Gulf Coast Ecosystem Restoration Council
Finding of No Significant Impact
Plug Abandoned Oil and Gas Wells (DOI_RESTORE_003_049-051_Cat1)
March 17, 2021

The Gulf Coast Ecosystem Restoration Council (Council) hereby adopts the U.S. Department of the Interior (DOI) Environmental Assessments (EAs) listed below. The Council adopts these EAs in order to address requirements of the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321 *et seq*.) associated with the use of previously approved funding for reclamation activities at eleven abandoned oil and gas wells located within Padre Island National Seashore, Texas described below.

The Council has reviewed these EAs and determined that they address the potential environmental effects of the reclamation activities at the eleven wells. The Council has determined that these reclamation activities would not result in a significant effect on the human environment. Following is a description of the reclamation activities and the associated EAs being adopted by the Council.

Funded Activity

On December 9, 2015, the Council approved $1,317,567 to plug eleven abandoned oil and gas wells as part of the Council's Initial Funded Priorities List (2015 FPL), which was developed pursuant to the *Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012* (RESTORE Act) (33 U.S.C. § 1321(t) and *note*). As indicated in the 2015 FPL, the ultimate goal is to plug and reclaim the eleven abandoned wells in order to mitigate environmental risks posed by such wells. At that time, the Council believed that the approved funding would be sufficient only to plug the abandoned wells. The Council's 2015 NEPA documentation for this funding approval was limited to the plugging activities.

In the course of implementing the plugging activities, DOI, the sponsor of this project, informed the Council that the projected cost of the well plugging would be below the amount approved in 2015, and requested that the remaining funds be used for additional related reclamation activities (i.e., removal of surface structures associated with the wells, soil testing around the wells, and removal of contaminated soils).

The Council has reviewed DOI's request to use the remaining approved funds on these additional activities and found that it is consistent with the plugging and reclamation referenced in the 2015 FPL. Prior to approving these activities the Council must address NEPA and other applicable environmental

laws. The activities described above have been addressed in the following DOI EAs for the associated wells:

- *1996 Environmental Assessment and Updated Plan of Operations - South Sprint Field in state tracts 979-S, 980-S, 981-S, 983-S and 984-S* - South Sprint Pad State Tract 980-S Well
- *1999 Environmental Assessment of the Plan of Operations for the Continuing Operation of the Dunn-McCampbell "A" Lease* - Dunn-McCampbell A4 Well
- *2007 Environmental Assessment - BNP Petroleum Corporation Proposal to Drill and Produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A Wells, and Operate the Dunn-McCampbell A8 Water Well Located Along the Pan Am Road* - Dunn-McCampbell A8 Water Well, State Tract 991-S #1 Gas Well, and Dunn-McCampbell 11A Gas Well
- *2003 Environmental Assessment - BNP Petroleum Corporation Dunn-Peach #1 Well, Padre Island National Seashore, Texas* - Peach #1 Gas Well
- *2004 Environmental Assessment - BNP Petroleum Corporation Dunn-Peach #2, 3, 4, 5, 6 Wells* - Peach #4ST, 5, 6, and 7C/7T Gas Wells
- *2002 Environmental Assessment - BNP Petroleum Corporation Lemon/Lemon Seed Unit No. No. 1-1000S and No. 1-1008S* - Lemon Pad-11) State Tract 1008S #1 Well

Environmental Assessments Adopted

The subject EAs are hereby adopted and incorporated by reference into this Council finding, consistent with the Council's NEPA Procedures [80 FR 25680-25691 (May 5, 2015)]. The EAs are compliant with NEPA and include assessments of alternatives and associated environmental consequences of the wells and reclamation activities. The analyses of environmental consequences include information pertaining to other potentially applicable environmental laws, including the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA).

Environmental Conditions

In addition to NEPA, the Council must comply with all other environmental laws applicable to the proposed activities. DOI has advised the Council that the subject NEPA documentation remains applicable to the proposed activities, that no historic properties are present at any of the well sites, and that the proposed reclamation work is not likely to adversely affect any species listed pursuant to ESA.

To ensure compliance with applicable laws, the Council's approval of these activities requires that the sponsor adhere to all applicable mitigation conditions. Adherence to these conditions is mandatory and serves to limit the environmental effects of an action to those that are insignificant, discountable, or beneficial. DOI is also responsible for ensuring that any contractors who may work on these activities are aware of and comply with all environmental compliance requirements.

Finding of No Significant Impact

Based on an independent review of the information and analyses provided in the subject EAs, the Council hereby issues this FONSI for the subject reclamation activities. This determination is based on consideration of the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500 through 1508). The subject EAs are attached to this FONSI and are incorporated herein by reference.

The Council has authorized the Executive Director of the Council to execute the FONSI on its behalf.

Determination by Responsible Official

I have determined that the proposed subject activities would not have a significant effect on the human environment.

Mary Walker
Executive Director, Gulf Coast Ecosystem Restoration Council

(Signature) MARY WALKER Digitally signed by MARY WALKER Date: 2021.03.17 16:16:54 -04'00' _____

Date _____

For Further Information

For further information, please contact John Ettinger, Director of Policy and Environmental Compliance, Gulf Coast Ecosystem Restoration Council, at (504) 444-3522 or by e-mail at john.ettinger@restorethegulf.gov.

ENVIRONMENTAL ASSESSMENT
OF THE UPDATED PLAN OF OPERATIONS

for the Existing Amoco Production Company
South Sprint Fieldwide Gas Unit
Padre Island National Seashore
Kleberg County, Texas
November 1996

PURPOSE OF AND NEED FOR ACTION

The National Park Service has received for approval, a revised Plan of Operations prepared for Amoco Production Company by Carter:Burgess. Amoco Production Company has a Plan of Operations that was approved November 1987. The New Plan of Operations addresses the changes in the operation of the South Sprint Fieldwide Gas Unit at Padre Island National Seashore and complies with 36 CFR 9.40(a). The Plan of Operations has been determined to be substantially complete and was accepted by the Superintendent, Padre Island national Seashore , on November 27, 1996 for formal processing.

The Field Director, Intermountain Field Area, will either approve or reject the plan after it has been reviewed and evaluated in accordance with the National Environmental Policy Act and the Nonfederal Oil and Gas Rights Regulations (36 CFR 9B). Approval of the plan is contingent upon additional information or modifications that may result from public and agency review. An approved Plan of Operations would serve as the permit for continued operation of the South Sprint Fieldwide Gas Unit and associated wells.

Background

Padre Island National Seashore was established by Public Law 87-712, on September 28, 1962, "to save and preserve, for the purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped."

The enabling legislation for Padre Island National Seashore allows for the exploration and extraction of oil and gas, subject to the Nonfederal Oil and Gas Rights Regulations (Title 36 of the Code of Federal Regulations, Part 9, Subpart B). The regulations require that a Plan of Operations be prepared for exploration and extraction activities. Operations predating the implementation of the regulations, which became effective January 8, 1979, are allowed to continue without an approved Plan of Operations until the operation is transferred to a new owner and/or requires new State or Federal permitting. New operations are permitted only under an approved Plan of Operations.

Oil and gas exploration and production has been actively pursued on Padre Island since the early 1950's. Currently, there are 6 active oil and gas wells and 5 pipelines operating in the park.

Padre Island is the largest undeveloped barrier island in the United States. The National Seashore is approximately 70 miles-in length and from ½ to 3 miles in width. The park consists of approximately 130,000 acres of land and water and has an annual visitation of approximately 875,000. The park is bordered on the east by the Gulf of Mexico and on the west by the Laguna Madre, a shallow, hyper-saline body of water. The island features change from sandy beaches to the fore-island dunes, then to a grassy plains, comprised of small dunes, ponds and interspersed marshes, then to back-island dunes and mudflats, that merge into the Laguna Madre.

Natural resource information for the proposed operations is provided in Plan of Operations (Page 16). Cultural resource information for the proposed operations is located in appendix B, Section 3.7 in the 1987 Plan of Operations.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action: Approve the Plan of Operations with Additional Stipulations, as Identified During Public and Agency Review

Amoco Production Company has operated the South Sprint Fieldwide Gas Unit for nine years under an approved Plan of Operations. The operation has been upgraded and has changed from the operation approved November 1986. Amoco has developed and implemented many mitigating measures to further minimize impacts to natural resources. The applicable measures contained in the Plan include:

- Amoco has installed secondary containment throughout the entire facility.
- Produced waters and condensate are removed from the park by tanker trucks.
- Amoco required the contract compressor to be equipped with a "hospital muffler" to reduce noise impacts.

No-Action

A "No-Action" alternative is presented to provide a benchmark for evaluating the other action alternatives. "No-Action" means the continuation of present trends and conditions. In this case, under "no-action", the 1986 Plan of Operations would remain in affect. Amoco would be able to continue to operate at the 1986 standard. Produced water was disposed of in an eight foot sump at the base of the condensate tank. Upsets would occur in the gun barrel operation that would release condensate into the ground water. Drips, spills and accidents would allow oil and chemicals to be released onto the soils. This alternative would be contrary to the Organic Act of 1916, the National Park Service is charged with management of the parks to " ... to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Other Alternatives considered but Dropped

One alternative considered but dropped from further evaluation would be to "Approve the Plan as Submitted." Amoco has cooperated with the National Park Service to develop a revised Plan of Operations which meets all of the current information needs specified at 36 CFR 9.36, and which addresses additional National Park Service concerns. The decision to approve the Plan without providing public notice and making the Plan available for review and comment would violate 36 CFR 9B regulations, and would negate public involvement in the decision making process as encouraged by the National Environmental Policy Act.

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVES

The National Park Service has determined that the following critical elements would be affected by the proposed action and no-action alternatives. Only those element marked "yes" are discussed further:

Critical Elements	Affected	
	Yes	No
Air Quality/Noise Levels	X	_
American Indian Religious Uses	_	X
Cultural/Historical Resources	_	X
Farmlands, Prime/Unique	_	X
Floodplains	_	X
Hazardous Materials	X	_
Scenic Values	_	X
Threatened/Endangered Species	_	X
Vegetation	X	_
Water Quality	_	X
Wetlands	_	X
Wildlife	X	_

Environmental Consequences of the Proposed Action:

Impacts of the Proposed Action on Air Quality/Noise Levels:

Air emissions are expected to be released from hydrocarbon vapors, the exhaust emissions from stationary compressor engines and the introduction of motor vehicles. These emissions are expected to disperse quickly in the normal winds of Padre Island. Average wind speed in the Corpus Christi vicinity is 10+ mph. These emissions are expected to be within the standards of

the Texas Natural Resource Conservation Commission (TNRCC) exemptions for oil and gas production.

Noise levels have increased from background during the operation of the South Sprint Fieldwide Gas Unit. Amoco has worked with the park to minimize the increased noise from the operation of the compressor. The compressor is operating with a hospital muffler with catalytic converter to reduce emissions and noise. . Prevailing southeast winds minimize noise detected by park visitors on the gulf beaches. Compressors of one type or another have operated at the facility for over five years. Wildlife in the area have become accustomed to the noise of the facility.

Impacts of the Proposed Action on Floodplain Values:

Padre Island National Seashore, with the exception of the primary dune line, lies within the 100 year floodplain. Amoco location is sited behind and adjacent to the primary dune line. Amoco has re-worked their facility installing secondary containment under the tank battery and over the fire walls. Secondary containment has been installed under bulk oil and corrosion chemical containers. Gas lines are vented into tanks to collect any liquids associated with the production of natural gas. Amoco South Sprint facility is sited to minimize impacts to floodplain values.

In the event of a hurricane threatening Padre Island National Seashore, the Park's Hurricane Preparedness Plan would be implemented. Amoco would have sufficient time to shut down the operations, empty tanks of product, and to fill them with water.

Impacts of the Proposed Action on Hazardous Materials:

The potential for release of hazardous or toxic materials exists. Amoco has prepared a Contaminating or Toxic Substance Spill Control Plan that is site-specific for Padre Island National Seashore, Appendix E. Amoco has in place an impermeable liner over the berm and in the tank battery. The material safety data sheets for all toxic and/or hazardous material are on-site and located in Appendix E.

Impacts of the Proposed Action on Scenic Values:

The scenic values of the park are protected by the siting of the Amoco facility behind the primary dune line. The facility is visible briefly while looking down the access road when driving south on the beach. The facility is painted in earth tone colors, blending into the surrounding area.

Impacts of the Proposed Action on Threatened and Endangered Species:

No Federally listed threatened or endangered plant species are known to occur at Padre Island National Seashore.

Several animals identified at Padre Island National Seashore are included on the Federal list of

threatened (T) or endangered (E) species include: Peregrine falcon (Falco peregrinus anatum and (Falco peregrinus tundrius)(E), Brown pelican (Pelecanus occidentalis)(E), Piping plover (Charadrius melodus)(E), Green sea turtle (Chelonia mydas)(T), Kemp's Ridley sea turtle (Lepidochelys kempi)(E), Loggerhead sea turtle (Caretta caretta)(T), Leatherback sea turtle (Dermochelys coriacea)(E), and the Hawksbill sea turtle (Eretmochelys imbricata)(E).

The Texas coast averages one sea turtle nest per year with the majority documented on Padre Island. Additionally, park staff locate and care for an average of ten stranded hatchlings washed in on the tide yearly. Gaugers and contractors are contacted on a yearly basis to watch for and report the sightings of sea turtles.

The Peregrine falcon stages on Padre Island National Seashore during the spring and fall migration. On-going scientific studies report numbers of falcons to be 800+ during the migration on the southern end of the park. The greatest number of Peregrine falcons utilize the wind tidal flats approximately two miles south of Yarborough Pass to South Padre Island. However, Peregrine falcons could be observed anywhere on Padre Island. Amoco's continuing operation is not expected to impact the Peregrine falcon.

The Brown pelican utilizes the Gulf of Mexico and the Laguna Madre for feeding. The Piping plover is observed on Padre Island ten months a year (August through May). They utilize the wind tidal flats, the washover channels, and the gulf beaches for resting and feeding. Access to the Amoco facility is by driving on the beach. Piping plovers resting and feeding on the beach tolerate vehicle traffic. . Any adverse impacts to the species would be insignificant and short term. The proposed operation is not expected to have an impact on either the Brown pelican or the Piping plover.

Impacts of the Proposed Action on Vegetation:

Vegetation has stabilized the dune areas around the Amoco facility. Vegetation within the area used in the production of natural gas is trimmed mechanically to reduce the threat of fire.

Impacts of the Proposed Action on Wetlands:

The South Sprint Fieldwide Gas Unit is located in an upland area and avoids wetland impacts. Approximately 5000 feet of flowline runs through isolated wetlands to a junction with Houston Pipeline. Maintenance activities would fall under Corps of Engineers Nationwide Permit #3.

Impacts of the Proposed Action to Wildlife

Wildlife that utilized the grounds now occupied by the Amoco facility have been displaced for over 10 years. The wildlife would have had to adapt of perish due to displacement. Wildlife surrounding the facility have adapted to the noise and presence of human intervention.

Impacts of the Proposed Action to Wildlife:

Wildlife currently using the area proposed for the project would be displace during the construction, drilling, production, and reclamation. The loss of this habitat in not expected to have a measurable impact on wildlife populations.

Cumulative Impacts of the Proposed Action:

Cumulative oil and gas impacts are both spatial and temporal, and occur when the effects of an activity are added to those existing in a given area and/or they accumulate over time.

There are currently 6 active oil and gas operations within Padre Island National Seashore. These operations include: five natural gas wells, one oil well, one salt water disposal well, and one water well. In addition, five companies operate pipelines that account for approximately 70 miles of pipeline in the park. These operations also have access roads associated with them. There are 53 abandoned oil and gas sites in the park, dating back as far as 1951. Many abandoned sites are no longer discernible because of the changing nature of the barrier island ecosystem concealing, obscuring or destroying sites, such as in the case of hurricane washovers and migratory dune fields. Good operating methods employed by some operators in the past resulted in complete restoration of sites. Other sites that have still not revegetated completely show that operating methods are important to successful and timely restoration.

Environmental Consequences of the Alternative, No-Action

The no-action alternative entails rejecting the Plan of Operations. Current conditions would be maintained; therefore, noise level, air quality, scenic values, vegetation, wetlands, and other resource conditions would remain the same. Increased protection of natural resources that would result from the additional mitigative measures to reduce or minimize leaks and spills would not be realized under this alternative.

CONSULTATION AND COORDINATION

The following agencies and organizations were consulted during the preparation of the Plan of Operations and writing of this Environmental Assessment:

Intermountain Office of Minerals/Oil and Gas Support, National Park Service, Santa Fe, New Mexico

Geologic Resources Division, Mining Operations Branch, National Park Service
Denver, Colorado

U.S. Fish and Wildlife Service, Ecological Services,
Corpus Christi, Texas

Preparers

This Environmental Assessment was prepared by Paul H. Eubank, Environmental Protection Specialist, Padre Island National Seashore and Linda Dansby, Environmental Protection Specialist, Intermountain Office of Minerals/Oil and Gas Support, National Park Service, Santa Fe, New Mexico.

United States Department of the Interior

NATIONAL PARK SERVICE
Padre Island National Seashore
P. O. Box 181300
Corpus Christi, Texas 78480-1300

IN REPLY REFER TO:

L3025

October 26, 1999

Ms. Pat Clements
U.S. Fish & Wildlife Service
Texas A & M University – Corpus Christi
Campus Box 338
6300 Ocean Dr.
Corpus Christi, Texas 78412

Dear Ms. Clements:

Padre Island National Seashore has received from Vector Energy Corporation (Vector Energy) a Plan of Operations for the continued operation of properties originally developed by Sun Exploration Company and American Exploration Company. In accordance with the regulations at 36 CFR part 9 subpart B, Non-federal Oil and Gas Rights, a new Plan of Operations is required. The Plan of Operations will serve as the permit for Vector Energy to operate at Padre Island National Seashore.

Enclosed is a copy of the Plan of Operations, an Environmental Assessment, and an informal Biological Assessment. Please review, provide comments, and sign and return the last sheet of the informal Biological Assessment by November 12, 1999. If you have any questions, please feel free to telephone me at (361) 949-8173, extension 223.

Sincerely,

Darrell L. Echols
Chief, Resource Management

Enclosures

ENVIRONMENTAL ASSESSMENT OF THE PLAN OF OPERATIONS

FOR THE CONTINUING OPERATION of the DUNN-McCAMPBELL "A" LEASE Vector Energy Corporation

PROPOSED BY PADRE ISLAND NATIONAL SEASHORE KLEBERG COUNTY, TEXAS

October, 1999

PURPOSE OF AND NEED FOR ACTION

The National Park Service (NPS) is considering the approval of a Plan of Operations submitted by Vector Energy Corporation (Vector Energy). The Plan addresses the continuing operation and eventual reclamation of three natural gas wells, one saltwater disposal well, and associated production facilities located within Padre Island National Seashore (National Seashore), acquired from Vector Energy and Environmental, Inc. on November 1, 1998.

The authorizing legislation for Padre Island National Seashore, Public Law 87-712, allows for the exploration and production of non-Federal oil and gas. These activities are governed by the National Park Service's Nonfederal Oil and Gas Rights Regulations found at Title 36 of the Code of Federal Regulations, Part 9, Subpart B (36 CFR 9B Regulations). Operations predating the implementation of the regulations, which became effective January 8, 1979, are allowed to continue without an approved Plan of Operations until the operation is transferred to a new owner and/or requires new State or Federal permitting. New operations proposed after January 8, 1979 must be conducted under a Plan of Operations (Plan), which has been approved by the NPS.

Each Plan is intended to be a comprehensive description of the conduct of operations and eventual environmental restoration of the operations site upon abandonment. The approved Plan serves as a NPS permit for the operation, and the operator is required to provide financial assurance guarantee for continuing adherence to the conditions of the Plan. Furthermore, oil and gas production operations on Padre Island are subject to permits and regulations issued by the Railroad Commission of Texas, and may be subject to regulations and permits issued by the Texas Natural Resource Conservation Commission, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the U.S. Department of the Interior.

Oil and gas exploration and production has been actively pursued on Padre Island since the early 1950's. Currently, there are 4 active gas wells and 5 pipelines operating in the park.

Padre Island is the largest undeveloped barrier island in the United States. The National Seashore is approximately 70 miles in length and from ½ to 3 miles in width. The park consists of approximately 133,000 acres of land and water and has an annual visitation of approximately 875,000. The park is bordered on the east by the Gulf of Mexico and on the west by the Laguna Madre, a shallow, hyper-saline body of water. The island features change from sandy beaches to the fore-island dunes, then to a grassy plains, comprised of small dunes, ponds and interspersed marshes, then back-island dunes and mudflats that merge into the Laguna Madre.

Vector Energy has submitted a Plan of Operation describing the continuing operations and eventual reclamation of oil and gas operation on Padre Island National Seashore. The Plan has been determined to be substantially complete and accepted by the Superintendent, Padre Island National Seashore, on October 7, 1999, for formal processing. The Regional Director, Intermountain Region, will either approve or reject the Plan after it has been reviewed and evaluated in accordance with the National Environmental Policy Act and the Non-federal Oil and Gas Rights Regulations (36 CFR 9B). The Regional Director has the option of approving the Plan subject to additional stipulations, which may be identified during a 30-day public review and comment period. The Plan would be automatically rejected if the Regional Director fails to take action within 60 days from the official acceptance date. An approved Plan of Operations would serve as the permit for the continued operations of the Dunn-McCampbell "A" lease wells and associated facilities at Padre Island National Seashore.

Facilities

Flowlines for each well
Processing equipment for each well
Compressors, tanks, and bulkheads for each well
Injection equipment for saltwater disposal well
Measurement and sales facilities for natural gas

Other

Approximately 3.0 miles of improved road on Dunn-McCampbell "A" Lease

These existing oil and gas operations directly impact approximately 11.1 acres of the National Seashore. The Plan includes measures for prevention, containment, and remediation of any spills of oil or contaminating substances, which might result from the operations. Natural and cultural resource information is provided in Section IX of the Plan. Please refer to the appropriate sections of the Plan for more information on facility design and conduct of operations.

Anticipated longevity of the operations is unknown. Section VII of the Plan describes the eventual reclamation of the operations areas and access roads upon plugging and abandonment of the wells. Within 6 months of abandonment of a well, all associated equipment and facilities would be removed; all contaminated soil would be removed; the area revegetated to 70% percent cover with

native vegetation. The NPS has evaluated the reclamation measures outlined in the Plan, and believes that, based on the present knowledge of proven environmental restoration techniques, the measures and timing of the procedure are realistic.

Mitigating Measures. Vector Energy has developed and adopted several mitigating measures to minimize impacts to natural and cultural resources and to assure protection of the visiting public. These measures are summarized below as they relate to the continuing operations of wells, production facilities and access roads.

Production Facilities:

- Spill containment levees are around storage tanks at the A-6 Saltwater disposal well. A separate levee is also maintained around the entire facility.

- Imported fill is used to maintain the levees.

- A locked gate is installed at the entrance road.

- The operations areas would be inspected on a regular and continuing basis by the operator to detect leaks, spills, and accumulations of debris or garbage. All waste would be removed from the site and properly disposed of.

- The operator would adhere to the standards set forth by the Oil Pollution Act of 1990 (Title 40 of the Code of Federal Regulations, Part 112) for onshore oil storage facilities. A Spill Control and Countermeasure Plan for the facility is incorporated into the Plan.

- The amount of oil field chemicals (e.g., corrosion inhibitors) transported through the National Seashore and used on-site would be limited to the minimum amount needed to continue normal production of the wells. Hazardous chemicals would be transported, stored, used, and disposed of in accordance with Federal standards.

- Metal circulation tanks would be employed during workover operations, minimizing the potential for contamination of soils.

- Rainfall would not be allowed to accumulate within containment levees, which would effectively reduce their capacity to contain spills. Accumulated water would be pumped into the produced water tanks for disposal down the saltwater disposal well.

Abandonment and Reclamation:

- Upon plugging and abandonment of wells: all equipment, debris, contaminated soils, and imported fill materials would be removed; natural land contours would be regraded, and the site would be planted with native vegetation.

General Compliance Measures:

- The Superintendent and his designated representative(s) would be assured access to the site to determine adherence to the Plan of Operations and other applicable regulations.

- The operator would assume responsibility for assuring that contractors and subcontractors comply with the approved Plan.

- Vector Energy would comply with the approved Plan, and with all stipulations, demands, and orders of the Director, Intermountain Region, NPS.

- All operations would be conducted in accordance with applicable Federal, state, and local laws and regulations.

Additional Stipulations. In addition to the conditions for approval outlined above, additional issues may be identified during the public and agency review period. If important issues were identified, the NPS would develop additional stipulations before approving the Plan. Any additional stipulations would be incorporated into the NPS Finding of No Significant Impact/Decision Record document. The operator would be informed of any additional conditions for approval in NPS correspondence notifying them of the conditional approval of the Plan.

Performance Assurance Assessment. If the Plan is approved by the NPS, Vector Energy would be assessed a financial surety as required by 36 CFR 9B, '9.48(d) to: (1) ensure timely and effective plugging of the wells and reclamation of the operations areas upon abandonment; and (2) guarantee rapid and effective response and cleanup of a spill or fire as a result of the operations. Accordingly, the regulations further state that the amount of the surety be based upon the sum of: (1) the cost of plugging the wells and reclaiming the operations areas; and (2) the liability amount estimated by the Superintendent required to effectively contain, clean up and minimize the damages resulting from the escape of oil, oil-waste, contaminating substances, or fire resulting from the operations. The regulations limit the liability amount for the operation of a single well or operations other than geophysical surveys to $50,000. In addition, the regulations limit an operator's total bond for multiple operations within a given unit to $200,000. In Section VII of the Plan, Vector Energy estimates the total cost of plugging the wells and restoring the operations areas is $190,500. Therefore, the maximum allowable bond for these operations is $200,000. As Vector Energy plugs and abandons wells and restores operations areas, the NPS shall adjust the performance bond amount, thereby reducing the bond amount commensurate with the operations remaining.

The costs associated with operator liability for spill control and remediation are difficult to estimate. In doing so, the Superintendent has considered a range of hypothetical scenarios from a small spill to a worst-case scenario. The most probable scenario entails failure of the operator to respond to a spill of the daily production volume of oil and produced water into the containment levees around the facility. Given the typically thin sandy soil layer on Padre Island that allows rapid percolation of contaminants into the very shallow groundwater where it may be dispersed, characterization and remediation operations could easily cost $200,000. If a spill were to escape the operations area into the shallow groundwater or nearby wetlands communities, additional costs for cleanup could be incurred.

Although the probability of a worst-case scenario is rare, particularly when good housekeeping and use of spill control and containment devices are used, this would entail the failure of the operator to respond to a well blow-out, spill or fire caused by severe equipment failure and/or extreme weather conditions. In this case, extensive actions by blowout containment crews, spill-response contractors or firefighters would be required for control and remediation. The Superintendent estimates that the $200,000 liability limit could rapidly be obligated in any of these events.

The financial surety obligation would be held by the NPS, and released upon abandonment of the well and when the NPS is assured of natural vegetation over the entire operations area. In the event of a transfer of the minerals lease and production operations to another operator, the bond would be retained until subsequent adoption of this Plan and tendering of a substitute financial surety by the new operator in accordance with 36 CFR 9B, '9.34.

ALTERNATIVE 1, REJECT THE PLAN OF OPERATIONS

The NPS may reject the Plan upon determining that it is not substantially complete. The NPS may also reject the Plan if the operation cannot be conducted in a manner that assures protection of public health and safety, or which does not utilize technologically feasible methods to minimize damages to NPS administered lands or waters. Furthermore, a plan may be rejected which might substantially impair the natural and ecological integrity of NPS-administered lands. The Plan would also be automatically rejected if the NPS fails to make a decision to either approve or reject it within 60 days, as specified in 36 CFR 9B, '9.37(c). The rejection of the Plan would ultimately constitute denial of NPS approval to continue the existing operations. The operator would have the right to appeal the decision, and would be informed of appeals procedures.

NO-ACTION ALTERNATIVE

A "No-action" alternative is presented to provide a benchmark for evaluating the other alternatives. "No-action" means the continuation of present trends and conditions if no action is taken.

In this case, the Plan submitted by Vector Energy would be automatically rejected if the NPS makes no decision regarding its approval within 60 days from the official acceptance date. Automatic

rejection of the Plan would constitute denial of NPS approval to conduct the existing operations. The operator would have the right to appeal the decision, and would be informed of appeals procedures.

If this alternative were selected, Vector Energy would be permitted to continue to operate without a comprehensive Plan of Operations. The National Park Service would continue to utilize applicable State and Federal regulations to minimize some impacts to the park.

OTHER ALTERNATIVES CONSIDERED BUT DROPPED FROM FURTHER EVALUATION

One alternative considered but dropped would be to "Approve the Plan of Operations as Submitted." Vector Energy has cooperated with the NPS to develop a Plan of Operations, which meets the informational requirements specified at 36 CFR 9B, '9.36. However, the decision to approve the Plan without providing public notice and making the plan available for review and comment would negate public involvement in the NPS decision making process as required by the 36 CFR 9B Regulations and National Environmental Policy Act (NEPA). This alternative would also preclude NPS approval of the Plan subject to the operator's acceptance of the conditions outlined in the Proposed Action, above.

Another alternative considered but dropped would be to "Require Further Revision of the Plan of Operations to Include Additional Information." Vector Energy has cooperated with the NPS to develop a Plan of Operations, which substantially meets the information requirements, specified at 36 CFR 9B, '9.36. To meet the intent for reducing paperwork and streamlining, the NPS proposes that additional issues would best be addressed in a timely manner by approving the Plan subject to the conditions outlined in the Proposed Action, above, and any additional stipulations based upon comments received during the public and agency review period.

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVES

The NPS has determined that the following critical elements would be affected by the proposed action and no-action alternatives. Only those elements marked "yes" are discussed further.

Critical Elements	Affected	
	Yes	No
Air Quality/Noise Levels	X	
American Indian Religious Uses	___	X
Cultural/Historical Resources	___	X
Farmlands, Prime/Unique	___	X
Floodplains	X	
Hazardous Materials	X	
Scenic Values	X	
Soils	X	
Threatened/Endangered Species	X	
Vegetation	X	
Water Quality	X	
Wetlands	X	
Wildlife	X	

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

Impacts of the Proposed Action on Air Quality/Noise Levels.
Both air quality and ambient noise levels would be affected by continuing the operations. Air quality in the vicinity of the operations sites and access routes would be impacted by increased motor exhaust from transport trucks and other well service equipment. These emissions are usually of a short-term duration. Fugitive natural gas and other volatile vapors would be generated by the facilities over the life of the wells. The small volume of fugitive volatile organic compounds escaping from the operations would effectively mix and disperse into the atmosphere around the site by prevailing Gulf of Mexico breezes.

Noise levels would continue at the current level. Some measurable noise would continue to be generated by semi-truck traffic, production equipment compressors, and additional service equipment motors. Prevailing southeast winds should minimize noise detected by park visitors on the Gulf beaches.

Neither air quality nor ambient noise standards would be violated by the continuing operations. Therefore, the impacts are considered to be highly localized, negligible, and are not expected to disrupt visitor use and resource values.

Impacts of the Proposed Action on Floodplains. Padre Island National Seashore, with the exception of the primary dune line, lies within the 100-year floodplain. There is no practicable alternative to siting production facilities in a floodplain. Vector Energy compressors and produced water/condensate tanks are located on five-foot sheet pile bulkheads. Bulk oil and chemical drums are protected by secondary containment. In the event of a hurricane or tropical storm, Vector Energy would shut-in the wells and remove any stored produced water and condensate from the park prior to the storm's landfall.

Impacts of the Proposed Action on Hazardous Materials. The most significant issue identified with oil and gas production within NPS administered lands is the potential for oil, produced water, and oil field chemical spills, and their associated protracted impacts to vegetation, wildlife, soils, water quality, and wetlands in the environment adjacent to the operations areas.

Vector Energy has included a Contaminating or Toxic Substance Spill Control Plan in the Plan of Operations. Vector Energy has taken preventative measures to minimize any spills or releases. Coffin containers have been installed on all 55-gallon containers of chemicals. The amount of lubricants and chemicals kept on-site are only the amount necessary for operations. A containment berm with an impermeable liner has been constructed around two 400-barrel fiberglass water and condensate tanks. During normal operations, all potentially hazardous materials would be kept in completely enclosed storage containers.

The spill prevention and control measures and other mitigating measures included in the Plan should assure that, in the event of equipment failure or operator error, accidental discharges of oil and produced water would be small in volume and would be contained within the operations areas. Vector Energy has included specific language regarding spill response and remediation in the Plan, including prompt notification of the NPS.

The National Seashore staff would also be guaranteed access to inspect the site to verify that operations are conducted in a way that minimizes the potential for spills. Vector Energy would be notified if situations or deficiencies were observed which must be corrected, and other violations would be reported to the appropriate agency.

The probability of accidental discharge beyond the operations area is minimal, and might only result from severe equipment failure or catastrophic acts of nature such as lightning striking a site. The impacts to the environment adjacent to the operations area would vary according to the severity of the incident. Both oil and produced-water spills can harm and kill wildlife, and can also severely impact natural wetland and aquatic ecosystems, including killing wetland vegetation and sensitive freshwater organisms. Additional observations of areas that have been impacted by past events, suggest that produced-water spills are lethal to vegetation and can cause soil sterilization and contamination, which may persist for decades if not effectively remediated.

In the event of a spill, Vector Energy would consult with the NPS and other jurisdictional agencies to identify standards for remediation and treatment of contaminated soils, waters, wildlife, and

vegetation. Vector Energy would also obtain approval from the NPS before initiating clean-up activities, which might cause severe impacts to the environment adjacent to the operations area.

The potential for spills and associated impacts would be fully mitigated upon plugging and abandonment of the well, and effective remediation of any contaminated soils at the operations area.

Impacts of the Proposed Action on Scenery. Operations areas and man-made facilities, such as access roads, well heads, production equipment, gates and fencing cause visual interruptions of natural scenery. However, the existing operations sites are behind the primary dune line and not generally visible from the primary travel route along the Gulf beach. The operations sites and equipment are kept free of refuse and debris. Impacts to scenic values would be fully mitigated when the wells cease to be productive, and the sites are abandoned and reclaimed.

Impacts of the Proposed Action on Soils. The existing oil and gas operations impact approximately 11.1 acres on Padre Island National Seashore. Spill control and containment techniques, such as monitoring, berming, and impermeable liners reduce the potential for future leaks and spills.

Compatible fill materials required for future maintenance activities would be brought from sources outside the National Seashore. No new disturbance to soil is expected. Only the minimum amount of fill material required to support routine transport and service vehicles would be brought onsite. All imported fill materials would be removed upon abandonment. Native grasses would likely recover over most of the production facility except where there is routine vehicle traffic.

Soils might be contaminated by the occurrence of an oil, produced water, or chemical spill as discussed in the Hazardous Materials section, above. Vector Energy has included measures to protect soils from contamination during production and well-service operations. The impacts to soils would be fully mitigated when the sites are abandoned and reclaimed.

Impacts of the Proposed Action on Vegetation. Sun Oil Company originally constructed the roads and facilities now operated by Vector Energy. Approximately 11.1 acres of vegetation was removed to construct the access roads and production pads. Vegetation around the immediate production facility is manually removed to prevent fire exposure and is chemically removed on the elevated bulkheads under supervision of the park IPM coordinator.

Within six months of abandonment, operations sites would be recontoured to natural grades, and native grasses planted. The areas would be monitored until native grass species regrow over the entire site. The National Seashore staff estimates that a satisfactory early stage of revegetation indicative of eventual recovery to native grasses could be reached within one to two years of abandonment. Successful revegetation would occur when 70% cover of native vegetation has been attained.

Impacts of the Proposed Action on Water Quality. Both point source and nonpoint-source contamination of surface waters could result from the continuing operations. Point-source pollution could result in the event that oil, produced water, or oil field chemicals are discharged directly into waterways near the operations area. Non-point source contamination could result in the event that rainfall runoff from the operations area comes into contact with contaminated soils. The location of the well sites and additional spill control measures adopted in the Plan should prevent spills from reaching the Laguna Madre or Gulf waters. Additional mitigating measures adopted in the Plan should prevent most incidental contact between precipitation and contaminated soils.

The soils surrounding the proposed operations area are highly porous, and shallow groundwater could be contaminated by repeated spills or leaking equipment. Vector Energy 's use of secondary containment coffins and impermeable liners, and other spill response and mitigating measures outlined in the Plan should minimize the potential for groundwater contamination.

Groundwater contamination could also result from the use of inappropriate engineering or improper plugging of the well. The engineering standards adopted for the wells should ensure long-term protection of groundwater.

Potential impacts to water quality would be fully mitigated when the well is properly plugged upon abandonment. Existing State and Federal plugging regulations require the proper design and placement of cement plugs to permanently isolate and seal any oil-producing zones, brine water zones, lost circulation zones, and freshwater zones. This should prevent the migration of fluids in the well bore between the different zones or to the surface.

Impacts of the Proposed Action on Wetlands. Padre Island consists of 50%-75% wetlands. Impacts to wetlands cannot be avoided by roadway and production development. The facilities owned and operated by Vector Energy were constructed by Sun Oil Company in the 1960's prior to Corps of Engineer permitting requirements. Vector Energy is cognizant of the sensitive wetlands surrounding their facilities. When production ceases at the various facilities, the pads and access roads would be removed. The impacted areas would be restored to original contours of the surrounding area, restoring wetlands.

Impacts of the Proposed Action on Wildlife. Wildlife that was displaced cannot be measured. Wildlife in the immediate area has adjusted to the influence of man's intrusion over the past 30 years. Wildlife not normally seen by the public is observed regularly by oil/gas workers and park staff along the roads leading to the production location. The numerous ephemeral ponds located near the facilities are habitat to numerous wading birds.

The impact of habitat loss and noise would persist until such time as production ceases, when the wells would be plugged and the sites would be reclaimed. At that time, animal populations displaced by the operations are expected to recolonize the area.

National Seashore staff maintains files on all threatened and endangered animals that potentially

inhabit the Park. No likely impacts to endangered species or critical endangered species habitat are anticipated from the proposed continuing operations.

Cumulative Impacts of the Proposed Action. Cumulative oil and gas impacts are both spatial and temporal, and occur when the effects of an activity are added to those existing in a given area and/or they accumulate over time.

There are currently 4 active gas operations within Padre Island National Seashore. These operations include: four natural gas wells and one saltwater disposal well. In addition, five pipelines account for approximately 70 miles of pipeline in the park. These operations also have access roads associated with them.

There are 53 abandoned oil and gas sites in the park, dating back as far as 1951. Many abandoned sites are no longer discernible because of the changing nature of the barrier island ecosystem concealing, obscuring, or destroying sites, such as in the case of hurricane washovers and migratory dune fields. Good operating methods employed by some operators in the past resulted in complete restoration of sites. Other sites that have still not revegetated completely show that operating methods are important to successful and timely restoration.

Vector Energy's proposed operation would not increase surface disturbance to Padre Island National Seashore. Vector Energy 's preparation of a comprehensive Plan of Operations for their facilities would not result in increased cumulative impacts.

The NPS would consider approving a supplemental plan describing only those items alluded to in the present Plan which would result in no additional surface disturbance, or additional threats to natural and cultural resources or to the visiting public. Any forthcoming supplement which proposes surface disturbances or threats to the National Seashore beyond the scope of the present Plan would be formally considered within a separate Plan of Operations and accompanying Environmental Assessment, with public involvement, in accordance with 36 CFR 9B Regulations and NEPA.

ENVIRONMENTAL CONSEQUENCES OF NO-ACTION AND REJECTION ALTERNATIVES

The environmental consequences of the "No Action" alternative and the "Rejection" alternative would likely be identical. Therefore, the two are considered here together.

The "No Action" alternative would result in automatic denial of NPS approval to continue existing operations. The "Rejection" alternative would result in forthright denial of NPS approval to conduct the existing operations. In the latter event, the NPS would be required to inform the operator of the specific reasons for which the Plan was rejected. In either event, the operator would have the right to appeal the decision, and would be duly informed of the appeals procedure. Either action would hypothetically prevent continuing oil and gas operations and the potential for additional surface

disturbance within the National Seashore, and would provide maximum protection of natural and cultural resources.

Impacts of the "No Action" and "Rejection" Alternatives on Air Quality and Noise Levels. With the cessation of existing operations, the negligible and intermittent nature of noise or air quality degradation within the National Seashore would also stop.

Impacts of the "No Action" and "Rejection" Alternatives on Floodplains. Cessation of existing oil and gas operations would have no impact on floodplains.

Impacts of the "No Action" and "Rejection" Alternatives on Hazardous Materials. There would be a no potential for release of hazardous materials from inactive oil and gas operations. With routine frequent monitoring and maintenance of shut-in wells there should also be little possibility for pressure build-up and leaks.

Impacts of the "No Action" and "Rejection" Alternatives on Scenery. The presence of access roads and oil and gas production facilities would continue to be man-made intrusions on the natural visual scene of the National Seashore, resulting in little change from current conditions. However, like the proposed action, upon abandonment and reclamation, the scenic values would return to natural conditions.

Impacts of the "No Action" and "Rejection" Alternatives on Soils. Under No-Action and Rejection, cessation of operations would have no impact on soils.

Impacts of the "No Action" and "Rejection" Alternatives on Vegetation. Denuded areas in the vicinity of the existing operations areas would persist.

Impacts of the "No Action" and "Rejection" Alternatives on Water Quality. Under No-Action and Rejection, cessation of operations would have no impact on water quality.

Impacts of the "No Action" and "Rejection" Alternatives on Wetlands. Under No-Action and Rejection, cessation of operations would have no impact on wetlands.

Impacts of the "No Action" and "Rejection" Alternatives on Wildlife and Aquatic Life. Cessation of existing oil and gas operations would reduce the volume of vehicular traffic using access roads, to the production sites. This would have little measurable impact on wildlife since the volume of use along the access roads would continue with use by National Seashore visitors.

Cumulative Impacts of the "No Action" and "Rejection" Alternatives. The cessation of existing oil and gas operations would reduce the number of operating wells at the National Seashore from 8 to 3, and reduce other pipeline and support operations. Over time, the wells would be plugged and abandoned, and disturbed surface areas reclaimed, resulting in a measurable reduction of surface use impacts.

CONSULTATION AND COORDINATION

National Park Service review of the Vector Energy Plan of Operations was conducted by the staff at Padre Island National Seashore, the Geologic Resources Division, and the Intermountain Region Minerals/Oil and Gas Program Leader.

This Environmental Assessment was prepared by Paul Eubank, Environmental Protection Specialist, Padre Island National Seashore, with the assistance of Linda Dansby, Intermountain Region Minerals/Oil and Gas Program Leader.

The following agencies and organizations were consulted during preparation of this assessment:

- Railroad Commission of Texas
- U.S. Fish and Wildlife Service
- National Park Service, Intermountain Region, Minerals/Oil and Gas Program Leader, Santa Fe, New Mexico
- National Park Service, Geologic Resources Division, Denver, Colorado

A Notice of Availability of the Plan of Operations and Environmental Assessment has been published in the *Federal Register*.

INTERMOUNTAIN REGION
NATIONAL PARK SERVICE
PADRE ISLAND NATIONAL SEASHORE

SECTION 7 BIOLOGICAL ASSESSMENT FORM

...X.... INFORMAL

..... FORMAL

1. REGION: Intermountain Region, National Park Service

2. PARK: Padre Island National Seashore REF: PAIS-99-11

3. LOCATION: Kleberg County Texas

4. DEVELOPMENT ACTION PLANNED: Transfer and continuation of operations of three natural gas and one saltwater disposal well.

5. DEVELOPMENT ACTION OBJECTIVES: Allow for continued operation of the Dunn-McCampbell "A" Lease.

6. ALTERNATIVES TO PROPOSED ACTIONS: None

7. BRIEF DESCRIPTION OF ENDANGERED SPECIES SURVEYS: Numerous park floral/faunal surveys document plants and animals known to be present at the National Seashore; no endangered species of plants are known to occur. Park and permittee representatives have reviewed the site and Plan of Operations in order to assure protection of the natural environment.

OCCURRENCES: **Peregrine falcon** (*Falco peregrinus/F.p. tundrius*) are common spring and fall migrants with some birds staying through the winter. The **Bald eagle** (*Halieaeetus leucoecephalus*) is a accidental migrant. **Brown pelican** (*Pelecanus occidentalis*) (E) is a coastal resident seen along the Gulf of Mexico and the Laguna Madre year round. **Piping plover** (*Charadrius melodus*) (E) resides along Padre Island 10 months a year, August - May, utilizing Gulf beaches, washover passes, and expansive wind tidal flats along the Laguna Madre. **Kemp's ridley turtle** (*Lepidochelys kempii*) (E) Nests and hatchlings are found on beaches from April-August. **Green sea turtle** (*Chelonia mydas*) (T) nests are found on Padre Island beaches. **Loggerhead sea turtle** (*Caretta caretta*) (T), and **Hawksbill sea turtle** (*Eretmochelys imbricata*) (E) nest on Padre Island beaches. **Leatherback sea turtle** (*Dermochelys coriacea*) (E) historically used Padre Island beaches for nesting, no current confirmation available.

CATEGORY 1 & 2 REVIEW SPECIES:

Plants: None

Invertebrates: None

Reptiles/amphibians: No documentation supporting occurrence of the Texas horned lizard (*Phrynsoma cornutum*) (2).

Birds: Category 2; Reddish egret (*Egretta rufescens*), Whit-faced ibis (*Plegadis chihi*), Fulvous whistling duck (*Dendrocygna bicolor*), Long-billed curlew (*Numernius americamus*), Loggerhead shrike (*Lanius ludovicianus*), Cerulean warbler (*Dendroica cerulea*), and Western snowy plover (*Charadrius alexandrinus nivosus*), are known to occur in the park. Ferruginous Hawk (*Buteo regalis*), and the Mountain plover (*Charadrius montamus*) not documented, but may migrate through the park.

Mammals: Category 2; Texas maritime pocket gopher (*Geomys personatus maritimus*) not documented, but thought to occur in the park.

8. **LISTED OR PROPOSED SPECIES OR CRITICAL HABITAT WITHIN OR ADJACENT TO THE ACTION AREA:** There is no designated critical habitat within or adjacent to the action area.

The Texas coast had thirteen sea turtle nests documented during 1997, twenty-one in 1998, and eighteen in 1999, with the majority documented on Padre Island. Additionally, park staffs locate and care for an average of three stranded hatchlings each year.

Motor vehicle traffic on the gulf shoreline is permitted on Padre Island throughout the year. Oil and Gas personnel and contractors would be instructed on how to identify sea turtle tracks and how to report them to park staff. These mitigating measures are expected to prevent any impact to sea turtles.

The following chart lists the times of sea turtle activity in the South Texas coast.

General Dates and Locations of Turtle
Nesting and Tracks at Padre Island National Seashore

Events	Dates	Probable Nesting Season
Kemp's Ridley nesting/tracks	April-mid July	late March-August
Loggerhead nesting/tracks	May-August	late April-early September
Green sea turtle nesting/tracks	June- July	May-September
Hawksbill nesting/tracks	June	April-August

The Peregrine falcon stages on Padre Island National Seashore during the spring and fall migration. On-going scientific studies report numbers of falcons to be 800+ during the migration on the southern end of the park. The greatest number of Peregrine falcons utilize the wind tidal flats from Yarborough Pass to South Padre Island. However, Peregrine falcons could be observed anywhere on Padre Island. The Vector Energy wells have been in place since completed by Sun Exploration Company in the 1970's-1980's.

The Brown pelican utilizes the Gulf of Mexico and the Laguna Madre for feeding. The Piping plover is observed on Padre Island ten months a year (August through May). They utilize the wind tidal flats, the washover channels, and the gulf beaches for resting and feeding. The continued operation of the Dunn-McCampbell "A" lease natural gas and saltwater disposal wells are not expected to have an impact on either the Brown pelican, the Piping plover, or the Peregrine falcon.

10. CONCLUSION:

....X... NOT LIKELY TO AFFECT

.... MAY AFFECT (Requires Formal USFWS Consultation)

... BENEFICIAL EFFECTS

... ADVERSE EFFECTS

11. RECOMMENDATION: Proceed with approval of the Plan of Operations.

Prepared by: Paul H. Eubank, Environmental Protection Specialist; National Park Service; Padre Island National Seashore; P.O. Box 181300, Corpus Christi, Texas 78480-1300. Telephone (361) 949-8173 extension 223.

ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

We have reviewed your informal Biological Assessment for the Vector Energy Corporation's Plan of Operations for the Dunn-McCampbell "A" Lease at Padre Island National Seashore, Kleberg County, Texas. The Plan of Operations was prepared to meet the requirements found at 36 CFR 9B, Non-federal Oil and Gas Rights.

✓ We concur that the proposed National Park Service action is not likely to affect listed species or critical habitat.

____ We do not concur with your Biological Assessment and believe additional consultation may be necessary in this matter.

COMMENTS:

Note that the peregrine falcon has been delisted. The piping plover in Texas is listed as threatened, not endangered.

Thomas W. Schultz 11/17/99

Signed Thomas W. Schultz
Acting Field Supervisor

Title Acting Field Supervisor

Consultation No. 2-11-2000-I-011

ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

We have reviewed your Endangered Species Biological Assessment for the [illegible] Energy Corporation's Plan of Operations for the Dunn-McCampbell [illegible] Lease at Padre Island National Seashore, Kleberg County, Texas. The Plan of Operations was prepared to meet the requirements found at 36 CFR 9B, Non-federal Oil and Gas Rights.

✓ We concur that the proposed National Park Service action is not likely to affect listed species or critical habitat.

___ We do not concur with your Biological Assessment and further consultation may be necessary in this matter.

COMMENTS:

[illegible] falcon has been delisted. [illegible] threatened, not endangered.

[signature] 11/17/99

Field Supervisor

Title [illegible]

National Park Service
U.S. Department of the Interior

Padre Island National Seashore
Texas

Environmental Assessment

BNP Petroleum Corporation
Proposal to Drill and Produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A Wells, and Operate the Dunn-McCampbell A8 Water Well Located Along the Pan Am Road

Produced by:
Padre Island National Seashore
P.O. Box 181300
Corpus Christi, Texas 78480-1300

October 10, 2007

In 1916, Congress created the National Park Service in the Department of the Interior to:

…promote and regulate the use of the Federal areas know as national parks, monuments, and reservations…by such means and measures as to conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. (NPS Organic Act, 16 U.S.C. § 1)

Prepared by
United States Department of the Interior • National Park Service

Environmental Assessment

BNP Petroleum Corporation
Proposal to Drill the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A Wells and Operate the Dunn-McCampbell A8 Water Well
Padre Island National Seashore, Texas

Summary
BNP Petroleum Corporation (BNP) has submitted a Plan of Operations to the National Park Service (NPS) to drill and produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and operate the Dunn-McCampbell A8 water well from an existing wellpad located on Pan Am Road, approximately seven miles south of the end of the pavement on South Beach. The wells would be directionally drilled from the expanded wellpad located within Padre Island National Seashore (the Park) to bottom-hole locations east and southeast of the wellpad and located within the Park.

This Environmental Assessment (EA) evaluates two alternatives. Alternative A evaluates baseline conditions under No Action. In this case, No Action means that BNP would not drill the wells. Under No Action, there would be no additional impacts on the affected environment. Alternative B evaluates the Plan of Operations with Additional Mitigation Measures. The following resources and other concerns were given a limited analysis but dismissed from further evaluation in this EA because they are not found in the analysis area, would not be impacted, or due to the application of mitigation measures there would be less than measurable impacts (meaning minor or less effects): air quality, socioeconomics, certain species of management concern, environmental justice, prime and unique farmlands, and cultural resources. Catastrophic incidents, including well blowouts, well fires and major spills was also dismissed because there is not a reasonable expectation for occurrence. Impacts on geology and soils, water resources and floodplains, wetlands, vegetation, natural soundscapes, wildlife, species of management concern, and visitor use and experience would range from negligible to moderate. A small portion of emergent wetlands has been impacted by the expansion of the wellpad. BNP would compensate for wetland functional losses as per NPS Director's Order 77-1, Wetland Protection. Alternative A is the environmentally preferred alternative. Alternative B is the NPS's preferred alternative.

Public Comment
A Notice of Availability will be published in the *Federal Register* and posted on the NPS Planning, Environment, and Public Comment (PEPC) website. If you wish to comment on the environmental assessment, please access the PEPC system at http://parkplanning.nps.gov, mail your comments to the address below or hand deliver your comments to Padre Island National Seashore by November 15, 2007. Please note that names and addresses of people who comment become part of the public record. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your name personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your

personal identifying information from public review, we cannot guarantee that we will be able to do so.

Superintendent
Padre Island National Seashore

P.O. Box 181300
Corpus Christi, Texas 78480-1300

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1.0. PURPOSE AND NEED

This Environmental Assessment (EA) evaluates two alternatives for the National Park Service (NPS) to permit BNP Petroleum Corporation (BNP) to drill and produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and operate the Dunn-McCampbell A8 water well within Padre Island National Seashore (the Park). The purpose of this analysis is to provide a decision-making framework for the NPS to approve the use of parklands for BNP to explore and develop its mineral rights, while protecting and preventing impairment to the Park's resources and values, and allowing for a safe visitor experience; and to determine whether an Environmental Impact Statement (EIS) should be prepared.

When Congress authorized the establishment of Padre Island National Seashore (the Park) on September 28, 1962 (16 U.S.C. §459d, *et seq.*), the U.S. Government acquired surface ownership within the area. Private entities or the State of Texas retained the subsurface mineral interests on these lands. Thus, the Federal government does not own any of the subsurface oil and gas rights in the Park, yet the NPS is required by its laws, policies, and regulations to protect the Park from any actions, including gas operations, that may adversely impact or impair the Park's resources and values. The Park was created "in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped …." The Park is located along the southeastern Texas coast and comprises 130,473 acres (Figure 1). As of September 2007, 17 nonfederal gas operations occur within the Park.

BNP has submitted to the Park a Plan of Operations to drill and produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and operate the Dunn-McCampbell A8 water well. The NPS must decide whether to approve the plan and if additional mitigation measures are needed.

The analysis area for evaluating direct and indirect impacts in this EA includes:

- The direct area of impact would include access to the existing well site via the existing Pan Am Road located approximately seven miles south of the end of the pavement on South Beach. The proposed location is in a previously disturbed, 1.7191-acre wellpad site, where the Dunn-McCampbell A-3 gas well and the Dunn-McCampbell A-8 water well are located. The total wellpad acreage proposed, including the expansion, is 2.5503 acres.
- The indirect area of impact for each park resource or value could vary for each impact topic; but generally would not extend more than 1,500 feet beyond the well site (NPS has selected the analysis area for natural soundscapes and a 100-foot corridor around the access road and flowline).
- For species of management concern, the analysis area for direct and indirect impacts is defined for each species in the Affected Environment and Environmental Consequences section of this EA.
- For the impact topic, "Socioeconomics," the scope of the analysis includes the effect on BNP to meet NPS permitting requirements (including cost and time

involved for BNP to prepare a plan of operations and contractor efforts, increased mitigation measures and reclamation requirements inside an NPS unit, the effect of proceeding or not proceeding to drill and produce the well).

- The analysis area for evaluating cumulative impacts on park resources and values may extend beyond the boundaries of the Park.

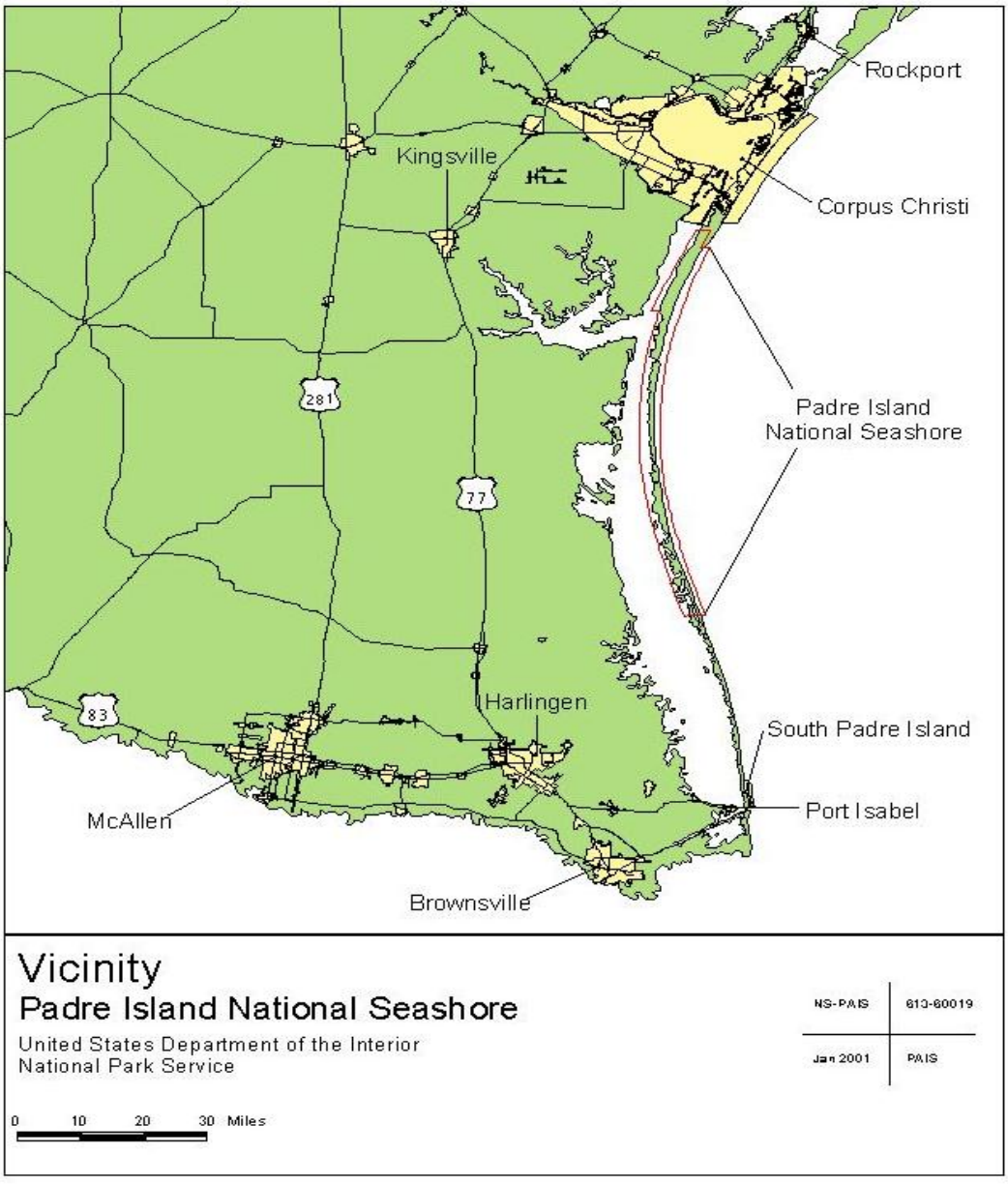

Figure 1. Region/Vicinity map depicting the location of Padre Island National Seashore in relation to the Gulf of Mexico coastline.

1.1. Objectives of Taking Action

There are three objectives for this project:

- Avoid, minimize, or mitigate impacts on park resources and values, visitor use and experience, and human health and safety.
- Prevent impairment of park resources and values.
- Provide BNP Petroleum Corporation, as the lessee of nonfederal oil and gas mineral interests, reasonable access for exploration and development.

1.2. Special Mandates and Direction

The NPS evaluates project-specific proposals for oil and gas production and transportation on a case-by-case basis by applying a variety of Current Legal and Policy Requirements prior to issuing a permit under the general regulatory framework of the NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B). The following discussion is a summary of the basic management direction the NPS follows for permitting nonfederal oil and gas operations in units of the National Park System.

1.2.1. NPS Organic Act and General Authorities Act - Prevention of Impairment

The NPS Organic Act of 1916 (16 U.S.C. § 1, *et seq.*) provides the fundamental management direction for all units of the National Park System. Section one of the Organic Act states, in part, that the NPS shall:

"…promote and regulate the use of the Federal areas known as national parks, monuments, and reservations…by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (16 U.S.C. §1)

The National Park System General Authorities Act of 1970 (16 U.S.C. § 1a-1 *et seq*.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The Act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Subsequently, the 1978 Redwood Act Amendments to the General Authorities Act further clarified Congress' mandate to the NPS to protect park resources and values. The Amendments state, in part: "[t]he authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." (16 U.S.C. § 1a-1)

Current laws and policies require the analysis of potential effects to determine whether actions would impair park resources. While Congress has given the NPS the managerial discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the Federal courts) that the NPS must leave

park resources and values unimpaired, unless a particular law directly and specifically provides otherwise (2001 Management Policies, §1.4).

These authorities all prohibit an impairment of park resources and values. Not all impacts are impairments. An **impairment** is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. The NPS Management Policies explain that an impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill a specific purpose identified in the establishing legislation or proclamation of the Park;
- Key to the natural or cultural integrity of the Park or to opportunities for enjoyment of the Park; or
- Identified as a goal in the Park's general management plan or other relevant NPS planning documents.

Management Policies explain that "resources and values" mean the full spectrum of tangible and intangible attributes for which the parks are established and are being managed, including the Organic Act's fundamental purposes (as supplemented), and any additional purposes as stated in a park's establishing legislation. park resources and values that are subject to the no impairment standard include: the biological and physical processes which created the Park and that continue to act upon it; scenic features; natural visibility; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures and objects; museum collections; and native plants and animals. Additional resources and values that are subject to the non-impairment standard include the Park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system.

In analyzing impairments in conjunction with the NEPA analysis for this project the NPS takes into account the fact that if an impairment were likely to occur, by operation of the CEQ's regulations at 40 CFR, such impacts would be considered to be major or significant. This is because the context and intensity of the impact would be sufficient to render what would normally be a minor or moderate impact to be major or significant. Taking this into consideration, NPS guidance documents note that "Not all major or significant impacts under a NEPA analysis are impairments. However, all impairments to NPS resources and values would constitute a major or significant impact under NEPA. If an impact results in impairment, the action should be modified to lessen the impact level. If the impairment cannot be avoided by modifying the proposed action, that action cannot be selected for implementation." "Interim Technical Guidance on

Assessing Impacts and Impairment to Natural Resources" National Park Service, Natural Resource Program Center, July 2003.

Section 3.0, Affected Environment and Environmental Consequences, of this EA provides an analysis of the potential for impairment for each park resource or value carried forward for further evaluation.

1.2.2. Padre Island National Seashore Enabling Act

Congress established Padre Island National Seashore on September 28, 1962 (16 U.S.C. § 459d, *et seq.*)

"In order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped…"

In this statute, Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the Park. As a result, the mineral estate underlying the Park is either owned by private entities or by the State of Texas. The NPS is legally required to allow access to the minerals while applying resource protection requirements and ensuring adherence to Federal and State regulations, policies, and guidelines.

One of the primary rights associated with the mineral interest is the right of reasonable access to explore for and develop the mineral interest. If the mineral interest holder chooses to exercise its right to explore for or develop its mineral interest, the NPS must consider granting some form of access in the Park. However, access to nonfederal oil and gas which requires access on, across, or through federally-owned or controlled lands or waters within the Park is subject to the NPS's Nonfederal Oil and Gas Rights Regulations (36 CFR 9B).

The Park occupies the central 66 miles of the approximately 113-mile long Padre Island in South Texas. Stretching from just south of the Nueces County line on the north to the northern end of Willacy County on the south, the Park includes portions of Kleberg, Kenedy, and Willacy Counties, with the majority of the Park in Kenedy County. It is one of 10 NPS Units designated as National Seashores. It is the longest section of undeveloped barrier island in the world, protecting rare coastal prairie; a complex, dynamic dune system; and the Laguna Madre, one of five hypersaline lagoon environments remaining in the world.

The Park is a dynamic system. It was formed and is continually being reshaped by the action of wind and water. Waves and currents move along the gulf shore in shifting patterns, defining the character of different beaches. Beach dunes are stabilized by vegetation, and eroded and reformed by storm events. Major storms have at times leveled the protective foredunes, changing the character and dynamics of this barrier island ecosystem. The general atmosphere of the island is one of undisturbed isolation and seemingly endless expanses of flat, sparsely vegetated beach land.

North Padre Island and surrounding waters provide important habitat for marine and terrestrial plants and animals, including a number of threatened and endangered

species. The Park is involved in a major, international research and recovery effort to save the most endangered of all sea turtles, the Kemp's ridley. Situated along the Central Flyway, the Park is a globally important area for over 350 migratory, over-wintering, and resident bird species and has been designated as a Western Hemisphere Shorebird Reserve Network site of international importance, which is the first in the NPS. This stretch of relatively undeveloped barrier island also provides visitors an opportunity to experience quiet and solitude where the beauty of a night sky is undiminished by ambient light from nearby urban centers.

Terrestrial systems within the Park include a mixture of upland grasslands, vegetated dunes, and extensive wetland environments. More than 60 percent of the Park consists of wetlands comprised of freshwater marshes, inland waters, wind-tidal flats, and seagrass beds. Marine environments include the Gulf of Mexico along the length of the Park to a depth of two fathoms and the hypersaline estuary of the Laguna Madre.

The cultural resources of the Park include archeological sites, cultural landscapes, and historic structures. Prehistoric sites show that Karankawa Indians inhabited the island prior to the arrival of the first Europeans, using the barrier island and gulf waters for hunting, gathering, and fishing. The Park also protects remnants of historic ranching structures, a campsite dating from the Mexican-American war, and shipwrecks from the days of the Spanish fleet.

All management activities within the Park are directed toward maintaining the natural and scientific values of the area, including preservation of the flora and fauna and the re-establishment of the indigenous plant and animal life as possible. Areas where historical events took place would contribute to the values of the Park and are managed in a manner, which will maximize both the natural and historical values.

Construction of physical facilities of any kind would be minimized and would be limited to those developments, which are essential to the preservation and management of the area and the safety of the public. To the extent such facilities are deemed necessary and appropriate; they would be constructed in a manner, which would minimize their impact on the environment and their intrusion on the natural setting.

Oil and gas exploration and development at the Park is not precedent setting because it is provided for and contemplated in both statute and regulation, and is not unusual or an unexpected occurrence. Mineral exploration and development is fully in accord with the Park's General Management Plan (DOI, 1983), Draft General Management Plan (DOI, 2007), and Oil and Gas Management Plan (DOI, 2000).

1.2.3. NPS Nonfederal Oil and Gas Regulations, 36 CFR 9B

The authority to manage and protect federal property arises from the Property Clause of the United States Constitution. The Property Clause provides that "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States . . ." U.S. Const. Art. IV, ¶ 3, cl. 2.

In 1916, Congress exercised its power under the Property Clause and passed the NPS Organic Act, 16 U.S.C. § 1 *et seq*. Section 3 of the Organic Act authorizes the Secretary of the Interior to "make and publish such rules and regulations as he may deem necessary or proper for the use of the Parks…" 16 U.S.C. § 3.

Pursuant to Section 3 of the NPS Organic Act and individual park statutes, the Secretary of the Interior promulgated regulations at 36 CFR Part 9, Subpart B ("9B regulations") in 1979. The 9B regulations apply to operations that require access on or through federally owned or controlled lands or waters in connection with nonfederally owned oil and gas in all NPS units (36 CFR § 9.30(a)).

The NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B) and other regulatory requirements assist park managers in managing oil and gas activities so they may be conducted in a manner consistent with the NPS mandate to protect the Park's resources and values. The application and implementation of these regulations on the ground must be assessed parkwide for each site-specific oil and gas activity to determine if these activities have the potential to impair park resources and values.

1.2.4. NPS Oversight and Monitoring of Nonfederal Oil and Gas Operations

Under 36 CFR §9.37(f) "[a]pproval of each plan of operations is expressly conditioned upon the Superintendent having such reasonable access to the site as is necessary to properly monitor and insure compliance with the plan of operations." At the Park, park staff patrols the beach daily during turtle nesting season, and visit oil and gas sites several times a week. Park resource managers conduct a monitoring oversight patrol at least two times per week. All approved plans of operations have a spill contingency plan that is reviewed and approved by the NPS. In the event of an accident or spill, BNP will notify its dispatch immediately, which will then immediately notify park resource managers.

Pursuant to 36 CFR §9.51(a) an "operator shall be held liable for <u>any</u> damages to federally-owned or controlled lands, waters, or resources, resulting from his failure to comply with . . . his plan of operations" (emphasis added). Undertaking any operations within the boundaries of a park system unit in violation of the 9B regulations shall be deemed a trespass against the United States and shall be cause for revocation of approval of an operator's plan of operations. If an operator violates a term or condition of its approved plan of operation the Superintendent has the authority to temporarily suspend the operation and give the operator the chance to cure the violation. 36 CFR §9.51(c) outlines the Superintendent's suspension authority and procedure. If an operator fails to correct any violation or damage to federally owned or controlled lands, waters, or resources the operator's approval will be revoked (36 CFR §9.51(c)(3)).

In addition to the remedies available to the NPS under the 9B regulations, an operator is also subject to the remedial provisions found in all applicable federal, state, and local laws. For instance, under 16 U.S.C. §19jj, commonly known as the "Park System Resource Protection Act," any person who destroys, causes the loss of, or injures any

park system resource is strictly liable to the United States for response costs and for damages resulting from such destruction, loss or injury.

1.2.5. Approved Park Planning Documents

Approved park planning documents also provide a framework for determining how nonfederal oil and gas operations are conducted within Padre Island National Seashore.

The General Management Plan (GMP) is the major planning document for all national park system units. The GMP sets forth the basic philosophy of the unit, and provides strategies for resolving issues and achieving identified management objectives required for resource management and visitor use. The GMP includes environmental analysis and other required compliance documentation. A GMP/Development Concept Plan was completed along with an EA for the Park in 1983.

An Oil and Gas Management Plan/Environmental Impact Statement (OGMP) was completed for the Park on August 14, 2000 (DOI, 2000). The OGMP described the overall approaches that would be implemented over the next 15 to 20 years, or longer, to manage existing and anticipated oil and gas operations, including the exploration, development and transportation of nonfederal oil and gas underlying the Park, in a manner that provides for hydrocarbon development while protecting natural and cultural resources, human health and safety, and allowing for public use and enjoyment of those resources. The Oil and Gas Management Plan:

- Identifies park resources and values most sensitive to oil and gas exploration and development disturbance, and defines impact mitigation requirements to protect such resources and values.
- Establishes reasonable oil and gas exploration and development performance standards to protect park resources and values.
- Develops reasonable alternatives for oil and gas development in the Park and analyzes the impacts of those alternatives on park resources and values.
- Provides pertinent information to oil and gas owners and operators that will facilitate operations planning and compliance with all applicable regulations.

During the scoping and development of the Plan of Operations and this environmental assessment, the planning framework provided in the Park's GMP's and OGMP have been followed. Table 1, below, summarizes many, but not all, of the statutes, regulations, executive orders, and policies that govern the exercise of nonfederal oil and gas rights in national park units.

Table 1. Current Legal and Policy Requirements.

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
Statutes and Applicable Regulations	
National Park Service Organic Act of 1916, as amended, 16 U.S.C. §§1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
	species, visitor use and experience, and visual resources
National Park System General Authorities Act, 16 U.S.C. §§1a-1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
NPS Omnibus Management Act of 1998, 16 U.S.C. §§5901 *et seq.*	Any living or non-living resource.
NPS Nonfederal Oil and Gas Regulations – 36 Code of Federal Regulations (CFR) Part 9, Subpart B	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
16 U.S.C. §19jj (commonly referred to as the Park System Resource Protection Act)	Any living or non-living resource that is located within the boundaries of a unit of the National Park System, except for resources owned by a nonfederal entity
American Indian Religious Freedom Act, as amended, 42 U.S.C. §§1996 – 1996a; 43 CFR Part 7	Cultural and historic resources
Antiquities Act of 1906, 16 U.S.C. §§431-433; 43 CFR Part 3	Cultural, historic, archeological, and paleontological resources
Archeological Resources Protection Act of 1979, 16 U.S.C. §§470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7	Archeological resources
Clean Air Act, as amended, 42 U.S.C. §§7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23	Air resources
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§9601-9675; 40 CFR Parts 279, 300, 302, 355, and 373	Human health and welfare and the environment
Endangered Species Act of 1973, as amended, 16 U.S.C. §§1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450	Plant and animal species or subspecies, and their habitat, which have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (FWS) or National

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
	Oceanic and Atmospheric Administration-Fisheries
Federal Insecticide, Fungicide, and Rodenticide Act, as amended (commonly referred to as Federal Environmental Pesticide Control Act of 1972), 7 U.S.C. §§136 *et. seq.;* 40 CFR Parts 152-180, except Part 157	Human health and safety and the environment
Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. §§1251 *et seq.;* 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328	Water resources, wetlands, and waters of the U.S.
Historic Sites, Buildings, and Antiquities Act (Historic Sites Act of 1935), 16 U.S.C. §§461-467; 18 CFR Part 6; 36 CFR Parts 1, 62, 63 and 65	Historic sites, buildings, and objects
Lacey Act, as amended, 16 U.S.C. §§3371 *et seq.;* 15 CFR Parts 10, 11, 12, 14, 300, and 904	Fish, wildlife, and vegetation
Migratory Bird Treaty Act, as amended, 16 U.S.C. §§703-712; 50 CFR Parts 10, 12, 20, and 21	Migratory birds
National Environmental Policy Act of 1969, 42 U.S.C. §§4321 *et seq.;* 40 CFR Parts 1500-1508	The human environment (e.g. cultural and historic resources, natural resources, biodiversity, human health and safety, socioeconomic environment, and visitor use and experience)
National Historic Preservation Act of 1966, as amended, 16 U.S.C. §§470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810	Cultural and historic properties listed in or determined to be eligible for listing in the National Register of Historic Places
Native American Graves Protection and Repatriation Act, 25 U.S.C. §§3001-3013; 43 CFR Part 10	Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony
Noise Control Act of 1972, 42 U.S.C. §§4901-4918; 40 CFR Part 211	Human health and welfare
Oil Pollution Act, 33 U.S.C. §§2701-2761; 15 CFR Part 990; 33 CFR Parts 135, 137, and 150; 40 CFR Part 112; 49 CFR Part 106	Water resources and natural resources
Pipeline Safety Act of 1992, 49 U.S.C. §§60101 *et seq*.; 49 CFR Subtitle B,	Human health and safety and the environment

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
Ch 1, Parts 190-199	
Resource Conservation and Recovery Act, 42 U.S.C. §§6901 *et. seq*.; 40 CFR Parts 240-280; 49 CFR Parts 171-179	Natural resources and human health and safety
Rivers and Harbors Act of 1899, as amended, 33 U.S.C. §§401 *et. seq*.; 33 CFR Parts 114, 115, 116, 321, 322, and 333	Shorelines and navigable waterways, tidal waters, and wetlands
Safe Drinking Water Act of 1974, 42 U.S.C. §§300f *et seq*.; 40 CFR Parts 141-148	Human health and water resources
Executive Orders	
Executive Order (E.O.) 11593 – Protection and Enhancement of the Cultural Environment, 36 Federal Register (Fed. Reg.) 8921 (1971)	Cultural resources
E.O. 11988 – Floodplain Management, 42 Fed. Reg. 26951 (1977)	Floodplains and human health, safety, and welfare
E.O. 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)	Wetlands
E.O. 12088 – Federal Compliance with Pollution Control Standards, 43 Fed. Reg. 47707 (1978)	Natural resources and human health and safety
E.O. 12630 – Governmental Actions and Interference with Constitutionally Protected Property Rights, 53 Fed. Reg. 8859 (1988)	Private property rights and public funds
E.O. 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, amended by Exec. Order No. 12948, 60 Fed. Reg. 6379 (1995)	Human health and safety
E.O. 13007 – Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)	Native American sacred sites
E.O. 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)	Vegetation and wildlife
E.O. 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)	Migratory birds

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
E.O. 13212 – Actions to Expedite Energy-Related Projects (2001)	
Policies, Guidelines, and Procedures	
NPS Management Policies (2006)	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
Department of the Interior (DOI), Departmental Manual (DM) 516 – NEPA policies	Human health and safety and the environment
DOI, DM 517 - Pesticides	Archeological and prehistoric resources, historic resources, Native American human remains, and cultural objects
NPS Director's Order (D.O.) – 12 and Handbook – National Environmental Policy Act (2001)	All resources, including air resources, cultural resources, human health and safety, socioeconomic environment, visitor use
NPS D.O. – 28 – Cultural Resource Management (1997)	Cultural, historic, and ethnographic resources
NPS 66 – Minerals Management Guideline (1990)	Natural resources and human health and safety
NPS 77 – Natural Resources Management Guideline (1991)	Natural resources
NPS D.O. 77-1 – Wetland Protection	Wetlands
NPS D.O. 77-2 – Floodplain Protection	Wetlands
Secretary of the Interior's "Standards and Guidelines for Archeology and Historic Preservation," 48 Fed. Reg. 44716 (1983), also published as Appendix C of NPS D.O. 28 – Cultural Resource Management	Cultural and historic resources
Government-to-Government Relations with Native American Tribal Governments, Presidential Memorandum signed April 29, 1994	Native American Tribal rights and interests

1.3. Issues and Impact Topics Evaluated

Early in the planning and development of the Plan of Operations, the NPS met with BNP representatives to identify resources, values, and other concerns that could be potentially impacted by drilling and producing the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells. On January 29, 2007, the NPS released a 30-day

public scoping brochure for this proposed operation. Comments received during the public scoping process focused on belief that oil and gas development should not take place within a national park. However, since oil and gas development is allowed by law, these comments did not affect the impact topics evaluated or their analysis.

In addition, input from other federal, state, and local agencies was sought. Scoping with the U.S. Fish and Wildlife Service (FWS), U.S. Army Corps of Engineers (COE), and Texas Commission on Environmental Quality (TCEQ) involved contacts by telephone, written correspondence, and/or meetings at the proposed project location within the Park. Scoping involved defining appropriate alternatives, impact determinations, mitigation measures, and identification of major issues. Based on scoping, the NPS identified the following park resources, values, and other concerns for evaluation in this EA.

- Geology and soils
- Water resources and floodplains
- Wetlands
- Vegetation
- Natural soundscapes
- Wildlife
- Species of Management Concern (federal and stated listed species)
- Visitor use and experience

Based on the above list of park resources, values, and other concerns identified during scoping, issue statements were developed to define problems or benefits pertaining to the proposal to drill and produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells. The issue statements in Table 2 describe a cause-and-effect relationship between an activity and a resource, value, or concern. The issue statements were used in developing and evaluating alternatives.

Table 2. Issue Statements.

Impact Topic	Issue Statement
Geology and Soils	• Grading and leveling of 0.8312 acres of hummocky uplands and non-tidal wetlands to expand the wellpad would result in soil and sand compaction and loss of productivity. • The release of hydrocarbons or other contaminating and hazardous substances from vehicles, equipment, and pipelines during all phases of operation could alter the chemical and physical properties of the soil and sand in the vicinity of the operation(s). Changes in the soil and sand properties could result directly from contact with contaminants on-site, or indirectly, via runoff from contaminated areas. • Vehicle use along 6.9 miles of Gulf of Mexico shoreline, particularly from heavy vehicles transporting the drilling rig, water, and drilling muds for disposal outside the Park,

Impact Topic	Issue Statement
	could cause rutting and compaction of beach sands.
Water Resources and Floodplains	• Vehicle use; removal or modification of vegetation; surface disturbance associated with expansion, maintenance, and use of the 2.55 acre well/production pad and flow line could alter surface and subsurface drainage patterns in the vicinity of operation(s). • The release of hydrocarbons and contaminating or hazardous substances from vehicles, equipment, or pipelines during all phases of operation could degrade water quality. • The siting, maintenance, and use of the oil and gas access road, well/production facility, and flowline in the floodplain, or the release of hydrocarbons and contaminating or hazardous substances from these operations, could adversely affect floodplain functions, values and uses, including: the natural moderation of floods, water quality, sediment control, ground water recharge or discharge, fish and wildlife habitat, maintenance of biodiversity, recreational opportunities, and natural beauty. • Reclamation of the well/productionpad could adversely affect water quality and floodplain functions, values, and uses over the short-term. Reclamation would re-establish surface and sub-surface water flow, natural contours of the area, and native vegetative communities.
Wetlands	• Grading and leveling of hummocky uplands and non-tidal wetlands to expand the wellpad would result in vegetation removal and alteration of the surface and subsurface hydrology on 0.8312 acre of emergent wetlands. Reclamation would re-establish the contours of the area, restore surface and subsurface water flow, control non-native vegetation, and re-establish native vegetative communities that would restore natural and beneficial wetland functions, values, and uses.
Vegetation	• Vegetation would be removed on 0.8312 acres for the expansion of the existing 1.7191-acre wellpad for a total of 2.5503 acres. Vegetation removal could change the structure and composition of vegetative communities in the project area; alter wildlife habitat and species composition; increase storm runoff; and increase soil and sand erosion. • Expansion and use of the existing wellpad, flowline, and production facility could disrupt the surface, and subsurface water flow that is necessary to maintain vegetative communities. • The release of hydrocarbons and contaminating or hazardous substances could damage or kill vegetation

Impact Topic	Issue Statement
	directly, via contact with contaminants on-site, or indirectly, via pathways from contaminated areas. • Disturbances/removal of native vegetation could lead to the unintentional spread and establishment of non-native plant species transported in or on drilling and maintenance equipment. • Reclamation of the oil and gas site would re-establish native vegetative communities and surface and subsurface drainage patterns necessary to support vegetative growth.
Natural Soundscapes	• Vehicles and equipment used for expansion and maintenance of the wellpad, production facility, and flow line could result in increased noise, adversely affecting wildlife and visitor uses and experience.
Wildlife	• Oil and gas operations, including vehicle use, wellpad expansion, drilling, production, maintenance, and reclamation activities could displace wildlife and increase predation in open areas; directly harm or kill wildlife; and disrupt wildlife feeding, denning, nesting, spawning/reproduction, and other behavior. Oil and gas activities could result in avoidance of the area by wildlife due to increased noise and human presence. • Loss or modification of wildlife habitat could occur from the expansion of the wellpad. Operations could increase edge effects, increase human access, and alter wildlife species, composition, and migration. • Liquids that collect in secondary containment structures at the oil and gas production site could attract, harm, and possibly kill birds. • The release of hydrocarbons and hazardous or contaminating substances from vehicles, drilling and production equipment, and pipelines could injure wildlife. The adverse effects could become worse over time if wildlife species ingest the contaminants and are consumed by other wildlife species. • Heavy equipment used for reclamation operations could injure or kill wildlife over the short-term. However, reclamation of oil and gas sites would re-establish native vegetative communities and surface and subsurface water quality and quantity that support wildlife populations.
Species of Management Concern	• Trucks driving along the Gulf beach could compact the sand, which could make it difficult for sea turtles to dig a nest cavity. • Trucks (both commercial and private vehicles) driving along the Gulf beach could run over sea turtles, sea turtle nests, sea turtle hatchlings, and bird species.

Impact Topic	Issue Statement
	• Trucks (both commercial and private vehicles) driving along the Gulf beach could cause bird species to take flight and alter foraging and nesting behavior. • Deep ruts made from large commercial vehicles could be an obstacle to sea turtles moving towards the sea. Hatchlings could become vulnerable to depredation, desiccation, and exhaustion. • Noise, artificial lighting, and other nighttime activities during drilling operations could affect migration, feeding, and nesting activities of T&E wildlife species. • Noise, odors, artificial lighting, and vibrations could interfere with the imprinting process of the hatchling sea turtles.
Visitor Use and Experience	• Oil and gas operations could pose a threat to human health and safety from the use of the Gulf Beach by commercial vehicles (particularly vehicles with less maneuverability and visibility); hazardous equipment at wells and production facilities; and the release of hydrocarbons and hazardous or contaminating substances. Spilled or released hydrocarbons and contaminating or hazardous substances could be inhaled, absorbed, or ingested by human beings. • The oil and gas operations could adversely affect air quality; alter scenic resources and night sky; increase background sound levels and could degrade the quality of park visitor uses and experiences.

1.4. Issues and Impact Topics Eliminated from Further Analysis

In this section, and later in Section 3 of this EA, the NPS takes a "hard look" by considering the direct, indirect, and cumulative impacts (effects) of the proposed action on the environment, along with connected, cumulative, and similar actions. Impacts are described in terms of context and duration. The context or extent of the impact is described as localized (extending up to 100 feet along access roads and 1,500 feet from a drilling rig, which is the distance that elevated noise would attenuate to ambient levels recorded in the Park) or widespread (affecting the entire project area). The duration of impacts is described as short-term, ranging from days to three years in duration, or long-term, extending up to 20 years or longer. Generally, short-term impacts apply to the surveying, drilling, recording, and initial reclamation phases of the drilling operation; and long-term impacts apply to the time that full reclamation of wetlands functions and values may require or the production life of a well. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. The NPS equates "major" effects as "significant" effects. The identification of a "major" effect would trigger the need for an environmental impact statement (EIS). Where the intensity of an impact could be described quantitatively, numerical data is presented, but most impact analyses are qualitative. The use of the

four impact intensity levels also provides a “hard look” to NPS decision makers and enables them to evaluate the impacts in an objective fashion.

The NPS defines “measurable” impacts as moderate or greater effects. It equates “no measurable effects” as minor or less effects. “No measurable effect” is used by the NPS in determining if a categorical exclusion applies or if impact topics may be dismissed from further evaluation in an EA or EIS. The use of “no measurable effects” in this EA pertains to whether the NPS dismisses an impact topic from further evaluation in the EA. The reason the NPS uses “no measurable effects” to determine whether impact topics are dismissed from further evaluation is to concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail as required by CEQ regulations at 1500.1(b).

NPS provides a limited evaluation and explanation as to why some impact topics are not evaluated further in the EA. Impact topics are dismissed from further evaluation in this EA if:

- They do not exist in the analysis area,
- They would not be affected by the proposal, or
- Through the application of mitigation measures, there would be minor or less effects from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

Due to there being no effect or no measurable effects, there would either be no contribution towards cumulative effects or the contribution would be low. For each issue or impact topic presented below, if the resource is found in the analysis area or the issue is applicable to the proposal, then a limited analysis of direct, indirect, and cumulative effects is presented. The basis for analyzing cumulative impacts in this section and Section 3 of the EA is provided in the descriptions under the headings “Socioeconomics” in this section of the EA, and under the headings “Park Development and Operations” and “Adjacent Land Uses” in the introduction of Section 3 of the EA and the impact topic “Visitor Use and Experience” in Section 3. There is no impairment analysis included in the limited evaluations because the NPS’s threshold for considering whether there could be impairment is based on “major” effects.

The following topics have been eliminated from further analysis in this EA for the reasons described below.

- Air Quality
- Socioeconomics
- Certain Species of Management Concern
- Environmental Justice
- Prime and Unique Farmlands
- Catastrophic Incidents, including Well Blowouts, Well Fires, or Major Spills
- Cultural Resources

Sections 1.5 and 8.12 of the NPS *Management Policies* underscore the fact that not all uses are allowable or appropriate in units of the National Park System. The proposal

analyzed in this EA to drill up to 3 wells from a surface location inside the Park to extract hydrocarbons from bottomhole targets beneath the Park is provided for and contemplated in both statute and regulation, and is not unusual or an unexpected occurrence. Nonfederal oil and gas exploration and development is fully in accord with the Park's general management plan (1983) and most recently in the Park's oil and gas management plan (2000). Therefore, the NPS finds that the proposed wells are an appropriate use. Section 1.4.7.1 of the NPS *Management Polices* 2006 also addresses "unacceptable impacts." For the impact topics described below, where a resource is located within the analysis area, there would either be no effect as a result of implementing the proposal, or effects would not be measurable (meaning minor or less effects). Because of the low intensity of impacts, NPS finds that the impacts are not unacceptable.

1.4.1. Air Quality

According to TCEQ, Kenedy County continues to be an attainment area for regulated pollutants. The Park is designated as a Class II airshed by the State of Texas, as authorized by the Prevention of Significant Deterioration provisions of the Clean Air Act. The Park's air quality is protected by allowing limited increases over baseline concentrations of sulfur dioxide, nitrogen oxides, and particulate matter.

Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled with impacts from localized point sources resulting in negligible to minor, adverse impacts on air quality throughout the Park, and within state and federal standards.

Use of the Pan Am Access Road; expansion and possible reduction of the well/production pad; drilling and producing the wells; any future workover operations on the wells; eventual plugging of the wells and reclamation of the operations areas; and the wetlands compensation project to reclaim a portion of an abandoned oilfield access road and restore wetlands functions and values would result in increases in particulate matter during ground-disturbing activities and the use of vehicles and other machinery. Emissions of nitrogen oxides, carbon monoxide, carbon dioxide, sulfur dioxide, particulates and objectionable odors would be greatest during the short-term (60 day) drilling/completion of the wells and workover activities (1 to 2 weeks) due to increased use of vehicles and large gasoline and diesel engines used to power the drill rig, pumps, and auxiliary equipment. Based on calculations by Hennig Production Company, Inc., for Century Resources Land, LLC, total organic compounds (TOC) emitted during a drilling operation lasting 30 days would be approximately 5,335 pounds or 2.7 tons. BNP projects the drilling of the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells could take approximately 180 days, as BNP proposes to drill each well consecutively, resulting in total estimated emissions of 32,010 pounds or 16.2 tons for the wells. However, there is a low possibility that one of the three wells could encounter well control problems, in which case up to 6 additional months of drilling may be necessary emitting an additional 16.4 tons of TOCs. The total emissions of the 3 wells of 16.2 tons plus the additional 16.4 tons in the event that one well encounters well control problems would total an estimated 32.6 tons. This figure is well below the

emission threshold (Texas permitting threshold) of 100 tons of total emissions per year, and neither the proposed drilling nor production operation has the potential to approach this threshold. If the wells are completed to produce hydrocarbons, emissions would continue, but at lower levels over the lifetime of the wells. Prevailing winds are expected to dissipate emissions from the area. Depending on atmospheric conditions, the effects to air quality from the proposed operation could travel beyond the analysis area and affect the air quality of surrounding areas. The accidental release of hydrocarbons, or other contaminants, from vehicles, equipment, and flowlines during drilling, production, transport, and eventual plugging and reclamation could adversely impact air quality. In the vicinity of a leak, concentrations of gas and other constituents could provide a source for explosion or fire.

Cumulative Impacts
Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the Park, and to remain within state and federal standards.

Because of the low intensity of impact, this topic is being dismissed from further analysis in the EA.

1.4.2. Socioeconomics

Socioeconomics issues include the effect of BNP's proposal to drill and produce ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells on local and regional economies, and the effects of the proposal on visitation in the Park, which in turn affects those economies. The description presented below of past, present, and reasonably foreseeable oil and gas development in and adjacent to the Park provides supporting data to base the cumulative impacts analyses in this and Section 3. The description below is an addition to the description of the Park Development and Operations, and Adjacent Land Uses, provided in the introduction of Section 3, and the affected environment description of visitor uses and experience in Section 3.8.

The Park lies within the Railroad Commission of Texas (TRRC) District 4. Between January 1, 2006, and December 20, 2006, the TRRC issued 1,894 drilling permits in the 14 counties comprising District 4. For the three counties encompassing the Park, 137 drilling permits were issued, comprising 7 percent of the District-wide total.

In 1999, the NPS prepared a reasonably foreseeable development (RFD) scenario for inclusion in the Park's Draft Oil and Gas Management Plan/Environmental Impact Statement. The RFD projects that three-dimensional (3-D) seismic surveys could be conducted over the entire park and up to 18 wells could be drilled and produced over the next 30 years to develop the 80 billion cubic feet of natural gas that the U.S. Geological Survey estimates remains beneath the Park. The NPS projects that the 3-D seismic surveys would directly impact up to 748 acres; and the 18 wells and associated construction of roads, well/production pads, and flowlines could directly impact up to 250 acres, for a total direct surface use of up to 998 acres or 0.77 percent of the Park. It is expected that 3-D seismic surveys would result in short-term impacts lasting no more than three years until reclamation is satisfactorily achieved. It is reasonable to assume that, as some wells are being drilled and produced that others would be plugged and abandoned.

Oil and gas exploration and production have been actively pursued on Padre Island since 1951. Eighty-six operations have occurred within the current boundaries of the Park. During 1998-2001, 3-D seismic surveys were conducted from the north boundary of the Park to the 42-mile marker. Impacts from the source and receiver lines have been reclaimed and there are no residual impacts from the surveys. Currently, there are 17 gas operations, including 11 wells, 1 freshwater well, and 5 pipelines occupying 399 acres or 0.30 percent of the Park. All oil and gas activities are under NPS approved plans of operations. One operation (South Sprint) has ongoing clean-up and

remediation activities associated with a release of oil and gas and other contaminating or hazardous substance. Until cleanup is successfully completed, impacts on the Park's resources and values persist.

Five additional wells have been permitted via approved plans of operations to be drilled and produced; the BNP Petroleum Lemon and Lemon Seed wells, the Kindee Oil and Gas, LLC (Kindee) ST945 #1 and ST949 #2 wells, and the Kindee DM Murdock Deep #1 well.

BNP proposes to drill the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells from the existing wellpad for the Dunn-McCampbell A-3 gas well and the Dunn-McCampbell A-8 water well located on the Pan Am Road, approximately seven miles south of the end of the pavement on South Beach. Park visitation calculations are provided in Table 3 (Scott, 2004).

Table 3. Park Visitation in 2006.

Visitation Calculations	
732,794	total visitation for 2006 (park web page)
271,133	37% total use of Bird Island Basin (BIB)
	173,779 (BIB only)
	73,521 (11% of BIB users also use Gulf beaches)
494,601	Gulf Beach users
	180,462 (27% from the zero North only)
	253,984 (38% use Gulf Beach zero to 10 mile marker)
	233,933 (35% use Gulf Beach 10 mile mark to the channel)

In the rare event that a serious spill event would occur, the public would perceive that the Park is not a desirable place to visit. Tourism could fall, resulting in reduced revenues to the local economy. The likelihood of this happening is very small, considering the mitigation measures and operating standards required of all operators and the use of current technology.

Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled, and if hydrocarbons are produced, could result in a negligible, beneficial impact on local and regional economies.

Cumulative Effects

Under Alternative B, Proposed Action, if the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be produced, the cumulative impact on local and regional economies would be negligible. Increased exploratory drilling activity and new field development from 3-D seismic in and adjacent to the Park would essentially be offset by the overall decline of drilling activity and production in the analysis area, resulting in an overall negligible, beneficial impact on local and regional economies.

Because of the low intensity of impacts, this topic was dismissed from further analysis in this EA.

1.4.3. Certain Species of Management Concern

NPS policy requires that state-listed species, and others identified as species of management concern by the Park, are to be managed in a manner similar to those that are federally listed. Thus, federal and state-listed species will be addressed in this EA following federal law and NPS policy.

Please see Table 11 in Section 3, and Appendix A, for a current listing of federal and state protected species that may occur in the analysis area. There is no federally designated critical habitat in or near the Park.

For each of the following federal or state protected species, the discussions below explain why each of these species was dismissed from further analysis in this EA.

American Alligator

The American alligator is considered a federally threatened based on similarity of appearance. The American alligator does not occur within the analysis area for the proposed project, which would be situated away from any known alligator habitat. Only two American alligators have been documented in the Park since 1991. Three alligators have been documented in the park; one individual formally resided in an area west of the Visitor Center approximately 20 miles from the proposed project, but was removed from the Park in September 2005; one individual washed ashore into the Park in 2003 and has not been observed since 2004; and one individual washed ashore during September 2007 that was released in a pond near the Malaquite Beach Visitor Center. With only one individual known to occur within the Park, a distance of over 7 miles from the last reported sighting, and no ponded water within the proposed project area, American alligator was not analyzed as part of the protected species impact topic.

Texas Horned Lizard

The Texas horned lizard is considered a species of concern federally as well as a state threatened species. The Texas horned lizard does not occur within the analysis area for the proposed project. Texas horned lizards have been found on Padre Island north of the Park in the mid-1980's, but have not been documented within the Park. A comprehensive two-year herpetological survey completed in 2004 did not document the presence of this species (Duran 2004). Without a documented case of a Texas horned lizard occurring within the Park, this species was not analyzed as part of the protected species impact topic.

Texas Indigo Snake

The Texas indigo snake is considered a state threatened species. The Texas indigo snake does not occur within the analysis area for the proposed project. In 1980, a specimen was documented from the Park (Donna Shaver Ph.D. personal communication; Duran 2004). However, no other individual of this species has been

documented since. This species was not during a comprehensive two-year herpetological survey completed in 2004 (Duran 2004). Without a recent documented case of a Texas indigo snake occurring within the Park, this species was not analyzed as part of the protected species impact topic.

Texas Scarlet Snake
The Texas scarlet snake is considered a state threatened species. The Texas scarlet snake does not occur within the analysis area for the proposed project. A herpetological survey completed in 2004 did document the presence of the Texas indigo snake through the observation of a single individual (Duran 2004). Since Texas scarlet snakes have not been documented within the project area and have rarely been seen within the Park, Texas scarlet snakes were not analyzed as part of the protected species impact topic.

Bald Eagle
The bald eagle is considered a federal and state threatened species. Bald eagles are considered rare occurrences at the Park and were historically found in greater abundance on the mainland portion of Texas than the island (McCraken and Clark 1990). Bald eagles have not been sighted in the Park based on surveys over the past 15 years. Since bald eagles have not been documented in the Park for over 15 years, bald eagles were not analyzed as part of the protected species impact topic.

Because these federally or state protected species do not occur within the analysis area, these species were not analyzed further in this EA.

1.4.4. Environmental Justice
Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, environmental justice was dismissed as an impact topic in this EA.

1.4.5. Prime and Unique Farmlands
In August 1980, the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland is defined as soil that produces specialty crops such as fruits, vegetables, and nuts. There are no prime or unique farmlands located within the Park; therefore, prime and unique farmlands were dismissed as an impact topic in this EA.

1.4.6. Catastrophic Incidents, including Well Blowouts, Well Fires, or Major Spills.
As described in the EA, there is the possibility that during drilling and production of the wells, there could be localized and short-term discharges of sediments and/or pollutants into nearby wetland complexes. Those discharges could have the potential to occur as long as the operations remain active. If the wells are successful and placed in production, they could produce for 20 years or longer.

There would be a low potential for a catastrophic incident, including well blowouts, well fires, or major spills. Following is a discussion of incidents reported during calendar year 2006 in RRC District 4, which includes the Park and is representative of blowout events/well control problems, fires, and spills that occur in or adjacent to the Park (Table 4). Data is also presented for the three counties within District 4 where the Park is located.

As of September 2006, there were approximately 1,780 regular producing oil wells and 12,113 regular producing gas wells in RRC District 4, totaling 13,893 wells. Of these wells, 129 oil wells (7 percent) and 472 gas wells (4 percent) are located within the three counties where the Park is located. See http://www.rrc.state.tx.us/divisions/og/statistics/wells/wellcount/oilwlct0906.pdf and http://www.rrc.state.tx.us/divisions/og/statistics/wells/wellcount/gaswlct0906.pdf.

Table 4. Number of Reported Well Blowouts/Well Control Problems, Well Fires, and Major Spills in RRC District 4 During Calendar Year 2006.

Type of Incident	No. of Incidents in RRC District 4 during 2006	No. of Incidents in 3 Counties around the Park during 2006	No. of Incidents within the Park during 2006	Rate of Occurrence	Source of Data
Blowouts/ Well Control Problems during Drilling Operations	0	0	0	0	RRC Website (http://www.rrc.state.tx.us)
Well Fires	2	0	0	1 in every 7,000 wells	RRC Website (http://www.rrc.state.tx.us)
Major Oil Spills exceeding 5 barrels	21	2	0	2 spills for every 1,400 wells	RRC Website (http://www.rrc.state.tx.us)

Well Blowouts: The term "blowout" means the uncontrolled escape of formation fluids (water/brine, gas, oil) from a well. Given present day technology, a well blowout is extremely rare. According to RRC data, the vast majority of reports deal with well control problems that never manifested in full, sustained blowouts. During 2006, no blowouts/well control problems were reported in RRC District 4.
See http://www.rrc.state.tx.us/divisions/og/blowouts-mm/district4.html

Well Fires: According to RRC data, over the last 40 years (1967-2007), there have been 24 fires associated with oil and gas wells in District 4

(http://www.rrc.state.tx.us/divisions/og/blowouts-mm/district4.html). This equates to approximately 0.6 fires per year. During 2006, there were two fires and in 2005 there was one fire that resulted from lightning strikes at production facilities. No well fires have occurred in the three counties where the Park is located since 1985.

Major Spills. During 2006, in RRC District 4, there were 21 spills reported greater than 5 barrels of oil, equating to approximately 2 spills for every 1,400 wells per year. The RRC reporting requirement is five barrels of oil, so spills of less than that amount are not reported. See, Tex. Admin. Code Tit. 16, § 3.20 (2005). It should be noted that any loss of product is reported, and some do not pertain to spills or releases that actually reach the ground.

Of the 21 reported spills, 11 spills (52 percent) occurred within tank batteries from a variety of causes including corrosion, equipment failure, human-error, and lightning strike. Most of the releases within tank batteries were contained within the diked areas. Five spills, or 24 percent, involved pipelines or flowlines, and were predominantly caused by corrosion. The remaining 6 spills, or 29 percent, occurred in other equipment (valves, separators, terminals) and resulted mainly from equipment failure. Two of the 21 spills were located in the three counties in which the Park is located; but neither spill was located within the Park.
(http://www.rrc.state.tx.us/divisions/og/h8s/h82006/h82006.html)

Of the 21 reported spills, 7 spills, or 33 percent, consisted of quantities < 20 barrels; 3 spills, or 14 percent, were between 21 and 50 barrels; 4 spills, or 19 percent, were between 51 and 100 barrels; and 7 spills, or 33 percent, were between 101 and 1159 barrels. Of the 21 spills reported, there was 100 percent recovery of the spilled product in 3 spills (14 percent), 80 to 99 percent recovery in 4 spills (19 percent), 50 to 79 percent recovery in 2 spills (10 percent), and 0 to 49 percent recovery in the remaining 12 spills (57 percent). [http://www.rrc.state.tx.us/divisions/og/h8s/h82006/h82006.html]

Any operator of oil and gas operations that could reasonably be expected to discharge oil in harmful quantities, as defined in 40 CFR §110.3, into navigable waters, as defined in 40 CFR §110.1, is required to have a Spill Prevention Control and Countermeasure Plan as per 40 CFR §Part 112. Some of the specific requirements that an operator of onshore drilling and workover facilities must adhere to under 40 CFR §112.14 include:

- Meet the general requirements and specific discharge prevention and containment procedures listed under Sec. 112.7.
- Position or locate mobile drilling or workover equipment so as to prevent a discharge as described in Sec. 112.1(b).
- Provide catchment basins or diversion structures to intercept and contain discharges of fuel, crude oil, or oily drilling fluids.
- Install a blowout prevention (BOP) assembly and well control system before drilling below any casing string or during workover operations. The BOP assembly and well control system must be capable of controlling any well-head pressure that may be encountered while that BOP assembly and well control system are on the well.

Due to these requirements, in the rare event of a major spill consisting of > 5 barrels of oil, the spill would be rapidly contained and picked up, so that impacts are short-lived and limited to the immediate area of operations. In the event that a spill did occur and did spread into the Park, the impacts could be remedied and mitigated over time. In the rare event that spilled substances from a well blowout or major spill are transported into the Park, or a well fire spreads into the Park, the NPS would seek damages and restoration costs under the Park System Resources Protection Act, 16 U.S.C. § 19jj. While applicability of the Park System Resources Protection Act would be applied only after damages to the Park's resources or values have occurred, this tool is also an effective deterrent for operators to apply the necessary preventative measures to prevent an incident from affecting the Park.

The NPS recognizes that unplanned incidents associated with oil and gas operations such as well blowouts, fires, and major spills within the boundaries of the Park present a risk of damage to the Park's resources and values. However, the incident rates for such incidents are low and are not a reasonable expectation of project implementation. If such an incident did occur, required mitigation measures listed in Section 2 of this EA would result in lessening the potential for spilled substances or a well fire to spread into the Park, and for timely response and cleanup so that there is a reasonable expectation that the natural environment could be reclaimed or would otherwise recover over time so that impairment would not occur. In the event that the Park's resources or values are damaged, the NPS could seek remedy both on the ground and in the form of monetary compensation. Any further analysis on this topic would be highly speculative.

1.4.7. Cultural Resources

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq*.); the National Environmental Policy Act of 1969 (42 USC 4321 *et seq*.); and the National Park Service's Director's Order #28, *Cultural Resource Management Guideline (1997*), *Management Policies, 2006* (2006), and Director's Order #12, *Conservation Planning, Environmental Impact Analysis, and Decision Making* (2001) require the consideration of impacts on cultural resources listed in or eligible to be listed in the National Register of Historic Places. The NPS recognizes five categories of cultural resources: historic structures, ethnographic resources, cultural landscapes, archeological resources, and museum collections.

There are no historic structures, ethnographic resources, or cultural landscapes within or near the proposed operations areas. During project scoping, a literature search was conducted to determine the extent and continued adequacy of past archeological surveys that had been performed in the analysis area. An inventory for archeological resources was conducted during earlier development of the Dunn-McCampbell "A" leases in 1984, which did not identify any cultural resources within the project area. A recent archeological resource survey was performed on the proposed location for the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wellpad, access road, and flowline corridor in March 2007 by William E. Moore and James E. Warren. No archeological resources were found. The NPS concluded that no historic properties

would be affected and concurrence was obtained from the Texas Historical Commission.

BNP proposes to utilize the existing Dunn-McCampbell “A” lease wellpad and flowline corridor. Routine maintenance of the flowline over the producing life of the wells, up to 20 years or longer, may require occasional excavation of portions of the flowline to perform routine inspection of the line, and in the event of leaks or ruptures, portions or the entire flowline could be excavated for repairs and replacement. Any ground-disturbing activities associated with excavation of portions or the entire flowline would be confined within the previously disturbed area; therefore, there would be no effect on undiscovered archeological resources that may be located outside this corridor.

Due to the absence of cultural resources within the project area and concurrence obtained from the State of Texas, this topic was dismissed as an impact topic in this EA.

2.0. ALTERNATIVES

Two Alternatives, A (No Action) and B (Proposed Action), are described and evaluated in this EA. Alternative locations and strategies that were considered but dismissed from further analysis are then described. An analysis for selecting the environmentally preferred alternative is also provided. This section concludes with three summary tables comparing the two alternatives.

2.1. Alternative A, No Action

The No Action Alternative is required under NEPA and establishes a baseline or benchmark from which to compare the effects of permitting the proposed activity to proceed. Under No Action, three new wells would not be drilled, but use and maintenance of the existing Dunn-McCampbell A8 water well would continue. Existing operations located along the Pan Am Road would require continued access by vehicles utilizing the Gulf of Mexico shoreline and other existing roadways. Activities associated with these operations such as daily trips by pickup-sized trucks and larger trucks to remove "condensate" from holding tanks and periodic well maintenance could be expected.

2.2. Alternative B, Proposed Action, Plan of Operations with Additional Mitigation Measures

Under Alternative B, Proposed Action, the NPS would approve BNP's Plan of Operations to directionally drill and produce the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and operate the Dunn-McCampbell A8 water well. The anticipated timeline for each of these wells is about 60 days. They would be drilled consecutively for a target of 180 days to have all three wells drilled (BNP, 2007). There is the low possibility, however, that well control problems could occur and may extend the drilling time up to 6 months or more for one or more wells

Project Location

BNP proposes to utilize the existing Dunn-McCampbell A8 wellpad, which is approximately seven miles south of the end of the pavement on South Beach. The additional proposed wells require an expansion of the existing pad from 1.7191 acres to 2.5503 acres.

The global positioning system (GPS) measurements based on Texas State Plane Coordinate System of 1927, Texas South Zone, for the surface and bottom-hole locations (Figure 2) of the proposed wells are:

ST 991 #1

Surface location:	X = 2,371,485	Y = 594,979
Bottom-hole location:	X = 2,376,998	Y = 589,499

True Vertical Depth	10,500 feet
Measured Vertical Depth	14,130 feet

Dunn-McCampbell 12A

Surface location:	X = 2,371,430	Y = 594,870
Bottom-hole location:	X = 2,374,869	Y = 589,895

True Vertical Depth	10,000 feet	
Measured Vertical Depth	10,664 feet	

Dunn-McCampbell 11A

Surface location:	X = 2,371,388	Y = 594,977
Bottom-hole location:	X = 2,373,246	Y = 595,050

True Vertical Depth	10,000 feet
Measured Vertical Depth	11,740 feet

Dunn-McCampbell A8

Surface location:	X = 2,371,430	Y = 594,910
Bottom-Hole location:	X = 2,374,869	Y = 589,895

True vertical Depth:	10,000 feet
Measured Vertical Depth:	10,664 feet

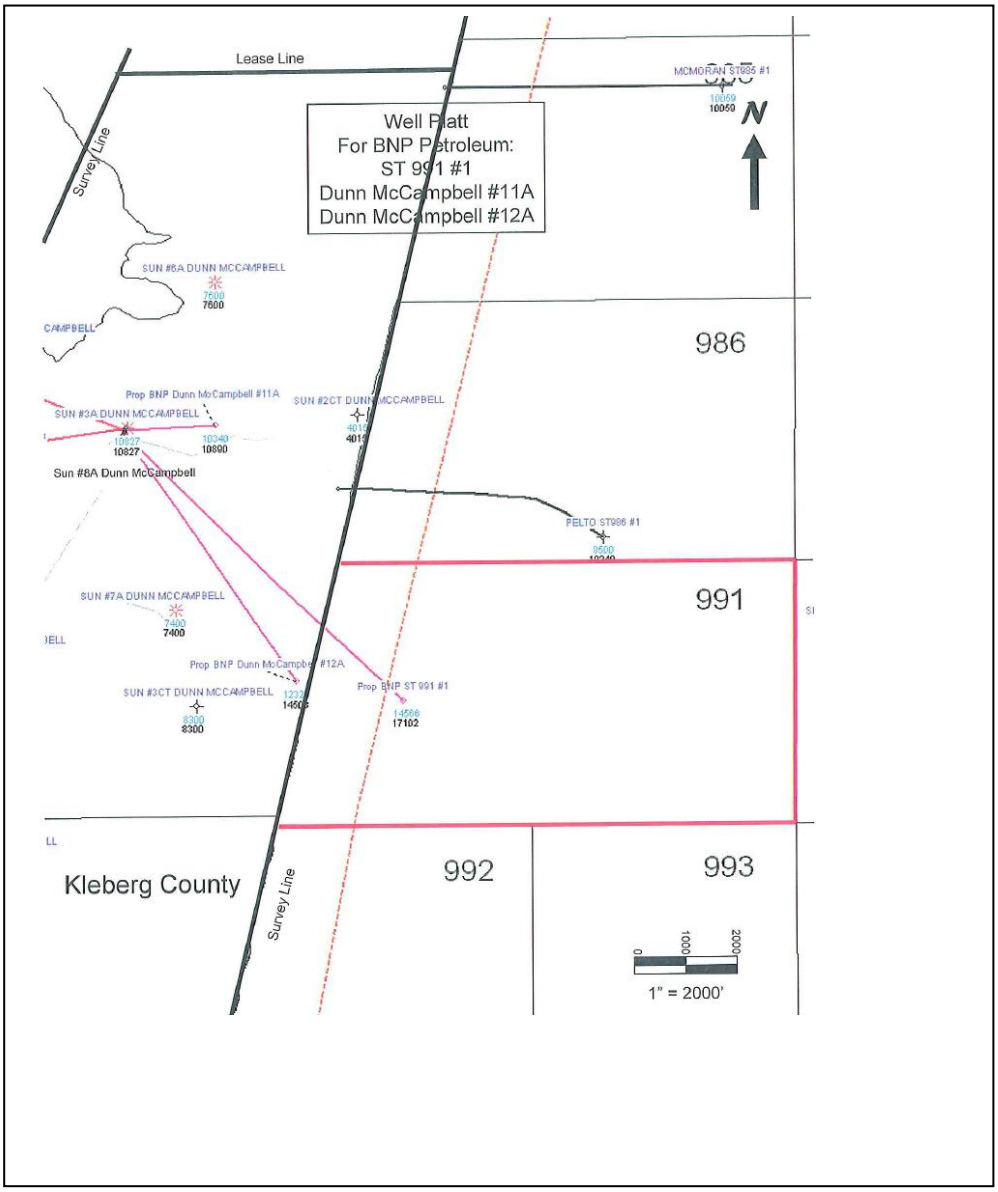

Figure 2. Surface and bottomhole locations for the ST 991 #1, Dunn-McCampbell 11A, and Dunn-McCampbell 12A

Access

All vehicles used during well pad expansion, drilling, and production operations would enter the Park via Park Road 22, travel approximately eight miles to the end of the paved road, and then proceed approximately seven miles along the Gulf Beach to a gated dune pass and an existing shell/caliche road that extends approximately four miles to the A8 well location (Figure 3).

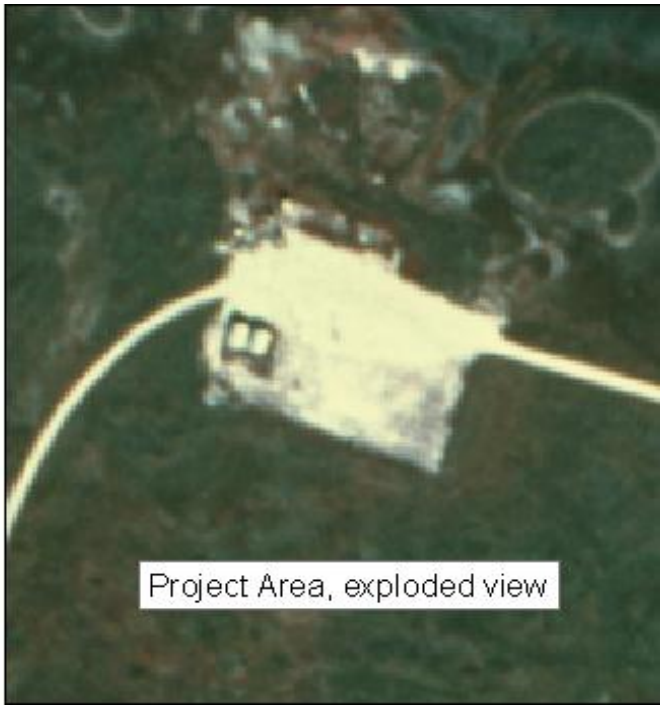

Figure 3. Proposed location of the ST 991 #1, Dunn-McCampbell 11A, and Dunn-McCampbell 12A natural gas wells and Dunn-McCampbell A8 water well.

Surface Location and Wellpad

BNP's proposed drill site would be located on the existing Dunn-McCampbell "A" Lease wellpad (Figure 4) because the site would avoid or minimize adverse impacts on wetlands, tidal flats, dunes, and other sensitive resource areas because it is a previously disturbed 1.7191-acre site. The wellpad has been expanded by 0.8312 acres for a total wellpad acreage of 2.5503 acres, which is the acreage BNP has stated is necessary for the proposed operation. This expanded site would provide for an orderly addition of up to three new wells adjacent to the existing Dunn-McCampbell A8 wellhead.

A six-foot diameter by six-foot deep corrugated galvanized steel cellar would be installed around each well. Cellars would be made of rolled steel with spiral seams and would be effectively watertight. Prior to rigging up the drilling rig, a conductor would be driven to ± 120 feet (point of refusal) and the bottom of the cellar would be sealed with one foot of cement. Steel conduit would be cemented in place for the rathole and mousehole to prevent communication between groundwater sands and well fluids. The pad would be sloped and drainage ditches would be dug (12 inches wide and 8 inches deep) to route all runoff to the cellar. A portable sump pump would be used to pump the gathered liquids to steel tanks for re-use or disposal. After leveling the pad area, a 20 mm thick polyethylene protective liner would be placed on the pad area with approximately a 6-foot overlap between sheets. A 3-foot high caliche berm would be constructed around the perimeter of the pad area for emergency containment that would also be lined with a 20mm thick impermeable liner.

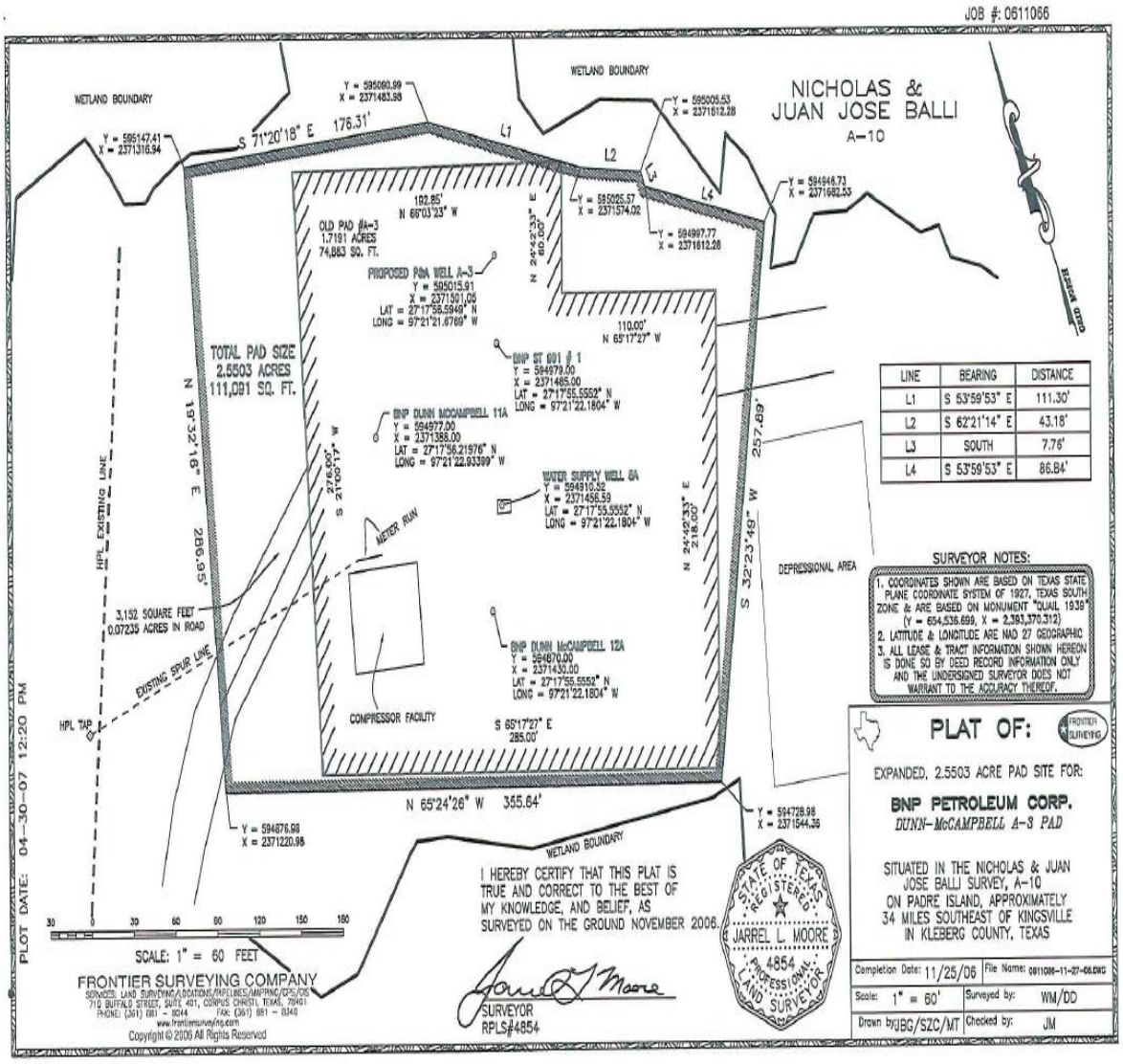

Figure 4. Proposed locations of wellpad and production facility.

All equipment, machinery, and living quarters would be placed within the 2.5503-acre pad area. Approximately 1.0 acre of the wellpad would be reclaimed beginning 15 days after the drilling/completion rig is moved off of the last well location.

Use of Water for Drilling

Freshwater would be needed during the drilling operation primarily for mud dilution, cementing, and rig cleaning and would be supplied by the existing Dunn-McCampbell A8 water well. By using synthetic oil based mud, approximately 7,500 barrels (315,000 gallons) of freshwater would be needed to drill each well. The water would be stored in the drilling rigs water tank and, if necessary, an additional fractionating tank would be installed on location.

Alternatively, fresh water could be obtained from one of several fire hydrants located along Park Road 22 outside the Park. A check valve and water meter would be installed on the hydrant. Two 500-barrel fractionating tanks would be set near the hydrant to store water. Vacuum trucks would be used to haul water to the rig as needed. At 130 barrels per load, this would require approximately 173 loads to be delivered to the rig.

Production Facility
BNP would use existing tank batteries and production equipment that are present on the location. Production for all operations could continue for up to 20 years.

Pipeline
BNP proposes to utilize an existing metering facility previously installed for the A3 and A8 wells located within the original pad area. BNP would also use the existing flowline and tap located at the Houston Pipeline (HPL) main trunk line. All such facilities would be built to HPL specifications as authorized by the NPS. The pad expansion would not require disturbance of the existing flowline. BNP anticipates that the existing metering, flowline and tap facilities are adequate for projected flow. However, should the production rate reach a level such that the existing facilities should require revision, NPS would be notified and NPS procedures would be followed to request an upgrade to the facilities.

Reclamation Plan
Should the wells enter production, approximately 1.0 acre of the wellpad would be reclaimed beginning 15 days after the drilling/completion rig is moved off of the last well location. Final site reclamation would commence within 30 days once all wells on the site are depleted, plugged, and abandoned. The total site reclamation should be completed within 120 days and re-vegetation should occur within one year depending on rainfall.

At the completion of production operations, each well would be plugged, and all above ground structures, equipment, and other manmade debris resulting form operations would be removed; and any contaminating substances would be removed or neutralized. (36 CFR 9.39 (a)(2)). The pad area would be re-contoured as near as possible to the original contour. The re-contoured ground would be fertilized at 40 pounds per acre of 30/0/10 (N-P-K) fertilizer. Native hay would be used to mulch the disturbed areas. If additional hay is needed, BNP would obtain it from a suitable site approved by the Park from a commercial harvester or would obtain the right to harvest the hay directly from the Park. BNP would make every effort to harvest the hay at a time that would provide for high seed density. If possible, mulching would be scheduled so as to take advantage of predicted rainfall. During annual monitoring efforts, undesirable species would be controlled either by herbicide application or hand/tool removal, as approved by the NPS. Restored areas would be monitored annually until 70 percent coverage of targeted species is achieved. A report would be submitted by BNP to the Park documenting restoration activities and results. Monitoring would cease

after 70 percent of the original vegetative coverage is achieved or after the site had been approved by the Park Superintendent.

Wetland Compensation

This operation would require a wellpad expansion of 0.8312-acre. Prior to the acceptance of BNP's plan of operation for these wells, this expansion occurred without the approval or knowledge of the Park. As this expansion was necessary for the operation, the NPS would not require BNP to remove the expanded section of pad, but rather, would accept the expansion and designate the entire 0.8312-acre expansion as a wetland.

The NPS adheres to the administration's "no-net loss" policy for wetlands protection. Since the total wetland impact area is greater than 0.1 acre, and the wetlands are considered of high quality or high functional value, compensatory mitigation is necessary. The Park has recognized a suitable wetland restoration project that would be used as 2:1 equivalent compensation.

This wetland compensation project would consist of restoring approximately 1.7 acres of an abandoned oilfield access road. This road was built-up onto a tidal flat. This project would consist of removing the former road and leveling it to the elevation of the tidal flat, thus restoring hydrology to 95 acres of tidal flat (see Appendix C, Figure 5).

Mitigation Measures

In order to reduce the impacts on the Park's resources and values, BNP and its contractor, BEI, sought the views and advice of personnel at the Park, USFWS, COE, US Geological Survey and other experts. BNP and BEI also relied on the recommendations of the Park's Final Oil and Gas Management Plan/Environmental Impact Statement (DOI, 2000) for operating standards and other information. As a result of these and other efforts, BNP would implement all mitigation measures outlined in Table 5. The location of each mitigation measure in the Plan of Operations is included for ease of reference.

Table 5. Mitigation Measures under Alternative B, Proposed Action.

Number	Mitigation Measures	Reference
Natural and Cultural Resources and Visitor Experiences		
1	If appropriate, directional drilling from an upland location will be encouraged and access roads and flowline routes will be selected to minimize direct impacts on park resources. The location and size of the well pad will be situated so that it is suitable for drilling to multiple targets and eliminates the need for additional well pads.	Section G, Item 1, page 12; Section G, Item 2, page 12; Section G, Item 3, page 12

Number	Mitigation Measures	Reference
2	Heavy equipment (vehicles larger than a 1-ton pick-up truck or any size pick-up truck with a trailer) will not be operated on Holiday weekends including Memorial Day, July 4th, and Labor Day.	OGMP, pages 1-15 and 2-46
3	If an unknown cultural resource is discovered during approved operations, and such resource might be altered or destroyed by the operations, the operator will immediately cease activity in the immediate area and notify the Superintendent before continued any operations.	Section G, Item 9, page 13
4	Culverts will be installed where fill may directly affect surface water run-off and flow. Culvert locations will be approved by the NPS and selected to minimize alteration of natural surface drainage patterns and will be placed at an adequate depth to fulfill their function of maintaining hydrologic flow.	OGMP, page 2-58
5	All compressors used during production operations will be equipped with hospital mufflers or similar technology and be oriented so that the exhaust faces away from the prevailing southeast wind direction.	Section G, Item 31, page 15
6	The operator will plant NPS-approved native vegetation around the production facility to minimize visual and audible impacts on visitors and provide habitat.	Section G, Item 24, page 15
7	Vegetation growth within the facility and along the access road will be mowed frequently to a height of four to six inches to minimize threats from wildfire. Herbicide or pesticide use must be approved by the Superintendent before their use.	Section G, Item 28, page 15
8	The operator will make every effort to conduct operations outside of the summer season (April 1 through August 31) in order to avoid disturbing sea turtle nests and nesting activity and impacting the Park's visitors.	Section G, Item 7, page 13
9	Heavy equipment and convoys will conduct all driving above the Gulf beach "wet line" to prevent excessive erosion, crushing of benthic invertebrates, impacting endangered or threatened species, and prevent disturbances to shorebirds.	Section G, Item 5, page 12
10	All operations will be setback 500 feet from the Gulf Beach dune line and other light-sensitive areas. Lights will be shielded and directed at the rig work	Section G, Item 14, page 14;

Number	Mitigation Measures	Reference
	area itself to meet human safety requirements.	
11	All open-topped tanks and/or secondary containment areas will be covered with netting or other covering with all seams completely enclosed and netting falling no further than 3-inches below the top of the containment. All open-vent exhaust stacks on production equipment will be constructed in a manner that prevents birds and bats from entering or perching.	Section G, Item 15, page 14; Section G, Item 22, page 15
12	Sea turtle awareness training will be provided by the NPS to all operation employees and contractors and will include track identification, notification protocols, and how to mark tracks or nest area if they are unable to stay on site until NPS personnel arrive.	Section G, Items 3 and 4, page 12; and, Item 48, Page 17; FEIS, 5-11(9)
13	The operator will hire vehicle monitors that will escort all heavy equipment (vehicles larger than a 1-ton pick-up truck or any size pickup truck with a trailer) traveling to and from the well site. They will report all violations of the mitigation measures or conditions of approval immediately to the NPS.	Section G, Item 7, page 13
14	The operator will educate all employees and contractors regarding the need for, and ways and means of, minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore. Operator will print a list of conduct and operating procedures, approved by Padre Island National Seashore, while working within the Park to be reviewed by all operation related personnel before they begin work inside the Park.	Section G, Items 3 and 4, page 12; and, Item 48, Page 17
Safety		
15	All ATV operators will be required to wear personal safety equipment identical to that which is required of NPS staff. This includes helmet, gloves, and orange safety vest, closed-toe shoes that cover the ankle, eye protection, long sleeve shirt, and long pants. Operator will provide the NPS with proof that these individuals have completed a current ATV safety Rider Course prior to operating an ATV in the Park.	Section G, Item 48, page 17
16	In preparation for a hurricane event, the operator will secure all surface and sub-surface equipment in	Section O, Part 5

Number	Mitigation Measures	Reference
	accordance within the Park Hurricane Preparedness Plan and as outlined in the operator's Plan of Operations.	
17	The operator will have in place fire suppression equipment and will maintain it in serviceable condition at all times.	Section G, Item 30, pages 15
18	The operator will maintain the access road using a maintainer when needed to keep the road passable and minimize the potential of vehicles driving off the road and into undisturbed habitats. The use of bull rock will not be allowed on roads within the Park.	Section G, Item 47, page 17
19	The operator will not be allowed to store unused equipment or debris at the site. Any unused or surplus equipment must be removed from the Park immediately. Debris such as cardboard boxes, garbage, buckets, etc. must not be stored at the site and must be brought in on an as needed basis.	Section G, Item 36, page 16
20	During construction and drilling, the operator will utilize a dispatcher stationed outside of the Park to regulate the flow of traffic into the Park and along the beach. The operator will employ an onsite "Beach Manager" to coordinate and control all operation activities within the Park. The dispatcher will maintain logs of all personnel entering the project and will supply copies of the log to park staff when requested but at least weekly. Data to be collected on the vehicle log will include purpose of trip (sales, delivery, etc.), type of vehicle (pickup, vacuum truck, flatbed, etc.), gross vehicle weight for vehicles classified as heavy equipment, type of equipment (compressor, drilling structure, etc.), and site destination (Peach, A4, etc.). The dispatcher will provide this to NPS staff when requested but at least on a weekly basis. The dispatcher will provide each driver a copy of Operator/Padre Island National Seashore requirements for vehicle operations, environmental concerns, and public safety while operating in the Park.	Section G, Item 49, page 17
21	A bulldozer will be used throughout the drilling operation to assist vehicles in the transportation of personnel, services, and materials where needed. A maintainer will be on-site to smooth out any rutting that may occur.	Section G, Item 16, page 14
22	A temporary, three-strand, barbed-wire fence will be	Section G Item 18,

Number	Mitigation Measures	Reference
	placed around the perimeter of the pad during drilling and completion operations. If the well enters production, a gate and permanent chain link fence will be installed around the well and production facilities of a design specified by the Superintendent.	page 14
23	If drilling or production operations are suspended for 24 hours or more, but less than 30 days, the pipe rams will be closed and locked, and at least one safety valve installed in the top of the drill pipe and closed. If suspended for 30 days or more, a backpressure valve will be installed in the tree, the tree gate valves will be closed, and the valve handles will be removed.	Section G, Item 34, page 16; Section G, Item 35, page 16
24	Heavy equipment is limited to 20 vehicles each day, a speed limit of 15 mph or less, no traveling at night, and shall be scheduled in a manner that facilitates caravanning. The drilling crew will utilize an operator-provided shuttle service to transport crews to and from the site to decrease vehicular traffic on the beach.	Section G, Items 7 and 49, pages 13 and 17
25	Consumption of alcoholic beverages or illegal drugs will not be allowed or tolerated on operations located within the Park. If evidence of these activities is discovered during an inspection, the operator will be notified immediately and will be required to provide the NPS with a plan on preventing this activity in the future.	Section G, Item 48, page 17
Contamination		
26	Collection and sampling of soils, surface water, and ground water will be performed following NPS protocols as listed in the 2006 Operator's handbook, prior to the start of construction, to establish baseline conditions, and at the completion of operations, to determine if contaminating substances are present in concentrations that pose a threat to wildlife populations or human health, or will jeopardize reestablishment of native vegetation.	Section G, Item 42, page 16
27	A Contamination or Toxic Substance Spill Control Plan shall be included as part of the Plan of Operations to describe actions to be performed in the event of an oil spill, brine spill, release of drilling fluids, blow-out, or release of any toxic substance.	Section G, Item 38, page 16

Number	Mitigation Measures	Reference
28	Should contaminated soils be found, the contaminated soil will be excavated to clean soil and removed to a state-approved off-site disposal facility where applicable. The excavation will be filled with clean native soil. If necessary, contaminated soils will be remediated on-site using NPS-approved remediation methods.	Section G, Item 43, page 17
29	A 20-millimeter thick polyethylene protective liner will be placed on the pad area and a 3-foot high earthen material berm, which will also be lined, will be constructed around the perimeter of the pad for emergency containment and prevention of downward movement of fluids through the soil from reaching the groundwater. Construction of a moat or barrow ditch will not be allowed around the pad perimeter.	Section G, Item 15, page 14.
30	A corrugated galvanized steel cellar will be placed around the well. Drainage ditches will be dug to route all runoff to the cellar for collection and removal. The cellar will be filled upon completion of drilling activities in an NPS approved manner that will allow the operator to continue monitoring the production casing - surface casing annulus for pressure buildup.	Section G, Item 13, page 13
31	Well control equipment will be installed and include a blowout preventer and a choke manifold equipped with a hydraulic, remote-controlled, and adjustable choke.	Section G, Item 17, page 14
32	The operator will utilize an environmentally safe, synthetic, oil-based drilling mud for drilling the well to reduce water usage, beach traffic, and operational time. Lost circulation mud additives will be used to prevent and control lost circulation, reducing the time needed to drill.	Section G, Item 11, page 13; Section G, Item 12, page 13
33	All flammable liquids (i.e. condensate, compressor oil, etc.) will be labeled, stored in steel or fiberglass tanks, and contained inside the firewall or berm at the central facility. All materials not necessary for the immediate operation of the well will be removed. Any surplus or emergency materials or supplies that need to be kept at the well site will be stored at the central facility in a locked storage shed or parts box. All containers will be labeled as to their contents.	Section G, Item 36, page 16
34	A closed loop “zero discharge system” or similar	Section G, Item 18,

Number	Mitigation Measures	Reference
	technology will be utilized for drilling the well. No earthen pits will be approved. All mud, drill cuttings, sewage, produced water, etc. will be collected for disposal at state-approved disposal facilities outside of the Park boundaries, or disposed down the well annulus. Where feasible, excess materials and drill cuttings will be stored on the drill location in order to coordinate the removal of such materials.	page 14
35	Standard oil field technologies will be applied to prevent leaks and spills of hydrocarbons and produced water including: pressure relief valves, hi-lo safety shut-off actuators, liquid level controls, and cathodic protection.	Section G, Item 10, page 13
36	A berm with an impermeable liner will be constructed around all tank batteries, and designed to contain 1.5 times the volume of the largest tank.	Section G, Item 21, page 14
37	All produced water will be stored in closed top fiberglass tank(s). The water will be transported to an off-site, state-approved disposal facility by vacuum truck.	Section G, Item 20, page 14
38	For all releases of contaminating or toxic substances, the operator will promptly report the initial spill information to Padre Island National Seashore according to their Contamination or Toxic Substance Spill Control Plan within their Plan of Operations.	Section G, Item 38, page 16
Reclamation		
39	The operator will cut, bale, and store vegetation before ground-disturbing activities occur. This vegetation will be used in mulching and native seeding activities during reclamation/re-vegetation. All equipment will be washed off and cleaned of mud/soils/plant debris before entering the Park to reduce potential introduction of non-native seed/pests into the Park.	Section G, Item 44, page 17; Section G, Item 8, page 13
40	Reclamation of the site will begin after completion of operations and no later than six months unless authorized by the Regional Director. The operator will reduce the pad size following drilling operations as feasible for production operations. All imported fill materials and liners used to construct the access road and pad will be hauled offsite. All disturbed areas, including rutting deeper than one inch, will be	Section G, Item 38, page 16; Section G, Items 39 & 40, page 16

Number	Mitigation Measures	Reference
	re-contoured and re-vegetated.	
41	Some soils and sands from outside Padre Island National Seashore, but on Padre Island, may be hauled in to achieve pre-project contours or to restore any spill clean-up areas. Such soils and sands will be similar in character to pre-project soils and sands with regard to particle size, contaminants, certified weed-free, and approved by the Superintendent before purchase/use to minimize the potential for invasive species.	Section G, Item 32, page 15
42	Native vegetation harvested and baled before operations begin or at seasonally optimal times during operation will be used to reclaim disturbed areas. Successful re-vegetation will be reached when 70 percent coverage of targeted species is achieved. Herbicide application or hand-tool removal will be used to control invasive plant species in the reclamation area, as approved by the Superintendent.	Section G, Item 44, page 17; Section G, Item 45, page 17; Section G, Item 46, page 17
Operational		
43	To the extent possible, with respect to rig scheduling and availability, the operator will use a diesel electric rig or similar rig to drill the well so that impacts on the natural soundscape are minimized.	Section G, Item 6, page 13
44	The operator will provide the Park with daily drilling logs to allow NPS petroleum engineers to track the progress of the well.	Section G, Item 26, page 15
45	Signs will be posted at the entrance of the access road, on the well tree, and on the tank battery giving operator name, lease name, well number, API Number, and Railroad Commission of Texas identification number.	Section G, Item 33, page 15
46	During production, the operator will check the facilities daily and notify Padre Island National Seashore personnel of problems or observations. The operator will check supply gas pressure daily by use of a hi-lo pressure sensor. Should system pressure go above or below the safe range of operating pressure set by a technician, the sensor will trip a relay that actuates the safety valve, shutting in the well.	Section G, Item 27, page 15; Section G, Item 26, page 15
47	The well will be plugged in compliance with Federal Onshore Oil and Gas Order No. 2 and Railroad	Section G, Item 39, page16

Number	Mitigation Measures	Reference
	Commission of Texas requirements.	
48	The Superintendent of Padre Island National Seashore, or his representative, shall have reasonable access to the operations as necessary to properly monitor and insure compliance with the conditions of the plan of operations under the provisions of 36 CFR §9.37(f).	36 CFR §9.37(f).
49	The approval of the Plan of Operations will be conditioned upon the operator tendering a performance bond not to exceed $200,000 for operations by a given operator within a unit of the National Park System. The regulations limit the liability amount for the operation of a single well to $50,000.	36 CFR §9.48(a-f).
50	The operator is responsible for all damages to the Park's paved road surfaces due to trucks carrying construction and drilling equipment because these roads were not constructed for heavy industrial equipment and loads. Typical repairs include road resurfacing, site preparation, pack coat, and seal and chip. Damages will be determined based upon wear to the road or on a per vehicle basis.	36 CFR §9.50(c).
51	The wellhead and all production equipment will be painted a neutral, earth-tone color, such as Sherwin Williams Burlap, or a similar NPS approved color, to blend with the natural environment.	Section G, Item 25, page 15

Additional Mitigation Measures Required by NPS as a Condition of Plan Approval

The NPS would require BNP to apply additional mitigation measures as a condition of approving the plan of operations.

The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells, like other drilling operations in the past, would require the use of heavy equipment, large trucks, and several months to complete, thereby contributing towards cumulative effects on Park resources and visitor experience. Cumulative effects associated with the increase in heavy truck traffic related to oil and gas development, the prospect of increased activities at previously approved operations, and the addition of new operations is the justification for additional protective measures. The drilling of the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells are expected to take place beginning in the fall of 2007 and be completed prior to the onset of the sea turtle nesting season in 2008. However, because of the cumulative effects of oil and gas related traffic on the Gulf beach, the NPS has recognized a peak nesting season that would provide maximum protection for nesting Kemp's ridleys and protect the majority of

Kemp's ridley hatchlings that may exist from undiscovered nests. Turtle nesting season begins on April 16 and extends until August 31. Drilling activities would be scheduled in such a manner as to be completed before or after the turtle-nesting season if possible. However, if certain operational conditions occur, which are outlined in Table 6, drilling may take place within this peak-nesting season if additional mitigation measures are followed. Additional mitigation measures are outlined in Table 7. The peak-nesting season would not prohibit the necessary activities associated with producing a well that is already drilled since these activities do not generally require the use of a large number of heavy equipment or large trucks.

The Superintendent has the discretion to waive mitigation measures when this option would prove beneficial to park resources, a protected species, or in the advent of difficult or beneficial environmental conditions. If the need presents itself, this would be a daily decision, based on a case-by-case review.

Table 6. Operational Conditions that may Require Drilling During the Nesting Season.

Number	Possible Operational Conditions
1	The wells to be drilled by BNP are of such depth or complexity that in BNP's estimated operations associated with the mobilization for and drilling, testing, and completion of the wells will last for a period of time in excess of 240 days provided that the drilling operation begins close to the end of the Protected Season. BNP must demonstrate and document to the NPS the reason why the drilling operation cannot be completed within the 240 days instead of merely stating that the operation cannot be completed. Drill operations will be scheduled in such a manner that will not cause the drilling operation to extend into the Protected Season.
2	BNP commences operations associated with drilling a well prior to the Protected Season with an expectation that such drilling operations will be completed prior to such season, but delays associated with such operation prohibit completion of the well prior to the Protected Season. Delays that may give rise to the need to conduct operations within this timeframe shall include, but shall not be limited to weather delays, delays in drilling due to downhole drilling difficulties or unforeseen circumstances encountered while drilling, any delays associated with governmental action prohibiting operations, delays attributable to the actions of third parties such as riots, terrorism, strikes, vandalism, or similar action that disrupts BNP's authorized activities.
3	BNP is prohibited by the NPS or any other Federal or State government agency from conducting operations for any period of time in excess of 14 consecutive days outside of the Protected Season if the reason that BNP is not allowed to operate is not the fault of BNP.
4	BNP is unable to schedule a drilling rig capable of drilling the well in question and meeting all requirements of BNP's Plan of Operations at any time other than the Protected Season. BNP will demonstrate and document to the NPS the reason that a drilling rig needed for the operation cannot be

Number	Possible Operational Conditions
	obtained prior to the Protected Season.
5	The NPS fails to issue a permit granting BNP authorization to conduct drilling operations associated with a Plan of Operations submitted by BNP and accepted as substantially complete by NPS within six (6) months of the date the Plan of Operations is accepted as substantially complete by NPS. BNP will provide the necessary Plan of Operations to the NPS prior to April 1 of a given year in order to ensure that enough time exists for the issuance of a permit.
6	The oil and gas lease(s) covering the drilling operation will terminate unless BNP conducts drilling operations during the Protected Season, and such lease termination is not the result of avoidable delays by BNP in prosecuting operations authorized by such lease.

Table 7. Additional Measures Necessary if Drilling Occurs Within the Nesting Season.

Number	Concern	Mitigation Measure
1	Sea Turtles	An NPS-trained monitor will patrol the beach at the beginning of each day and prior to any convoy of trucks driving to or from the drilling location in order to identify any possible nesting that may have occurred at night or in the early morning hours.
2	Sea Turtles	An additional ATV monitor will be utilized behind each convoy to insure that all trucks in such convoy maintain proper spacing while driving on the beach.
3	Sea Turtles	BNP will employ one or more maintainers or similar equipment that will immediately repair ruts caused by BNP vehicles. Each maintainer or similar equipment will have an ATV monitor.
4	Sea Turtles	BNP will employ an onsite “Beach Manager” to coordinate and control all BNP activities on the beach.
5	Sea Turtles	Where feasible, excess materials and drill cuttings will be stored on the drilling location in order to delay the traffic associated with hauling such materials.

2.3. Alternatives Considered but Dismissed from Further Analysis

During the scoping process for this project, alternative locations and methods were considered for siting the proposed wellpad, access road, and production facilities. These alternative locations and methods were discussed in consultation with the USFWS, BNP, park staff, Regional Office, and Washington Office for technical guidance. For the reasons described below, these alternatives were not subjected to further analysis.

NPS Acquisition of the Mineral Rights that are Part of BNP’s Proposal

In the event that a proposed operation cannot be sufficiently modified to prevent the impairment of the Park’s resources and values, the NPS may seek to extinguish the associated mineral right through acquisition, subject to the appropriation of funds from Congress. With respect to the BNP proposed Plan of Operations, mitigation measures were identified and applied, which substantially reduced the potential for adverse

impacts on the Park's resources and values. As a result, the acquisition of mineral rights was dismissed from further consideration in this EA.

Alternative Access, Interior Route

This alternative does not meet the project objectives as well as the proposed action. If a new interior road were to be considered, it would likely originate from the end of Park Road 22 and extend southward to the proposed well location.

Accessing the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would entail the development of approximately seven miles of new road. A road seven miles long and 20 feet wide with a 60-foot construction corridor would impact 2,217,600 square feet (50.9 acres). The impacted habitats would consist of approximately 10.2 acres (444,312 square feet) of upland/dunes and 40.7 acres (1,772,892 square feet) of wetlands.

The road would need to be an all weather road to be able to provide access throughout the year. The rainfall events of recent years have demonstrated that this could not be accomplished without elevating the roadbed considerably higher than the surrounding area. Building a substantial road would alter the natural flow of ground water within the area, resulting in impacts on wetlands reaching far beyond the immediate area. Culverts would need to be installed, but would not guarantee that flow would continue at its natural rate. Run off from the road may create sedimentation and water quality issues within adjacent wetlands. Altering the productivity of these wetlands would compromise the food supply available for migratory and grassland birds, many of which are threatened or endangered species. The island's interior also would be more susceptible than the exposed Gulf beach to invasive species introduction from plant fragments or seeds carried on vehicles.

Finally, the Park's responsibility to protect resources and the visitor experience would be complicated by such a route. The view from atop a dune would not be the vast undisturbed back island with a few pockets of mitigated development, but a long, barren strip that would stand out. This road would be an enticement to some visitors who would try to find a way to drive down it, legal or not. Illegal activities would benefit from having another route on or off the island. These additional considerations make this alternative unattractive compared to the environmentally mitigable beach access alternative.

Alternative Surface Locations

BNP considered two different alternatives for the surface locations of the wells.

One alternative considered was to drill the three wells as vertical holes from directly over the bottomhole targets. Vertically drilling the ST 991 #1 and Dunn-McCampbell 12A wells would have required drilling near the shoreline in the Gulf of Mexico. Vertically drilling the Dunn-McCampbell 11A well would have required construction of a new access road approximately 1,750 feet east of the existing wellpad and constructing a new well/production pad. Each well placed in production would have required the

construction of flowlines to transport produced liquids. This alternative would have greater effects on park resources and values, and visitor use and experience than the agency's preferred alternative.

Another alternative location was considered east of the proposed location in an undisturbed area. This alternative would have required a new pad location of approximately 2.5 acres to accommodate the three proposed wells. This alternative would have greater effects on park resources and values, and visitor use and experience that the agency's preferred alternative stemming from the creation of nearly two additional acres of disturbance beyond the present 1.7 acres of disturbed area associated with the Dunn-McCampbell A8 wellpad.

The proposed location was decided upon by BNP and park staff to be the most feasible alternative from both environmental and technological feasibility points of view.

2.4. Environmentally Preferred Alternative

Section 101 of NEPA states that "…it is the continued responsibility of the Federal Government to…(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depleatable resources" [42 U.S.C. §4321 *et seq.* §101 (b)].

The environmentally preferred alternative for drilling and producing the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells are in compliance with Railroad Commission of Texas, and NPS regulations are based on these national environmental policy goals. Under Alternative A, No Action, the three new wells would not be drilled. Because there would be no new impacts, Alternative A would provide the greatest protection of area and park resources and values and meets five of the six criteria (1 through 4, and 6) and is therefore the environmentally preferred alternative.

BNP's Proposal, Alternative B, would have greater effects on the environment because of the drilling and production operations. Alternative B meets four of the six criteria (1, 2, 4, and 5). Although mitigating measures would reduce effects to park resources and values, there would still be effects, and, therefore, this alternative would not meet the NPS's environmental policy goals as well as the No Action Alternative.

2.5. NPS Preferred Alternative

The environmentally preferable alternative is Alternative A because it surpasses Alternative B in realizing the full range of national environmental policy goals as stated

in §101 of NEPA. However, because the enabling legislation of Padre Island National Seashore respects the exercise of oil and gas rights, the environmentally preferred alternative was not selected as the NPS preferred alternative. The NPS preferred alternative is Alternative B, Proposed Action. The NPS believes this alternative would fulfill its mandates and direction, giving due consideration to environmental, economic, technical, and other factors. Table 8 outlines how well each alternative meets the objectives of this project. The actions required for this project and to what extent park resources are impacted are summarized in Tables 9 and 10.

Table 8. Extent that Each Alternative Meets Objectives.

Objectives	Does Alternative A: No Action Meet Objective?	Does Alternative B: Proposed Action Meet Objective?
Avoid, minimize, or mitigate impacts on park resources and values, visitor use and experience, and human health and safety.	**Yes** Without drilling the wells, there would be no impacts.	**Yes** Mitigation measures would avoid and minimize impacts.
Prevent impairment of park resources and values.	**Yes** Without drilling the wells, there would be no potential for park resources and values to be impaired.	**Yes** Mitigation measures would result in no impairment of park resources and values.
Provide BNP Petroleum Corporation, as the lessee of nonfederal oil and gas mineral interests, reasonable access for exploration and development.	**No** The wells would not be permitted to be drilled, precluding BNP Petroleum Corporation reasonable access to develop its nonfederal oil and gas mineral interests.	**Yes** The wells would be permitted to be drilled and produced, with the application of mitigation measures to meet other objectives.

Table 9. Comparative Summary of Alternatives.

Actions	Alternative A: No Action	Alternative B: Proposed Action
Access	Access to the existing wells would continue via Park Road 22, South Beach, and the Pan Am Road.	BNP related traffic would utilize Park Road 22, South Beach, and the Pan Am Road.
Surface Location-Wellpad	Wellpad would not be expanded any further, as BNP expanded pad to full-size prior to the release of this EA. Mitigation measures, as stated in this operation's Wetland Statement of Findings, have been established and defined in response to the noncompliant wellpad expansion.	The existing wellpad consisting of approximately 1.7191 acres, as approved in the original Plan of Operations for the Dunn-McCampbell "A" Lease, has been expanded by approximately .8312 acres to a total of 2.5503 acres. A 3-foot berm would be constructed around the perimeter. All equipment, machinery, and living quarters would be placed on

Actions	Alternative A: No Action	Alternative B: Proposed Action
		the pad.
Production Facility	The existing production facility would not be utilized.	BNP would reduce the well pad size by approximately 1.0 acres after the drilling/completion rig is moved off the last well location and would utilize the existing production facility.
Pipeline	Existing flow line would not be utilized.	BNP proposes to use the existing flow line and tap located at the HPL main trunk line.
Reclamation Plan	No reclamation plan would be needed because the wells would not be drilled.	BNP would remove all foreign materials from the Park. Surface disturbances would be re-contoured as near as possible to the original contour. The ground would be fertilized and mulched with native hay. Hand tools or herbicides would control undesirable species. The restored area would be monitored until 70% native vegetation cover was achieved.

Table 10. Comparative Summary of Impacts.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
Geology and Soils	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on geology and soils. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continued operation of two pipelines and the A8 well within the analysis area, would result in localized, short to long-term, negligible to minor, adverse	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may produce hydrocarbons, resulting in the short-term disturbance to geology and soils of 2.5503 acres and the long-term occupancy of 1.5503 acres. Expansion of the existing wellpad and drilling and producing the wells, in addition to existing activities within the analysis area, would result in

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	impacts on geology and soils. The A8 well would have a short-term disturbance of 2.5503 acres, and the long-term occupancy of 1.5503 acres. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.	localized, short to long-term, negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on geology and soils throughout the Park. The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to geology and soils would result from implementation of this alternative.
Water Resources and Floodplains	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on water resources and floodplains. Existing park, commercial, and recreational vehicle use on the seven mile segment of Gulf beach, visitor use on the beach, and the continued operation of two gas pipelines and the Dunn-McCampbell A8 well would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from existing	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short-term occupancy of 2.5503 acres and long-term occupancy of 1.5503 acres within the 100-year floodplain. Additional well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.	and future oil and gas operations in and adjacent to the Park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to water resources and floodplains would result from implementation of this alternative.
Wetlands	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled; however, existing vehicle use on the seven mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the Dunn-McCampbell A8 well would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Impacts on wetlands within the analysis area have been mitigated. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Vehicle access above the “wet-line” along the seven mile segment of Gulf beach, and additional well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Impacts on wetlands within the analysis area have been mitigated. Cumulative impacts would be similar to those described under Alternative A, No Action, with

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's wetlands, primarily along the Park's shorelines. No impairment to wetlands would result from implementation of this alternative.	short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's wetlands, primarily along the Park's shorelines. The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to wetlands would result from implementation of this alternative.
Vegetation	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled; however, existing uses, including the continued operation of two gas pipelines and the Dunn-McCampbell A8 well, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. If the wells were placed into production, there would be short-term loss of vegetative cover on 2.5503 acres and the long-term loss of 1.5503 acres. Additional well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts on vegetation throughout the Park.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's vegetation, primarily along the Park's shorelines. No impairment to vegetation would result from implementation of this alternative.	The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to vegetation would result from implementation of this alternative.
Natural Soundscapes	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled; however, existing vehicle use on the seven mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the Dunn-McCampbell A8 well would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the Park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the Park. No impairment to natural soundscapes would result from implementation of this alternative.	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts on natural soundscapes throughout the Park. The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to natural soundscapes would result from implementation of this alternative.
Wildlife	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on wildlife; however, existing vehicle use on the seven	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. If the wells were placed into production, there would be short-

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the Dunn-McCampbell A8 well would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.	term loss of wildlife habitat on 2.5503 acres and the long-term occupancy of 1.5503 acres. Well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the Park. The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to wildlife would result from implementation of this alternative.
Species of Management Concern and Threatened and Endangered Species	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no impacts on protected species or their suitable habitat. Existing impacts on suitable habitat and species range would range from no impact, to localized, short to long-term, negligible to minor, adverse impacts. Cumulative impacts from existing and future oil and gas operations	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled, and may be placed in production. Existing impacts on protected species and their suitable habitat are the same as under Alternative A, No Action. Additional well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area would result in localized, short to long-term, negligible to minor,

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	in the Park, routine park operations, and visitor uses are expected to result in localized, short to long-term, negligible to moderate, adverse impacts on protected species. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts, primarily along the Park's shoreline. No impairment to protected species or their suitable habitat would result from implementation of this alternative.	adverse impacts, and negligible beneficial impacts on protected species. Cumulative impacts would be similar to those described under No Action, with localized to widespread, short to long-term, negligible to moderate adverse impacts throughout the Park. The proposed action is an appropriate use and would not result in any unacceptable impacts. No impairment to protected species or their habitat would result from implementation of this alternative.
Visitor Use and Experience	The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled; however, existing vehicle use on the seven mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, adverse impacts on visitor use	Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on 2.5503 acres, and long-term occupancy by oil and gas developments on 1.5503 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area. Well pad expansion and the drilling and producing of the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	and experience, primarily along park shorelines.	Park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

3.0. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Methodology
This section is organized by impact topic. Under each impact topic, the affected environment is described, the methodology for assessing impacts is presented, the impacts under each alternative is given, a cumulative impact analysis provided and a conclusion is stated. The conclusion section summarizes all major findings and includes an impairment analysis. Impairment analyses are only performed for park resources and values. A description of the NPS mandate to prevent impairment to park resources and values is provided in Section 1.2.1 of this EA (pages 7 and 8).

This section describes direct, indirect, and cumulative impacts under the two alternatives. Impacts are described in terms of context, duration, and intensity. The context or extent of the impact may be **localized** (affecting the project area or a single company) or **widespread** affecting other areas of the Park and/or the project area, or an industry). The duration of impacts could be **short-term**, ranging from days to three years in duration, or **long-term**, extending up to 20 years or longer. Generally, short-term impacts would apply to construction activities and long-term impacts would apply to roads, production operations, and pipelines. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. Where the intensity of an impact can be described quantitatively, the numerical data are presented. However, most impact analyses are qualitative.

Cumulative Impacts
The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq*.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

The following descriptions of park development and operations, and adjacent land uses provide the basis for analyzing cumulative impacts in this section. These descriptions should be used in conjunction with the discussion under the heading “socioeconomics” on pages 23 and 24 of this EA that describes past, present, and reasonably foreseeable oil and gas development in the analysis area.

NPS Development and Operations
The Park was established to save and preserve a portion of the diminishing seashore of the United States that remains undeveloped, for the purposes of public recreation, benefit, and inspiration. Any developments are vulnerable to the harsh corrosive salt-air atmosphere and require constant maintenance. Park developments are confined to the northernmost 20 miles of the Park and consist of the minimum necessary to support park management and the 732,794 visitors in 2006. The Malaquite Visitor Center and

concession facility along with its 1,150-vehicle parking lot provides the primary interpretive opportunity within the Park. Additional park infrastructure includes park headquarters, one park housing unit, a 40-site RV/Tent Campground, a wastewater treatment facility, Bird Island Basin and Yarborough Pass visitor use areas, and a ¾ mile paved trail, the Grasslands Nature Trail. The paved, two-lane Park Road 22 provides access into the Park, westward to Bird Island Basin, and south to Malaquite beach at which point the Gulf beach becomes the primary transportation corridor to the southern end of the Park. The beach is hard and accessible by both two and four-wheel drive vehicles for the first 5 miles of Gulf beach at which point the remaining 55 miles of beach corridor is accessible only by four-wheel drive vehicles. Park visitors can also access the Park from the north via Kleberg Beach and North Beach. Access to the Park is available via boat in the Laguna Madre and Gulf of Mexico. In total, existing park development occupies 391 acres or 0.3% of the Park. There are no past park developments or activities that continue to impact the Park's resources or values. Park operations that could contribute to impacts on park resources and values include prescribed fires, routine maintenance of the Park roads, future park development, park and visitor vehicle use, and public recreational activities such as motor boating and burning of campfires.

Adjacent Land Uses

Drilling and production of state-owned oil and gas is expected to continue from state tracts adjacent to the Park boundaries, either on the east in the Gulf of Mexico, on the west in the Laguna Madre, or to the north on Texas GLO lands. Exploration and development of federally owned oil and gas in the Gulf of Mexico's outer continental shelf will also continue. In addition, tankers transporting products through the Gulf of Mexico could potentially impact the Park should there be a spill incident. Alternative energy projects are currently proposed around the Park. These include a geothermal energy project on 2,800 acres adjoining the Park's northern boundary; a 152 turbine windfarm to the Park's west on property owned and managed by the Kenedy Foundation; a windfarm project on 7,000 acres of South Padre to the Park's south; and a 40,000 acre lease to the Park's east for the development of a 400 turbine windfarm. These activities have the potential to impact all park resources and values.

3.1. Impacts on Geology and Soils

Methodology

To analyze the impacts on geology and soils, all available information on geological resources in the Park was compiled from research, previous plans of operations, and park planning documents.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Padre Island consists of Pleistocene and Holocene sands, silts, clays, and shell fragments, which were transported by wind and water (DOI, 2000). According to the Natural Resources Conservation Service (NRCS), soil pH generally ranges from 5.5 to 8.0, with higher pH occurrences nearer the Gulf side of the island. Soils are comprised of the Galveston and Mustang series on the majority of the barrier island. Soil types in the project area consist of Mustang-Panam complex (491) on lower poorly drained swales. Mustang series is characterized as being poorly drained shallow soils with depth to water at 10-30 inches. The Panam series is characterized as being somewhat poorly drained, deep sandy soil with depth to water at 30- 50 inches. A parkwide soil survey was completed by the NRCS in 2004.

Impacts of Alternative A, No Action, on Geology and Soils

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on geology and soils. However, impacts on geology and soils in the analysis area would continue as a result of vehicle use along the Gulf beach and the continued operation and maintenance of the A8 well.

Drilling and production of the A8 well has resulted in the long-term disturbance of 1.7191 acres for the producing life of the well, resulting in localized, short- to long-term, negligible to minor, adverse impacts.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on geology and soils throughout the Park could result from the continued operation of 17 nonfederal oil and gas operations within the Park on 399 acres, park developments on 391 acres, future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the Park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time.

Park staff, 17 oil and gas operations, and an estimated 374,850 park visitors (49% of total visitation) use the 7-mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include two and four-wheel drive vehicles, recreational vehicles, and an occasional larger, multi-axle vehicle associated with routine maintenance activities at the oil and gas sites located throughout the Park. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other

lubricants on the beach. The intensity of impacts would be variable, depending on the number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August; and would be concentrated in the first five miles of the Gulf beach. Vehicle traffic associated with oil and gas operations normally use four-wheel drive trucks; however, a large, multi-axle vehicle like a vacuum truck, would travel the beach corridor approximately every 10 days. Vehicle use on the 7-mile segment of Gulf beach would result in localized, short-term, negligible to minor, adverse impacts.

The existing operation of the HPL and Duke Energy gas pipelines located to the west of the proposed well site would continue to impact geology and soils within the analysis area. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or All-Terrain Vehicle (ATV) to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with mitigation measures, cathodic protection, and prompt response in the event of a spill, the intensity of impacts would be reduced to negligible to minor, localized, short-term adverse impacts.

Leaks and spills from oil and gas operations in the Park could result in localized, short to long-term, negligible to major adverse impacts on geology and soils. However, with the mitigation measures included in the operator's plan of operations, and prompt response in the event of a spill, the intensity of impacts is reduced. Spills from oil and gas operations and tankers in the Laguna Madre or Gulf of Mexico, could be transported by water into the Park and cause widespread impacts that would require long-term clean-up and remediation. Park, commercial and recreational vehicle use along the beach and off road vehicle use within the Park would continue to compact and rut soils. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels near the Park could increase sedimentation within the Laguna Madre portions of the Park. Cumulative impacts on geology and soils throughout the Park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on park geology and soils, primarily along park shorelines.

Conclusion

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on geology and soils. Existing uses, including vehicle access along the Gulf beach and continued operation of the A8 well would result in localized, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to

minor, adverse impacts, localized near developments throughout the Park. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Because there would be no major, adverse impacts on geology and soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's geology and soil resources or values.

Impacts of Alternative B, Proposed Action, on Geology and Soils

Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in short-term disturbance on 2.5503 acres to expand the wellpad. Additional flowlines would be placed within the previously disturbed flowline corridor only if estimated flow rates exceed the capacity of the existing flowlines. Existing impacts on geology and soils within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with vehicle use on the 7-mile segment of Gulf beach and continued operation of two gas pipelines and the A8 well.

Well pad expansion would directly impact 2.5503 acres of undisturbed soils. The area would be leveled and crushed limestone brought in to build the pad expansion. Mitigation measures to protect soils during the drilling and production phase of operations would include constructing a sloped 6' x 6' corrugated steel well cellar, and lining the crushed limestone pad with a 20-millimeter thick polyethylene liner that would extend over a three foot high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation into native soil underlying the pad. If the proposed wells enter production, the wellpad would be reduced to 1.5503 acres, resulting in localized, short-term, minor, adverse impacts on geology and soils until the site is satisfactorily reclaimed.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation.

The continued use of the site for production operations would result in localized, long-term, minor adverse impacts on geology and soils. Wellpad reduction would involve removing imported material, re-contouring the site to natural conditions, and re-establishing native vegetation to 70% pre-disturbance cover. No new flowlines would

need to be installed as the existing production and monitoring facilities are estimated to be adequate to handle the flow from all proposed wells.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced to short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the Park.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on geology and soils throughout the Park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the Park, resulting in short to long-term, negligible to minor, adverse impacts localized near developments. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Maintenance of the wellpad expansion for the proposed ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would directly impact up to 2.5503 acres, resulting in short- to long-term, negligible to minor, adverse impacts on geology and soils in the analysis area.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and could possibly produce hydrocarbons, resulting in the short-term disturbance to geology and soils on 2.5503 acres, and the long-term disturbance of 1.5503 acres (Table 11). Maintenance of the access road/flowline route, production facility; well pad expansion, drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the Park.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with §1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on geology and soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS

planning documents, there would be no impairment of the Park's geology and soil resources or values.

Table 11. Breakdown of Acreage Calculations.

Proposed	Existing	Cumulative	Long-term
0.8312 acres for wellpad expansion	1.7191 acres for wellpad 3.40 acres road/ flowline 5.12 acres presently disturbed	2.5503 acres for wellpad 3.40acres for road/ flowline 5.95 acres of total disturbance	5.95 acres of total disturbance - 1.0 acre wellpad reduction 4.95 acres of long-term disturbance

3.2. Impacts on Water Resources and Floodplains

Methodology

To analyze the impacts on water resources and floodplains, all available information on water resources and floodplains in the Park was compiled including: personal observations, consultation with other agencies, the Park's approved OGMP, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

The Park is located on a largely undeveloped barrier island in southern Texas, along the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The Park's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre, back-island dunes, and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Park. Two natural and 20 manmade dredge material islands in the Laguna Madre also lie within the Park.

Foredunes provide protection from hurricanes and tropical storms for the island's backcountry and the Texas mainland. The dunes are fragile and once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand, resulting in a line of dunes forming parallel to the beach that varies in height from less than six feet to approximately 50 feet above sea level. This primary dune line extends the entire length of the Park, broken only in a few places where storm washover channels have occurred, or road cuts have been constructed.

The A8 wellpad is sited on upland habitat, and the proposed wellpad expansion would encompass uplands as well as previously undisturbed wetlands. Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water at the site is approximately two to five feet deep, depending upon the season.

According to the Final Oil and Gas Management Plan/Environmental Impact Statement (DOI, 2000), and Federal Emergency Management Agency floodplains maps, most of the Park and all of the project area lies within the 100-year floodplains with the exception of the higher dune areas. Hurricane season begins June 1 and continues through November 30.

The Park will provide a draft floodplains statement of findings to the various state and federal agencies required by the NPS's Director's Order and Procedural Manual #77-2: Floodplain Management.

Impacts of Alternative A, No Action, on Water Resources and Floodplains
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on water resources and floodplains. However, impacts on water resources and floodplains in the analysis area would continue as a result of vehicle access along 6.9 miles of Gulf Beach and the Pan Am Access Road, and the continued operation of the A8 well.

Operation of the A8 well requires the long term-occupancy of 1.7191 acres within the 100-year floodplain.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on water resources and floodplains throughout the Park could result from the continued operation of 17 nonfederal oil and gas operations within the Park on 399 acres, park development on 391 acres, future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the Park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Dredging and

maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the Park could increase turbidity to Laguna Madre waters inside the Park. Other activities that could impact water resources and floodplains park wide include prescribed fires, future park developments, routine maintenance of park roads, park, commercial and recreational vehicle use, and recreational activities.

Park staff, 17 oil and gas operations, and an estimated 374,850 park visitors (49% of total visitation) use the 7-mile segment of Gulf beach for vehicular access. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, adverse impacts on water quality of the Gulf of Mexico.

Visitor uses on the beach include: camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The primary visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach. Visitor uses would result in localized and short-term, negligible, adverse impacts on water quality of the Gulf.

The A8 well and the HPL pipeline located to the west of the well site would continue to impact water resources and floodplains within the analysis area. The Park is located along the 100-year floodplains and, with the exception of the foredunes, there is no practicable alternative to siting these operations outside the 100-year floodplains. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and annually excavating small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. These activities could cause sedimentation during times when the work area is inundated; however, it is expected that work of this nature would be scheduled during dry periods (winter months). There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating surface or groundwater. If leaks or spills occur during flood events, contaminants could be transported via surface waters great distances, thereby increasing flood hazards and degrading floodplains values. Impacts from spills could be localized to widespread, with minor to major, adverse impacts on water resources and floodplains. However, with mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing and future development of oil and gas access roads and pads within the Park could result in altering surface water flow and locally increasing soil erosion. Leaks and spills from oil and gas operations could be localized to widespread, with minor to major, impacts on water resources and floodplains. Spills from oil and gas operations or tankers in the Laguna Madre or Gulf of Mexico could be transported by water into the Park and cause widespread impacts and result in long-term clean-up and remediation.

Cumulative impacts on water resources and floodplains throughout the Park are expected to be localized near developments, with short to long-term, negligible to minor,

adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, adverse impacts on the Park's water resources and floodplains, primarily along the Park's shorelines.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 7-mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the A8 well would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the Park. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts.

Because there would be no major, adverse impacts on water resources and floodplains whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's water resource and floodplain resources or values.

Impacts of Alternative B, Proposed Action, on Water Resources and Floodplains
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and produced, resulting in the short-term disturbance of 2.5503 acres within the 100-year floodplain. Mitigation measures are in place to restore the loss of water resources. Existing impacts on water resources and floodplains within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with park, commercial, and recreational vehicle use on the 7-mile Gulf beach, visitor use on the beach, and the continued operation of two gas pipelines and the A8 well.

There is no practicable alternative to siting the proposed wellpad expansion outside the 100-year floodplains because the entire park, with the exception of the higher dunes, is located within floodplains. Impacts could result from changes in surface and subsurface hydrology and risk of contamination from contaminating and hazardous substances. The application of mitigation measures and conditions of approval in the plan of operations would reduce the potential for these impacts on occur.

If the proposed wells are not placed in production, the wellpad would be reduced to 1.5503 acres, surface materials would be removed, the area re-contoured and re-vegetated, resulting in a localized, short to long-term, negligible, adverse impact on water resources and floodplains.

The drilling of the three wells would require the use of approximately 7,500 bbls (315,00 gallons) per well for a total of 945,000 gallons of fresh water to drill all three wells. The water source for the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be the BNP (Vector) A-8 well. This well was converted to a water well to drill the Dunn-Peach # 1 well.

The potential impact associated with utilizing a water well includes depletion or contamination of the aquifer in the Goliad formation located between 1,400 and 1,700 feet. The Texas Commission on Environmental Quality (formerly TNRCC) has identified useable-quality ground water in this zone to a depth of 1,700 feet; and the Railroad Commission of Texas and NPS have applied mitigation measures to ensure that drilling, production and plugging operations would not impact ground water quality.

Constructing the wellpad expansion, maintenance of the access road, production facility, and drilling and producing the wells would result in impacts similar to those described under No Action, with localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation, and would also re-establish surface water circulation and floodplain functions and values along the restored road corridor.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on water resources and floodplains throughout the Park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the Park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor, adverse impacts localized near developments throughout the Park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled, resulting in the short-term occupancy of 100-year floodplains. Producing the wells would result in localized, short to long-term, negligible to minor, adverse impacts on water resources and floodplains. Cumulative

impacts from existing and future oil and gas operations in and adjacent to the Park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the Park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on water resources and floodplains whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's water resource and floodplain resources or values.

3.3. Impacts on Wetlands

Methodology
To analyze the impacts on wetlands, all available information on water resources in the Park was compiled including: personal observations, consultation with other agencies and wetland specialists, the Park's approved OGMP, landcover classification data, and wetland maps.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment
Wetland delineation completed for the preexisting A8 well determined that the impacted wetlands were under the jurisdiction of the U. S. Army Corps of Engineers. NPS Director's Order #77-1: Wetland Protection and its accompanying Procedural Manual identify the Cowardin wetland definition as the NPS standard for delineating wetlands for use in determining the extent of impacts. On this project site, the wetlands delineated by the COE are the same as those that would be delineated using the Cowardin definition.

The additional proposed wells require an expansion of the existing pad from 1.7191 acres to 2.5503 acres. This expansion already occurred without the knowledge or approval from the NPS.

Impacts of Alternative A, No Action, on Wetlands
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on wetlands. However, impacts on wetlands in the analysis area would continue as the result of vehicle use along the 6.9-mile segment of Gulf beach and continued operation of the A8 well.

The wellpad has been expanded to 2.5503 acres, which requires that the wellpad be reduced to 1.7191 acres. The park would be compensated at a ratio of 2:1 for the restoration of wetlands impacted by the expansion and described in Appendix C.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on wetlands throughout the Park could result from the continued operation of 17 nonfederal oil and gas operations within the Park on 399 acres, park development on 391 acres, future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the Park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the Park could increase sedimentation in the Laguna Madre waters inside the Park, resulting in the covering of seagrasses. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wetlands parkwide include prescribed fires, future park developments, routine maintenance of park roads, park and visitor vehicle use, and recreational activities.

Park staff, 17 oil and gas operations, and an estimated 374,850 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 7-mile segment of Gulf beach for vehicular access. Vehicle access on the Gulf beach is recommended above the Gulf beach "wet line" to prevent excessive erosion along the beach. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone, resulting in localized, long-term, negligible,

indirect adverse impacts on the marine wetlands along the 7-mile segment of Gulf beach.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The primary visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized, long-term, negligible, direct, and indirect adverse impacts on the marine wetlands along the 6.9-mile segment of Gulf beach.

The HPL gas pipeline is located west of the A8 well and proposed wellpad expansion. The pipeline is under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of the HPL pipeline are located within the analysis area for the proposed ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells, and within emergent wetlands. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating small sections of the pipelines to inspect the integrity of the pipe. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed the pipeline in emergent wetland areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of wetlands within the immediate area of work. If there is standing water, sedimentation could indirectly impact a larger area around the worksite.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating emergent wetlands. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wetlands beyond the immediate area and degrading wetlands values. Impacts from spills could be serious, with effects ranging from localized to widespread, with minor to major, adverse impacts on wetlands. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced.

Cumulative impacts on wetlands throughout the Park are expected to result in short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the Park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's wetlands, primarily along the Park's shorelines.

Conclusion

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on wetlands. Existing vehicle use on the 7-mile segment of Gulf beach, visitor use on the beach, continued operation of two gas pipelines, and the A8 well would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's wetlands, primarily along the Park's shorelines.

Because there would be no major, adverse impacts on wetlands whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's wetland resources or values. However, the Park would be compensated 2:1, approximately 1.66 acres, for the restoration of wetlands that were destroyed when this wellpad was expanded without the approval or knowledge of the NPS.

Impacts of Alternative B, Proposed Action, on Wetlands

Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may produce hydrocarbons, resulting in short-term, direct impacts on 0.8312-acre of emergent wetlands (NPS) associated with the expansion of the existing wellpad. This expansion already occurred prior to approving the plan of operations, and prior to the approval and knowledge by the NPS. A 2:1 wetland compensation project would occur under this action for the restoration of the 0.8312-acre wellpad expansion.

BNP would use a 7-mile segment of Gulf beach to access the A8 wellpad, access road, and production facility. BNP would be required to confine heavy equipment use above the "wet-line" (see Tables 5, 6, and 7 for additional mitigation measures and operating stipulations). As described above under No Action, poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 7-mile segment of Gulf beach.

Existing impacts on wetlands within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands associated with vehicle access along the 7-mile segment of Gulf beach, visitor use on the beach, and continued operation of the two gas pipelines and the A8 well.

Heavy equipment access above the “wet-line” along the 7-mile segment of Gulf beach and wellpad expansion would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on wetlands throughout the Park would be similar to those described under No Action, with short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park’s wetlands, primarily along the Park’s shorelines.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. If the wells were placed into production, there would be no new impacts on emergent wetlands associated with the flowline since existing flowlines are anticipated to be capable of handling predicted additional gas flow.

Heavy equipment access above the “wet-line” along the 7-mile segment of Gulf beach and wellpad expansion would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park’s wetlands, primarily along the Park’s shorelines.

This operation would require a wellpad expansion of 0.8312-acre. Prior to the acceptance of BNP’s plan of operation for these wells, this expansion occurred without the approval or knowledge of the Park. As this expansion was necessary for the operation, the NPS would not require BNP to remove the expanded section of pad, but rather, would accept the expansion and designate the entire 0.8312-acre expansion as a wetland.

The NPS adheres to the administration’s “no-net loss” policy for wetlands protection. Since the total wetland impact area is greater than 0.1 acre, and the wetlands are

considered of high quality or high functional value, compensatory mitigation is necessary. The Park has recognized a suitable wetland restoration project that would be used as 2:1 equivalent compensation. This wetland compensation project would consist of restoring ~1.7 acres of a prior oil and gas operation. This site's road was built-up onto a tidal flat. This project would consist of removing the former road and leveling it to an altitude or height that is equal to the tidal flat, thus restoring hydrology to 95 acres of tidal flat (see Appendix C, Figure 5).

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on wetlands whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS documents, there would be no impairment of the Park's wetland resources or values.

3.4. Impacts on Vegetation

Methodology
To analyze the impacts on vegetation, the Park utilized research; the Park's approved OGMP; other park plans; personal observations; and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be

measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment

Drawe (1992) provides a detailed characterization of species composition and abundance in the various vegetation types on Padre Island. Dr. Drawe identified 140 species of plants, including 27 grasses, 92 forbs, 3 cacti, 3 wood species, and 15 other species.

The area within 1,500 feet of the drilling rig and 100 feet of the Pan Am Road is comprised of a diverse group of habitats. Moderate to high dune fields were typically dominated by seacoast bluestem (*Schizachyrium littorale*), camphor weed (*Hetrotheca subaxillaris*), and gulf dune paspalum (*Paspalum monostachyum*), with partridge pea (*Cassia fasiculata),* sea oats (*Uniola paniculata*), slim leaf dicantheleum (*Dichantheleum linearifolium*), marsh hay cordgrass (*Spartina patens*), seaside pennywort (*Hydrocotyle bonariensis*), white stem wild indigo (*Baptisia leucophaera*), western ragweed (*Ambrosia psilostachya*), narrow-leaf sumpweed (*Iva angustifolia*), eastern prickly pear (*Opuntia compressa*), and silver-leaf croton (*Croton punctatus*). Moderate to high dune fields are typically 75% -95% covered with vegetation. Most of the proposed project area is comprised of grasslands. Hummocky grasslands are typically dominated by narrow-leaf sumpweed, western ragweed, marshhay cordgrass, and camphor daisy (*Maechaeranthera phyllocephala*) at lower elevations. Seacoast bluestem, gulf dune paspalum, and seaside pennywort dominate higher elevations. Other species include camphorweed, purple mist flower (*Eupatorium coelestinum*), seashore dropseed (*Sporobolus viriginicus*), partridge pea, white stem wild indigo, prairie clover (*Dalea sp.*), sea ox-eye (*Borrichia frutescens*), and bushy bluestem (*Andropogon glomeratus*). Hummocky grasslands are typically 95%-100% covered with vegetation.

Scattered depressions within the grasslands have alternating dominance of bulrush (*Scirpus americanus*), narrow-leaf sumpweed, seashore dropseed, frog-fruit (*Phyla nodiflora*), and gulf dune paspalum, with sea lavender (*Limonium corolinianum*), and slim leaf dicanthelium. Vegetation coverage in these depressions is approximately 75%-96%. A distinct shallow depression among the grasslands is dominated by sea ox-eye daisy and seashore dropseed. Other species include narrow-leaf sumpweed, gulf dune paspalum, frog fruit, and bulrush. Vegetation coverage in this depression is 90%. A scar from an existing pipeline exists near the Pan Am Access Road and is slightly elevated and dominated by narrow-leaf sumpweed and sea ox-eye with seashore dropseed. Vegetation coverage along the pipeline scar is approximately 85%.

A sparsely vegetated sand flat with scattered hummocks lies to the north and west of the project site. The hummock areas within this sand flat consist of the same vegetation community as previously described in hummocky grasslands. Sand flat vegetation is typically dominated by seashore dropseed, narrow-leaf sumpweed, and sea lavender, with higher fringes dominated by sea ox-eye and low patches dominated by shoregrass. Other species include gulf dune paspalum, seaside golden rod (*Salidago sempervirens*), seacoast bluestem, slim-leaf dicanthelium, and camphor daisy. Vegetation coverage within the sand flat is approximately 50%-80%. A few transitional areas are typically 25-foot wide and dominated by bulrush. Other species within the

transitional areas include seashore dropseed, marshhay cordgrass, sea lavender, and purple mistflower.

Salt marsh areas near the Laguna Madre shoreline are dominated on the lower fringe by saltwort (*Batis maritima*) and shoregrass. The higher salt marsh area was dominated by seashore saltgrass, marshhay cordgrass, and sea ox-eye. Other species include sea lavender, Carolina wolfberry, bulrush, and narrow-leaf sumpweed. Vegetation coverage for salt marsh areas is typically 75%-95%. One unvegetated habitat (a tidal algal flat) exists within the allotted radius of the project.

Impacts of Alternative A, No Action, on Vegetation
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on vegetation. However, impacts on vegetation in the analysis area would continue as the result of the continued operation of the A8 well. Production of the A8 well results in the long-term occupancy of 1.7191 acres.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on vegetation throughout the Park could result from the continued operation of 17 nonfederal oil and gas operations within the Park on 399 acres, park development on 391 acres, and future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting vegetation parkwide include prescribed fires, future park developments, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

The HPL and Duke Energy gas pipelines are located west of the A8 wellpad. The pipelines are operating under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of the HPL pipeline are located within the analysis area for the proposed ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells. The pipeline corridor is fully vegetated. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the pipeline to inspect the integrity of the pipeline. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed the pipeline in areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of vegetation within the immediate area of work.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and damaging or killing vegetation. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced.

Existing uses, including the continued operation of the two gas pipelines and the A8 well would result in localized, long-term, negligible to minor, adverse impacts on vegetation within the analysis area.

Existing and future development of oil and gas-related roads, pads and flowlines within the Park could directly and indirectly impact vegetation. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced.

Cumulative impacts on vegetation throughout the Park are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled resulting in no new impacts on vegetation. Existing uses, including the continued operation of two gas pipelines and the A8 well, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's vegetation, primarily along the Park's shorelines.

Because there would be no major, adverse impacts on vegetation whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's vegetation resources or values.

Impacts of Alternative B, Proposed Action, on Vegetation
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Wellpad expansion would directly impact and additional 0.8312-acre of upland vegetation. If the

wells enter production, the expanded wellpad (2.5503 acres) would be reduced to 1.7191 acres and the 0.8312-acre expanded area would be restored, resulting in localized, short-term, minor, adverse impacts on vegetation until the site is satisfactorily restored. The continued use of the site for production operations would result in localized, long-term, minor adverse impacts on vegetation. The wellpad reduction would remove 1.0 acre of imported material, resulting in a localized, short-term, minor, adverse impact on vegetation until the site is re-vegetated to 70% native cover.

Over the long-term operation of the flowline, occasional disturbance to vegetation within the flowline corridor could occur as a result of routine maintenance, including access over the corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the flowline to inspect the integrity of the line.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on vegetation. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Mitigation measures include the construction of a sloped 6' x 6' corrugated steel well cellar and lining the pad underneath the caliche with a 20 millimeter thick polyethylene liner that would extend over a three-foot high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation.

Direct and indirect impacts on vegetation could occur as a result of the introduction of exotic vegetation resulting from the placement of fill material or the use of construction equipment. However, with the mitigation measures included with this alternative, the potential and intensity of impacts would be reduced.

Upon plug and abandonment of the wells, the imported crushed limestone or cement would be removed, the site re-contoured to natural conditions, and native vegetation re-established to 70% cover. Plugging and reclamation activities would result in a localized, short-term, minor, adverse impact on vegetation.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts from existing and future oil and gas operations in the Park, park developments and operations, and visitor uses, resulting in short to

long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. If the well were placed into production, there would be short-term loss of vegetative cover on 2.5503 acres and a long-term loss on 1.5503 acres. Wellpad expansion and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the Park.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on vegetation whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant National park Service planning documents, there would be no impairment of the Park's vegetation resources or values.

3.5. Impacts on Natural Soundscapes

Methodology
To analyze the impacts on natural soundscapes, the Park utilized personal observation, research, and the Park's approved OGMP**.**

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable.

Minor: the impact is slight but detectable.

Moderate: the impact is readily apparent.

Major: the impact is severely adverse.

Affected Environment
The natural quiet of Padre Island National Seashore contributes heavily to a positive visitor experience. Surveys in 1987 (Ditton and Gramann) and 1989 (Gramann and Ruddell) examined visitor motive for coming to Padre Island. The top motives include "to get away," "be outdoors," and "for rest and relaxation." In 1998, the NPS contracted Dr. Jim Foch of the Livermore Laboratory to record background sound measurements at various locations in the Park. A useful measure of background sounds is the sound level observed 90% of the time, abbreviated L90. Although measurements were not recorded at the exact location of the project area, the relatively constant sound level of the surf (about 62 decibels) at 60 yards from the water) is considered the "background" noise level along the Gulf shoreline. The L90 levels inland fall off in a systematic manner based on the distance from the surf (Foch, 1998).

Impacts of Alternative A, No Action, on Natural Soundscapes
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on natural soundscapes. However, impacts on natural soundscapes in the analysis area would continue as the result of vehicle use along the 6.9-mile segment of Gulf beach and the continued operation of the A8 well.

Vehicle use along the Gulf beach could occasionally result in sounds that exceed the 60-decibel background sound levels when drivers honk horns and operate vehicle engines louder than normal.

Cumulative Impacts
Under Alternative A, cumulative impacts on natural soundscapes throughout the Park could result from the continued operation of 17 nonfederal oil and gas operations within the Park and new drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to natural soundscapes include routine maintenance of park roads, park and visitor vehicle use, and recreational activities such as motor boating and playing radios at a high volume. On occasion, military overflights introduce noise audible in the Park.

Existing operation of the HPL and Duke Energy pipelines located to the west of the existing wellpad could impact natural soundscapes more readily due to the background sound measurements being very low, in the 30 to 45 decibel range. Routine maintenance of the pipeline from using a backhoe/front loader would be heard several hundred feet away. Backcountry visitor use is uncommon, and visitors recreating on the Gulf beach would not hear these activities. Due to the predominant southeast winds, Laguna Madre visitors would hear maintenance and other types of oil and gas activities from within the Park on certain days when environmental conditions favor sound movement.

Existing uses, including vehicle access along the Gulf beach, recreational boating within the Laguna Madre, visitor uses on the beach, and continued oil and gas operations would result in short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area.

As a result of these activities, cumulative impacts on natural soundscapes throughout the Park are expected to result in short to long-term, negligible to moderate, adverse impacts, localized near sources.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on natural soundscapes. Existing vehicle use on the 7-mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the A8 well would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the Park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the Park.

Because there would be no major, adverse impacts on natural soundscapes whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's natural soundscape resources or values.

Impacts of Alternative B, Proposed Action, on Natural Soundscapes
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be completed to produce hydrocarbons.

Existing impacts on natural soundscapes within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible to minor, adverse impacts associated with vehicle use on the 7-mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the A8 well.

The wellpad expansion and routine maintenance activities during production would result in localized, short-term increases in noise associated with vehicle traffic, heavy equipment, and ground-disturbing activities. Elevated noise would be greatest during the short-term drilling of the wells. Sound levels could reach 90 decibels on the drill rig. At 1,500 feet from the drill rig, sound levels would approach background levels ranging from 30 to 45 decibels depending on wind direction and speed. Elevated noise during the drilling phase would result in localized, short-term, minor to moderate, adverse impacts on natural soundscapes within 1,500 feet of the wellpad. It is possible that on a calm day visitors can hear the equipment farther than 1,500 feet. During the long-term production life of the well, occasional workover operations could occur at five to 10 year intervals and take one to two weeks to complete. Workover operations would increase noise levels, but at a much lower intensity and duration than drilling a well. Production operations would result in localized, long-term, negligible to minor, adverse impacts from routine daily pickup truck traffic, periodic larger truck traffic necessary to remove produced liquids, and the use of a compressor to remove gas if necessary.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of

an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Ground-disturbing equipment and vehicles would introduce elevated noise into the area. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on natural soundscapes throughout the Park would be similar to those described under No Action, with existing and future oil and gas operations in the Park, routine park operations, visitor uses, and occasional military overflights result in localized, short to long-term, negligible to moderate, adverse impacts near sound sources.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Construction of the wellpad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to moderate, adverse impacts on natural soundscapes localized near sources throughout the Park.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on natural soundscapes whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's natural soundscape resources or values.

3.6. Impacts on Wildlife

Methodology

To analyze the impacts on wildlife, the Park utilized research, the Park's approved OGMP, other park plans, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment

During field investigations for the A8 well and the proposed ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells, personnel made notes of wildlife observed in the area of the access road, flowline route, and wellpad. The species that were observed include the Mourning Dove (*Zenaida macroura*), coyote (*Canis latrans*), Black-tailed jackrabbit (*Lepus californicus*), and white-tailed deer (*Odocoileus virginianus*). The diverse vegetation offers feeding opportunities for a wide variety of birds and other wildlife. In addition to the above, NPS staff have observed White-tailed Hawks (*Buteo albicaudalus*), Black Terns (*Chlidonias niger*), and Meadowlarks (*Sturnella* sp.)

Birds. Continental Shelf Associates (CSA), Inc. (1985), Chapman (1981, 1988), Brown and Huey (1991) and U.S. Department of the Interior (2000), provide data and discussions of the wildlife utilization of the project area. Ecoservices (1993) surveyed bird activity north and south of the project site from July 1992 through April 1993. Approximately 281,000 birds from 97 species were identified and counted. Important species included the Brown Pelican (*Pelecanus occidentalis*), Piping Plover (*Charadrius melodus*), Snowy Plover (*C. alexandrinus*), Peregrine Falcon (*Falco peregrinus*), and the Reddish Egret (*Egretta rufescens*). Species of geese, duck, gull, tern, sandpiper, and other beach species were also observed. Padre Island has documented 322 species of birds, including migratory and resident waterfowl, shorebirds, neo-tropical songbirds, and raptors. During the fall and winter, Sandhill Cranes (*Grus canadensis*)

frequent the west side of Padre Island, near Bird Island Basin. The cranes can be observed feeding in the wetlands and uplands of the Park. Many bird species utilize ephemeral and freshwater ponds. They include Northern Bobwhite Quail (*Colinus virginianus*), Northern Harrier (*Circus cyaneus*), Sandhill Crane, Great Egret (*Casmerodius albus*), Great Blue Heron (*Ardea herodias*), Long-billed Curlew (*Numenius americanus*), Sanderling (*Caldris alba*), Killdeer (*Charadrius vociferus*), terns, ducks, and grebes (DOI, 2000).

Mammals. Mammals likely to utilize habitat in the general project area include the gulf coast kangaroo rat (*Dipodomys compactus*), south Texas pocket gopher (*Geomys personatus*), northern grasshopper mouse *(Onychomys leucogaster*), eastern mole (*Scalopus aquaticus*), raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*), and Mexican free-tailed bat (*Tadarida brasiliensis mexicana*) (CSA, 1985; DOI, 2000). Whitetail deer are another species that are frequently observed in the project area.

Reptiles and Amphibians. Reptiles likely to utilize habitat in the general project area include the keeled earless lizard *(Holbrookia propinqua propinqua*), whiptail lizard (*Cnemidophorus sp*.), western diamondback rattlesnake (*Crotalus atrox*), slender glass lizard (*Ophisaurus attenuatus*), western massasauga rattlesnake (*Sistrurus tergeminus*), western hog-nosed snake (*Heterodon nasicus*), glossy snake (*Arizona elegans*), checkered garter snake (*Thamnophis marcianus*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvius*), red-eared slider (*Trachemys scripta elegans*), and the yellow mud turtle (*Kinosternon flavescens*) (Chapman, 1988; CSA, 1985; and DOI, 2000). The ornate box turtle (*Terrapene ornata ornata*) has also been reported on the island (CSA, 1985). Amphibians found on the island include the northern leopard frog (*Rana pipiens*), green tree frog (*Hyla cinerea*), and Hurter's spadefoot toad (*Scaphiopus holbrookii hurterii*).

Impacts of Alternative A, No Action, on Wildlife

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on wildlife. However, impacts on wildlife in the analysis area would continue as the result of vehicle use along the 6.9-mile segment of Gulf beach and the continued operation of the A8 well

Vehicles on the Gulf beach would include two and four-wheel drive vehicles, and on occasion larger, multi-axle vehicles associated with routine maintenance activities at the A8 well.

Vehicle access would result in short-term movement of bird species utilizing the shoreline for loafing or resting. Shorebirds would take temporary flight when vehicles approach too close and land to resume their activity after vehicles have passed. Displaced wildlife could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Vehicles could rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone. In a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers, 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. Some loss of benthic organisms would be expected due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Vehicle impacts

would result in localized, short-term, negligible to minor, adverse impacts on shorebirds and benthic organisms. Heavy equipment related to existing extraction activities will be required to travel above the wet line to prevent unnecessary impacts on benthic organisms and shorebird species.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on wildlife throughout the Park could result from the continued operation of 17 nonfederal oil and gas operations within the Park on 399 acres, park developments on 391 acres, future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres, spills from oil and gas activities located adjacent to the Park, including tanker traffic in the Gulf of Mexico, and an estimated 374,850 park visitors (49% of total visitation). Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the Park could increase turbidity in the Laguna Madre waters inside the Park. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wildlife parkwide include prescribed and wildland fires, future park development, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The primary visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach. Visitor uses on the beach would displace wildlife, primarily shorebirds, resulting in localized, negligible to minor, adverse impacts on shorebirds.

Existing and future development of oil and gas-related roads, pads and flowlines within the Park would result in the direct loss of wildlife habitat. Displaced wildlife could potentially die of natural causes or displace other wildlife. There is a remote possibility for the incidental take of wildlife during the course of operations from vehicle use, construction activities, or from ingesting leaked or spilled hydrocarbons and contaminating or hazardous substances. Leaks and spills from oil and gas operations could be serious, with negligible to moderate impacts on wildlife. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the Gulf or Laguna Madre shores, causing widespread impacts and resulting in long-term clean-up and remediation. Elevated noise levels, particularly during drilling operations, could displace wildlife, but most wildlife is expected to return after becoming acclimated to some noise disturbance. Mitigation measures listed in Table 5, including use of a diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, routine monitoring and inspection of operations are expected to substantially reduce the impacts on wildlife to short to long-term, negligible to minor, adverse impacts, localized around developments throughout the Park.

The HPL and Duke Energy pipelines located west of the A8 well are under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed ST 991 #1, Dunn-McCampbell

12A, and Dunn-McCampbell 11A wells. Routine maintenance along the pipeline corridors could include work crews occasionally accessing the pipeline corridor by truck or ATV to inspect surface equipment, excavating small sections of the lines to inspect the integrity of the pipelines. A backhoe/front-loader could be used to excavate and replace segments of pipe. Use of heavy equipment could result in the incidental take of individuals, alter habitat by rutting or compacting soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Damage or removal of soil and vegetation along segments of the pipelines would result in the short-term modification of wildlife habitat. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced. Impacts from the continued operation and maintenance of the two pipeline segments within the analysis area would result in localized, short to long-term, negligible to minor, adverse impacts on wildlife.

Cumulative impacts on wildlife throughout the Park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments and activities throughout the Park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Park's wildlife, primarily along the Park's shorelines.

Conclusion

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on wildlife. Existing vehicle use on the 7-mile segment of Gulf beach, visitor use on the beach, and continued operation of two gas pipelines and the A8 well, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the Park. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Because there would be no major, adverse impacts on wildlife whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's wildlife resources or values.

Impacts of Alternative B, Proposed Action, on Wildlife

Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and the existing A8 wellpad expanded, resulting in short-term loss of wildlife habitat on 2.5503 acres and the long-term occupancy of 1.5503 acres

Existing impacts on wildlife within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts associated with vehicle access along the 7-mile segment of Gulf beach, visitor use on the beach, continued operation of the two gas pipelines, and the A8 well.

BNP would use a 7-mile segment of Gulf beach to access its existing A8 wellpad (proposed expansion site). BNP would be required to confine heavy equipment use above the "wet-line" to minimize impacts on shorebirds and benthic organisms (see Tables 5, 6, and 7 for mitigation measures and operating stipulations). As described above under No Action, vehicles could rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicle impacts would result in localized, short to long-term, negligible to minor, indirect, adverse impacts on shorebirds and benthic organisms.

If the wells are placed in production, the wellpad would be reduced by 1.0 acre, resulting in localized, short-term, negligible to minor, adverse impacts on wildlife. Additional flowline construction would not be required as part of the proposed plan.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on wildlife; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures include the use of a diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels. For a complete listing see Table 5.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Ground-disturbing equipment and vehicles would introduce elevated noise into the area that could displace wildlife. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation, and would result in recovery of wildlife habitat.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on wildlife throughout the Park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and

operations, and visitor uses, resulting in short to long-term, negligible to minor adverse impacts localized near developments; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. If the wells are placed into production, there would be short-term loss of wildlife habitat on 2.5503 acres, and the long-term occupancy of 1.5503 acres. Wellpad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the Park.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on wildlife whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's wildlife resources or values.

3.7. Impacts on Species of Management Concern

The Endangered Species Act terminology used to assess impacts on listed species is as follows:

> ***No effect:*** When a proposed action would not affect a listed species or designated critical habitat.
>
> ***May affect/not likely to adversely affect:*** Effects on special status species or designated critical habitat are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or completely beneficial.
>
> ***May affect/likely to adversely affect****:* When an adverse effect to a listed species or designated critical habitat may occur as a direct or indirect result of proposed actions and the effect is either not discountable or completely beneficial.

Is likely to jeopardize proposed species/adversely modify proposed critical habitat): The appropriate conclusion when the NPS or the U.S. Fish and Wildlife Service identify situations that could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within or outside park boundaries.

Information on state and federally protected species within Padre Island National Seashore was gathered from state and federal permitting agencies, research, personal observation, consultation with specialists, and reference materials. Known impacts caused by road and beach access by visitors and existing gas operations were also considered.

The NPS has developed the following threshold definitions under the National Environmental Policy Act guidelines. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: No federally listed species would be affected or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. Negligible effect would equate to a "no effect" determination in U.S. Fish and Wildlife Service terms.

Minor: The alternative would affect an individual(s) of a listed species or its critical habitat, but the change would be small. Minor effect would equate to a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species.

Moderate: An individual or population of a listed species, or its critical habitat would be noticeably affected. The effect could have some long-term consequence to the individual, population, or habitat. Moderate effect would equate to a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species.

Major: An individual or population of a listed species, or its critical habitat, would be noticeably affected with a long-term, vital consequence to the individual, population, or habitat. Major effect would equate to a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species or critical habitat.

The Park has no designated critical habitat within the Park's boundary for any federally listed species. An existing U.S. Fish and Wildlife Recovery Plan for the Kemp's Ridley

sea turtle assigns the task of patrolling for nesting sea turtles to the Park. According to a July 25, 2007 listing of federally protected species and the Texas Parks and Wildlife Department's website (TPWD http://gis.tpwd.state.tx.us/TpwEndangeredSpecies/DesktopDefault.aspx), 16 species federally listed as endangered or threatened, 18 federally listed as species of concern, and five state protected species potentially occur at the Park (Appendix A). Of these, the 25 species that have actually been documented at the Park are listed in Table 12 below. The remaining 14 species have either not been documented and/or there is not suitable habitat within the Park, and therefore would not be affected by the proposed project. Table 12 also includes five state-protected species (*) that have been documented in the Park and will be addressed within this document because the NPS recognizes their sensitive status and provides them a high level of protection, similar to federally listed species.

Table 12. State and Federally Protected Species Occurring or likely to Occur at Padre Island National Seashore.

SPECIES	FEDERAL	STATE
(T – Threatened, E – Endangered, SOC – Species of Concern, and S/A – Similar in Appearance)		
Reptiles and Amphibians		
American Alligator (*Alligator mississippiensis)*	T (S/A)	
Texas Horned Lizard (*Phrynosoma cornutum*)	SOC	T
Texas Indigo Snake (*Drymarchon corais erebennus)* *		T
Texas Scarlet Snake (*Cemophora coccinea lineri*) *		T
Sea Turtles		
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)*	E	E
Loggerhead Sea Turtle (*Caretta caretta)*	T	T
Green Sea Turtle (*Chelonia mydas)*	T	T
Atlantic Hawksbill Sea Turtle (*Eretmochelys imbricata*)	E	E
Leatherback Sea Turtle (*Dermochelys coriacea*)	E	E
Birds		
Eastern Brown Pelican (*Pelecanus occidentalis*)	E	E
Reddish Egret (*Egretta rufescens*)	SOC	T
White-faced Ibis (*Plegadis chihi*)	SOC	T
Wood Stork (*Mycteria americana*) *		T
Sooty Tern (*Sterna fuscata*) *		T
Black Tern *(Chlidonias niger)*	SOC	
Piping Plover (*Charadrius melodous*)	T	T
Bald Eagle (lower 48 states) (*Haliaeetus leucocephalus*)	T	T
Northern Aplomado Falcon (*Falco femoralis septentrionalis*)	E	E
Peregrine Falcon (*Falco peregrinus*)	Delisted	E

SPECIES	FEDERAL	STATE
White-tailed Hawk (*Buteo albicaudatus*) *		T
Ferruginous Hawk *(Buteo regalis)*	SOC	
Loggerhead Shrike *(Lanius ludovicianus)*	SOC	
Cerulean Warbler *(Dendroica cerulea)*	SOC	
Black-capped Vireo (*Vireo atricapillus*)	E	E
Tropical Parula (*Parula pitiayumi*)	SOC	T

There are several species from Table 12 that may occur or have suitable habitat within the Park. These species include the Texas horned lizard, Texas indigo snake, Texas scarlet snake, all five species of sea turtle, Peregrine and Northern Aplomado Falcons, White-tailed Hawk, Ferruginous Hawk, Loggerhead Shrike, Cerulean Warbler, Black-capped Vireo, and Tropical Parula. These species were grouped together by assemblages, such as terrestrial reptiles, since the possible impacts and available habitat are similar. The remaining species listed in Table 11 are not included within the analysis area and therefore are not analyzed.

Table 12 summarizes the impacts on each species or suitable habitat analyzed in this section. Impacts on species and suitable habitat under the Proposed Action range from negligible to moderate. Existing impacts within the analysis area under both alternatives on species and suitable habitat range from no impact to moderate.

The NPS requested an amendment to the existing concurrence for the Dunn-Peach consultation due to the close proximity of the proposed location to the previously analyzed location, similar activities proposed, the application of extensive mitigation measures, and the proposed drilling schedule that would complete the three wells prior to the beginning of the sea turtle nesting season in March 2008. The NPS determined that the proposed project would "not likely adversely affect" protected species or their suitable habitat. An NPS decision will not be rendered until concurrence is obtained from the USFWS.

Table 13. Summary of Impacts by Species.

Species	Alternative A: No Action	Alternative B: Proposed Action
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)* **Loggerhead Sea Turtle** (*Caretta caretta)* **Green Sea Turtle** (*Chelonia mydas)* **Atlantic Hawksbill Sea Turtle**	Under Alternative A, No Action, ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 7-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts	Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Vehicle access above the "wet-line" along the 7-mile segment of Gulf beach and application of mitigation measures in Tables 4 and 6, in addition to existing vehicle

Species	Alternative A: No Action	Alternative B: Proposed Action
(*Eretmochelys imbricata*) **Leatherback Sea Turtle** (*Dermochelys coriacea*)	on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from the implementation of this alternative.	access along the beach, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, direct and indirect, direct and indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from the implementation of this alternative.
Peregrine Falcon (*Falco peregrinus*) **Northern Aplomado Falcon** (*Falco femoralis septentrionalis)* **White-tailed Hawk** (*Buteo albicaudatus*) * **Ferruginous Hawk** *(Buteo regalis)* Suitable Habitat	Under Alternative A, No Action, ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on raptors. However, existing uses on the Gulf foredunes, Laguna Madre shoreline, park roads, and trails would result in localized, short-term, negligible, direct and indirect, adverse impacts on the falcons. Cumulative impacts from park activities, visitor uses, and	Under Alternative B, Proposed Action, ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. BNP's proposed access route and well pad expansion would directly impact 2.5503 acres of upland habitat preferred by the Northern Aplomado Falcon, and White-tailed and Ferruginous Hawks, resulting in localized, short-term, negligible to minor, direct and indirect, adverse impacts on White-tailed and Ferruginous Hawks

Species	Alternative A: No Action	Alternative B: Proposed Action
	existing and future oil and gas operations in and adjacent to the Park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on the Raptors. No impairment to raptors would result from implementation of this alternative.	until the site is satisfactorily reclaimed and habitat returned. If well is productive, 1.5503 acres of this habitat would be impacted long-term. The drill rig, production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Raptors, resulting in localized, short to long-term, negligible, beneficial impacts for raptors. Cumulative impacts on raptors throughout the Park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, direct and indirect, direct and indirect, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the Park on grassland, Gulf beach, and Laguna Madre shoreline. No impairment to raptors would result from implementation of this alternative.
Eastern Brown Pelican (*Pelecanus occidentalis*) **Piping Plover** (*Charadrius melodous*) **Reddish Egret** (*Egretta rufescens*) **White-faced Ibis** (*Plegadis chihi*) **Black Tern** *(Chlidonias niger)*	Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on shorebirds. However, existing visitor uses and vehicle use on the 7-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on shorebirds	Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Vehicle access above the "wet-line" along the 7-mile segment of Gulf beach and application of mitigation measures in Tables 4 and 6, in addition to existing vehicle access along the beach, would result in localized, short to long-

Species	Alternative A: No Action	Alternative B: Proposed Action
	within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by park staff, visitors, and existing and future oil and gas operations in and adjacent to the Park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts along the Gulf shoreline. No impairment to shorebirds would result from implementation of this alternative.	term negligible, direct, adverse impacts on shorebirds within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on shorebirds. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on shorebirds. No impairment to shorebirds would result from implementation of this alternative.
Loggerhead Shrike *(Lanius ludovicianus)* **Neotropical Migratory Songbirds** Suitable Habitat	Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on Loggerhead Shrikes and Neotropical songbirds. Existing oil and gas operations would result in localized, short-term, negligible, direct and indirect, adverse impacts on songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to	Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short-term disturbance to grasslands habitat preferred by songbirds on up to 2.5503 acres, and the long-term occupancy of 1.5503 acres. Well site expansion and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts. Drill rig lighting, barbed-wire fencing, and planting willow

Species	Alternative A: No Action	Alternative B: Proposed Action
	the Park, and park developments and operations are expected to result in short to long-term, negligible to minor direct and indirect, adverse impacts, localized near developments in grasslands preferred by these species throughout the Park. Leaks and spills from oil and gas operations would be localized, with minor to major, direct and indirect, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, direct and indirect, adverse impacts. No impairment to songbirds would result from implementation of this alternative.	shrubs or trees around production facilities would perpetuate perching and foraging habitat for these species, resulting in localized, short to long-term, negligible, beneficial impacts on these species. Cumulative impacts throughout the Park would be similar to those described under No Action, with park developments and operations, recreational activities, and existing and future oil and gas operations that may be located within the Park's grasslands preferred by these species resulting in localized, short- to long-term, negligible, direct and indirect, adverse impacts on the songbirds. No impairment to songbirds would result from implementation of this alternative.

Sea Turtles

Including Kemp's Ridley Turtle, Loggerhead Sea Turtle, Green Sea Turtle, Atlantic Hawksbill Sea Turtle and Leatherback Sea Turtle

Affected Environment

The **Kemp's ridley sea turtle** (*Lepidochelys kempii)* is federally listed as an endangered species. It is the smallest of the sea turtles, and adults reach maturity at about 10-15 years of age. Kemp's ridley turtles nest mostly during the daytime, often in groups called "arribadas." An individual Kemp's ridley may nest as many as three times a season (USFWS and NMFS, 1992), with an average of 2.5 clutches per season. Clutch size averages around 100 eggs. Hatchlings emerge after about 50 days of incubation and hatchling emergence occurs during the night or day. Kemp's ridleys are found in the Gulf of Mexico and Atlantic Ocean and some adjoining estuarine areas. Nesting occurs primarily in the vicinity of Rancho Nuevo, Tamaulipas, Mexico. Each year, some nests are also found at scattered locations between the Texas coastline and

Veracruz, Mexico. Very rarely, Kemp's ridleys nest at other locations in the U.S. outside of Texas. More Kemp's ridley nests are consistently found at Padre Island National Seashore than at any other location in the U.S., making it the most important nesting beach in the U.S. for this species.

Kemp's ridley is a native nester at Padre Island National Seashore (Hildebrand, 1963, 1981, 1983; Shaver, 1998a; Shaver and Caillouet, 1998). Historic nesting frequency of this sea turtle on the south Texas coast is poorly known and only six Kemp's ridley turtles were documented there prior to 1979 (Shaver and Caillouet, 1998). A total of 351 Kemp's ridley nests have been documented along the Texas coast between 1979 and 2006, 197 for of them at the Park. 2007 was a record year for Kemp's ridley nests on Texas beaches, 128 nests were found along the Texas coast, 81 of which occurred at the Park. Since 1978, an international, experimental project involving the NPS at Padre Island National Seashore, USFWS, NMFS/NOAA, etc., has been on-going to establish a secondary nesting colony of Kemp's ridley turtles at the Park.

During 2002, three Kemp's ridley nests were found at hatching on the Texas coast, including one within the patrol route at the Park. During 2004, one Kemp's ridley nest was found at hatching on Mustang Island. These observations confirm that some Kemp's nests are missed at egg laying despite patrols and public education. Kemp's ridley nests are distributed along the entire Gulf beachfront length of Padre Island National Seashore.

The date of the nesting season varies slightly each year. In Mexico, Kemp's ridley nests have been recorded as early as March and as late as August. The 278 nests documented at Padre Island National Seashore from 1979-2007 were found during the months of April, May, June, and July; the months that beach surveys were conducted most intensively. Nesting may also occur at the Park during other summer months, but this has not been confirmed. Additionally, Kemp's ridley turtles sometimes inhabit near the shoreline of Gulf of Mexico waters at Padre Island National Seashore for foraging or migration.

No critical habitat has been designated for this species. An existing Recovery Plan (USFWS and NMFS, 1992) for the Kemp's ridley defines specific park tasks in the recovery efforts, which are being conducted (patrols, monitoring, and habitat management). This is the only federally listed species in the Park with Recovery Plan responsibilities assigned to this park.

An NPS and USFWS program was initiated in 1986 to detect, study, and protect Kemp's ridley turtle nests at the Park and this on-going program has expanded to include the four other species of sea turtle.

Critical habitat has not been designated in the Park for any sea turtle species. There are no specific Recovery Plan tasks assigned to the Park for the remaining four species of sea turtle occurring at the Park, however NPS staff members and volunteers conduct, support, and assist in the daily patrols for these species to protect, document, and monitor nesting occurrence.

The **loggerhead sea turtle** (*Caretta caretta)* is federally listed as a threatened species. It occurs in temperate and tropical waters of both hemispheres. The species inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian oceans. Historic nesting frequency on the Texas coast is poorly known. Hildebrand (1981) suggested that nesting likely occurred within the last 300 years, but the earliest loggerhead nest that he was able to confirm for the Texas coast was found in 1977.

Adult loggerhead turtles reach maturity in 25 to 30 years. Loggerheads are nocturnal nesters, although some daytime nesting occurs. They nest from one to seven times within a nesting season (average of approximately 4.1 clutches); clutch size averages 100-125 eggs along the southeastern U.S. coast (NMFS and USFWS, 1991b). Hatchling emergence typically occurs at night. In the Gulf of Mexico, there are distinct nesting populations on the coast of the Florida panhandle and the Yucatan Peninsula.

Scattered nests can be found occasionally along other areas of the U.S. Gulf coast including the Chandeleur Islands, Louisiana, in the north and to the U.S./Mexico border in the south.

At the Park, loggerhead turtles sometimes inhabit nearshore Gulf of Mexico waters for foraging or migration. Additionally, a few occasionally nest at the Park and many more are found stranded there (Shaver, 1998b, 1999b). From 1979-2007, 30 loggerhead nests were documented at Padre Island National Seashore (at various locations scattered along the coast of the Park), but additional nests were likely missed, especially when patrols are reduced and less comprehensive after the mid-July Kemp's ridley patrol season ends. Loggerhead nests are found on North Padre Island from mid-May through early August, although nesting has been documented in the southeastern U.S. from late-April through early September.

The **green sea turtle** (*Chelonia mydas)* is federally listed as threatened in all of its range except the waters of Florida and the Pacific coast of Mexico, where it is endangered. It is circumglobal in tropical and sub-tropical waters. A green turtle fishery, operating almost exclusively within inshore waters (bays, estuaries, passes), began in Texas in the mid-1800's. By the early 1900's, the catch declined to such an extent that the turtle fishing and processing industry collapsed (Hildebrand, 1981). Although historic nesting by green turtles on the Texas coast is suspected, the first confirmed nest was not documented there until 1987 (Shaver, 2000).

Adult green turtles reach maturity at 30 to 50 years of age. Female green turtles nest at night. From one to seven clutches are deposited within a breeding season (the average number is usually two to three clutches) (NMFS and USFWS, 1991a). Average clutch size is usually 110-115 eggs. Hatchling emergence occurs at night. In this region, nesting sites include southern Florida and scattered locations in Mexico, although nesting occasionally occurs in south Texas.

At the Park, juvenile green sea turtles inhabit waters of the nearshore Gulf of Mexico, the Laguna Madre, and the Mansfield Channel. Additionally, a few green turtles occasionally nest within the Park and many are found stranded there each year (Shaver, 1989, 1998b, 2000). From 1979-2007, 20 green turtle nests were documented at the Park, all in roughly the southern two-thirds of the Park (Shaver, 1989, 2000). The 12 green turtle nests were found during June and July, although nesting occurs from May through September in this region.

The **hawksbill sea turtle** (*Eretmochelys imbricata)* is federally listed as endangered. It occurs in tropical and subtropical seas of the Atlantic, Pacific, and Indian oceans. Young hawksbills occur with some regularity in Texas waters, since northern currents carry them from nesting beaches in Mexico (Hildebrand, 1981). Historic nesting by this species on the Texas coast is unknown. Female hawksbill turtles nest mostly during the night, but rare daytime nesting is known. They nest an average of 4.5 times per season (up to 12 clutches); clutch size averages approximately 140 eggs (NMFS and USFWS, 1993). Hatchling emergence occurs at night. Hawksbills nest on scattered islands and beaches between 25 degrees North and South latitude including beaches in southeastern Florida and the states of Campeche and Yucatan in Mexico. Nesting does not regularly occur on the Texas coast.

At the Park, young hawksbills occasionally inhabit waters of the nearshore Gulf of Mexico and Mansfield Channel. Additionally, many are found stranded in the Park each year, but nesting very rarely occurs here (Shaver, 1998b, 1999b).

The **leatherback** sea turtle (*Dermochelys coriacea)* is federally listed as an endangered species. It ranges throughout the tropical waters of the Atlantic, Pacific, and Indian oceans, but has also been recorded from the North Atlantic, North Pacific, South Atlantic, and South Pacific. The leatherback is the largest and most pelagic sea turtle species and is normally found in the deeper waters of the Gulf of Mexico where it may undertake extensive migrations.

Nesting occurs primarily at night and diurnal nesting occurs only occasionally. They nest five to seven times per year, with an average clutch size of 110-116 eggs (NMFS and USFWS, 1992). Hatchling emergence typically occurs at night. Leatherback nesting grounds are distributed circumglobally. Leatherbacks infrequently strand at Padre Island National Seashore (Shaver, 1998b).

Hildebrand (1963, 1981) reported leatherback nesting at Little Shell on Padre Island National Seashore, including one documented nesting in 1928 and at least one observed nesting in the mid 1930's. No leatherback nests have been confirmed on the Texas coast since that time, although it is possible that a few were missed, especially when patrols were not conducted or were less comprehensive. In the U.S. and Caribbean, nesting begins in February and continues through July.

Impacts of Alternative A, No Action, on Sea Turtles

Under Alternative A, No Action, ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on sea turtles. Impacts on sea turtles in the analysis area would continue along the 6.9-mile segment of Gulf beach associated with the continued operation of the A8 well.

Vehicle traffic associated with oil and gas operations normally use 4-wheel drive trucks, however, large, multi-axle vehicles like vacuum trucks, would occasionally travel the beach corridor to remove gas by-products or "condensate" from the Park. Additional traffic is limited to emergency or periodic, routine trips for maintenance or inspections of flowlines and facilities.

Vehicle access along the Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on sea turtles would result primarily from vehicle access along the Gulf beach from the continued operation of 17 nonfederal oil and gas operations within the Park, future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario, park staff, and an estimated 374,850 visitors. As some oil and gas operations are developed in the Park,

others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time.

Vehicle and operation lights behind the dunes can cause direct impacts on nesting turtles leading to false crawls and can disorient hatchlings so that they crawl in the wrong direction rather than enter the sea, thereby becoming vulnerable to crushing, predation, and dehydration (NMFS and USFWS 1991a, 1991b; Fletemeyer, 1996). Lights from operations behind the dunes could impact this species if the lights are visible from the beach; however, there are no current operations within proximity to the beach that have night lighting. Nesting Kemp's ridley turtles, which are primarily daytime nesters and Kemp's ridley hatchlings, which emerge generally in the daytime, would most likely not be affected. Conditions of approval and mitigation measures applied to the existing 17 approved oil and gas operations would reduce the potential impact associated with lighting.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf of Mexico shoreline for over 20 years with no documented case of a crushing of a nesting sea turtle within the Park. Current nesting activity does not seem to indicate compaction from vehicles, either by visitors or from the existing six oil and gas operators, is causing a negative affect.

Currently, the NPS removes all sea turtle eggs that are located from the beach and transfers them to the incubation facility within the Park. Hatching success is usually elevated substantially for eggs that are transferred to this facility rather than left on the beach in-situ. Some nests missed by the patrol and monitoring effort may go undetected and unprotected from predation, insect infestation, tidal inundation, and crushing. Additionally, some nesting and stranded turtles are not immediately found and protected by the NPS.

Leaks and spills from oil and gas operations could be serious, with negligible to moderate, impacts on sea turtles. Spills from oil and gas operations in the Gulf of Mexico, including tanker traffic, could be transported by water onto the Gulf beach shoreline, causing widespread impacts and resulting in long-term clean-up and remediation. Mitigation measures are expected to substantially reduce the impacts.

To reduce and or eliminate the impact of light pollution on sea turtles (and to the visitor) the following measures of night sky protection are currently being applied as mitigation measures by the Park: 1) use of directional and shielded lighting on the drilling rigs and no lighting of production facilities; 2) use of a required setback of 500 feet from the dunes and other light-sensitive areas; and 3) placing night driving restrictions on operators of heavy equipment and trucks during the sea turtle nesting and hatchling emergence period.

Cumulative impacts on sea turtles throughout the Park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers,

impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Because there would be no major, adverse impacts on sea turtles whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's sea turtle resources or values.

Impacts of Alternative B, Proposed Action, on Sea Turtles
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced.

Existing impacts on sea turtles within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, direct and indirect, negligible to minor, adverse impacts associated with vehicle use along the 7-mile segment of Gulf beach.

BNP would use the 7-mile segment of Gulf beach to access the existing wellpad located approximately 900 feet behind the foredunes. BNP would be required to confine vehicle use above the "wet-line" and apply other mitigation measures specifically designed to avoid or minimize impacts on sea turtles (see Table 5). As described above under No Action, vehicles could compact and rut beach sands. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Truck traffic associated with drilling the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would range from a low of four to a maximum of 20 truck trips per day, with 13 average daily trips. Once drilling is completed, the number of large vehicles used in long-term production operations would substantially decrease to approximately one per week.

Drilling the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells are expected to take place outside of the primary Kemp's ridley sea turtle nesting season during late summer; therefore, direct impacts would be negligible. With the application of the mitigation measures outlined in Tables 5 and 6, which include such measures as

daytime driving only and the requirement for trained staff to precede operations vehicles down the beach, the potential impact would be reduced.

The four remaining species of sea turtles (loggerhead, green, hawksbill, and leatherback) nest primarily at night and hatchling emergence is usually at night or very early in the morning. As the number of nests in the Park and within the project area is historically few for these species, the risk of impacting one of these species of sea turtles is greatly reduced because of the limited possibility of encountering one. As night driving by BNP would be restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles.

Vehicle access along the 7-mile segment of Gulf beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles. Mitigation measures and monitoring of the proposed project would reduce the potential impact on sea turtles, and help to ensure that the project is not likely to adversely affect these species. The physical construction of the wellpad expansion would have no impact on sea turtles.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. The transportation of equipment to the wetlands compensation project site would account for some additional vehicle use along the Gulf Beach, over a period of one month.

Cumulative Impacts
Cumulative impacts on sea turtles throughout the Park would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. If the wells are placed into production, vehicle access along the 7-mile segment of Gulf beach, in addition to existing vehicle access along the beach, would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies*

2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on sea turtles whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's sea turtle resources or values.

Raptors
Including Peregrine Falcon, Northern Aplomado Falcon, White-tailed Hawk, and Ferruginous Hawk

Affected Environment
Peregrine Falcon
The Peregrine Falcon (*Falco peregrinus*) has been federally de-listed but is still listed as endangered at the Texas state level and is a migratory species that winters along the Gulf of Mexico. They are known as common winter resident of the Park, arriving sometime in early fall and departing mid-May (Chaney *et. al*. 1993a). They are increasingly common at the Park, especially in the fall during migration. These birds are generally concentrated in the southern portion of Padre Island National Seashore, which is unique in that it is a main component of the migration route "staging area," particularly for juveniles, during the spring and fall migration (Maechtle 1993). From actual counts, more than 2,000 Peregrine Falcons have utilized this area annually during migration (Maechtle 1993).

Peregrine Falcons forage along the Laguna Madre shoreline, and rest on any higher elevation, typically on the foredunes along the Gulf beach (Chaney *et. al*. 1995b). The Gulf beach is a very important stopover area for foraging, resting, and is a landmark guide for many migratory birds (Chaney *et. al*. 1993a). Padre Island National Seashore and South Padre Island are the only known localities in the Western Hemisphere where Peregrine Falcons can be found in such high concentrations during their spring migration. No critical habitat has been designated for this species at the Park.

Northern Aplomado Falcon
The Northern Aplomado Falcon (*Falco femoralis septentrionaliss*) is federally and state listed as endangered and considered a rare species at Padre Island National Seashore. Over the past ten years, sightings of individual Northern Aplomado Falcons have increased. Sightings are generally concentrated in the Park along the main road, beach foredunes, and grasslands of the Northern ten miles of the Park and occur primarily in winter and early spring. The most recent park sighting of a Northern Aplomado Falcon

occurred in spring 2006, 37 miles south of the end of Park Road 22. Individuals sighted appear to be transients, and no established adult pairs, territories, or nests have been documented within the Park. The impacts on this species are similar to those for the Peregrine Falcon and therefore, they are presented together.

White-tailed Hawk

The White-tailed Hawk (*Buteo albicaudatus*) is not federally listed but is listed as threatened by the state. There is no critical habitat designated for these species in the Park.

The White-tailed Hawk occurs year round in southern Texas and are most visible in the grassland prairies near the coast, often where there are only scattered bushes, yuccas, or large cacti (Alsop 2001). White-tailed Hawks are considered common to uncommon in south Texas (Rappole and Blacklock 1994). Within the Park, the White-tailed Hawk is common during the winter months and less common throughout spring, summer, and fall (McCraken and Clark 1990).

Bird surveys have indicated that White-tailed Hawks generally prefer the western portion of the Park along the Laguna Madre (Chaney *et. al*. 1995b). Nesting White-tailed Hawks generally occur in trees and small shrubs in grasslands of the northern portions of the Park. Between six and ten nests may be found in the Park each year (Carey Haralson, Texas Tech University researcher, personal communication).

Ferruginous Hawk

The Ferruginous Hawk (Buteo regalis) is listed as a federal Species of Concern. Historically this species bred in Texas but currently nesting is limited to the northwestern Panhandle of Texas between winter and mid-summer months. The Ferruginous Hawk has been documented within grassland habitats of the Park but is considered rare with less than one bird sighted a year during the winter months (McCraken and Clark 1990).

Impacts on Raptors under Alternative A, No Action

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on raptors. However, impacts in the analysis area would continue as the result of regular traffic associated with the continued operation of the A8 well.

Vehicles on the Gulf beach would include two and four-wheel drive vehicles, and on occasion larger, multi-axle vehicles associated with routine maintenance activities at the A8 well.

Vehicle access would result in short-term movement of bird species utilizing the shoreline for loafing or resting. Raptors would take temporary flight when vehicles approach too close and land to resume their activity after vehicles have passed. Displaced raptors could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Vehicle impacts would result in localized, short-term, negligible to minor, adverse impacts on shorebirds and benthic organisms. .

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on raptors could occur from park activities, visitor uses, and oil and gas activities in the vicinity of the Gulf foredunes or Laguna Madre shoreline where falcons primarily rest or feed.

Raptors rest on any high point within the Park. Along the Gulf beach, raptors routinely rest on foredunes. Along the Laguna Madre shoreline, raptors utilize available structure such as limited trees for resting. Park staff performing park operations, recreating visitors, and nonfederal oil and gas operators occasionally hike to/or over the foredunes into the backcountry or along the Laguna shoreline. These activities may displace a resting raptor and cause it to take flight and travel to a nearby undisturbed area. The potential for displacement would be highest during the primary visitor use period from May through September, peaking in August, and would be concentrated along the Gulf beach.

Developments and activities that could impact these areas include the continued operation of 17 nonfederal oil and gas operations, and future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed and therefore, impacts would be distributed over time. Cumulative impacts would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on raptors.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on the raptors. However, existing uses on the Gulf foredunes, Laguna Madre shoreline, park roads, and trails would result in localized, short-term, negligible, direct, adverse impacts on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the Park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on the Raptors.

Because there would be no major, adverse impacts on raptors whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's raptor resources or values.

Impacts on Raptors under Alternative B, Proposed Action
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. Existing impacts on raptors within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible, direct adverse impacts on raptors resulting from regular traffic by park staff performing routine park operations, recreating visitors, and

nonfederal oil and gas operators hiking to/or over the foredunes or along the shoreline and displacing/flushing raptors.

Resting raptors are confined to high points, usually on the dunes, but also in limited tree habitat along the Laguna Madre shoreline. Vehicle or pedestrian traffic might on occasion displace a resting raptor from its perch. However, the distance between vehicle traffic and a resting raptor is sufficiently great not to cause raptors to normally do so.

Well pad expansion would have short-term, direct impacts on 2.5503 acres of grassland habitat preferred by the White-tailed and Ferruginous Hawks. If the well enters production, 1.0 acre would be reclaimed, resulting in localized, short-term, minor direct and indirect, adverse impacts on White-tailed and Ferruginous Hawks until the site is satisfactorily reclaimed and habitat returned. Pad expansion activities could displace resting raptors resulting in localized, short-term, negligible to minor, direct impact on raptors. However, the proposed project is located in habitat that is void of trees and therefore impacts on resting raptors would be very limited. Northern Aplomado Falcons, White-tailed Hawk, and Ferruginous Hawk utilize grassland habitats for foraging and may be impacted by the proposed project. These raptors would be displaced by traffic operating along the access road and pad resulting in localized, short-term, negligible, direct adverse impact to Northern Aplomado Falcons, White-tailed Hawks, and Ferruginous Hawks.

The proposed drilling and production operation would provide structures that could be used for perching. Drilling and production equipment would be higher than the surrounding terrain and provide an opportunity for these species to perch. Since few perching structures exist and the historic use of oil and gas equipment by falcons is documented, it is likely that equipment associated with this alternative could be used by these species. Drilling and production operations would result in localized, short-term, negligible, direct, beneficial impacts on raptors

Alternative B, Proposed Action, would result in localized, short-term, negligible to minor, direct and indirect, adverse impacts on raptors from being displaced by traffic; however, the proposed action would also result in localized, short and long-term, negligible, beneficial impacts, for the raptors by providing structure.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. Ground-disturbing equipment and vehicles would introduce elevated noise into the area that could displace wildlife. Minor adverse impacts would be localized within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation, and would result in recovery of wildlife habitat.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on Raptors throughout the Park would be similar to those described under No Action. Under Alternative B, Proposed Action, the number of continued nonfederal oil and gas operations would increase. Additional maintenance and operation activities would occur as a result of the proposed project. Alternative B, Proposed Action, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse cumulative impacts on raptors.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. BNP's proposed wellpad expansion would directly impact 2.5503 acres of grassland habitat preferred by the White-tailed and Ferruginous Hawks, resulting in localized, short-term, minor adverse impacts on White-tailed and Ferruginous Hawks until the site is satisfactorily reclaimed and habitat returned. If the wells are productive, 1.5503 acres of this habitat would be impacted long-term. The drill rig and production facilities would provide additional perches for raptors, resulting in localized, short to long-term, negligible, beneficial impacts. Cumulative impacts on raptors throughout the Park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the Park on grassland, Gulf beach, and Laguna Madre shoreline.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on raptors whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's raptor resources or values.

Shorebirds
Including Eastern Brown Pelican, Piping Plover, Reddish Egret, White-faced Ibis, and Black Tern

Affected Environment
Eastern Brown Pelican

Eastern Brown Pelicans *(Pelecanus occidentalis)* are federally and state listed as endangered. This species is found along salt bays, beaches, and oceans and are generally found near shallow waters adjacent to the coast, especially on sheltered bays.

Eastern Brown Pelicans occur in the Park year-round along both the Gulf and Laguna Madre sides of Padre Island. Individuals utilize the Park for resting and foraging, and are typically found in the nearshore and washover habitats. Some individuals migrate south during the winter months and return during the breeding season. Brown Pelicans forage along the Gulf beach shoreline searching for fish near the surface of the water.

In 1993, Dr. Allan Chaney recorded 356 Brown Pelicans over 64 miles of beach between Yarborough Pass and Port Mansfield Channel during a 1992-1993 shorebird survey. Twelve individuals were observed on the Laguna Madre shoreline while the remaining 344 individuals were observed in the washover channels located south of the 33-mile marker. Forty-four individuals were observed between the Park's north boundary and the 15-mile mark (Chaney *et. al*., 1993a). In 1995, 553 birds were surveyed along the Gulf beach between the Park's northern boundary and Yarborough Pass (Chaney *et. al*., 1995b). In comparison, only one Brown Pelican was documented along the Laguna Madre shoreline between Yarborough Pass and the Park's northern boundary (Chaney *et. al*., 1995a). It is evident that Brown Pelicans prefer the Gulf beach shoreline instead of the Laguna Madre shoreline.

Piping Plover

The Piping Plover (*Charadrius melodus*), one of the least common members of the plover family, is considered threatened both federally and by the state of Texas. The Piping Plover is a shorebird that winters along the Gulf Coast from Florida to Mexico, along the Atlantic Coast from Florida to North Carolina, and in the Caribbean. Piping Plovers have been documented defending feeding territories, and foraging on benthic invertebrates and insect larvae along both the Laguna Madre and Gulf beach inter-tidal areas within the Park. It is estimated that between 60-65% of all Piping Plovers winter in South Texas (Chaney *et. al*., 1995a).

In 1992 – 1993, a study documented 602 plovers over the entire 60 miles of south beach, with 400 of these being found along the Gulf beach foreshore (Chaney *et. al*., 1993a). Of the 600 birds observed, 87 Plovers occurred between the zero and twelve-mile mark accounting for nearly 14% of the total number of Plovers counted (Chaney *et. al*., 1993a). In 1994 – 1995, 150 plovers were documented between the zero and fifteen-mile mark on the Gulf Beach with the majority of these inhabiting the Gulf beach foreshore (Chaney *et. al*., 1995b).

No nesting has been documented in south Texas or Padre Island National Seashore to date, and there is no critical habitat designated for this species. In 2000, the US Fish and Wildlife Service proposed 80% of the Park as Piping Plover critical habitat. Final habitat designation did not include Padre Island National Seashore as critical habitat. Part of the reason was that the species is already protected by existing NPS

regulations, policies, and management measures, and designating critical habitat would not provide a greater level of protection.

Reddish Egret

The Reddish Egret (*Egretta rufescens*) is considered a species of concern at the federal level and listed as threatened by the state. Reddish Egrets are year round residents at the Park and are typically found in and around the shallow waters of the Laguna Madre, the flooded wind tidal flats, and washover channels between the Park's northern boundary southward to the Port Mansfield Channel. During a 1994-1995 survey, four Reddish Egrets were documented on the Gulf beach shoreline between Yarborough Pass and the Park's northern boundary compared to 1,200 found along the Laguna Madre shoreline for the same area (Chaney *et. al*. 1995a). Additionally, 43 Reddish Egrets were documented on the Gulf beach between Yarborough Pass and the Port Mansfield Channel compared to 1,760 found along the Laguna Madre shoreline for the same area in 1993 (Chaney *et. al*. 1993a). Both of these studies show that the Reddish Egret prefers the Laguna Madre habitat to the Gulf beach. The largest numbers of Reddish Egrets have been documented during the summer and winter months. During 1994-1995, 81.5% of Reddish Egrets surveyed occurred along the Laguna Madre between the 10-mile and 15-mile mark (Yarborough Pass).

Since 1973, Reddish Egrets have been documented nesting yearly in large colonies on several of the Park's isolated manmade and natural islands. During the 2001 colonial waterbird census, 50 pairs of nesting Reddish Egrets were documented on a manmade spoil island located approximately two miles south of the Park's northern boundary (TCWD 2001).

White-faced Ibis

The White-faced Ibis (*Plegadis chihi*) is considered a species of concern at the federal level and listed as threatened by the state.

The White-faced Ibis is a migratory species occurring at Padre Island National Seashore during the spring and early summer months. This species has been documented nesting on several isolated manmade and natural islands within the Laguna Madre portion of the Park. The White-faced Ibis has nested at Padre Island National Seashore since 1973, but have not nested here since 2000 when only two nests were documented (TCWD 2001). The nesting sites within the Park are located on dredge material islands located within the Laguna Madre.

This species has not been documented foraging in the Park since its foraging habitat is freshwater marshes, which are not found within the Park. In addition, based on four annual surveys (Chaney *et. al*. 1993a, 1993b, 1995a, 1995b) this species has not been documented resting along the Laguna Madre and Gulf beach shorelines.

Black Tern

The Black Tern (*Chlidonias niger*) is considered a species of concern at the federal level and there is no critical habitat designated within the Park. These Terns are observed foraging in the coastal waters off Padre Island National Seashore during the summer months. The Black Tern is a spring and fall migrant through the Park, and is a common

summer resident along the Gulf shore within the Park. No breeding has been documented along the Texas coast (Rappole and Blacklock, 1985).

In a 1994 – 1995 survey, 5,107 Black Terns were documented in the Park, with three times as many black terns documented on the Laguna Madre side of the Park than on the Gulf beach (Chaney *et. al*., 1995b). These high totals were found in August, prior to their fall migration.

Impacts of Alternative A, No Action, on Shorebirds
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on shorebirds. However, existing impacts on shorebirds in the analysis area would continue as the result of vehicle access along the 6.9-mile segment of Gulf beach and continued operation of the A8 well.

Vehicles on the Gulf beach would include two and four-wheel drive vehicles, and on occasion larger, multi-axle vehicles associated with routine maintenance activities at the A8 well.

Vehicle access would result in short-term movement of bird species utilizing the shoreline for loafing or resting. Shorebirds would take temporary flight when vehicles approach too close and land to resume their activity after vehicles have passed. Displaced shorebirds could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Vehicles could rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone. In a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers, 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. Some loss of benthic organisms would be expected due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Vehicle impacts would result in localized, short-term, negligible to minor, adverse impacts on shorebirds and benthic organisms. Heavy equipment related to existing extraction activities will be required to travel above the wet line to prevent unnecessary impacts on benthic organisms and shorebird species.

Cumulative Impact
Under Alternative A, No Action, cumulative impacts on shorebirds would occur from recreational activities, and vehicle access along the Gulf beach by park employees, visitors, and oil and gas operators as a result of the continued operation of 17 nonfederal oil and gas operations and future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and

reclaimed; therefore, impacts would be distributed over time. Cumulative impacts of recreational activities and vehicle access along the Gulf beach would result in localized, short to long-term, negligible to minor, indirect and direct, adverse impacts on shorebirds; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect and direct, adverse impacts on shorebirds, primarily along the Gulf shoreline.

Park staff, 6 oil and gas operators, and an estimated 374,485 visitors annually use the 7-mile segment of Gulf beach for vehicle access. Park staff conducts routine park operations along the beach. Vehicles on the Gulf beach would include two and four-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at oil and gas sites located throughout the Park. Vehicle traffic associated with oil and gas operations normally consists of 4-wheel drive trucks, however, large, multi-axle vehicles like vacuum trucks would travel the beach corridor approximately every 10 days or so. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continued gas operations within the Park that require access through this 7-mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored outside of the turtle season and are required to drive 15 mph.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

Visitor activities and vehicles traveling within or close to the “wet-zone” would displace shorebirds and cause them to take flight. They generally fly along the shoreline to another suitable location and land, or they fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally observed landing a short distance away and continued to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants and affect habitat quality or prey species. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing vehicle access and visitor use along the 7-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, indirect and direct, adverse impacts on shorebirds within the analysis area.

Conclusion

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on shorebirds;

however, existing recreational activities and vehicle use on the 7-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on shorebirds within the analysis area. Cumulative impacts from recreational activities and vehicle access along the Gulf beach by park employees, visitors, and operators of existing and future oil and gas operations in and adjacent to the Park, are expected to result in localized, short to long-term, negligible to minor, indirect and direct, adverse impacts; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect and direct, adverse impacts along the Gulf shoreline.

Because there would be no major, adverse impacts on shorebirds whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's shorebird resources or values.

Impacts of Alternative B, Proposed Action, on Shorebirds

Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced.

Existing impacts on shorebirds within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, indirect and direct, adverse impacts on shorebirds within the analysis area from recreational activities and vehicle access on the 7-mile segment of Gulf beach.

BNP would use a 7-mile segment of Gulf beach to access its existing wellpad. Vehicles would displace shorebirds causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary, but more frequent due to the increased vehicle use along the Gulf beach during the pad expansion and the placement and removal of the drill rig. Shorebird response to vehicles associated with the proposed ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells is expected to be the same as vehicles associated with recreational activities or other vehicle use along the shoreline.

BNP would be required apply mitigation measures outlined in Table 5 and 6 to minimize the disturbance to shorebirds. Mitigation measures include vehicle caravans and confinement of vehicle traffic above the "wet-line," which increases the distance between the vehicles and shorebirds. Additionally, project vehicles would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph. This would reduce the amount of disturbance on shorebirds, as reducing speed and the number of times the bird is displaced would lessen the overall impact. Reduced vehicle speed lessens the disturbance affect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of

the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

Recreational activities on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Disturbance to shorebirds could result from vehicle or pedestrian traffic along the shoreline. Pedestrian traffic causes shorebirds to either fly offshore, fly along the shoreline to a more suitable location, or continually walk ahead of the pedestrian until either the pedestrian leaves, another disturbance occurs, or the disturbance is enough to cause the bird to take flight.

Existing vehicle access and recreational use on the 7-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, indirect and direct, adverse impacts on shorebirds.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. The transportation of equipment to the wetlands compensation project site would account for some additional vehicle use along the Gulf Beach, over a period of one month.
Ground-disturbing equipment and vehicles would introduce elevated noise into the area that could displace wildlife. Minor adverse impacts would be localized along the Gulf Beach access route and within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation, and would result in recovery of wildlife habitat.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on shorebirds throughout the Park would be similar to those described under No Action, with recreational activities and vehicle access along the Gulf beach resulting in localized, short-term, negligible to minor, indirect and direct, adverse impacts on shorebirds; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to minor, indirect and direct, adverse impacts on shorebirds.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 7-mile segment of Gulf beach and other imposed mitigation measures, in addition to existing recreational activities and vehicle access within the beach corridor, would result in localized, short to long-term negligible to minor, indirect and direct, adverse impacts on shorebirds within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with recreational activities and vehicle access along the Gulf beach resulting in localized, short to long-term, negligible to minor, indirect and direct, adverse impacts on

shorebirds; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect and direct, adverse impacts on the shorebirds.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on shorebirds whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS documents, there would be no impairment of the Park's shorebird resources or values.

Songbirds

Including Loggerhead Shrike, Cerulean Warbler, Black-capped Vireo, and Tropical Parula

Affected Environment

Loggerhead Shrike

The Loggerhead Shrike (*Lanius ludovicianus*) is considered a species of concern at the federal level. This species is a permanent resident throughout most of the state but is uncommon to rare in southern Texas (Rappole and Blacklock 1994). Loggerhead Shrikes commonly occur in grasslands throughout the Park as well as in black willow and small shrub habitats that occur in the northern section of the Park. This species is common during the spring, fall, and winter (McCracken and Clark 1990) and considered rare in summer (Rappole and Blacklock 1994). There has been no documented nesting of Loggerhead Shrikes at the Park.

Neotropical Migratory Songbirds

Padre Island National Seashore provides migratory habitat for a broad number of Neotropical migratory songbirds that occur within the Park during the spring and fall migrations. Several of these species are listed as federal species of concern, threatened, endangered, or state listed as threatened or endangered. Some species that have been documented in the Park include Black-capped Vireo (*Vireo atricapillus*), Tropical Parula (*Parula pitiayumi*), and Cerulean Warbler (*Dendroica cerulea*).

Impacts on Songbirds under Alternative A, No Action

Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on songbirds.

However, impacts on songbirds would continue as the result of continued operation of the A8 well.

Vehicles would include two and four-wheel drive vehicles, and on occasion larger, multi-axle vehicles associated with routine maintenance activities at the A8 well.

Vehicle access would result in short-term movement of bird species utilizing the access road or wellpad equipment for loafing or resting. Songbirds would take temporary flight when vehicles or individuals approach too close and land to resume their activity after the disturbance has passed. Displaced songbirds could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on songbirds on grassland habitat preferred by these species throughout the Park could result from the continued operation of nonfederal oil and gas operations within the Park on 399 acres, park development on 391 acres, and future drilling and production wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres.

Existing oil and gas operations would continue to impact grassland habitat preferred by these species. Routine maintenance along pipeline corridors would include accessing the flowline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect flowline integrity. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. The occasional presence of vehicles and work crews, and associated engine noise could displace songbirds during the occasional, short periods that maintenance activities are being conducted along these segments of flowline. The resulting disturbance would likely cause this species to take flight and move to other suitable habitat nearby. There is a potential for the flowlines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term direct and indirect, adverse impacts on these species. However, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced. The continued oil and gas operations would result in localized, short-term, negligible, direct and indirect, adverse impacts on songbirds, for the long life of these flowlines, which could be 20 years or longer.

As some oil and gas operations are developed in the Park, others would be plugged, abandoned, and reclaimed, and therefore, impacts would be distributed over time, resulting in cumulative impacts, localized near development within grasslands throughout the Park, with short to long-term, negligible to minor, direct and indirect, adverse impacts. Leaks and spills from oil and gas operations would be localized, with minor to major, direct and indirect, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, direct and indirect, adverse impacts.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on Loggerhead Shrikes and Neotropical songbirds. Existing oil and gas operations would result in localized, short-term, negligible, direct and indirect, adverse impacts on songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, and park developments and operations are expected to result in short to long-term, negligible to minor direct and indirect, adverse impacts, localized near developments in grasslands preferred by these species throughout the Park. Leaks and spills from oil and gas operations would be localized, with minor to major, direct and indirect, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, direct and indirect, adverse impacts.

Because there would be no major, adverse impacts on songbirds whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's songbird resources or values.

Impacts on Songbirds under Alternative B, Proposed Action
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short to long-term disturbance to grassland habitat preferred by Loggerhead shrikes and Neotropical migratory birds on 2.5503 acres, and if completed to produce hydrocarbons, the long-term occupancy of 1.5503 acres.

Existing impacts on songbirds within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible, direct and indirect, adverse impacts associated with continued oil and gas operations.

Construction of the well pad expansion and drilling and production of the wells would cause the loss of habitat for Loggerhead shrikes, resulting in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts. Adverse impacts on songbirds from pad reclamation would be localized, minor, and short-term (lasting up to one year or more) during construction and re-vegetation activities. The continued use of the site for production operations would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on songbirds in the analysis area.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term direct and indirect, adverse impacts on grassland habitat. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

An indirect, localized, short-term, negligible beneficial impact may occur from the presence of shielded lighting on the drilling rig. This lighting would attract insects, which would provide a food source for the songbirds. In addition, the use of barbed wire around the wellpad could be utilized by this species for impaling prey. Finally, if the wells go into production, trees that would be planted for visual screening could result in localized, negligible, long-term beneficial impacts on songbirds by providing perching and foraging habitat for these species.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. The transportation of equipment to the wetlands compensation project site would account for some additional vehicle use along the Gulf Beach, over a period of one month.
Ground-disturbing equipment and vehicles would introduce elevated noise into the area that could displace wildlife. Minor adverse impacts would be localized along the Gulf Beach access route and within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation, and would result in recovery of wildlife habitat.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on songbirds throughout the Park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, and park developments and operations resulting in short to long-term, negligible to minor direct and indirect, adverse impacts, localized near developments in grasslands preferred by these species throughout the Park. Leaks and spills from oil and gas operations would be localized, with minor to major, direct and indirect, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, direct and indirect, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short-term disturbance to grasslands habitat preferred by songbirds on up to 2.5503 acres, and the long-term occupancy of 1.5503 acres. Wellpad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts. Drill rig lighting, barbed-wire fencing, and planting native willow shrubs or trees around production facilities would perpetuate perching and foraging habitat for these species, resulting in localized, short to long-term, negligible, beneficial impacts on these species. Cumulative impacts throughout the Park would be similar to those described under No Action, with park developments and operations, recreational

activities, and existing and future oil and gas operations that may be located within the Park's grasslands preferred by these species resulting in localized, short- to long-term, negligible, direct and indirect, adverse impacts on the songbirds.

As discussed in the last paragraph in Section 1.4, the NPS finds the proposed wells are an appropriate use in accordance with §§1.5 and 8.12 of the NPS *Management Policies* 2006. Further, because the application of mitigation measures would be reasonably expected to be successful in resulting in no major adverse effects from implementation of this alternative, and satisfactory reclamation of the disturbed operations area would also be reasonably expected to be achievable, the NPS finds that implementation of this alternative would not result in any unacceptable impacts and is consistent with Section 1.4.7.1 of the NPS *Management Policies* 2006.

Because there would be no major, adverse impacts on songbirds whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Padre Island National Seashore; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's songbird resources or values.

3.8. Impacts on Visitor Use and Experience

Methodology
Visitor surveys and personal observations of visitation patterns combined with an assessment of services and recreational opportunities available to visitors under current management were used to estimate the effects of the actions in the alternatives.

Negligible: the impact is barely detectable and/or will affect few visitors.

Minor: the impact is slightly detectable and/or will affect few visitors.

Moderate: the impact is readily apparent and/or will affect some visitors.

Major: the impact is severely adverse or exceptionally beneficial and/or will affect many visitors.

Affected Environment
The northern portion of the National Seashore is where most park development is located. Current park development includes a visitor center, entrance station, park headquarters and maintenance facilities, campground, and the Bird Island Basin recreational area. Please refer to the section "Park Development and NPS Operations" in the introduction to this section for an expanded description of park developments.

Visitor use typically begins to increase in May and peaks in August, with the fewest visitors in December. Annual park visitation in 2006 was 732,794, representing a 6% increase from 2002. Scott and Lai's (2004) publication, "A Survey of Visitors to Padre

Island National Seashore: A Final Report," in conjunction with Ditton and Gramann's (1987) publication, "A survey of Down-Island Visitors and Their Use Patterns at Padre Island National Seashore," indicated the following patterns:

- Twenty-seven percent of visitors interviewed reported traveling no farther down-island than Milepost 0, the end of the paved road (Park Road 22).
- Thirty-eight percent of beach users interviewed utilize the first ten miles of south beach for their visit.
- Thirty-five percent of interviewed visitors travel south of Little Shell Beach, even though individual destinations south of Little Shell Beach do not display high visitation.
- Visitation patterns are similar in July, August, and September.
- More anglers use areas south of Yarborough Pass (15-mile Marker) than beach users.

The beach areas can be divided up into two-wheel drive accessible, four-wheel drive recommended, and "closed" beach (no vehicle use). The ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells project area encompasses the first 6.9 miles of "South" beach, beginning at the end of the paved section of Park Road 22 and terminating at an existing gated caliche road through the dunes at the 7-mile mark. Most camping and a large portion of beach day use occur on the first five miles of "South" beach. South of the 5-mile marker, at the four-wheel drive only sign, the number of visitors heading south towards Mansfield Channel dramatically decreases.

Recent statistics show that about 37% of annual visitors (271,113) utilize Bird Island Basin to camp and have access to the Laguna Madre for their recreational pursuits. This is a 12% increase from the Ditton study. Approximately 11% of these visitors (29,822) will also use the Gulf for day use activities.

The Gulf shoreline is used for recreational opportunities such as surf fishing, swimming, shell collection, sunbathing, camping, and vehicle access to more remote areas of the beach. Padre Island National Seashore estimates that 27% (102,991) of beach users concentrate their use on the Gulf shoreline at North Beach and Closed Beach.

Extrapolating visitation figures, the Park estimates approximately 144,950 people recreate on the Gulf shoreline between the zero and the 10-mile marker of South Beach each year. Of these users, 70% (101,465 visitors) utilize only the first 5 miles (denoted by "4 wheel drive only" sign).

Thirty-five percent (133,507 visitors) take the opportunity to access remote beach areas south of the 10-mile marker, such as Yarborough Pass and the Mansfield Channel that are accessible only to four-wheel drive vehicles.

Use of the backcountry, the area behind the dune line and across the island to the Laguna Madre, is less popular than the beach in part because of the lack of access, and park regulations restricting the use of the dunes and wind tidal flats, etc., found in the center of the island.

Impacts on the visitor from the BNP project are expected to be from visual obstruction due to increased truck traffic, and being subjected to the noise generated by the larger trucks used for hauling drilling and production equipment, etc. to and from the site (see Tables 5 and 6 for additional mitigation measures and operating stipulations). Utilizing an existing drill location would significantly reduce the number and duration of required truck traffic.

Impacts of Alternative A, No Action, on Visitor Use and Experience
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on visitor use and experience. However, existing impacts on visitor use and experience in the analysis area would continue as the result of vehicle access along the 6.9-mile segment of Gulf beach and continued operation of the A8 well.

Vehicle use along the Gulf beach would include two and four-wheel drive vehicles, and on occasion larger, multi-axle vehicles associated with routine maintenance activities at the A8 well. Vehicles could occasionally result in sounds that exceed the 60-decibel background sound levels when drivers honk horns and operate vehicle engines louder than normal and become noticeable by park visitors. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Some drivers could drive over the speed limit, honk their horns, or play their radios loudly.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on visitor use and experience throughout the Park could result from the visual impact of human developments on the natural scenery associated with the continued operation of 17 nonfederal oil and gas operations within the Park on 399 acres, park developments on 391 acres, and future drilling and production of up to 16 wells projected in the Park's reasonably foreseeable development scenario on up to 241.75 acres.

Park staff, 17 oil and gas operations, and an estimated 374,850 (49% of total visitation) park visitors use the 7-mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger, multi-axle vehicles associated with routine maintenance activities at the oil and gas sites located throughout the Park. Four-wheel drive vehicles are recommended for travel below the 5-mile marker. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Some drivers could drive over the speed limit, honk their horns, or play their radios loudly. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August, and would be concentrated in the first five miles of Gulf beach. Vehicle traffic associated with oil and gas operations normally uses four-wheel drive trucks, however, a large vehicle like a vacuum truck, would travel the beach corridor approximately every 10 days to access

17 existing oil and gas operations located throughout the Park in order to perform routine maintenance.

The existing operation of the HPL and AEP pipelines located to the west of the existing A8 well site would continue. However, there should be no impact on visitor use and experience as these pipeline segments are sited 2,700 to 1,700 feet respectively from the dune line in the backcountry where no vehicular access available to the public. Company vehicles access the pipeline corridors either near the end of Park Road 22 or from Yarborough Pass road. If visitors hike from the Gulf beach over the foredunes to view the backcountry in the vicinity of these pipeline segments, nothing would be seen because these pipeline segments are buried and the surface of the pipeline corridor is vegetated. In the rare event that pipeline maintenance activities are occurring at the same time that a visitor looks towards the Laguna Madre, the pipeline maintenance activities occurring 2,700 to 1,700 feet away from the dune line would have little visual impact.

Existing uses, including vehicle access along the 7-mile segment of Gulf beach, would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area.

Other park activities that could contribute to impacts include prescribed fires, future park development, routine maintenance of park roads, and park and visitor vehicle use. Cumulative impacts could also result from conflicts between visitor uses and over-use of park resources and developments. Degradation of park resources and values could affect park visitors' perception of the Park and their experience. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels near the Park could increase sedimentation within the Laguna Madre in the Park and damage seagrass beds and fishery resources. Spills from oil and gas activities located in and adjacent to the Park, including tanker traffic in the Gulf of Mexico, could cause widespread impacts and result in long-term clean-up and remediation, and areas that would be closed to visitors. Spills of hydrocarbons and other contaminating or hazardous substances could also pose serious health and safety concerns. Some oil and gas operations and park operations would introduce elevated noise and odors. With the application of mitigation measures detailed in the Park's OGMP, and incorporated into operators' plans of operations, impacts would be avoided or minimized.

Cumulative impacts on visitor use and experience throughout the Park are expected to be localized near developments or activities, with short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion
Under Alternative A, No Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would not be drilled, resulting in no new impacts on visitor use and experience. Existing vehicle use on the 7-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Impacts of Alternative B, Proposed Action, on Visitor Use and Experience
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 2.5503 acres, and long-term occupancy by oil and gas developments on 1.5503 acres.

Existing impacts on visitor use and experience within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, adverse impacts associated with vehicle use on the 7-mile segment of Gulf beach.

BNP would use the 6.9-mile segment of Gulf beach to access its existing well pad. BNP would be required to confine vehicle use above the "wet-line" and observe speed limits (see Tables 5 and 6 for mitigation measures and operating stipulations). As described above under No Action, vehicles rut beach sands, and poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. BNP vehicle access on the beach could result in deeper and wider rutting, possible conflicts with visitors sharing the beach driving corridor, and repeated exposure to trucks each day. Truck traffic directly related to the production activities of the Dunn-Peach #1-7 wells, which utilize the same access road as the proposed wells, represented only 2.36 % of the 57,213 vehicles on south beach during that three month period. If the wells are productive, occasional gas vehicular traffic would traverse the Gulf beach to perform routine, periodic maintenance and removal of condensate from the wells.

Expansion of the existing A8 well pad and production facility could result in the short-term loss of natural scenery of up to 2.5503 acres. If the wells are placed in production, the well pad would also be reduced by 1.0 acre. Long-term occupancy by oil and gas developments on the well/production pad would be confined on 1.5503 acres.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on visitor use and experience. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including selecting a proposed operations area located away from visitor use developments and recreational use areas, providing security and a three-strand barbed-wire fence during the drilling operations to prevent unauthorized entry into the operations area (Table 5), would result in avoiding or minimizing impacts on visitor use and experience.

BNP vehicle access on the Gulf beach, expansion of the wellpad and production facility; and drilling and producing the wells would result in the short-term loss of natural scenery on up to 2.5503 acres, and long-term occupancy by oil and gas developments on 1.5503 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

BNP is required to complete the wetlands compensation project prior to or concurrent with the implementation of the proposal. The reclamation of approximately 1.7 acres of an abandoned oilfield access road would involve using heavy equipment to remove road base material and preparing the ground to re-establish natural topographic contours and reseeding with native vegetation to approximate adjacent undisturbed areas. The transportation of equipment to the wetlands compensation project site

would account for some additional vehicle use along the Gulf Beach, over a period of one month.
Ground-disturbing equipment and vehicles would introduce elevated noise into the area that could displace wildlife and be heard over natural sounds by park visitors. Minor adverse impacts would be localized along the Gulf Beach access route and within the road corridor and short-term, lasting a weeks or months. Restoration of wetland function and values could take a year or longer, depending on rainfall and re-vegetation, and would result in recovery of wildlife habitat and the natural scenery.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on visitor use and experience throughout the Park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion
Under Alternative B, Proposed Action, the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 2.5503 acres, and long-term occupancy by oil and gas developments on 1.5503 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Expansion of the wellpad and production facility, and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the Park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the Park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

4.0. CONSULTATION AND COORDINATION

A Notice of Availability for the Plan of Operations, EA, and draft Floodplains and Wetlands Statements of Findings will be published in the *Federal Register* and posted to the NPS public comment website at http://parkplanning.nps.gov announcing the availability of these documents for a 30-day public review and comment period.

Following the 30-day public review and comment period, NPS will consider written comments received. Additional mitigation measures resulting from the public involvement process may be applied by the NPS as conditions of approval of the Plan of Operations. Copies of the decision document would be sent to those who comment on the Plan of Operations, EA, and draft Floodplains Statement of Findings during the public review period, or request a copy.

4.1. Individuals and Agencies Consulted

Persons and agencies contacted for information, or that assisted in identifying important issues, developing alternatives, or analyzing impacts for the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells are listed below:

BNP Petroleum Corporation
Paul Black, Chairman & CEO, BNP
Charles E. Belaire, Belaire Environmental, Inc.
Andi Bohn, Belaire Environmental, Inc.

Agencies
Karen Bridges, Texas Commission on Environmental Quality, Corpus Christi, TX
Mary Orms, U.S. Fish and Wildlife Service, Corpus Christi, TX
John Wong, U.S. Army Corps of Engineers, Corpus Christi, TX

National Park Service
Intermountain Regional Office-Santa Fe
- Linda Dansby, Regional Minerals Coordinator

Intermountain Regional Office-Denver
- Chris Turk, Regional Environmental Quality Officer

Washington Office, Natural Resource Program Center, Geologic Resources Division
- Carol McCoy, Chief, Planning, Evaluation, and Permits Branch
- Edward Kassman, Regulatory/Policy Specialist
- Lisa Norby, Petroleum Geologist
- Pat O'Dell, Petroleum Engineer

Washington Office, Natural Resource Program Center, Water Resources Division
- Kevin Noon, Wetland Scientist, Lakewood, CO
- Mike Martin, Hydrologist, Ft. Collins, CO

4.2. List of Document Recipients

The EA and draft Floodplains and Wetlands Statements of Findings will be sent to:

BNP Oil Corporation and Consultants
Paul Black, Chairman & CEO, BNP
Charlie Belaire, Belaire Environmental, Inc.

Congressional Delegation
Senator Kay Bailey Hutchison
Senator John Cornyn
Honorable Ruben Hinojosa
Honorable Solomon P. Ortiz

Agencies
U.S. Department of the Interior - Office of the Solicitor
Barry Roth, Washington, DC
Robert Eaton, Santa Fe, NM

National Park Service
Mike Snyder, Director, Intermountain Region, Lakewood, CO
Linda Dansby, Regional Minerals Coordinator, Santa Fe, NM
Chris Turk, Regional Environmental Quality Coordinator, Lakewood, CO.
Carol McCoy, Geologic Resources Division, Denver, CO
Kevin Noon, Water Resources Division, Denver, CO
Mike Martin, Water Resources Division, Ft. Collins, CO
Jim Bradford, Archeologist, Intermountain Regional Office, Santa Fe, NM

Other Federal Agencies
Alan Strand, U.S. Fish and Wildlife Service, Corpus Christi, TX
Lloyd Mullins, U.S. Army Corps of Engineers, Corpus Christi, TX
Samuel Coleman, U.S. Environmental Protection Agency, Dallas, TX
District Conservationist, National Resources Conservation Service
Regional Director, Region VI, Federal Emergency Management Agency

State Government
Senator Juan “Chuy” Hinojosa
Representative Abel Herrero
Mary Helen Berlanga, Texas State Board of Education
Jerry Patterson, Commissioner, Texas General Land Office, Austin, TX
Debra Beene, Texas Historical Commission, Austin, TX
Texas Parks and Wildlife Department, Austin, TX
Sinoel Contreras, Texas Commission on Environmental Quality, Austin, TX
Fermin Munoz, Railroad Commission of Texas, Oil and Gas Division Corpus Christi, TX
Pat Alba, Texas Coastal Management Program

Tribal Interest
Anthony Street, President, Tonkawa Tribe

Environmental Interests
Phyllis Dunham, Regional Director, Sierra Club, Austin, TX
Pat Suter, Coastal Bend Sierra Club, Corpus Christi, TX
Coastal Bend Bays Foundation

Local Papers
Corpus Christi Caller Times
The Padre Island Moon

4.3. Preparers

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Linda Dansby, Regional Minerals Coordinator, Intermountain Region, National Park Service, Santa Fe, NM
Victoria Barela, Program Assistant, Office of Minerals/Oil and Gas Support, Intermountain Region, National Park Service, Santa Fe, NM

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6.0. APPENDIX A – Protected Species

Federally Listed Endangered and Threatened Species

Gulf Coast Jaguarundi	(E)	*Herpailurus yagouaroundi cacomitli*
Ocelot	(E)	*Leopardus pardalis*
West Indian manatee (=Florida)	(E)	*Trichechus manatus*
Coues' rice rat	(SOC)	*Oryzomys couesi aquaticus*
Green sea turtle	(T)	*Chelonia mydas*
Loggerhead sea turtle	(T)	*Caretta caretta*
Hawksbill sea turtle	(E w/CH‡)	*Eretmochelys imbricata*
Kemp's Ridley sea turtle	(E)	*Lepidochelys kempii*
Leatherback sea turtle	(E w/CH‡)	*Dermochelys coriacea*
Black-spotted newt	(SOC)	*Notophthalmus meridionalis*
Rio Grande lesser siren	(SOC)	*Siren intermedia texana*
Texas horned lizard	(SOC)	*Phrynosoma cornutum*
American alligator	(TSA)	*Alligator mississipiensis*
Whooping Crane	(E w/CH)	*Grus americana*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Piping Plover	(T w/CH)	*Charadrius melodus*
Loggerhead Shrike	(SOC)	*Lanius ludovicianus*
White-faced Ibis	(SOC)	*Plegadis chihi*
Least Tern	(E~)	*Sterna antillarum*
Brown Pelican	(E)	*Pelecanus occidentalis*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Audubon's Oriole	(SOC)	*Icterus graduacauda audubonii*
Cerulean Warbler	(SOC)	*Dendroica cerulea*
Ferruginous Hawk	(SOC)	*Buteo regalis*
Black Tern	(SOC)	*Chlidonias niger*
Reddish Egret	(SOC)	*Egretta rufescens*
Sennett's Hooded Oriole	(SOC)	*Icterus cucullatus sennetti*
Texas Botteri's Sparrow	(SOC)	*Aimophila botterii texana*
Texas Olive Sparrow	(SOC)	*Arremonops rufivirgatus rufivirgatus*
Tropical Parula	(SOC)	*Parula pitiayumi nigrilora*
Brownsville Common Yellowthroat	(SOC)	*Geothlypis trichas insperata*
Bailey's ballmoss	(SOC)	*Tillandsia baileyi*
Roughseed sea-purslane	(SOC)	*Sesuvium trianthemoides*
South Texas ambrosia	(E)	*Ambrosia cheiranthifolia*
Black lace cactus	(E)	*Echinocereus reichenbachii* var. *albertii*
Slender rush-pea	(E)	*Hoffmannseggia tenella*
Welder machaeranthera	(SOC)	*Psilactis heterocarpa*
Lilia de los llanos	(SOC)	*Echeandia chandleri*
Los Olmos tiger beetle	(SOC)	*Cicindela nevadica olmosa*
Maculated manfreda skipper	(SOC)	*Stalligsia maculosus*

State Listed Threatened and Endangered Species

Black spotted newt	(T)	*Notophthalmus meridionalis*
Mexican treefrog	(T)	*Smilisca baudinii*
Sheep frog	(T)	*Hypopachus variolosus*
South Texas siren	(T)	*Siren* sp.
Texas horned lizard	(T)	*Phrynosoma cornutum*
Black striped snake	(T)	*Coniophanes imperialis*
Northern cat-eyed snake	(T)	*Leptodeira septentrionalis*
Texas scarlet snake	(T)	*Cemophora coccinea lineri*
Texas tortoise	(T)	*Gopherus berlandieri*
Indigo snake	(T)	*Drymobius corias*
Specked Racer	(T)	*Drymobius margaritiferus*
Loggerhead sea turtle	(T)	*Caretta caretta*
Green sea turtle	(T)	*Chelonia mydas*
Atlantic hawksbill sea turtle	(E)	*Eretmochelys imbricata*
Kemp's ridley sea turtle	(E)	*Lepidochelys kempi*
Leatherback sea turtle	(E)	*Dermochelys coriacea*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Southwestern Willow Flycatcher	(E)	*Empidonax trailii extimus*
Cactus Ferruginous Pygmy-owl	(T)	*Glaucidium brasilianum cactorum*
Eskimo Curlew	(E)	*Numenius borealis*
Rose-throated Becard	(T)	*Pachyramphus aglaiae*
Northern Beardless tyrannulet	(T)	*Camptostoma imberbe*
Sooty Tern	(T)	*Sterna fuscata*
Texas Botteri's Sparrow	(T)	*Aimophila botterii texana*
Zone-Tailed Hawk	(T)	*Buteo albonotatus*
Eastern Brown Pelican	(E)	*Pelecanus occidentalis*
Piping Plover	(T)	*Charadrius melodus*
Reddish Egret	(T)	*Egretta rufescens*
White-Faced Ibis	(T)	*Plegadis chihi*
Wood Stork	(T)	*Mycteria Americana*
Swallow-Tailed Kite	(T)	*Elannoides forticatus*
White-Tailed Hawk	(T)	*Buteo albonotatus*
Common Black-Hawk	(T)	*buteogallus anthracinus*
Peregrine Falcon	(E)	*Falco femoralis septentrionalis*
Black-Capped Vireo	(E)	*Vireo atricapillus*
Tropical Parula	(E)	*Parula ptiayumi nigrilora*
Coues' rice rat	(T)	*Oryzomys coues*i
Jaguar	(E)	*Panthera onca*
Jaguarundi	(E)	*Herpailurus yaguarondi*
Ocelot	(E)	*Leopardus pardalis*
Red wolf	(E)	*Canis rufus*
Southern yellow bat	(T)	*Lasiurus ega*
White-nosed coati	(T)	*Nasua narica*
Texas ayenia	(E)	*Ayenia limitaris*

Slender rush-pea	(E)	*Hoffmannseggia tenella*
South Texas ambrosia	(E)	*Ambrosia cheiranthifolia*

Fishes
No listed species documented at this time within Padre Island National Seashore.

Marine Mammals
All marine mammals, excluding the West Indian Manatee, only occur in the Padre Island National Seashore when stranded due to illness or death.

Index
Statewide or areawide migrants are not included by county, except where they breed or occur in concentrations. The whooping crane is an exception; an attempt is made to include all confirmed sightings on this list.

E	=	Species in danger of extinction throughout all or a significant portion of its range.
T	=	Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
C	=	Species for which the Service has on file enough substantial information to warrant listing as threatened or endangered.
CH	=	Critical Habitat (in Texas unless annotated ‡)
P/E	=	Species proposed to be listed as endangered.
P/T	=	Species proposed to be listed as threatened.
TSA	=	Threatened due to similarity of appearance.
SOC	=	Species for which there is some information showing evidence of vulnerability, but not enough data to support listing at this time.
‡	=	CH designated (or proposed) outside Texas
~	=	Protection restricted to populations found in the “interior” of the United States. In Texas, the least tern receives full protection, except within 50 miles (80 km) of the Gulf Coast.

7.0. APPENDIX B – Draft Floodplains Statement of Findings

STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11988
(FLOODPLAIN MANAGEMENT)

BNP PETROLEUM CORPORATION
ST 991 #1, DUNN-MCCAMPBELL 12A, DUNN-MCCAMPBELL 11A NATURAL GAS WELLS AND DUNN-MCCAMPBELL A8 WATER WELL AT
PADRE ISLAND NATIONAL SEASHORE, TEXAS

INTRODUCTION

Padre Island National Seashore (the Park) was established by Congress on September 28, 1962 (16 U.S.C. §459d, *et seq.*), "In order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped…" Padre Island National Seashore preserves the longest undeveloped barrier island in the United States (Figure 1). It encompasses 69 miles of the 113-mile-long barrier island. More than 60% of the Park consists of wetlands comprising marshes, inland waters, wind-tidal flats, and seagrass beds.

At the time of the Park's establishment, surface ownership was held by the State of Texas or by private landowners. In 1973, the surface estate owned by the State of Texas was conveyed to the U.S. Government, while those surface rights held by private landowners were acquired by the federal government through condemnation. All subsurface mineral interests underlying the land portion of the Park were retained by private owners. Those underlying the submerged lands under the Laguna Madre and Gulf of Mexico were retained by the State of Texas and are administered by the General Land Office. Thus, the federal government does not own any of the subsurface oil and gas minerals in the Park. However, Congress directed in the Park's enabling act that nonfederal oil and gas development be regulated.

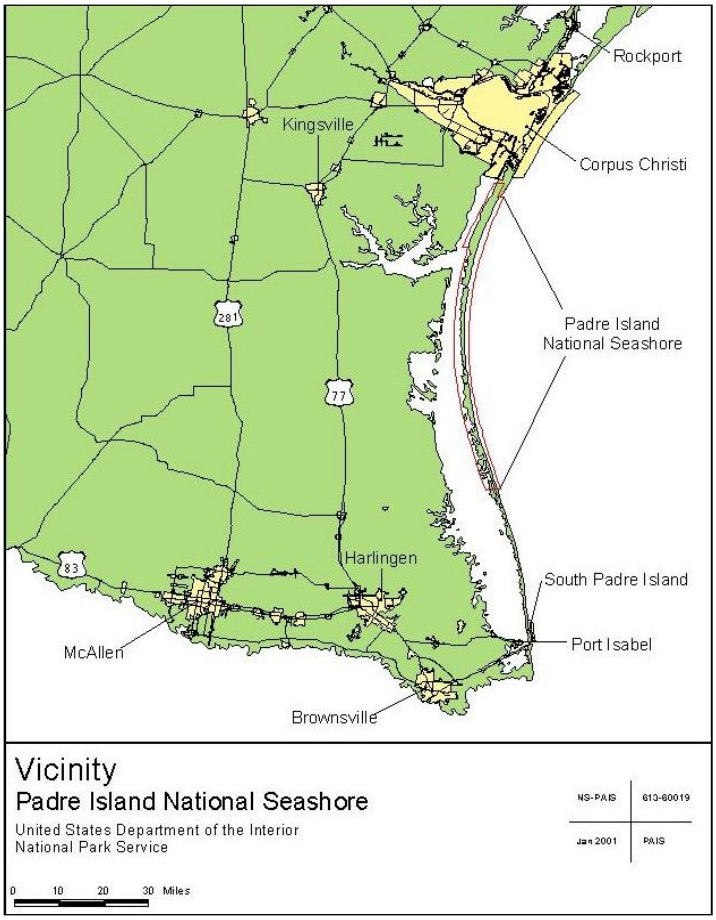


Figure 1. Region/Vicinity map.

In accordance with National Park Service (NPS) regulations for nonfederal oil and gas rights, BNP Petroleum Corporation (BNP) has submitted a Plan of Operations to the NPS to directionally drill and produce

the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells, and operate the Dunn-McCampbell A8 Water Well from a surface location on Padre Island National Seashore (the Park) (Figures 1 - 3).

ACCESS

All vehicles used during well pad expansion, drilling, and production operations would enter the Park via Park Road 22, travel approximately eight miles to the end of the paved road, and then proceed approximately seven miles along the Gulf Beach to a gated dune pass and an existing shell/caliche road that extends approximately four miles to the A8 well location (Figure 2).

Figure 1-2. Proposed location of the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells, and Dunn-McCampbell A8 water well.

SURFACE LOCATION AND WELLPAD

BNP's proposed drill site would be located on the existing Dunn-McCampbell "A" Lease wellpad (Figure 3) because the site would avoid or minimize adverse impacts on wetlands, tidal flats, dunes, and other sensitive resource areas because it is a previously disturbed 1.7191-acre site. The wellpad would be expanded by 0.8312 acres for a total wellpad acreage of 2.5503 acres, which is the acreage BNP has stated, is necessary for the proposed operation. This expanded site would provide for an orderly addition of up to three new wells adjacent to the existing Dunn-McCampbell A8 wellhead.

A six-foot diameter by six-foot deep corrugated galvanized steel cellar would be installed around each well. Cellars would be made of rolled steel with spiral seams and would be effectively watertight. Prior to rigging up the drilling rig, a conductor would be driven to ± 120 feet (point of refusal) and the bottom of the cellar would be sealed with one foot of

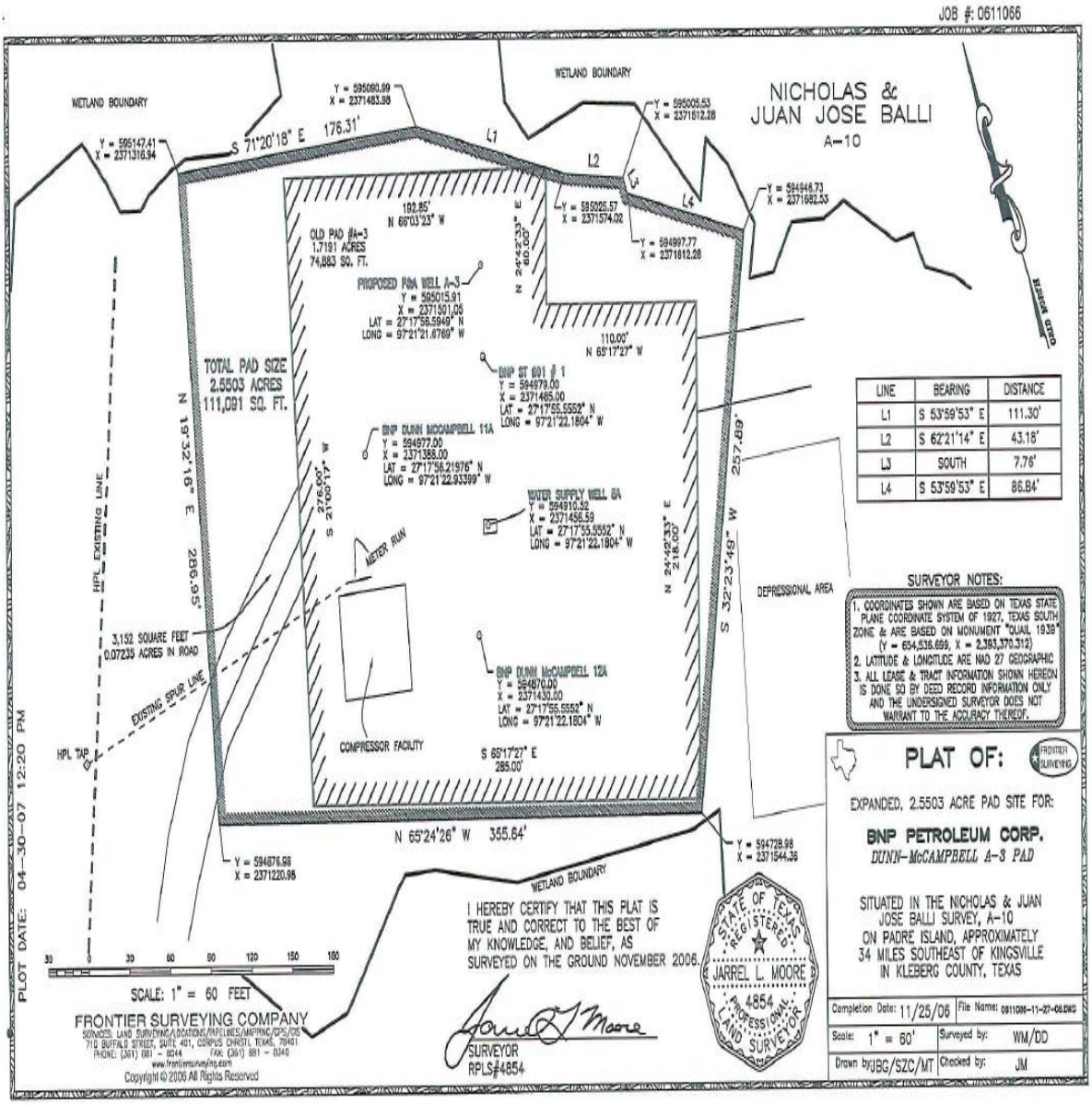


Figure 3. Proposed locations of wellpad and production facility.

cement. Steel conduit would be cemented in place for the rathole and mousehole to prevent communication between groundwater sands and well fluids. The pad would be sloped and drainage ditches would be dug (12 inches wide and 8 inches deep) to route all runoff to the cellar. A portable sump pump would be used to pump the gathered liquids to steel tanks for re-use or disposal. After leveling the pad area, a 20 mm thick polyethylene protective liner would be placed on the pad area with approximately a 6-foot overlap between sheets. A 3-foot high caliche berm would be constructed around the perimeter of the pad area for emergency containment that would also be lined with a 20mm thick impermeable liner.

All equipment, machinery, and living quarters would be placed within the 2.5503-acre pad area. Approximately 1.0 acre of the wellpad would be reclaimed beginning 15 days after the drilling/completion rig is moved off of the last well location.

Use of Water for Drilling
Freshwater would be needed during the drilling operation primarily for mud dilution, cementing, and rig cleaning and would be supplied by the existing Dunn-McCampbell A8 water well. By using synthetic oil based mud, approximately 7,500 barrels (315,000 gallons) of freshwater would be needed to drill each well. The water would be stored in the drilling rigs water tank and, if necessary, an additional fractionating tank would be installed on location.

Alternatively, fresh water could be obtained from one of several fire hydrants located along Park Road 22 outside the Park. A check valve and water meter would be installed on the hydrant. Two 500-barrel fractionating tanks would be set near the hydrant to store water. Vacuum trucks would be used to haul water to the rig as needed. At 130 barrels per load, this would require approximately 173 loads to be delivered to the rig.

Production Facility
BNP would use existing tank batteries and production equipment that are present on the location. Production for all operations could continue for up to 20 years.

Pipeline
BNP proposes to utilize an existing metering facility previously installed for the A3 and A8 wells located within the original pad area. BNP would also use the existing flow line and tap located at the Houston Pipeline (HPL) main trunk line. All such facilities would be built to HPL specifications as authorized by the NPS. The pad expansion would not require disturbance of the existing flow line. BNP anticipates that the existing metering, flow line and tap facilities are adequate for projected flow. However, should the production rate reach a level such that the existing facilities should require revision, NPS would be notified and NPS procedures would be followed to request an upgrade to the facilities.

Site Description
The Park is located on a largely undeveloped barrier island in southern Texas, along the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The Park's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore-island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre, back-island dunes, and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Park. Two natural and 20 manmade spoil islands in the Laguna Madre also lie within the Park.

A dune line along the Gulf beach provides protection from hurricanes and tropical storm events for the island's backcountry and the Texas mainland. The dunes are fragile and once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand, resulting in a line of dunes forming parallel to the beach that varies in height from less than 6 feet to approximately 50 feet above sea level. This primary dune line extends the entire length of the Park, broken only in a few places where storm washover channels have occurred, or road cuts have been constructed.

Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water is typically 1-4 feet deep, depending upon the season.

According to the Final Oil and Gas Management Plan/Environmental Impact Statement and Federal Emergency Management Agency floodplain maps, most of the Park and all of the proposed project area lie within 100-year floodplains. The exception is the higher dune areas.

Nature of Flooding in the Area

Hurricanes, tropical storms, or other storm events that bring high winds and/or substantial rainfall may result in periodic flooding, due to the low elevations. Hurricanes strike the Texas coastline twice every three years for an average rate of 0.67 storms per year. The most recent hurricane to impact the Park was Hurricane Brett in 1999, which came ashore 50 miles south of park headquarters and came ashore as a Category 4 hurricane. Prior to that event, Hurricane Allen in 1980 was the last hurricane to directly impact the Park. The hurricane season begins June 1 and continues through November 30.

Justification for Use of the Floodplain

Two legislative authorities identify how non-federal oil and gas interests would be managed by the NPS and include the Park’s enabling legislation and the NPS Non-federal Oil and Gas Rights Regulations, 36 CFR Part 9, Subpart B.

Park Enabling Legislation - Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the Park. As a result, the mineral estate underlying the Park is either owned privately or by the State of Texas and is protected by the U.S. Constitution.

One of the primary rights associated with the mineral interest is the right of reasonable access to explore for and develop the mineral interest. If the mineral interest holder chooses to exercise its right to explore for or develop its mineral interest, the NPS must grant reasonable access to do so. However, access to nonfederal oil and gas which requires access on, across, or through federally owned or controlled lands or waters within the Park is subject to the NPS’s Nonfederal Oil and Gas Rights Regulations.

Non-federal Oil and Gas Rights Regulations, 36 CFR Part 9, Subpart B - The 9B regulations apply to operations that require access on or through federally owned or controlled lands or waters in connection with non-federally owned oil and gas in all National Park System units.
These regulations assist park managers in managing oil and gas activities so they may be conducted in a manner consistent with the NPS mandate to protect park resources and values. The application and implementation of these regulations on the ground must be assessed parkwide for each site-specific oil and gas activity to determine if these activities have the potential to impair park resources and values.

Because of legislative requirements, there is no practical alternative to locating the proposed, well pad, access road, and flowline outside of the 100-year floodplain because the entire park, with the exception of the fore dunes, is located within floodplains. The formal designation of the floodplain status of the Park was initially conducted by the Federal Emergency Management Agency's National Flood Insurance Program on August 17, 1971, and revised on March 1, 1984.

Site-Specific Flood Risk
The greatest percentage of hurricanes occurs in August, September, and October. The number of tropical storms occurring during a season may vary from 4 to 12. The average for the past 40 years has been 10 storms per year within the Gulf of Mexico. The Corpus Christi area has had significant effects from only a small percentage of hurricanes, averaging one storm event every 15 years.

Under normal weather patterns, any flooding of the back island area or the beach face is of short duration. Winds associated with the passage of northern weather fronts during the winter, cause water to rise 1-3 inches and cover back island environments (wind tidal flats) until the wind returns to the southeast. This generally occurs over the course of 2-3 days. Storm events entering the Gulf of Mexico cause Gulf waters to rise, which when coupled with normal lunar tides, inundate the beach until the storm moves ashore. Normally 2-4 days are needed for water levels to recede and allow passage along the Gulf beach.

Padre Island N. S. utilizes the following four stage alert system when a tropical storm or hurricane enters the Gulf of Mexico.

- STAGE I ALERT: National Weather Service hurricane forecast and projected storm path is 72 hours from Padre Island.

- STAGE II ALERT: National Weather Service hurricane forecast and projected storm path is 60 hours from Padre Island or a Hurricane Watch has been declared.

- STAGE III ALERT: National Weather Service hurricane forecast and projected storm path is 36 hours from Padre Island, or a Hurricane Warning has been issued, or a Category 3, 4, or 5 hurricane is within 60 hours of landfall, or

projected landfall is within 150 miles south of Corpus Christi or 100 miles north of Corpus Christi, or the Superintendent deems step-up actions are warranted.

- STAGE IV ALERT will be put into effect when conditions for Stage III have occurred *and* projected hurricane landfall for the Texas Coastal Bend area is within 12 hours.

Should a storm suddenly develop in the western Gulf area, or if an approaching storm suddenly increases its forward speed, any or all of the alerts may be bypassed and the Park could immediately go under a STAGE III or IV ALERT.

Project Contingencies

Project impacts would be reduced by locating the proposed operations on existing upland areas and applying mitigation and restoration measures such as constructing a berm around the drilling equipment area on the well pad and the production facility. The berm will provide primary and secondary spill containment to prevent the release of any leaked or spilled hydrocarbons, or hazardous substances off the operations pad into the environment. Because of applying these and other mitigation and restoration measures, construction, drilling, and production operations would result in localized, short- to long-term, negligible to minor, adverse impacts on floodplains.

The possibility of severe or significant storm events has been taken into consideration during the planning of this project. BNP has developed hurricane preparedness and evacuation plan, which is included as appendices to BNP's Plan of Operations for drilling and production of the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and the Dunn-McCampbell A8 Water Well. BNP's hurricane preparedness plan was developed in conjunction with the Park's hurricane plan; however, BNP's alert levels are stricter than those used by the NPS and generally actions begin sooner than NPS actions. Their plan addresses: shutting in, securing the well and equipment, and evacuating personnel. The rig is considered "threatened" when a storm is within 500 miles of landfall. Preparation phases are as follows:

- Preparation for Storm Season,
- Phase I – Storm is 72 hours away from landfall,
- Phase II – Storm is 48 hours away from landfall,
- Phase III – Storm is 24 hours away from landfall.

During initial storm season preparation, the rig will be prepared for storm season by sending unneeded materials and equipment to storage or disposal or is secure, ensuring that all emergency equipment is operational. During phase one, the emergency generator will be tested, the rig secured, and arrangements for personnel evacuation made. During phase two, derrick equipment, drill floor, and pumps will be secured. Evacuation arrangements for personnel will begin. During phase three, all valves will be closed, equipment and doors, main engines are shut down, and rig is evacuated.

Summary

The NPS concludes that there is no practical alternative for placement of BNP's ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and Dunn-McCampbell A8 Water Well outside of designated floodplains. Therefore proposed construction, maintenance, drilling, and production activities associated with these wells would result in localized, short to long-term, negligible to minor, adverse impacts on water resources and floodplains. The NPS, therefore, finds that this project complies with Executive Order 11988: "Floodplain Management."

8.0. APPENDIX C – Draft Wetlands Statement of Findings

STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11990
(PROTECTION OF WETLANDS)

BNP PETROLEUM CORPORATION
ST 991 #1, DUNN-MCCAMPBELL 12A, DUNN-MCCAMPBELL 11A NATURAL GAS WELLS AND DUNN-MCCAMPBELL A8 WATER WELL AT
PADRE ISLAND NATIONAL SEASHORE, TEXAS

INTRODUCTION

Congress established Padre Island National Seashore (the Park) on September 28, 1962 to "save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped" (16 U.S.C. §459d, et seq). The Park preserves the longest undeveloped barrier island in the United States. It encompasses 69 miles of the 113-mile-long barrier island. More than 60% of the Park consists of wetlands comprising marshes, inland waters, wind-tidal flats, and seagrass beds. However, Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the Park. As a result, the mineral estate underlying the Park is either owned privately or by the State of Texas. The National Park Service (NPS) is legally required to allow access to the minerals while applying resource protection requirements and ensuring adherence to federal and state regulations, policies, and guidelines.

BNP Petroleum Corporation (BNP) proposes to drill the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and continue the operation of the Dunn-McCampbell A8 water well. The new wells will be placed on the existing A8 wellpad, road, and flowline corridor utilized when the A8 well was originally installed in 1985.

This Statement of Findings addresses potential impacts, alternatives considered, wetland functions, and avoidance, minimization, and park compensation measures associated with a 0.8312-acre expansion of the existing Dunn-McCampbell A8 wellpad. This statement does not address the additional components of the road, flowline, and wellpad. Those components currently exist and have already been addressed in a previous SOF.

PROJECT DESCRIPTION

BNP Petroleum Corporation (BNP) proposes to utilize the existing Dunn-McCampbell A8 wellpad, which is approximately seven miles south of the end of the pavement on South Beach (Figure 1) to drill the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells and continue the operation of the Dunn-McCampbell A8 water well. Their use of the well pad will require an expansion of 0.8312-acre.

Surface Location and Wellpad

BNP's proposed drill site will be located on the existing Dunn-McCampbell "A" Lease wellpad (Figures 1 and 2) because the site will avoid or minimize adverse impacts on the Park's habitats because the site is a previously disturbed 1.7191-acre site. The

wellpad will be expanded by 0.8312-acre for a total wellpad acreage of 2.5503-acres, which is the acreage BNP has stated, is necessary for the proposed operation.

Figure 1-2. Proposed location of the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A natural gas wells, and Dunn-McCampbell A8 water well.

A six-foot diameter by six-foot deep corrugated galvanized steel cellar will be installed around each well. Cellars will be made of rolled steel with spiral seams and will be effectively watertight. Prior to rigging up the drilling rig, a conductor will be driven to ± 120 feet (point of refusal) and the bottom of the cellar will be sealed with one foot of cement. Steel conduit will be cemented in place for the rathole and mousehole to prevent communication between groundwater sands and well fluids. The pad will be sloped and drainage ditches will be dug (12 inches wide and 8 inches deep) to route all runoff to the cellar. A portable sump pump will be used to pump the gathered liquids to steel tanks for re-use or disposal. After leveling the pad area, a 20 mm thick polyethylene protective liner will be placed on the pad area with approximately a 6-foot overlap between sheets. A 3-foot high caliche berm will be constructed around the perimeter of the pad area for emergency containment that will also be lined with a 20mm thick impermeable liner.

All equipment, machinery, and living quarters will be placed within the 2.5503-acres acre pad area. Approximately 1.0-acre of the wellpad will be reclaimed beginning 15 days after the drilling/completion rig is moved off of the last well location.

Use of Water for Drilling

Freshwater will be needed during the drilling operation primarily for mud dilution, cementing, and rig cleaning and will be supplied by the existing Dunn-McCampbell A8 water well. By using synthetic oil based mud, approximately 7,500 barrels (315,000 gallons) of freshwater will be needed to drill each well. The water will be stored in the drilling rigs water tank and, if necessary, an additional fractionating tank will be installed on location.

Alternatively, fresh water could be obtained from one of several fire hydrants located along Park Road 22 outside the Park. A check valve and water meter will be installed on the hydrant. Two 500-barrel fractionating tanks will be set near the hydrant to store water. Vacuum trucks will be used to haul water to the rig as needed. At 130 barrels per load, this will require approximately 173 loads to be delivered to the rig.

Production Facility

BNP will use existing tank batteries and production equipment that are present on the location for the production facility (Figure 3). Production for all operations could continue for up to 20 years.

WETLAND VALUES

Emergent wetlands are significant because they provide important habitat for various park wildlife resources. Wildlife that use wetlands include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Felis rufus*), skunk (*Mephitis mephitis*), badger (*Taxidea taxus beriandieri*), raccoon (*Procyon lotor*), jackrabbit (*Lepus californicus merriami*), bobwhite quail (*Colinus virginianus*), dove (*Zenaida macroura*), meadowlark (*Sturnella magna*), northern harrier (*Circus cyaneus*), peregrine falcon (*Falco peregrinus*), American egret (*Casmerodius albus*), great blue heron (*Ardea herodias*), and various species of ducks, geese, and shorebirds. Reptiles and amphibians that use wetlands include: northern leopard frog (*Rana pipiens*), Hunter's spadefoot toad (*Scaphiopus holbrookii*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvis*), checkered garter snake (*Thamnophis marcianus*), red-eared slider turtle (*Trachemys scripta*), and yellow mud turtle (*Kinosternon flavescens*).

Federal and/or state listed species that can use park wetlands include: reddish egret (*Egretta rufescens*), peregrine falcon (*Falco peregrinus*), white-tailed hawk (*Buteo albicaudatus*), ferruginous hawk (*Glaucidium brasilianum*), and white-faced ibis (*Plegadis chichi*).

Park wetlands are adjacent to or lie within depressions that exist among sandy, low profile hummocks across the island. Wetland hydrology is derived from runoff, precipitation, and a seasonally high water table. Wetlands serve to collect runoff water and eroded sediment, recharge the water table, as a surface expression for a high water table (i.e., ground water), and to store floodwaters.

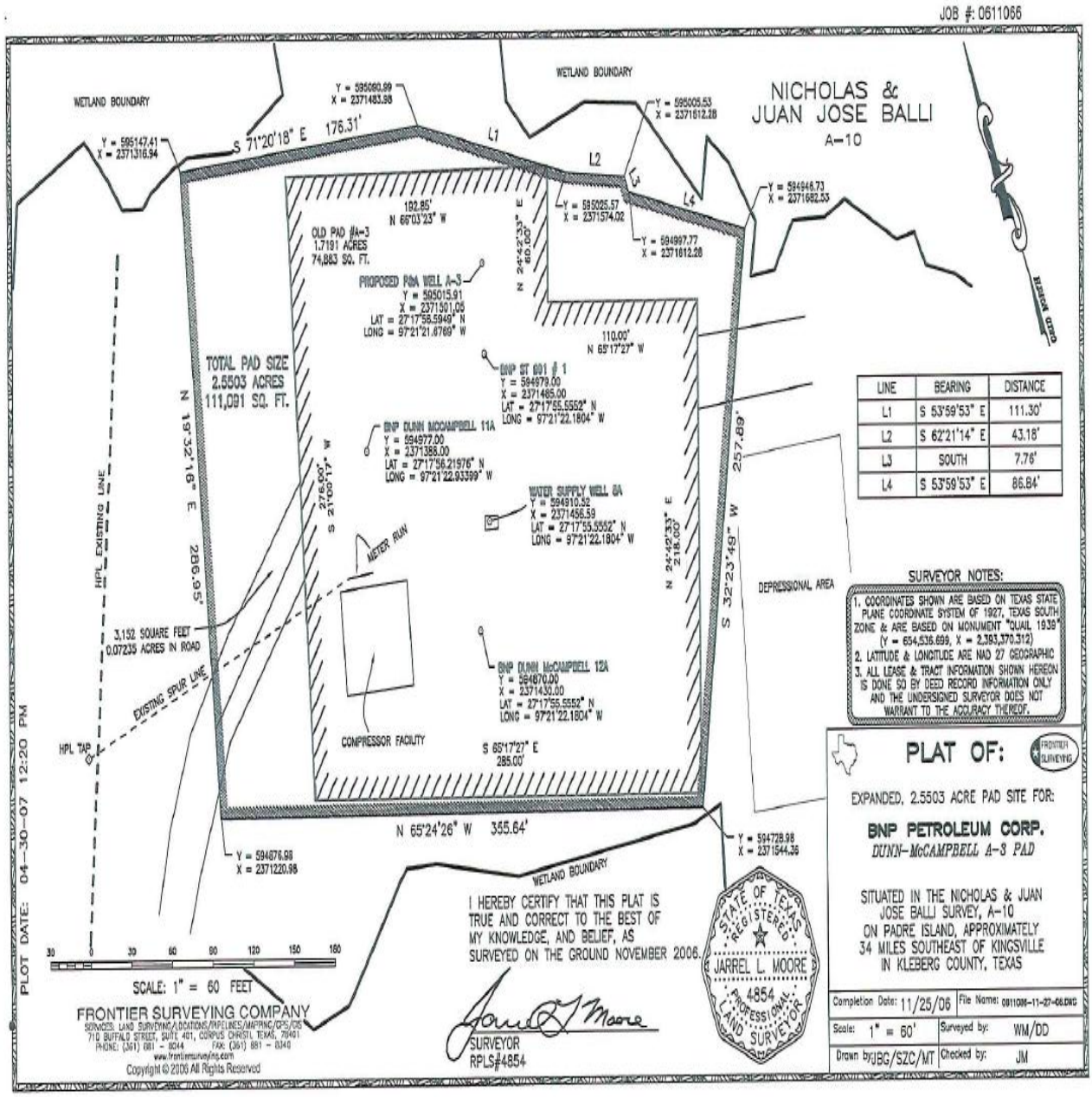


Figure 3. Proposed locations for wellpad and production facility.

Restoration of the impacted site will enhance the following wetland functions and values:

- Wildlife habitat: Tidal flow will be re-established to allow periodic saltwater inundation, which will promote the presence and growth of benthic invertebrates and blue green algae and therefore benefit terrestrial and aquatic wildlife. Benthic invertebrates such as polychaetes, amphipods, and insect larvae will provide a food source for many shorebird species including several federally and

state protected species. Bluegreen algae provide the basis of the food web within the Laguna Madre by providing a food source for zooplankton and larval fish. Approximately 10 acres of tidal flat habitat will become productive through this wetland compensation project. Enhanced benefits will be realized for wildlife habitat by directly supporting several federal and state protected species, which do not utilize the wetlands impacted from the wellpad expansion.

- Nutrient source: The periodic inundation of saltwater will provide the necessary nutrients to promote the growth of benthic invertebrates and blue green algae, which will benefit wildlife associated with the tidal flats and Laguna Madre as mentioned above. The nutrient wetland function between the impacted and restored wetlands will be approximately the same, since both wetlands promote nutrient production.

- Recreational and commercial values: While tidal flats are not typically utilized for direct recreational activity, the removal of the abandoned road and its associated fill material will enhance the scenic beauty of the area associated with the wetland restoration project. Visitors frequenting Yarborough Pass will be able to see a larger expanse of tidal flat habitat without the detraction of an abandoned road. The restored wetland will function as a valuable component of the ecosystem and support birds and other fauna that visitors will utilize through recreational activities such as bird watching.

The promotion of blue green algae will enhance the Laguna Madre and its associated commercial and recreational finfish and shellfish species. Recreational and commercial values will be enhanced to a higher degree than the original wetlands. The impacted wetlands do not provide a food source utilized by the finfish and shellfish species within the Laguna Madre.

WETLAND DESCRIPTION

The NPS would normally conduct a wetlands delineation of the proposed project location utilizing the wetland classification system described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al. 1979) and delineated by a qualified professional based on the methods described in the 1987 *Corps of Engineers Wetland Delineation Manual* and prior to construction. The delineation would focus on the analysis of soil properties, vegetation composition, and hydrologic properties. However, construction began prior to conducting the delineation; therefore, the NPS utilized the best available information to determine the extent of wetland impacts.

Soils

According to a recent NRCS soil survey, soil series 491 Mustang-Panam Complex were identified within the proposed project area (Figure 4).

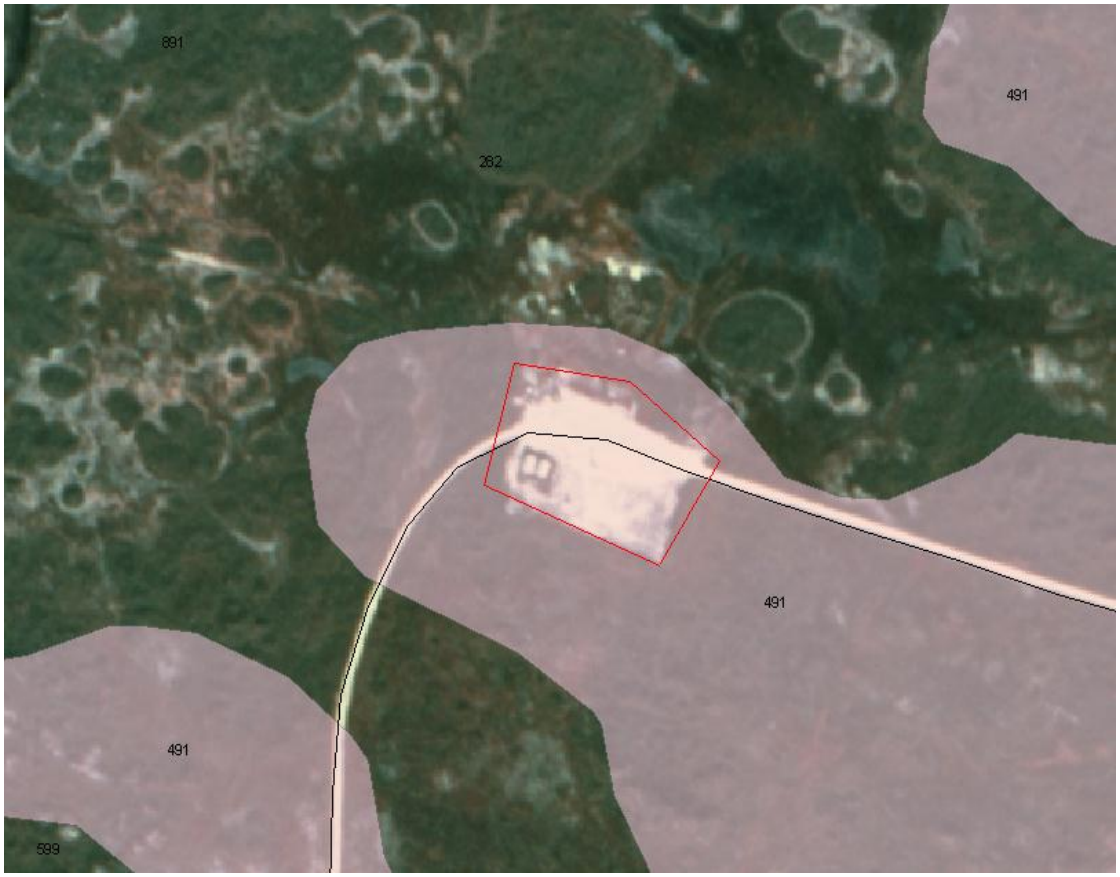


Figure 4. Soil Series Associated with the ST 991 #1, Dunn-McCampbell 11A, and Dunn-McCampbell 12A Natural Gas Wells, and Dunn-McCampbell A8 Water Well.

The Mustang-Panam soils are gently sloping soils (0-2%) with elevations ranging from 0-10 feet. This series is comprised of very deep, poor draining, and very slow to rapidly permeable soils that formed in sandy eolian and storm washover sediments on barrier islands. They are classified as being 55% hydric.

Vegetation

The existing 1.7191-acres pad has already been expanded by 0.8312-acre due to miscommunication between the operator and the NPS to establish the proposed 2.5503-acres pad. The wellpad area was not surveyed for wetland habitats prior to the 0.8312-acre expansion. Therefore, wetland vegetation can only be determined by surrounding wetland plant communities. The predominant wetland emergent species included *Paspalum urvillei* at 30%, *Andropogon glomeratus* at 35%, and *Spartina patens at 35%.*

Hydrologic

The area is subject to occasional flooding by high storm surge from strong tropical storms, and is ponded after periods of heavy rainfall.

WETLAND IMPACTS

The proposed project has impacted 0.8312-acre of wetland habitat through the placement of fill material used during the unauthorized expansion of the wellpad. Due to park compliance not being completed prior to the pad expansion, the amount of emergent wetland vegetation was unable to be correctly calculated. Wetland impacts associated with construction of road, flowline, and authorized wellpad, which already exist, were addressed in previous compliance documents.

Wellpad: The unauthorized wellpad expansion impacted 0.8312-acre, which consisted of emergent, wetland vegetation. Hydric soils were not included as part of the wellpad determination since the wellpad constituted an atypical situation based on the presence of previous fill material. Therefore the wellpad expansion impacts 0.8312-acre of park wetland.

ALTERNATIVES CONSIDERED

Measures have been taken to avoid wetlands to the maximum extent practicable when locating the access road, wellpad site, and flowline and to minimize impacts on wetlands that could not be avoided.

Several wellpad and flowline alternatives were considered for this project to minimize impacts on park resources, but were dismissed. Using existing wellpad, flowline, and access routes, while minimizing impacts on park resources and values, were the NPS and BNP's principal criterion for selecting the proposed location.

Alternative Access, Interior Route

This alternative does not meet the project objectives of: allowing reasonable access for lessee, minimizing or mitigating impacts on resources and values, and preventing impairment to park resources, as well as the proposed action. If a new interior road were to be considered, it would likely originate from the end of Park Road 22 and extend southward to the proposed well location.

Accessing the ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells would entail the development of approximately seven miles of new road. A road seven miles long and 20 feet wide with a 60-foot construction corridor would impact 50.91-acres (2,217,600 square feet). The impacted habitats would consist of approximately 10.20-acres (444,312 square feet) of upland/dunes and 40.70-acres (1,772,892 square feet) of wetlands.

The road would need to be an all weather road to provide access throughout the year. Rainfall events of recent years have demonstrated that this could not be accomplished without elevating the roadbed considerably higher than the surrounding area. Building a substantial road would alter the natural flow of ground water within the area, resulting in impacts on wetlands reaching far beyond the immediate area. Culverts would need to be installed, but would not guarantee that flow would continue at its natural rate. Run off from the road may create sedimentation and water quality issues within adjacent wetlands. Altering the productivity of these wetlands would compromise the food supply

available for migratory and grassland birds, many of which are threatened or endangered species. The island's interior would also be more susceptible to invasive species introduction than the exposed Gulf beach as a result of plant fragments or seeds being carried into the park on oil and gas vehicles.

Finally, the Park's responsibility to protect resources and the visitor experience would be complicated by such a route. The view from atop a dune would not be the vast undisturbed back island with pockets of mitigated development, but instead the road would stand out as a long, barren strip. This road would be an enticement to some visitors who would try to find a way to drive down it, legal or not. Increased security would be a park responsibility and burden. Illegal activities would benefit from having another route on or off the island. These additional considerations make this alternative unattractive compared to the environmentally mitigable beach access alternative.

Alternative Surface Locations

BNP considered two different alternatives for the surface locations of the wells.

One alternative considered drilling the three wells as vertical holes from directly over the bottomhole targets. Vertically drilling the ST 991 #1 and Dunn-McCampbell 12A wells would have required drilling near the shoreline in the Gulf of Mexico. Vertically drilling the Dunn-McCampbell 11A well would have required construction of a new access road approximately 1,750 feet east of the existing wellpad and constructing a new well/production pad. Each well placed in production would have required the construction of flowlines to transport produced liquids. This alternative would have greater negative impacts on park resources, values, and visitor use and experience than the preferred alternative.

Another alternative location was considered east of the proposed location in an undisturbed area. This alternative would have required a new pad location of approximately 2.5503-acres to accommodate the three proposed wells and a new access road. This alternative would have greater effects on park resources, values, and visitor use and experience that the agency's preferred alternative stemming from the creation of nearly two additional acres of disturbance beyond the present 1.7191-acres of disturbed area associated with the Dunn-McCampbell A8 wellpad.

The proposed location was decided upon by park staff and BNP to be the most feasible alternative from both environmental and technological feasibility points of view.

Alternative Flowline Locations

An alternative to tie-in to the Duke Energy pipeline that underlies the proposed wellpad location was considered; however, the Duke Energy pipeline is currently not in compliance and cannot be utilized; therefore, this option was dismissed from further consideration.

MINIMIZATION

Mitigation is proposed to offset wetland impacts associated with the proposed project. Mitigation measures considered included locating the proposed operation in a manner that avoids wetlands to the greatest extent possible. Expansion of a previously developed wellpad, and utilization of an existing access road, and flowline corridor was selected for the proposed project because it would avoid adversely impacting wetlands, tidal flats, dunes, and other sensitive resource areas. Other mitigation measures to be employed include the use of cathodic protection and the use of rust inhibitors, which reduce impacts caused by repeated access to the flowline corridor.

Initially, BNP proposed expanding the wellpad to 3.5 acres, but it was determined that these wells could be produced from the existing wellpad size of 2.5 acres. Therefore, impacts on 1 acre of wetlands have already been prevented as a result of the accepted plan.

COMPENSATION

All wetland impacts could not be avoided or mitigated therefore wetland compensation is required. NPS Procedural Manual No. 77-1 allows compensation to be waived if adverse wetland impacts are less than 0.1-acre (Section 5.2.C.1.); however, the proposed project will impact 0.8312-acre of wetlands. A 2:1 compensation ratio was selected to compensate for wetland impacts that could not be avoided or mitigated, which provides for 1.6624-acres of total compensation.

A suitable compensation project was identified at Yarborough Pass involving the restoration of an abandoned oilfield access road, which is located approximately 1,000 feet east of the boat ramp along the south side of Yarbrough Pass Road. This road was constructed through the placement of fill material onto tidal flats, which now impedes water flow to the eastern edge of the tidal flat (Figure 5) and has made this portion of tidal flat habitat less productive.

This compensation project will require removal of the existing road and base to an elevation that is equal to the tidal flat, thus restoring hydrology to approximately 10 acres of wind tidal flats. Large equipment such as a trackhoe or backhoe will be used to remove the fill material and transport to dump trucks that will remove the fill from the park. Equipment will utilize the existing road and begin restoration from the furthest end of the road and work backwards to the Yarborough Pass Access Road. Once the fill material is removed, restoration personnel will utilize hand tools to conduct the final grading and sediment removal to ensure that the elevation is equal to the surrounding tidal flat.

The restoration project is expected to take two weeks to accomplish depending on equipment availability and weather. Park personnel will monitor restoration activities daily to ensure that the project objectives are reached and additional impact to park resources does not occur.

Figure 5. Wetland compensation area.

Depending on weather conditions, storm events, and tidal fluctuations, full wetland restoration may require 2-3 years to accomplish during which time park personnel will monitor the restoration area quarterly. If personnel observe during this time that restoration activities did not reach the project objective, BNP will be required to address NPS concerns and conduct any necessary activities to restore wetland functions.

BNP will be solely responsible for funding activities associated with this wetland restoration project. The NPS will fund the necessary monitoring activities.

CONCLUSION

The proposed project location was decided upon by the NPS and BNP to be the most desirable alternative that will provide BNP sufficient space for current and future drilling operations while avoiding, minimizing, and mitigating direct impacts on wetlands, cultural resources, threatened and endangered species, and visitor experience. Total acreage of park resources impacted during expansion of the existing wellpad, and continued use of the existing flowline will be 0.8312-acre. Due to the previous unauthorized expansion activities precluding an accurate assessment of impacted resources, the park has determined that the whole 0.8312-acre expansion will be classified as wetlands and the compensation will be calculated from this value for a total acreage of compensation of 1.6624-acres.

The NPS finds that there are no practicable alternatives to disturbing 0.8312-acre of wetlands within the Park for the BNP ST 991 #1, Dunn-McCampbell 12A, and Dunn-McCampbell 11A wells, and Dunn-McCampbell A8 water well. Steps were undertaken to avoid impacts on wetland habitats to the maximum extent practicable; however, wetland impacts could not be entirely avoided. For these wetlands that have been impacted, compensation will be required consisting of the restoration of 1.6624-acres of existing, abandoned access road that will ultimately restore hydrology to 95 acres of wind tidal flats along the south side of Yarborough Pass Road. This project is consistent with the NPS policy of "no-net-loss" of wetland habitats.

National Park Service
U.S. Department of the Interior

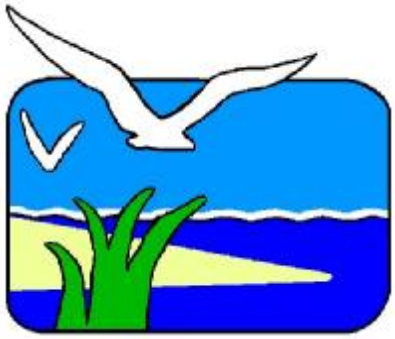
Environmental Assessment

BNP Petroleum Corporation

Dunn-Peach # 1 Well

Padre Island National Seashore • Texas

October 2003



Environmental Assessment

BNP Petroleum Corporation
Dunn-Peach #1 Well
Padre Island National Seashore, Texas

Summary

On June 9, 2003, BNP Petroleum Corporation (BNP) submitted a Plan of Operations to the National Park Service to drill and produce the Dunn-Peach #1 Well from a surface location approximately 6.9 miles south, from the end of Park Road 22. The well would be directionally drilled to a bottom-hole location west of the surface location within Padre Island National Seashore.

This Environmental Assessment evaluates two alternatives for BNP to drill and produce the Dunn-Peach #1 Well. Alternative A evaluates baseline conditions under No Action. In this case, No Action means that BNP would not drill the well. Under No Action, there would be no additional impacts on the affected environment, and no impact on the domestic energy supply. However there would a be moderate to major adverse impact on BNP due to the investment in preparing a Plan of Operation and not being able to develop its private mineral interest. Alternative B evaluates the Plan of Operations, as submitted by BNP, to drill and produce the well. Due to mitigation measures, most notably directional drilling, there would be no impacts to seagrass beds or algal flats, trees, cultural resources; and impacts on air quality, geology and soils, water resources and floodplains, vegetation, natural soundscapes, wildlife, state and federally protected species, and visitor use and experience would be localized and long-term, with adverse impacts ranging from negligible to moderate. A small portion of emergent wetlands would be impacted during the construction of the access road / flowline route. We recognize that this is a sensitive resource area and would be managed as per mitigation measures established in the Padre Island Oil and Gas Management Plan (March 2001) and developed through this Environmental Assessment. Alternative B is the proposed action. Alternative A is the environmentally preferred alternative.

Public Comment

The Notice of Availability will be published in the *Federal Register* and *Corpus Christi Caller Times*. If you wish to comment on the Plan of Operations, Environmental Assessment, draft Floodplains Statement of Findings, or draft Wetlands Statement of Findings please mail comments to the name and address below. These documents will be available for public review for 30 days from the date of publication in the *Federal Register*. Please note that names and addresses of people who comment become part of the public record. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

Superintendent
Padre Island National Seashore
P.O. Box 181300
Corpus Christi, Texas 78480-1300

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1.0. PURPOSE AND NEED

This Environmental Assessment (EA) evaluates two alternatives for the National Park Service (NPS) to permit BNP Petroleum Corporation (BNP) to drill and produce the Dunn-Peach #1 Well within Padre Island National Seashore (the Park). The purpose of this analysis is to provide a decision-making framework for the NPS to approve the use of parklands for BNP to explore and develop its mineral rights, while protecting and preventing impairment to park resources and values, and allowing for a safe visitor experience; and to determine whether an Environmental Impact Statement (EIS) should be prepared.

When Congress authorized the establishment of Padre Island National Seashore on September 28, 1962 (16 U.S.C. §459d, *et seq.*), the U.S. Government acquired surface ownership within the area. Private entities or the State of Texas retained the subsurface mineral interests on these lands. Thus, the federal government does not own any of the subsurface oil and gas rights in the park, yet the NPS is required by its laws, policies and regulations to protect the park from any actions, including gas operations, that may adversely impact or impair park resources and values. Padre Island National Seashore was created "in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped …." The park is located along the southeastern Texas coast and comprises 130,473 acres (Figure 1). As of 2003, 13 nonfederal gas operations occur within the park.

On June 9, 2003, BNP submitted to Padre Island National Seashore a Plan of Operations to drill and produce the Dunn-Peach #1 Well. The NPS reviewed and determined the plan to be substantially complete. BNP revised the Plan of Operations to include all NPS recommendations and the Plan was accepted on August 21, 2003. The NPS must decide whether to approve the plan and if additional mitigation measures are needed.

The analysis area for evaluating direct and indirect impacts in this EA includes:

- The direct area of impact would include the access road from the park entrance via paved Park Road 22 to its terminus on the beach, then approximately 6.9 miles south on the Gulf beach to a gated dune pass which connects to an existing shell/caliche road that extends approximately 3 miles to the Vector Energy Corporation's Dunn-McCampbell "A" No. 4 well site. The Dunn-Peach #1 surface location is approximately 6,400 feet west of the Gulf beach. A 3,700 foot long crushed cement or limestone access road is proposed to connect the production facility at the Vector "A" 4 site to the Dunn-Peach #1 Well pad. The footprint for constructing the well pad would be 2.28 acres and 3.56 acres for the 3,700 foot by 40 foot road / flowline route and turn arounds. The production facility pad would utilize 0.207 acres of upland area near the Vector "A" No. 4 well site.
- The indirect area of impact for each park resource or value could vary for each impact topic; but generally would not extend 1,500 feet beyond the well (NPS has selected the analysis area for natural soundscapes and a 100-foot corridor around the access road and the flowline).
- For State and Federally Protected Species, the analysis area for direct and indirect impacts is defined for each species in the Environmental Consequences section of this EA.
- For the impact topic, "Nonfederal Oil and Gas Development," the analysis area includes the effect on BNP and the mineral owner to meet NPS permitting requirements (including cost and time involved for BNP to prepare a plan of operations and contractor efforts, increased mitigation measures and reclamation requirements inside an NPS unit,

the effect of proceeding or not proceeding to drill and produce the well), and the effect of drilling and producing the well on the domestic energy supply.

The analysis area for evaluating cumulative impacts on park resources and values may extend beyond the boundaries of the park.

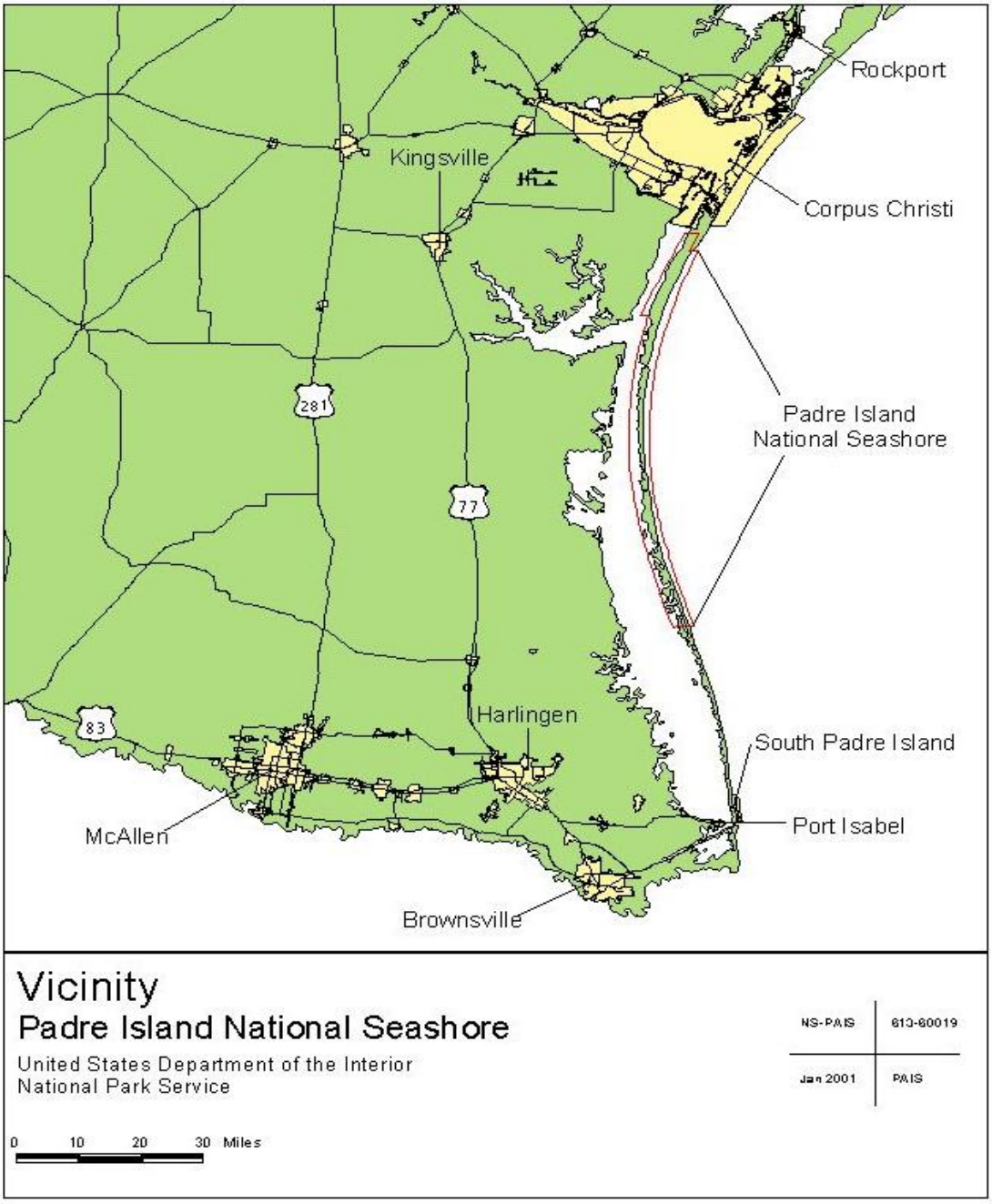

Figure 1. Region/Vicinity map depicting the location of Padre Island National Seashore in relation to the Gulf of Mexico coastline

1.1. Objectives of Taking Action

There are three objectives for this project:

- Provide BNP Petroleum Corporation, as the lessee of nonfederal oil and gas mineral interests, reasonable access for exploration and development.
- Avoid, minimize, or mitigate impacts on park resources and values, visitor use and experience, and human health and safety.
- Prevent impairment of park resources and values.

1.2. Special Mandates and Direction

The NPS evaluates project-specific proposals for oil and gas production and transportation on a case-by-case basis by applying a variety of Current Legal and Policy Requirements prior to issuing a permit under the general regulatory framework of the NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B). The following discussion is a summary of the basic management direction the NPS follows for permitting nonfederal oil and gas operations in units of the National Park System.

1.2.1. NPS Organic Act and General Authorities Act - Prevention of Impairment

The NPS Organic Act of 1916 (16 U.S.C. § 1, *et seq.*) provides the fundamental management direction for all units of the National Park System. Section one of the Organic Act states, in part, that the NPS shall:

> "…promote and regulate the use of the Federal areas known as national parks, monuments, and reservations…by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 16 U.S.C. §1.

The National Park System General Authorities Act of 1970 (16 U.S.C. § 1a-1 *et seq*.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The Act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Subsequently, the 1978 Redwood Act Amendments to the General Authorities Act further clarified Congress' mandate to the NPS to protect park resources and values. The Amendments state, in part: "[t]he authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." 16 U.S.C. § 1a-1.

Current laws and policies require the analysis of potential effects to determine whether actions would impair park resources. While Congress has given the NPS the managerial discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the federal courts) that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise (2001 Management Policies, §1.4).

These authorities all prohibit an impairment of park resources and values. Not all impacts are impairments. **An impairment** is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an

impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. The NPS Management Policies explain that an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

1). Necessary to fulfill a specific purpose identified in the establishing legislation or proclamation of the park;
2). Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
3). Identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute impairment to the extent that it is an unavoidable result, which cannot be reasonably further mitigated, of an action necessary to preserve or restore the integrity of park resources or values.

NPS Management Policies explain that "resources and values" mean the full spectrum of tangible and intangible attributes for which the parks are established and are being managed, including the Organic Act's fundamental purposes (as supplemented), and any additional purposes as stated in a park's establishing legislation. Park resources and values that are subject to the no impairment standard include: the biological and physical processes which created the park and that continue to act upon it; scenic features; natural visibility; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures and objects; museum collections; and native plants and animals. Additional resources and values that are subject to the non-impairment standard include the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system.

For these reasons, the Environmental Consequences section of this EA provides an analysis of the potential for impairment for each of the resource topics covered in this EA.

1.2.2. NPS Nonfederal Oil and Gas Regulations, 36 CFR 9B

The authority to manage and protect federal property arises from the Property Clause of the United States Constitution. The Property Clause provides that "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States . . ." U.S. Const. Art. IV, ¶ 3, cl. 2.

In 1916, Congress exercised its power under the Property Clause and passed the NPS Organic Act, 16 U.S.C. § 1 *et seq*. Section 3 of the Organic Act authorizes the Secretary of the Interior to "make and publish such rules and regulations as he may deem necessary or proper for the use of the parks…" 16 U.S.C. § 3.

Pursuant to section 3 of the NPS Organic Act and individual park statutes, the Secretary of the Interior promulgated regulations at 36 CFR Part 9, Subpart B ("9B regulations") in 1979. The 9B regulations apply to operations that require access on or through federally owned or controlled lands or waters in connection with nonfederally owned oil and gas in all National Park System units (36 CFR § 9.30(a)).

The NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B) and other regulatory requirements assist park managers in managing oil and gas activities so they may be conducted in a manner consistent with the NPS mandate to protect park resources and values. The application and implementation of these regulations on the ground must be assessed parkwide

for each site-specific oil and gas activity to determine if these activities have the potential to impair park resources and values.

1.2.3. NPS oversight and Monitoring of Nonfederal Oil and Gas Operations

Under 36 CFR §9.37(f) "[a]pproval of each plan of operations is expressly conditioned upon the Superintendent having such reasonable access to the site as is necessary to properly monitor and insure compliance with the plan of operations." At Padre Island National Seashore, park staff patrols the beach every day during turtle nesting season, and visit certain oil and gas sites several times a week. Park resource managers conduct a monitoring oversight patrol at least two times per week. In the event of an accident or spill, BNP will notify its dispatch immediately, which will then immediately notify park resource managers. All approved plans of operations have a spill contingency plan that is reviewed and approved by the NPS.

Pursuant to 36 CFR §9.51(a) an "operator shall be held liable for <u>any</u> damages to federally-owned or controlled lands, waters, or resources, resulting from his failure to comply with . . . his plan of operations" (emphasis added). Undertaking any operations within the boundaries of a park system unit in violation of the 9B regulations shall be deemed a trespass against the United States and shall be cause for revocation of approval of an operator's plan of operations. If an operator violates a term or condition of its approved plan of operation the Superintendent has the authority to temporarily suspend the operation and give the operator the chance to cure the violation. 36 CFR §9.51(c) outlines the Superintendent's suspension authority and procedure. If an operator fails to correct any violation or damage to federally owned or controlled lands, waters, or resources the operator's approval will be revoked. 36 CFR §9.51(c)(3).

In addition to the remedies available to the NPS under the 9B regulations, an operator is also subject to the remedial provisions found in all applicable federal, state, and local laws. For instance, under 16 U.S.C. §19jj, commonly known as the "Park System Resource Protection Act," any person who destroys, causes the loss of, or injures any park system resource is strictly liable to the United States for response costs and for damages resulting from such destruction, loss or injury.

1.2.4. Approved Park Planning Documents

Approved park planning documents also provide a framework for determining how nonfederal oil and gas operations are conducted within Padre Island National Seashore.

The General Management Plan (GMP) is the major planning document for all National Park System units. The GMP sets forth the basic philosophy of the unit, and provides strategies for resolving issues and achieving identified management objectives required for resource management and visitor use. The GMP includes environmental analysis and other required compliance documentation. A GMP/Development Concept Plan (GMP/DCP) was completed along with an EA for Padre Island National Seashore in 1983. The park is currently one year into the process of evaluating criteria for a new GMP/Development Concept Plan. The new GMP/DCP has the anticipated completion date of 2006.

An Oil and Gas Management Plan/Environmental Impact Statement (OGMP) was completed for Padre Island National Seashore on August 14, 2000 (PAIS, 2000). The OGMP describes the overall approaches that will be implemented over the next 15 to 20 years, or longer, to manage existing and anticipated oil and gas operations, including the exploration, development and transportation of nonfederal oil and gas underlying Padre Island National Seashore, in a manner that provides for hydrocarbon development while protecting natural and cultural resources,

human health and safety, and allowing for public use and enjoyment of those resources. The Oil and Gas Management Plan:

1) Identifies park resources and values most sensitive to oil and gas exploration and development disturbance, and defines impact mitigation requirements to protect such resources and values.
2) Establishes reasonable oil and gas exploration and development performance standards to protect park resources and values.
3) Develops reasonable alternatives for oil and gas development in the park and analyzes the impacts of those alternatives on park resources and values.
4) Provides pertinent information to oil and gas owners and operators that will facilitate operations planning and compliance with all applicable regulations.

During the scoping and development of the Plan of Operations and of this environmental assessment, the planning framework provided in the park's GMP/DCP and OGMP have been followed. Table 1, below, summarizes many, but not all, of the statutes, regulations, executive orders, and policies that govern the exercise of nonfederal oil and gas rights in National Park units.

Table 1. Current Legal and Policy Requirements.

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
Statutes and Applicable Regulations	
National Park Service (NPS) Organic Act of 1916, as amended, 16 U.S.C. §§ 1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
National Park System General Authorities Act, 16 U.S.C. §§ 1a-1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
NPS Omnibus Management Act of 1998, 16 U.S.C. §§ 5901 *et seq.*	Any living or non-living resource
NPS Nonfederal Oil and Gas Regulations – 36 Code of Federal Regulations (CFR) Part 9, Subpart B	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
16 U.S.C. § 19jj (commonly referred to as the Park System Resource Protection Act)	Any living or non-living resource that is located within the boundaries of a unit of the National Park system, except for resources owned by a nonfederal entity
American Indian Religious Freedom Act, as amended, 42 U.S.C. §§ 1996 – 1996a; 43 CFR Part 7	Cultural and historic resources
Antiquities Act of 1906, 16 U.S.C. §§ 431-433; 43 CFR Part 3	Cultural, historic, archeological, and paleontological resources
Archeological Resources Protection Act of 1979, 16 U.S.C. §§ 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7	Archeological resources
Clean Air Act, as amended, 42 U.S.C. §§ 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23	Air resources
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675; 40 CFR Parts 279, 300, 302, 355, and 373	Human health and welfare and the environment
Endangered Species Act of 1973, as amended, 16 U.S.C. §§ 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450	Plant and animal species or subspecies, and their habitat, which have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (FWS) or the National Marine

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
	Fisheries Service
Federal Insecticide, Fungicide, and Rodenticide Act, as amended (commonly referred to as Federal Environmental Pesticide Control Act of 1972), 7 U.S.C. §§ 136 *et. seq.;* 40 CFR Parts 152-180, except Part 157	Human health and safety and the environment
Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. §§ 1251 *et seq.;* 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328	Water resources, wetlands, and waters of the U.S.
Historic Sites, Buildings, and Antiquities Act (Historic Sites Act of 1935), 16 U.S.C. §§ 461-467; 18 CFR Part 6; 36 CFR Parts 1, 62, 63 and 65	Historic sites, buildings, and objects
Lacey Act, as amended, 16 U.S.C. §§ 3371 *et seq.;* 15 CFR Parts 10, 11, 12, 14, 300, and 904	Fish, wildlife, and vegetation
Migratory Bird Treaty Act, as amended, 16 U.S.C. §§ 703-712; 50 CFR Parts 10, 12, 20, and 21	Migratory birds
National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §§ 4321 *et seq.;* 40 CFR Parts 1500-1508	The human environment (e.g. cultural and historic resources, natural resources, biodiversity, human health and safety, socioeconomic environment, visitor use and experience)
National Historic Preservation Act of 1966, as amended, 16 U.S.C. §§ 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810	Cultural and historic properties listed in or determined to be eligible for listing in the National Register of Historic Places
Native American Graves Protection and Repatriation Act, 25 U.S.C. §§ 3001-3013; 43 CFR Part 10	Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony
Noise Control Act of 1972, 42 U.S.C. §§ 4901-4918; 40 CFR Part 211	Human health and welfare
Oil Pollution Act, 33 U.S.C. §§ 2701-2761; 15 CFR Part 990; 33 CFR Parts 135, 137, and 150; 40 CFR Part 112; 49 CFR Part 106	Water resources and natural resources
Pipeline Safety Act of 1992, 49 U.S.C. §§ 60101 *et seq*.; 49 CFR Subtitle B, Ch 1, Parts 190-199	Human health and safety and the environment
Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 *et. seq*.; 40 CFR Parts 240-280; 49 CFR Parts 171-179	Natural resources and human health and safety
Rivers and Harbors Act of 1899, as amended, 33 U.S.C. §§ 401 *et. seq*.; 33 CFR Parts 114, 115, 116, 321, 322, and 333	Shorelines and navigable waterways, tidal waters, and wetlands
Safe Drinking Water Act of 1974, 42 U.S.C. §§ 300f *et seq*.; 40 CFR Parts 141-148	Human health and water resources
Executive Orders	
Executive Order (E.O.) 11593 – Protection and Enhancement of the Cultural Environment, 36 Federal Register (Fed. Reg.) 8921 (1971)	Cultural resources
E.O. 11988 - Floodplain Management, 42 Fed. Reg. 26951 (1977)	Floodplains and human health, safety, and welfare
E.O. 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)	Wetlands
E.O. 12088 – Federal Compliance with Pollution Control Standards, 43 Fed. Reg. 47707 (1978)	Natural resources and human health and safety
E.O. 12630 – Governmental Actions and Interference with Constitutionally Protected Property Rights, 53 Fed. Reg. 8859 (1988)	Private property rights and public funds
E.O. 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, amended by Exec. Order No.	Human health and safety

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
12948, 60 Fed. Reg. 6379 (1995)	
E.O. 13007–Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)	Native Americans' sacred sites
E.O. 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)	Vegetation and wildlife
E.O. 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)	Migratory birds
E.O. 13212 - Actions To Expedite Energy-Related Projects (2001)	
Policies, Guidelines and Procedures	
NPS Management Policies (2001)	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
Department of the Interior (DOI), Departmental Manual (DM) 516 –NEPA policies	Human health and safety and the environment
DOI, DM 517 - Pesticides	Archeological and prehistoric resources, historic resources, Native American human remains, and cultural objects
DOI, Onshore Oil and Gas Order Number 2, Section III, Drilling Abandonment Requirements, 53 Fed. Reg. 46,810-46,811 (1988)	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, socioeconomic development, and visual resources
NPS Director's Order (D.O.) –12 and Handbook – National Environmental Policy Act (2001)	Cultural, historic, and ethnographic resources
NPS D.O. - 28 – Cultural Resource Management (1997)	Natural resources and human health and safety
NPS 66 – Minerals Management Guideline (1990)	Natural resources
NPS 77 – Natural Resources Management Guideline (1991)	Wetlands
NPS D.O. 77-1 – Wetland Protection	Floodplains
NPS Special Directive 93-4 – Floodplain Management Guideline	Cultural and historic resources
Secretary of the Interior's "Standards and Guidelines for Archeology and Historic Preservation," 48 Fed. Reg. 44716 (1983), also published as Appendix C of NPS D.O. 28 – Cultural Resource Management	Native American Tribal rights and interests
Government-to-Government Relations with Native American Tribal Governments, Presidential Memorandum signed April 29, 1994	

1.3. Issues and Impact Topics Evaluated

Early in the planning and development of the Plan of Operations by BNP, the NPS met with BNP and its contractor, Belaire Environmental, Inc. (BEI), to identify resources, values, and other concerns that could be potentially impacted by drilling and producing the Dunn-Peach #1 Well. In addition, early input from other federal, state and local agencies was sought. Scoping was performed with the U.S. Fish and Wildlife Service (FWS), U.S. Army Corps of Engineers (COE), and Texas Natural Resources Conservation Commission (TCEQ) and involved contacts by telephone, written correspondence, and meetings at the proposed project location within the park. Scoping involved defining appropriate alternatives, impact determinations, mitigation measures, and identification of major issues. Based on scoping, the NPS identified the following park resources, values, and other concerns for evaluation in this EA.

- Nonfederal oil and gas development
- Air quality
- Geology and soils

- Water resources and floodplains
- Wetlands
- Vegetation
- Natural soundscapes
- Wildlife
- State and federally protected species
- Visitor use and experience

Based on the above list of park resources, values, and other concerns identified during scoping, issue statements were developed to define problems or benefits pertaining to the proposal to drill and produce the Dunn-Peach #1 Well. The issue statements in Table 2, below, describe a cause-and-effect relationship between an activity and a resource, value, or concern. The issue statements were used in developing and evaluating alternatives.

Table 2. Issue Statements.

Impact Topic	Issue Statement
Nonfederal Oil and Gas Development	• The NPS permitting process, regulatory requirements, and operating stipulations generally increase the cost to operate on parklands, compared to operating on non-NPS lands. These increased costs could reduce income to mineral owners (or mineral interest holders) and operators, and influence an owner's or operator's decision to defer, modify, undertake as planned, or not conduct certain nonfederal oil and gas operations. • Production of the nonfederal mineral interest would contribute hydrocarbon resources to meet the nation's domestic energy demands.
Air Quality	• Construction and maintenance of roads, wellpad, production facilities, and pipelines; vehicle use on and off paved roads; and exhaust from combustion of gasoline and diesel-powered vehicles and equipment used for drilling and production operations would increase emissions of particulate matter which could affect air quality, including visibility in the general vicinity of the operations. • Maintenance activities, including the application of herbicides for vegetation control on and around operations sites, would emit pollutants, including nitrogen oxides, volatile organic compounds, carbon monoxide, sulfur dioxide, particulate matter, and objectionable odors. These emissions could degrade air quality within the park and could contribute toward regional air quality degradation. Nitrogen oxides and volatile organic compounds are primary precursors to ozone formation, which, depending on ambient concentrations, can have damaging effects on some vegetation and on the health of humans and wildlife.
Geology and Soils	• Grading and leveling of hummocky uplands and non-tidal wetlands for the oil and gas access road / flowline route, wellpad, and production facility and the placement of nonnative materials (crushed limestone or concrete) on the access road / flowline route, well pad, and production facility would result in soil and sand compaction and loss of productivity on approximately 2.412 acres for the duration of the oil and gas operation. • The release of hydrocarbons or other contaminating and hazardous substances from vehicles, equipment, and pipelines during exploration and production operations, could alter the chemical and physical properties of the soil and sand in the vicinity of the operation(s). Changes in the soil and sand properties could result directly from contact with contaminants on-site, or indirectly, via

Impact Topic	Issue Statement
	runoff from contaminated areas. • Vehicle use along the Gulf Beach, particularly from heavy vehicles transporting the drilling rig, water, and drilling muds for disposal outside the park, could cause rutting and compaction of the sands on the beach.
Water Resources and Floodplains	• Vehicle use; removal or modification of vegetation; and surface disturbance associated with construction, maintenance, and use of the oil and gas access road, wellpad, production facility, and flowline could alter surface and subsurface drainage patterns in the vicinity of operation(s). • The release of hydrocarbons and contaminating or hazardous substances from vehicles, equipment, or pipelines used for exploration and production operations could degrade water quality. • The siting, maintenance, and use of the oil and gas access road, wellpad, production facility, and flowline in the floodplain, or the release of hydrocarbons and contaminating or hazardous substances from these operations, could adversely affect floodplain functions, values and uses, including: the natural moderation of floods, water quality, sediment control, ground water recharge or discharge, fish and wildlife habitat, maintenance of biodiversity, recreational opportunities, and natural beauty. • Reclamation of the oil and gas access road, wellpad, and production facility could adversely affect water quality and floodplain functions, values and uses over the short-term. However, long-term benefits include the re-establishment of surface and surface water flow, the control of non-native vegetation, and re-establishment of native vegetative communities.
Wetlands	• Construction of the access road / flowline through 0.048 acre of an emergent wetland would result in vegetation removal and alteration of the surface and subsurface hydrology of the site for approximately one year with the mitigation of culverts. Reclamation activities that re-establish the contours of the area, restore surface and subsurface water flow, control non-native vegetation, and re-establish native vegetative communities would restore natural and beneficial wetland functions, values, and uses.
Vegetation	• Vegetation would be totally removed on 6.05 acres for the construction of an oil and gas access road / flowline route, wellpad, and production facility. Vegetation removal could change the structure and composition of vegetative communities in the project area; alter wildlife habitat and species composition; increase storm runoff; and increase soil and sand erosion. • Construction and use of the oil and gas access roads, wellpad, flowline, and production facility could disrupt the surface, and subsurface water flow that is necessary to maintain vegetative communities. • The release of hydrocarbons and contaminating or hazardous substances could damage or kill vegetation directly, via contact with contaminants on-site, or indirectly, via pathways from contaminated areas. • Disturbances/removal of native vegetation could lead to the unintentional spread and establishment of non-native plant species transported in or on drilling and maintenance equipment. • Reclamation of the oil and gas site could re-establish native vegetative communities and surface and subsurface drainage patterns necessary to support vegetative growth.

Impact Topic	Issue Statement
Natural Soundscapes	• Vehicles and equipment used for construction and maintenance of the oil and gas access road, wellpad, production facility, and flowlines could result in increased noise, adversely affecting wildlife and visitor uses and experience.
Wildlife	• Oil and gas activities, including vehicle use and the construction, maintenance, and use of the oil and gas access road / flowline route, wellpad, and production facility could increase predation in open areas; directly harm or kill wildlife; and disrupt wildlife feeding, denning, nesting, spawning/reproduction, and other behavior. Oil and gas activities could result in avoidance of the area by wildlife due to increased noise and human presence. • Loss or modification of wildlife habitat could occur from the construction of the oil and gas access road, wellpad, production facility, and flowline. These activities could increase edge effects, increase human access, and alter wildlife species, composition, and migration. • Liquids that collect in secondary containment structures at the oil and gas production site could attract, harm, and possibly kill birds. • The release of hydrocarbons and hazardous or contaminating substances from vehicles, drilling and production equipment, and pipelines could injure wildlife. The adverse effects could become worse over time if wildlife species ingest the contaminants and are consumed by other wildlife species. • Heavy equipment used for reclamation operations could injure or kill wildlife over the short-term. However, reclamation of oil and gas sites over the long-term could re-establish native vegetative communities and surface and subsurface water quality and quantity that support wildlife populations.
State and Federally Protected Species (T&E)	• Trucks driving along the Gulf beach could compact the sand, which would make it difficult for the sea turtles to dig a nest cavity. • Trucks (both commercial and private vehicles) driving along the Gulf beach could run over sea turtles, sea turtle nests, sea turtle hatchlings, and other T&E species (e.g., birds). • Deep ruts made from large commercial vehicles could be an obstacle to sea turtles during nesting and to hatchlings moving towards the sea. Hatchlings could become vulnerable to depredation, desiccation, and exhaustion. • Noise, artificial lighting, and other nighttime activities during drilling operations could affect other T&E wildlife species. • Noise, odors, artificial lighting, and vibrations could interfere with the imprinting process of the hatchling sea turtles.
Visitor Use and Experience	• Oil and gas operations could pose a threat to human health and safety from the use of the Gulf Beach by commercial vehicles (particularly vehicles with less maneuverability and visibility); hazardous equipment at wells and production facilities; and the release of hydrocarbons and hazardous or contaminating substances. Spilled or released hydrocarbons and contaminating or hazardous substances could be inhaled, absorbed, or ingested by human beings. • The oil and gas operations could adversely affect air quality; alter scenic resources and the night sky; increase background sound levels and could degrade the quality of visitor uses and experiences in the park.

1.4. Issues and Impact Topics Eliminated from Further Analysis

The following topics have been eliminated from further analysis in this environmental assessment for the reasons described.

1.4.1. Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, environmental justice was dismissed as an impact topic in this EA.

1.4.2. Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland is defined as soil that produces specialty crops such as fruits, vegetables, and nuts. There are no prime or unique farmlands located within the park therefore, prime and unique farmlands was dismissed as an impact topic in this EA.

1.4.3. Cultural Resources

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq*.); the National Environmental Policy Act of 1969 (42 USC 4321 *et seq*.); and the National Park Service's Director's Order #28, *Cultural Resource Management Guideline (1997*), *Management Policies, 2001* (2000), and Director's Order #12, *Conservation Planning, Environmental Impact Analysis, and Decision Making* (2001) require the consideration of impacts on cultural resources listed in or eligible to be listed in the National Register of Historic Places. The National Park Service recognizes five categories of cultural resources: historic structures, ethnographic resources, cultural landscapes, archeological resources, and museum collections.

There are no historic structures, ethnographic resources, or cultural landscapes within or near the operations area. During project scoping, a literature search was conducted to determine the extent and continuing adequacy of past archeological surveys that had been performed in the analysis area. An inventory for archeological resources was conducted as part of 3-D seismic surveys conducted in 1999 and 2000, which covered a majority of the park. Archeological data is lacking in some areas; therefore, BNP contracted for, and the NPS permitted, further archeological surveys to be conducted. William Moore and James Warren were used to survey for archeological resources in the area of the proposed project. The survey was conducted December 23, 2002 and found no archeological or historic resources in the survey area. The survey was submitted to the State Historic Preservation Office (SHPO) for review and approval.

1.4.4. Local and Regional Economics

Local and regional economics was dismissed as an impact topic in this EA because the outcome of whether or not two wells are drilled would have negligible impact on local and regional economies.

2.0. ALTERNATIVES

Two Alternatives, A and B, are described and evaluated in this EA. Alternative locations and strategies that were considered but dismissed from further analysis are then described. An analysis for selecting the environmentally preferred alternative is also provided. This section concludes with three summary tables comparing the two alternatives.

2.1. Alternative A, No Action

The No Action Alternative is required under the National Environmental Policy Act (NEPA) and establishes a baseline or benchmark from which to compare the effects of permitting the proposed activity to proceed. Under No Action, the wells would not be drilled, upkeep and maintenance of the existing 13 gas operations throughout the park would continue. Truck traffic access would be along the Gulf of Mexico shoreline. Daily trips by pickup sized trucks and the periodic larger trucks removing "condensate" from holding tanks can be expected.

2.2. Alternative B, Proposed Action

Under Alternative B, Proposed Action, the NPS would approve BNP's Plan of Operations, to drill and produce the Dunn-Peach #1 Well.

Location of the Well. The surface location of the Dunn-Peach #1 Well is located 153.66 feet from the north line and 425.5 feet from the east line (Boyles Meander Line) of the Nicholas and Juan Jose Balli Survey, Abstract-10, Kleberg County, Texas. This drill site is approximately 6.9 miles south of the end of Park Road 22 and 6,400 feet west of the Gulf of Mexico (Figures 2 and 3).

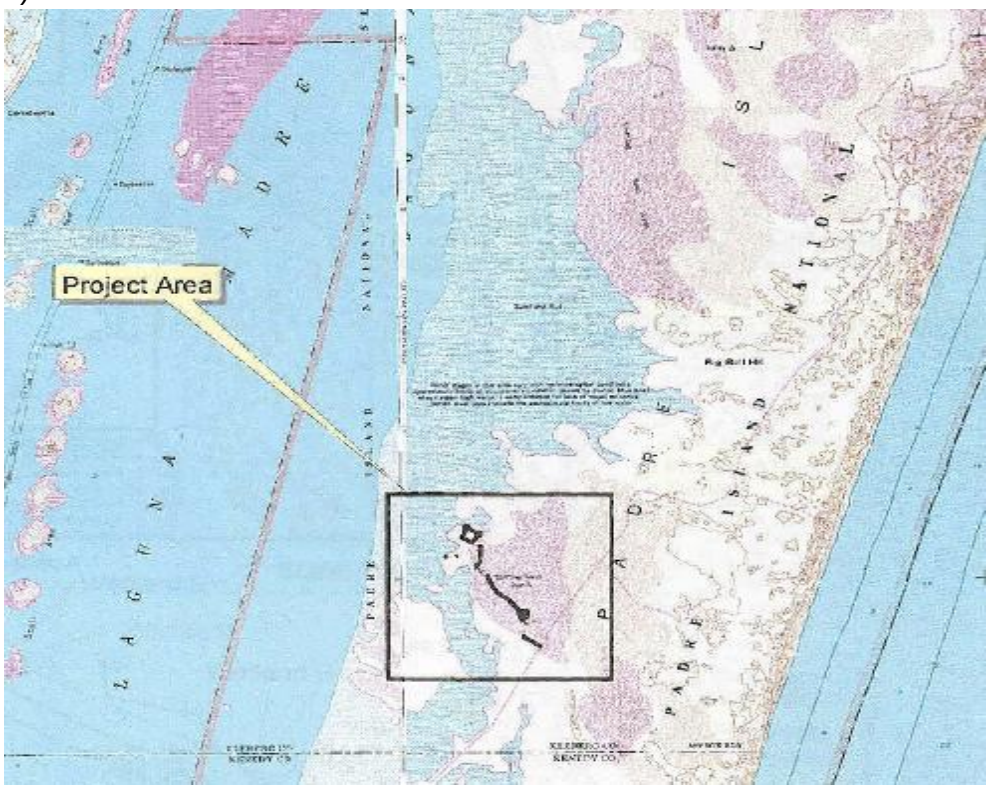

Figure 2. General location of the proposed Dunn-Peach # 1 Well at Padre Island National Seashore

The global positioning system (GPS) measurements based on Texas State Plane Coordinate System of 1927, Texas South Zone, for the surface and bottom-hole locations of the proposed Dunn-Peach #1 Well are:

Surface location:	X = 2,367,029 E	Y = 593,610 N
Bottom-hole location:	X = 2,364,250 E	Y = 594,400 N

True Vertical Depth (TD)	9,500 feet
Measured Vertical Depth (MVD)	10,500 feet
Surface Offset Distance	2,889 feet

Figure 3. Surface and bottom hole locations for the Dunn-Peach # 1 Well.

Access

All vehicles used during construction, drilling, and production operations would enter the park via Park Road 22 and then proceed approximately 6.9 miles along the Gulf Beach to a-gated dune pass and an existing shell/caliche road that extends approximately 3 miles to the Vector Energy Corporation's Dunn-McCampbell "A" No. 4 well site. Accessing the Dunn-Peach #1 Well drill site will require the construction of approximately 3,700 feet of new road from the Vector production facility westward to the drill site. See Figure 3.

The proposed access road / flowline route would result in the filling and leveling of 3,700 linear feet x 40 feet or a total of 148,000 square feet, including 145,909 square feet of hummocky uplands and approximately 2,091 square feet of emergent wetlands. The construction of the

road portion only will result in a total of 74,000 square feet (0.024 square feet of impacted wetlands). In addition, there will be two truck turnouts totaling 6,950 square feet. Conventional road and foundation construction techniques would be used to construct the access road (Figure 4). The total acreage of park resources impacted during construction of the access road / flowline route includes 0.048 acres of wetlands and 3.35 acres of uplands.

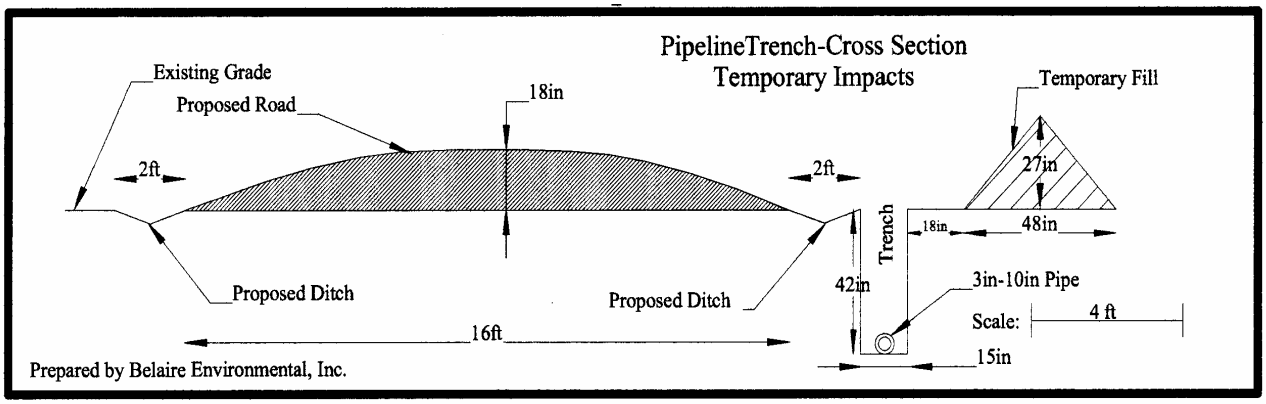

Figure 4. Pipeline and access road construction impacts cross sections.

Surface Location and Wellpad

BNP's proposed drill site was selected because it would avoid or minimize adverse impacts to wetlands, tidal flats, dunes, and other sensitive resource areas. Conventional foundation construction techniques would be used to construct the 99,225 square foot (2.28 acres) polygon shaped drill site. One bulldozer and one maintainer would be used first to level the roadbed and drilling pad. After leveling, a lease crew would cover the pad with a 20 mm thick polyethylene protective liner. Eighteen-yard "belly dump" trucks would be used to place crushed limestone or concrete on the road and pad. Approximately 12,250 cubic yards of material will be placed on the road and pad at a depth of 18 inches. The material would be spread with a bulldozer and leveled with a maintainer. A compactor and a water truck would be used to compact the material and water the road and pad. A 3-foot high berm would be constructed around the perimeter of the pad area for containment. Caliche berms would also be constructed around the diesel tanks for containment.

All equipment, machinery, and living quarters would be placed within the 99,225 square foot pad area. This pad may be used for additional drilling in the future. Should the well be productive, the well pad would be reduced to a polygon approximately 15,000 square feet. In the previously developed 84,225 square-foot area, the ground would be reclaimed to original condition.

Use of Water for Drilling

Fresh water is needed during the drilling operation primarily for mud dilution, cementing, and rig cleaning. By using synthetic oil based mud, approximately 7,500 barrels (315,000 gallons) of freshwater will be needed to drill Dunn-Peach #1 Well. The water will be stored in the rig's water tank and, if necessary, an additional frac tank on location. Several alternatives for water sources are available.

The preferred alternative for water source is to convert an existing inactive gas well presently owned and operated by Vector Energy Corporation into a water source well. Vector has four unplugged wells near the Dunn-Peach drill site. Possibly one of these wells could be converted to a water source well. The Vector sites have environmental issues, which need to be resolved before this alternative could be used. However, if the issues are resolved, BNP would plug the

selected well and convert it to a water source well. This would require a week of work and approximately twenty loads of equipment delivered to the well site to plug the well. A submersible pump powered by a generator would be installed in the well. A storage tank would be placed near the water well and a 3-inch polypropylene line would be laid along the access road from the water source well to the Dunn-Peach drill site. The water would be pumped into the tank and then transferred by a surface pump to the drill site via the polypropylene line.

If the issues with the Vector wells cannot be resolved, the next preferred alternative is to drill a water source well at the drill site to the Goliad sand located at a depth of 1,700 feet. This would require approximately 50 loads of equipment and two weeks of activity at the well site prior to moving the drilling rig in. After drilling the well, it would be cased with a 4.5 inch steel pipe and a screen. A flowline and diesel powered air compressor will be used to transfer the water into a storage tank located at the drill site. BNP will place a water meter on the well to measure water usage for either alternative.

A third alternative would be to utilize the water source well drilled at the Dunn-Murdock site. This would entail hauling a diesel-powered generator and a frac tank to the Dunn-Murdock location. The generator would power the electric submersible pump currently in the well so water could be pumped to the frac tank. Vacuum trucks would then be used to haul the water to the Peach location. This would be approximately 60 loads of water being hauled to the Peach location six miles north on the Gulf beach. An additional dozer or front-end loader would also be needed to aid the vacuum trucks in the event beach conditions hamper driving.

BNP plans to file an application with the Railroad Commission of Texas (TRRC) for a minor permit for annular disposal of drilling mud. Should the TRRC deny the application, or if injection were prevented for some mechanical reason (i.e., excessive injection pressure, failure of casing integrity, etc.), BNP would be required to haul the excess liquids by transport out of the park to an approved disposal site.

Production Facility

Should BNP's proposed well prove to be productive, full well stream (gas and liquids commingled in one pipeline) would flow from the drill site to the production facility site. The production facility would be located at the existing Vector Energy Corporation Dunn-McCampbell "A" Well No. 4. However, pre-existing environmental issues unrelated to BNP's activities need to be resolved before this site can be utilized. If these issues cannot be resolved, then the facilities will be located at the alternative site indicated in Figure 5. The alternative production facility would require 0.207 acres of new disturbance to hummocky uplands. If subsequent wells are drilled and brought online, additional equipment will be added to the production system as needed. Production could continue for up to 20 years.

Pipeline

There are two pipelines in the area of proposed operations. Duke Energy owns a currently inactive 10-inch pipeline approximately 4,300 feet east of the proposed wellsite. AEP (formerly Enron/HPL) operates and maintains an active 12-inch pipeline that lies approximately 3,700 feet east of the proposed wellsite (Figure 2). The pipelines extend north and south on the island for several miles from the location. BNP plans to tie into the existing AEP pipeline that lies approximately 50 feet west-northwest of the existing Vector facility and adjacent to the preferred production facility alternative. The construction of BNP's proposed flowline route would result in short-term impacts to approximately 3,700 linear feet of hummocky uplands to access the AEP pipeline, including impacts to 0.024 acres of wetland (Figure 5).

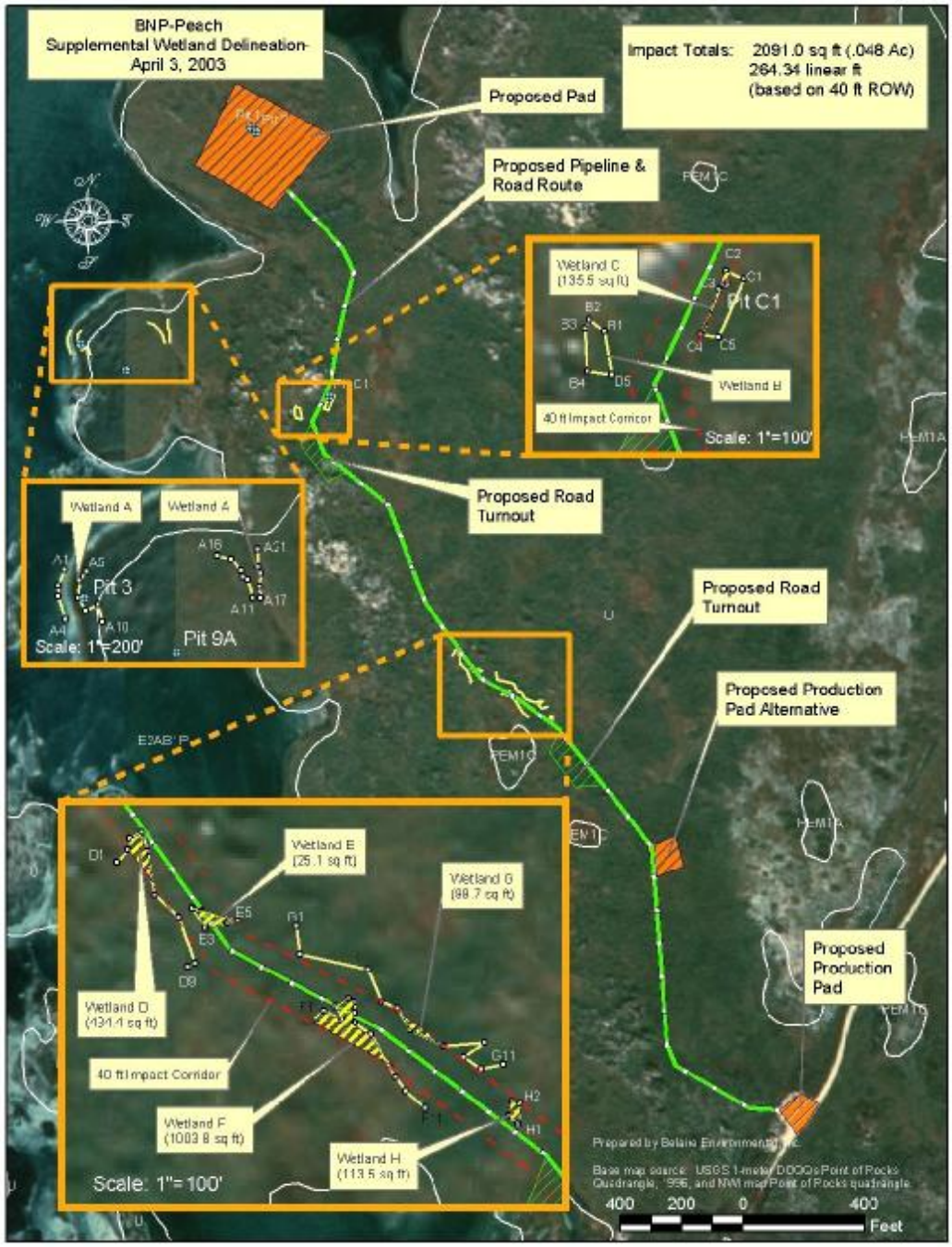

Figure 5. Proposed locations of access road / flowline route, well pad, production facility, and wetland areas.

The size of new line, which ranges from a minimum of three to a maximum of 10 inches, is contingent on the production rates obtained during the testing phase of the well. A ditch of approximately 24 inches wide and 42 inches deep would be dug from the wellpad to the AEP pipeline tie-in point. The access road / flowline route is combined. The 20-foot wide access road will be within the 40-foot wide pipeline construction corridor to reduce impacts. The procedure used to tie-in the pipeline is a “hot tap.” This method allows pipelines that are in service to be connected without the contents being released. A 15-foot by 15-foot (225 square foot) excavation will be required to make the tie-in. Any ground water that seeps into the excavation would be pumped out using PVC well points and diaphragm pumps. The liquids

would be diverted and filtered through a silt screen and hay bales before being released onto the surrounding area. Any contaminated liquids or soils would be removed and hauled to a State-approved disposal site.

Reclamation Plan

As soon as possible after completion of approved operations but no later than six (6) months thereafter unless a longer period of time is authorized by the Regional Director, BNP would initiate reclamation. [36 CFR 9.39(a) (2)]. Reclamation would follow both the drilling and production phases of operations. After drilling the well, and if the well is placed in production, the wellpad size would be reduced to a polygon with approximate dimensions of 100 feet x 150 feet (15,000 sq. feet or 0.345-acres).

At the completion of production operations, the well would be plugged, and all above ground structures, equipment, and other man-made debris resulting form operations would be removed; and any contaminating substances would be removed or neutralized. [36 CFR 9.39 (a)(2)]. The pad and road areas would be re-contoured as near as possible to the original contour. The re-contoured ground would be fertilized at 40 pounds per acre of 30/0/10 (N-P-K) fertilizer, the area ripped to 18 inches, and mulched with native hay containing seeds from the previously existing vegetation. During annual monitoring efforts, undesirable species would be controlled either by herbicide application or hand/tool removal, as approved by the NPS. Restored areas would be monitored annually until 70 percent coverage of targeted species is achieved. An annual report would be submitted to the park documenting restoration activities and results. Monitoring would cease after 70 percent of the original vegetative coverage of three target species, seacoast bluestem (*Schizachyrium scoparium* var. *littoralis*) and gulfdune paspalum (*Paspalum monostachyum*), and narrow-leaf sumpweed (*Iva angustifolia*) was achieved or after the site had been approved by the park Superintendent.

Breakdown of acreage calculations

INITIAL PHASE	PRODUCTION PHASE
2.28 acres Wellpad	1.7 acres Road (0.024 acres wetland)
1.7 acres Road (0.024 acres wetland)	1.7 acres Pipeline (0.024 acres wetland)
0.16 acres Turn Arounds	0.16 acres Turn arounds
4.14 acres Total	0.207 acres Production Facility
	0.345 acres reduced well pad
MAX Disturbance before reclamation	4.112 acres Total
2.28 acres wellpad	-1.7 acres re-vegetated pipeline (1 year)
3.4 acres road / flowline	2.412 acres longterm disturbance
0.16 acres turn arounds	
0.207 acres production facility	
6.047 acres Total (6.05)	

Mitigation Measures

In order to reduce the impacts to park resources and values, BNP and its contractor, BEI, sought the views and advice of personnel of Padre Island National Seashore, USFWS, COE, and other experts. BNP and BEI also relied on the recommendations of the park's Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS, 2000) for operating standards and other information. As a result of these and other efforts, BNP has agreed to apply all mitigation measures outlined in Tables 3 and 4. The location of mitigation measure (1-46) in the Plan of Operations is included for ease of reference. Additional mitigation measures and operating stipulations (# 47-73) were developed by NPS and BNP during the drilling of the

Dunn-Murdock Well in 2002 and development of this EA. These measures have been incorporated in subsequent oil and gas operations at Padre Island National Seashore and will be required for the Dunn-Peach #1 Well.

Table 3. Mitigation Measures under Alternative B, Proposed Action.

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
1	Pre-activities	Direct impacts to wind-tidal algal flats, seagrass beds, trees, and cultural resources would be avoided by directionally drilling the well from an upland location using a polygon-shaped well pad, which would utilize approximately 99.225 square feet (2.28 acres) of hummocky uplands.	Section X, Item D (1), page 35
2	Pre-activities	BNP will educate all employees and contractors regarding the need for and ways and means of minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore. BNP will print a Padre Island National Seashore approved list of conduct and operating procedures while working within the park to be reviewed by all BNP related personnel before they begin working inside the park.	Section X, Item D (3), page 35 Item D (50), page 39 Appendix H
3	Pre-activities	In accordance with Padre Island National Seashore's approved Hurricane Preparedness and Evacuation Plan, BNP will secure the well site in the event of a hurricane. If a hurricane or tropical storm is within 540 miles or 36 hours of the operation site and the operation site is predicted to be in the severe weather area, BNP will fill the hold with drilling mud; set drill pipe slips safety clamps and safety valves 50 feet above the deepest casing string; lay down and secure drill pipe; close and lock pipe rams and annular BOP; secure loose tools, equipment and electrical connections; lower drilling derrick; close all valves in mud system; and place generators, SCR on oilfield truck floats and chain down. If the well is producing hydrocarbons, BNP will close the storm valve in the well or install backpressure valve in the tree, shut in all valves on tree, replace all hydrocarbons in storage tanks with water, and remove or secure all lose equipment and supplies. In the event of a hurricane, this mitigation measure is intended to protect human life and property, reducing flood hazards, and protecting natural floodplain values.	Section X, Item D (30) page 37
4	Pre-activities	Collection and sampling of soils and surface and ground water will be performed following NPS protocols (Exhibit D) prior to the start of construction, to establish baseline conditions, and at the completion of operations, to determine if contaminating substances are present in concentrations that pose a threat to wildlife populations or human health, or will jeopardize reestablishment of native vegetation.	Section VII, Item E, page 22; Section X, Item A (2), page 27, and Item D (44), page 38
5	Pre-activities	BNP will have in place fire suppression equipment to prevent wildfires.	Section X, Item D (31), pages 37
6	Pre-activities	BNP has included a Contaminating or Toxic Substance Spill Control Plan in the Plan of Operations to describe actions to be performed in the event of an oil spill, brine	Section VI, pages 19-21, Section X,

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		spill, release of drilling fluids, blow-out or release of any toxic substance.	Item D (39), page 38
7	Pre-activities	Should contaminated soils be found, the contaminated soil will be excavated to clean soil and hauled to a state-approved off-site disposal facility where applicable. The excavation will be filled with clean native soil. If necessary, contaminated soils will be remediated on-site using Padre Island National Seashore -approved remediation methods.	Section VII, Item F, page 22; Section X, Item D (45), page 39
8	Pre-activities	The access road / flowline route was selected to minimize impacts to wetlands. The construction of the proposed access road / flowline route will impact approximately 3,700 linear feet x 40 feet (145,909 square feet) of hummocky uplands and (2,091 square feet) of emergent wetlands, over the short-term until restoration of wetlands is successfully achieved within 1 growing season, with the mitigation of culverts.	Section X, Item D (2), page 35.Section X, Item E, Land Features, page 40
9	Construction	If at any time, any unknown cultural resource were discovered during the conducting of approved operations, and such resource might be altered or destroyed by the operations, the operator will immediately cease operations in the immediate area and notify the Superintendent. The operator must leave the discovery intact until the Superintendent grants permission to proceed with the operations. Before any further activities occur, a qualified cultural resource expert will assess the cultural resources, evaluate their National Register eligibility, and consult with the State Historic Preservation Officer.	Section X, Item D (10), page 36
10	Construction	BNP will cut and store vegetation before ground-disturbing activities for use later in mulching and native seeding activities for reclamation/re-vegetation. All equipment will be hosed off/cleaned of mud/soils/plant debris prior to entering the park to reduce potential introduction of non-native seed/pests into the park.	Section X, Item D (9), page 36
11	Construction	BNP proposes to install culverts, as needed, along the proposed 3,700-foot access road / flowline route, where fill may directly affect surface water run-off. Culvert locations will be selected to minimize alteration of natural surface drainage patterns and will be approved by the National Park Service.	Section X, Item D (6), page 35; and Section X, Item E. Water Resources, page 41
12	Construction, Maintenance	BNP will maintain the 3,700-foot long access road by keeping it passable with a maintainer on an as-needed basis to minimize the potential of vehicles driving off the road.	Section V, Item K (13), page 16; Section X, Item D (33), page 37
13	Construction	During construction and drilling, BNP will utilize a dispatcher stationed outside of the park somewhere along Park Rd 22 to help regulate the flow of traffic along the beach. BNP representatives at the well site will be able to communicate with the dispatcher and report on existing conditions (i.e.: traffic, tides, etc.) further down the beach. The dispatcher will maintain logs of all personnel entering the project and will supply copies of the log to Park staff at	Section X, Item D (51), page 39

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		their request but at least weekly. The dispatcher will provide each driver a copy of BNP/Padre Island National Seashore requirements for traffic, environmental and public safety while in the park.	
14	Construction	Throughout the drilling operations, a bulldozer will be used to assist vehicles in the transportation of personnel, services, and materials and a maintainer will be on-site to smooth out any rutting that may occur.	Section V, Item B, page 9; Section X, Item D (11), page 36
15	Construction	After leveling the access road and pad area, a 20-millimeter thick polyethylene protective liner will be placed on the pad area. A 3-foot high earthen material berm will be constructed around the perimeter of the pad for emergency containment. The berm and liner will provide temporary containment of spills and fires and prevent the downward movement of fluids through the soil from reaching the ground water.	Section V, Item A (6) page 9. Section X, Item D (16), page 36, Item E, Soils, page 41
16	Construction	A 6-foot diameter by 6-foot deep corrugated galvanized steel cellar will be placed around Dunn-Peach #1 Well. Cellars are designed to collect spilled contaminating substances and facilitate their removal. Drainage ditches will be dug (12 inches wide and 8 inches deep) to route all runoff to the cellars. A portable sump pump will be used to pump the gathered liquids to steel tanks for re-use or disposal.	Section V, Item A (4), page 8; Section X, Item D (14), page 36
17	Construction	A temporary, three-strand, barbed-wire fence will be placed around the perimeter of the project, when the pad is constructed, to deter unauthorized persons from entering the operations area during drilling and completion operations. If production were established, a gate and permanent chain link fence will be installed around the production facilities of a design specified by the Superintendent.	Section V, Item N (6), page 17; Section X, Item D (20), page 37
18	Drilling	To the extent possible in regard to rig scheduling and availability, BNP intends to use a diesel electric (SCR) rig to drill the well to reduce impacts to the natural soundscape.	Section X, Item D (6), page 35
19	Drilling	After setting surface casing and installing the braidenhead, a blowout preventer will be installed on the well. Additional well control equipment will include a choke manifold equipped with a hydraulic, remote-controlled, adjustable choke. This mitigation will reduce the potential of a well blowout.	Section V, Item C (1) and (2), page 9; Section X, Item D (18), page 36
20	Drilling	BNP will utilize an environmentally safe synthetic oil-based drilling mud for drilling the well to reduce water usage, beach traffic, and operational time.	Section X, Item D (12), page 36; Section X, Item F, page 44
21	Drilling	Lost circulation mud additives will be used to prevent and control lost circulation, reducing the time needed to drill.	Section lll C (6), page 6; Section X, Item D (13), page 36
22	Drilling	To prevent accumulation of oil and other materials	Section V,

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		deemed to be fire hazards, all flammable liquids (i.e. condensate, compressor oil, etc.) will be stored in steel or fiberglass tanks and contained inside the firewall or a berm at the central facility. All materials not necessary for the operation of the well will be removed. Any surplus or emergency materials or supplies that need to be kept at the well site will be stored at the central facility in a locked storage shed or parts box. All containers will be labeled as to their contents.	Item N (8), page 17; Section X, Item D (38), page 38
23	Drilling	A closed loop "zero discharge system" will be utilized for drilling the well. No earthen pits will be utilized. All mud, drill cuttings, sewage, and produced water will be collected in steel tanks for re-use or hauled by sealed dump trucks for disposal at state-approved disposal facilities outside of the park boundaries, or disposed down the well annulus. This measure will reduce the likelihood of accidental death to migratory birds and other animals.	Section V, Item D (2) and (3), page 10 & 11; Section VII, Item B, page 28; Section X, Item D (19), page 19
24	Drilling	The following methods will be applied to prevent leaks and spills of hydrocarbons and produced water: All separators will be equipped with pressure relief valves that vent to the water tank; the inside wing valve on the tree will be equipped with a pressure controlled hi-lo safety shut-off actuator; all tanks will be equipped with liquid level controls to prevent overflow; and cathodic protection will be installed at each end of the proposed pipeline.	Section X, Item D (11), page 36
25	Drilling, Production	Signs will be posted at the entrance of the access road, on the tree, and on the tank battery giving operator name, lease name, well number, and Railroad Commission of Texas ID number. BNP will display a public information sign that will generally describe the management of oil and gas exploration within Padre Island National Seashore, and the important relationships between Padre Island National Seashore, the general public, and oil and gas exploration. Signs will be posted as necessary on the flowline showing operator name and telephone number. If the well were produced, signs will be posted at the entrance prohibiting public access, smoking, and requiring safety equipment.	Section V, Item N (5 & 7), page 17; Section X, Item D (35), page 38.
26	Production	A tank battery and a berm or "firewall" will be constructed and maintained to contain 1.5 times the volume of the largest tank, and an impermeable liner will be installed at the tank battery to protect soils and ground water.	Section V, Item K (2), page 14; Section X, Item D (22), page 37
27	Production	During production, the gauger will check the facilities daily for leaks, damage, corrosion, etc. and repair as needed. If leaks, damage, etc. were found, the gauger will report the status to Padre Island National Seashore staff upon leaving the site.	Section V, Item K (7) (c), page 18; Section X, Item D (27),page 37
28	Production	During production, the gauger will check supply gas pressure daily. A hi-lo pressure sensor will be installed at a strategic point in the flow stream to monitor the system pressure. Should system pressure go above or below the safe range of operating pressure set by a technician, the	Section V, Item K (7)(C), page 15; Section X, Item D

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		sensor will trip a relay that actuates the safety valve, shutting in the well.	(28), page 37
29	Production	During production, and as the reservoir depletes and compressors are placed at the central tank battery to maintain the gas production rates, all compressors will be equipped with hospital mufflers to reduce noise levels and oriented so that the exhaust faces away from prevailing wind direction (SE).	Section V, Item I (11), page 16; Section X, Item D (32), page 37
30	Production	If shut-in of the well occurred and drilling or production operations were suspended for 24 hours or more but less than 30 days, the drill pipe will be run in the hole to approximately 100 feet above the last casing depth. The pipe rams will be closed and locked, and at least one safety valve will be installed in the top of the drill pipe and closed.	Section V, Item N (3) page 17; Section X, Item D (36), page 38
31	Production	If production operations should be suspended for 30 days or more, a backpressure valve will be installed in the tree, the tree gate valves will be closed, and the valve handles will be removed.	Section V, Item N (4), page 17; Section X, Item D (37), page 38
32	Maintenance	BNP will plant native shrubs or willow trees around the production facility to minimize visual impacts to visitors. Plantings of native trees or shrubs will also provide and perpetuate valuable habitat for migratory birds.	Section X, Item D (25), page 37
33	Maintenance	Vegetation growth within the facility and along access road will be maintained using mowers and hand tools to minimize threats from wildfire. The use of herbicides or pesticides must have the approval of the park Superintendent prior to their use.	Section V, Item K (6) (g), page 15; Section X, Item D (29), Page 37
34	Reclamation	The well will be plugged in compliance with NPS standards (Federal Onshore Oil and Gas Order No. 2) and Railroad Commission of Texas requirements. These standards ensure protection of useable quality aquifers.	Section V, Item L, page16; Section X, Item D (41), page 38
35	Reclamation	Reclamation of the site will be initiated as soon as possible following completion of operations, and no later than six months unless the Regional Director authorizes a longer period of time. BNP will reduce the pad size following drilling operations as feasible for production operations. All imported fill materials and liners used to construct the access road and pad will be loaded in dump trucks and hauled offsite for disposal or re-use.	Section VII, Items A, D page 22; Section X, Item D (40), page 38
36	Reclamation	All disturbed areas, including any rutting deeper than one inch, will be re-contoured and re-vegetated.	Section X, Item D (43), page 38
37	Reclamation	Some soils and sands from outside Padre Island National Seashore on Padre Island may be hauled in to achieve pre-project contours or to restore any spill clean-up areas. Such soils and sands will be similar in character to pre-project soils and sands with regards to particle size, free of unacceptable contaminants, certified weed-free, and approved by the Superintendent prior to purchase/use to minimize the potential for exotic species.	Section X, Item D (34), page 38; Item E, Soils, page 41

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
38	Reclamation	After the pad and access road have been re-contoured and the soil has been prepared, previously harvested hay, baled from the proposed access road and pad area and containing native plant seeds, will be used to re-vegetate the disturbed areas. If needed, additional hay for mulching and seed will be obtained by a commercial harvester approved by the NPS to prevent introduction of exotic plant species.	Section VII, Item H (2), page 23; Section X, Item D (46), page 39
39	Reclamation	Herbicide application or hand-tool removal will be used to control exotic plant species in the reclamation area, as approved by the Superintendent.	Section VII, Item H (5), page 22; Section X, Item D (47), page 39
40	Reclamation	Re-vegetation of the operations will be determined satisfactory when 70 percent coverage of targeted species is achieved.	Section VII, Item H (6), page 23 Section X, Item D (48), page 39
41	Sea Turtles	If possible, BNP will avoid moving the rig via the Gulf beach during the months of April through September in order to avoid disturbing sea turtle nests and nesting activity. However, should rig scheduling force BNP to move equipment down the beach during this period, an NPS trained monitor will be utilized to avoid potential adverse impacts to turtle nesting.	Section X, Item D (8), page 35
42	Sea Turtles and Birds	Driving will be conducted above the Gulf beach “wet line” to prevent excessive erosion along the beach and impacting endangered or threatened species.	Section X, Item D (5) page 35
43	Sea Turtles and Birds	BNP will utilize shielded lights to prevent unnecessary glare and direct all lighting at the rig toward the rig work area itself.	Section X, Item D (15), page 36
44	Birds	All open-topped tanks and/or secondary containments will be covered with netting or other covering, to effectively eliminate the likelihood of accidental deaths to migratory birds.	Section X, Item D (24), page 37
45	Birds	If the well were placed in production, all produced water will be stored in a closed top fiberglass tank(s). The water will be transported to an off-site, state-approved disposal facility by vacuum truck to reduce likelihood of accidental death to migratory birds.	Section V, Item K (4), page 15 Section X, Item D (21), Page 37
46	Birds	All open-vent exhaust stacks on production vessels designed to heat the product using an open flame will be constructed in a manner that prevents birds and bats from entering or perching.	Section X, Item D (23), page 37
47	Park Infrastructure	The Superintendent of Padre Island National Seashore, or his representative, shall have reasonable access to the operations as is necessary to properly monitor and insure compliance with the conditions of the plan of operations under the provisions of 36 CFR §9.37(f).	
48	Park Infrastructure	The approval of the Plan of Operations will be conditioned upon BNP tendering a performance bond to: (1) ensure timely and effective plugging of the well and reclamation of the operations area upon abandonment; and (2)	

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		guarantee rapid and effective response and cleanup of a spill. The regulations further state that the amount of the surety cannot exceed the sum of: (1) the cost of plugging the well and reclaiming the operations area; and (2) the liability amount estimated by the Superintendent required effectively containing, cleanup, and minimizing the damages resulting from the operation. The regulations limit the liability amount for the operation of a single well to $50,000. The regulations further limit the maximum overall bond for any entity to not exceed $200,000 for operations by a given operator within a unit of the National Park System.	
49	Park Infrastructure	The well plugging and surface reclamation costs listed in Section 1 of the Reclamation Plan total more than $200,000. By regulation, the NPS has set the performance bond for the Dunn-Peach #1 Well at $200,000. BNP already has on file with the park a bond specific to the Dunn-Murdock Well No. 1 plan of operations. As a condition of approving the Plan of Operations, the NPS will require BNP to modify the language of the bond to include the Dunn-Peach #1 Well.	
50	Park Infrastructure	Damage to paved surfaces due to trucks carrying construction and drilling equipment will be assessed. BNP will be charged for the cost of repair of these surfaces because these roads were not constructed for heavy industrial equipment and loads. Typical repairs of this type include road resurfacing, site preparation, pack coat, and seal and chip. Price will be determined based upon wear to the road.	
51	Park Infrastructure	For all releases to the ground of contaminating or toxic substances, BNP will promptly report the following initial information to Padre Island National Seashore: time of spill discovery, type of product spilled, location of spill, estimated spill volume, cause of spill, area covered; estimated rate or release if spill is ongoing; direction of spill movement; description of contaminated area; proximity to surface waters, roads or trails; weather conditions; steps being taken to remedy the situation; and initial response equipment required. For releases in excess of 5 barrels in the aggregate, BNP will provide a written report to Padre Island National Seashore within 10 working days of the incident. In addition to the information reported in the initial notification, the written report will include steps that will be or have been taken to prevent recurrence of the incident.	
52	Park Infrastructure	Source of water and annular injection: The water well will be drilled into the Goliad formation, between 1,400 feet and 1,700 feet. Providing this well has sufficient volume, BNP will not have to purchase water from the park or haul water via water trucks along the Gulf beach.	
53	Turtles	NPS awareness training will be provided to BNP employees and contractors that include identification of tracks, notification protocol, and how to mark tracks or nest area if they are unable to stay on site until official crew arrives.	FEIS, 5-11(9)

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
54	Turtles and Visitors	Trained monitor will lead all large vehicles when traveling to or from the well site. A trained monitor will also lead maintaining equipment such as a backhoe or front-end loader when cleaning the ruts on the beach.	
55	Turtles	BNP will hire and pay the lead monitors, subject to the NPS's approval of the persons selected. The lead monitors will report all violations of the mitigation measures or conditions of approval, as well as all sightings of and incidents involving sea turtles or their nest, eggs, hatchlings, or tracks, immediately and directly to the NPS. The NPS will provide the lead monitors with NPS radios to facilitate this communication. Failure to comply strictly with this mitigation measure may result in the immediate suspension of the plan of operations.	
56	Turtles and Visitors	Monitors will utilize an ATV as the primary vehicle preceding heavy equipment on the Gulf beach during peak Kemp's ridley nesting. FEIS, 5-22(9).	
57	Turtles and Visitors	All large trucks will drive 15 mph or less in the posted 25 mph speed zone and speed limits will be strictly enforced.	
58	Turtles and Visitors	A backhoe will be stationed on the Gulf beach to smooth out ruts as needed.	
59	Turtles and Visitors	No large vehicles will travel at night.	
60	Turtles /Birds And Visitors	Vehicles larger than a pick-up truck will be limited to 20 round trips per day.	
61	Turtles /Birds	Large vehicles will be scheduled to facilitate caravanning.	
62	Turtles /Birds	Lighting on the drilling rig will be shielded and directed inward to reduce the distraction potential for turtle hatchlings. FEIS, 5-11 (10). Section X, Item D (14), p. 40.	
63	Turtles	There will be a required setback of 500 feet from dunes and other light-sensitive areas.	
64	Turtles	During peak Kemp's ridley nesting season, vehicle convoys will not leave before an NPS turtle patroller patrols the beach ahead of them.	
65	Birds	Driving will be conducted above the Gulf beach "wet line" to help prevent disturbance to resting birds and crushing of benthic invertebrates.	
66	Birds	Native vegetation will be planted around the well site to minimize noise and provide habitat for birds.	
67	Visitors	Location of the wellpad is suitable for drilling to multiple targets and eliminates the need for additional wellpads, minimizing topographic impacts.	
68	Visitors	Drilling crew will utilize shuttle service provided.	
69	Visitors	Lighting on the drilling rig will be directed inward to meet human safety requirements and reduce night sky impacts.	
70	Visitors	Use of a diesel electric drilling rig and hospital mufflers on compressors will reduce noise levels.	
71	Visitors	Fencing and signing the operations area will exclude and protect visitors.	
72	Visitors	Use of secondary containment to prevent leaks and spills of hydrocarbons or hazardous substances to be released into the environment.	

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
73	Visitors	Production facility equipment and wellhead will be painted a neutral, earth-tone color, such as Sherwin Williams Burlap, or a similar NPS approved color, to blend with the natural environment.	

Several drilling operations are expected to take place in the winter and spring of 2004. These operations include: 1) the drilling of the Lemon/Lemon seed well located at the 12.5 mile marker, 2) the drilling of the Dunn-Peach well, which is the subject of this EA, 3) the possible drilling of the Manzano well, which is located near the Dunn-Peach location, and 4) the re-working of the Dunn-Murdock well location, which is located at Yarborough Pass. Like other drilling operations in the past, these operations will require the use of heavy equipment, large trucks, and several months to complete, thereby increasing the cumulative affects on the park's resources and visitor experience. Cumulative affects associated with the current increase in heavy truck traffic related to oil and gas development, the prospect of increased activities at previously approved operations, and the addition of new operations is the justification for this additional protective measure.

The drilling of the Dunn-Peach #1 well is expected to take place beginning in the winter of 2004 and be completed prior to the onset of the sea turtle nesting season. However, because of the cumulative effects of oil and gas related traffic on the Gulf beach, the NPS is establishing a 'Protected Season' in order to ensure adequate protection for nesting sea turtles and hatchlings. This timeframe will provide maximum protection for nesting Kemp's ridley's and protect the majority of Kemp's ridley hatchlings that may exist from undiscovered nests. The timeframe will become effective in the 2004 sea turtle nesting season, beginning on April 16 and extending until June 30. Drilling activities will be scheduled in such a manner as to be completed by the beginning of this timeframe. However, if certain operational conditions occur, which are outlined in Table 4, drilling may take place within this Protected Season if additional mitigation measures are followed. The additional mitigation measures are outlined in Table 5. The Protected Season will not prohibit the necessary activities associated with producing a well that is already drilled since these activities do not require the use of heavy equipment or large trucks.

Table 4. Operational conditions that may require drilling during the Protected Season.

Number	Possible Operational Conditions
1	The well to be drilled by BNP is of such depth or complexity that in BNP's estimation operations associated with the mobilization for and drilling, testing, and completion of the well will last for a period of time in excess of 240 days provided that the drilling operation begins close to the end of the Protected Season. BNP must demonstrate and document to the NPS the reason why the drilling operation cannot be completed within the 240 days instead of merely stating that the operation cannot be completed. Drill operations will be scheduled in such a manner that will not cause the drilling operation to extend into the Protected Season.
2	BNP commences operations associated with drilling a well prior to the Protected Season with an expectation that such drilling operations will be completed prior to such season, but delays associated with such operation prohibit completion of the well prior to the Protected Season. Delays that may give rise to the need to conduct operations within this timeframe shall include, but shall not be limited to weather delays, delays in drilling due to downhole drilling difficulties or unforeseen circumstances encountered while drilling, any delays associated with governmental action prohibiting operations, delays attributable to the actions of third parties such as riots, terrorism, strikes, vandalism, or similar action that disrupts BNP's authorized activities.
3	BNP is prohibited by the NPS or any other federal or state governmental agency from conducting operations for any period of time in excess of 14 consecutive days outside of the Protected Season if the reason that BNP is not allowed to operate is not the fault of BNP.

Number	Possible Operational Conditions
4	BNP is unable to schedule a drilling rig capable of drilling the well in question and meeting all requirements of BNP's Plan of Operations at any time other than the Protected Season. BNP will demonstrate and document to the NPS the reason that a drilling rig needed for the operation cannot be obtained prior to the Protected Season.
5	The NPS fails to issue a permit granting BNP authorization to conduct drilling operations associated with a Plan of Operations submitted by BNP and accepted as substantially complete by NPS within six (6) months of the date the Plan of Operations is accepted as substantially complete by NPS. BNP will provide the necessary Plan of Operations to the NPS prior to April 1 of a given year in order to ensure that enough time exists for the issuance of a permit.
6	The oil and gas lease(s) covering the drilling operation will terminate unless BNP conducts drilling operations during the Protected Season, and such lease termination is not the result of avoidable delays by BNP in prosecuting operations authorized by such lease.

Table 5. Additional measures necessary if drilling occurs within the Protected Season.

Number	Concern	Mitigation Measure
1	Sea Turtles	An NPS trained monitor will patrol the beach at the beginning of each day and prior to any convoy of trucks driving to or from the drilling location in order to identify any possible nesting that may have occurred at night or in the early morning hours.
2	Sea Turtles	An additional ATV monitor will be utilized behind each convoy to insure that all trucks in such convoy maintain proper spacing while driving on the beach.
3	Sea Turtles	BNP will employ one or more maintainers or similar equipment that will immediately repair ruts caused by BNP vehicles. Each maintainer or similar equipment will have an ATV monitor.
4	Sea Turtles	BNP will employ an onsite "Beach Manager" to coordinate and control all BNP activities on the beach.
5	Sea Turtles	Where feasible, excess materials and drill cuttings will be stored on the drilling location in order to delay the traffic associated with hauling such materials.

2.3. Alternatives Considered but Dismissed from Further Analysis

During the scoping process for this project, alternative locations and methods were considered for siting the proposed wellpad, access road, production facilities. These alternative locations and methods were discussed in consultation with the USFWS, BNP, park staff, Regional Support Office, and Washington Support Office for technical guidance. For the reasons described below, these alternatives were not subjected to further analysis.

NPS Acquisition of the Mineral Rights that are Part of BNP's Proposal

In the event that a proposed operation cannot be sufficiently modified to prevent the impairment of park resources and values, the NPS may seek to extinguish the associated mineral right through acquisition, subject to the appropriation of funds from Congress. With respect to the BNP proposed Plan of Operations, mitigation measures were identified and applied, which substantially reduced the potential for adverse impacts to park resources and values. As a result, the acquisition of mineral rights was dismissed from further consideration in this EA.

Alternative Well Access by Land

The first alternative access route considered entailed BNP to utilize the existing park roads, the Gulf beach and a portion of the existing Vector roads. However, instead of utilizing the existing Vector road from the southwestern most point as proposed, BNP could exit and begin construction of a new road at any point along the existing Vector roads to the proposed well site.

This alternative was rejected due to the additional impact to 900 linear feet (18,000 sq. ft.) of non-tidal wetlands and 100 linear feet (2,000 sq. ft) of tidal wetlands. This alternative would also entail a considerable increase in construction costs and time.
The second alternative route considered but dismissed from further analysis was to utilize the existing park road and the Gulf beach and create a new dune pass and access directly to the purposed Dunn-Peach #1 Well site. This route would require the construction of approximately 8,500 linear feet of road and would directly impact existing foredunes and barrier dunes adjacent to the Gulf beach. This alternative could also potentially impact up to 900 linear feet (18,000 sq. ft.) of non-tidal wetlands, up to 100 linear feet (2,000 sq. ft.) of tidal wetlands, and approximately 7,500 linear feet (150,000 sq. ft.) of hummocky grasslands. This alternative would also increase construction cost and time. This alternative would also impact the Black Hill cultural site, which has a 1,500 foot buffer around it (PAIS, 2000). This dune pass would travel through the buffer.

A third alternative access route that might be possible, but was not considered because of its enormous potential for environmental impacts as well as it enormous cost and time constraints would be to move the drilling rig to the park via the Laguna Madre. This alternative would impact 13,000 linear feet of open bay bottom and 1,600 linear feet of seagrasses outside the park. Dredging within the park would impact 2,700 linear feet of unvegetated tidal flat and 2,100 linear feet of tidal algal flat. Due to potential environmental impacts, costs, and the inevitable permitting difficulties for such a project, this alternative was rejected.

Alternative Well Pad Locations
BNP considered many different surface location alternatives for drilling the well. The proposed location, Pad E (Figure 6), was decided upon by BNP and park staff to be the most feasible alternative from both environmental and technological feasibility points of view.

The first alternative, Pad C, was located on a peninsula approximately 550-ft south-southwest of Pad E (Figure 6). Pad C was approximately 85,000 sq. ft and approximately 2,800-ft from the bottom hole location. The arrangement of Pad C avoided wetlands. However, the odd configuration of the upland pad was less conducive to drilling operations than Pad E, and park staff was concerned that the size of the pad would completely envelop the small natural peninsula. Park staff was also concerned that Pad C offered no visual barrier between the drilling operation and the Laguna Madre and therefore would not minimize the impact to the visitor's experience.

The second alternative, Pad D, was located east-southeast of Pad C and was situated on the east side of an existing dune ridge within a nook. A dune ridge would have provided a natural barrier between the drilling operations and park visitors in the Laguna Madre. Pad D would also have reduced the access road / flowline route by approximately 800 linear feet. However, placing drilling operations on Pad D would directly impact approximately 645-sq. ft of non-tidal wetlands. In addition, the largest pad that could be constructed without directly impacting any additional wetlands and existing dune ridge would be 76,051 sq. ft. A pad this size would not be feasible for carrying out BNP's proposed drilling operations (Figure 6).

The third alternative that was considered but dismissed was to drill the well from a surface location outside of the park in the Laguna Madre. BNP decided against this alternative because of drilling logistical problems. BNP's potential productive zones would be better reached by drilling from a surface location east of the proposed bottomhole rather than west. By drilling the well from the proposed Pad E, drilling distance to bottomhole would be reduced by approximately 2,300 feet. There were many environmental concerns associated with the location: dredging an access to the site, seagrass impacts, and visual intrusion to the Laguna

Madre visitor. Due to the obvious lack of environmental or economic benefits, this alternative was never fully developed.

Production Facility Alternative
Initially, BNP considered placing its production facility in the Laguna Madre outside of the park. After consultation with the park, it was decided that a production facility of the Dunn-Peach #1 Well on Padre Island within the park would result in less direct and indirect impacts.

Figure 6. Alternative well pad locations.

2.4. NPS Environmentally Preferred Alternative

Section 101 of NEPA states that "…it is the continuing responsibility of the Federal Government to…(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources" [42 U.S.C. §4321 *et seq.* §101 (b)].

The environmentally preferred alternative for drilling and producing the Dunn-Peach # 1 Well is based on these national environmental policy goals. Under Alternative A, No Action, the wells would not be drilled. Because there would be no new impacts, Alternative A would provide the greatest protection of area and park resources and values. Alternative A meets five of the six criteria (1 thru 4, and 6) and is therefore the environmentally preferred alternative.

BNP's Proposal, Alternative B, would have greater effects on the environment because of the drilling and production operations. Alternative B meets four of the six criteria (1,2,4, and 5). Although mitigating measures would reduce effects to park resources and values, there would still be effects, and therefore this alternative would not meet the Park Service's environmental policy goals as well as the No Action Alternative.

2.5. NPS Preferred Alternative

The environmentally preferable alternative is Alternative A because it surpasses Alternative B in realizing the full range of national environmental policy goals as stated in §101 of NEPA. However, because the enabling legislation of Padre Island National Seashore respects the exercise of oil and gas rights, the environmentally preferred alternative was not selected as the NPS preferred alternative. The NPS preferred alternative is Alternative B, Proposed Action. The NPS believes this alternative would fulfill its mandates and direction, giving due consideration to environmental, economic, technical, and other factors. Table 6 outlines both alternatives and how well each alternative meets the objectives of this project. The actions required for this project and to what extent park resources are impacted are summarized in Tables 8 and 9.

Table 6. Extent that each alternative meets objectives.

Objectives	Does Alternative A: No Action Meet Objective?	Does Alternative B: Proposed Action Meet Objective?
Provide BNP Petroleum Corporation, as a holder of nonfederal oil and gas mineral interests, reasonable access for exploration and development.	**No (-)** The well would not be permitted to be drilled, precluding BNP Petroleum Corporation reasonable access to develop its nonfederal oil and gas mineral interests.	**Yes (+)** The well would be permitted to be drilled and produced, with the application of mitigation measures to meet other objectives.
Avoid or minimize impacts on park resources and values, visitor use and experience, and human health and safety.	**Yes (++)** Without drilling the well, there would be no impacts.	**Yes (+)** Mitigation measures would avoid and minimize impacts.
Prevent impairment of park resources and values.	**Yes (++)** Without drilling the well, there would be no potential for park resources and values to be impaired.	**Yes (+)** Mitigation measures would result in no impairment of park resources and values.

Table 7. Comparative summary of alternatives.

Actions	Alternative A: No Action	Alternative B: Proposed Action
Access	Access road would not be constructed.	BNP related traffic would utilize Park Road 22 along with approximately 6.9 miles of Gulf beach.
Surface Location-	Wellpad would not be	BNP would construct a 99,225

Actions	Alternative A: No Action	Alternative B: Proposed Action
Wellpad	constructed.	square-foot drill site on uplands using conventional foundation construction techniques. Berms would be constructed around the perimeter and around the diesel tanks. All equipment, machinery, and living quarters would be placed on the pad.
Production Facility	Production facility would not be constructed.	It the well proved to be productive, BNP would reduce the well pad size by 1.935 acres and build a 0.207 acre production facility.
Pipeline	Pipeline would not be constructed.	BNP proposes to construct a 3,700 linear feet route through uplands to the existing AEP pipeline, in which 264.34 linear feet crosses an emergent wetland. Pipeline is located east of the drill site.
Reclamation Plan	No reclamation plan would be needed because the well would not be drilled.	BNP would remove all foreign materials from the park. All surface disturbances would be re-contoured as near as possible to the original contour. The ground would be fertilized and mulched with native hay. The mulch would be disked into the ground. Hand tools or herbicides would control undesirable species. The restored area would be monitored until 70% native vegetation cover was achieved. Sand fencing would be installed across the dune pass to aid foredune re-establishment.

Table 8. Comparative summary of impacts.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
Nonfederal Oil and Gas Development	Dunn-Peach #1 Well would not be drilled or developed, resulting in no impact on domestic energy supplies, and a moderate to major adverse impact on BNP. If BNP decides not to drill additional wells in the vicinity of the park, there could be a moderate to major, cumulative, adverse impact on BNP and a cumulative, moderate, adverse impact on domestic energy supplies.	Dunn-Peach #1 Well would be drilled, and if hydrocarbons are produced, could result in a negligible beneficial impact on domestic energy supplies. There would be a minor adverse impact on BNP due to costs and time invested in preparing a plan of operations, drilling and completing and/or plugging the well. If additional wells are drilled and completed in the vicinity of the park, there could be a minor, beneficial cumulative impact on domestic energy supplies and a minor to major, beneficial cumulative impact on

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
		BNP and associated mineral owners.
Air Quality	Dunn-Peach #1 Well would not be drilled; resulting in no new impacts on air quality. Existing park, commercial, and recreational vehicle use on the 6.9 mile segment of Gulf beach; visitor use on the beach; and continuing operation of two gas pipelines would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the park, and to remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and could be placed in production. Construction of the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts would be similar to those described under No Action, with localized, negligible to minor, adverse impacts on air quality throughout the park, and would remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.
Geology and Soils	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on geology and soils. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and could possibly produced hydrocarbons, resulting in the short-term disturbance to geology and soils on up to 6.05 acres, and the long-term occupancy of 2.412 acres. A 3.56 acres disturbance to geology and soils with construction of the road / flowline. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park. No impairment to geology and soils would result from implementation of this alternative
Water Resources and Floodplains	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from	Dunn-Peach #1 Well would be drilled, resulting in the short-term occupancy of 100-year floodplains on up to 6.05 acres, and if produced, result in the long-term occupancy of 2.412 acres. A 0.048 acres loss of water resources with construction of the road / flowline. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.	result in localized, short to long-term negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.
Wetlands	Dunn-Peach #1 Well would not be drilled; however, existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. Vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, and construction and maintenance of the access road / flowline within 0.048 acre of emergent wetlands, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.
Vegetation	Dunn-Peach #1 Well would not be drilled; however, existing uses, including the continuing operation of two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in	Dunn-Peach #1 Well would be drilled and may be produced. If the well were placed into production, there would be short-term loss of vegetative cover on up to 6.05 acres and the long-term occupancy of 2.412 acres. A 3.56 acres loss of vegetation with construction of the road / flowline. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation would result from implementation of this alternative.	impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts on vegetation throughout the park. No impairment to vegetation would result from implementation of this alternative.
Natural Soundscapes	Dunn-Peach #1 Well would not be drilled; however, existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. Construction of the access road / flowline route, well pad, and production facility; and drilling a water well; and drilling and producing a well, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts on natural soundscapes throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.
Wildlife	Peach # 1 Well would not be drilled, resulting in no new impacts on wildlife; however, existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. If the well were placed into production, there would be short-term loss of wildlife habitat on up to 6.05 acres, and the long-term occupancy of 2.412 acres. A 3.56 acres loss of habitat with construction of road / flowline. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the park. No impairment to wildlife would result from implementation of this alternative.
State and Federally Protected Species	Dunn-Peach #1 Well would not be drilled, with no impacts on suitable habitat or species. Existing impacts on suitable habitat and species range would range from no impact, to localized, short to long-	Dunn-Peach #1 Well would be drilled, and may be placed in production. Existing impacts on suitable habitat and species are the same as under Alternative A, No Action.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	term, negligible to minor, adverse impacts. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in localized, short to long-term, negligible to moderate adverse impacts on State and Federally Protected Species. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts, primarily along the parks shoreline. No impairment to species or suitable habitat would result from implementation of this alternative.	Impacts on suitable habitat and species from the construction and maintenance of the access road / lowline route (3.56 acres), well pad (2.28 acres), and production facility (0.207 acres); and drilling and production of the well would result in localized, short to long-term, negligible to minor, adverse impacts, and negligible beneficial impacts on T&E species. Cumulative impacts would be similar to those described under No Action, with localized to widespread, short to long-term, negligible to moderate adverse impacts throughout the park. No impairment to species or suitable habitat would result from implementation of this alternative.
Visitor Use and Experience	Dunn-Peach #1 Well would not be drilled; however, existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts, but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.	Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 6.05 acres, and long-term occupancy by oil and gas developments on 2.412 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area. A 3.56 acres loss of visitor use with construction of road / flowline. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

3.0. AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

Methodology
This section describes direct, indirect, and cumulative impacts under the two alternatives. Impacts are described in terms of context, duration, and intensity. The context or extent of the impact may be **localized** (affecting the project area or a single company) or **widespread** affecting other areas of the park and/or the project area, or an industry). The duration of impacts could be **short-term**, ranging from days to three years in duration, or **long-term**, extending up to 20 years or longer. Generally, short-term impacts would apply to construction activities and long-term impacts would apply to roads, production operations, and pipelines. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. Where the intensity of an impact can be described quantitatively, the numerical data are presented. However, most impact analyses are qualitative.

Cumulative Impacts
The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq*.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). The following descriptions of park development and operations, nonfederal oil and gas development, and adjacent land uses provide the basis for analyzing cumulative impacts in this chapter:

The following descriptions of park development and operations, and adjacent land uses provide the basis for analyzing cumulative impacts in this EA. These descriptions should be used in conjunction with the description of the affected environment for nonfederal oil and gas development that follows in the next section:

Park Development and Operations
Padre Island National Seashore was established to save and preserve a portion of the diminishing seashore of the United States that remains undeveloped, for the purposes of public recreation, benefit, and inspiration. Any developments are vulnerable to the harsh corrosive salt-air atmosphere and require constant maintenance. Park developments are confined to the northernmost 10 miles of the park and consist of the minimum necessary to support park management and the approximate 495,963 visitors in 2002. The Malaquite visitor center and concession facility was built in 1988 to replace the older pavilion structure damaged by Hurricane Allen. In 1999, Hurricane Bret struck the park from the 32.5 to 56.8 mile markers, and created 21 washover channels. In addition to the Malaquite visitor center/concession facility, there is a 1,150-vehicle parking lot, a park headquarters/ranger station/turtle incubation facility, two park housing units, a 40-site RV Campground, wastewater treatment facility, Bird Island Basin and Yarborough Pass primitive boat docks, an unpaved cross-island Yarborough Pass road, and a ¾ mile paved Grasslands Nature Trail. The paved, two-lane Park Road 22 provides access into the park, westward to Bird Island Basin, or south to Malaquite Beach at which point the Gulf beach becomes the primary transportation corridor south. The beach is hard and accessible by both two and four-wheel drive vehicles for 5 miles at which point the beach corridor is recommended accessible only by four-wheel-drive vehicles. Access to the park is also available via boat in the Laguna Madre or Gulf of Mexico. In total, existing park developments occupy 391 acres or 0.3% of the park. There are no past developments or activities that continue to impact the park's resources or values. New developments that are

planned in the future include the implementation of the Bird Island Recreational Use Plan and the construction of a sea turtle lab within the footprint of the park headquarters compound.

Park activities that could contribute to impacts on park resources and values include prescribed fires, routine maintenance of the park roads, park and visitor vehicle use, and public recreational activities such as motor boating, and burning of campfires.

Adjacent Land Uses
Drilling and production of state-owned oil and gas is expected to continue from state tracts adjacent to the park boundaries, either on the east in the Gulf of Mexico, or on the west in the Laguna Madre. Exploration and development of federally owned oil and gas in the Gulf of Mexico's outer continental shelf will also continue. In addition, tankers transporting products through the Gulf of Mexico could potentially impact the park should there be a spill incident. These activities have the potential to impact all park resources and values.

Impairment
A major, adverse impact to a resource or value whose conservation is: 1) necessary to fulfill a specific purpose identified in the establishing legislation of Padre Island National Seashore; 2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or 3) identified as a goal in the park's general management plan or other relevant NPS planning documents.

The impact analyses are organized by impact topic. Under each impact topic, the affected environment is described, impacts under each alternative is given, a cumulative impact analysis is provided (analysis area is parkwide), and a conclusion is stated. The conclusion section summarizes all major findings, including whether or not an impairment of resources or values is likely or would occur. Impairment analyses are only performed for park resources and values.

3.1. Impacts on Nonfederal Oil and Gas Development

Methodology
To analyze the impacts on nonfederal oil and gas development, the park reviewed current and historic drilling operations that have been conducted within the park since the mid 1900's. Information from the parks enabling legislation, current state and federal laws and regulations, and the parks approved Oil and Gas Management Plan were also utilized.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely measurable, and/or would not affect domestic energy supplies or BNP.

Minor: the impact is slight but measurable, and/or would affect domestic energy supplies or BNP.

Moderate: the impact is readily apparent, and/or would affect domestic energy supplies or BNP.

Major: the impact is severely adverse or exceptionally beneficial, and/or would affect domestic energy supplies or BNP.

Affected Environment
Oil and gas exploration and production have been actively pursued on Padre Island since 1951. A total of 74 operations have occurred within the current boundaries of the park. During 1982-1992, two-dimensional seismic surveys were conducted over many areas of the park. Currently, there are 13 gas operations, including six wells, one saltwater well, and six pipelines occupying 349 acres or 0.27 percent of the park. All are under approved plans of operations. Four operations, including one abandoned production facility have ongoing clean-up and remediation activities associated with releases of oil and gas and other contaminating or hazardous substances (South Sprint Facility, Vector A-6 location, American Exploration/Louis Dreyfus abandoned production facility, and the former Chevron USA Onshore Production Facility). Until cleanup is successfully completed, impacts on park resources and values persist. Two existing gas pipelines are located within the analysis area of the proposed project. AEP operates and maintains a 12-inch pipeline 3,700 feet west of the proposed wellsite. Duke Energy owns a currently inactive 10-inch pipeline located 4,300 feet east of the proposed wellsite. BNP proposes to tie into the existing AEP pipeline that lies approximately 50 feet west-northwest of the existing Vector A-4 facility and adjacent to the preferred production facility alternative. Also included in the analysis area of the proposed Dunn-Peach #1 Well is a 6.9 mile segment of Gulf beach that BNP would use to access its well. This segment of Gulf beach is currently used by 13 nonfederal oil and gas operators to access existing operations located throughout the park, by park staff to conduct routine park operations, and by an estimated 62,868 (18% of annual visitation) park visitors that venture further than the Little Shell area (6 to 9 miles).

In 1999, the NPS prepared a reasonably foreseeable development (RFD) scenario for inclusion in the park's Draft Oil and Gas Management Plan/Environmental Impact Statement. The RFD projects that three-dimensional seismic surveys could be conducted over the entire park and up to 18 wells could be drilled and produced over the next 30 years to develop the 80 billion cubic feet of natural gas estimated by the U.S. Geological Survey that remains beneath the park. The NPS projects that 3-D seismic surveys would directly impact up to 748 acres; and the 18 wells and associated construction of roads, well and production pads, and flowlines would directly impact up to 250 acres, for a total direct surface use of up to 998 acres or 0.77% of the park. It is expected that 3-D seismic surveys would result in short-term impacts lasting no more than 3 years until reclamation is satisfactorily achieved. It is reasonable to assume that, as some wells are being drilled and produced that others would be plugged and abandoned. As of 2001, 3-D seismic surveys have been completed over the northern three-quarters of the park. There are negligible to minor impacts on park resources and values from those seismic surveys. In June 2002, BNP drilled the Dunn-Murdock #1 well in the vicinity of the Yarborough Pass boat dock. This constituted the first of the possible 18 wells that the NPS's RFD scenario projected could be drilled over the next 30 years. The Dunn-Murdock #1 well directly disturbed 2.01 acres within the park. The site is being evaluated to rework the well or to drill additional wells at this time. Two additional wells have been permitted, Lemon/Lemon Seed Wells, but construction of these two wells has not begun to date.

Impacts of Alternative A, No Action, on Nonfederal Oil and Gas Development
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no impact on domestic energy supplies. There could be moderate to major adverse impacts on BNP due to the cost to collect data, and prepare a plan of operations, and lost revenues since BNP would not develop their private mineral interests at this location.

Cumulative Impacts
Under Alternative A, No Action, if BNP decides not to drill additional oil and gas wells in the vicinity of the park, there could be a moderate to major, cumulative, adverse impact on BNP,

and a cumulative, moderate, adverse impact on domestic energy supplies from potential production of oil and gas.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled or developed, resulting in no impact on domestic energy supplies, and a moderate to major adverse impact on BNP. If BNP decides not to drill additional wells in the vicinity of the park, there could be a moderate to major, cumulative, adverse impact on BNP and a cumulative, moderate, adverse impact on domestic energy supplies.

Impacts of Alternative B, Proposed Action, on Nonfederal Oil and Gas Development
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if hydrocarbons are discovered and produced, could result in a negligible beneficial impact on domestic energy supplies. If a commercial field is discovered, the financial impacts on BNP and the associated mineral owners could range from minor to moderate beneficial impacts, depending on the quality of the discovery. Costs and time BNP has invested in preparing a plan of operations, drilling and completing and/or plugging the well would result in a minor adverse impact on BNP.

Cumulative Impacts
Under Alternative B, Proposed Action, if the Dunn-Peach #1 Well were not produced, the cumulative impact on nonfederal oil and gas development would be the same as under the no-action alternative. Should additional exploration and development wells be drilled and completed, production of petroleum resources under the park would increase, and may result in a minor, beneficial, cumulative impact on domestic energy supplies and a minor to major, beneficial, cumulative impact on BNP and associated mineral owners.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if hydrocarbons are produced, could result in a negligible beneficial impact on domestic energy supplies. There would be a minor adverse impact on BNP due to costs and time invested in preparing a plan of operations, drilling and completing and/or plugging the well. If additional wells are drilled and completed in the vicinity of the park, there could be a minor, beneficial cumulative impact on domestic energy supplies and a minor to major, beneficial cumulative impact on BNP and associated mineral owners.

3.2. Impacts on Air Quality

Methodology
To analyze the impacts on air quality, the park reviewed current state and federal laws regarding air quality and the park's approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable and would not affect the park's designation as a Class II air shed.

Minor: the impact is slight but detectable and would not affect the park's designation as a Class II air shed.

Moderate: the impact is readily apparent and would not affect the park's designation as a Class II air shed.

Major: the impact is severely adverse and/or would affect the parks designation as a Class II air shed.

Affected Environment
According to the TCEQ and the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS, 2000), Kenedy County continues to be an attainment area for regulated pollutants. Prevailing southeast winds from March through September and north-northeasterly winds from October through February are likely to dissipate any pollutants in the park (PAIS, 2000). Padre Island National Seashore is designated as a Class II airshed by the State of Texas, as authorized by the Prevention of Significant Deterioration provisions of the Clean Air Act. The park's air quality is protected by allowing limited increases over baseline concentrations of sulfur dioxide, nitrogen oxides, and particulate matter (PAIS, 2000).

Impacts of Alternative A, No Action, on Air Quality
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on air quality. However, impacts on air quality in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach by park staff, visitors, and 13 nonfederal oil and gas operators; visitor campfires along this segment of Gulf beach; and the continuing operation of two gas pipelines. The possibility exists for leaks or spills of hydrocarbon products along the two pipelines. Spilled hydrocarbon products could volatize and enter the atmosphere. In the vicinity of a leak, concentrations of gas and other constituents could provide a source for explosion or fire. These impacts could be localized, with minor to major, short-term adverse impacts on air quality; however, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts is reduced. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor use on the beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on air quality within the analysis area.

Cumulative Impacts
Under Alternative A, cumulative impacts on air quality throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park; and from new drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to air quality impacts include prescribed fires; routine maintenance of park roads; park, commercial, and recreational vehicle use; and public recreational activities such as motor boating and burning of camp fires. Adjacent land uses that could contribute to impacts on the park's air quality include state- and federally-leased oil and gas operations in the Laguna Madre or Gulf of Mexico. As a result of these activities, cumulative impacts on air quality in the park is expected to be localized around point sources, short-term because emissions would be readily dissipated by prevailing winds, and range from negligible to minor adverse impacts. Air quality is expected to stay within state and federal standards.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled; resulting in no new impacts on air quality. Existing park, commercial, and recreational vehicle use on the 6.9 mile segment of Gulf beach; visitor use on the beach; and continuing operation of two gas pipelines would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to

minor, adverse impacts on air quality throughout the park, and to remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Air Quality
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be completed to produce hydrocarbons.

Existing impacts on air quality within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the access road / flowline route, well pad, and production facility would result in localized and short-term increases in particulate matter during ground-disturbing activities such as importing and compacting base materials, and use of vehicles and other machinery. Emissions of particulate matter, nitrogen oxides, carbon monoxide, carbon dioxide, and sulfur dioxide would be greatest during the short-term drilling and workover operations due to increased use of vehicles and large gasoline and diesel engines used to power the drill rig, pumps, and auxiliary equipment, resulting in short-term, negligible to minor adverse impacts on air quality, localized near the wellsite. Prevailing winds are expected to dissipate emissions quickly out of the area. If the well does not produce, impacts on air quality would return to levels described under the No Action Alternative. However, if the well is placed in production, emissions would continue but at reduced levels, resulting in localized, long-term, negligible, adverse impacts on air quality.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts from localized point sources resulting in negligible to minor, adverse impacts on air quality throughout the park, and within state and federal standards.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and could be placed in production. Construction of the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts would be similar to those described under No Action, with localized, negligible to minor, adverse impacts on air quality throughout the park, and would remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.

3.3. Impacts on Geology and Soils

Methodology
To analyze the impacts on geology and soils, all available information on geological resources in the park was compiled including: research, previous plans of operations, and the park's approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Padre Island consists of Pleistocene and Holocene sands, silts, clays, and shell fragments, which were transported by wind and water (PAIS, 2000). According to the U.S. Department of Agriculture (1965), soil pH generally ranges from 5.5 to 8.0, with higher pH occurrences nearer the Gulf side of the island. Soils are comprised of the Galveston and Mustang series on the majority of the barrier island. Soil types in the project area consist of Padre series on sand hummocks and Mustang series on lower poorly drained swales. The Padre series is characterized as being well-drained, deep sandy soil with depth to water at around 80 inches. Mustang series is characterized as being poorly drained shallow soils with depth to water at around 30 inches. A parkwide soil survey is being conducted by the Natural Resources Conservation Service (NRCS), with completion expected in early 2004.

To establish baseline conditions of hydrocarbon and organic levels, BNP would sample soils immediately prior to the start of construction. Soils would be collected and tested according to the sampling protocol prescribed by the NPS (see Appendix F, PAIS 2000).

Impacts of Alternative A, No Action, on Geology and Soils

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on geology and soils. However, impacts on geology and soils in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, and the continuing operation of two gas pipelines.

Park staff, 13 oil and gas operators, and an estimated 62,868 (18% of annual Gulf beach visitation) park visitors use the 6.9 mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include two and four-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5 mile marker. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. An estimated 349,269 visitors annually use the Gulf beach. Approximately 62,868 visitors (18% of those using the Gulf beach) travel between the six to 12.5 mile marker, with some going below this point. Vehicle traffic associated with oil and gas operations normally uses four-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so.

Existing operation of the two gas pipelines located to the east of the proposed wellsite would continue to impact geology and soils within the analysis area. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect the

integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on geology and soils within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on geology and soils throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Leaks and spills from oil and gas operations could result in localized, minor to major, impacts on geology and soils. Spills from oil and gas operations and tankers in the Laguna Madre or Gulf of Mexico, could be transported by water into the park and cause widespread impacts that would require long-term clean-up and remediation. Park, commercial, and recreational vehicle use along the beach and off road vehicle use within the park would continue to compact and rut soils. Dredging and maintenance of the Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park. Cumulative impacts on geology and soils throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on park geology and soils, primarily along park shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on geology and soils. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Geology and Soils
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and produced, resulting in the short-term disturbance to geology and soils on up to 6.05 acres, and if completed to produce hydrocarbons, the long-term occupancy of 2.412 acres. The construction of the access road / flowline would result in a 3.56 acres disturbance to geology. Existing impacts on geology and soils within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the access road / flowline route, well pad, and production facility for the proposed Dunn-Peach #1 Well would directly impact up to 6.05 acres, resulting in the long-term loss of soil productivity and localized, short- to long-term, negligible to minor, adverse impacts on geology and soils in the analysis area.

The construction of the access road / flowline route, well pad, and production facility would directly impact 6.05 acres of undisturbed soils. The area would be leveled and crushed limestone or cement brought in to build the road and pad. Mitigation measures to protect soils during the drilling and production phase of operations would include constructing a sloped 6' x 6' corrugated steel well cellar, and lining the pad underneath the crushed limestone or cement with a 20-millimeter thick polyethylene liner that would extend over a three foot high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation into native soil underlying the pad. If the well does not go into production, the entire 6.05 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on geology and soils until the site is satisfactorily reclaimed.

However, if the well is placed in production, the well pad would be reduced to 0.345 acres and the imported materials would be removed, the site re-contoured to natural conditions, and native vegetation re-established to meet 70% cover. A flowline would be installed adjacent to the access road to connect with one of the existing pipelines located east of the proposed well. The continued use of the site for production operation would result in localized, long-term, minor adverse impacts on geology and soils.

Flowline construction would disturb an additional 1.86 acres of hummocky uplands, of which 0.024 acres of emergent wetlands. A temporary displacement of soils would occur until the flowline is being buried. Once the flowline is buried, soils would be replaced and the corridor would be re-vegetated. Adverse impacts on geology and soils from flowline placement would be localized, minor, and short-term during construction and re-vegetation activities.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on geology and soils throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park, resulting in short to long-term, negligible to minor adverse impacts localized near developments. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and could possibly produce hydrocarbons, resulting in the short-term disturbance to geology and soils on up to 6.05 acres, and the long-term occupancy of 2.412 acres. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, negligible to moderate,

adverse impacts on geology and soils throughout the park. No impairment to geology and soils would result from implementation of this alternative.

3.4. Impacts on Water Resources and Floodplains

Methodology
To analyze the impacts on water resources and floodplains, all available information on water resources and floodplains in the park was compiled including: personal observations, consultation with other agencies, the parks approved Oil and Gas Management Plan, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment
Padre Island National Seashore is located on a largely undeveloped barrier island in southern Texas, on the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre and the back-island dunes and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made dredge material islands in the Laguna Madre also lie within the National Seashore.

The foredunes of the park provide protection from hurricanes and tropical storms for the island's backcountry and the Texas mainland. The dunes are fragile and, once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand. This results in a line of dunes forming parallel to the beach that varies in height from less than six feet to approximately 50 feet above sea level. This primary dune line extends the entire length of Padre Island National Seashore, broken only in a few places where hurricane washover channels have occurred, or road cuts have been constructed.

The proposed project is sited on hummocky uplands, with the exception that 0.048 acres of emergent wetlands, which are jurisdictional wetlands, would be directly impacted by the proposed access road / flowline route.

Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water at the site is approximately two to five feet deep, depending upon the season.

According to the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS, 2000), and Federal Emergency Management Agency floodplain maps, most of the park and all of the project area lies within the 100-year floodplain. The exception is higher dune areas. The hurricane season begins June 1 and continues through November 30.

The park will provide a draft floodplains statement of findings to the various state and federal agencies required by the NPS's Procedural Manual #77-2: Floodplain Management.

Impacts of Alternative A, No Action, on Water Resources and Floodplains
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on water resources and floodplains. However, impacts on water resources and floodplains in the analysis area would continue as a result of park, commercial, and recreational vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of two gas pipelines.

Park staff, 13 oil and gas operators, and an estimated 62,868 (18% of annual visitation) park visitors use the 6.9 mile segment of Gulf beach for vehicular access. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, adverse impacts on water quality of the Gulf.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized and short-term, negligible, adverse impacts on water quality of the Gulf.

Existing operation of the two pipelines located to the east of the proposed wellsite would continue to impact water resources and floodplains within the analysis area. Because the entire park is located within the 100-year floodplain, with the exception of the foredunes, there was no practicable alternative to siting the pipelines within the 100-year floodplain. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis excavating small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. These activities could cause sedimentation during times when the work area is inundated; however, it is anticipated that work of this nature would be scheduled during dry periods (winter months). There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating surface or groundwater. If leaks or spills occur during flood events, contaminants could be transported via surface waters great distances, thereby increasing flood hazards and degrading floodplain values. Impacts from spills could be localized to widespread, with minor to major, adverse impacts on water resources and floodplains. However, with mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two gas pipelines, would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on water resources and floodplains throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase turbidity to Laguna Madre waters inside the park. Other activities that could impact water resources and floodplains parkwide include prescribed fires; routine maintenance of park roads; park, commercial, and recreational vehicle use; and recreational activities.

Existing and future development of oil and gas access roads and pads within the park could result in altering surface water flow and locally increasing soil erosion. Leaks and spills from oil and gas operations could be localized to widespread, with minor to major, impacts on water resources and floodplains. Spills from oil and gas operations or tankers in the Laguna Madre or Gulf of Mexico could be transported by water into the park and cause widespread impacts and result in long-term clean-up and remediation.

Cumulative impacts on water resources and floodplains throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, adverse impacts on the park's water resources and floodplains, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Water Resources and Floodplains
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, resulting in the short-term occupancy of 100-year floodplains on up to 6.05 acres; and if completed to produce hydrocarbons, long-term occupancy of 2.412 acres. Construction of the access road / flowline would result in a 0.048 acres loss of water resources. Existing impacts on water resources and floodplains within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with park, commercial, and recreational vehicle use on the 6.9 mile Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines.

There is no practicable alternative to siting the proposed access road / flowline route, well pad, and production facility within the 100-year floodplain because the entire park, with the exception

of the higher dunes, is located within floodplains. Impacts could result from changes in surface and subsurface hydrology and risk of contamination from contaminating and hazardous substances. The application of mitigation measures and conditions of approval in the plan of operations would reduce the potential for these impacts to occur.

If the well is not placed in production, the well pad and access road materials would be removed, the area re-contoured and re-vegetated, resulting in a localized, short to long-term, negligible, adverse impact on the barrier island's role as a defense to prevent or slow the effects of hurricanes on the Texas mainland.

The drilling of the well would require the use of 315,000 gallons of water. This water could be obtained from either of two preferred water sources. The preferred option is to convert an existing inactive gas well presently owned and operated by Vector Energy Corporation into a water source well. Vector has four unplugged wells near the Peach drillsite. Possibly one of these wells could be converted to a water source well. The Vector sites have environmental issues, which need to be resolved before this alternative could be used. However, if the issues are resolved, BNP would plug the selected well and convert it to a source well.

If the issues with the Vector wells cannot be resolved, the alternative is to drill a water source well at the drill site to the Goliad sand at a depth of 1,700 feet.

The potential impact associated with drilling a water well includes depletion or contamination of the aquifer in the Goliad formation located between 1,400 and 1,700 feet. The Texas Commission on Environmental Quality (formerly TNRCC) has identified useable-quality ground water in this zone; and the Railroad Commission of Texas and NPS have applied mitigation measures to ensure that drilling, production and plugging operations would not impact ground water quality.

Constructing the access road / flowline route, well pad, production facility; and drilling and producing the wells would result in impacts similar to those described under No Action, with localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on water resources and floodplains throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, resulting in the short-term occupancy of 100-year floodplains. Producing the well would result in localized, short to long-term negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and

widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

3.5. Impacts to Wetlands

Methodology
To analyze the impacts on wetlands, all available information on water resources in the park was compiled including: personal observations, consultation with other agencies and wetland specialists, the park's approved Oil and Gas Management Plan, landcover classification data, and wetland maps.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment
On April 3, 2003, U. Army Corps of Engineers (COE), and Arlene Wimer (NPS), performed a site visit and the wetland delineation within the proposed project area. Based on a site visit performed by BEI and COE. The proposed access road / flowline would impact wetlands under jurisdiction of the COE and NPS. NPS Director's Order #77-1: Wetland Protection and its accompanying Procedural Manual. D.O. #77-1 identifies the Cowardin wetland definition as the NPS standard for delineating wetlands for use in determining the extent of impacts. On this project site, the wetlands delineated by the COE are the same as those that would be delineated using the Cowardin definition.

U.S. Army Corps of Engineers Section 404 permit would be needed for the wetland impacts. Nationwide Permit (NWP) 12 authorizes the construction of utility lines where construction does not cause greater than 0.5 acre loss of waters of the U.S. and the utility line does not exceed two feet in waters of the U.S. The NWP 14 authorizes the construction of linear transportation projects if discharge does not cause the loss of greater than 0.5 acre of water of the U.S. Based on the evaluation, this project appears to be authorized under NWP's 12 and 14.

The wetlands are located along a total 264.34 linear feet of the access road / flowline route. Wetlands totaling 2,091 square feet (0.048 acres) would be directly impacted by construction and maintenance of the access road / flowline route. To minimize the impacts, the traditional 50-foot wide construction corridor for a pipeline has been reduced to a 40-foot wide corridor containing both the access road and the flowline if needed. This combination would result in a reduction of impacts by 37,000 square feet (0.85 acres). The NPS and the COE adhere to the "no-net loss" policy for wetlands protection. Since the total wetland impact area is less than 0.1 acre, and assuming that the wetlands are not considered of high quality of high functional value,

compensatory mitigation is strongly encouraged but not required according to NPS Procedural Manual #77-1.

However, the COE's NWP 14 requires that the notification include compensatory mitigation. Proposed mitigation will be culverting the access road / flowline route. The size, number, and exact placement are to be determined by a professional hydrologist. The objective is not only to keep the hydrology of the area intact, but also to improve it where possible by the placement of culverts.

NPS Executive Order 11990 "Protection of Wetlands" directs federal agencies to "… avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands…" E.O. 11990 also directs the NPS and other agencies to issue procedures to comply with the Order. The NPS policies and procedures for protection of wetlands are found in Director's Order #77-1: Wetland Protection and its accompanying Procedural Manual. D.O. #77-1 requires that a "Statement of Findings" be prepared in cases such as this where proposed actions will have adverse impacts on wetlands managed by the NPS. The Statement of Findings (Appendix Two) will address the loss of the 0.048 wetland acre, alternatives considered, and functions of the impacted wetland, and avoidance and mitigation measures. The park will provide a draft wetlands statement of findings to the various state and federal agencies responsible for maintaining water quality as required by the NPS's Procedural Manual #77-1.

Impacts of Alternative A, No Action, on Wetlands

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on wetlands. However, impacts on wetlands in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of two gas pipelines.

Park staff, 13 oil and gas operators, and an estimated 62,868 (18% of annual visitation) park visitors use the 6.9 mile segment of Gulf beach for vehicular access. Vehicle access on the Gulf beach is recommended above the Gulf beach "wet line" to prevent excessive erosion along the beach. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 6.9 mile segment of Gulf beach.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized, long-term, negligible, direct and indirect adverse impacts on the marine wetlands along the 6.9 mile segment of Gulf beach.

Two gas pipelines are located east of the proposed wellsite. Both pipelines are operating under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of the AEP pipeline are located within the analysis area for the proposed Dunn-Peach #1 Well, and within emergent wetlands. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating small sections of the pipelines to inspect the integrity of the pipe. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed pipeline in emergent wetlands areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would

minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of wetlands within the immediate area of work. If there is standing water, sedimentation could indirectly impact a larger area around the worksite. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating emergent wetlands. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wetlands beyond the immediate area and degrading wetlands values. Impacts from spills could be serious, with effects ranging from localized to widespread, with minor to major, adverse impacts on wetlands. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Existing uses, including vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on wetlands throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase sedimentation in the Laguna Madre waters inside the park, resulting in covering of seagrasses. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wetlands parkwide include prescribed fires, routine maintenance of park roads, park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact wetlands. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on wetlands. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the park's shorelines, comprised of marine wetlands on the Gulf shore and wind-tidal flats on the Laguna Madre shore, causing widespread impacts and resulting in long-term clean-up and remediation.

Cumulative impacts on wetlands throughout the park are expected to result in short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts to wetlands. Existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands

within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wetlands
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if completed to produce hydrocarbons would result in long-term, direct impacts on 0.048 acre of emergent wetlands (NPS) associated with the placement of the access road / flowline.

Existing impacts on wetlands within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands associated with vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines.

Project design would minimize impacting park wetlands. There is no practicable alternative to siting a segment of the proposed flowline within emergent wetlands, or for using the Gulf beach as an access corridor.

BNP would use a 6.9 mile segment of Gulf beach to access its proposed access road / flowline route, well pad, and production facility. BNP would be required to confine vehicle use above the "wet-line" (see Table 3, 4, and 5 for additional mitigation measures and operating stipulations). As described above under No Action, poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 6.9 mile segment of Gulf beach.

Emergent wetlands are located along a total 264.34 linear feet of the access road / flowline route. Wetlands totaling 2,091 square feet (0.048 acres) would be directly impacted by construction and maintenance of the access road / flowline route. The flowline would be connected to the existing AEP/HPL pipeline using a procedure known as a "hot tap." This method allows pipelines that are in service to be connected without the contents being released. A 15-foot by 15-foot (225 square foot) area would be excavated to make the tie-in. Any ground water that seeps into the excavation would be pumped out using PVC well points and diaphragm pumps. The liquids would be diverted and filtered through a silt screen and native hay bales. Any contaminated liquids or soils would be removed and disposed at a State-approved disposal facility outside the park, while the remaining collected water would be released onto the surrounding area.

The NPS adheres to the administration's principle of "no-net loss of wetlands." The area that would be directly impacted would comprise less then one tenth of an acre. However, the required mitigation (NWP 14) and the proposed culverting along the access road / flowline route, will not only keep the hydrology of the area intact, but also improve water flow.

Vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, and construction and maintenance of the access road / flowline within 0.048 acre of emergent wetlands would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on wetlands throughout the park would be similar to those described under No Action, with short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. If the well were placed into production, there would be short-term, direct impacts on 0.048 acres of emergent wetlands associated with the placement of the access road / flowline.

Vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, and construction and maintenance of the access road / flowline within 0.048 acre of emergent wetlands, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

3.6. Impacts on Vegetation

Methodology
To analyze the impacts on vegetation, the park's utilized research, other park plans, the parks approved Oil and Gas Management Plan, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment

Drawe (1992) provides a detailed characterization of species composition and abundance in the various vegetation types on Padre Island. He found 140 species of plants, including 27 grasses, 92 forbs, 3 cacti, 3 wood species, and 15 other species.

The area in the vicinity (i.e. within 1,000 feet) of the proposed project area is comprised of a diverse group of habitats. Moderate to high dune fields were typically dominated by seacoast bluestem (*Schizachyrium littorale*), camphor weed (*Hetrotheca subaxillaris*), and gulf dune paspalum (*Paspalum monostachyum*), with partridge pea (*Cassia fasiculata),* sea oats (*Uniola paniculata*), slim leaf dicantheleum (*Dichantheleum linearifolium*), marsh hay cordgrass (*Spartina patens*), seaside pennywort (*Hydrocotyle bonariensis*), white stem wild indigo (*Baptisia leucophaera*), western ragweed (*Ambrosia psilostachya*), narrow-leaf sumpweed (*Iva angustifolia*), eastern prickly pear (*Opuntia compressa*), and silver-leaf croton (*Croton punctatus*). Moderate to high dune fields are typically 75% -95% covered with vegetation. Most of the proposed project area is comprised of grasslands. Hummocky grasslands are typically dominated by narrow-leaf sumpweed, western ragweed, marshhay cordgrass, and camphor daisy (*Maechaeranthera phyllocephala*) at lower elevations. Seacoast bluestem, gulf dune paspalum, and seaside pennywort dominate higher elevations. Other species include camphorweed, purple mist flower (*Eupatorium coelestinum*), seashore dropseed (*Sporobolus viriginicus*), partridge pea, white stem wild indigo, prairie clover (*Dalea sp.*), sea ox-eye (*Borrichia frutescens*), and bushy bluestem (*Andropogon glomeratus*). Hummocky grasslands are typically 95%-100% covered with vegetation.

Scattered depressions within the grasslands have alternating dominance of bulrush (*Scirpus americanus*), narrow-leaf sumpweed, seashore dropseed, frog-fruit (*Phyla nodiflora*), and gulf dune paspalum, with sea lavender (*Limonium corolinianum*), and slim leaf dicanthelium. Vegetation coverage in these depressions is approximately 75%-96%. A distinct shallow depression among the grasslands is dominated by sea ox-eye daisy and seashore dropseed. Other species include narrow-leaf sumpweed, gulf dune paspalum, frog fruit, and bulrush. Vegetation coverage in this depression is 90%. A scar from an existing pipeline exists near the Vector access road and is slightly elevated and dominated by narrow-leaf sumpweed and sea ox-eye with seashore dropseed. Vegetation coverage along the pipeline scar is approximately 85%.

A sparsely vegetated sand flat with scattered hummocks lies east of the project site. The hummock areas within this sand flat consist of the same vegetation community as previously described in hummocky grasslands. Sand flat vegetation is typically dominated by seashore dropseed, narrow-leaf sumpweed, and sea lavender, with higher fringes dominated by sea ox-eye and low patches dominated by shoregrass. Other species include gulf dune paspalum, seaside golden rod (*Salidago sempervirens*), seacoast bluestem, slim-leaf dicanthelium, and camphor daisy. Vegetation coverage within the sand flat is approximately 50%-80%. A few transitional areas are typically 25-foot wide and dominated by bulrush. Other species within the transitional areas include seashore dropseed, marshhay cordgrass, sea lavender, and purple mistflower.

Salt marsh areas near the Laguna Madre shoreline were dominated on the lower fringe by saltwort (*Batis maritima*) and shoregrass. The higher salt marsh area was dominated by seashore saltgrass, marshhay cordgrass, and sea ox-eye. Other species include sea lavender, Carolina wolfberry, bulrush, and narrow-leaf sumpweed. Vegetation coverage for salt marsh areas is typically 75%-95%. One unvegetated habitat exists within the allotted radius of the project. This unvegetated habitat is a tidal algal flat.

Impacts of Alternative A, No Action, on Vegetation
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on vegetation. However, impacts on vegetation in the analysis area would continue as the result of the continuing operation of two gas pipelines.

Two gas pipelines are located east of the proposed wellsite. Both pipelines are operating under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Dunn-Peach #1 Well. Vegetation covers the pipeline corridors. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the pipeline to inspect the integrity of the pipeline. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed pipeline in areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of vegetation within the immediate area of work.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and damaging or killing vegetation. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Existing uses, including the continuing operation of two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on vegetation throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting vegetation parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact vegetation. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on vegetation; however, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Cumulative impacts on vegetation throughout the park are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled resulting in no new impacts on vegetation. Existing uses, including the continuing operation of two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Vegetation
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if completed to produce hydrocarbons would result in short-term loss of vegetative cover on up to 6.05 acres, and the long-term occupancy of 2.412 acres. If the well does not go into production, the initial disturbance to construct the access road, wellpad, and turn arounds on 4.14 acres would be reclaimed.

Existing impacts on vegetation within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts associated with the continuing operation of two gas pipelines located east of the proposed wellsite.

Construction of the access road / flowline route, well pad, and production facility would result in the direct loss of approximately 6.05 acres of hummocky uplands vegetation. If the well does not go into production, the entire 6.05 acres would be reclaimed, resulting in localized, short-term, minor, adverse impacts on vegetation until the site is satisfactorily reclaimed. If the well is placed in production, the well pad would be reduced by 1.935 acres; and a flowline would be installed to connect with the existing AEP pipeline located east of the proposed well. The reduction of the well pad by 1.935 acres would result in a localized, short-term, minor, adverse impact on vegetation until the site is re-vegetated to 70% native cover.

Over the long-term operation of the flowline, occasional disturbance to vegetation within the flowline corridor could occur as a result of routine maintenance, including access over the corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the flowline to inspect the integrity of the line.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on vegetation; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Mitigation measures include constructing a sloped 6' x 6' corrugated steel well cellar, and lining the pad underneath the caliche with a 20 millimeter thick polyethylene liner that would extend over a 3'-high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation.

Direct and indirect impacts on vegetation could occur as a result of the introduction of exotic vegetation resulting from the placement of fill material or the use of construction equipment. However, with the mitigation measures included with this alternative, the potential and intensity of impacts would be reduced.

Upon plug and abandonment of the well, the imported crushed limestone or cement would be removed, the site re-contoured to natural conditions, and native vegetation re-established to 70% cover. Plugging and reclamation activities would result in a localized, short-term, minor, adverse impact on vegetation.

Construction of the access road / flowline, well pad, and production facility; and drilling and producing the well would result in the long-term loss of vegetation on up to 6.05 acres, and localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation in the analysis area.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts from existing and future oil and gas operations in the park, park developments and operations, and visitor uses, resulting in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. If the well were placed into production, there would be short-term loss of vegetative cover on up to 6.05 acres, and the long-term occupancy of 2.412 acres. Constructing the access road / flowline, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park. No impairment to vegetation would result from implementation of this alternative.

3.7. Impacts to Natural Soundscapes

Methodology
To analyze the impacts on natural soundscapes, the park utilized personal observation, research, and the park's approved Oil and Gas Management Plan**.**

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable.

Minor: the impact is slight but detectable.

Moderate: the impact is readily apparent.

Major: the impact is severely adverse.

Affected Environment
The natural quiet of Padre Island National Seashore contributes heavily to a positive visitor experience. Surveys in 1987 (Ditton and Gramann) and 1989 (Gramann and Ruddell) examined visitor motive for coming to Padre Island. The top motives include "to get away," "be outdoors," and "for rest and relaxation." In 1998, the NPS contracted Dr. Jim Foch of the Livermore Laboratory to record background sound measurements at various locations in the park. A useful measure of background sounds is the sound level observed 90% of the time, abbreviated L90. Although measurements were not recorded at the exact location of the project area, the relatively constant sound level of the surf (about 62 dB at 60 yards from the water) is

considered the “background” noise level along the Gulf shoreline. The L90 levels inland fall off in a systematic manner with distance from the surf (Foch, 1998).

Impacts of Alternative A, No Action, on Natural Soundscapes
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on natural soundscapes. However, impacts on natural soundscapes in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of two gas pipelines.

Vehicle use and visitor uses on the 6.9 mile segment of Gulf beach could occasionally result in sounds that exceed the 60-decibel background sound levels when drivers honk horns, and radios are very loud.

Existing operation of the 2 pipelines located to the east of the proposed wellsite could impact natural soundscapes more readily due to the background sound measurements being very low, in the 30 to 45 decibel range. Routine maintenance of the pipeline from using a backhoe/front loader would be heard several hundred feet away, but backcountry visitor use is not common, and visitors recreating on the Gulf beach would not hear these activities. Due to the predominant southeast winds, on some days Laguna Madre visitors will hear the drilling activity and may hear other oil and gas activities from within the park.

Existing uses, including vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two pipelines, would result in short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area.

Cumulative Impacts
Under Alternative A, cumulative impacts on natural soundscapes throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park; and from new drilling and production of up to 17 wells projected in the park’s reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to natural soundscapes include routine maintenance of park roads, park and visitor vehicle use, and recreational activities such as motor boating and playing radios at a high volume. On occasional, military overflights over the park introduces noise and super-sonic booms audible in the park. As a result of these activities, cumulative impacts on natural soundscapes throughout the park is expected to result in short to long-term, negligible to moderate, adverse impacts, localized near sources.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on natural soundscapes. Existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Natural Soundscapes
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be completed to produce hydrocarbons.

Existing impacts on natural soundscapes within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the access road / flowline, well pad, production facility, and routine maintenance activities during production would result in localized and short-term increases in noise associated with vehicle traffic, heavy equipment and ground-disturbing activities. Elevated noise would be greatest during the short-term drilling of the wells. Sound levels could reach 90 decibels on the drill rig. At 1,500 feet from the drill rig, sound levels would approach background levels ranging from 30 to 45 decibels. Elevated noise during the drilling phase would result in localized, short-term, minor to moderate, adverse impacts on natural soundscapes within 1,500 feet of the wellpad. It is possible that on a calm day visitors can hear the equipment farther than 1,500 feet. During the long-term production life of the well, occasional workover operations could occur at five to 10 year intervals and take one to two weeks to complete. Workovers would increase noise levels, but at much lowest intensity and duration of drilling a well. Production operations would result in localized, long-term, negligible to minor, adverse impacts from routine daily pickup truck traffic, periodic larger truck traffic necessary to remove produced liquids, and the use of a compressor to remove gas if necessary.

Construction of the access road / flowline. well pad, production facility, and drilling and producing the well would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources in the analysis area.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on natural soundscapes throughout the park would be similar to those described under No Action, with existing and future oil and gas operations in the park, routine park operations, visitor uses, and occasional military over flights resulting in localized, short to long-term, negligible to moderate, adverse impacts near sources.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. Construction of the access road / flowline, well pad, production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to moderate; adverse impacts on natural soundscapes localized near sources throughtout the park. No impairment to natural soundscapes would result from implementation of this alternative.

3.8. Impacts on Wildlife

Methodology
To analyze the impacts on wildlife, the park utilized research, other park plans; the park's approved Oil and Gas Management Plan, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment

During BEI's March 26, April 30, May 23, May 30, and September 19, 2002 field investigations, personnel made notes of wildlife observed in the area of the proposed access road / flowline route, well pad, and production pad. The only species observed were the Mourning Dove (*Zenaida macroura*), coyote (*Canis latrans*), Black-tailed jackrabbit (*Lepus californicus*), and white-tailed deer (*Odocoileus virginianus*). The diverse vegetation offers feeding opportunities for a wide variety of birds and other wildlife. In addition to the above, NPS staff have observed white-tailed hawks(*Buteo albicaudalus*), black terns (*Chlidonias niger*), and meadowlarks (*Sturnella* sp.)

Birds. Continental Shelf Associates (CSA), Inc. (1985), Chapman (1981, 1988), Brown and Huey (1991) and U.S. Department of the Interior (2000), provide data and discussions of the wildlife utilization of the project area. Ecoservices (1993) surveyed bird activity south of the project site from July 1992 through April 1993. A total of 281,045 birds of 97 species were identified and counted. Important species included the Brown Pelican (*Pelecanus occidentalis*), Piping Plover (*Charadrius melodus*), Snowy Plover (*C. alexandrinus*), Peregrine Falcon (*Falco peregrinus*), and the Reddish Egret (*Egretta rufescens*). Species of goose, duck, gull, tern, and sandpiper were also observed. Padre Island has 322 species of birds, including migratory and resident waterfowl, shorebirds, neo-tropical songbirds, and raptors. During fall and winter, Sandhill Cranes (*Grus canadensis*) frequent the west side of Padre Island, near Bird Island Basin. The cranes can be observed feeding in the wetlands, uplands, and shallow water of the Laguna Madre. Many bird species utilize ephemeral and freshwater ponds. They include Northern Bobwhite Quail (*Colinus virginianus*), Northern Harrier (*Circus cyaneus*), Sandhill Crane, Great Egret (*Casmerodius albus*), Great Blue Heron (*Ardea herodias*), Long-billed Curlew (*Numenius americanus*), Sanderling (*Caldris alba*), Killdeer (*Charadrius vociferus*), terns, ducks, and grebes (DOI 2000).

Mammals. Mammals likely to utilize habitat in the general project area include the gulf coast kangaroo rat (*Dipodomys compactus*), south Texas pocket gopher (*Geomys personatus*), northern grasshopper mouse *(Onychomys leucogaster*), eastern mole (*Scalopus aquaticus*), raccoon (*Procyon lotor*), the eastern cottontail (*Sylvilagus floridanus*), and Mexican free-tailed bat (*Tadarida brasiliensis mexicana*) (CSA 1985, and DOI 2000).

Reptiles and Amphibians. Reptiles likely to utilize habitat in the general project area include the keeled earless lizard *(Holbrookia propinqua propinqua*), whiptail lizard (*Cnemidophorus sp*.),

western diamondback rattlesnake (*Crotalus atrox*), slender glass lizard (*Ophisaurus attenuatus*), western massasauga rattlesnake (*Sistrurus tergeminus*), western hog-nosed snake (*Heterodon nasicus*), glossy snake (*Arizona elegans*), checkered garter snake (*Thamnophis marcianus*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvius*), red-eared slider (*Trachemys scripta elegans*), and the yellow mud turtle (*Kinosternon flavescens*) (Chapman 1988, CSA 1985, and DOI 2000). The ornate box turtle (*Terrapene ornata ornata*) has also been reported on the island (CSA 1985). Amphibians found on the island include the northern leopard frog (*Rana pipiens*), green tree frog (*Hyla cinerea*) and Hurter's spadefoot toad (*Scaphiopus holbrookii hurterii*).

Impacts of Alternative A, No Action, on Wildlife

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on wildlife. Existing impacts on wildlife in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach by park staff, visitors, and 13 nonfederal oil and gas operators. Vehicles on the Gulf beach would include two and four-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites. At the 5 mile marker, the Gulf beach is recommended for four-wheel drive vehicles only. Vehicle use along the Gulf beach would compact and rut the beach sand.

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on wildlife. However, impacts on wildlife in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of two gas pipelines.

This segment of Gulf beach is currently used by 13 nonfederal oil and gas operators to access existing operations located throughout the park, by park staff to conduct routine park operations, and by an estimated 62,868 (18% of annual Gulf beach visitation) park visitors that venture further than the Little Shell area (6 to 9 miles). Vehicle access would result in short-term movement of bird species utilizing the shoreline for loafing or resting. Shorebirds would take temporary flight when vehicles approach too close and land to resume their activity after vehicles have passed. Displaced wildlife could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone. In a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. Some loss of benthic organisms would be expected due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Vehicle impacts would result in localized, short-term, negligible to minor, adverse impacts on shorebirds and benthic organisms.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach where most visitor use occurs. Visitor uses on the beach would displace wildlife, primarily shorebirds, resulting in localized, negligible to minor, adverse impacts on shorebirds.

Two gas pipelines are located east of the proposed wellsite. Both pipelines are operating under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Dunn-Peach #1 Well. Routine maintenance along the pipeline corridors would include work crews occasionally accessing the pipeline corridor by truck or ATV to inspect surface equipment and on occasional basis excavating small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. Use of heavy equipment could result in the incidental take of individuals, and alter habitat by rutting or compacting soils, and damaging or killing vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Damage or removal of soil and vegetation along segments of the pipelines would result in the short-term modification of wildlife habitat. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating vegetation and soils. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wildlife habitat beyond the immediate area. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on wildlife. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced. Impacts from the continuing operation and maintenance of the two pipeline segments within the analysis area would result in localized, short to long-term, negligible to minor, adverse impacts on wildlife.

Existing uses, including vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on wildlife throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase turbidity in the Laguna Madre waters inside the park. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wildlife parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park would result in the direct loss of wildlife habitat. Displaced wildlife could potentially die of natural causes or displace other wildlife. There is a remote possibility for the incidental take of wildlife during the course of operations from vehicle use, construction activities, or from ingesting leaked or spilled hydrocarbons and contaminating or hazardous substances. Leaks and spills from oil and gas operations could be serious, with negligible to moderate, impacts on wildlife. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the Gulf or Laguna Madre shores, causing widespread impacts and resulting in long-term clean-up and remediation. Elevated noise levels, particularly during drilling

operations, could displace wildlife, but most wildlife is expected to return after becoming acclimated to some noise disturbance. Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, fencing the operations area to exclude wildlife, using primary and secondary containment to prevent leaks and spills from being released into the environment, preventing birds and bats from entering open-vent exhaust stacks, covering all open-topped tanks to minimize accidental injury or death of migratory birds, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat, preventing the introduction of exotic species, careful use of NPS-approved herbicides, good housekeeping, and routine monitoring and inspection of operations, are expected to substantially reduce the impacts to wildlife to short to long-term, negligible to minor, adverse impacts, localized around developments throughout the park.

Cumulative impacts on wildlife throughout the park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments and activities throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wildlife, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on wildlife. Existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wildlife
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if completed to produce hydrocarbons would result in the short-term loss of wildlife habitat on up to 6.05 acres, and the long-term occupancy of 2.412 acres.

Existing impacts on wildlife within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts associated with vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines.

BNP would use a 6.9 mile segment of Gulf beach to access its proposed wellpad. BNP would be required to confine vehicle use above the "wet-line" (see Tables 3, 4, and 5 for mitigation measures and operating stipulations). As described above under No Action, vehicles could compact and rut beach sands; and poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicle impacts would result in localized, short to long-term, negligible to minor, indirect, adverse impacts on shorebirds and benthic organisms.

Construction of the access road / flowline route, well pad, and production facility would result in the short to long-term loss of up to 6.05 acres of habitat and displacement of wildlife. Elevated noise levels, particularly during drilling operations, could displace wildlife, but most wildlife are expected to return after becoming acclimated to some noise disturbance. Displaced wildlife

could increase competition in adjacent areas over the short-term. The construction of the access road and well pad would directly impact 4.14 acres of wildlife habitat. If the wells do not go into production, the entire 4.14 acres would be reclaimed, resulting in localized, short-term, negligible to minor, adverse impacts on wildlife.

If the well is placed in production, the well pad would be reduced by 1.935 acres and a flowline installed to connect with the existing AEP pipeline located east of the proposed well. The reduction of the well pad by 1.935 acres would result in localized, short-term, negligible to minor, adverse impacts on wildlife. A production facility would be constructed resulting in 0.207 acres of additional disturbance. Flowline construction would disturb an additional 1.7 acres of hummocky uplands habitat, of which 0.024 acres are emergent wetlands. A temporary alteration of habitat would occur while the flowline is being buried, and until the surface is reclaimed. Impacts on wildlife from flowline placement would result in localized, short-term, negligible to minor, adverse impacts.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on wildlife; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, fencing the operations area to exclude wildlife, using primary and secondary containment to prevent leaks and spills from being released into the environment, preventing birds and bats from entering open-vent exhaust stacks, covering all open-topped tanks to minimize accidental injury or death of migratory birds, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat, preventing the introduction of exotic species, careful use of NPS-approved herbicides, good housekeeping, and routine monitoring and inspection of operations, are expected to substantially reduce the impacts to wildlife.

Construction of the access road / flowline route, well pad, and production facility; and drilling and producing the well would result in short-term loss of wildlife habitat on up to 6.05 acres, and the long-term occupancy of 2.412 acres, with localized, short to long-term, negligible to minor, adverse impacts, on wildlife in the analysis area.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on wildlife throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor adverse impacts localized near developments; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. If the well is placed into production, there would be short-term loss of wildlife habitat on up to 6.05 acres, and the long-term occupancy of 2.412 acres. Constructing the access road / flowline route, well pad, and production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate,

adverse impacts on wildlife throughout the park. No impairment to wildlife would result from implementation of this alternative.

3.9. Impacts on State and Federally Protected Species

The Endangered Species Act terminology used to assess impacts to listed species as follows:

No effect: When a proposed action would not affect a listed species or designated critical habitat.

May affect/not likely to adversely affect: Effects on special status species or designated critical habitat are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or completely beneficial.

May affect/likely to adversely affect*:* When an adverse effect to a listed species or designated critical habitat may occur as a direct or indirect result of proposed actions and the effect is either not discountable or completely beneficial.

Is likely to jeopardize proposed species/adversely modify proposed critical habitat): The appropriate conclusion when the National Park Service or the U.S. Fish and Wildlife Service identify situations in which personal watercraft use could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within or outside park boundaries.

Methodology
Information on state and federally protected species within Padre Island National Seashore was gathered from state and federal permitting agencies, research, personal observation, consultation with specialists, and reference materials. Known impacts caused by road and beach access by visitors and existing gas operations were also considered.

The NPS has developed the following threshold definitions under the National Environmental Policy Act guidelines. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: No federally listed species would be affected or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. Negligible effect would equate with a "no effect" determination in U.S. Fish and Wildlife Service terms.

Minor: The alternative would affect an individual(s) of a listed species or its critical habitat, but the change would be small. Minor effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species.

Moderate: An individual or population of a listed species, or its critical habitat would be noticeably affected. The effect could have some long-term consequence to the individual, population, or habitat. Moderate effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species.

Major: An individual or population of a listed species, or its critical habitat, would be noticeably affected with a long-term, vital consequence to the

individual, population, or habitat. Major effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species or critical habitat.

Padre Island National Seashore has no designated critical habitat within the park's boundary for any federally listed species. An existing U.S. Fish and Wildlife Recovery Plan for the Kemp's Ridley sea turtle assigns the task of patrolling for nesting sea turtles to the park. According to a September 18, 2003 listing of federally protected species and the Texas Parks and Wildlife Department's website (TPWD http://tpwd.state.tx.us/nature/endang/), 42 listed federal and four state protected species potentially occur at Padre Island National Seashore (Appendix 1). Of these, the 27 species that have actually been documented at Padre Island National Seashore are listed in Table 9 below. The remaining 15 species have either not been documented and/or there is not suitable habitat within the park, and therefore will not be affected by the proposed project. Table 9 also includes four state-protected species (*) that have been documented in the park and will be addressed within this document because the NPS recognizes their sensitive status and provides them a high level of protection, similar to Federal listed species.

Table 9. State and federally protected species occurring or likely to occur at Padre Island National Seashore.

SPECIES	FEDERAL	STATE
(T – Threatened, E – Endangered, SOC – Species of Concern, and S/A – Similar in Appearance)		
Reptiles and Amphibians		
American Alligator (*Alligator mississippiensis)*	T (S/A)	
Texas Horned Lizard (*Phrynosoma cornutum*)	SOC	T
Texas Indigo Snake (*Drymarchon corais erebennus)* *		T
Turtles		
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)*	E	E
Loggerhead Sea Turtle (*Caretta caretta)*	T	T
Green Sea Turtle (*Chelonia mydas)*	T	T
Atlantic Hawksbill Sea Turtle (*Eretmochelys imbricata*)	E	E
Leatherback Sea Turtle (*Dermochelys coriacea*)	E	E
Birds		
Eastern Brown Pelican (*Pelecanus occidentalis*)	E	E
Reddish Egret (*Egretta rufescens*)	SOC	T
White-faced Ibis (*Plegadis chihi*)	SOC	T
Wood Stork (*Mycteria americana*) *		T
Interior Least Tern (*Sterna antillarum*)	E	E
Sooty Tern (*Sterna fuscata*)	T	
Black Tern *(Chlidonias niger)*	SOC	
Piping Plover (*Charadrius melodous*)	T	T
Bald Eagle (lower 48 states) (*Haliaeetus leucocephalus*)	T	T
Northern Aplomado Falcon (*Falco femoralis septentrionalis*)	E	E
Ferruginous Hawk *(Buteo regalis)*	SOC	
Swallow-tailed Kite (*Elanoides forficatus*) *		T
White-tailed Hawk (*Buteo albicaudatus*) *		T
Peregrine Falcon (*Falco peregrinus*)	Delisted	E

SPECIES	FEDERAL	STATE
Cerulean Warbler *(Dendroica cerulea)*	SOC	
Black-capped Vireo (*Vireo atricapillus*)	E	E
Tropical Parula (*Parula pitiayumi*)	SOC	T
Loggerhead Shrike *(Lanius ludovicianus)*	SOC	
Plants		
Roughseed Sea-purslane *(Sesuvium trianthemoides)*	SOC	

There are several species from Table 9 known to occur or would have suitable habitat in or adjacent to the project area (Gulf shoreline and upland grasslands and wetlands). These species include the Texas horned lizard, Texas Indigo snake, all five species of sea turtle, Eastern Brown Pelican, Interior Least Tern, Black Tern, Piping Plover, Peregrine and Aplomado Falcons, White-tailed Hawk, and the Loggerhead Shrike.

As of fall 2003, NOVUS, who owns the Dunn-Murdock well is planning to re-work the Dunn-Murdock well, BNP is seeking approval for the Dunn-Peach #1 Well and possibly another proposed operation, and BNP is planning to drill one of the permitted Lemon / Lemon Seed Wells. These activities are anticipated to begin later this fall and winter. With the increased oil and gas vehicular traffic on the beach and the cumulative affects resulting from this increased activity, the park is pursuing formal consultation with the U.S. Fish and Wildlife Service. The resulting Biological Opinion will likely have additional mitigation measures.

Table 10 summarizes the impacts on each species or suitable habitat analyzed in this section. Impacts on species and suitable habitat under the Proposed Action range from negligible to moderate. Existing impacts within the analysis area under both alternatives on species and suitable habitat range from no impact to moderate.

Table 10. Summary of impacts by species.

Species	Alternative A: No Action	Alternative B: Proposed Action
Texas Horned Lizard (*Phrynosoma cornutum*) Suitable Habitat	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Texas horned lizard suitable habitat; however, continuing operation of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in **localized, short to long-term, negligible, adverse impacts.** Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in **localized, short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas horned lizard suitable habitat would result from the implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. If the well is placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas horned lizard suitable habitat. Cumulative impacts would be similar to No Action, with **localized, short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas horned lizard suitable habitat would result from implementation of this alternative
Texas Indigo Snake (*Drymarchon corais erebennus)* *	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat.	Dunn-Peach #1 Well would be drilled and may be produced. If the well were placed into production, there would be

Species	Alternative A: No Action	Alternative B: Proposed Action
Suitable Habitat	However, continuing operation of segments of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in **localized, short to long-term, negligible, adverse impacts.** Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in **short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas indigo snake suitable habitat would result from the implementation of this alternative.	**localized, short to long-term, negligible, adverse impacts** on Texas indigo snake suitable habitat. Cumulative impacts would be similar to No Action, with **localized, short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas indigo snake suitable habitat would result from implementation of this alternative.
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)* **Loggerhead Sea Turtle** (*Caretta caretta)* **Green Sea Turtle** (*Chelonia mydas)* **Atlantic Hawksbill Sea Turtle** (*Eretmochelys imbricata*) **Leatherback Sea Turtle** (*Dermochelys coriacea*)	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 6.9 mile segment of Gulf beach would result in **localized, short to long-term, negligible to minor, direct and indirect, adverse impacts** on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in **short to long-term, negligible to minor, direct and indirect, adverse impacts localized** along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would result from the implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. If the well is placed into production, vehicle access along the 6.9 mile segment of Gulf beach; in addition to existing vehicle access along the beach would result in **localized, short to long-term, direct and indirect, negligible to minor, adverse impacts** on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with **short to long-term, negligible to minor, direct and indirect, adverse impacts localized** along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from implementation of this alternative.
Eastern Brown Pelican (*Pelecanus occidentalis*)	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Eastern Brown Pelican; however, existing visitor uses and vehicle use on the 6.9 mile segment of Gulf beach would result **in localized, short to long-term, negligible to minor, direct, adverse impacts** on Eastern Brown Pelican within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in **localized, short to long-term,**	Dunn-Peach #1 Well would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing visitor uses and vehicle access within this beach corridor, would result in **localized, short to long-term negligible to minor, direct, adverse impacts** on Eastern Brown Pelican within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in **localized, short to long-term, negligible to**

Species	Alternative A: No Action	Alternative B: Proposed Action
	negligible to minor, direct, adverse impacts; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be **long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts** along the Gulf shoreline. No impairment to the Eastern Brown Pelican would result from implementation of this alternative.	**minor, direct, adverse impacts** to Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on the Eastern Brown Pelican. No impairment to Eastern Brown Pelican would result from implementation of this alternative.
Interior Least Tern (*Sterna antillarum*), **Black Tern** (Chlidonias niger), and **Piping Plover** (*Charadrius melodous*)	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Interior Least Tern, Black Tern, and Piping Plover; however, existing visitor uses and vehicle access on the 6.9 mile segment of Gulf beach would result **in localized, short to long-term, negligible to minor, direct, adverse impacts** on these species within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, **negligible to minor, direct, adverse impacts**; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could **be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts**. No impairment to the Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative	Dunn-Peach #1 Well would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing vehicle access and visitor uses along this segment of beach would result in **localized, short to long-term negligible, direct, adverse impacts** on Interior Least and Black Terns and Piping Plovers. Cumulative impacts would be similar to those described under Alternative A, No Action, with vehicle use along the Gulf beach resulting in **localized, short to long-term, negligible to minor, direct, adverse impacts** on Interior Least and Black Terns and Piping Plovers; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on the Interior Least and Black Terns and Piping Plovers. No impairment to Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative.
Peregrine Falcon (*Falco peregrinus*) and **Northern Aplomado Falcon** (*Falco femoralis septentrionalis)*	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Peregrine and Northern Aplomado Falcons; however, existing uses on the Gulf foredunes, result **in localized, short to long-term, negligible, adverse impacts** on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in **localized, short to long-term, negligible to minor, adverse impacts** on the Peregrine and Northern Aplomado Falcons. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. The drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Peregrine and Northern Aplomado Falcons, resulting in **localized and long-term, negligible, beneficial impacts**, for the falcons. Cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with **localized, short to long-term, negligible to minor, adverse impacts** resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre

Species	Alternative A: No Action	Alternative B: Proposed Action
		shore. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.
White-tailed Hawk (*Buteo albicaudatus*) *	Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the White-tailed Hawk; and, there **are no existing impacts** within the analysis area. Cumulative impacts from park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species would result in **localized, short to long-term, negligible, adverse impacts** on the White-tailed Hawk. No impairment to the White- tailed Hawk would result from implementation of this alternative.	Dunn-Peach #1 Well would be drilled and may be produced. BNP's proposed construction of an access road / flowline route, well pad, and production facility would directly impact 6.05 acres of grassland habitat preferred by the White-tailed Hawk, resulting **in localized, short-term, minor adverse impacts** on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned. However, the drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for White-tailed Hawks, resulting in **localized and long-term, negligible, beneficial impacts.** Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in **localized, short to long-term, negligible, adverse impacts** on the White-tailed Hawk. No impairment to the White- tailed Hawk would result from implementation of this alternative.
Loggerhead Shrike *(Lanius ludovicianus)* and **Neotropical Migratory Songbirds**	Dunn-Peach #1 Well would not be drilled, resulting in **no new impacts** on Loggerhead Shrikes and Neotropical migratory songbirds; however, existing operation of 2 gas pipelines would result **in localized, short-term, negligible, adverse impacts** on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in **short to long-term, negligible to minor adverse impacts, localized** near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands;	Dunn-Peach #1 Well would not be drilled; however, existing operation of 2 gas pipelines would result in **localized, short to long-term, negligible, adverse impacts** on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in **short to long-term, negligible to minor adverse impacts, localized** near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt

Species	Alternative A: No Action	Alternative B: Proposed Action
	however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced **to negligible to moderate, adverse impacts**. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.	response in the event of a spill, impacts would be reduced to **negligible to moderate, adverse impacts**. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

Texas Horned Lizard

Affected Environment

The Texas horned lizard (*Phrynosoma cornutum*) is considered a species of concern at the federal level and listed as threatened by the state.

The distribution of the Texas horned lizard ranges from Kansas down to Louisiana through Texas, Arizona, and into northern Mexico (Bockstanz, http://www.zo.utexas.edu/research/txherps/lizards/phrynosoma.cornutum.html). In Texas, it was originally seen throughout the state, but numbers dropped dramatically in the 1950's-60 due to the pet trade, habitat loss, and introduction of the exotic fire ant. As of 1998, Texas horned lizards are only seen in the western third of the state. It is generally found in deserts, temperate grasslands, prairies, and scrubland, in sandy, open areas with little vegetation, often inhabiting abandoned animal burrows or simply covering itself with loose sand. (Todd, UMMZ) These lizards are often found in close proximity to harvester ant (*Pogonomyrmex* spp) mounds, which are its main source of prey, but it will also forage on grasshoppers, beetles, and isopods. In order to obtain enough energy, adult Texas Horned Lizards must forage from several Harvester ant colonies so their daily feeding activities coincide with the times of highest ant activity.

The Texas horned lizard does not migrate but will hibernate from late summer to late spring. Therefore, it is only seen on warm days in late spring and summer. Breeding begins once they emerge from hibernation usually in late April and continuing into July. The age of reproductive maturity is not known, however they are full-grown adults at three years of age.

Texas horned lizards have been found on Padre Island north of the park in the mid-1980, but have not been documented within the park. A herpetological survey is currently underway to document species occurrence and presence within the park. Information from this inventory will be used to develop management actions, increase park knowledge of those species documented, and help to formulate future protection measures. No critical habitat has been designated for this species.

During surveys conducted by park biologists in August, September, and December 2001, this species was not found within the analysis area for the proposed Dunn-Peach #1 Well; therefore, this impact analysis focuses on the potential for impacts on suitable habitat for this species.

Impacts of Alternative A, No Action, on Texas Horned Lizard

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no impacts on the Texas horned lizard suitable habitat.

Impacts on Texas horned lizard suitable habitat within the analysis area would continue as the result of the continuing operation of two gas pipelines, resulting in localized, negligible to minor, adverse impacts.

Cumulative Impacts
Some of the 13 existing oil and gas operations and flowlines throughout the park are located within suitable habitat for this species. If the Texas horned lizard had been occupying the park prior to the park's establishment, when many of the existing oil and gas operations were developed, displacement of this species may have occurred from these operations.

Under Alternative A, No Action, cumulative impacts on Texas horned lizard suitable habitat could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged and abandoned, and reclaimed; therefore, impacts would be distributed over time. Park activities that could contribute to impacting suitable habitat include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. In the future, biological surveys would be performed prior to selecting a proposed oil and gas development site or conducting park operations; thereby identifying whether the species is in the proposed project vicinity or if suitable habitat exists so that avoidance and minimization of impacts can be planned. As a result, suitable habitat could be utilized for developments and operations, resulting in short to long-term, negligible to moderate, adverse impacts on suitable habitat, localized at developments and activities throughout the park.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Texas horned lizard suitable habitat; however, continuing operation of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Texas Horned Lizard
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if completed, would result in short-term loss of suitable habitat for Texas horned lizard on up to 6.05 acres, and the long-term occupancy of 2.412 acres. Construction of the access road / flowline, well pad, and production facility would occur in areas with Texas horned lizard suitable habitat, resulting in localized, short to long-term, negligible, adverse impacts.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Texas horned lizard suitable habitat throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. If the well is placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas horned lizard suitable habitat. Cumulative impacts would

be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from implementation of this alternative.

Texas Indigo Snake

Affected Environment
The Texas indigo snake (*Drymarchon corais erebennus*) is not federally listed, but is state listed as threatened.

This species ranges from southern Texas southward along the Gulf coast into Veracruz and Hidalgo, Mexico generally inhabiting burrows in moist riparian breaks in the thorn brush woodlands and coastal mesquite savannah. It may also be seen in grassy plains or on coastal sandhill habitats (University of Texas, Http://www.zo.utexas.edu/research/txherps/snakes/drymarchon.corais.html).

Unlike many other snakes, indigo snakes are primarily diurnal predators. The Texas indigo snake feeds on frogs, turtles, small mammals, birds, and other snake species. This species mates between November and February and lays eggs between April and May. Indigo snakes also spend the first two years of life in seclusion (CCWild, Http://ccwild.cbi.tamucc.edu/naturalhistory/texas_indigo_snake/tisacc.htm).

Padre Island National Seashore has grassy plains and coastal sandhill habitats that may be suitable for this species. Only one known specimen has been documented from the park and was curated in the mid-1980 by Texas A&M University-Kingsville (Donna Shaver PhD, personal communication). No other individuals of this species have been documented since. A herpetological survey is currently underway to document species within the park. Information from this inventory will be used to develop management actions, increase park knowledge of those species documented, and help to formulate future protection measures. No critical habitat has been designated for this species.

Impacts of Alternative A, No Action, on Texas Indigo Snake
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat.

Impacts on Texas indigo snake suitable habitat within the analysis area would continue as the result of the continuing operation of segments of two gas pipelines, resulting in localized, negligible to minor, adverse impacts. Existing visitor uses and vehicle traffic along the 6.9 mile segment of Gulf beach would not impact Texas indigo snake suitable habitat.

Cumulative Impacts
Some of the 13 existing oil and gas operations and flowlines throughout the park are located within suitable habitat for this species. If the Texas indigo snake had been occupying the park prior to the park's establishment, when many of the existing oil and gas operations were developed, displacement of this species may have occurred from these operations.

Under Alternative A, No Action, cumulative impacts on Texas indigo snake suitable habitat could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be

plugged and abandoned, and reclaimed; therefore, impacts would be distributed over time. Park activities that could contribute to impacting suitable habitat include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. In the future, biological surveys would be performed prior to selecting a proposed oil and gas development site or conducting park operations; thereby identifying whether the species is in the proposed project vicinity or if suitable habitat exists so that avoidance and minimization of impacts can be planned. As a result, suitable habitat could be utilized for developments and operations, resulting in short to long-term, negligible to moderate, adverse impacts on suitable habitat, localized at developments and activities throughout the park.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat. However, continuing operation of segments of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Texas Indigo Snake
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled, and if completed, would result in the short-term loss of suitable habitat for Texas indigo snake on up to 6.05 acres and the long-term occupancy of 2.412 acres. Construction of the access road / flowline route, well pad, and production facility would occur in areas with Texas indigo snake suitable habitat, resulting in localized, short to long-term, negligible, adverse impacts.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Texas indigo snake suitable habitat throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. If the well were placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas indigo snake suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from implementation of this alternative.

Sea Turtles
Including Kemp's Ridley Turtle, Loggerhead Sea Turtle, Green Sea Turtle, Atlantic Hawksbill Sea Turtle, and Leatherback Sea Turtle

Affected Environment
The **Kemp's ridley sea turtle** (*Lepidochelys kempii)* is federally listed as an endangered species. It is the smallest of the sea turtles, and adults reach maturity at about 10-15 years of age. Kemp's ridley turtles nest mostly during the daytime, often in groups called "arribadas". An individual Kemp's ridley may nest as many as three times a season (USFWS and NMFS, 1992), with an average of 2.5 clutches per season. Clutch size averages around 100 eggs. Hatchlings emerge after about 50 days of incubation and hatchling emergence occurs during the night or day. Kemp's ridleys are found in the Gulf of Mexico and Atlantic Ocean and some

adjoining estuarine areas. Nesting occurs primarily in the vicinity of Rancho Nuevo, Tamaulipas, Mexico. Each year, some nests are also found at scattered locations between the Texas coastline and Veracruz, Mexico. Very rarely, Kemp's ridleys nest at other locations in the U.S. outside of Texas. More Kemp's ridley nests are consistently found at Padre Island National Seashore than at any other location in the U.S., making it the most important nesting beach in the U.S. for this species.

Historic nesting frequency of this sea turtle on the south Texas coast is poorly known and only six Kemp's ridley turtles were documented there prior to 1979 (Shaver and Caillouet, 1998). A total of 157 Kemp's ridley nests have been documented along the Texas coast between 1979 and 2003. Kemp's ridley is a native nester at Padre Island National Seashore (Hildebrand, 1963, 1981, 1983; Shaver, 1998a; Shaver and Caillouet, 1998). Since 1978, an international, experimental project involving the National Park Service at Padre Island National Seashore, USFWS, NMFS/NOAA, etc., has been on-going to establish a secondary nesting colony of Kemp's ridley turtles at the park.

Eggs were collected in Mexico, transported to Padre Island National Seashore, and placed into an NPS incubation facility in the park. Hatchlings were released on the beach, allowed to enter the surf and were recaptured. They were then shipped to the National Marine Fisheries Service Laboratory in Galveston, Texas, for 9-11 months of rearing in captivity (head-starting) and the yearling turtles were subsequently released into the Gulf of Mexico. It was hoped that these procedures would cause the turtles to be imprinted to Padre Island National Seashore and return there to nest when they were sexually mature. Since 1996, some turtles from this project have been documented returning to Padre Island National Seashore and nearby vicinity to lay eggs (Shaver, 1997, 1998a, 1999a, 1999b; Shaver and Caillouet, 1998).

In 1986, an NPS program was initiated to detect, monitor, and protect sea turtle nests at Padre Island National Seashore. Detection involves patrols to look for nesting activity, public education, and investigation of reports from patrollers, beach workers, and the public. Patrollers (NPS staff members and volunteers) use ATVs to search the park and adjacent State beaches to the north of the park for sea turtle tracks and nesting Kemp's ridley turtles each day, from April through mid–July. From 1979-2003, 82 Kemp's ridley nests were confirmed in the park, but additional nests were likely missed, especially when patrols were not conducted or were less comprehensive. During 2002, three Kemp's ridley nests were found at hatching, including one within the patrol route at the park, confirming that some Kemp's nests are missed at egg laying despite patrols and public education. The 82 Kemp's ridley nests were distributed along the entire Gulf beachfront length of Padre Island National Seashore.

The date of the nesting season varies slightly each year. In Mexico, Kemp's ridley nests have been recorded as early as March and as late as August. The 82 nests documented at Padre Island National Seashore from 1979-2003 were found during the months of April, May, June, and July; the months that beach surveys were conducted most intensively. Nesting may also occur at the national seashore during other months, but this has not been confirmed. A dead Kemp's ridley turtle containing eggs was found washed ashore at the national seashore during July.

At the national seashore, some Kemp's ridley turtle's nest every year and many are found stranded (washed ashore, alive or dead) (Shaver, 1997, 1998a, 1998b, 1999a, 1999b; Shaver and Caillouet, 1998). Additionally, Kemp's ridley turtles sometimes inhabit nearshore Gulf of Mexico waters at Padre Island National Seashore for foraging or migration.

No critical habitat has been designated for this species. An existing Recovery Plan for the Kemp's ridley defines specific park tasks in the recovery efforts, which are being conducted (patrols, monitoring, and habitat management). This is the only federally listed species in the park with Recovery Plan responsibilities assigned to this park.

As mentioned above, an NPS and USFWS program was initiated in 1986 to detect, study, and protect Kemp's ridley turtle nests at Padre Island National Seashore and this on-going program has expanded to include the four other species of sea turtle. Detection for the following four species of sea turtles involves patrols to look for nesting activity, public education, and investigation of reports from patrollers, beach workers, in-park contractors, and the public. Patrollers (NPS staff members and volunteers) use ATVs to search Padre Island National Seashore and the adjacent northern area of State beaches for sea turtle tracks and nesting turtles. Each day, from April through mid-July, they repeatedly patrol the entire Gulf beachfront of the national seashore during daylight hours. The patrol season and procedures are designed primarily to detect nesting by Kemp's ridley turtles, but the other sea turtle nests have also been documented and recovered. Daily runs to the Port Mansfield Channel and back are made from mid-July through August to look for signs of nesting activity, but these patrols are subject to funding and staff availability, and reports from the public.

No **critical habitat** has been designated in the park for any of the following four sea turtle species. There is no specific Recovery Plan task assigned to the park for the remaining four species of sea turtle occurring at the national seashore, however NPS staff members and volunteers conduct, support and assist in the daily patrols for this species to protect, document, and monitor nesting occurrence.

The **loggerhead sea turtle** (*Caretta caretta)* is federally listed as a threatened species. It occurs in temperate and tropical waters of both hemispheres. The species inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian oceans. Historic nesting frequency on the Texas coast is poorly known. Hildebrand (1981) suggested that nesting likely occurred within the last 300 years, but the earliest loggerhead nest that he was able to confirm for the Texas coast was found in 1977.

Adult loggerhead turtles reach maturity in 25 to 30 years. Loggerheads are nocturnal nesters, although some daytime nesting occurs. They nest from one to seven times within a nesting season (average of approximately 4.1 clutches); clutch size averages 100-125 eggs along the southeastern U.S. coast (NMFS and USFWS, 1991b). Hatchling emergence typically occurs at night. In the Gulf of Mexico, there are distinct nesting populations on the coast of the Florida panhandle and the Yucatan Peninsula. Scattered nests can be found occasionally along other areas of the U.S. Gulf coast including the Chandeleur Islands, Louisiana, in the north and to the U.S./Mexico border in the south.

At Padre Island National Seashore, loggerhead turtles sometimes inhabit nearshore Gulf of Mexico waters for foraging or migration. Additionally, a few occasionally nest at the national seashore and many more are found stranded there (Shaver, 1998b, 1999b). From 1979-2003, 22 loggerhead nests were documented at Padre Island National Seashore (at various locations scattered along the coast of the national seashore), but additional nests were likely missed, especially when patrols are reduced and less comprehensive after the mid-July Kemp's ridley patrol season ends. Loggerhead nests are found on North Padre Island from mid-May through early August, although nesting has been documented in the southeastern U.S. from late-April through early September.

The **green sea turtle** (*Chelonia mydas)* is federally listed as threatened in all of its range except the waters of Florida and the Pacific coast of Mexico, where it is endangered. It is circumglobal in tropical and sub-tropical waters. A green turtle fishery, operating almost exclusively within inshore waters (bays, estuaries, passes), began in Texas in the mid-1800's. By the early 1900's, the catch declined to such an extent that the turtle fishing and processing industry collapsed (Hildebrand, 1981). Although historic nesting by green turtles on the Texas coast is suspected, the first confirmed nest was not documented there until 1987 (Shaver, 2000).

Adult green turtles reach maturity at 30 to 50 years of age. Female green turtles nest at night. From one to seven clutches are deposited within a breeding season (the average number is usually two to three clutches) (NMFS and USFWS, 1991a). Average clutch size is usually 110-115 eggs. Hatchling emergence occurs at night. In this region, nesting sites include southern Florida and scattered locations in Mexico, although nesting occasionally occurs in south Texas.

At Padre Island National Seashore, juvenile green sea turtles inhabit waters of the nearshore Gulf of Mexico, the Laguna Madre, and the Mansfield Channel. Additionally, a few green turtles occasionally nest within the national seashore and many are found stranded there each year (Shaver, 1989, 1998b, 2000). From 1979-2003, 11 green turtle nests were documented at the park, all in roughly the southern two-thirds of the park (Shaver, 1989, 2000). The 11 green turtle nests were found during June and July, although nesting occurs from May through September in this region.

The **hawksbill sea turtle** (*Eretmochelys imbricata)* is federally listed as endangered. It occurs in tropical and subtropical seas of the Atlantic, Pacific, and Indian oceans. Young hawksbills occur with some regularity in Texas waters, since northern currents carry them from nesting beaches in Mexico (Hildebrand, 1981). Historic nesting by this species on the Texas coast is unknown. Female hawksbill turtles nest mostly during the night, but rare daytime nesting is known. They nest an average of 4.5 times per season (up to 12 clutches); clutch size averages approximately 140 eggs (NMFS and USFWS, 1993). Hatchling emergence occurs at night. Hawksbills nest on scattered islands and beaches between 25 degrees North and South latitude including beaches in southeastern Florida and the states of Campeche and Yucatan in Mexico. Nesting does not regularly occur on the Texas coast.

At Padre Island National Seashore, young hawksbills occasionally inhabit waters of the nearshore Gulf of Mexico and Mansfield Channel. Additionally, many are found stranded in the park each year, but nesting very rarely occurs here (Shaver, 1998b, 1999b).

The **leatherback** sea turtle (*Dermochelys coriacea)* is federally listed as an endangered species. It ranges throughout the tropical waters of the Atlantic, Pacific, and Indian oceans, but has also been recorded from the North Atlantic, North Pacific, South Atlantic, and South Pacific. The leatherback is the largest and most pelagic sea turtle species and is normally found in the deeper waters of the Gulf of Mexico where it may undertake extensive migrations.

Nesting occurs primarily at night and diurnal nesting occurs only occasionally. They nest five to seven times per year, with an average clutch size of 110-116 eggs (NMFS and USFWS, 1992). Hatchling emergence typically occurs at night. Leatherback nesting grounds are distributed circumglobally. Leatherbacks infrequently strand at Padre Island National Seashore (Shaver, 1998b).

Hildebrand (1963, 1981) reported leatherback nesting at Little Shell on Padre Island National Seashore, including one documented nesting in 1928 and at least one observed nesting in the mid 1930's. No leatherback nests have been confirmed on the Texas coast since that time.

No leatherback nests have been recorded within the park during recent years, although it is possible that a few were missed, especially when patrols were not conducted or were less comprehensive. In the U.S. and Caribbean, nesting begins in February and continues through July.

Impacts of Alternative A, No Action, on Sea Turtles

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on sea turtles. However, impacts on sea turtles in the analysis area would continue along the 6.9 mile segment of Gulf beach as the result of park, commercial, and visitor vehicle use along the 6.9 mile segment of Gulf beach; routine park operations; and recreational activities.

Park staff, 13 oil and gas operators, and an estimated 349,269 visitors annually use the 6.9 mile segment of Gulf beach for vehicle access. Approximately 62,868 visitors (18% of those using the Gulf beach) travel between the six to 12.5 mile marker, with some going below this point. Park staff conducts routine park operations along the beach. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would occasionally travel the beach corridor. These trips include up to three pickup sized trucks that run down, daily, to the sites near the 3 mile and 6 mile markers. Twice monthly, a larger truck runs to the South Sprint Facility near the 6 mile marker to remove gas by-products or "condensate" from a holding tank. Additional traffic is limited to emergency or periodic, routine trips for maintenance or inspections of flowlines and facilities.

There may be times when turtle eggs, nesting turtles, hatchlings, and stranded turtles could be directly vulnerable to vehicle traffic on the 6.9 mile segment of Gulf beach. Operation of all vehicles, including oil and gas heavy equipment, on the beach can crush nesting turtles, stranded turtles, hatchlings, and some eggs, producing an immediate, lethal impact and may cause changes in the structure or density of beach sand, indirectly affecting nesting and incubation habitat (Mann, 1977; NMFS and USFWS, 1991a, 1991b, 1992-1993; Ernest et al., 1998). Vehicles could also remove sea turtle tracks, making it impossible for the NPS staff members and volunteers to find a nest for investigation and protection.

Eggs could be crushed in nests that are not detected. Eggs located close to the sand surface would be most vulnerable to crushing. Each year, a portion of the nests found have the uppermost eggs within only an inch or two of the sand surface. Patrollers and monitors locate nests primarily by searching for the tracks left in the sand by the nesting females. However, the nesting turtles do not always leave visible tracks on the beach, particularly in areas with very hard packed sand, very soft and blowing sand, and thick seaweed. For example, at the first nest discovered at Padre Island National Seashore during 2003, the female barely left any trace of tracks on the hard-packed sand at the nest site, 0.5 miles south of the end of the paved road. Patrol staff that arrived while the turtle was nesting noted that they would not have found her tracks and that the nest would not have been found if visitors had not spotted her crawling on the beach.

The three Kemp's ridley nests found at hatching were located in the dunes. In contrast, the other 35 Kemp's ridley nests found on the Texas coast during the 2002 were documented along the entire beach width, from the high tide line into the dunes. One would expect the beach position distribution of undetected and detected nests to be similar, but that was not the case. Perhaps other nests went undetected at lower beach positions, but did not survive to hatching because of beach driving, human disturbance, predation, or high tides occurring lower on the beach.

Vibrations and noise caused by moving vehicles on the beach could frighten nesting turtles, causing them to abandon their nesting attempt (false crawl) (NMFS and USFWS 1991a, 1991b, 1992; Ernest et al., 1998). Current scientific data are not available for the Kemp's ridley sea turtle, however several mitigation measures and specific conditions of approval are implemented to reduce the potential risk to sea turtles (Tables 4 and 5).

Turtle hatchlings and smaller stranded sea turtles could become trapped in the ruts for short or long periods of time causing them to weaken, invert, or succumb due to predation, disorientation, crushing, or dehydration (Hosier et al., 1981; Fletemeyer, 1996; Ernest et al., 1998). The depth and slope of the ruts will influence the amount of impact. Deeper and more steeply sloped ruts will cause the greatest impact. Hosier et al. (1981) found that 10-15 cm deep tracks may serve as a significant impediment to loggerhead hatchlings. The smaller the turtle the more that it will be impacted by rut size.

A study in Florida on a nourished beach found that vehicles can also compact the sand, making it more difficult or impossible for nesting turtles to excavate a nest cavity leading to increased false crawls and nests with shallow egg chambers (Fletemeyer, 1996). Compaction could also make it more difficult for hatchlings to emerge from an undetected nest. Data on the level of compaction necessary to inhibit or prevent nesting, or inhibit or prevent hatchling emergence is not available. There is no documented evidence that suggests that the level of traffic in this sandy environment, of Padre Island National Seashore, is a serious concern or noticeable to the sea turtle. In fact, 2002 nesting levels appear to contradict this assumption.

Large vehicles associated with oil and gas operations can produce deeper ruts in the sand, which could affect movements of nesting females and hatchlings. To reduce direct impacts that can occur from rutting, the park requires operators to mitigate the impacts by backfilling ruts. However, since backfilling ruts and leveling of the beach surface may cause indirect and direct impacts (including compaction of sand, covering or removal of sea turtle tracks, and crushing of nests and turtles), existing methods used to fill ruts will be reviewed and monitored on a periodic basis by the NPS and USFWS. There are no data to show that sand in these backfilled areas is compacted enough to inhibit nesting.

Vibrations could also harm incubating eggs. It is difficult to assess these areas as scientific data is lacking to fully understand the level of impact on sea turtles from traffic vibrations or noise. From observations of traffic and wildlife interactions, in most instances seeing the vehicle at the water's edge would cause the sea turtle to move back into the water. One would expect this type of reaction of wildlife to man's presence (on foot or in a vehicle). The effect of vibrations from people or from vehicles on the beach during a nesting event does not show a strong negative correlation to date. People driving on the beach often spot nesting sea turtles and can often approach them without disturbing the nesting activity, once laying the eggs begins.

Vehicle and operation lights behind the dunes can cause direct impacts on nesting turtles leading to false crawls and can disorient hatchlings so that they crawl in the wrong direction rather than enter the sea, thereby becoming vulnerable to crushing, predation, and dehydration (NMFS and USFWS 1991a, 1991b; Fletemeyer, 1996). Since oil and gas nighttime transportation of heavy equipment is not permitted during the sea turtle nesting season, the vehicular light issue is confined to four-wheel drive trucks associated with 2-wheel and 4-wheel drive vehicles used by the visitors. It is understood that there are an estimated 349,269 trips down the analysis area of 6.9 miles of Gulf beach each year by park visitors, many of which operate at night. Lights from operations behind the dunes could impact this species if the lights are visible from the beach; however, there are no current operations within proximity to the

beach that have night lighting. Nesting Kemp's ridley turtles, which are primarily daytime nesters and Kemp's ridley hatchlings, which emerge generally in the daytime, will most likely not be affected. Conditions of approval and mitigation measures applied to the existing 13 approved oil and gas operations would reduce the potential impact associated with lighting.

To reduce and or eliminate the impact of light pollution on the sea turtle (and to the visitor) the following measures of night sky protection are currently being applied as mitigation measures by the park: 1) use of directional and shielded lighting on the drilling rigs and no lighting of production facilities; 2) use of a required setback of 500 feet from the dunes and other light-sensitive areas; and 3) placing night driving restrictions on operators of heavy equipment and trucks during the sea turtle nesting and hatchling emergence period. These steps are expected to be adequate to prevent any light pollution impact, given current scientific data.

So this leaves those species of sea turtle that nest primarily at night (green, loggerhead and hawksbill) likely to be the most affected by night driving and associated lighting. Based on documented nesting, the total number of these three species of sea turtle nesting at Padre Island National Seashore, within the analysis area, would be less than three over a 15-year span. The risk of loss to nesting turtles of these species is therefore very small. This would also apply to those hatchlings that emerge at night or early in the morning from the few in-situ nests possibly missed by the daily patrols conducted by the NPS and volunteers.
Currently the NPS removes all sea turtle eggs that are located from the beach and transfers them to the incubation facility within the park. Hatching success is usually elevated substantially for eggs that are transferred to this facility rather than left on the beach in-situ. Some nests missed by the patrol and monitoring effort may go undetected and unprotected from predation, insect infestation, tidal inundation, and crushing. Additionally, some nesting and stranded turtles are not immediately found and protected by the NPS.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf of Mexico shoreline for over 20 years with no documented case of a crushing of a nesting sea turtle within the park. However, outside the park, a passing vehicle struck a Kemp's ridley turtle that laid eggs on the Matagorda Peninsula during 2002. Visitors put her back into the water, but they noted that she was injured and a dead adult Kemp's ridley washed ashore about five miles away, two weeks later. Additionally, in 2002, beach visitors found and reported three Kemp's ridley nests at hatching, including one located at Padre Island NS, one on North Padre Island north of the national seashore, and one on Mustang Island. No hatchlings were killed at the park, but 14 were crushed and killed by passing vehicles at the two nests sites outside the park. During the 2003, three turtles were documented nesting in the vehicular roadway at the park, including two within visible ruts.

The risk to a sea turtle in the analysis area is low when looking at past nesting activity. The average number of nests per year over a five-year span, for the first 15 miles of south beach, is approximately three. In 2002, one of the highest nesting activity years since the beginning of the patrol program (1986), there were six nests found within the analysis area. Current nesting activity does not seem to indicate compaction from vehicles, either by visitors or from the existing 13 oil and gas operators, is causing a negative affect.

Nesting activity for 2002 seems to support the idea that existing traffic levels (approximately 349,269 vehicles annually) do not currently have a measurable effect on nesting sea turtles. Looking at nesting data collected over the past 20 years for the action area, and given that most nests are found and removed from the beach by NPS staff, the potential impact of vibrations to eggs and crushing of nests would appear to be minimal. The chance that hatchlings could be

killed by vehicle use at night along the stretch of beach within the action area of the project is real, but minimal.

There is the very small chance that the four sea turtle species (loggerhead, green, hawksbill, or leatherback) would be directly impacted by vehicle use on the beach, including the crushing of stranded turtles and undiscovered nests or hatchlings. Impacts that are more likely to occur would be indirect impacts, including noise and vibration to nests or hatchlings; and direct impacts from night- time lighting, from vehicles and project area lighting that may cause changes in sea turtle behavior can affect these species. All of the existing 13 oil and gas operations located throughout the park are located a sufficient distance behind the foredunes so that any night lighting would not shine onto the beach. The NPS conservation efforts related to these sea turtles are conducted to promote and enhance their recovery. Please refer to the measures employed for use in the Kemp's ridley sea turtle effort as measures used to assist this and other species of sea turtle.

Existing vehicle access along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on sea turtles would result primarily from vehicle access along the Gulf beach from the continuing operation of 13 nonfederal oil and gas operations within the park, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario, park staff, and visitors. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Leaks and spills from oil and gas operations could be serious, with negligible to moderate, impacts on sea turtles. Spills from oil and gas operations in the Gulf of Mexico, including tanker traffic, could be transported by water onto the Gulf beach shoreline, causing widespread impacts and resulting in long-term clean-up and remediation. Mitigation measures are expected to substantially reduce the impacts.

The risk of impacting one of the four species of sea turtle (loggerhead, green, hawksbill, and leatherback), however, is reduced to a much greater degree because of the limited possibility of encountering one on the seashore. This is particularly true within the existing areas of oil and gas operation. As night driving by all companies is restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles. The greatest potential for a direct, adverse impact would occur from vehicle traffic crushing an undocumented nest or emerging hatchlings, and causing hatchling mortality due to vehicle rutting.

Cumulative impacts on sea turtles throughout the park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle

access along the Gulf beach, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Sea Turtles
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced.

Existing impacts on sea turtles within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, direct and indirect, negligible to minor, adverse impacts associated with vehicle use along the 6.9 mile segment of Gulf beach.

BNP would use the 6.9 mile segment of Gulf beach to access its proposed wellpad located approximately 6,400 feet west of the Gulf of Mexico beach. BNP would be required to confine vehicle use above the "wet-line" and apply other mitigation measures specifically designed to avoid or minimize impacts on sea turtles (Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). As described above under No Action, vehicles could compact and rut beach sands. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf beach for over 20 years with no documented case of a nesting sea turtle being crushed within the park. The risk to a sea turtle in the analysis area of this project is reduced when looking at past nesting activity. The average number of nests per year over a five-year span (between 1999 and 2003), for the first 6.9 miles of south beach is 2.4 nests. Current nesting activity does not seem to indicate compaction of sand from vehicles, either by the public or from the operator, is causing a negative affect. During the Protected Season, from April 16 to June 30, drilling would not likely take place. However, drilling of the Dunn-Peach #1 Well would occur outside of the Kemp's ridley nesting season. The primary impacts would be obstacles to emerging hatchlings from unfilled ruts and the possibility of crushing both hatchlings and eggs in undetected nests. The requirements for daytime driving only, trained staff accompanying equipment and larger trucks down the beach will reduce the potential for impacts to hatchlings.

The four species of sea turtles (loggerhead, green, hawksbill, and leatherback) nest primarily at night and hatchling emergence is usually at night or very early in the morning. As the numbers of nests in the park and within the project area are historically few, the impact on these species is expected to be less than for Kemp's Ridley sea turtles. Therefore, the risk of impacting one of these species of sea turtles is greatly reduced because of the limited possibility of encountering one on the seashore. As night driving by BNP would be restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles. The greatest potential for a direct, adverse impact is to the loggerhead and any remaining undiscovered sea turtle nests. The only real potential for impacts is from vehicle traffic resulting in the crushing of undocumented nests or emerging hatchlings, and causing hatchling mortality due to vehicle tracks and rutting. Since the number of trips per day by oil and gas operators driving large trucks along the Gulf beach is greater than four truck trips per day, and given that the typical use by existing operators is restricted to the daylight hours, this alternative has the higher potential for negative impacts on these four species of sea turtles. Since seasonal visitor use of the beach (pick-up trucks and recreational vehicles/motor homes) increases to its highest point at this time of year, this alternative is less likely to cause direct

impacts to the turtle. There is still a risk of injury or mortality from BNP truck traffic; however, it would be minimal in the near and long-term.

Vehicle access along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles. Mitigation measures and monitoring of the proposed project would reduce the potential impact on sea turtles, and help to ensure that the project is not likely to adversely affect these species.

Construction of the access road / flowline, would have no impact on sea turtles.

Cumulative Impact
Cumulative impacts on sea turtles throughout the park would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. If the well is placed into production, vehicle access along the 6.9 mile segment of Gulf beach; in addition to existing vehicle access along the beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from implementation of this alternative.

Eastern Brown Pelican

Affected Environment
Eastern Brown Pelicans *(Pelecanus occidentalis)* are federally and state listed as endangered. This bird's population fell to less than 100 birds between 1967 and 1974 (TPWD, http://tpwd.state.tx.us/nature/endang/birds/bpelican.htm). It is a coastal inhabitant whose range includes the southern United States and northern South America - from North Carolina to Venezuela and Trinidad in the Atlantic and from British Columbia to Chile on the Pacific coast.

This species is found along salt bays, beaches, and oceans. It is generally found near shallow waters adjacent to the coast, especially on sheltered bays. Occasionally Brown Pelicans are seen well out to sea. Brown Pelicans feed almost entirely on fish including menhaden, smelt, and anchovies but can occasionally feed on crustaceans.

Brown pelicans nest in colonies on isolated islands where they are safe from predators. These islands may be either bare or rocky or covered with small mangroves, shrubs, or other trees. Stray individuals may appear on freshwater lakes inland. Nests may be a simple scrape, a heap of debris with a depression on the top, or a large stick nest located in a tree. Breeding season generally begins in early March and lasting until August. After the breeding season, flocks move north along both Atlantic and Pacific coasts. These birds return southward to warmer waters by winter. Small numbers of immatures regularly wander inland in summer, especially in the Southwest (Peterson Multimedia Guides, http://www.petersononline.com/birds/month/brpe/index.html).

Eastern Brown Pelicans occur in the park year-round along both the Gulf and Laguna Madre sides of Padre Island. Individuals utilize the park for resting and foraging, and are typically found in the nearshore and washover habitats. Some individuals migrate south during the winter months and return during the breeding season. Brown Pelicans forage along the Gulf beach shoreline searching for fish near the surface of the water.

In 1993, Dr. Allan Chaney recorded 356 Brown Pelicans over 64 miles of beach between Yarborough Pass and Port Mansfield Channel during a 1992-1993 shorebird survey. Twelve individuals were observed on the Laguna Madre shoreline while the remaining 344 individuals were observed in the washover channels located south of the 33 mile marker. Forty-four individuals were observed between the park's north boundary and the 6.5 mile mark (Chaney *et. al*., 1993a). In 1995, 553 birds were surveyed along the Gulf beach between the park's northern boundary and Yarborough Pass (Chaney *et. al*., 1995b). In comparison, only one Brown Pelican was documented along the Laguna Madre shoreline between Yarborough Pass and the park's northern boundary (Chaney *et. al*., 1995a). It is evident that Brown Pelicans prefer the Gulf beach shoreline instead of the Laguna Madre shoreline.

Brown Pelicans are generally found along the Gulf beach tide line in the morning hours and along the Laguna Madre shoreline and washover channels located in the southern portion of the park in the afternoons. When observed in the washover channels, Brown Pelicans were generally associated with Double Crested Cormorants, gulls, and terns. Brown Pelicans are not observed in other habitats within the park.

Based on nearly thirty years of park colonial waterbird census data, Brown Pelicans have not been documented nesting within the park (TCWD, http://texascoastalprogram.fws.gov/Texas_Colonial_Waterbird_Census_2002.xls). However, they do nest on an island located in Corpus Christi Bay, which is located approximately 20 miles from the park and on islands located in the Laguna Madre outside of the park.

Impacts of Alternative A, No Action, on Eastern Brown Pelican
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts to the Eastern Brown Pelican. However, existing impacts on Eastern Brown Pelicans in the analysis area would continue as the result of vehicle access and visitor uses along the 6.9 mile segment of Gulf beach

Park staff, 13 oil and gas operators, and an estimated 349,269 visitors annually use the 6.9 mile segment of Gulf beach for vehicle access. Approximately 62,868 visitors (18% of those using the Gulf beach) travel between the 6 to12.5 mile marker, with some going below this point. Park staff conducts routine park operations along the beach. Vehicles on the Gulf beach would include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continuing operation of 13 oil and operations throughout the park that require access through this 6.9 mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored and are expected to be driven at the posted speed limit of 15 to 25 mph.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

Visitor activities and vehicles traveling within or close to the "wet-zone" would displace Eastern Brown Pelicans and cause them to take flight. They most likely would fly along the shoreline to another suitable location and land, or they can fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing vehicle access and visitor use along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelicans within the analysis area.

Cumulative Impact
Under Alternative A, No Action, cumulative impacts on Eastern Brown Pelican would occur from visitor uses, and vehicle access along the Gulf beach by the park, visitors, and oil and gas operators as a result of the continuing operation of 13 nonfederal oil and gas operations and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Cumulative impacts of visitor uses and vehicle access along the Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on the Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican, primarily along the Gulf shoreline.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Eastern Brown Pelican; however, existing visitor uses and vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts along the Gulf shoreline. No impairment to the Eastern Brown Pelican would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Eastern Brown Pelican
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced.

Existing impacts on Eastern Brown Pelican within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct, adverse

impacts on Eastern Brown Pelican within the analysis area from visitor uses and vehicle access on the 6.9 mile segment of Gulf beach.

BNP would use a 6.9 mile segment of Gulf beach to access its proposed wellpad. Vehicles would displace Eastern Brown Pelicans causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary, but potentially more frequent than those of the public, especially during the higher frequency of heavy vehicle use during the construction of the access road, well/production pad, and flowline, and placement and removal of the drill rig. Shorebirds disturbed by park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the Eastern Brown Pelicans for the duration of the drilling project.

BNP would be required to confine vehicle use above the "wet-line" (see Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph. This should reduce the amount of disturbance on the Eastern Brown Pelican, as reducing speed and the number of times the bird is displaced would lessen the overall impact to the tern. It is known that reduced speed does have less of an affect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Existing vehicle access and visitor use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican.

Cumulative Impact
Under Alternative B, Proposed Action, cumulative impacts on Eastern Brown Pelican throughout the park would be similar to those described under No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short-term, negligible to minor, direct, adverse impacts on the Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to minor, indirect, adverse impacts on the Eastern Brown Pelican.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing visitor uses and vehicle access within this beach corridor, would result in localized, short to long-term negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts to Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican. No impairment to Eastern Brown Pelican would result from implementation of this alternative.

Interior Least Tern, Black Tern, and Piping Plover

Affected Environment

The **Interior Least Tern** (*Sterna antillarum)* is the smallest member of the tern family (Nebraska Game and Parks Commission, http://www.ngpc.state.ne.us/wildlife/ltern.html). Only colonies located 50 miles from the coast are considered endangered at the federal level. However, all colonies of Interior Least Terns throughout the state are considered endangered at the state level. They are found along the western and eastern coasts of the United States and from southern Maine to the southern tip of Texas. No critical habitat has been designated for this species in this park.

Their habitat includes mudflats, beaches, and sandbars (Scott, 1983). Interior Least Terns forage on small fish captured in shallow coastal waters. Fall migration begins mid to late July and continues through early September. Wintering habitat for Interior Least Terns exist along the beaches of Central and South America.

Interior Least Terns are colonial nesters that breed throughout the United States on riverbeds, sandbars, and beaches. Both sexes participate in making shallow nest scrapes. The female will select a suitable scrape. If the first clutch of eggs is lost, Interior Least Terns will re-nest up to two times with each re-nesting attempt taking place at a new site. Nesting season begins in spring and ends in early August. Migration from breeding areas to winter grounds usually begins in August and is complete by early September (Nebraska Game and Parks Commission, http://www.ngpc.state.ne.us/wildlife/ltern.html).
Interior Least Terns are present at Padre Island National Seashore seasonally between April and September and utilize the park for foraging, nesting, and migration. These colonial nesters utilize the isolated manmade and natural islands in the Laguna Madre. Nesting season in south Texas generally occurs between April and July and has occurred within the park since 1973 (TCWD, http://texascoastalprogram.fws.gov/Texas_Colonial_Waterbird_Census_2002.xls). Documentation shows that Interior Least Terns generally prefer the Laguna Madre shoreline during June and July possibly for breeding, and the Gulf beach shoreline during April, May, August, and September (Chaney *et. al*., 1995b). In 2002, at least two pairs of Interior Least Terns nested on a manmade island 17 miles north of the project area. Interior Least Terns have not been documented nesting on the Gulf beach within the park, however, based on surveys in 1993 and 1995, the Interior Least Tern population appears to be stable with 8 birds/mile surveyed (Chaney *et. al*., 1995b)

The **Black Tern** (*Chlidonias niger*) is considered a species of concern at the federal level, and there is no critical habitat designated within the national seashore.

Black Terns inhabit temperate grassland, freshwater lake, freshwater rivers, prairies, lakeshores and marshes with fairly dense cattail or other marsh vegetation and pockets of open water (Null, 1997). The breeding habitat for Black Terns consists of dead canes of marsh or on floating masses of dead plants. Black Terns breed in north central United States northward into Canada and the Northwest Territories. Sporadic nesting is observed in California, Oregon, and Kansas. Wintering habitat is located along the Pacific coast of Mexico, Central and South America and the northern coast of South America. Non-breeding summer habitat consists of marine and coastal areas located along the Gulf of Mexico (Dunn and Agro, 1995).

Black Terns forage on insects such as dragonflies, moths, grasshoppers, and beetles, and freshwater fish when at the breeding grounds. Prey consists of small marine fish including anchovies and silversides, and they will eat crayfish and mollusks. These Terns are seen foraging in the coastal waters off Padre Island National Seashore during the summer months.

The Black Tern is a spring and fall migrant through the park, and is a common summer resident along the Gulf shore within Padre Island National Seashore. No breeding has been documented along the Texas coast (Rappole and Blacklock, 1985). These Terns generally nest in colonies from March to early August.

In a 1994 – 1995 survey, 5,107 Black Terns were documented in the park, with three times as many black terns documented on the Laguna Madre side of the park than on the Gulf beach (Chaney *et. al*., 1995b). These high totals were found in August, prior to their fall migration.

The **Piping Plover** (*Charadrius melodus*), one of the least common members of the plover family, is considered threatened both federally and by the state of Texas. The population is currently estimated to be approximately 1400 pairs (USFWS, http://pipingplover.gws.gov/overview.html).

The Piping Plover is a shorebird that migrates from Nova Scotia south to North Carolina and winters along the Gulf Coast from Florida to Mexico, along the Atlantic Coast from Florida to North Carolina, and in the Caribbean. They are found on sandy beaches, lakeshores, dunes, and often well above the water line (Sibley, 2000).

Piping Plovers breed along prairie-rivers and on alkali wetlands of the Northern Great Plains, sandy beaches along Great Lakes shorelines, and Atlantic coast beaches. These birds nest in shallow depressions built in the sand with both parents incubating the eggs and exhibiting a monogamous mating system. Breeding can occur between March and August with both fledglings and parents leaving the nest by September. It is clear that direct interference of nests by vehicles, humans, and dogs significantly affects breeding success (TPWD, http://tpwd.state.tx.us/nature/ending/birds/piplover.htm). Piping Plovers disturbed during nesting by flooding or other disturbance may abandon the nest and establish a second nest in the vicinity at a new location (USFWS, http://pipingplover.gws.gov/overview.html).

Piping Plovers forage mostly on benthic invertebrates, insects, and crustaceans found within the inter-tidal areas of ocean beaches, wash over areas, mudflats, sand flats, wrack lines, and shorelines of coastal ponds, lagoons or salt marshes. Piping Plovers have been documented defending feeding territories, and foraging on benthic invertebrates and insect larvae along both the Laguna Madre and Gulf beach inter-tidal areas within the park.

Piping Plovers have been documented throughout the park as a winter resident and fall/spring migrant (Chaney *et. al*., 1993a, 1993b, 1995a, and 1995b). Piping Plovers are generally found along the Laguna Madre, Gulf beach, and washover channels within the park and occur at the park 11 months of the year with the exception of February (Chaney *et. al*., 1993a and 1993b), with the highest concentrations occurring between August and December. September typically has the highest numbers (Chaney *et. al*., 1995b) of Piping Plovers found in the park. Padre Island National Seashore protects substantial acreage of wintering habitat for the Piping Plover, with the most important area being the broad wind tidal flats located at the north boundary of the park. It is estimated that between 60-65% of all Piping Plovers winter in South Texas (Chaney *et. al*., 1995a).

In 1992 – 1993, a study documented 602 plovers over the entire 60 miles of south beach, with 400 of these being found along the Gulf beach foreshore (Chaney *et. al*., 1993a). Of the 600 birds observed, 87 Plovers occurred between the zero and 12 mile mark accounting for nearly 14% of the total number of Plovers counted (Chaney *et. al*., 1993a). In 1994 – 1995, 150 plovers were documented between the zero and 15 mile mark on the Gulf Beach with the majority of these inhabiting the Gulf beach foreshore (Chaney *et. al*., 1995b).

No nesting has been documented in south Texas or Padre Island National Seashore to date, and there is no critical habitat designated for this species. In 2000, the US Fish and Wildlife Service proposed 80% of the park as Piping Plover critical habitat. Final habitat designation figures did not include Padre Island National Seashore as critical habitat. Part of the reason was that the species is already protected by existing NPS regulations, policies, and management measures, and designating critical habitat would not provide a greater level of protection.

Impacts of Alternative A, No Action, on Interior Least Tern, Black Tern, and Piping Plover
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Interior and Black Terns and Piping Plovers. However, impacts on these species in the analysis area would continue as the result of vehicle access and visitor uses along the 6.9 mile segment of Gulf beach.

Park staff, 13 oil and gas operators, and an estimated 349,269 visitors annually use the 6.9 mile segment of Gulf beach for vehicle access. Approximately 62,868 visitors (18% of those using the Gulf beach) travel between the six to 12.5 mile marker, with some going below this point. Park staff conducts routine park operations along the beach. Vehicles on the Gulf beach would include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so. Vehicles would compact and rut the beach sand. There would be some loss of benthic organisms due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. As noted in the wildlife section of this chapter, in a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continuing operation of 13 oil and gas operations throughout the park that require access through this 6.9 mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored and are expected to be driven at the posted speed limit of 15 to 25 mph.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

The Interior Least Tern and Black Tern prefer the “wet-zone” along the Gulf beach for resting, loafing, and feeding. Piping Plovers utilize the Laguna Madre wind-tidal flats and Gulf beach for foraging and resting. Benthic invertebrates are the primary food source for Piping Plovers.

Visitor activities and vehicles traveling within or close to the “wet-zone” would displace terns and Piping Plovers and cause them to take flight. They most likely would fly along the shoreline to another suitable location and land, or they can fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day.

Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach where most visitor use occurs.

Existing vehicle access and visitor use along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least Terns, Black Terns, and Piping Plovers within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on Interior Least and Black Terns and Piping Plovers would occur from visitor uses and vehicle access along the Gulf beach by park staff, visitors, and oil and gas operators as a result of the continuing operation of 13 nonfederal oil and gas operations and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Cumulative impacts of visitor uses and vehicle access along the Gulf beach would continue to cause these shorebirds to be flushed, resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least and Black Terns and Piping Plovers; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on these species, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Interior Least Tern, Black Tern, and Piping Plover; however, existing visitor uses and vehicle access on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts. No impairment to the Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Interior Least Tern, Black Tern, and Piping Plover
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced.

Existing impacts on Interior Least and Black Terns and Piping Plovers within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area from visitor uses and vehicle access on the 6.9 mile segment of Gulf beach.

BNP would use a 6.9 mile segment of Gulf beach to access its proposed wellpad. Vehicles would displace terns and Piping Plovers causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary. Shorebirds disturbed by park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the terns and Piping Plovers for the duration of the drilling project.

BNP would be required to confine vehicle use above the "wet-line" (see Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph. This should reduce the amount of disturbance on the Eastern Brown Pelican, as reducing speed and the number of times the bird is displaced would lessen the overall impact to them. It is known that reduced speed does have less of an effect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

The proposed project is expected to take place between August and December, which is the time of the year when the highest concentrations of Piping Plovers occur at the park. Based on previous studies, approximately 14% of the total Piping Plovers occurring in the park are likely to be utilizing this segment of Gulf beach. Piping Plovers utilize both sides of the park depending on available habitat and time of day. Piping Plovers do not nest at Padre Island. Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

Existing visitor uses and vehicle access along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least Tern, Black Tern, and Piping Plover.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Interior Least Terns, Black Terns, and Piping Plovers throughout the park would be similar to those described under No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, direct, negligible to minor, adverse impacts on these species; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Interior Least Tern, Black Tern, and Piping Plover.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing vehicle access and visitor uses along this segment of beach would result in localized, short to long-term negligible, direct, adverse impacts on Interior Least and Black Terns and Piping Plovers. Cumulative impacts would be similar to those described under Alternative A, No Action, with vehicle use along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least and Black Terns and Piping Plovers; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Interior Least and Black Terns and Piping Plovers. No impairment to Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative.

Peregrine and Northern Aplomado Falcons

Affected Environment
The **Peregrine Falcon** (*Falco peregrinus*) has been federally de-listed but is still listed as endangered at the state level. The Peregrine Falcon has nearly worldwide distribution, thriving in a great variety of habitats from arctic tundra to tropical rain forests. In North America, this

species is best known as inhabitants of canyons and cliffs, though it has been documented to reside amongst the skyscrapers of large cities.

The Peregrine Falcon is a migratory species that winters along the Gulf of Mexico and as far south as Central and South America. They are known as common winter inhabitants of the southern portion of Padre Island National Seashore, arriving sometime in early fall and departing mid-May (Chaney *et. al*., 1993a). This falcon is generally only seen twice a year as it migrates through the state in spring and fall (TPWD, http://tpwd.state.tx.us/nature/ending/birds/peregrine.htm).

Peregrines breed in a wide range of habitats including the edge of cliffs, raised mounds on the ground in bare open spaces, in hollow tree stumps, and ledges of large city buildings. Peregrines tend to return to the same site annually. Breeding season begins in early March in the south and mid-May in the north. A single brood of three to four eggs are laid in a hollow scrape with no materials added to it. Females closely tend their young for the first 14 days, but leave them more each day as they grow. The nestlings fly at 35-42 days, but appear to be dependent on the adults for an additional two months.

This species predates upon waterbirds but normally does not attack ducks that are sitting on the water. Those individuals who have become city dwellers are most likely attracted to the high populations of Rock Doves (pigeons). They typically feed on Neotropical migrants, waterfowl, and shorebirds while in the area of Padre Island National Seashore. No critical habitat has been designated for this species at the park.

Peregrine Falcons are an increasingly common migrant at the park, especially in the fall, and they are a rare winter resident. Peregrine Falcons hunt on broad mudflats along the Laguna Madre shoreline, and rest on any higher elevation, typically on the foredunes along the Gulf beach (Chaney *et. al*., 1995b). They rarely predate shorebirds that forage and rest on the Gulf beach. These birds are generally concentrated in the southern portion of Padre Island National Seashore, which is unique in that it is a main component of the migration route "staging area," particularly for juveniles, during the spring and fall migration (Maechtle, 1993). From actual counts, more than 2,000 Peregrine Falcons have utilized this area annually during their fall migration (Maechtle, 1993). The Gulf beach is a very important stopover area for foraging, resting, and is a landmark guide for many migratory birds (Chaney *et. al*., 1993a). Padre Island National Seashore and South Padre Island are the only known localities in the Western Hemisphere where Peregrine Falcons can be found in such high concentrations during their spring migration.

The **Northern Aplomado Falcon** (*Falco femoralis septentrionaliss*) is considered a rare species at Padre Island National Seashore. Over the past ten years, approximately four sightings of individual Northern Aplomado Falcons have occurred in the park along the main road, beach foredunes, and grasslands of the Northern ten miles of the park. These sporadic sightings generally occurred in winter and early spring. The most recent park sighting of a Northern Aplomado Falcon occurred in December 1999 on the park's northern boundary. Individuals sighted appear to be transients, and no established adult pairs, territories, or nests have been documented within the park. The effects to this species are similar to those for the Peregrine Falcon and therefore, they are presented together.

Impacts of Alternative A, No Action, on Peregrine and Northern Aplomado Falcons
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Peregrine and Northern Aplomado Falcons. However, impacts on the falcons

in the analysis area would continue as the result of occasional forays by park staff, visitors, and oil and gas operators onto the Gulf foredunes.

Park staff, 13 oil and gas operators, and an estimated 62,868 (18% of those using the Gulf beach) park visitors use the 6.9 mile segment of Gulf beach for vehicular access. Visitor uses along this segment of Gulf beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Peregrine and Northern Aplomado Falcons rest on any high elevation within the park. Along this segment of Gulf beach, falcons have routinely been seen resting on the foredunes. Park staff performing routine park operations, recreating visitors, and nonfederal oil and gas operators occasionally hike to/or over the foredunes into the backcountry. These activities on the dunes may displace a resting falcon and cause it to take flight. The potential for displacement would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing park and visitor uses along the 6.9 mile segment of Gulf beach would result in localized, short-term, negligible, adverse impacts on Peregrine and Northern Aplomado Falcons within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on Peregrine and Northern Aplomado Falcons could occur from park activities, visitor uses, and oil and gas activities in the vicinity of the Gulf foredunes or Laguna Madre shoreline where falcons primarily rest or feed. Developments and activities that could impact these areas include the continuing operation of up to 13 nonfederal oil and gas operations, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Cumulative impacts would result in localized, short to long-term, negligible to minor, adverse impacts on Peregrine and Northern Aplomado Falcons.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Peregrine and Northern Aplomado Falcons; however, existing uses on the Gulf foredunes, result in localized, short-term, negligible, adverse impacts on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in localized, short to long-term, negligible to minor, adverse impacts on the Peregrine and Northern Aplomado Falcons. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Peregrine and Northern Aplomado Falcons
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced.

Existing impacts on Peregrine and Northern Aplomado Falcons within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible, adverse impacts on the falcons resulting from occasional forays by park staff performing routine park operations, recreating visitors, and nonfederal oil and gas operators hiking to/or over the foredunes and displacing/flushing falcons.

The likelihood of a Peregrine or Northern Aplomado Falcon being affected by vehicular traffic along the Gulf beach is negligible. These falcons are not known to predate shorebirds along the Gulf shoreline; and resting is confined to high points, preferably on the dunes. Beach traffic might on occasion displace a resting Peregrine or Northern Aplomado Falcon from its perch on the foredunes, but the distance between beach traffic and the foredunes is sufficiently great to not cause falcons to normally do so.

Construction of the access road / flowline route, well pad, production facility, and drilling and production operation would not impact Peregrine and Northern Aplomado Falcons. These activities would take place in grassland and wetland habitats. These areas are void of trees and shrubs that could be used for perching. In addition, these habitats are not suitable foraging habitats for the falcon. Therefore, these habitats are not likely to be used to any degree other than when this species flies between park shorelines to forage or rest. The proposed drilling and production operation may provide structures that could be used for perching. Drilling and production equipment will be higher than the surrounding terrain and provide an opportunity for this species to perch. Peregrine and Northern Aplomado Falcons have been documented using oil and gas facilities in the park for perching. Since few perching structures exist and the historic use of oil and gas equipment by falcons, it is likely that equipment associated with this alternative could be used by these species. In addition, should the well be placed in production, BNP proposes to plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors, and provide and perpetuate habitat for migratory birds. The additional perches that Peregrine and Northern Aplomado Falcons could use to rest, eat prey, and seek out prey; and the perpetuation of habitat for migratory birds which are one of the Peregrine's food sources, would result in localized and long-term, negligible, beneficial impacts, for the Peregrine and Northern Aplomado Falcons.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. The drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Peregrine and Northern Aplomado Falcons, resulting in localized and long-term, negligible, beneficial impacts, for the falcons. Cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

White-tailed Hawk

Affected Environment
The **White-tailed Hawk** (*Buteo albicaudatus*) is not federally listed but is listed as threatened by the state. There is no critical habitat designated for this species in the park.

The White-tailed Hawk is a tropical and subtropical species ranging from southern Texas (year round) to Mexico and Central and South America: also some of the islands of the South Caribbean. Its preferred habitat includes open, semi-open, or thinly forested country, whether flat or hilly. In southern Texas, they are most visible in the grassland prairies near the coast, often where there are only scattered bushes, yuccas, or large cacti (Channing, http://www.hawk-conservancy.org/priors/whitetailedhawk.html). White-tailed Hawks are considered common to uncommon in south Texas (Rappole and Blacklock, 1994).

In southern Texas, where rabbits are abundant, White-tailed Hawks feed upon them extensively, although not exclusively. It has been known to take cotton rats, snakes, lizards, frogs, grasshoppers, cicadas, and beetles, and occasionally a quail or other bird. When the wind is favorable, the White-tailed Hawk resorts to hovering while hunting.

Breeding begins late January and usually ends in July (Baicich and Harrison, 1997). This Buteo builds a large nest of freshly broken twigs, often thorny ones, mixed with bunches of dry grass and lined with finer material, among which are some green sprays of mesquite or other plants. The nest is added to each year and may become quite large, measuring almost three feet across (Channing, http://www.hawk-conservancy.org/priors/whitetailedhawk.shtml).

Within the park, the White-tailed Hawk is common during the winter months and uncommon throughout spring, summer, and fall (McCraken and Clark, 1990).

White-tailed Hawks have been observed in grassland and wind-tidal flat habitats within the park. In 1993, four White-tailed Hawks were seen flying over the wind tidal flats between the 19 and 26 mile mark while 20 birds were observed between Yarborough Pass and the north boundary (Chaney *et. al*., 1993b and 1995a). White-tailed Hawks have been observed during the fall and winter months within the park. Less than 10% of the White-tailed Hawks documented in 1995 occurred over the Gulf beach habitat while the remaining 90% were seen flying over the wind tidal flats of the Laguna Madre (Chaney *et. al*., 1995b). This indicates that the White-tailed Hawk generally prefers the western portion of the park.

Nesting accounts for White-tailed Hawks are rare. However, a single nest was documented in the park in 2002, in a grassland habitat located 6.5 miles south of the end of Park Road 22. The nest was built in a 6-foot huisache (*Acacia farnesiana*) and appeared to be have been used previously and may indicate that the hawk had been nesting for several years.

Impacts of Alternative A, No Action, on White-tailed Hawks
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on White-tailed Hawks. There are no existing impacts on White-tailed Hawks within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on White-tailed Hawks throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres that may be located within the park's grasslands and wind-tidal flats preferred by this species. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other activities that could contribute to impacting this species include prescribed fires, routine park operations, and recreational activities. Cumulative impacts on White-tailed Hawks throughout the park are

expected to be localized near developments, with short to long-term, negligible, adverse impacts.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the White-tailed Hawk; and, there are no existing impacts within the analysis area. Cumulative impacts from park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species would result in localized, short to long-term, negligible, adverse impacts on the White-tailed Hawk.

Impacts of Alternative B, Proposed Action, on White-tailed Hawks
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. There are no existing impacts within the analysis area.

The construction of the access road / flowline route, well pad, and production facility would directly impact 4.14 acres of grassland habitat preferred by the White-tailed Hawk. If the well does not go into production, the entire 4.14 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned.
However, if the well is placed in production, the well pad would be reduced by 1.935 acres and a flowline installed to connect with one of the existing pipelines located east of the proposed wells. Flowline construction would disturb an additional 1.7 acres of hummocky uplands, of which 0.024 acres are within emergent wetlands. The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Construction of the access road / flowline route, well pad, production facility, and drilling and production of the well would cause the loss of habitat for the White-tailed Hawk, resulting in localized, short to long-term, negligible to minor, adverse impacts.

If the well is placed in production, BNP proposes to plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors, and provide and perpetuate habitat for migratory birds. The trees would provide additional perches for White-tailed Hawks to rest, eat prey, seek out prey, and possibly nest in. Further, the drill rig and production facilities may also provide additional perches for this species. These additional perches would result in localized and long-term, negligible, beneficial impacts, for the White-tailed Hawk.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on White-tailed Hawks throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short- to long-term, negligible, adverse impacts on the White-tailed Hawk.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced. BNP's proposed construction of an access road / flowline route, well pad, and production facility would directly impact 6.05 acres of grassland habitat preferred by the White-tailed Hawk, resulting in localized, short-term, minor adverse impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned. However, the drill rig and production facility, and BNP's planting of willow shrubs or trees around the production facility would provide

additional perches for White-tailed Hawks, resulting in localized and long-term, negligible, beneficial impacts. Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short- to long-term, negligible, adverse impacts on the White-tailed Hawk. No impairment to the White-tailed Hawk would result from implementation of this alternative.

Loggerhead Shrikes and Neotropical Migratory Songbirds

Affected Environment

The **Loggerhead Shrike** (*Lanius ludovicianus*) is considered a species of concern at the federal level. All populations within the United States seem to be declining which has been attributed to the loss of habitat. This species is found throughout most of the United States, Mexico, and south-central Canada. It's wintering range includes the southern United States and into Mexico. Loggerhead Shrikes prefer open country such as savannas, prairie, and farmland with patches of trees or shrubs present. This species is a permanent resident throughout most of the state but is uncommon to rare in southern Texas (Rappole and Blacklock, 1994).
Shrikes are often found hunting from low perches where they can strike their prey quickly and return to the perch. They do not have talons and kill with a stunning blow from their beaks. They are known for their unique habit of impaling their prey on thorns or barb-wired fences and returning to feed later. Loggerhead Shrikes forage on insects in the summer and mice in winter. This species is solitary except for the breeding season, which begins in early May and continues into mid-July. Nests are constructed of twigs, bark, and other materials and usually found in isolated small trees. Loggerhead Shrikes can produce up to two broods annually.

Loggerhead shrikes commonly occur in park grasslands throughout the park and black willow and small shrub habitats that occur in the northern section of the park. This species is common during the spring, fall, and winter (McCracken and Clark, 1990) and considered rare in summer (Rappole and Blacklock, 1994). In 1997, a Loggerhead shrike was captured and banded in a dune area near Bird Island Basin (Blacklock *et. al*., 1997). There has been no documented nesting of Loggerhead Shrikes at Padre Island National Seashore.

Padre Island National Seashore provides migratory habitat for a broad number of **Neotropical migratory songbirds** that occur within the park during the spring and fall migrations. Based on Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, Padre Island National Seashore has imposed the mitigation measures outlined in Tables 3 and 4 to protect these resources from impacts associated with oil and gas operations within the park.

Impacts of Alternative A, No Action, on Loggerhead Shrikes and Neotropical Migratory Songbirds

Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on Loggerhead shrikes and Neotropical migratory songbirds. However, impacts on Loggerhead shrikes and Neotropical migratory songbirds would continue as the result of continuing operation of two existing pipelines within the analysis area.

Existing operation of the two gas pipelines located within the analysis area, east of the proposed wellsite, would continue to impact grassland habitat preferred by these species. Routine maintenance along the two pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. The occasional presence of vehicles and

work crews, and associated engine noise could displace Loggerhead shrikes and Neotropical migratory songbirds during the occasional, and short periods that maintenance activities are being conducted along these segments of pipeline. The resulting disturbance would likely cause this species to take flight and move to other suitable habitat nearby. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on these species; however, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced. The continuing operation of the two pipeline segments within the analysis area would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds, for the long life of these pipelines which could be 20 years or longer.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on Loggerhead shrikes and Neotropical migratory songbirds on grassland habitat preferred by these species throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time, resulting in cumulative impacts, localized near developments within grasslands throughout the park, with short to long-term, negligible to minor, adverse impacts. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on the Loggerhead Shrikes and Neotropical Songbirds. Existing operation of 2 gas pipelines would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Loggerhead Shrikes and Neotropical Migratory Songbirds
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced, resulting in the short-term disturbance to grassland habitat preferred by Loggerhead shrikes and Neotropical migratory birds on up to 6.05 acres, and if completed to produce hydrocarbons, the long-term occupancy of 2.412 acres.

Existing impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible, adverse impacts associated with continuing operation of two gas pipelines.

Initial construction of the access road and well pad for the proposed Dunn-Peach #1 Well would directly impact up to 4.14 acres, resulting in the loss of grassland habitat preferred by these species for foraging and resting. If the well does not go into production, the entire 4.14 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds, until the site is reclaimed.

However, if the well is placed in production, the well pad would be reduced by 1.935 acres and a flowline installed to connect with the existing AEP pipeline located east of the proposed well. The imported crushed limestone or cement would be removed, the site re-contoured to natural conditions, and native vegetation re-established to meet 70% cover. Flowline construction would disturb an additional 1.7 acres of hummocky uplands, of which 0.024 acres are emergent wetlands. A temporary loss of grassland habitat would occur while the flowline is being buried, until the corridor is re-vegetated. Adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds from pad reclamation and flowline placement would be localized, minor, and short-term (lasting up to one year or more) during construction and re-vegetation activities. The continued use of the site for production operations would result in localized, long-term, minor, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on grassland habitat; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Construction of the access road / flowline, well pad, and production facility for the proposed Dunn-Peach #1 Well would directly impact up to 6.05 acres, resulting in the short- to long-term loss of grassland habitat and localized, negligible to minor, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds in the analysis area.

An indirect, localized, short-term, negligible beneficial impact may occur from the presence of shielded lighting on the drilling rig. This lighting would attract insects, which would provide a food source for the Loggerhead Shrike. In addition, the use of barbed wire around the wellpad could be utilized by this species for impaling prey. Finally, if the well goes into production, trees that would be planted for visual screening could result in localized, negligible, long-term beneficial impacts to Loggerhead Shrike and Neotropical migratory songbirds by providing perching and foraging habitat for these species.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on Loggerhead Shrikes and Neotropical migratory songbirds throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations resulting in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced, resulting in the short-term disturbance to grasslands habitat preferred by Loggerhead shrikes and Neotropical migratory songbirds on up to 6.05 acres, and the long-term occupancy of 2.412 acres. Constructing the access road / flowline route, wellpad, and production pad and

drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts. Drill rig lighting, barbed-wire fencing, and planting willow shrubs or trees around production facilities would perpetuate perching and foraging habitat for these species, resulting in localized, short to long-term, negligible, beneficial impacts on these species. Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands preferred by these species resulting in localized, short- to long-term, negligible, adverse impacts on the Loggerhead Shrikes and Neotropical migratory songbirds. No impairment to the Loggerhead Shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

3.10 Impacts on Visitor Use and Experience

Methodology
Visitor surveys and personal observations of visitation patterns combined with an assessment of what is available to visitors under current management were used to estimate the effects of the actions in the alternatives**.**

Negligible: the impact is barely detectable, and/or will affect few visitors.

Minor: the impact is slightly detectable, and/or will affect few visitors.

Moderate: the impact is readily apparent and/or will affect some visitors.

Major: the impact is severely adverse or exceptionally beneficial and/or will affect many visitors.

Affected Environment
The northern portion of the National Seashore is where most park development is located. Current park development includes a Visitor Center, Entrance Station, Park Headquarters and Maintenance facilities, Malaquite Campground, and Bird Island Basin.

Visitor use typically begins to increase in May and peaks in August, with the fewest visitors in December. Annual park visitation in 2002 was 495,963. There are no recent figures tracking use on park beaches, but information from Ditton and Gramann's (1987) publication, "A survey of Down-Island Visitors and Their Use Patterns at Padre Island National Seashore," indicated the following patterns:

1. Over one-half of visitors interviewed reported traveling no farther down-island than four miles past the end of the paved road (Park Road 22).
2. Seventy percent of beach users utilize the first five miles of south beach (denoted by "4-wheel drive only" sign) for their visit.
3. Almost 18% (349,868 visitors) travel south of Little Shell Beach, even though individual destinations south of Little Shell Beach do not display high visitation.
4. Visitation patterns are similar in July, August, and September.
5. More fishermen use areas south of Yarborough Pass (15 mile Marker) than beach users.

Extrapolating visitation figures from Ditton and Gramann's 1987 study, given little or no change in visitor use patterns, the park estimates approximately people recreate on the Gulf shoreline of South Beach each year. Of these users, only 18%, or 62,868 visitors, venture farther south

than Little Shell Beach. Little Shell Beach begins around Mile Marker Six and extends south to Mile Marker Nine, approximately.

These beach areas can be divided up into two-wheel drive accessible, four-wheel drive only recommended, and "closed" beach (no vehicle use). The Dunn-Peach #1 Well project area encompasses the first 6.9 miles of "South" beach, beginning at the end of the paved section of Park road 22 and terminating at an existing gated caliche road through the dunes at the 6.9 miles. Most camping and a large portion of beach day use occur on the first five miles of "South" beach. South of the 5 mile marker, at the four-wheel drive only sign, the number of visitors heading south towards Mansfield Channel decreases considerably.

Statistics show that about 25% of annual visitors utilize Bird Island Basin to camp and provide access to the Laguna Madre for their recreational opportunities. Some of these visitors will also use the Gulf for day use activities. The Gulf shoreline is used for recreational opportunities like surf fishing, swimming, shell collection, sunbathing, camping, and vehicle access to more remote areas of the beach (60+ miles). Padre Island National Seashore estimates that up to 50% of beach users arrive in two-wheel drive vehicles and concentrate their use on the Gulf shoreline at "North beach," the Malaquite Visitor Center (using "closed" beach), and the first five miles of "South beach." Eighteen percent (62,868 visitors) take the opportunity to access remote beach areas south of the 5 mile marker, like Yarborough Pass and the Port Mansfield Channel, that are accessible (recommended) only to four-wheel drive vehicles.

Use of the backcountry, behind the dune line and across the island to the Laguna Madre, are of more limited interest in part because of the lack of access, and Padre Island National Seashore regulations and restrictions regarding the use of the dunes and wind tidal mud flats, etc., found in the center of the island.

Impacts on the visitor from the BNP project are expected to be from viewing the increased truck traffic, and being subjected to the noise generated by the larger trucks used for hauling drilling and production equipment, etc. to and from the site (see Tables 3, 4, and 5 for additional mitigation measuresand operating stipulations).

Impacts of Alternative A, No Action, on Visitor Use and Experience
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on visitor use and experience. However, impacts on visitor use and experience in the analysis area would continue as the result of vehicle use along the 6.5 mile segment of Gulf beach by park staff, visitors, and 13 nonfederal oil and gas operators.

Park staff, 13 oil and gas operators, and an estimated 62,868 (18% of those using the Gulf beach) park visitors use the 6.9 mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5 mile marker. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. Some drivers could drive over the speed limit, or honk their horns and play their radios very loudly. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach where most visitor use occurs. An estimated 349,269 visitors annually use the Gulf beach. Vehicle traffic associated with oil and gas operations normally uses four-wheel drive trucks, however, a large vehicle like a pumper-

truck, would travel the beach corridor approximately every 10 days or so to access 13 existing oil and gas operations located throughout the park in order to perform routine maintenance.

The existing operation of the two pipelines located to the east of the proposed wellsite would continue. However, there should be no impact on visitor use and experience as these pipeline segments are sited 2,700 to 1,700 feet from the dune line in the backcountry where there is no vehicular access available. Company vehicles access onto the pipeline corridors either near the end of Park road 22 or from the Yarborough Pass road. If visitors were to hike from the Gulf beach over the foredunes to view the backcountry in the vicinity of these pipeline segments, there would be nothing to see because these pipeline segments are buried and the surface of the pipeline corridor is vegetated. In the rare event that pipeline maintenance activities are occurring at the same time that a visitor was looking towards the Laguna Madre, the pipeline maintenance activities occurring 2,700 to 1,700 feet away from the dune line would have little visual impact.

Existing uses, including vehicle access along the 6.9 mile segment of Gulf beach, would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on visitor use and experience throughout the park could result from the visual impact of human developments on the natural scenery associated with the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. Other park activities that could contribute to impacts include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use. Cumulative impacts could also result from conflicts between visitor uses and over-use of park resources and developments. Degradation of park resources and values could affect park visitors' perception of the park and their experience. Dredging and maintenance of the Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park and damage seagrass beds and fishery resources. Spills from oil and gas activities located in and adjacent to the park, including tanker traffic in the Gulf of Mexico, could cause widespread impacts and result in long-term clean-up and remediation, and areas that would be closed to visitors. Spills of hydrocarbons and other contaminating or hazardous substances could also pose serious health and safety concerns. Some oil and gas operations and park operations would introduce elevated noise and odors. With the application of mitigation measures detailed in the park's Oil and Gas Management Plan and Final Environmental Impact Statement (PAIS, 2000), and incorporated into operators' plans of operations, impacts would be avoided or minimized.

Cumulative impacts on visitor use and experience throughout the park are expected to be localized near developments or activities, with short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach #1 Well would not be drilled, resulting in no new impacts on visitor use and experience. Existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations,

and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts, but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Visitor Use and Experience
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 6.05 acres, and long-term occupancy by oil and gas developments on 2.412 acres.

Existing impacts on visitor use and experience within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach.

BNP would use the 6.9 mile segment of Gulf beach to access its proposed wellpad. BNP would be required to confine vehicle use above the "wet-line" and observe speed limits (see Tables 3, 4, 5, and 6 for mitigation measures and operating stipulations). As described above under No Action, vehicles could compact and rut beach sands; and poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. BNP vehicle access on the beach could result in deeper and wider rutting, possible conflicts with visitors sharing the beach driving corridor, and repeated exposure to trucks each day. If the well is productive, occasional gas vehicular traffic would traverse the Gulf beach to perform routine, periodic maintenance and removal of condensate from the well.

Construction of the access road / flowline route, well pad, and production facility could result in the short-term loss of natural scenery on up to 6.05 acres. If the well is not placed in production, the entire 4.14 acres for the well pad and access road would be reclaimed. If the well is placed in production, the well pad would be reduced by 1.935 acres and a flowline installed to connect with the existing AEP pipeline located east of the proposed well. Flowline placement would disturb 1.7 acres of hummocky uplands habitat, of which 0.024 acres are emergent wetlands. The natural visual scenery along the pipeline corridor would return when the surface is successfully reclaimed. Long-term occupancy by oil and gas developments on the well/production pad would be confined on 2.412 acres.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on visitor use and experience; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including selecting a proposed operations area located away from visitor use developments and recreational use areas, providing security and a three-strand barbed-wire fence during the drilling operations to prevent unauthorized entry into the operations area, fencing and gating the production operations, stationing a dozer or front-end loader on the Gulf beach to smooth out any rutting that occurs to facilitate continued visitor access along the beach, using a diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, using primary and secondary containment to prevent leaks and spills from being released into the environment, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat and minimize visual impacts to visitors, caravanning large vehicles along the Gulf beach and enforcing speed limits, restricting large vehicle access on the Gulf beach at night, and painting the production facility a neutral color to

blend with the surrounding environment, would result in avoiding or minimizing impacts on visitor use and experience.

BNP vehicle access on the Gulf beach; construction of the access road / flowline route, well pad, and production facility; and drilling and producing the well would result in the short-term loss of natural scenery on up to 6.05 acres, and long-term occupancy by oil and gas developments on 2.412 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on visitor use and experience throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach #1 Well would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 6.05 acres, and long-term occupancy by oil and gas developments on 2.412 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Constructing the access road / flowline route, well pad, production facility; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

4.0. CONSULTATION AND COORDINATION

A Notice of Availability for the Plan of Operations, EA, draft Floodplains Statement of Findings, and draft Wetlands Statement of Findings will be published in the *Federal Register* and the local *Corpus Christi Caller-Times* newspaper, announcing the availability of these documents for a 30-day review.

Following the 30-day public review period, NPS will consider written comments received. Additional mitigation measures resulting from the public involvement process may be applied by the NPS as conditions of approval of the Plan of Operations. Additional mitigation measures will be identified in the decision document. Copies of the decision document will be sent to those who comment on the Plan of Operations, EA, draft Floodplains Statement of Findings, and draft Wetlands Statement of Findings during the public review period, or request a copy.

4.1. Individuals and Agencies Consulted
Persons and agencies contacted for information, or that assisted in identifying important issues, developing alternatives, or analyzing impacts are listed below:

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Environmental Interests
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6.0. APPENDIX ONE

Federally Listed Endangered and Threatened Species

Gulf Coast Jaguarundi	(E)	*Herpailurus yagouaroundi cacomitli*
Ocelot	(E)	*Leopardus pardalis*
West Indian manatee (=Florida)	(E)	*Trichechus manatus*
Coues' rice rat	(SOC)	*Oryzomys couesi aquaticus*
Green sea turtle	(T)	*Chelonia mydas*
Loggerhead sea turtle	(T)	*Caretta caretta*
Hawksbill sea turtle	(E w/CH‡)	*Eretmochelys imbricata*
Kemp's Ridley sea turtle	(E)	*Lepidochelys kempii*
Leatherback sea turtle	(E w/CH‡)	*Dermochelys coriacea*
Black-spotted newt	(SOC)	*Notophthalmus meridionalis*
Rio Grande lesser siren	(SOC)	*Siren intermedia texana*
Texas horned lizard	(SOC)	*Phrynosoma cornutum*
American alligator	(TSA)	*Alligator mississipiensis*
Least Tern	(E ~)	*Sterna antillarum*
Whooping Crane	(E w/CH)	*Grus americana*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Piping Plover	(T w/CH)	*Charadrius melodus*
Loggerhead Shrike	(SOC)	*Lanius ludovicianus*
White-faced Ibis	(SOC)	*Plegadis chihi*
Brown Pelican	(E)	*Pelecanus occidentalis*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Audubon's Oriole	(SOC)	*Icterus graduacauda audubonii*
Cerulean Warbler	(SOC)	*Dendroica cerulea*
Ferruginous Hawk	(SOC)	*Buteo regalis*
Black Tern	(SOC)	*Chlidonias niger*
Reddish Egret	(SOC)	*Egretta rufescens*
Sennett's Hooded Oriole	(SOC)	*Icterus cucullatus sennetti*
Texas Botteri's Sparrow	(SOC)	*Aimophila botterii texana*
Texas Olive Sparrow	(SOC)	*Arremonops rufivirgatus rufivirgatus*
Tropical Parula	(SOC)	*Parula pitiayumi nigrilora*
Mountain Plover	(P/T)	*Charadrius montanus*
Brownsville Common Yellowthroat	(SOC)	*Geothlypis trichas insperata*
Bailey's ballmoss	(SOC)	*Tillandsia baileyi*
Roughseed sea-purslane	(SOC)	*Sesuvium trianthemoides*
South Texas ambrosia	(E)	*Ambrosia cheiranthifolia*
Black lace cactus	(E)	*Echinocereus reichenbachii* var. *albertii*
Slender rush-pea	(E)	*Hoffmannseggia tenella*
Welder machaeranthera	(SOC)	*Psilactis heterocarpa*
Texas Ayenia	(E)	*Ayenia limitaris*
Lilia de los llanos	(SOC)	*Echeandia chandleri*
Los Olmos tiger beetle	(SOC)	*Cicindela nevadica olmosa*
Maculated manfreda skipper	(SOC)	*Stalligsia maculosus*

State Listed Threatened and Endangered Species

Texas horned lizard	(T)	*Phrynosoma cornutum*
Indigo snake	(T)	*Drymobius corias*
Loggerhead sea turtle	(T)	*Caretta caretta*
Green sea turtle	(T)	*Chelonia mydas*

Atlantic hawksbill sea turtle	(E)	*Eretmochelys imbricata*
Kemp's ridley sea turtle	(E)	*Lepidochelys kempi*
Leatherback sea turtle	(E)	*Dermochelys coriacea*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Southwestern Willow Flycatcher	(E)	*Empidonax trailii extimus*
Eastern Brown Pelican	(E)	*Pelecanus occidentalis*
Piping Plover	(T)	*Charadrius melodus*
Reddish Egret	(T)	*Egretta rufescens*
White-Faced Ibis	(T)	*Plegadis chihi*
Wood Stork	(T)	*Mycteria Americana*
Swallow-Tailed Kite	(T)	*Elannoides forticatus*
White-Tailed Hawk	(T)	*Buteo albonotatus*
Peregrine Falcon	(E)	*Falco femoralis septentrionalis*
Least Tern	(E)	*Sterna antillarum athalassos*
Black-Capped Vireo	(E)	*Vireo atricapillus*
Tropical Parula	(E)	*Parula ptiayumi nigrilora*

Fishes
No listed species documented at this times within Padre Island National Seashore.

Marine Mammals
All marine mammals, excluding the West Indian Manatee, only occur in the Padre Island National Seashore when stranded due to illness or death.

Index
Statewide or areawide migrants are not included by county, except where they breed or occur in concentrations. The whooping crane is an exception; an attempt is made to include all confirmed sightings on this list.

E	=	Species in danger of extinction throughout all or a significant portion of its range.
T	=	Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
C	=	Species for which the Service has on file enough substantial information to warrant listing as threatened or endangered.
CH	=	Critical Habitat (in Texas unless annotated ‡)
P/E	=	Species proposed to be listed as endangered.
P/T	=	Species proposed to be listed as threatened.
TSA	=	Threatened due to similarity of appearance.
SOC	=	Species for which there is some information showing evidence of vulnerability, but not enough data to support listing at this time.
‡	=	CH designated (or proposed) outside Texas
~	**=**	**Protection restricted to populations found in the "interior" of the United States. In Texas, the least tern receives full protection, except within 50 miles (80 km) of the Gulf Coast.**

7.0. APPENDIX TWO

Statement of Findings for Floodplains
“Executive Order 11988, “Floodplains Management”

Statement of Findings for Wetlands
“Executive Order 11990, “Protection of Wetlands”

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STATEMENT OF FINDINGS FOR FLOODPLAINS

Introduction

Proposed Action:
BNP Petroleum Corporation plans to drill the Dunn-Peach #1 Well from a location within Padre Island National Seashore (PAIS) (Figure 1). The surface location is 153.66 feet from the north line and 425.5 feet from the east line (Boyles Meander Line) of the Nicholas and Juan Jose Balli Survey, Abstract-10, Kleberg County, Texas. This drill site is approximately 6.9 miles south of the end of Park Road 22 and 6,400 feet west of the Gulf of Mexico (Figure 2).

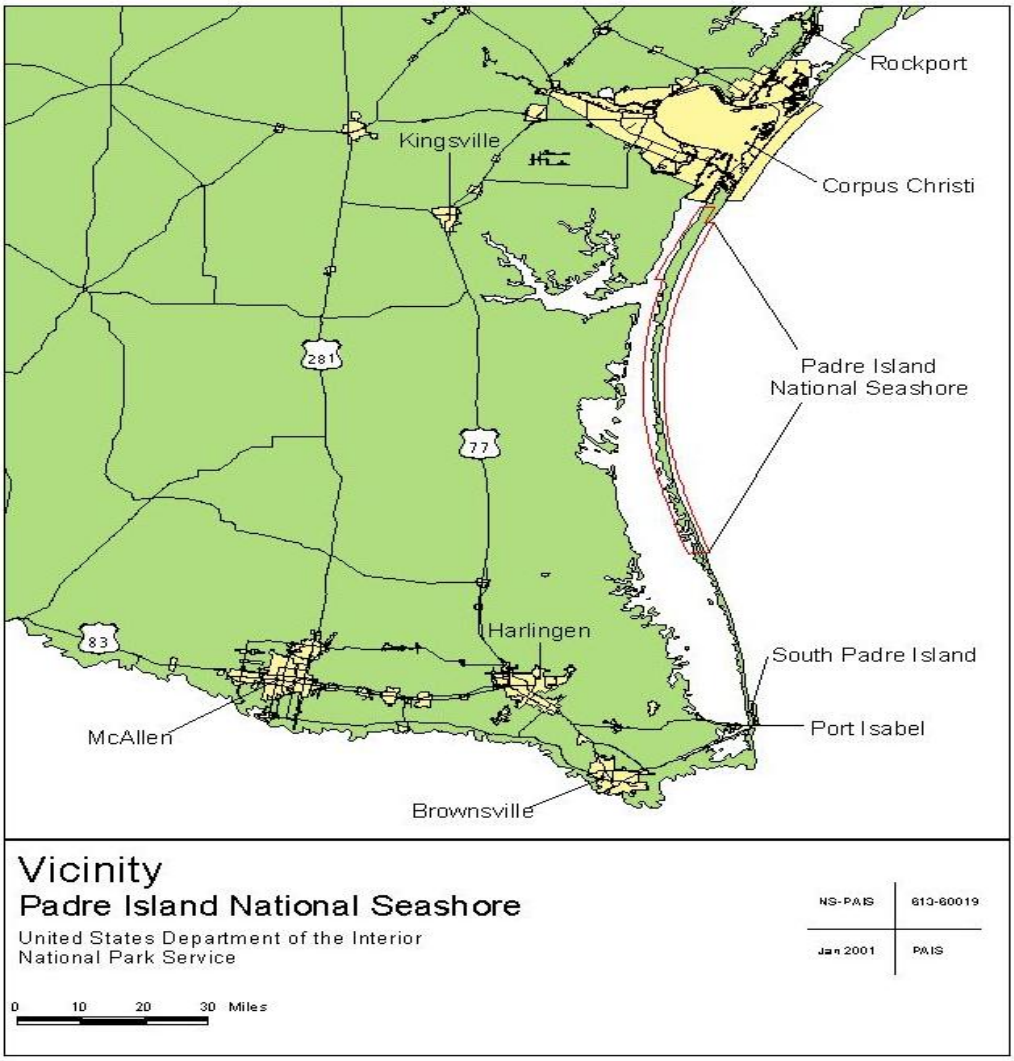


Figure 1. Vicinity

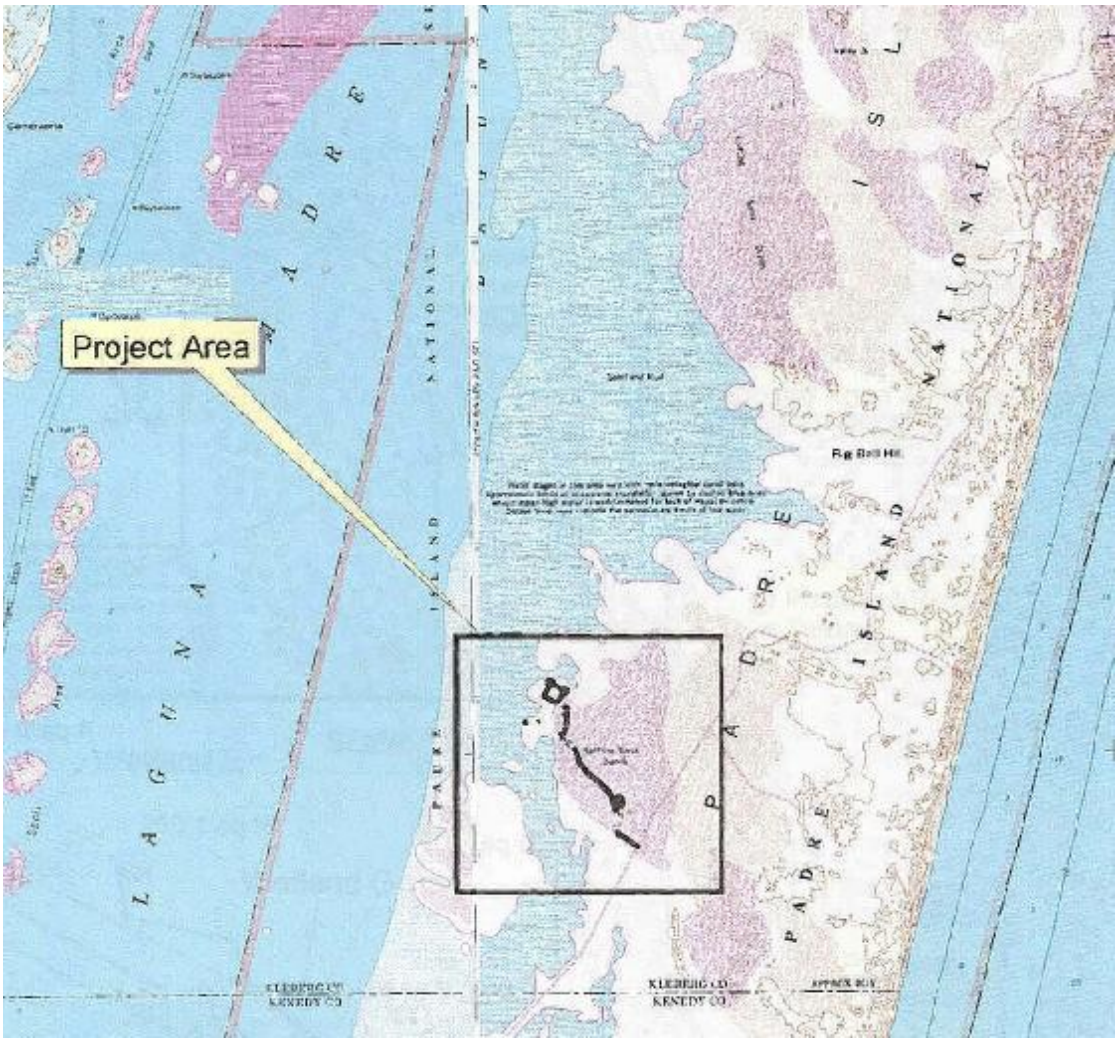


Figure 2. General location of the proposed Dunn-Peach # 1 Well in relation to Padre Island National Seashore, the Kleberg–Kenedy county line is approximately the 10-mile marker.

Operator's mineral tract and the area of operations include proposed new surface disturbance associated with the operations, such as an access road / flowline, well pad, production facility, and any other planned surface use. Proposed is a 99,225 square-foot (2. 28 acres) well pad. The Dunn-Peach #1 Well is a directional well with a proposed true vertical depth (tvd) of 9,500 feet and a measured depth (md) of approximately 10,500 feet.

The proposed access road / flowline route would result in the filling and leveling of 3,700 linear feet x 40 feet or a total of 148,000 square feet, including 145,909 square feet of hummocky uplands and approximately 2,091 square feet of emergent wetlands. The construction of the road portion will result in a total of 74,000 square feet (0.024 square feet of impacted wetlands). In addition, there will be two truck turn-outs totaling 6,950 square feet. Conventional road and foundation construction techniques, described in the Environmental Assessment, would be used to construct the access road. The total acreage of park resources impacted during construction of the access road / flowline route includes 0.048 acres of wetlands and 3.35 acres of uplands (Figure 3). The accompanying Statement of Findings for Wetlands will address this issue in detail.

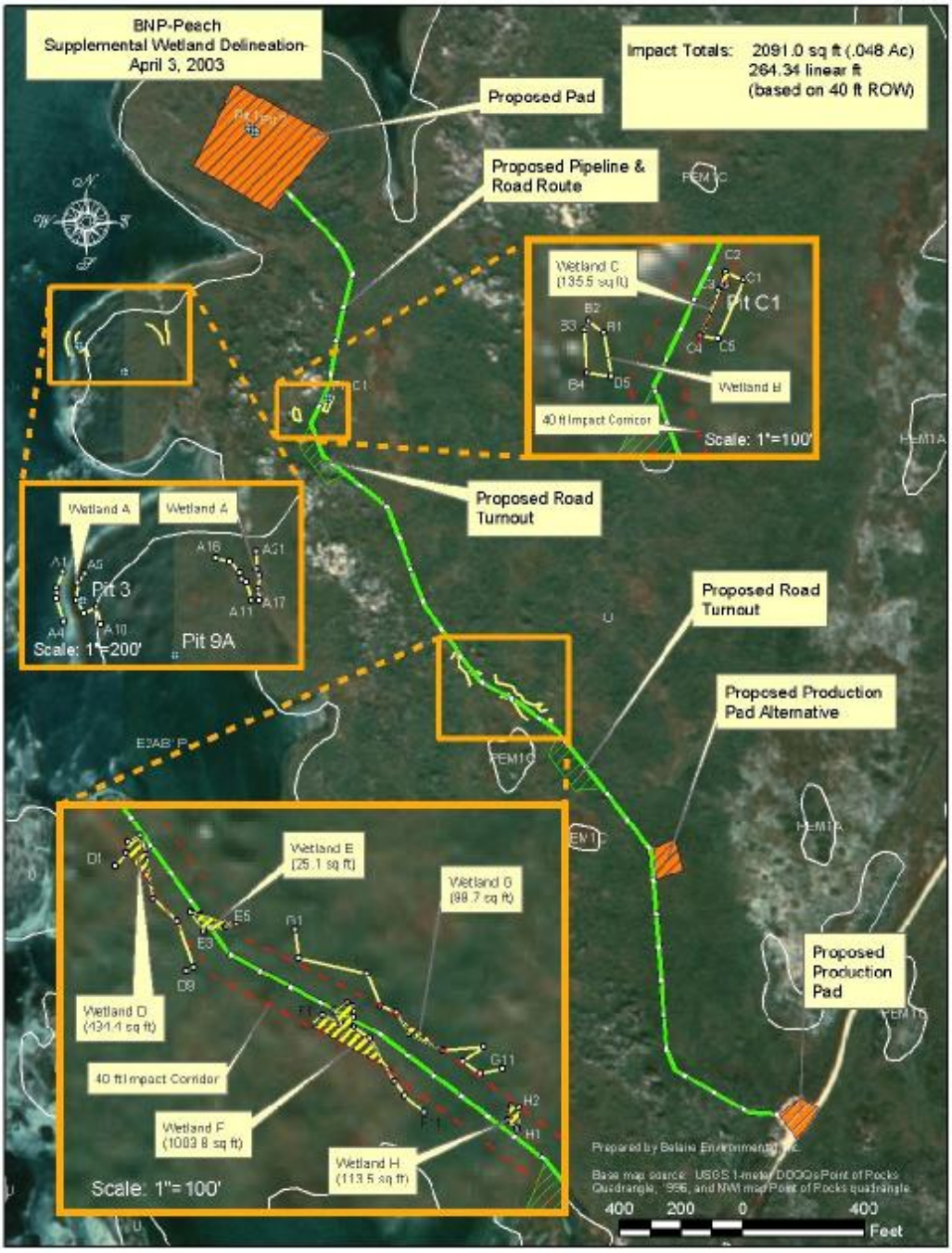


Figure 3. Wetlands with proposed area of Dunn-Peach # 1 Well disturbance.

All equipment, machinery, and living quarters would be placed on the 136,603 square foot pad area. Should the well be productive, the pad area would be reduced to a polygon approximately 100 feet x 150 feet (15,000 square feet) and 67,303 square feet of the original 136,603 square feet would be reclaimed to its original condition (Figure 4).

Figure 4. Location of proposed well pad, access road, turn outs, and production facility for the Dunn-Peach #1 Well.

Pipeline:
Should the well be productive, BNP plans to tie into the existing AEP pipeline that lies approximately 50 feet west-northwest of the existing Vector facility and adjacent to the preferred production facility alternative. The construction of BNP's proposed flowline route would briefly impact approximately 3,700 linear feet of hummocky uplands to access the AEP pipeline, including impacts to 0.024 acres of wetland. (Figures 3 & 4).

The size of new line, which ranges from a minimum of three (3) to a maximum of (10) inches, is contingent on the production rates obtained during the testing phase of the well. A ditch of approximately 24 inches wide and 42 inches deep would be dug from the wellpad to the AEP pipeline tie-in point. The access road / flowline routes are combined. The 20 foot wide access road will be within the 40 foot wide pipeline construction corridor to reduce impacts. The procedure used to tie-in the pipeline is a "hot tap". This method allows pipelines that are in service to be connected without the contents being released. A 15 foot by 15 foot (225 square foot) excavation will be required to make the tie-in. Any ground water that seeps into the excavation would be pumped out using PVC well points and diaphragm pumps. The liquids would be diverted and filtered through a silt screen and hay bales before being released onto the surrounding area. Any contaminated liquids or soils would be removed and hauled to a State-approved disposal site.

Site Description:
Padre Island National Seashore (PAIS) is located on a largely undeveloped barrier island in southern Texas, on the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore-island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre and the back-island dunes and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made spoil islands in the Laguna also lie within the National Seashore.

Nature of Flooding in the Area:

Hurricanes, tropical storms, or other storm events that bring high winds or substantial rainfall may result in periodic flooding, due to the low elevations.

Justification for Use of the Floodplain:

Established by Congress on September 28, 1962, private owners retained all mineral interests underlying the park. Two sections of the park's enabling legislation provide guidance regarding the management of nonfederal oil and gas. Under Section 4(a) of the park's enabling legislation and the NPS Organic Act (16U.S.C. §3), Congress authorized the Secretary of the Interior to promulgate the NPS Non-federal Oil and Gas Rights Regulations,
36 CFR 9B.

There is no practical alternative to locating the proposed access road, well/production pad, and pipeline within the 100-year floodplain because the entire park, with the exception of the fore dunes, is located within floodplains. The formal designation of the floodplain status of Padre Island National Seashore was initially conducted by the Federal Emergency Management Agency's National Flood Insurance Program on August 17, 1971, and revised on March 1, 1984.

Site-Specific Flood Risk:

The greatest percentage of hurricanes occurs in August, September, and October. The number of tropical storms occurring during a season may vary from 4 to 12. The average for the past 40 years has been 10 storms per year within the Gulf of Mexico. The Corpus Christi area has had significant effects from only a small percentage of hurricanes, averaging 1 storm event every 15 years.

Under normal weather patterns, any flooding of the back island area or the beach face is of short duration. Water is pushed up by the winds associated with the frontal passage and generally recedes during the subsequent tide cycles.
Padre Island N. S. utilizes a three stage alert system when a tropical storm is in the Gulf of Mexico.

- GREEN ALERT will be set when a weather system is developing a circular pattern with winds above 39 miles per hour within 700 miles or 48 hours of PAIS and appears to be heading for the coastal bend area. Visitors are advised a storm is in the Gulf of Mexico.

YELLOW ALERT will be set anytime a storm building up to hurricane force moves to within 500 miles or 36 hours of PAIS. Visitors are evacuated.

- RED ALERT will be set anytime a storm is expected to reach hurricane force within 300 miles or 24 hours of PAIS. A Red Alert will be set when the National Weather Service establishes a Hurricane Warning. The park will be closed, gates locked, and employees and visitors evacuated.

Should a storm suddenly develop in the western Gulf area, or if an approaching storm suddenly increases its forward speed, any or all of the alerts may be bypassed and the park would immediately come under red alert. Time remaining before the tidal rise covers the John F. Kennedy Causeway will be the primary factor determining what preparations are completed before evacuation of PAIS.

The possibility of severe or significant storm events has been taken into consideration during the planning of this project. Hurricane preparedness and evacuation plans are appendices to the BNP Plan of Operations.

Project Contingencies:

Project impacts would be reduced by locating the proposed operations on hummocky uplands and by applying mitigation and restoration measures, such as installing culverts along the access roads where needed, collecting sewage and hauling it offsite for disposal, and constructing a berm around the drilling equipment area on the well pad and the production facility. This berm will provide primary and secondary spill containment to prevent the release of any leaked or spilled hydrocarbons, or hazardous substances off the operations pad into the environment. As a result of applying these and other mitigation and restoration measures, construction, drilling, and production operations would result in localized, short- to long-term, minor adverse impacts on water resources and floodplains.

BNP has developed a hurricane plan in conjunction with the PAIS hurricane plan. Their plan addresses: shutting in, securing the well and equipment, and evacuating personnel.

Summary:

The National Park Service concludes that there is no practical alternative for the placement of BNP's proposed construction, maintenance, drilling, and production of the wells. The proposed action would result in localized, short to long-term, minor adverse impacts on water resources and floodplains. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11988: "Floodplain Management."

Preparer: Arlene Wimer, Environmental Protection Specialist; National Park Service; Padre Island National Seashore; P. O. Box 181300, Corpus Christi, Texas 78480-1300. Telephone (361) 949-8173 x 224.

STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11990
(PROTECTION OF WETLANDS)

BNP PETROLEUM CORPORATION
DUNN-PEACH # 1 WELL
PADRE ISLAND NATIONAL SEASHORE, TEXAS

INTRODUCTION

Padre Island National Seashore (PAIS) was established by Congress on September 28, 1962 (16 U.S.C. §459d, *et seq.*), "In order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped…". Padre Island National Seashore preserves the longest undeveloped barrier island in the United States (Figure 1). It encompasses 6.9 miles of the 113-mile-long barrier island. More than 60% of the park consists of wetlands comprising marshes, inland waters, wind-tidal flats, and seagrass beds.

At the time of the park's establishment, surface ownership was held by the State of Texas or by private landowners. In 1973, the surface estate owned by the State of Texas was conveyed to the U.S. Government, while those surface rights held by private landowners were acquired by the federal government through condemnation. All subsurface mineral interests underlying the park were retained by private owners. Those underlying the submerged lands under the Laguna Madre and Gulf of Mexico were retained by the State of Texas and are administered by the General Land Office. Thus, the federal government does not own any of the subsurface oil and gas rights in the park. However, Congress directed in the park's enabling act that nonfederal oil and gas development be regulated.

The drill pad and production facility for the Dunn-Peach # 1 Well will not impact wetlands. However, the access road / flowline route will impact wetlands at several locations. This Statement of Findings will address this impact, alternatives considered, functions of the impacted wetland, and avoidance and minimization measures.

Figure 1. Region/Vicinity map

PURPOSE AND NEED FOR ACTION

According to the Environmental Assessment, there are 3 objectives for this project:

- Provide BNP Petroleum Corporation, as holder of nonfederal oil and gas mineral interests, reasonable access for exploration and development.

- Avoid or minimize impacts on park resources and values, visitor use and experience, and human health and safety.
- Prevent impairment of park resources and values.

The drill site is approximately 6.9 miles south along the Gulf beach, from the end of Park Road 22, and 6,400 feet west of the Gulf of Mexico (Figures 2). The access road / flowline route extends from the existing Vector Energy A-4 site to the west-northwest approximately 3,700 feet to the well pad. The wetlands impacted are located within a section of access road / flowline approximately 1,500 feet to 1,900 feet west of the Vector Energy A-4 site (Figures 3).

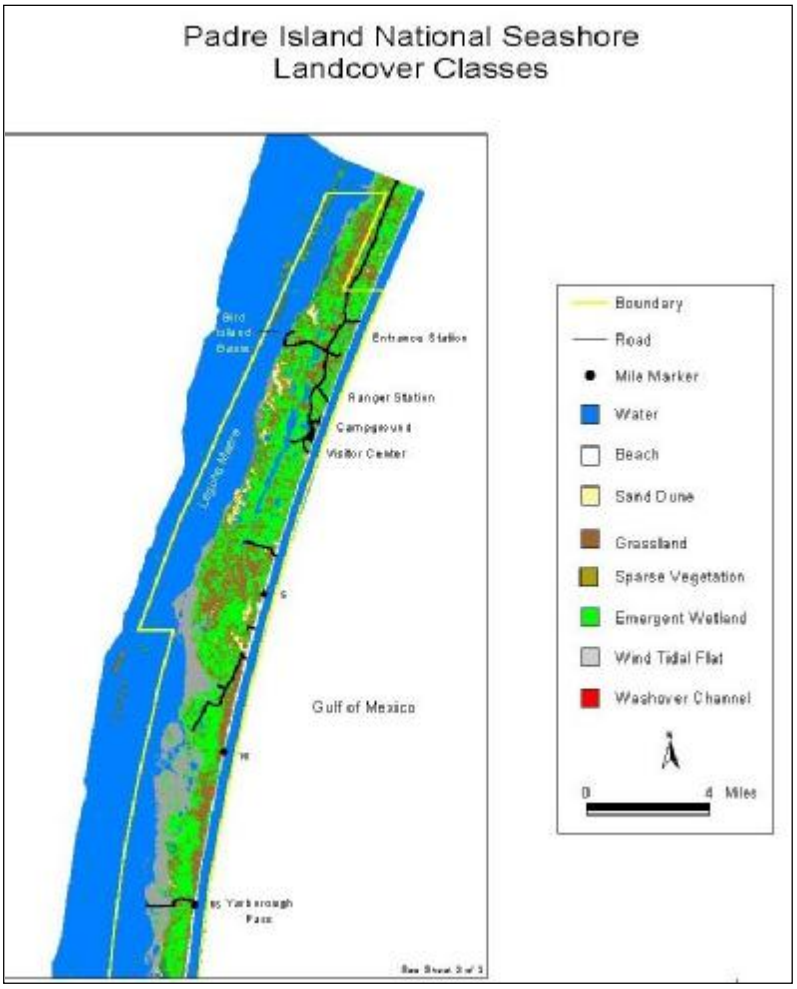


Figure 2. General Location of Project within PAIS

ALTERNATIVES:

<u>Considered but Dismissed:</u>
Three access road / flowline route alternatives were considered but dismissed from further analysis. Route one would have impacted approximately 900 linear feet (18,000 sq. feet) of non-tidal wetlands and 100 linear feet (2,000 sq feet) of tidal wetlands while reducing the total road length by 300 feet.

The second route would require the construction of approximately 8,500 linear feet of road and would directly impact existing fore dunes and barrier dunes adjacent to the Gulf beach. This alternative could also potentially impact up to 900 linear feet (18,000 sq. ft.) of nontidal wetlands, up to 100 linear feet (2,000 sq. ft.) of tidal wetlands, and approximately 7,500 linear feet (150,000 sq. ft.) of hummocky grasslands. This alternative would also increase construction cost and time. This alternative would also impact the Blackhill cultural site, which has a 1,500 foot buffer around it. This dune pass would travel through the buffer.

A third alternative access route that might be possible, but was not considered because of its enormous potential for environmental impacts as well as it enormous cost and time restraints would be to move the drilling rig to the park via the Laguna Madre. This alternative would impact 13,000 linear feet of open bay bottom and 1,600 linear feet of seagrasses outside the park. Dredging within the park would impact 2,700 linear feet of unvegetated tidal san flat and 2,100 linear feet of tidal algal flat. Due to potential environmental impacts, costs, and the inevitable permitting difficulties for such a project, BNP rejected this access alternative.

Figure 3. Proposed Dunn-Peach # 1 Well project

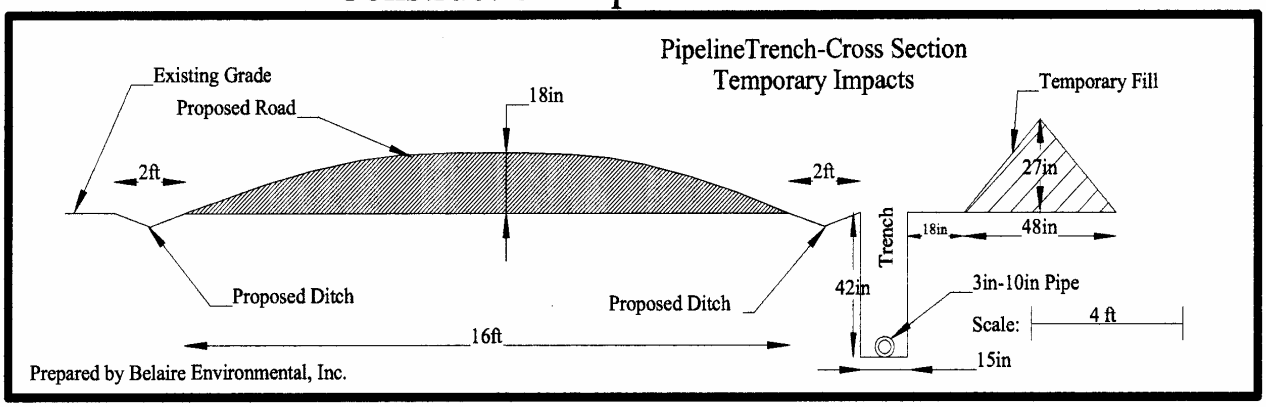
Alternatives Evaluated:

Two alternatives were evaluated for this project. Under the first alternative, no action, the well would not be drilled and the pipeline would not be installed. There would be no adverse impacts to wetlands and this would be the environmentally preferred alternative. This alternative was not selected as the proposed action since the enabling legislation of PAIS honors existing nonfederal oil and gas rights.

The second alternative, the proposed action, is the BNP Petroleum Corporation proposal. Under this alternative, the proposed access road / flowline route would result in the filling and leveling of 3,700 linear feet x 40 feet or a total of 148,000 square feet, including 145,909 square feet of hummocky uplands and approximately 2,091 square feet of emergent wetlands. In addition there will be two truck turn outs totaling 6,950 square feet. Conventional road and foundation construction techniques would be used to construct the access road. The total acreage of park resources impacted during construction of the access road / flowline route includes 0.048 acres of wetlands and 3.35 acres of uplands. (Figure 4).

The area would be excavated, with material temporarily sidecast. The pipeline would then be laid in the trench and the sidecast material redeposited. The disturbed area would be restored to pre-construction contours and revegetated. Top soil and vegetation would be reserved on-site and replaced after the pipe was laid.

Pipeline and Access Road
Construction Impacts Cross Sections



WETLAND DESCRIPTION

A supplemental wetland delineation was done on April 3, 2003 by Belaire Environmental, Inc. and verified by the Corps of Engineers during a site visit the same day. The Corps' verification letter noted that the area between Pan-Am Road (the existing road) and the proposed access road / flowline route to the Dunn-Peach # 1 Well site does contain jurisdictional areas subject to Section 404 of the Clean Water Act and the placement of fill in this area will require a Department of Army permit.

Based on the wetland delineation done by John Wong of the Corps of Engineers and BEI, approximately 0.048 acres of jurisdictional wetlands would be impacted by the construction of the access road / flowline route within the same corridor. Nationwide Permit (NWP) 12 authorizes the construction of utility lines where construction does not cause greater that 0.5 acres loss of waters of the U.S. and the utility line does not exceed two feet in waters of the U.S. NWP 14 authorizes the construction of linear transportation projects provided that discharge does not cause the loss of greater than 0.5 acres of water of the U.S. Based on the evaluation, this project appears to be authorized under NWP's 12 and 14.

Nationwide Permit 14 requires that the notification include compensatory mitigation. Proposed mitigation will be culverting the access road / flowline route. The size, number and exact placement is to be determined by a profession hydrologist. The objective is not only to keep the hydrology of the area intact, but to improve it where possible by the placement of culverts.

The wetland is classified as PEM1C; palustrine (P), emergent (EM), persistent (1), seasonally flooded (C). The wetland is not identified on the US Fish and Wildlife Service's National Wetland Inventory map (NWI).

Plant species present in the wetland include *Spartina patens* (FACW), *Scirpus americanus* (OBL), *Paspalum monostachyum* (FACW+), and *Hydrocotyle bonariensis* (FACW).

According to USDA-Natural Resources Conservation Service's recent soil survey, soils within the area of impact are predominantly of the Panam-Madre Complex (891). This series consists of very deep, somewhat poorly drained, rapidly permeable soils that formed in sandy, eolian and storm wash-over sediments on barrier islands. These are nearly level or very gently

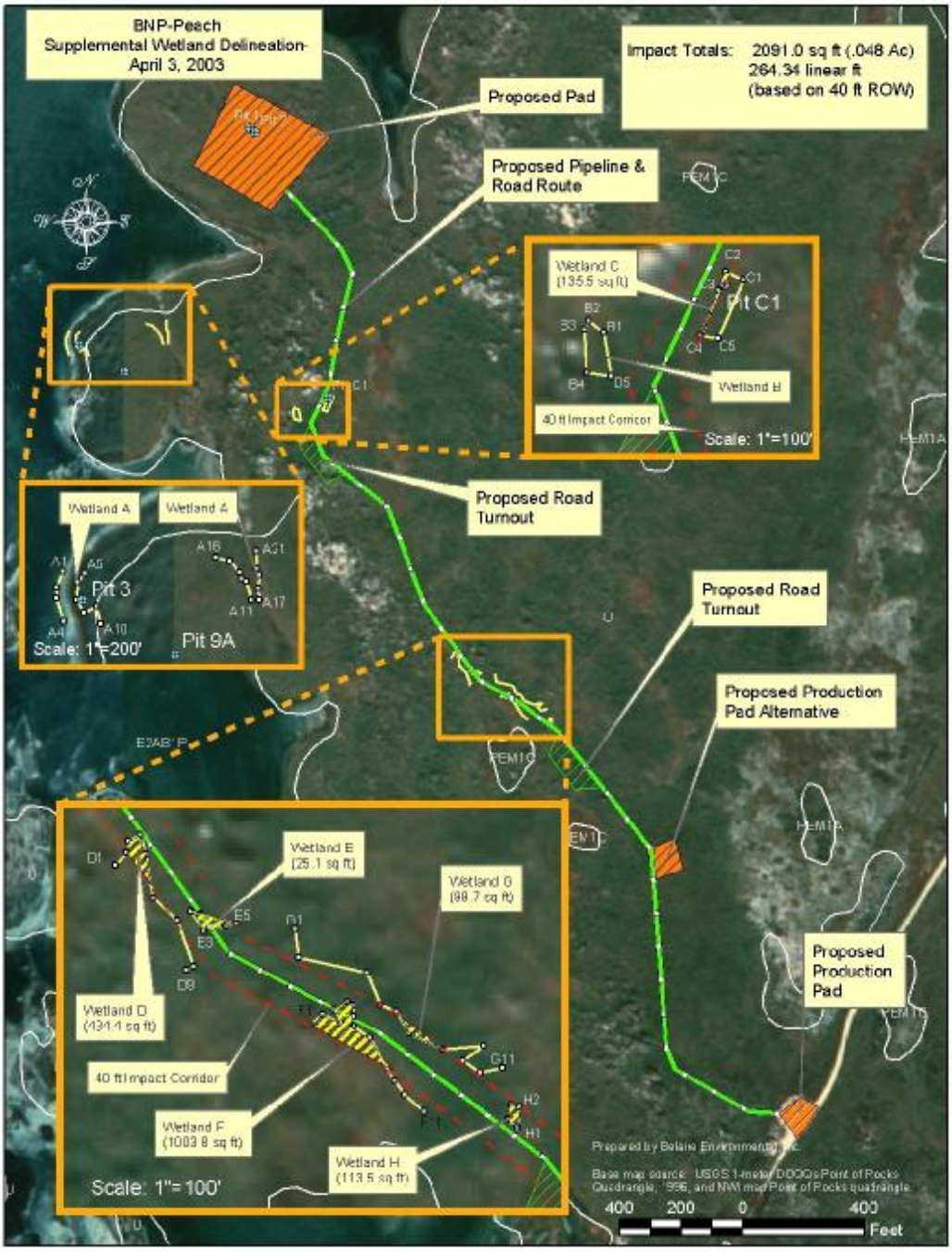


Figure 4. Impacted wetlands within the proposed Dunn-Peach # 1 Well construction area. Depicts location of access road, pad/production site, proposed pipeline, and wetland area.

sloping soils and are subject to flooding by strong tropical storms Also the Madre series (282) same description These soils are subject to occasional flooding by strong tropical storms and are ponded after periods of heavy rainfall.

Figure 5. USDA-NRCS soils map for project area.

According to the park's Oil and Gas Management Plan, one of the reasons emergent wetlands are significant is that they provide important habitat for the varied wildlife resources of the park. Wildlife that could use the wetland include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Felis rufus*), skunk (*Mephitis mephitis*), badger (*Taxidea taxus beriandieri*), raccoon (*Procyon lotor*), jackrabbit (*Lepus californicus merriami*), bobwhite quail (*Colinus virginianus*), dove (*Zenaida macroura*), meadowlark (*Sturnella magna*), northern harrier (*Circus cyaneus*), peregrine falcon (*Falco peregrinus*), American egret (*Casmerodius albus*), great blue heron (*Ardea herodias*), ducks, geese, and shorebirds. Reptiles and amphibians that could use the wetland include: northern leopard frog (*Rana pipiens*), Hunter's spadefoot toad (*Scaphiopus holbrookii*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvis*), checkered garter snake (*Thamnophis marcianus*), red-eared turtle (*Trachemys scripta*), and yellow mud turtle (*Kinosternon flavescens*).

Federal and/or state listed species that could use the wetland include: reddish egret (*Egretta rufescens*), white-tailed hawk (*Buteo albicaudatus*), ferruginous hawk (*Glaucidium brasilianum*), and white-faced ibis (*Plegadis chichi*). The Fish and Wildlife Service determined during a site visit that the proposed project would have no effect on federally listed threatened and endangered species or their critical habitat because of the limited size and ephemeral nature of the wetland.

The wetlands are adjacent to or lie in depressions among hummocks. Hydrology is derived from runoff, precipitation, and a seasonally high water table. The wetland serves to collect runoff water and eroded sediment, recharge the water table, as a surface expression for a high water table (i.e., ground water), and to store flood waters.

It is doubtful that this small wetland is used by tourists/recreationists, although it could be used by bird watchers. A cultural resource survey was conducted and no archeological resources were found. The wetland is not currently being used for research purposes.

WETLAND AVOIDANCE, MINIMIZATION, MITIGATION

The project proposes to impact 0.048 acres of wetland. Measures have been taken to avoid wetlands to the maximum extent practicable and to minimize impacts to wetlands that could not be avoided. Flowline would be a temporary impact; the access road would be a barrier for its duration, thus the need for mitigation measures.

The current configuration of the pipeline was routed around several wetlands along the 3,700 foot length. The final route resulted in impacts to several wetlands that could not be avoided due to the fact that it is a continuous feature that runs perpendicular to the pipeline route.

Mitigation is being proposed to offset impacts from the access road / flowline. NPS Procedural Manual #77-1 does allow for compensation to be waived if adverse wetland impacts are less than 0.1 acre (Section 5.2.C.1.). However, NWP 14 requires compensatory mitigation. The Corps of Engineers and the NPS concur that culverting the proposed access road / flowline route would be an appropriate and beneficial mitigation.

- a professional hydrologist needs to determine the exact placement , size and number of the culverts to maintain hydrology
- culvert placement needs to be over and above the minimum to reduce loss of wetland functions, ultimate goal is to improve water exchange

On October 15, 2003, professional engineer Randy Thompson, Jeff Nelson (BEI) and Arlene Wimer (NPS) visited the Dunn-Peach site to identify locations along the proposed access road / flowline route that warranted culverting.

A total of 17 culvert sites were identified (Figure 6). Eight culverts were located specifically in wetland crossing areas in order to permit the continued circulation and exchange of water in these areas. Other culverts were placed in locations of natural drainage swales which will allow runoff to pass under the roadway fill. GPS coordinates were taken to allow exact placement during construction of the access road.

Drainage areas contributing to the peak runoff at the culverts are not of sufficient size to require large culverts. The predominant flow pattern is toward the northeast beginning in the dune ridge which parallels the access road on the southwest. According to Mr. Thompson, “peak runoff during a 25 year frequency rainfall should not exceed 5 cubic feet per minute at any individual culvert in order to avoid erosion.” Therefore he recommends that “all culverts be 18 inch in diameter which will allow for passage of peak flows without excessive erosive velocities and will also allow sufficient size to minimize clogging that can occur in smaller pipes.”

It is recommended that the 18 inch diameter culverts be constructed from reinforced concrete pipe, 36 feet in length and installed in accordance with the details in Figure 7. The pipe flow line should be placed 6 inches below existing grade in order to insure that shallow flow is unimpeded.

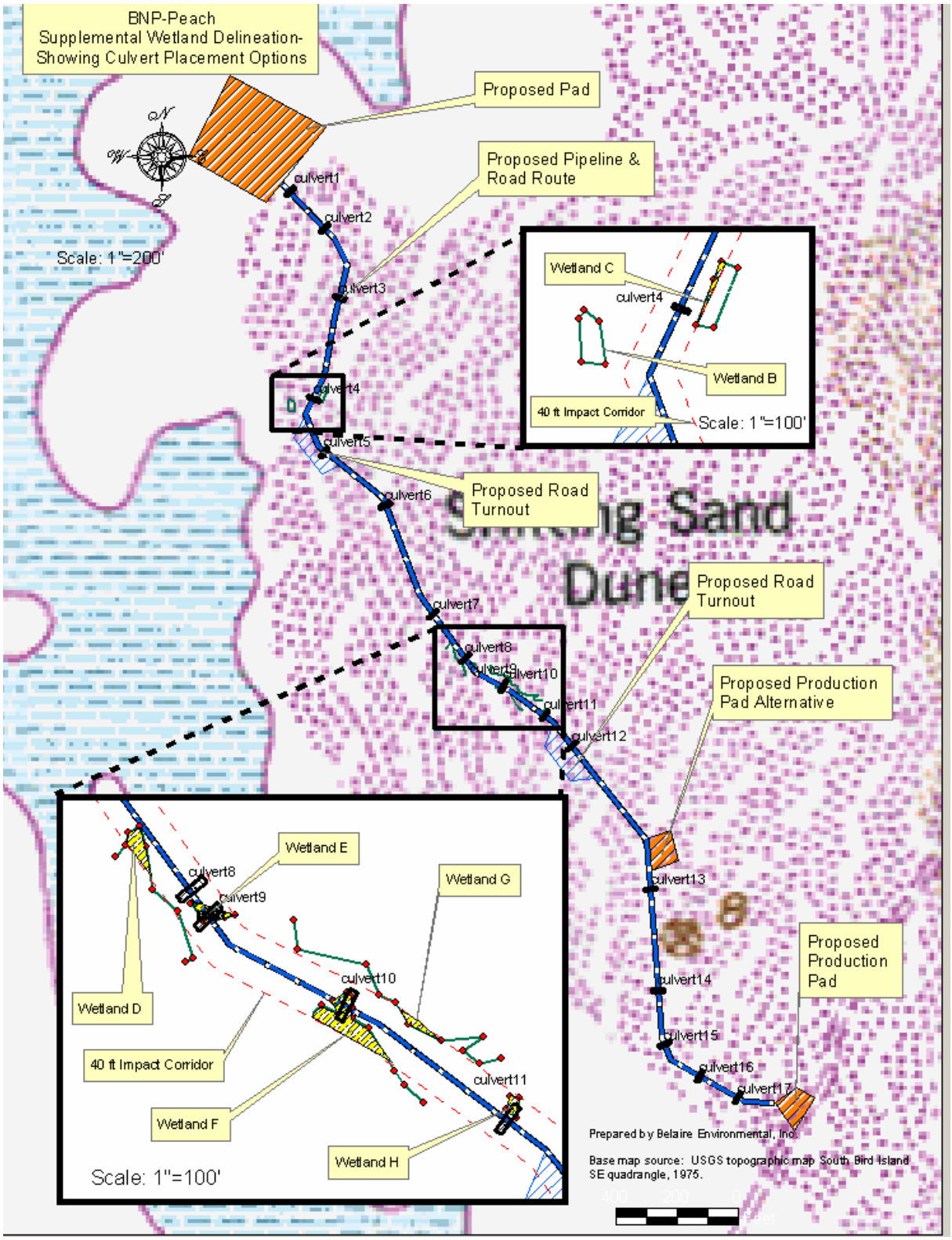


Figure 6. Proposed culvert locations.

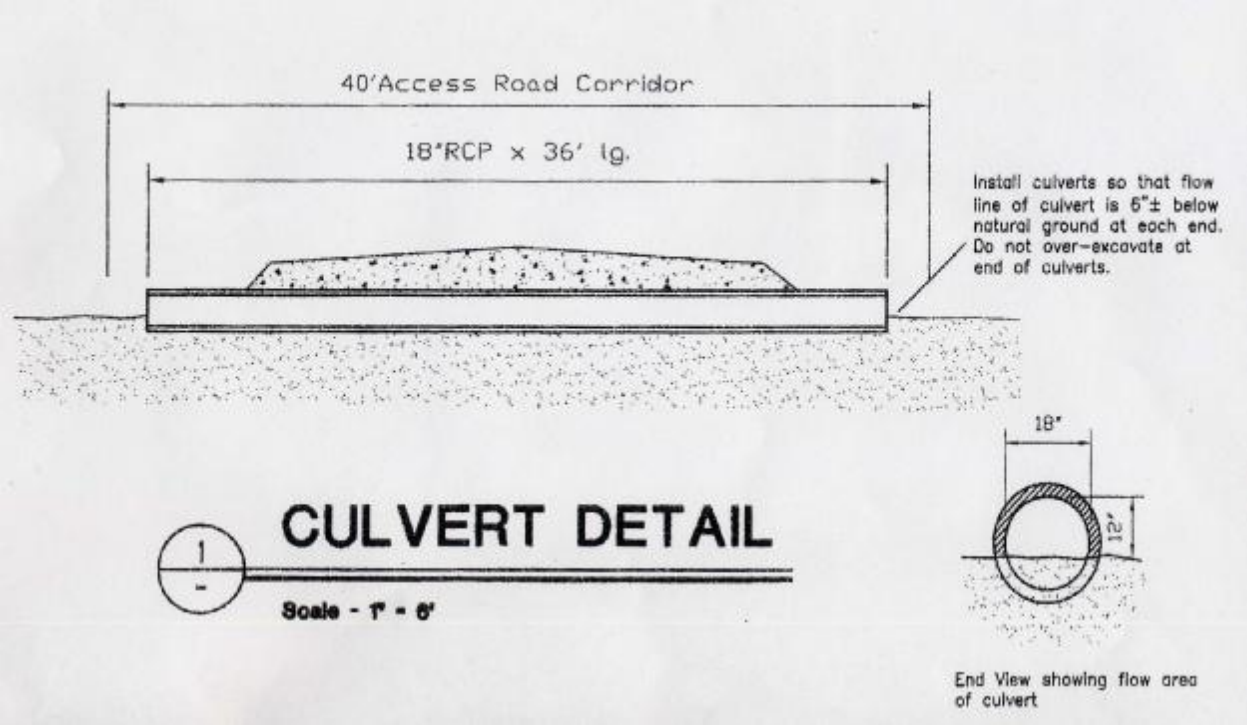


Figure 7. Culvert details as specified by engineer.

CONCLUSION

The National Park Service finds that there are no practicable alternatives to disturbing 0.048 acres of wetlands within Padre Island National Seashore for the Dunn-Peach # 1 Well natural gas well project. Wetlands have been avoided to the maximum practicable extent, and the wetland impacts that could not be avoided will be minimized. This project is consistent with the NPS no-net-loss of wetlands policy in that the flowline site will be restored to pre-disturbance contours and the native vegetation community restored when the trench is backfilled and revegetated. Construction of the access road presents a possible long-term barrier to hydrology of the area. The required mitigation of culverting the access road will maintain and improve the hydrology of the area. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11990: “Protection of Wetlands.”

Environmental Assessment

BNP Petroleum Corporation
Dunn-Peach # 2, 3, 4, 5, and 6 wells

Padre Island National Seashore
Corpus Christi, Texas

Produced by:

Padre Island National Seashore
P.O. Box 181300
Corpus Christi, Texas 784180-1300

November 2004

Environmental Assessment

BNP Petroleum Corporation
Dunn-Peach # 2, 3, 4, 5, & 6 Wells
Padre Island National Seashore, Texas

Summary

On September 7, 2004 BNP Petroleum Corporation (BNP) submitted an amendment to their previously approved Plan of Operations for the Dunn-Peach # 1 well to the National Park Service to drill and produce the Dunn-Peach # 2, 3, 4, 5, and 6 wells. The proposed wells would be drilled from the existing Dunn-Peach # 1 well surface location approximately 6.9 miles south of the end of Park Road 22. The wells would be directionally drilled to bottom-hole locations within Padre Island National Seashore.

This Environmental Assessment evaluates two alternatives for BNP to drill and produce the Dunn-Peach # 2, 3, 4, 5, and 6 wells. Alternative A evaluates baseline conditions under No Action. In this case, No Action means that BNP would not drill the wells. Under No Action, there would be no additional impacts on the affected environment. Due to mitigation measures, most notably directional drilling, there would be no impacts to seagrass beds or algal flats, trees, and cultural resources; and impacts on socioeconomics**,** air quality, geology and soils, water resources and floodplains, wetlands, vegetation, natural soundscapes, wildlife, state and federally protected species, and visitor use and experience would be localized and long-term, with adverse impacts ranging from negligible to moderate. Alternative B is the proposed action. Alternative A is the environmentally preferred alternative.

Public Comment

The Notice of Availability will be published in the *Federal Register* and *Corpus Christi Caller Times*. If you wish to comment on the Plan of Operations, Environmental Assessment, and draft Floodplains Statement of Findings, please mail comments to the name and address below. These documents will be available for public review for 30 days from the date of publication in the *Federal Register*. Please note that names and addresses of people who comment become part of the public record. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

Superintendent
Padre Island National Seashore
P.O. Box 181300
Corpus Christi, Texas 78480-1300

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1.0. PURPOSE AND NEED

This Environmental Assessment (EA) evaluates two alternatives for the National Park Service (NPS) to permit BNP Petroleum Corporation (BNP) to drill and produce the Dunn-Peach # 2, 3, 4, 5, and 6 wells within Padre Island National Seashore (the ark). The purpose of this analysis is to provide a decision-making framework for the NPS to approve the use of parklands for BNP to explore and develop its mineral rights, while protecting and preventing impairment to park resources and values, and allowing for a safe visitor experience; and to determine whether an Environmental Impact Statement (EIS) should be prepared.

When Congress authorized the establishment of the park on September 28, 1962 (16 U.S.C. §459d, *et seq.*), the U.S. Government acquired surface ownership within the area. Private entities or the State of Texas retained the subsurface mineral interests on these lands. Thus, the federal government does not own any of the subsurface oil and gas rights in the park, yet the NPS is required by its laws, policies, and regulations to protect the park from any actions, including gas operations, that may adversely impact or impair park resources and values. The park was created "in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped …." The park is located along the southeastern Texas coast and comprises 130,473 acres (Figure 1). As of 2004, there are 13 nonfederal gas operations occurring within the park.

On September 7, 2004, BNP submitted to the park an amendment to the approved Dunn-Peach # 1 Plan of Operations. The NPS reviewed and determined the amendment to the Plan of Operations to be substantially complete. BNP revised the Plan of Operations to include all NPS recommendations and the NPS accepted the Plan on September 29, 2004 for processing. The NPS must decide whether to approve the plan and if so, if additional mitigation measures are needed.

The analysis area for evaluating impacts in this EA includes:

- The direct area of impact would include the access road from the park entrance south approximately 10 miles via the paved Park Road 22 to its terminus on the beach, then approximately 6.9 miles south on the Gulf beach to a gated dune pass which connects to an existing shell/caliche road that extends approximately four miles to the Dunn-Peach # 1 well surface location. This site is approximately 6,400 feet west of the Gulf beach. The existing Dunn-Peach well pad footprint (2.28 acres) would be expanded by 1.24 acres in order to accommodate the proposed five wells. The production facility developed for Dunn-Peach # 1 would be utilized for the additional wells as well as the flowline corridor to connect to the AEP pipeline consisting of a 20 foot wide corridor, 3,700 feet long.
- The indirect area of impact for each park resource or value could vary for each impact topic; but generally would not extend 1,500 feet beyond the well and a 100-foot corridor around the access road and flowline corridor. NPS selected the 1500-foot offset from the well because noise generated during drilling may require up to 1,500 feet to attenuate to background levels.
- For State and Federally Protected Species, the analysis area for direct and indirect impacts is defined for each species in the Environmental Consequences section of this EA.
- The analysis area for evaluating cumulative impacts on park resources and values may extend beyond the boundaries of the park.

A map (Figure 3) can be found in Section 2, page 18, depicting the analysis area .

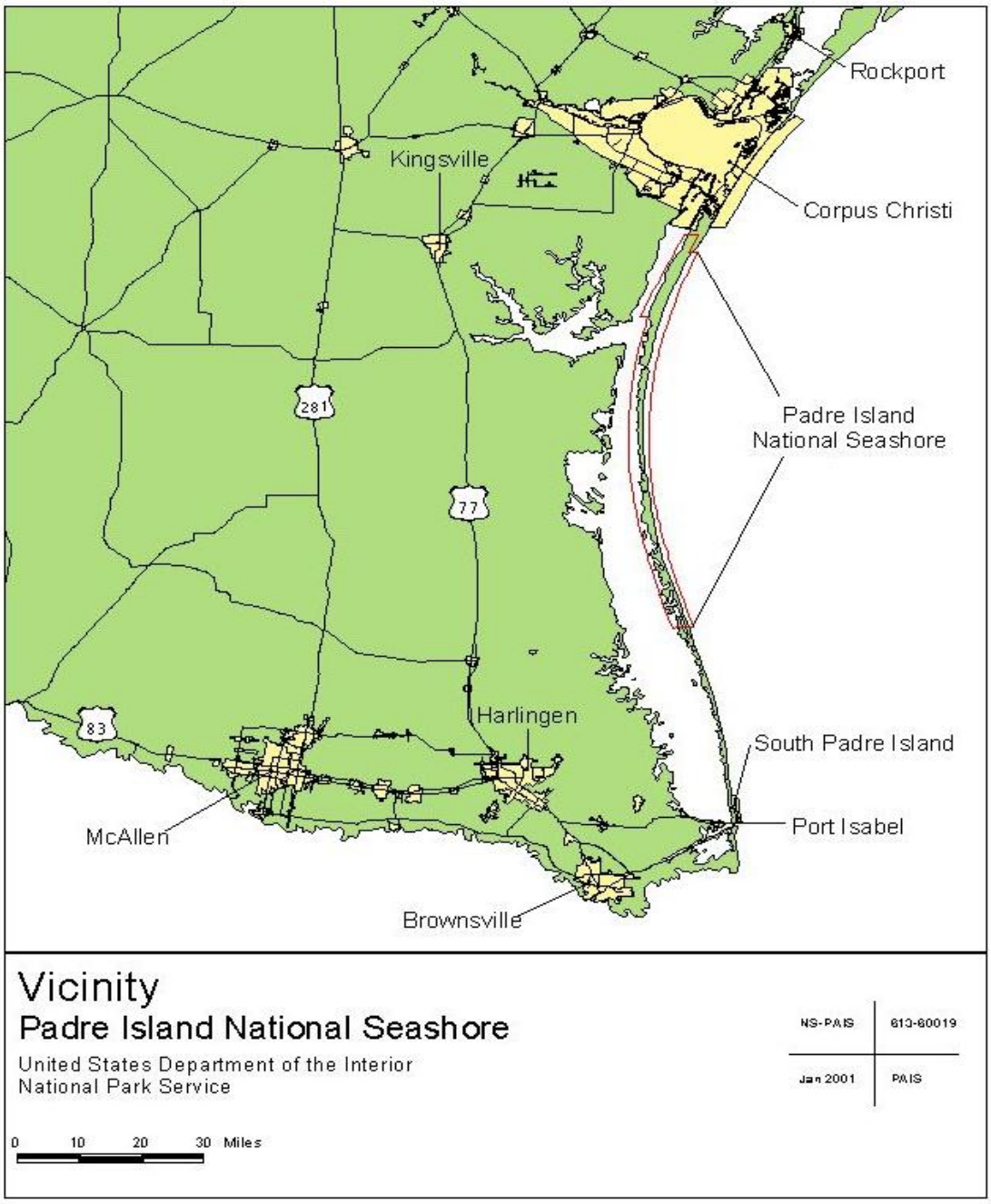

Figure 1. Region/Vicinity map depicting the location of Padre Island National Seashore in relation to the Gulf of Mexico coastline.

1.1. Objectives of Taking Action

There are three objectives for this project:

- Provide BNP Petroleum Corporation, as the lessee of nonfederal oil and gas mineral interests, reasonable access for exploration and development.
- Avoid, minimize, or mitigate impacts on park resources and values, visitor use and experience, and human health and safety.
- Prevent impairment of park resources and values.

1.2. Special Mandates and Direction

The NPS evaluates project-specific proposals for oil and gas production and transportation on a case-by-case basis by applying a variety of Current Legal and Policy Requirements prior to issuing a permit under the general regulatory framework of the NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B). The following discussion is a summary of the basic management direction the NPS follows for permitting nonfederal oil and gas operations in units of the National Park System.

1.2.1. NPS Organic Act and General Authorities Act - Prevention of Impairment

The NPS Organic Act of 1916 (16 U.S.C. § 1, *et seq.*) provides the fundamental management direction for all units of the National Park System. Section 1 of the Organic Act states, in part, that the NPS shall:

> "…promote and regulate the use of the Federal areas known as national parks, monuments, and reservations…by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 16 U.S.C. §1.

The National Park System General Authorities Act of 1970 (16 U.S.C. § 1a-1 *et seq*.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The Act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Subsequently, the 1978 Redwood Act Amendments to the General Authorities Act further clarified Congress' mandate to the NPS to protect park resources and values. The Amendments state, in part: "[t]he authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." 16 U.S.C. § 1a-1.

Current laws and policies require the analysis of potential effects to determine whether actions would impair park resources. While Congress has given the NPS the managerial discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the federal courts) that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise (2001 Management Policies, §1.4).

These authorities all prohibit an impairment of park resources and values. Not all impacts are impairments. **An impairment** is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. The NPS Management Policies explain that an impact would be <u>more likely</u> to constitute an impairment to the extent that it affects a resource or value whose conservation is:

1) necessary to fulfill a specific purpose identified in the establishing legislation or proclamation of the park;

2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
3) identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute impairment to the extent that it is an unavoidable result, which cannot be reasonably further mitigated, of an action necessary to preserve or restore the integrity of park resources or values.

NPS Management Policies explain that "resources and values" mean the full spectrum of tangible and intangible attributes for which the parks are established and are being managed, including the Organic Act's fundamental purposes (as supplemented), and any additional purposes as stated in a park's establishing legislation. Park resources and values that are subject to the no impairment standard include: the biological and physical processes which created the park and that continue to act upon it; scenic features; natural visibility; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures and objects; museum collections; and native plants and animals. Additional resources and values that are subject to the non-impairment standard include the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system.

The Environmental Consequences section of this EA provides an analysis of the potential for impairment for each park resource or value carried forward for further evaluation.

1.2.2. Padre Island National Seashore Enabling Act

Padre Island National Seashore occupies the central 66 miles of the approximately 113-mile long Padre Island in South Texas. Stretching from just south of the Nueces County line on the north to the northern end of Willacy County on the south, the park includes portions of Kleberg, Kenedy, and Willacy Counties, with the majority of the park in Kenedy County.

Congress established Padre Island National Seashore on September 28, 1962 (16 U.S. C. §459d, *et seq.*)

> "In order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped…"

In this statute, Congress included provisions allowing the original owners of oil and gas rights to retain these rights within the National Seashore. As a result, the mineral estate underlying the park is either owned privately or by the State of Texas. The NPS is legally required to allow access to the minerals while applying resource protection requirements and ensuring adherence to federal and state regulations, policies, and guidelines.

One of the primary rights associated with the mineral interest is the right of reasonable access to explore for and develop the mineral interest. If the mineral interest holder chooses to exercise its right to explore for or develop its mineral interest, the NPS must consider granting some form of access in the park. However, access to nonfederal oil and gas which requires access on, across, or through federally owned or controlled lands or waters within the park is subject to the NPS's Nonfederal Oil and Gas Rights Regulations.

1.2.3. NPS Nonfederal Oil and Gas Regulations, 36 CFR 9B

The authority to manage and protect federal property arises from the Property Clause of the United States Constitution. The Property Clause provides that "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States . . ." U.S. Const. Art. IV, ¶ 3, cl. 2.

In 1916, Congress exercised its power under the Property Clause and passed the NPS Organic Act, 16 U.S.C. § 1 *et seq*. Section 3 of the Organic Act authorizes the Secretary of the Interior to "make and publish such rules and regulations as he may deem necessary or proper for the use of the parks…" 16 U.S.C. § 3.

Pursuant to section 3 of the NPS Organic Act and individual park statutes, the Secretary of the Interior promulgated regulations at 36 CFR Part 9, Subpart B ("9B regulations") in 1979. The 9B regulations apply to operations that require access on or through federally owned or controlled lands or waters in connection with nonfederally owned oil and gas in all National Park System units (36 CFR § 9.30(a)).

The NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B) and other regulatory requirements assist park managers in managing oil and gas activities so they may be conducted in a manner consistent with the NPS mandate to protect park resources and values. The application and implementation of these regulations on the ground must be assessed parkwide for each site-specific oil and gas activity to determine if these activities have the potential to impair park resources and values.

1.2.4. NPS Oversight and Monitoring of Nonfederal Oil and Gas Operations

Under 36 CFR § 9.37(f) "[a]pproval of each plan of operations is expressly conditioned upon the Superintendent having such reasonable access to the site as is necessary to properly monitor and insure compliance with the plan of operations." At Padre Island National Seashore, park staff patrol the beach every day during turtle nesting season, and visit certain oil and gas sites several times a week. Park resource managers conduct a monitoring oversight patrol at least two times per week. In the event of an accident or spill, BNP will notify its dispatch immediately, which will then immediately notify park resource managers. All approved plans of operations have a spill contingency plan that is reviewed and approved by the NPS.

Pursuant to 36 CFR § 9.51(a) an **"operator shall be held liable for <u>any</u> damages to federally-owned or controlled lands, waters, or resources, resulting from his failure to comply with…his plan of operations**." Undertaking any operations within the boundaries of a park system unit in violation of the 9B regulations shall be deemed a trespass against the United States and shall be cause for revocation of approval of an operator's plan of operations. If an operator violates a term or condition of its approved plan of operation the Superintendent has the authority to temporarily suspend the operation and give the operator the chance to cure the violation. Section § 9.51(c) outlines the Superintendent's suspension authority and procedure. If an operator fails to correct any violation or damage to federally owned or controlled lands, waters, or resources the operator's approval will be revoked. 36 CFR § 9.51(c)(3).

In addition to the remedies available to the NPS under the 9B regulations, an operator is also subject to the remedial provisions found in all applicable federal, state, and local laws. For instance, under 16 U.S.C. § 19jj, commonly known as the "Park System Resource Protection Act," any person who destroys, causes the loss of, or injures any park system resource is strictly liable to the United States for response costs and for damages resulting from such destruction, loss or injury.

1.2.5. Approved Park Planning Documents

Approved park planning documents also provide a framework for determining how nonfederal oil and gas operations are conducted within Padre Island National Seashore.

The General Management Plan (GMP) is the major planning document for all National Park System units. The GMP sets forth the basic philosophy of the unit, and provides strategies for resolving issues and achieving identified management objectives required for resource management and visitor use. The GMP includes environmental analysis and other required compliance documentation. A GMP/Development Concept Plan (GMP/DCP) was completed along with an EA for Padre Island National Seashore in 1983. The park is currently preparing a new GMP and anticipates its completion in 2006.

An Oil and Gas Management Plan/Environmental Impact Statement (OGMP) was completed for Padre Island National Seashore on August 14, 2000 (PAIS, 2000). The OGMP describes the overall approaches that will be implemented over the next 15 to 20 years, or longer, to manage existing and anticipated oil and gas operations, including the exploration, development and transportation of nonfederal oil and gas underlying the Park, in a manner that provides for hydrocarbon development while protecting natural and cultural resources, human health and safety, and allowing for public use and enjoyment of those resources. The Oil and Gas Management Plan:

1) Identifies park resources and values most sensitive to oil and gas exploration and development disturbance, and defines impact mitigation requirements to protect such resources and values.
2) Establishes reasonable oil and gas exploration and development performance standards to protect park resources and values.
3) Develops reasonable alternatives for oil and gas development in the park and analyzes the impacts of those alternatives on park resources and values.
4) Provides pertinent information to oil and gas owners and operators that will facilitate operations planning and compliance with all applicable regulations.

During the scoping and development of the amendment to the approved Dunn-Peach # 1 Plan of Operations and the EA, the planning framework provided in the park's GMP/DCP and OGMP have been followed.

Table 1, summarizes many, but not all, of the statutes, regulations, executive orders, and policies that govern the exercise of nonfederal oil and gas rights in National Park units.

Table 1. Current Legal and Policy Requirements.

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
National Park Service Laws and Applicable Regulations	
NPS Organic Act of 1916, as amended, 16 U.S.C. §§ 1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
National Park System General Authorities Act, 16 U.S.C. §§ 1a-1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
NPS Omnibus Management Act of 1998, 16 U.S.C. §§ 5901 *et seq.*	Any living or non-living resource

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
NPS Nonfederal Oil and Gas Regulations – 36 CFR Part 9, Subpart B	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
Park System Resource Protection Act, 16 U.S.C. § 19jj	Any living or non-living resource that is located within the boundaries of a unit of the National Park system, except for resources owned by a nonfederal entity
Other Applicable Federal Laws and Regulations	
American Indian Religious Freedom Act, as amended, 42 U.S.C. §§ 1996 – 1996a; 43 CFR Part 7	Cultural and historic resources
Antiquities Act of 1906, 16 U.S.C. §§ 431-433; 43 CFR Part 3	Cultural, historic, archeological, and paleontological resources
Archeological Resources Protection Act of 1979, 16 U.S.C. §§ 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7	Archeological resources
Clean Air Act, as amended, 42 U.S.C. §§ 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23	Air resources
Coastal Zone Management Act of 1972, 16 U.S.C. § 1451 *et seq.*, 15 CFR Parts 923, 930, 933	Coastal waters and adjacent shoreline areas
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675; 40 CFR Parts 279, 300, 302, 355, and 373	Human health and welfare and the environment
Endangered Species Act of 1973, as amended, 16 U.S.C. §§ 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450	Plant and animal species or subspecies, and their habitat, which have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NOAA Fisheries)
Federal Insecticide, Fungicide, and Rodenticide Act, as amended (commonly referred to as Federal Environmental Pesticide Control Act of 1972), 7 U.S.C. §§ 136 *et. seq.;* 40 CFR Parts 152-180, except Part 157	Human health and safety and the environment
Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. §§ 1251 *et seq.;* 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328	Water resources, wetlands, and waters of the U.S.
Historic Sites, Buildings, and Antiquities Act (Historic Sites Act of 1935), 16 U.S.C. §§ 461-467; 18 CFR Part 6; 36 CFR Parts 1, 62, 63 and 65	Historic sites, buildings, and objects
Lacey Act, as amended, 16 U.S.C. §§ 3371 *et seq.;* 15 CFR Parts 10, 11, 12, 14, 300, and 904	Fish, wildlife, and vegetation
Migratory Bird Treaty Act, as amended, 16 U.S.C. §§ 703-712; 50 CFR Parts 10, 12, 20, and 21	Migratory birds
National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §§ 4321 *et seq.;* 40 CFR Parts 1500-1508	The human environment (e.g. cultural and historic resources, natural resources, biodiversity, human health and safety, socioeconomic environment, visitor use and experience)
National Historic Preservation Act of 1966, as amended, 16 U.S.C. §§ 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810	Cultural and historic properties listed in or determined to be eligible for listing in the National Register of Historic Places
Native American Graves Protection and Repatriation Act, 25 U.S.C. §§ 3001-3013; 43 CFR Part 10	Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony
Noise Control Act of 1972, 42 U.S.C. §§ 4901-4918; 40 CFR Part 211	Human health and welfare
Oil Pollution Act, 33 U.S.C. §§ 2701-2761; 15 CFR Part 990; 33 CFR Parts 135, 137, and 150; 40 CFR Part 112; 49 CFR Part 106	Water resources and natural resources
Pipeline Safety Act of 1992, 49 U.S.C. §§ 60101 *et seq.*; 49 CFR Subtitle B, Ch 1, Parts 190-199	Human health, safety, and the environment

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 *et. seq.*; 40 CFR Parts 240-280; 49 CFR Parts 171-179	Natural resources, human health, and safety
Rivers and Harbors Act of 1899, as amended, 33 U.S.C. §§ 401 *et. seq.*; 33 CFR Parts 114, 115, 116, 321, 322, and 333	Shorelines and navigable waterways, tidal waters, and wetlands
Safe Drinking Water Act of 1974, 42 U.S.C. §§ 300f *et seq.*; 40 CFR Parts 141-148	Human health and water resources
Executive Orders	
Executive Order (E.O.) 11593 – Protection and Enhancement of the Cultural Environment, 36 Federal Register (Fed. Reg.) 8921 (1971)	Cultural resources
E.O. 11988 - Floodplain Management, 42 Fed. Reg. 26951 (1977)	Floodplains and human health, safety, and welfare
E.O. 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)	Wetlands
E.O. 12088 – Federal Compliance with Pollution Control Standards, 43 Fed. Reg. 47707 (1978)	Natural resources and human health and safety
E.O. 12630 – Governmental Actions and Interference with Constitutionally Protected Property Rights, 53 Fed. Reg. 8859 (1988)	Private property rights and public funds
E.O. 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, amended by Exec. Order No. 12948, 60 Fed. Reg. 6379 (1995)	Human health and safety
E.O. 13007–Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)	Native Americans' sacred sites
E.O. 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)	Vegetation and wildlife
E.O. 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)	Migratory birds
E.O. 13212 - Actions To Expedite Energy-Related Projects (2001)	Production, transmission,and conservation of energy
Policies, Guidelines and Procedures	
NPS Management Policies (2001)	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
Department of the Interior (DOI), Departmental Manual (DM) 516 –NEPA policies (1980)	Archeological and prehistoric resources, historic resources, Native American human remains, and cultural objects
DOI, DM 517 - Pesticides (1981)	Human health and safety and the environment
DOI, DM 519 – Protection of the Cultural Environment (1994)	Archeological, prehistoric resources, historic resources, Native American human remains, and cultural objects
DOI, Onshore Oil and Gas Order Number 2, Section III, Drilling Abandonment Requirements, 53 Fed. Reg. 46,810-46,811 (1988)	Human health and safety
NPS Director's Order (D.O.) –12 and Handbook – Conservation Planning, Environmental Impact Analysis, and Decision Making (2001)	All resources, including air resources, cultural resources, human health and safety, socioeconomic environment, visitor use
NPS D.O. - 28 – Cultural Resource Management (1998)	Cultural, historic, and ethnographic resources
NPS D. O. 28A - Archeology	Clarifies roles & responsibilities for archeological resources management through out the NPS
NPS 66 – Minerals Management Guideline (1990)	Natural resources, human health and safety
NPS Reference Manual 77 – Natural Resources Management (1991)	Natural resources
NPS D.O. and Procedural Manual 77-1 – Wetland Protection (2002)	Wetlands

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
NPS D.O. and Procedural Manual 77-2 – Floodplain Management (2003)	Floodplains
Secretary of the Interior's "Standards and Guidelines for Archeology and Historic Preservation," 48 Fed. Reg. 44716 (1983), also published as Appendix C of NPS D.O. 28 – Cultural Resource Management	Cultural and historic resources
Government-to-Government Relations with Native American Tribal Governments, Presidential Memorandum signed April 29, 1994	Native American Tribal rights and interests

1.3. Issues and Impact Topics Evaluated

Early in the planning and development of the amendment to the Dunn-Peach # 1 well Plan of Operations by BNP, the NPS met with BNP and its contractor, Belaire Environmental, Inc. (BEI), to identify resources, values, and other concerns that could be potentially impacted by drilling and producing the Dunn-Peach # 2, 3, 4, 5, and 6 wells. In addition, early input from other federal, state and local agencies was sought. Scoping was performed with the U.S. Fish and Wildlife Service (FWS), U.S. Army Corps of Engineers (COE), and Texas Commission on Environmental Quality (TCEQ), and involved contacts by telephone, written correspondence, and meetings at the proposed project location within the park. Scoping involved defining appropriate alternatives, impact determinations, mitigation measures, and identification of major issues.

Pursuant to 36 CFR § 9.52(a) a notice of BNP's intent to develop more wells was placed in the local newspaper. A public scoping notice was made available by mail and on the Park's web site giving the public a 30-day period to submit scoping comments. No comments were received by the Park.

Based on scoping, the NPS identified the following park resources, values, and other concerns for evaluation in this EA.

- Geology and soils
- Water resources and floodplains
- Wetlands
- Vegetation
- Natural soundscapes
- Wildlife
- State and federally protected species
- Visitor use and experience

Based on the above list of park resources, values, and other concerns identified during scoping, issue statements were developed to define problems or benefits pertaining to the proposal to drill and produce the Dunn-Peach # 2, 3, 4, 5, and 6 wells. The issue statements in Table 2, below, describe a cause-and-effect relationship between an activity and a resource, value, or concern. The issue statements were used in developing and evaluating alternatives.

Table 2. Issue Statements.

Impact Topic	Issue Statement
Geology and Soils	• Grading and leveling of 1.24 acres of hummocky uplands for well pad expansion and the placement of additional nonnative materials (crushed limestone, concrete or caliche) on the well pad would result in soil and sand compaction and loss of productivity on the total well pad of approximately 3.52 acres.

Impact Topic	Issue Statement
	• The release of hydrocarbons or other contaminating and hazardous substances from vehicles, equipment, and pipelines during exploration and production operations, could alter the chemical and physical properties of the soil and sand in the vicinity of the operation(s). Changes in the soil and sand properties could result directly from contact with contaminants on-site, or indirectly, via runoff from contaminated areas. • Vehicle use along the Gulf Beach, particularly from heavy vehicles transporting the drilling rig, water, and drilling muds for disposal outside the park, could cause rutting of the sands on the beach.
Water Resources and Floodplains	• Vehicle use; removal or modification of vegetation; and surface disturbance associated with maintenance and use of the oil and gas access road, production facility, and flowline and well pad expansion could alter surface and subsurface drainage patterns in the vicinity of operation(s). • The release of hydrocarbons and contaminating or hazardous substances from vehicles, equipment, or pipelines used for exploration and production operations could degrade water quality. • The siting, maintenance, and use of the oil and gas access road, well pad, production facility, and flowline in the floodplains, or the release of hydrocarbons and contaminating or hazardous substances from these operations, could adversely affect floodplains functions, values and uses, including: the natural moderation of floods, water quality, sediment control, ground water recharge or discharge, fish and wildlife habitat, maintenance of biodiversity, recreational opportunities, and natural beauty. • Reclamation of the oil and gas access road, well pad, and production facility could adversely affect water quality and floodplains functions, values, and uses over the short-term. However, long-term benefits include the re-establishment of surface and surface water flow, the control of non-native vegetation, and re-establishment of native vegetative communities.
Wetlands	• Additional flowlines would be placed within the previously disturbed pipeline corridor used for the Dunn-Peach # 1 well. Existing impacts on wetlands within the analysis area have already been mitigated. Reclamation activities that re-establish the contours of the area, restore surface and subsurface water flow, control non-native vegetation, and re-establish native vegetative communities would restore natural and beneficial wetland functions, values, and uses.
Vegetation	• Vegetation would be totally removed on 1.24 acres for the well pad expansion. Vegetation removal could change the structure and composition of vegetative communities in the project area, alter wildlife habitat and species composition, increase storm runoff, and increase soil and sand erosion. • Use of the oil and gas access roads, production facility, and well pad expansion could disrupt the surface, and subsurface water flow that is necessary to maintain vegetative communities. • The release of hydrocarbons and contaminating or hazardous substances could damage or kill vegetation directly, via contact with contaminants on-site, or indirectly, via pathways from contaminated areas. • Disturbances/removal of native vegetation could lead to the unintentional spread and establishment of non-native plant species transported in or on drilling and maintenance equipment.

Impact Topic	Issue Statement
	• Reclamation of the oil and gas site could re-establish native vegetative communities and surface and subsurface drainage patterns necessary to support vegetative growth.
Natural Soundscapes	• Vehicles and equipment used for maintenance of the oil and gas access road and production facility, well pad expansion, and drilling the wells could result in increased noise, adversely affecting wildlife and visitor uses and experience.
Wildlife	• Oil and gas activities, including vehicle use and maintenance of the oil and gas access roads and production facility, and the well pad expansion could increase predation in open areas; directly harm or kill wildlife; and disrupt wildlife feeding, denning, nesting, spawning/reproduction, and other behavior. Oil and gas activities could result in avoidance of the area by wildlife due to increased noise and human presence. • Loss or modification of wildlife habitat could occur from the maintenance of the oil and gas access road, production facility, and flowline and well pad expansion. These activities could increase edge effects, increase human access, and alter wildlife species, composition, and migration. • Liquids that collect in secondary containment structures at the oil and gas production site could attract, harm, and possibly kill birds. • The release of hydrocarbons and hazardous or contaminating substances from vehicles, drilling and production equipment, and pipelines could injure wildlife. The adverse effects could become worse over time if wildlife species ingest the contaminants and are consumed by other wildlife species. Heavy equipment used for reclamation operations could injure or kill wildlife over the short-term. However, reclamation of oil and gas sites over the long-term could re-establish native vegetative communities and surface and subsurface water quality and quantity that support wildlife populations.
State and Federally Protected Species (T&E)	• Vehicles (both commercial and private) driving along the Gulf beach could run over sea turtles, sea turtle nests, sea turtle hatchlings, and other T&E species (e.g., birds). • Deep ruts made from large commercial vehicles could be an obstacle to sea turtles during nesting and to hatchlings moving towards the sea. Hatchlings could become vulnerable to depredation, desiccation, and exhaustion. • Noise, artificial lighting, and other nighttime activities during drilling operations could affect T&E wildlife species. • Noise, odors, artificial lighting, and vibrations could interfere with the imprinting process of the hatchling sea turtles.
Visitor Use and Experience	• Oil and gas operations could pose a threat to human health and safety from the use of the Gulf beach by commercial vehicles (particularly vehicles with less maneuverability and visibility), hazardous equipment at wells and production facilities, and the release of hydrocarbons and hazardous or contaminating substances. Spilled or released hydrocarbons and contaminating or hazardous substances could be inhaled, absorbed, or ingested by human beings. • The oil and gas operations could adversely affect air quality, alter scenic resources and the night sky, increase background sound levels, and could degrade the quality of visitor uses and experiences in the park.

1.4. Issues and Impact Topics Eliminated from Further Analysis

Impact topics are dismissed from further evaluation in this EA if, for the action alternative(s):

- they do not exist in the analysis area,
- they would not be affected by the proposal, or
- when through the application of mitigation measures, the impacts (direct, indirect, and cumulative) would result in "minor or less effects," and there is little controversy on the subject or reasons to otherwise include the topic.
-

The following topics have been eliminated from further analysis for reasons described below.

- Socioeconomics
- Environmental Justice
- Prime and Unique Farmlands
- Cultural Resources
- Air Quality

1.4.1. Socioeconomics

The socioeconomic issue includes the effect of drilling the Dunn-Peach # 2, 3, 4, 5, and 6 wells on the local and regional economies. The following description also provides supporting data to base the cumulative impact analysis for topics carried forward for further evaluation in Section 3.

Padre Island National Seashore lies within the Railroad Commission of Texas (TRRC) District 4. During the first nine months of 2004 the TRRC issued 1,286 drilling permits in the 14 counties comprising District 4. For the 3 counties encompassing the park, 95 drilling permits were issued, comprising 13.5 percent of the District-wide total.

In 1999, the NPS prepared a reasonably foreseeable development (RFD) scenario for inclusion in the park's Draft Oil and Gas Management Plan/Environmental Impact Statement. The RFD projects that three-dimensional seismic surveys could be conducted over the entire park and up to 18 wells could be drilled and produced over the next 30 years to develop the 80 billion cubic feet of natural gas estimated by the U.S. Geological Survey that remains beneath the park. The NPS projects that 3-D seismic surveys would directly impact up to 748 acres; and the 18 wells and associated construction of roads, well and production pads, and flowlines would directly impact up to 250 acres, for a total direct surface use of up to 998 acres or 0.77% of the park. It is expected that 3-D seismic surveys would result in short-term impacts lasting no more than 3 years until reclamation is satisfactorily achieved. It is reasonable to assume that, as some wells are being drilled and produced that others would be plugged and abandoned.

Oil and gas exploration and production have been actively pursued on Padre Island since 1951. A total of 73 operations have occurred within the current boundaries of the park. During 1998-2001, three-dimensional seismic surveys were conducted from the north boundary of the park to the 42-mile marker. Currently, there are 13 gas operations, including six wells, one freshwater well, and six pipelines occupying 349 acres or 0.27 percent of the park. All are under approved plans of operations. Four operations, including one abandoned production facility have ongoing clean-up and remediation activities associated with releases of oil and gas and other contaminating or hazardous substances (South Sprint Facility, Vector A-6, and the former Chevron USA Onshore Production Facility). Until cleanup is successfully completed, impacts on park resources and values persist.

As of 2001, 3-D seismic surveys have been completed over the northern three-quarters of the park. The source and receiver lines have been reclaimed and there are no residual impacts

from the surveys. In June 2002, BNP drilled the Dunn-Murdock # 1 well in the vicinity of the Yarborough Pass boat dock. This constituted the first of the possible 18 wells that the NPS's RFD scenario projected could be drilled over the next 30 years. In April of 2004, BNP drilled the Dunn-Peach # 1 well, directly disturbing 6.05 acres within the park. Two additional wells, Lemon/Lemon Seed Wells, have been permitted, but construction has not begun on either well to date.

Included in the analysis area of the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells is a 6.9 mile segment of Gulf beach that BNP would use to access its well. This 6.9 mile segment of Gulf beach is currently used by nonfederal oil and gas operators to access existing operations located throughout the park, by park staff to conduct routine park operations, and by an estimated 278,458 park visitors (73% of annual Gulf beach visitation(Scott, 2004) or 49% of annual Park visitation) for vehicular access (Figure 2).

Visitation Calculations

568,732 total visitation for 2003 (Park web page)
210,430 37% of total use Bird Island Basin (BIB)
187,283 BIB only
23,147 11% of BIB users also use Gulf beaches
381,449 Gulf beach users
102,991 27% from the zero North only
144,950 38% use Gulf beach zero to 10 mile marker
101,465 70% use Gulf beach zero to 5 mile marker
43,485 use Gulf beach 5 – 10 mile marker
133,449 35 % use Gulf beach 10 mile mark to the channel
278,458 73% of south beach users or 49% total visitation

Figure 2: Park Visitation in 2003

In the rare event that a serious spill event would occur, the public would perceive that the park is not a desirable place to visit. Tourism could fall, resulting in reduced revenues to the local economy. The likelihood of this happening is very small, considering the precautions and mitigations required of the operators.

Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled, and if hydrocarbons are discovered and produced, could result in a negligible, beneficial impact on local and regional economies.

Cumulative Impacts

Under Alternative B, Proposed Action, if the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be produced, the cumulative impact on local and regional economics would be negligible. Increased exploratory drilling activity and new field development from 3-D seismic in and adjacent to the park would essentially be offset by the overall decline of drilling activity and production in the analysis area, resulting in an overall negligible, beneficial impact on local and regional economies.

Because of the low intensity of impact, this topic is being dismissed from further analysis in the EA.

1.4.2. Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, environmental justice was dismissed as an impact topic in this EA.

1.4.3. Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland is defined as soil that produces specialty crops such as fruits, vegetables, and nuts. There are no prime or unique farmlands located within the park therefore, prime and unique farmlands was dismissed as an impact topic in this EA.

1.4.4. Cultural Resources

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq*.); the National Environmental Policy Act of 1969 (42 USC 4321 *et seq*.); and the National Park Service's Director's Order #28, *Cultural Resource Management Guideline (1997*), *Management Policies, 2001* (2000), and Director's Order # 12, *Conservation Planning, Environmental Impact Analysis, and Decision Making* (2001) require the consideration of impacts on cultural resources listed in or eligible to be listed in the National Register of Historic Places. The National Park Service recognizes five categories of cultural resources: historic structures, ethnographic resources, cultural landscapes, archeological resources, and museum collections.

There are no historic structures, ethnographic resources, or cultural landscapes within or near the operations area. During project scoping, a literature search was conducted to determine the extent and continuing adequacy of past archeological surveys that had been performed in the analysis area. An inventory for archeological resources was conducted as part of 3-D seismic surveys conducted in 1999 and 2000, which covered a majority of the park. Archeological data is lacking in some areas; therefore, BNP contracted for, and the NPS permitted, further archeological surveys to be conducted.

William Moore and James Warren were contracted by BNP to survey for archeological resources in the proposed project area. The initial survey was conducted December 23, 2002 and found no archeological or historic resources in the survey area. The expansion area (1.24 acres) was surveyed on August 5, 2004 by Herbert Uecker and James Warren and no archeological or historic resources were found. This additional survey was submitted as an amendment to the original survey to SHPO for review and approval.

Due to the absence of cultural resources within the project area, this topic was dismissed as an impact topic in this EA.

1.4.5. Air Quality

According to the TCEQ and the Final Oil and Gas Management Plan/Environmental Impact Statement for the park (PAIS, 2000), Kenedy County continues to be an attainment area for regulated pollutants. Prevailing southeast winds from March through September and north-northeasterly winds from October through February are likely to dissipate any pollutants in the

park (PAIS, 2000). The park is designated as a Class II airshed by the State of Texas, as authorized by the Prevention of Significant Deterioration provisions of the Clean Air Act. The park's air quality is protected by allowing limited increases over baseline concentrations of sulfur dioxide, nitrogen oxides, and particulate matter (PAIS, 2000).

Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled with impacts from localized point sources resulting in negligible to minor, adverse impacts on air quality throughout the park, and within state and federal standards.

Cumulative Impacts
Cumulative impacts from existing and future oil and gas operations in and adjacent to the park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the park, and to remain with state and federal standards.

Because of the low intensity of impact, this topic is being dismissed from further analysis in the EA.

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2.0. ALTERNATIVES

Two Alternatives are described and evaluated in this EA. Alternative locations and strategies that were considered but dismissed from further analysis are then described. An analysis for selecting the environmentally preferred alternative is also provided. This section concludes with three summary tables comparing the two alternatives.

2.1. Alternative A, No Action

The No Action Alternative is required under the National Environmental Policy Act (NEPA) and establishes a baseline or benchmark from which to compare the present management direction and environmental consequences of the action alternative. Under No Action, the wells would not be drilled.

2.2. Alternative B, Proposed Action

Under Alternative B, Proposed Action, the NPS would approve BNP's Plan of Operations, to drill and produce the Dunn-Peach # 2, 3, 4, 5, and 6 wells.

Location of the Well. The existing surface location of the Dunn-Peach # 1 well is located 153.66 feet from the north line and 425.5 feet from the east line (Boyles Meander Line) of the Nicholas and Juan Jose Balli Survey, Abstract-10, Kleberg County, Texas. This drill site is approximately 6.9 miles south of the end of Park Road 22 and 6,400 feet west of the Gulf of Mexico (Figure 3).

The global positioning system (GPS) measurements based on Texas State Plane Coordinate proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells are (Figure 4):

Dunn-Peach #2:

Surface location:	X = 2,366,638 E	Y = 592,910 N
Bottom-hole location:	X = 2,365,006 E	Y = 595,342 N
True Vertical Depth (TD)	8,205 feet	
Measured Vertical Depth (MVD)	8,600 feet	

Dunn-Peach #3:

Surface location:	X = 2,366,638 E	Y = 592,910 N
Bottom-hole location:	X = 2,367,391 E	Y = 598,588 N
True Vertical Depth (TD)	8,300 feet	
Measured Vertical Depth (MVD)	10,047 feet	

Dunn-Peach #4:

Surface location:	X = 2,366,638 E	Y = 592,910 N
Bottom-hole location:	X = 2,360,887 E	Y = 594,359 N
True Vertical Depth (TD)	8,200 feet	
Measured Vertical Depth (MVD)	9,170 feet	

Dunn-Peach #5:

Surface location:	X = 2,366,638 E	Y = 592,910 N
Bottom-hole location:	X = 2,360,887 E	Y = 594,359 N
True Vertical Depth (TD)	8,160 feet	
Measured Vertical Depth (MVD)	10,500 feet	

Dunn-Peach #6:

Surface location:	X = 2,366,638 E	Y = 592,910 N
Bottom-hole location:	X = 2,368,203 E	Y = 593,526 N
True Vertical Depth (TD)	8,420 feet	
Measured Vertical Depth (MVD)	8,675 feet	

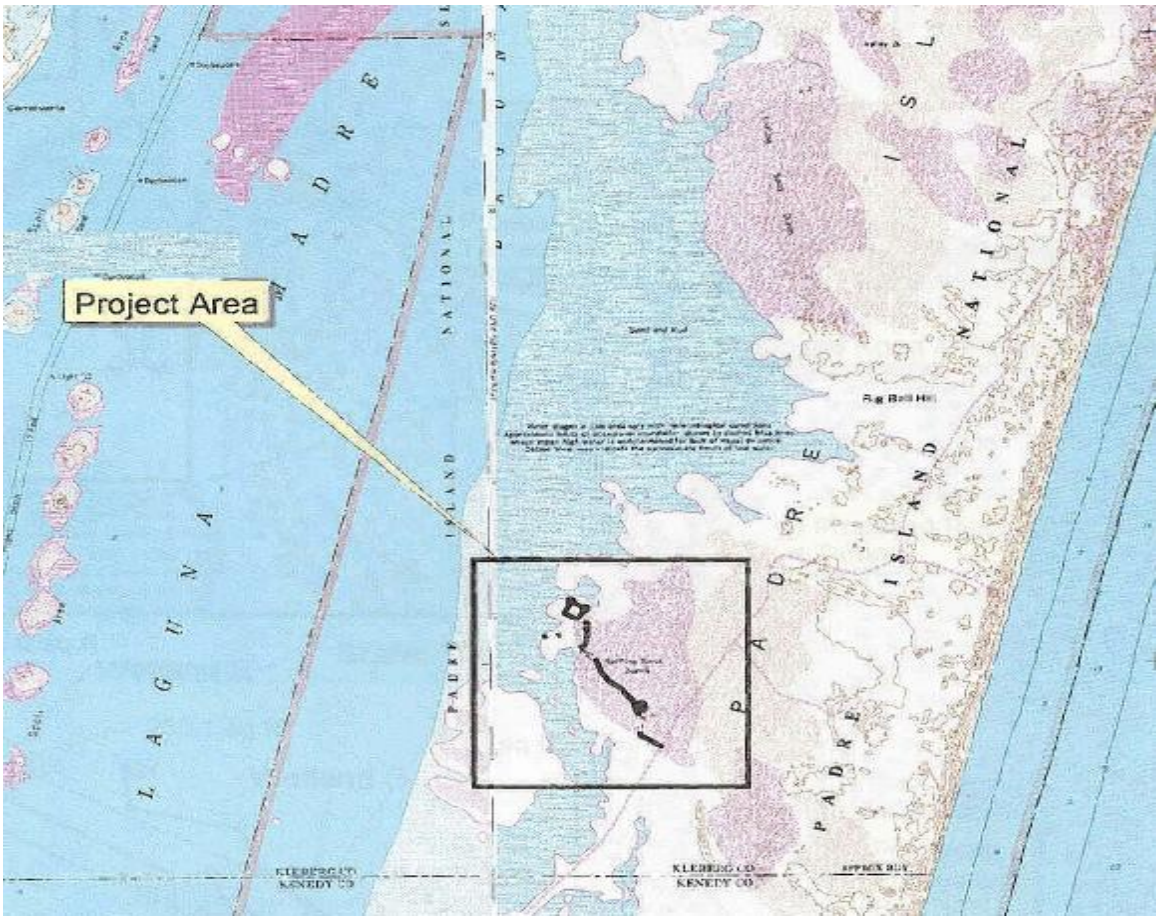

Figure 3. General location of the Dunn-Peach # 1 well, and the proposed location of the Dunn-Peach # 2, 3, 4, 5, and 6 wells at Padre Island National Seashore

Access

All vehicles used during well pad expansion, drilling, and production operations would enter the park via Park Road 22 approximately 10 miles and then proceed approximately 6.9 miles along the Gulf Beach to a-gated dune pass and an existing shell/caliche road that extends approximately 4 miles to the Dunn-Peach # 1 well location.

Surface Location and Wellpad

BNP's original Dunn-Peach # 1 drill site was selected because it avoided or minimized adverse impacts to wetlands, tidal flats, dunes, and other sensitive resource areas. The utilization of a previously developed site reduces the impacts to the park and exhibits the use of least-

damaging methods. The existing well pad occupies 2.28 acres and would be expanded by approximately 1.24 acres (3.52 total acres) (Figure 5). This expansion would provide the necessary space required for the drilling of the proposed five new wells. The proposed pad expansion remains within the upland habitat area and does not impact additional wetlands.

Conventional foundation construction techniques would be used to construct the 1.24 acre addition (54,014 square foot). One bulldozer and one maintainer would be used first to level the expansion area of the drilling pad. After leveling, a lease crew would cover the area with a 20 mm thick polyethylene protective liner. Eighteen-yard "belly dump" trucks would be used to place approximately 300 cubic yards of material on the pad expansion at a depth of 18 inches. The material would be spread with a bulldozer and leveled with a maintainer. A compactor and water truck would be used to compact the material and water the road and pad. A 3-foot high berm would be constructed around the perimeter of the pad area for containment.

All equipment, machinery, and living quarters would be placed within the 3.52 acre (153,331 square foot) pad area. Should the wells be productive, the well pad would be reduced by approximately 1.5 acres (65,340 square feet). This previously-developed 65,340 square-foot area would be restored to natural conditions.

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Use of Water for Drilling

Fresh water is needed during the drilling operation primarily for mud dilution, cementing, and rig cleaning. By using synthetic oil-based mud, and a closed-loop system, water requirements are reduced. The water source for the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be the BNP (Vector) A-8 well. This well was converted to a water well to drill the Dunn-Peach # 1 well. A submersible pump powered by a generator would be installed in the well. A storage tank would be placed near the water well and a 3-inch polypropylene line would be laid along the access road from the water source well to the Dunn-Peach drill site. The water would be pumped into the tank and then transferred by a surface pump to the drill site via the polypropylene line. The water would be stored in the rig's water tank and, if necessary, an additional frac tank on location.

The calculations provided by the drilling fluids company used for drilling the Dunn-Peach # 1 well showed a consumption of 5,000 barrels of fresh water. Another 500 barrels have been added for miscellaneous rig consumption over the course of drilling. This totals 5,500 barrels which equates to 0.6 bbl/ foot of hole. Based on this, the estimated water requirements for the proposed wells are as follows:

- Peach No. 2 5,306 barrels (222,252 gallons)
- Peach No. 3 6,207 barrels (260,694 gallons)
- Peach No. 4 5,627 barrels (236,334 gallons)
- Peach No. 5 6,723 barrels (282,366 gallons)
- Peach No. 6 5,108 barrels (214,536 gallons)

(Conversion of barrels to gallons is based on 42 petroleum gallons per barrel.)

Production Facility

All final production, handling, and sales metering facilities would be located at the A-4 site production facility developed for the Dunn-Peach # 1 well. No additional tanks or production equipment beyond those approved in the original Plan should be necessary as the additional wells are added the system. The production unit may need to be resized per future volume demands; however, this would not affect the overall site size and general equipment layout. One additional piece of interim measuring equipment, a well test separator, is planned as an option for the drill pad site. This test unit can be used in lieu of individual flow lines for each

new well. The test separator which is equipped with gas, oil, and water meters would be skid mounted (approximately 6 feet x 12 feet) and located on the drill pad site where it can be tied into the individual wellheads by a header pipe system and discharged into the flow line(s) leaving the location. As the proposed new wells are added to the system, this test unit can be utilized to measure individual well production volumes necessary for royalty and production allocations. The test unit eliminates the need for installing individual flowlines each time a new well is added to the system. This system for production measurement and allocation is currently approved and widely used by other state and federal agencies for "confined" operations throughout the Gulf of Mexico.

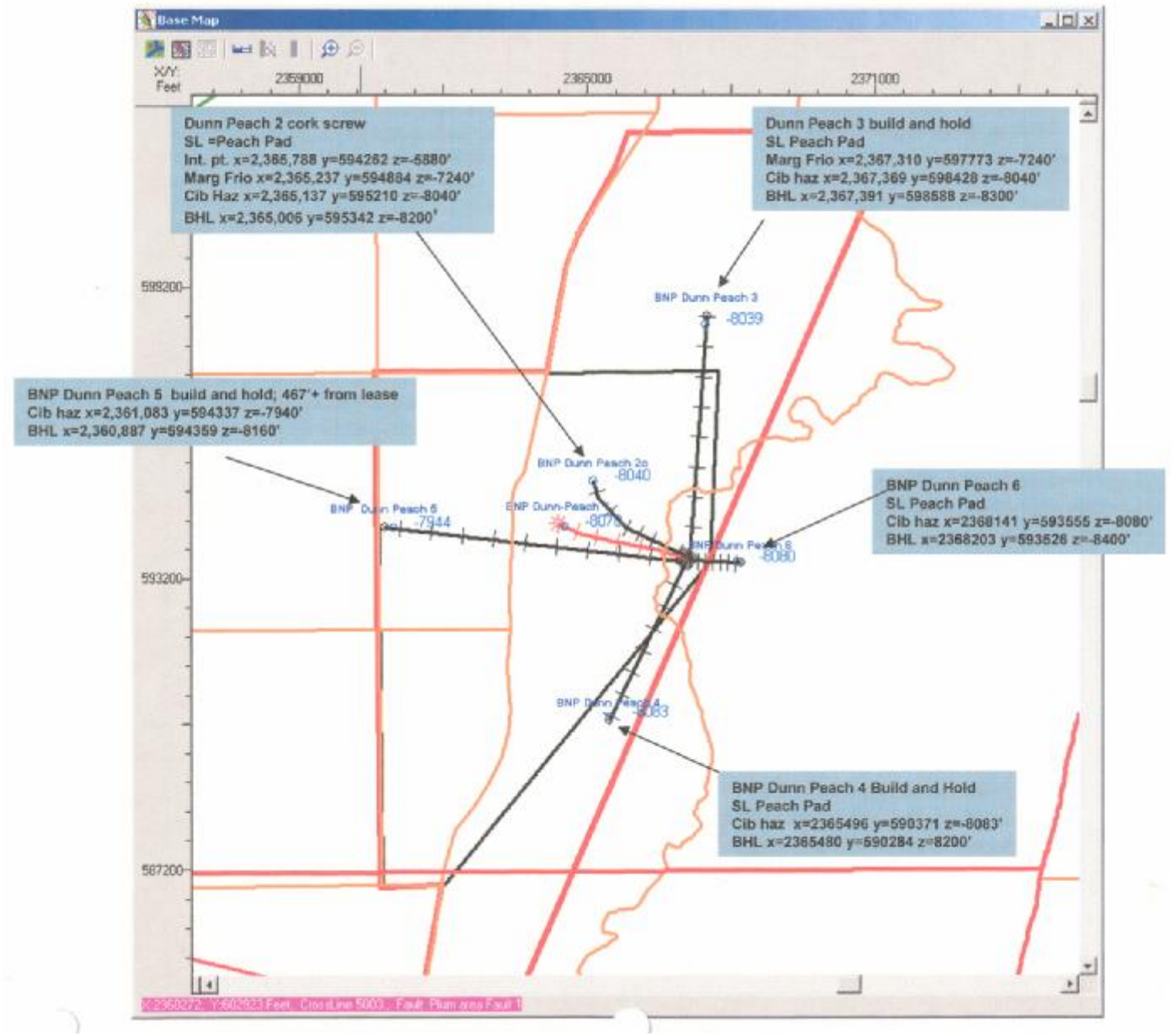

Figure 4. Surface and bottom hole locations for the Dunn-Peach # 2, 3, 4, 5, and 6 wells.

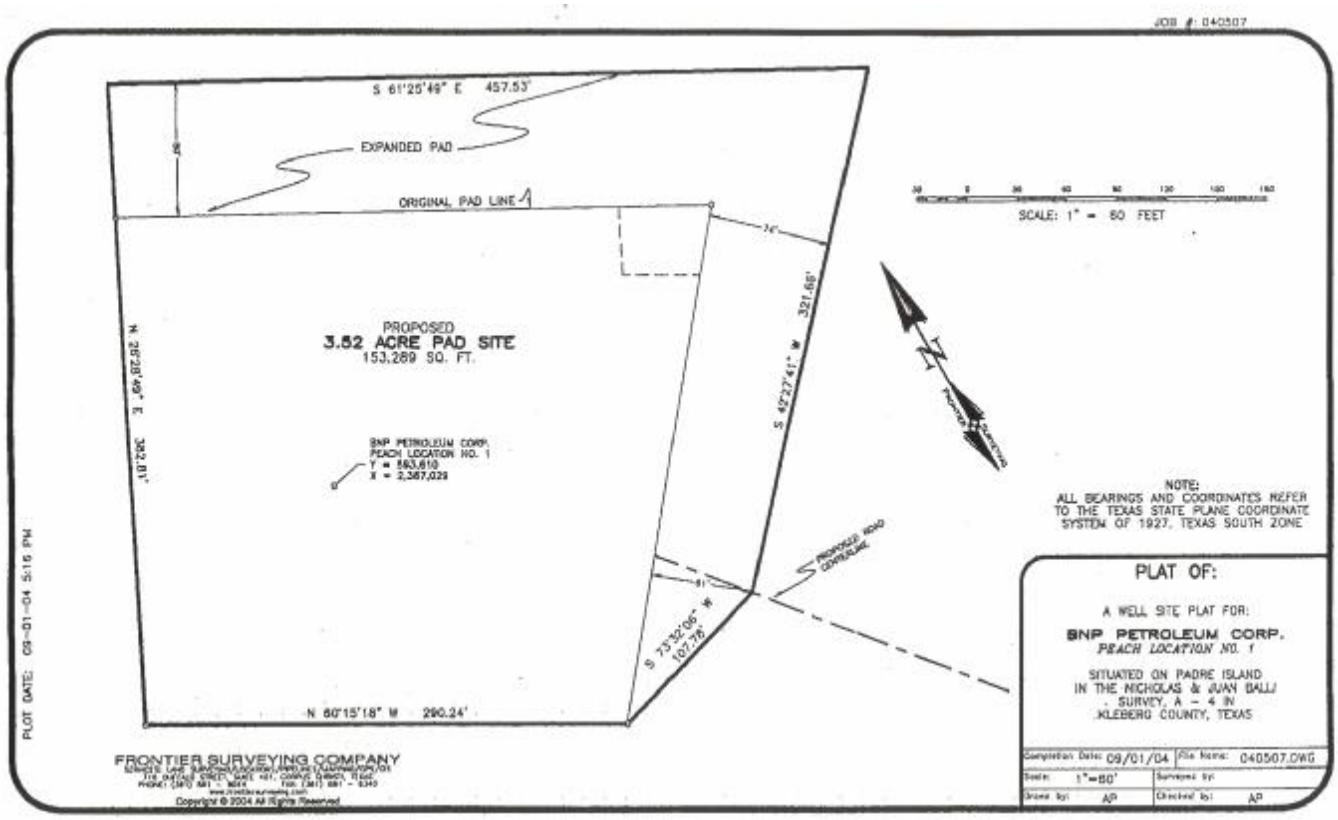

Figure 5. Existing Dunn-Peach # 1 well pad with proposed expansion areas.

The second option for transporting full wellstream (oil, water, and gas) production from the well heads to the facility site is trenching one new ditch within the existing flowline corridor and lay multiple flowlines at one time to accommodate all future wells. This option allows maximum output from each well whereas the test unit option allows the stronger well(s) to dominate the flow system until all pressures in the reservoir are equal. These individual flowlines can be appropriately sized and buried in the existing corridor at such time as future wells are completed. Reservoir and production data acquired from the on-line operations of the Dunn-Peach # 1 well would help determine the best option for flowline requirements.

Production from the wells could continue for up to 20 years.

Flowlines and Gathering Lines

If the Peach 2 through 6 wells are placed in production, additional flowlines would be needed. Construction of additional flowlines would be within the existing access road/flowline route to tie into an existing 12-inch pipeline operated by AEP located approximately 3,700 feet east of the existing Dunn-Peach #1 well. The flowline corridor is approximately 3,700 feet long and 20-feet wide. A ditch of approximately 24 inches wide and 42 inches deep would be dug from the well pad to lay additional flowlines.

Reclamation Plan

As soon as possible after completion of approved operations but no later than six (6) months thereafter unless a longer period of time is authorized by the Regional Director, BNP would initiate reclamation. [36 CFR 9.39(a)(2)]. Reclamation would follow both the drilling and

production phases of operations. After drilling the wells, and if the wells are placed in production, the well pad size would be reduced by 1.5 acres (65,340 square feet).

At the completion of production operations, the wells would be plugged, and all above ground structures, equipment, and other man-made debris resulting from operations would be removed; and any contaminating substances would be removed or neutralized. [36 CFR 9.39 (a)(2)]. The pad and road areas would be re-contoured as near as possible to the original contour. The re-contoured ground would be fertilized at 40 pounds per acre with 30/0/10 (N-P-K) fertilizer, the area ripped to 18 inches, and mulched with native hay containing seeds from the previously existing vegetation. During annual monitoring efforts, undesirable species would be controlled either by herbicide application or hand/tool removal, as approved by the NPS. Restored areas would be monitored annually until 70 percent coverage of targeted native species is achieved. An annual report would be submitted to the park documenting restoration activities and results. Monitoring would cease after 70 percent of the native vegetative coverage of three target species, seacoast bluestem (*Schizachyrium scoparium* var. *littoralis*) and gulfdune paspalum (*Paspalum monostachyum*), and narrow-leaf sumpweed (*Iva angustifolia*) was achieved or after the site had been approved by the park Superintendent.

Mitigation Measures

In order to reduce the impacts to park resources and values, BNP and its contractor, Belaire Environmental, Inc. (BEI), sought the views and advice of personnel of the park, USFWS, U. S. Army Corps of Engineers (COE), and other experts. BNP and BEI also relied on the recommendations of the park's Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS, 2000) for operating standards and other information. The table includes the location of mitigation measures within the Plan of Operations for ease of reference. Mitigation measures and operating stipulations were developed by NPS and BNP during the drilling of the Dunn-Murdock Well in 2002 and Dunn-Peach # 1 in 2004. These measures have been incorporated in the amendment to the Dunn-Peach # 1 well Plan of Operations for the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells.

Table 3. Mitigation Measures under Alternative B, Proposed Action.

Number	Mitigation Measures	Reference
Natural and Cultural Resources		
1	If appropriate, directional drilling from an upland location will be encouraged to minimize direct impacts to park habitats such as wind-tidal flats, seagrass beds, and trees. Location and size of the well pad is suitable for drilling to multiple targets and eliminates the need for additional well pads.	Section X, Item D (1), page 35
2	Access roads and flowline routes will be selected to minimize impacts to wetlands and other sensitive habitats.	Section X, Item D (2), page 35.Section X, Item E, Land Features, page 40
3	If an unknown cultural resource is discovered during approved operations, and such resource might be altered or destroyed by the operations, the operator will immediately cease activity in the immediate area and notify the Superintendent before continuing any operations.	Section X, Item D (10), page 36
4	Culverts will be installed where fill may directly affect surface water run-off and flow. Culvert locations will be selected to minimize alteration of natural surface drainage patterns and approved by the National Park Service.	

Number	Mitigation Measures	Reference
5	All compressors used during production operations will be equipped with hospital mufflers or similar technology and be oriented so that the exhaust faces away from the prevailing southeast wind direction.	Section V, Item I (11), page 16; Section X, Item D (32), page 37
6	Native shrubs and trees will be planted around the production facility to minimize visual and audible impacts to visitors and provide habitat.	Section X, Item D (25), page 37
7	Vegetation growth within the facility and along the access road will be maintained to minimize threats from wildfire. Herbicide or pesticide use must be approved by the Superintendent before their use.	Section V, Item K (6) (g), page 15; Section X, Item D (29), Page 37
8	The operator will make every effort to avoid moving the drilling rig via the Gulf Beach during the months of April through September in order to avoid disturbing sea turtle nests and nesting activity. However, should rig scheduling force the operator to move equipment down the beach during this period, a monitor trained by the NPS to observe and detect nesting sea turtles, will be utilized.	Section X, Item D (8), page 35
9	Driving will be conducted above the Gulf beach “wet line” to prevent excessive erosion, crushing of benthic invertebrates, impacting endangered or threatened species, and help prevent disturbances to shorebirds.	Section X, Item D (5) page 35
10	All operations will be setback 500 feet from the Gulf Beach dune line and other light-sensitive areas. Lights will be shielded and directed at the rig work area itself to meet human safety requirements.	Section X, Item D (15), page 36 FEIS, 5-11 (10), Section X, Item D (124), p. 40.
11	All open-topped tanks and/or secondary containment areas will be covered with netting or other covering, and all open-vent exhaust stacks on production equipment will be constructed in a manner that prevents birds and bats from entering or perching.	Section X, Item D (23) (24), page 37
12	Sea turtle awareness training will be provided to all operation employees and contractors and will include track identification, notification protocols, and how to mark tracks or nest area if they are unable to stay on site until NPS personnel arrive.	FEIS, 5-11(9)
13	The operator will hire and pay vehicle monitors that will utilize an All Terrain Vehicle (ATV) while escorting all large vehicles (vehicles larger than a pick-up truck or a pickup truck with a trailer) traveling to and from the well site. They will report all violations of the mitigation measures or conditions of approval, as well as all sightings of and incidents involving sea turtles or their nest, eggs, hatchlings, or tracks, immediately to the NPS. During the peak sea turtle nesting season (April 16 through June 30), an additional ATV monitor will be utilized behind each convoy to insure that all convoyed trucks maintain proper spacing.	FEIS, 5-22(9).
14	During the peak sea turtle nesting season, vehicle convoys will not travel the beach before an NPS turtle patroller patrols the beach ahead of them.	
Safety		
15	The operator will educate all employees and contractors regarding the need for, and ways and means of, minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore. Operator will print a list of conduct and operating procedures approved by Padre Island National Seashore, while working within the park to be reviewed by all operation related personnel before they begin work inside the park.	Section X, Item D (3), page 35 Item D (50), page 39 Appendix H

Number	Mitigation Measures	Reference
16	In preparation for a hurricane event, the operator will secure all surface and sub-surface equipment in accordance within PAIS Hurricane Preparedness Plan and outlined in the Operators Plan of Operations.	Section X, Item D (30) page 37
17	The operator will maintain the access road using a maintainer when needed to keep the road passable and minimize the potential of vehicles driving off the road and into undisturbed habitats.	Section V, Item K (13), page 16; Section X, Item D (33), p. 37
18	During construction and drilling, the operator will utilize a dispatcher stationed outside of the park to regulate the flow of traffic into the park and along the beach. The operator will employ an onsite "Beach Manager" to coordinate and control all operation activities within the park. The dispatcher will provide each driver a copy of Operator/Padre Island National Seashore requirements for vehicle operations, environmental concerns, and public safety while operating in the park.	Section X, Item D (51), page 39
19	A bulldozer will be used throughout the drilling operation to assist vehicles in the transportation of personnel, services, and materials where needed. A maintainer will be on-site to smooth out any rutting that may occur. During the peak sea turtle nesting season, each maintainer or similar equipment will have an ATV monitor.	Section V, Item B, page 9; Section X, Item D (11), page 36
20	A temporary, three-strand, barbed-wire fence will be placed around the perimeter of the pad during drilling and completion operations. If the well enters production, a gate and permanent chain link fence will be installed around the well and production facilities.	Section V, Item N (6), page 17; Section X, Item D (20), page 37
21	If drilling or production operations are suspended for 24 hours or more, but less than 30 days, the pipe rams will be closed and locked, and at least one safety valve installed in the top of the drill pipe and closed. If suspended for 30 days or more, a backpressure valve will be installed in the tree, the tree gate valves will be closed, and the valve handles will be removed.	Section V, Item N (3)(4) page 17; Section X, Item D (36) (37), page 38
22	A total of 20 large vehicles (vehicles larger than a pick-up truck or a pickup truck with a trailer) are allowed each day. Large vehicles are limited to 20 vehicles each day, a speed limit of 15 mph or less, no traveling at night, and are scheduled in a manner that facilitates caravanning. The drilling crew will utilize an operator provided shuttle service.	
Contamination		
23	Collection and sampling of soils, surface water, and ground water will be performed following NPS protocols (Exhibit D), prior to the start of construction, to establish baseline conditions, and at the completion of operations, to determine if contaminating substances are present in concentrations that pose a threat to wildlife populations or human health, or will jeopardize reestablishment of native vegetation.	Section VII, Item E, page 22; Section X, Item A (2), page 27, and Item D (44), page 38
24	A Contaminating or Toxic Substance Spill Control Plan is included as part of the Plan of Operations to describe actions to be performed in the event of an oil spill, brine spill, release of drilling fluids, blow-out, or release of any toxic substance.	Section VI, pages 19-21, Section X, Item D (39), page 38
25	Should contaminated soils be found, the contaminated soil will be excavated to clean soil and removed to a state-approved off-site disposal facility where applicable. The excavation will be filled with	Section VII, Item F, page 22; Section X, Item D (45), page 39

Number	Mitigation Measures	Reference
	clean native soil. If necessary, contaminated soils will be remediated on-site using NPS-approved remediation methods.	
26	A 20-millimeter thick polyethylene protective liner will be placed on the pad area and a 3-foot high earthen material berm will be constructed around the perimeter of the pad for emergency containment and prevention of downward movement of fluids through the soil from reaching the groundwater.	Section V, Item A (6) page 9. Section X, Item D (16), page 36, Item E, Soils, page 41
27	A corrugated galvanized steel cellar will be placed around the well. Drainage ditches will be dug to route all runoff to the cellar for collection and removal.	Section V, Item A (4), page 8; Section X, Item D (14), p. 36
28	Well control equipment will be installed and include a blowout preventer and a choke manifold equipped with a hydraulic, remote-controlled, adjustable choke.	Section V, Item C (1) and (2), page 9; Section X, Item D (18), page 36
29	The operator will utilize an environmentally safe, synthetic, oil-based drilling mud for drilling the well to reduce water usage, beach traffic, and operational time. Lost circulation mud additives will be used to prevent and control lost circulation, reducing the time needed to drill.	Section X, Item D (12), page 36; Section X, Item F, page 44 Section lll C (6), page 6; Section X, Item D (13), page 36
30	All flammable liquids (i.e. condensate, compressor oil, etc.) will be labeled, stored in steel or fiberglass tanks, and contained inside the firewall or berm at the central facility.	Section V, Item N (8), page 17; Section X, Item D (38), page 38
31	A closed loop “zero discharge system” or similar technology will be utilized for drilling the well. No earthen pits will be approved. All mud, drill cuttings, sewage, produced water, etc. will be collected for disposal at state-approved disposal facilities outside of the park boundaries, or disposed down the well annulus. Where feasible, excess materials and drill cuttings will be stored on the drill location in order to coordinate the removal of such materials.	Section V, Item D (2) and (3), page 10 & 11; Section VII, Item B, page 28; Section X, Item D (19), page 19
32	Standard oil field technologies will be applied to prevent leaks and spills of hydrocarbons and produced water including: pressure relief valves, hi-lo safety shut-off actuators, liquid level controls; and cathodic protection.	Section X, Item D (11), page 36
33	A berm with an impermeable liner will be constructed around all tank batteries, and designed to contain 1.5 times the volume of the largest tank.	Section V, Item K (2), page 14; Section X, Item D (22), page 37
34	All produced water will be stored in closed top fiberglass tank(s). The water will be transported to an off-site, state-approved disposal facility by vacuum truck.	Section V, Item K (4), page 15 Section X, Item D (21), Page 37
35	For all releases of contaminating or toxic substances, the operator will promptly report the initial spill information to Padre Island National Seashore according to their Contamination or Toxic Substance Spill Control Plan within their Plan of Operations	
Reclamation		
36	The operator will cut and store vegetation before ground-disturbing activities occur. This vegetation will be used in mulching and native seeding activities during reclamation/re-vegetation. All equipment will be washed off and cleaned of mud/soils/plant debris before entering the park to reduce potential introduction of non-native seed/pests into the park.	Section X, Item D (9), page 36

Number	Mitigation Measures	Reference
37	Reclamation of the site will begin after completion of operations and no later than six months unless authorized by the Regional Director. All disturbed areas, including rutting deeper than one inch, will be re-contoured and re-vegetated	Section VII, Items A, D page 22; Section X, Item D (40) (43), page 38
38	Some soils and sands from outside Padre Island National Seashore, but on Padre Island, may be hauled in to achieve pre-project contours or to restore any spill clean-up areas. Such soils and sands will be similar in character to pre-project soils and sands with regards to particle size, contaminants, certified weed-free, and approved by the Superintendent before purchase/use to minimize the potential for invasive species.	Section X, Item D (34), page 38; Item E, Soils, page 41
39	Native vegetation harvested before operations beginning will be used to reclaim disturbed areas. Successful re-vegetation will be reached when 70 percent coverage of targeted species is achieved. Herbicide application or hand-tool removal will be used to control invasive plant species in the reclamation area, as approved by the Superintendent.	Section VII, Item H (2) (6) (5), pages 22 & 23; Section X, Item D (46) (47) (48), page 39
Operational		
40	To the extent possible, with respect to rig scheduling and availability, the operator will use a diesel electric (SCR) rig or similar rig to drill the well so that impacts to the natural soundscape are minimized.	Section X, Item D (6), page 35
41	Signs will be posted at the entrance of the access road, on the well tree, and on the tank battery giving operator name, lease name, well number, and Railroad Commission of Texas identification number. The wellhead and all production equipment will be painted a neutral, earth-tone color, such as Sherwin Williams Burlap, or a similar NPS approved color, to blend with the natural environment.	Section V, Item N (5 & 7), page 17; Section X, Item D (35), page 38.
42	During production, the well gauger will check the facilities daily and notify Padre Island National Seashore personnel of problems or observations.	Section V, Item K (7) (c), page 18; Section X, Item D (27), page 37
43	The well will be plugged in compliance with Federal Onshore Oil and Gas Order No. 2 and Railroad Commission of Texas requirements.	Section V, Item L, page16; Section X, Item D (41), page 38
44	The Superintendent of Padre Island National Seashore, or his representative, shall have reasonable access to the operations as necessary to properly monitor and insure compliance with the conditions of the plan of operations under the provisions of 36 CFR §9.37(f).	
45	The approval of the Plan of Operations will be conditioned upon the operator tendering a performance bond not to exceed $200,000 for operations by a given operator within a unit of the National Park System. The regulations limit the liability amount for the operation of a single well to $50,000.	
46	The operator is responsible for all damages to park paved road surfaces due to trucks carrying construction and drilling equipment because these roads were not constructed for heavy industrial equipment and loads.	

Several drilling operations could take place in the winter 2004 and spring of 2005. These operations include: 1) the drilling of the Lemon/Lemon seed well located at the 12.5 mile marker, 2) the drilling of the Dunn-Peach # 2, 3, 4,5, and 6 wells, which are the subject of this

EA, and 3) the possible drilling of the proposed Novus Manzano well, which is located near the Dunn-Peach location. Like other drilling operations in the past, these operations will require the use of heavy equipment, large trucks, and several months to complete, thereby increasing the cumulative affects on the park's resources and visitor experience. Cumulative affects associated with the current increase in heavy truck traffic related to oil and gas development, the prospect of increased activities at previously approved operations, and the addition of new operations is the justification for additional protective measures.

The drilling of the Dunn-Peach # 2, 3, 4, 5, and 6 wells is expected to start late in the winter of 2004. This drilling program is designed to utilize one rig, so that all drilling and completion operations would be conducted under one mobilization. The time from the spudding of the first well to be drilled to the completion of the fifth well is expected to be eight months. Subject to permitting, rig availability and other regulatory issues, drilling is scheduled to begin late fall 2004 and continue into mid-summer 2005. This schedule would have the heaviest truck traffic prior to and after the peak nesting season for sea turtles. This timeframe would provide maximum protection for nesting Kemp's ridley's and protect a large percentage of Kemp's ridley hatchlings that may exist from undiscovered nests. The peak nesting season timeframe, which became effective in the 2004 sea turtle nesting season, begins on April 16 and extends until June 30. Drilling activities would be scheduled in such a manner as to be completed by the beginning of this timeframe. However, if certain operational conditions occur, which are outlined in Table 4, drilling may take place within this peak sea turtle nesting season if additional mitigation measures are followed. The additional mitigation measures are outlined in Table 5. The peak sea turtle nesting season would not prohibit the necessary activities associated with producing a well that has already been drilled since these activities do not require the use of heavy equipment or large trucks.

The Superintendent has the discretionary option to wave mitigation measures when this option would prove beneficial to park resources, a protected species, or in the advent of difficult or beneficial environmental conditions. If the need presents itself, this would be a daily decision, based on a case-by-case review.

Table 4. Operational conditions that may require drilling during the peak sea turtle nesting season.

Number	Possible Operational Conditions
1	The well(s) to be drilled by BNP is of such depth or complexity that in BNP's estimation operations associated with the mobilization for and drilling, testing, and completion of the well will last for a period of time in excess of 240 days provided that the drilling operation begins close to the end of the peak sea turtle nesting season. BNP must demonstrate and document to the NPS the reason why the drilling operation cannot be completed within the 240 days instead of merely stating that the operation cannot be completed. Drilling operations will be scheduled in such a manner that will not cause drilling to extend into the peak sea turtle nesting season.
2	BNP commences operations associated with drilling a well prior to the peak sea turtle nesting season with an expectation that such drilling operations will be completed prior to such season, but delays associated with such operation prohibit completion of the well prior to the peak sea turtle nesting season. Delays that may give rise to the need to conduct operations within this timeframe shall include, but shall not be limited to weather delays, delays in drilling due to downhole drilling difficulties or unforeseen circumstances encountered while drilling, any delays associated with governmental action prohibiting operations, delays attributable to the actions of third parties such as riots, terrorism, strikes, vandalism, or similar action that disrupts BNP's authorized activities.

Number	Possible Operational Conditions
3	BNP is prohibited by the NPS or any other federal or state governmental agency from conducting operations for any period of time in excess of 14 consecutive days outside of the peak sea turtle nesting season if the reason that BNP is not allowed to operate is not the fault of BNP.
4	BNP is unable to schedule a drilling rig capable of drilling the well in question and meeting all requirements of BNP's Plan of Operations at any time other than the peak sea turtle nesting season. BNP will demonstrate and document to the NPS the reason that a drilling rig needed for the operation cannot be obtained prior to the peak sea turtle nesting season.
5	The NPS fails to issue a permit granting BNP authorization to conduct drilling operations associated with a Plan of Operations submitted by BNP and accepted as substantially complete by NPS within six (6) months of the date the Plan of Operations is accepted as substantially complete by NPS. BNP will provide the necessary Plan of Operations to the NPS prior to April 1 of a given year in order to ensure that enough time exists for the issuance of a permit.
6	The oil and gas lease(s) covering the drilling operation will terminate unless BNP conducts drilling operations during the peak sea turtle nesting season, and such lease termination is not the result of avoidable delays by BNP in prosecuting operations authorized by such lease.

Table 5. Additional measures necessary if drilling occurs within the peak nesting season.

Number	Concern	Mitigation Measure
1	Sea Turtles	An NPS trained monitor will patrol the beach at the beginning of each day and prior to any convoy of trucks driving to or from the drilling location in order to identify any possible nesting that may have occurred at night or in the early morning hours.
2	Sea Turtles	An additional ATV monitor will be utilized behind each convoy to insure that all trucks in such convoy maintain proper spacing and speed while driving on the beach.
3	Sea Turtles	BNP will employ one or more maintainers or similar equipment that will immediately repair ruts caused by BNP vehicles. Each maintainer or similar equipment will have an ATV monitor.
4	Sea Turtles	BNP will employ an onsite "Beach Manager" to coordinate and control all BNP activities on the beach.
5	Sea Turtles	Where feasible, excess materials and drill cuttings will be stored on the drilling location in order to delay the traffic associated with hauling such materials.

2.3. Alternatives Considered but Dismissed from Further Analysis

During the scoping process for this project, alternative locations and methods were considered for siting the well pad, access road, and production facilities. These alternative locations and methods were discussed in consultation with the USFWS, BNP, park staff, Regional Office, and Washington Office for technical guidance. For the reasons described below, these alternatives were not subjected to further analysis.

NPS Acquisition of the Mineral Rights that are Part of BNP's Proposal

In the event that a proposed operation cannot be sufficiently modified to prevent the impairment of park resources and values, the NPS may seek to extinguish the associated mineral right through acquisition, subject to the appropriation of funds from Congress. With respect to the BNP proposed Plan of Operations, mitigation measures were identified and applied, which substantially reduced the potential for adverse impacts to park resources and values. As a result, the acquisition of mineral rights was dismissed from further consideration in this EA.

Alternative Access, Interior Route
This alternative does not meet the project objectives of: allowing reasonable access for lessee, minimizing or mitigating impacts on resources and values, and preventing impairment to Park resources as well as the proposed action. If a new interior road were to be considered, it would likely originate from the end of Park Road 22 and extend southward to the proposed well location.

Accessing the Dunn-Peach wells would entail the development of approximately seven miles of new road. A road seven miles long and 20 feet wide would impact 739,200 square feet (17.0 acres). The impacted habitats would consist of approximately 3.4 acres (148,000 square feet) of upland/dunes and 13.6 acres (592,000 square feet) of wetlands.

One member of the public has suggested that an interior road would be an "all weather" road. The rainfall events of recent years have demonstrated that this could not be accomplished without elevating the road bed considerably higher than the surrounding area. Building a substantial road would alter the natural flow of ground water within the area, resulting in impacts to wetlands reaching far beyond the immediate area. Culverts would need to be installed, but would not guarantee that flow would continue at its natural rate. Run off from the road may create sedimentation and water quality issues within adjacent wetlands. Altering the productivity of these wetlands would compromise the food supply available for migratory and grassland birds, many of which are threatened or endangered species. The island's interior also would be more susceptible than the exposed Gulf beach to invasive species introduction from plant fragments or seeds carried on vehicles.

Finally the park's responsibility to protect resources and the visitor experience would be complicated by such a route. The view from atop a dune would not be the vast undisturbed back island with a few pockets of mitigated development, but a long, barren strip that would stand out. This road would be an enticement to some visitors who would try to find a way to drive down it, legal or not. Increased security would be a park responsibility and burden. Illegal activities would benefit from having another route on or off the island. All of these additional considerations, make this alternative unattractive compared to the environmentally mitigable and resilient beach access alternative. Furthermore, barrier islands consist of constantly moving sands, movement that is sometimes increased by extreme weather events. The maintenance of an interior access road would impose on the park long-term and unpredictable problems and expense.

Alternative Well Pad Locations
BNP considered different surface locations for drilling the additional wells. It was decided that by using the least-damaging method of directionally drilling, the desired targets for each of the proposed wells could be reached utilizing the existing Dunn-Peach # 1 well surface location. Using an existing pad would reduce the direct area of surface disturbance within the park to drill and produce up to 6 wells, reduce the number of large trucks required because only a small expansion to an existing pad would be needed rather than building 5 separate pads, and the time necessary for the drilling operation to be completed, resulting in benefits to the park resources and visitor experience. As a result, alternative well pad locations were dismissed from further consideration in this EA.

2.4. NPS Environmentally Preferred Alternative
Section 101 of NEPA states that "…it is the continuing responsibility of the Federal Government to…(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the

environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources" [42 U.S.C. §4321 *et seq.* §101 (b)].

The environmentally preferred alternative for drilling and producing the Dunn-Peach # 2, 3, 4, 5, and 6 wells is based on these national environmental policy goals. Under Alternative A, No Action, the wells would not be drilled. Because there would be no new impacts, Alternative A would provide the greatest protection of area and park resources and values. Alternative A meets five of the six criteria (1 thru 4, and 6) and is therefore the environmentally preferred alternative.

BNP's Proposal, Alternative B, would have greater effects on the environment because of drilling and production operations. Alternative B meets four of the six criteria (1, 2, 4, and 5). Although mitigating measures would reduce effects to park resources and values, there would still be effects, and therefore this alternative would not meet the Park Service's environmental policy goals as well as the No Action Alternative.

2.5. NPS Preferred Alternative

The environmentally preferable alternative is Alternative A because it surpasses Alternative B in realizing the full range of national environmental policy goals as stated in §101 of NEPA. However, because the enabling legislation of Padre Island National Seashore respects the exercise of nonfederal oil and gas rights, the environmentally preferred alternative was not selected as the NPS preferred alternative. The NPS preferred alternative is Alternative B, Proposed Action. The NPS believes this alternative would fulfill its mandates and direction, giving due consideration to environmental, economic, technical, and other factors. Table 7 outlines both alternatives and how well each alternative meets the objectives of this project. The actions required for this project and to what extent park resources are impacted are summarized in Tables 8 and 9.

Table 6. Extent that each alternative meets objectives.

Objectives	Does Alternative A: No Action Meet Objective?	Does Alternative B: Proposed Action Meet Objective?
Provide BNP Petroleum Corporation, as a holder of nonfederal oil and gas mineral interests, reasonable access for exploration and development.	**No** Drilling the wells would not be permitted, precluding BNP Petroleum Corporation reasonable access to develop its nonfederal oil and gas mineral interests.	**Yes** Drilling and producing the wells would be permitted, with the application of mitigation measures to meet other objectives.
Avoid or minimize impacts on park resources and values, visitor use and experience, and human health and safety.	**Yes** Without drilling the wells, there would be no new impacts.	**Yes** Mitigation measures would avoid and minimize impacts.
Prevent impairment of park resources and values.	**Yes** Without drilling the wells, there would be no potential for park resources and values to be impaired.	**Yes** Mitigation measures would result in no impairment of park resources and values.

Table 7. Comparative summary actions by alternative.

Actions	Alternative A: No Action	Alternative B: Proposed Action
Access	Access would not be required because the wells would not be drilled.	BNP related traffic would utilize Park Road 22 along with approximately 6.9 miles of Gulf beach, and approximately 4 miles of an existing shell/caliche road to the Dunn-Peach #1 well/production pad.
Surface Location-Wellpad	The existing well pad (Dunn-Peach # 1 well) would not be expanded because the Peach 2-6 wells would not be drilled.	BNP would expand the existing Dunn-Peach # 1 well pad (2.28 acres) by 1.24 acres on uplands using conventional foundation construction techniques. Berms would be constructed around the new perimeter and around the diesel tanks. All equipment, machinery, and living quarters would be placed on the pad.
Production Facility	The production facility would remain as permitted under the Dunn-Peach # 1 well.	If the wells proved to be productive, BNP would utilize the production facility permitted with Dunn-Peach # 1 well.
Flowlines	The additional flowlines would not be needed because the Peach 2-6 wells would not be drilled.	BNP proposes to construct additional flowlines within in the previously disturbed flowline corridor used for the Dunn-Peach # 1 well. Impacts on wetlands within the analysis area have been mitigated.
Reclamation Plan	No additional reclamation would be needed, since the proposed wells would not be drilled.	BNP would remove all foreign materials from the park. All surface disturbances would be re-contoured as near as possible to the original contour. The ground would be fertilized and mulched with native hay. The mulch would be disked into the ground. Hand tools or herbicides would control undesirable species. The restored area would be monitored until 70% native vegetation cover was achieved. Sand fencing would be installed across the dune pass to aid foredune re-establishment.

Table 8. Comparative summary of impacts.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
Geology and Soils	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on geology and soils. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines and the Dunn-Peach # 1 well within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Dunn-Peach # 1 well has a short-term disturbance of 5.84 acres, and the long-term occupancy of 2.412 acres. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park. In the event of spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced hydrocarbons, resulting in the short-term disturbance to geology and soils on 1.24 acres and the long-term occupancy of 3.08 acres. Constructing additional flowlines, well pad expansion; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park. No impairment to geology and soils would result from implementation of this alternative
Water Resources and Floodplains	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines and the Dunn-Peach # 1 well would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Dunn-Peach # 1 well has a short-term disturbance of 5.84 acres, and the long-term occupancy of 2.412 acres within the 100-year floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced, resulting in the short-term occupancy of 1.24 acres and long-term occupancy of 3.08 acres along the 100-year floodplains. Constructing additional flowlines, well pad expansion; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.	
Wetlands	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled; however, existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Impacts on wetlands within the analysis area have been mitigated. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. Vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, and constructing additional flowlines, well pad expansion and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Additional flowlines construction would be within a previously disturbed pipeline corridor. Impacts on wetlands within the analysis area have been mitigated. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.
Vegetation	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled; however, existing uses, including the continuing operation of two gas pipelines and the Dunn-Peach # 1 well, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Dunn-Peach # 1 well has a short-term disturbance of 5.84 acres, and the long-term occupancy of 2.412 acres on vegetation. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the well were placed into production, there would be short-term loss of vegetative cover on 1.24 acres and the long-term occupancy of 3.08 acres. Constructing additional flowlines, well pad expansion; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts on vegetation throughout the park. No impairment to vegetation would result from implementation of this alternative.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	would result from implementation of this alternative.	
Natural Soundscapes	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled; however, existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. Constructing additional flowlines, well pad expansion; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts on natural soundscapes throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.
Wildlife	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on wildlife; however, existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Dunn-Peach # 1 well has a short-term disturbance of 5.84 acres, and the long-term occupancy of 2.412 acres on wildlife habitat. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the well were placed into production, there would be short-term loss of wildlife habitat on 1.24 acres and the long-term occupancy of 3.08 acres. Constructing additional flowlines, well pad expansion; and drilling and producing the wells, in addition to existing activities within the analysis area would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the park. No impairment to wildlife would result from implementation of this alternative.
State and Federally Protected Species	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, with no impacts on suitable habitat or species. Existing impacts on suitable habitat and species range would range from no impact, to localized, short to long-term, negligible to	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled, and may be placed in production. Existing impacts on suitable habitat and species are the same as under Alternative A, No Action. Constructing additional flowlines, well pad

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	minor, adverse impacts. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in localized, short to long-term, negligible to moderate adverse impacts on State and Federally Protected Species. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts, primarily along the parks shoreline. No impairment to species or suitable habitat would result from implementation of this alternative.	expansion; and drilling and producing the wells, in addition to existing activities within the analysis area would result in localized, short to long-term, negligible to minor, adverse impacts, and negligible beneficial impacts on T&E species. Cumulative impacts would be similar to those described under No Action, with localized to widespread, short to long-term, negligible to moderate adverse impacts throughout the park. No impairment to species or suitable habitat would result from implementation of this alternative.
Visitor Use and Experience	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled; however, existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.	Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on 1.24 acres, and long-term occupancy by oil and gas developments on 3.08 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area. Constructing additional flowlines, well pad expansion; and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

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3.0. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Methodology
This section is organized by impact topic. Under each impact topic, the affected environment is described, the methodology for assessing impacts is presented, the impacts under each alternative is given, a cumulative impact analysis provided and a conclusion is stated. The conclusion section summarizes all major findings and includes an impairment analysis. Impairment analyses are only performed for park resources and values. A description of the NPS mandate to prevent impairment to park resources and values is provided in Section 1.2.1 of this EA (pages 3 and 4).

This section describes direct, indirect, and cumulative impacts under the two alternatives. Impacts are described in terms of context, duration, and intensity. The context or extent of the impact may be **localized** (affecting the project area or a single company) or **widespread** affecting other areas of the park and/or the project area, or an industry). The duration of impacts could be **short-term**, ranging from days to three years in duration, or **long-term**, extending up to 20 years or longer. Generally, short-term impacts would apply to construction activities and long-term impacts would apply to roads, production operations, and pipelines. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. Where the intensity of an impact can be described quantitatively, the numerical data are presented. However, most impact analyses are qualitative.

Cumulative Impacts
The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq*.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

The following descriptions of park development and operations, and adjacent land uses provide the basis for analyzing cumulative impacts in this section. These descriptions should be used in conjunction with the discussion under the heading “socioeconomics” on pages x and x of this EA that describes past, present, and reasonably foreseeable oil and gas development in the analysis area.

NPS Development and Operations
The park was established to save and preserve a portion of the diminishing seashore of the United States that remains undeveloped, for the purposes of public recreation, benefit, and inspiration. Any developments are vulnerable to the harsh corrosive salt-air atmosphere and require constant maintenance. Park developments are confined to the northernmost 10 miles of the park and consist of the minimum necessary to support park management and the 568,732 visitors in 2003. The Malaquite Visitor Center and concession facility was built in 1988 to replace the older pavilion structure damaged by Hurricane Allen. In 1999, Hurricane Bret struck the park from the 32.5 to 56.8 mile markers, and created 21 washover channels. In addition to the Malaquite Visitor Center/concession facility, there is a 1,150-vehicle parking lot, a park headquarters, two park housing units, a 40-site RV Campground, a wastewater treatment facility, Bird Island Basin and Yarborough Pass visitor use areas, and a ¾ mile paved Grasslands Nature Trail. The paved, two-lane Park Road 22 provides access into the park, westward to Bird Island Basin, and south to Malaquite beach at which point the Gulf beach becomes the primary transportation corridor south. The beach is hard and accessible by both two and four-wheel drive vehicles for the first 5 miles of Gulf beach at which point the remaining

55 miles of beach corridor is accessible only by four-wheel drive vehicles. Access to the park is also available via boat in the Laguna Madre and Gulf of Mexico. In total, existing park development occupy 391 acres or 0.3% of the park. There are no past park developments or activities that continue to impact the park's resources or values. New developments that are planned in the future include the implementation of the Bird Island Basin Recreational Use Plan and the construction of a sea turtle research laboratory within the footprint of the park headquarters compound. Park operations that could contribute to impacts on park resources and values include prescribed fires, routine maintenance of the park roads, park future development, park and visitor vehicle use, and public recreational activities such as motor boating, and burning of campfires.

Adjacent Land Uses
Drilling and production of state-owned oil and gas is expected to continue from state tracts adjacent to the park boundaries, either on the east in the Gulf of Mexico, or on the west in the Laguna Madre. Exploration and development of federally owned oil and gas in the Gulf of Mexico's outer continental shelf will also continue. In addition, tankers transporting products through the Gulf of Mexico could potentially impact the park should there be a spill incident. These activities have the potential to impact all park resources and values.

3.1. Impacts on Geology and Soils

Methodology
To analyze the impacts on geology and soils, all available information on geological resources in the park was compiled including: research, previous plans of operations, and the Park's approved Oil and Gas Management Plan (OGMP).

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment
Padre Island consists of Pleistocene and Holocene sands, silts, clays, and shell fragments, which were transported by wind and water (PAIS, 2000). According to the U.S. Department of Agriculture (1965), soil pH generally ranges from 5.5 to 8.0, with higher pH occurrences nearer the Gulf side of the island. Soils are comprised of the Galveston and Mustang series on the majority of the barrier island. Soil types in the project area consist of the Padre series on sand hummocks and Mustang series on lower poorly drained swales. The Padre series is characterized as being well-drained, deep sandy soil with depth to water at around 80 inches. Mustang series is characterized as being poorly drained shallow soils with depth to water at

around 30 inches. A parkwide soil survey is being conducted by the Natural Resources Conservation Service (NRCS), with completion expected in early 2005.

To establish baseline conditions of hydrocarbon and organic levels, BNP would sample soils immediately prior to the start of construction. Soils would be collected and tested according to the sampling protocol prescribed by the NPS (see Appendix F, PAIS 2000).

Impacts of Alternative A, No Action, on Geology and Soils
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on geology and soils. However, impacts on geology and soils in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, and the continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operations and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include two and four-wheel drive cars and trucks, recreational vehicles, and an occasional larger vehicle associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5-mile marker. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. The intensity of impacts would be variable, depending on the number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August; and would be concentrated in the first five miles of the Gulf beach. Vehicle traffic associated with oil and gas operations normally use four-wheel drive trucks, however, a large vehicle like a vacuum truck, would travel the beach corridor approximately every 10 days. Vehicle use on the 6.9-segment of Gulf beach would result in localized, short-term, negligible to minor, adverse impacts.

The existing operation of the AEP gas pipeline located to the east of the proposed well site would continue to impact geology and soils within the analysis area. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures, cathodic protection, and prompt response in the event of a spill, the intensity of impacts would be reduced to negligible to minor, localized, short-term adverse impacts.

Drilling and production of the Dunn-Peach # 1 well has resulted in the short-term disturbance to geology and soils on 5.84 acres to construct the well pad for drilling operations, and the long-term disturbance of 2.412 acres for the producing life of the well, resulting in localized, short- to long-term, negligible to minor, adverse impacts (PAIS, 2003 from the Peach EA).

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines and the Dunn-Peach # 1 well would result in localized, short- to long-term, negligible to minor, adverse impacts on geology and soils within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on geology and soils throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time.

Leaks and spills from oil and gas operations in the park could result in localized, short to long-term, negligible to major adverse impacts on geology and soils. However, with the mitigation measures included in the operator's plan of operations, and prompt response in the event of a spill, the intensity of impacts is reduced. Spills from oil and gas operations and tankers in the Laguna Madre or Gulf of Mexico, could be transported by water into the park and cause widespread impacts that would require long-term clean-up and remediation. Park, commercial, and recreational vehicle use along the beach and off road vehicle use within the park would continue to compact and rut soils. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre portions of the park. Cumulative impacts on geology and soils throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on park geology and soils, primarily along park shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on geology and soils. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, continuing operation of the two pipelines, and the Dunn-Peach # 1 well would result in localized, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the park. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Geology and Soils
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced, resulting in short-term disturbance on 1.24 acres to expand the wellpad. Additional flowlines would be placed within the previously disturbed flowline corridor. Existing impacts on geology and soils within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

Well pad expansion would directly impact 1.24 acres of undisturbed soils. The area would be leveled and crushed limestone or cement brought in to build the pad expansion. Mitigation measures to protect soils during the drilling and production phase of operations would include constructing a sloped 6' x 6' corrugated steel well cellar, and lining the pad underneath the crushed limestone or cement with a 20-millimeter thick polyethylene liner that would extend over a three foot high berm surrounding the perimeter of the pad. These measures are intended to

contain any spilled substances and prevent the downward percolation into native soil underlying the pad. If the proposed wells do not go into production, the well pad would be reduced to 0.345 acres, resulting in localized, short-term, minor, adverse impacts on geology and soils until the site is satisfactorily reclaimed.

However, if the wells are placed in production, the expanded well pad (3.52 acres) would be reduced to 2.02 acres. The continued use of the site for production operations would result in localized, long-term, minor adverse impacts on geology and soils. Well pad reduction would involve removing imported material, re-contouring the site to natural conditions, and re-establishing native vegetation to meet 70% cover. Additional flowline construction would be confined within the previously disturbed flowline corridor (1.7 acres). Impacts on wetlands (0.024 acres) within the pipeline corridor have been previously mitigated as part of the construction of the flowline for the Peach #1 well. Temporary displacement of soils would occur while the flowlines are buried. Once the flowlines are buried, soils would be replaced and the corridor would be re-vegetated. Adverse impacts on geology and soils from flowline placement would be localized, minor, and short-term during construction and re-vegetation activities.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced to short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on geology and soils throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the park, resulting in short to long-term, negligible to minor, adverse impacts localized near developments. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Maintenance of the access road/flowline route and well pad expansion for the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells would directly impact up to 7.08 acres, resulting in short- to long-term, negligible to minor, adverse impacts on geology and soils in the analysis area.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and could possibly produce hydrocarbons, resulting in the short-term disturbance to geology and soils on 7.08 acres, and the long-term disturbance of 3.08 acres. Maintenance of the access road/flowline route, production facility; well pad expansion, drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park. No impairment to geology and soils would result from implementation of this alternative.

Breakddown of Acreage Calculations

Proposed	Existing	Cumulative	Longterm
1.24 acres for well pad expansion	2.28 acres for well pad 3.40 acres road/ flowline 0.16 acres for pull outs 5.84 acres presently disturbed	3.52 acres for well pad 3.40acres for road/ flowline 0.16 acres for pull outs 7.08 acres of total disturbance	7.08 acres of total disturbance - 1.50 acres well pad reduction - 1.7 acres reveg.of pipeline (1yr) 3.08 acres of longterm disturbance

3.2. Impacts on Water Resources and Floodplains

Methodology
To analyze the impacts on water resources and floodplains, all available information on water resources and floodplains in the park was compiled including: personal observations, consultation with other agencies, the parks approved OGMP, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment
Padre Island National Seashore is located on a largely undeveloped barrier island in southern Texas, along the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre, back-island dunes, and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made dredge material islands in the Laguna Madre also lie within the National Seashore.

Foredunes of the park provide protection from hurricanes and tropical storms for the island's backcountry and the Texas mainland. The dunes are fragile and once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become

primary dunes as vegetation stabilizes more sand, resulting in a line of dunes forming parallel to the beach that varies in height from less than six feet to approximately 50 feet above sea level. This primary dune line extends the entire length of Padre Island National Seashore, broken only in a few places where storm washover channels have occurred, or road cuts have been constructed.

The Dunn-Peach # 1 well pad is sited on upland habitat, and the proposed well pad expansion would also encompass uplands. Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water at the site is approximately two to five feet deep, depending upon the season.

According to the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS, 2000), and Federal Emergency Management Agency floodplains maps, most of the park and all of the project area lies within the 100-year floodplains. The exception is the higher dune areas. The hurricane season begins June 1 and continues through November 30.

The park will provide a draft floodplains statement of findings to the various state and federal agencies required by the NPS's Director's Order and Procedural Manual #77-2: Floodplain Management.

Impacts of Alternative A, No Action, on Water Resources and Floodplains
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on water resources and floodplains. However, impacts on water resources and floodplains in the analysis area would continue as a result of park, commercial, and recreational vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operations, and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, adverse impacts on water quality of the Gulf of Mexico.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The primary visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach. Visitor uses would result in localized and short-term, negligible, adverse impacts on water quality of the Gulf.

The Dunn-Peach # 1 well and the AEP pipeline located to the east of the wellsite would continue to impact water resources and floodplains within the analysis area. The park is located along the 100-year floodplains, with the exception of the foredunes, there is no practicable alternative to siting these operations outside the 100-year floodplains. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and annually excavating small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. These activities could cause sedimentation during times when the work area is inundated; however, it is expected that work of this nature would be scheduled during dry periods (winter months). There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating surface or groundwater. If leaks or spills

occur during flood events, contaminants could be transported via surface waters great distances, thereby increasing flood hazards and degrading floodplains values. Impacts from spills could be localized to widespread, with minor to major, adverse impacts on water resources and floodplains. However, with mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two gas pipelines and the Dunn-Peach # 1 well would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on water resources and floodplains throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the park could increase turbidity to Laguna Madre waters inside the park. Other activities that could impact water resources and floodplains parkwide include prescribed fires, future park developments, routine maintenance of park roads, park, commercial and recreational vehicle use, and recreational activities.

The Dunn-Peach # 1 well has a short-term disturbance of 5.84 acres and a long term-occupancy of 2.412 acres within the 100-year floodplains. Existing and future development of oil and gas access roads and pads within the park could result in altering surface water flow and locally increasing soil erosion. Leaks and spills from oil and gas operations could be localized to widespread, with minor to major, impacts on water resources and floodplains. Spills from oil and gas operations or tankers in the Laguna Madre or Gulf of Mexico could be transported by water into the park and cause widespread impacts and result in long-term clean-up and remediation.

Cumulative impacts on water resources and floodplains throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, adverse impacts on the park's water resources and floodplains, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No

impairment to water resources and floodplains would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Water Resources and Floodplains
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and produced, resulting in the short-term disturbance of 1.24 acres within the 100-year floodplain. Additional flowlines would be placed within the previously disturbed pipeline corridor. Mitigation measures are in place to restore the loss of water resources. Existing impacts on water resources and floodplains within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with park, commercial, and recreational vehicle use on the 6.9 mile Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

There is no practicable alternative to siting the proposed well pad expansion or additional flowlines outside the 100-year floodplains because the entire park, with the exception of the higher dunes, is located within floodplains. Impacts could result from changes in surface and subsurface hydrology and risk of contamination from contaminating and hazardous substances. The application of mitigation measures and conditions of approval in the plan of operations would reduce the potential for these impacts to occur.

If the proposed wells are not placed in production, the well pad would be reduced to 0.345 acres, surface materials would be removed, the area re-contoured and re-vegetated, resulting in a localized, short to long-term, negligible, adverse impact on water resources and floodplains.

The drilling of the five wells would require the use of approximately 1,216,182 gallons (total usage) of fresh water. An estimate of water usage per well can be found on page 17 of the EA. The water source for the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be the BNP (Vector) A-8 well. This well was converted to a water well to drill the Dunn-Peach # 1 well.

The potential impact associated with utilizing a water well includes depletion or contamination of the aquifer in the Goliad formation located between 1,400 and 1,700 feet. The Texas Commission on Environmental Quality (formerly TNRCC) has identified useable-quality ground water in this zone to a depth of 1,700 feet; and the Railroad Commission of Texas and NPS have applied mitigation measures to ensure that drilling, production and plugging operations would not impact ground water quality.

Constructing the well pad expansion and additional flowlines; maintenance of the access road, production facility; and drilling and producing the wells would result in impacts similar to those described under No Action, with localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on water resources and floodplains throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled, resulting in the short-term occupancy of 100-year floodplains. Producing the wells would result in localized, short to long-term, negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

3.3. Impacts to Wetlands

Methodology
To analyze the impacts on wetlands, all available information on water resources in the park was compiled including: personal observations, consultation with other agencies and wetland specialists, the park's approved OGMP, landcover classification data, and wetland maps.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment
A wetland delineation was completed for the Dunn-Peach # 1 well determining that the impacted wetlands were under the jurisdiction of the U. S. Army Corps of Engineers. NPS Director's Order #77-1: Wetland Protection and its accompanying Procedural Manual identifies the Cowardin wetland definition as the NPS standard for delineating wetlands for use in determining the extent of impacts. On this project site, the wetlands delineated by the COE are the same as those that would be delineated using the Cowardin definition.

U.S. Army Corps of Engineers Section 404 permit was needed for the wetland impacts. Nationwide Permit (NWP) 12 authorizes the construction of utility lines where construction does not cause greater than 0.5 acre loss of waters of the U.S. and the utility line does not exceed two feet in waters of the U.S. The NWP 14 authorizes the construction of linear transportation projects if discharge does not cause the loss of greater than 0.5 acre of water of the U.S. Based on the evaluation, this project is authorized under NWP's 12 and 14.

The NPS and the COE adhere to the "no-net loss" policy for wetlands protection. Since the total wetland impact area is less than 0.1 acre, and assuming that the wetlands are not considered of high quality or high functional value, compensatory mitigation is strongly encouraged but not

required according to NPS Procedural Manual #77-1. However, the COE's NWP 14 required that the notification include compensatory mitigation. Mitigation used was culverting the access road/flowline route. The objective was to keep the hydrology of the area intact and to improve it where possible through the placement of culverts. The placement of 17 culverts was determined by a professional hydrologist for maximum effectiveness.

Impacts of Alternative A, No Action, on Wetlands
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on wetlands. However, impacts on wetlands in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operations and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Vehicle access on the Gulf beach is recommended above the Gulf beach "wet line" to prevent excessive erosion along the beach. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 6.9 mile segment of Gulf beach.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The primary visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized, long-term, negligible, direct and indirect adverse impacts on the marine wetlands along the 6.9 mile segment of Gulf beach.

The AEP gas pipeline is located east of the Dunn-Peach # 1 well and proposed well pad expansion. The pipeline is under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of the AEP pipeline are located within the analysis area for the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells, and within emergent wetlands. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating small sections of the pipelines to inspect the integrity of the pipe. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed the pipeline in emergent wetland areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of wetlands within the immediate area of work. If there is standing water, sedimentation could indirectly impact a larger area around the worksite.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating emergent wetlands. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wetlands beyond the immediate area and degrading wetlands values. Impacts from spills could be serious, with effects ranging from localized to widespread, with minor to major, adverse impacts on wetlands. However, with the mitigation measures included

in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced.

Existing uses, including vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines and the Dunn-Peach # 1 well would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on wetlands throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels in the Laguna Madre near the park could increase sedimentation in the Laguna Madre waters inside the park, resulting in the covering of seagrasses. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wetlands parkwide include prescribed fires, future park developments, routine maintenance of park roads, park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact wetlands. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on wetlands. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the park's shorelines, comprised of marine wetlands on the Gulf shore and wind-tidal flats on the Laguna Madre shore, causing widespread impacts and resulting in long-term clean-up and remediation.

Cumulative impacts on wetlands throughout the park are expected to result in short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts to wetlands. Existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, continuing operation of two gas pipelines, and the Dunn-Peach # 1 well would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wetlands
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may produce hydrocarbons, resulting in short-term, direct impacts on 0.024 acre of

emergent wetlands (NPS) associated with the placement of additional flowlines. Additional flowline construction would occur within the previously disturbed pipeline corridor (1.7 acres). Impacts on wetlands (0.024 acres) within the pipeline corridor have been mitigated.

The NPS adheres to the administration's principle of "no-net loss of wetlands." The area that would be directly impacted would comprise less then one tenth of an acre. However, the previously required mitigation of installing culverts along the access road/flowline route, will keep the hydrology of the area intact, and also improve water flow.

BNP would use a 6.9 mile segment of Gulf beach to access the Dunn-Peach # 1 well pad, access road, and production facility. BNP would be required to confine vehicle use above the "wet-line" (see Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). As described above under No Action, poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 6.9 mile segment of Gulf beach.

Existing impacts on wetlands within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands associated with vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines and the Dunn-Peach # 1 well.

Project design would minimize impacts to park wetlands. There is no practicable alternative to siting a segment of the proposed flowline within emergent wetlands, or for using the Gulf beach as an access corridor.

Vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, well pad expansion and construction of additional flowlines would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on wetlands throughout the park would be similar to those described under No Action, with short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the wells were placed into production, there would be short-term, direct impacts on 0.024 acres of emergent wetlands associated with the placement of additional flowlines in a previously disturbed and mitigated pipeline corridor.

Vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, well pad expansion, additional flowline construction would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the

park's shorelines. No impairment to wetlands would result from implementation of this alternative.

3.4. Impacts on Vegetation

Methodology
To analyze the impacts on vegetation, the park's utilized research, the parks approved OGMP, other park plans, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment
Drawe (1992) provides a detailed characterization of species composition and abundance in the various vegetation types on Padre Island. He found 140 species of plants, including 27 grasses, 92 forbs, 3 cacti, 3 wood species, and 15 other species.

The area in the vicinity (i.e. within 1,000 feet) of the proposed project area is comprised of a diverse group of habitats. Moderate to high dune fields were typically dominated by seacoast bluestem (*Schizachyrium littorale*), camphor weed (*Hetrotheca subaxillaris*), and gulf dune paspalum (*Paspalum monostachyum*), with partridge pea (*Cassia fasiculata),* sea oats (*Uniola paniculata*), slim leaf dicantheleum (*Dichantheleum linearifolium*), marsh hay cordgrass (*Spartina patens*), seaside pennywort (*Hydrocotyle bonariensis*), white stem wild indigo (*Baptisia leucophaera*), western ragweed (*Ambrosia psilostachya*), narrow-leaf sumpweed (*Iva angustifolia*), eastern prickly pear (*Opuntia compressa*), and silver-leaf croton (*Croton punctatus*). Moderate to high dune fields are typically 75% -95% covered with vegetation. Most of the proposed project area is comprised of grasslands. Hummocky grasslands are typically dominated by narrow-leaf sumpweed, western ragweed, marshhay cordgrass, and camphor daisy (*Maechaeranthera phyllocephala*) at lower elevations. Seacoast bluestem, gulf dune paspalum, and seaside pennywort dominate higher elevations. Other species include camphorweed, purple mist flower (*Eupatorium coelestinum*), seashore dropseed (*Sporobolus viriginicus*), partridge pea, white stem wild indigo, prairie clover (*Dalea sp.*), sea ox-eye (*Borrichia frutescens*), and bushy bluestem (*Andropogon glomeratus*). Hummocky grasslands are typically 95%-100% covered with vegetation.

Scattered depressions within the grasslands have alternating dominance of bulrush (*Scirpus americanus*), narrow-leaf sumpweed, seashore dropseed, frog-fruit (*Phyla nodiflora*), and gulf dune paspalum, with sea lavender (*Limonium corolinianum*), and slim leaf dicanthelium. Vegetation coverage in these depressions is approximately 75%-96%. A distinct shallow depression among the grasslands is dominated by sea ox-eye daisy and seashore dropseed. Other species include narrow-leaf sumpweed, gulf dune paspalum, frog fruit, and bulrush. Vegetation coverage in this depression is 90%. A scar from an existing pipeline exists near the Vector access road and is slightly elevated and dominated by narrow-leaf sumpweed and sea ox-eye with seashore dropseed. Vegetation coverage along the pipeline scar is approximately 85%.

A sparsely vegetated sand flat with scattered hummocks lies east of the project site. The hummock areas within this sand flat consist of the same vegetation community as previously described in hummocky grasslands. Sand flat vegetation is typically dominated by seashore dropseed, narrow-leaf sumpweed, and sea lavender, with higher fringes dominated by sea ox-eye and low patches dominated by shoregrass. Other species include gulf dune paspalum, seaside golden rod (*Salidago sempervirens*), seacoast bluestem, slim-leaf dicanthelium, and camphor daisy. Vegetation coverage within the sand flat is approximately 50%-80%. A few transitional areas are typically 25-foot wide and dominated by bulrush. Other species within the transitional areas include seashore dropseed, marshhay cordgrass, sea lavender, and purple mistflower.

Salt marsh areas near the Laguna Madre shoreline are dominated on the lower fringe by saltwort (*Batis maritima*) and shoregrass. The higher salt marsh area was dominated by seashore saltgrass, marshhay cordgrass, and sea ox-eye. Other species include sea lavender, Carolina wolfberry, bulrush, and narrow-leaf sumpweed. Vegetation coverage for salt marsh areas is typically 75%-95%. One unvegetated habitat (a tidal algal flat) exists within the allotted radius of the project.

Impacts of Alternative A, No Action, on Vegetation

Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on vegetation. However, impacts on vegetation in the analysis area would continue as the result of the continuing operation of two gas pipelines and the Dunn-Peach # 1 well. Production of the Dunn-Peach # 1 well results in the short-term disturbance to geology and soils on 5.84 acres, and the long-term occupancy of 2.412 acres.

The AEP gas pipeline is located east of the Dunn-Peach # 1 wellsite. The pipeline is operating under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of the AEP pipeline are located within the analysis area for the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells. Vegetation covers the pipeline corridors. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the pipeline to inspect the integrity of the pipeline. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed the pipeline in areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of vegetation within the immediate area of work.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and damaging or killing vegetation. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced.

Existing uses, including the continuing operation of the two gas pipelines and the Dunn-Peach # 1 well would result in localized, long-term, negligible to minor, adverse impacts on vegetation within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on vegetation throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting vegetation parkwide include prescribed fires, future park developments, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact vegetation. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts is reduced.

Cumulative impacts on vegetation throughout the park are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled resulting in no new impacts on vegetation. Existing uses, including the continuing operation of two gas pipelines and the Dunn-Peach # 1 well, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Vegetation
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. Well pad expansion would directly impact 1.24 acres of upland vegetation. If the wells do not go into production, the well pad (3.52 acres) would be reduced to 0.345 acres and 3.17 acres would be reclaimed, resulting in localized, short-term, minor, adverse impacts on vegetation until the site is satisfactorily reclaimed. If the wells are placed in production, the expanded well pad (3.52 acres) would be reduced to 2.02 acres; and additional flowlines would be installed. The continued use of the site for production operations would

result in localized, long-term, minor adverse impacts on vegetation. The well pad reduction would remove 1.5 acres of imported material, resulting in a localized, short-term, minor, adverse impact on vegetation until the site is re-vegetated to 70% native cover.

Over the long-term operation of the flowline, occasional disturbance to vegetation within the flowline corridor could occur as a result of routine maintenance, including access over the corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the flowline to inspect the integrity of the line.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on vegetation. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Mitigation measures include the construction of a sloped 6' x 6' corrugated steel well cellar and lining the pad underneath the caliche with a 20 millimeter thick polyethylene liner that would extend over a three-foot high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation.

Direct and indirect impacts on vegetation could occur as a result of the introduction of exotic vegetation resulting from the placement of fill material or the use of construction equipment. However, with the mitigation measures included with this alternative, the potential and intensity of impacts would be reduced.

Upon plug and abandonment of the wells, the imported crushed limestone or cement would be removed, the site re-contoured to natural conditions, and native vegetation re-established to 70% cover. Plugging and reclamation activities would result in a localized, short-term, minor, adverse impact on vegetation.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts from existing and future oil and gas operations in the park, park developments and operations, and visitor uses, resulting in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the well were placed into production, there would be short-term loss of vegetative cover on 1.24 acres and a long-term loss on 3.08 acres. Constructing additional flowlines and well pad expansion, and drilling and producing the well, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park. No impairment to vegetation would result from implementation of this alternative.

3.5. Impacts to Natural Soundscapes

Methodology
To analyze the impacts on natural soundscapes, the park utilized personal observation, research, and the park's approved OGMP**.**

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable.

Minor: the impact is slight but detectable.

Moderate: the impact is readily apparent.

Major: the impact is severely adverse.

Affected Environment
The natural quiet of Padre Island National Seashore contributes heavily to a positive visitor experience. Surveys in 1987 (Ditton and Gramann) and 1989 (Gramann and Ruddell) examined visitor motive for coming to Padre Island. The top motives include "to get away," "be outdoors," and "for rest and relaxation." In 1998, the NPS contracted Dr. Jim Foch of the Livermore Laboratory to record background sound measurements at various locations in the park. A useful measure of background sounds is the sound level observed 90% of the time, abbreviated L90. Although measurements were not recorded at the exact location of the project area, the relatively constant sound level of the surf (about 62 decibles) at 60 yards from the water) is considered the "background" noise level along the Gulf shoreline. The L90 levels inland fall off in a systematic manner based on the distance from the surf (Foch, 1998).

Impacts of Alternative A, No Action, on Natural Soundscapes
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on natural soundscapes. However, impacts on natural soundscapes in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach, visitor uses on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

Vehicle use and visitor uses on the 6.9 mile segment of Gulf beach could occasionally result in sounds that exceed the 60-decibel background sound levels when drivers honk horns, play radios very loud, and engine noise is louder than normal.

Existing operation of the two pipelines located to the east of the proposed wellsite could impact natural soundscapes more readily due to the background sound measurements being very low, in the 30 to 45 decibel range. Routine maintenance of the pipeline from using a backhoe/front loader would be heard several hundred feet away, but backcountry visitor use is uncommon, and visitors recreating on the Gulf beach would not hear these activities. Due to the predominant southeast winds, on some days Laguna Madre visitors will hear maintenance and other types of oil and gas activities from within the park.

Existing uses, including vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two pipelines and the Dunn-Peach # 1 well would result in short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area.

Cumulative Impacts
Under Alternative A, cumulative impacts on natural soundscapes throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park and new drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to natural soundscapes include routine maintenance of park roads, park and visitor vehicle use, and recreational activities such as motor boating and playing

radios at a high volume. On occasion, military overflights over the park introduce noise audible in the park. As a result of these activities, cumulative impacts on natural soundscapes throughout the park is expected to result in short to long-term, negligible to moderate, adverse impacts, localized near sources.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on natural soundscapes. Existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Natural Soundscapes
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be completed to produce hydrocarbons.

Existing impacts on natural soundscapes within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

Construction of the well pad expansion and additional flowlines, and routine maintenance activities during production would result in localized and short-term increases in noise associated with vehicle traffic, heavy equipment and ground-disturbing activities. Elevated noise would be greatest during the short-term drilling of the wells. Sound levels could reach 90 decibels on the drill rig. At 1,500 feet from the drill rig, sound levels would approach background levels ranging from 30 to 45 decibels. Elevated noise during the drilling phase would result in localized, short-term, minor to moderate, adverse impacts on natural soundscapes within 1,500 feet of the wellpad. It is possible that on a calm day visitors can hear the equipment farther than 1,500 feet. During the long-term production life of the well, occasional workover operations could occur at five to 10 year intervals and take one to two weeks to complete. Workovers would increase noise levels, but at a much lower intensity and duration than drilling a well. Production operations would result in localized, long-term, negligible to minor, adverse impacts from routine daily pickup truck traffic, periodic larger truck traffic necessary to remove produced liquids, and the use of a compressor to remove gas if necessary.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on natural soundscapes throughout the park would be similar to those described under No Action, with existing and future oil and gas operations in the park, routine park operations, visitor uses, and occasional military overflights result in localized, short to long-term, negligible to moderate, adverse impacts near sound sources.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. Construction of the well pad expansion, additional flowlines, and drilling and producing the wells, in addition to existing activities within the analysis area, would result in

short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to moderate, adverse impacts on natural soundscapes localized near sources throughtout the park. No impairment to natural soundscapes would result from implementation of this alternative.

3.6. Impacts on Wildlife

Methodology
To analyze the impacts on wildlife, the park utilized research, the park's approved OGMP, other park plans, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment
During field investigations for the Dunn-Peach # 1 well and the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells, personnel made notes of wildlife observed in the area of the access road/flowline route, well pad, and production pad. The species that were observed include the Mourning Dove (*Zenaida macroura*), coyote (*Canis latrans*), Black-tailed jackrabbit (*Lepus californicus*), and white-tailed deer (*Odocoileus virginianus*). The diverse vegetation offers feeding opportunities for a wide variety of birds and other wildlife. In addition to the above, NPS staff have observed White-tailed Hawks(*Buteo albicaudalus*), Black Terns (*Chlidonias niger*), and Meadowlarks (*Sturnella* sp.)

Birds. Continental Shelf Associates (CSA), Inc. (1985), Chapman (1981, 1988), Brown and Huey (1991) and U.S. Department of the Interior (2000), provide data and discussions of the wildlife utilization of the project area. Ecoservices (1993) surveyed bird activity north and south of the project site from July 1992 through April 1993. A total of 281,045 birds of 97 species were identified and counted. Important species included the Brown Pelican (*Pelecanus occidentalis*), Piping Plover (*Charadrius melodus*), Snowy Plover (*C. alexandrinus*), Peregrine Falcon (*Falco peregrinus*), and the Reddish Egret (*Egretta rufescens*). Species of geese, duck, gull, tern, sandpiper, and other beach species were also observed. Padre Island has 322 species of birds, including migratory and resident waterfowl, shorebirds, neo-tropical songbirds, and raptors. During the fall and winter, Sandhill Cranes (*Grus canadensis*) frequent the west side of Padre Island, near Bird Island Basin. The cranes can be observed feeding in the

wetlands and uplands of the park. Many bird species utilize ephemeral and freshwater ponds. They include Northern Bobwhite Quail (*Colinus virginianus*), Northern Harrier (*Circus cyaneus*), Sandhill Crane, Great Egret (*Casmerodius albus*), Great Blue Heron (*Ardea herodias*), Long-billed Curlew (*Numenius americanus*), Sanderling (*Caldris alba*), Killdeer (*Charadrius vociferus*), terns, ducks, and grebes (DOI 2000).

Mammals. Mammals likely to utilize habitat in the general project area include the gulf coast kangaroo rat (*Dipodomys compactus*), south Texas pocket gopher (*Geomys personatus*), northern grasshopper mouse *(Onychomys leucogaster*), eastern mole (*Scalopus aquaticus*), raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*), and Mexican free-tailed bat (*Tadarida brasiliensis mexicana*) (CSA 1985, and DOI 2000).

Reptiles and Amphibians. Reptiles likely to utilize habitat in the general project area include the keeled earless lizard *(Holbrookia propinqua propinqua*), whiptail lizard (*Cnemidophorus sp*.), western diamondback rattlesnake (*Crotalus atrox*), slender glass lizard (*Ophisaurus attenuatus*), western massasauga rattlesnake (*Sistrurus tergeminus*), western hog-nosed snake (*Heterodon nasicus*), glossy snake (*Arizona elegans*), checkered garter snake (*Thamnophis marcianus*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvius*), red-eared slider (*Trachemys scripta elegans*), and the yellow mud turtle (*Kinosternon flavescens*) (Chapman 1988, CSA 1985, and DOI 2000). The ornate box turtle (*Terrapene ornata ornata*) has also been reported on the island (CSA 1985). Amphibians found on the island include the northern leopard frog (*Rana pipiens*), green tree frog (*Hyla cinerea*) and Hurter's spadefoot toad (*Scaphiopus holbrookii hurterii*).

Impacts of Alternative A, No Action, on Wildlife

Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on wildlife. However, impacts on wildlife in the analysis area would continue as the result of vehicle use along the 6.9 mile segment of Gulf beach by park staff, visitor uses on the beach, continuing operation of two gas pipelines, and the Dunn-Peach # 1 well. Vehicles on the Gulf beach would include two and four-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites. At the 5-mile marker, the Gulf beach is recommended for four-wheel drive vehicles only. Vehicle use along the Gulf beach would rut the beach sand.

Park staff, 13 oil and gas operations, and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Vehicle access would result in short-term movement of bird species utilizing the shoreline for loafing or resting. Shorebirds would take temporary flight when vehicles approach too close and land to resume their activity after vehicles have passed. Displaced wildlife could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone. In a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. Some loss of benthic organisms would be expected due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Vehicle impacts would result in localized, short-term, negligible to minor, adverse impacts on shorebirds and benthic organisms.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The primary visitor use period extends from May through September, peaking in August; and would be concentrated in the first five miles of Gulf beach. Visitor uses on the beach would displace wildlife, primarily shorebirds, resulting in localized, negligible to minor, adverse impacts on shorebirds.

Two gas pipelines are located east of the Dunn-Peach # 1 well. Both pipelines are under approved plans of operations pursuant to the 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells. Routine maintenance along the pipeline corridors would include work crews occasionally accessing the pipeline corridor by truck or ATV to inspect surface equipment, excavating small sections of the lines to inspect the integrity of the pipelines. A backhoe/front-loader would be used to excavate and replace segments of pipe. Use of heavy equipment could result in the incidental take of individuals, alter habitat by rutting or compacting soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Damage or removal of soil and vegetation along segments of the pipelines would result in the short-term modification of wildlife habitat. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating vegetation and soils. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wildlife habitat beyond the immediate area. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on wildlife. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced. Impacts from the continuing operation and maintenance of the two pipeline segments within the analysis area would result in localized, short to long-term, negligible to minor, adverse impacts on wildlife.

Existing uses, including vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines and the Dunn-Peach # 1 well, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on wildlife throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase turbidity in the Laguna Madre waters inside the park. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wildlife parkwide include prescribed fires, future park development, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park would result in the direct loss of wildlife habitat. Displaced wildlife could potentially die of natural

causes or displace other wildlife. There is a remote possibility for the incidental take of wildlife during the course of operations from vehicle use, construction activities, or from ingesting leaked or spilled hydrocarbons and contaminating or hazardous substances. Leaks and spills from oil and gas operations could be serious, with negligible to moderate, impacts on wildlife. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the Gulf or Laguna Madre shores, causing widespread impacts and resulting in long-term clean-up and remediation. Elevated noise levels, particularly during drilling operations, could displace wildlife, but most wildlife is expected to return after becoming acclimated to some noise disturbance. Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels (Table 3), routine monitoring and inspection of operations are expected to substantially reduce the impacts to wildlife to short to long-term, negligible to minor, adverse impacts, localized around developments throughout the park.

Cumulative impacts on wildlife throughout the park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments and activities throughout the park. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wildlife, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on wildlife. Existing vehicle use on the 6.9 mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines and the Dunn-Peach # 1 well ,would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the park. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wildlife
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled, the well pad expanded, resulting in short-term loss of wildlife habitat on 1.24 acres and the long-term occupancy of 3.08 acres

Existing impacts on wildlife within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts associated with vehicle access along the 6.9 mile segment of Gulf beach, visitor use on the beach, continuing operation of the two gas pipelines, and the Dunn-Peach # 1 well.

BNP would use a 6.9 mile segment of Gulf beach to access its Dunn-Peach # 1 well pad (proposed expansion site). BNP would be required to confine vehicle use above the "wet-line" to minimize impacts to shorebirds (see Tables 3, 4, and 5 for mitigation measures and operating stipulations). As described above under No Action, vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicle impacts would result in localized, short to long-term, negligible to minor, indirect, adverse impacts on shorebirds and benthic organisms.

If the wells are placed in production, the well pad would be reduced by 1.5 acres, resulting in localized, short-term, negligible to minor, adverse impacts on wildlife. Additional flowline construction would re-disturb 1.7 acres. A temporary alteration of habitat would occur while the flowline is being buried, and until the surface is reclaimed. Impacts on wildlife from flowline placement would result in localized, short-term, negligible to minor, adverse impacts.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on wildlife; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels. For a complete listing see Table 3.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on wildlife throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor adverse impacts localized near developments; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the wells are placed into production, there would be short-term loss of wildlife habitat on 7.08 acres, and the long-term occupancy of 3.08 acres. Well pad expansion, constructing the additional flowlines; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the park. No impairment to wildlife would result from implementation of this alternative.

3.7. Impacts on State and Federally Protected Species

The Endangered Species Act terminology used to assess impacts to listed species as follows:

> ***No effect:*** When a proposed action would not affect a listed species or designated critical habitat.
>
> ***May affect/not likely to adversely affect:*** Effects on special status species or designated critical habitat are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or completely beneficial.
>
> ***May affect/likely to adversely affect****:* When an adverse effect to a listed species or designated critical habitat may occur as a direct or indirect result of proposed actions and the effect is either not discountable or completely beneficial.
>
> ***Is likely to jeopardize proposed species/adversely modify proposed critical habitat):*** The appropriate conclusion when the National Park Service or the U.S. Fish and Wildlife Service identify situations that could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within or outside park boundaries.

Methodology
Information on state and federally protected species within Padre Island National Seashore was gathered from state and federal permitting agencies, research, personal observation, consultation with specialists, and reference materials. Known impacts caused by road and beach access by visitors and existing gas operations were also considered.

The NPS has developed the following threshold definitions under the National Environmental Policy Act guidelines. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: No federally listed species would be affected or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. Negligible effect would equate to a "no effect" determination in U.S. Fish and Wildlife Service terms.

Minor: The alternative would affect an individual(s) of a listed species or its critical habitat, but the change would be small. Minor effect would equate to a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species.

Moderate: An individual or population of a listed species, or its critical habitat would be noticeably affected. The effect could have some long-term consequence to the individual, population, or habitat. Moderate effect would equate to a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species.

Major: An individual or population of a listed species, or its critical habitat, would be noticeably affected with a long-term, vital consequence to the individual, population, or habitat. Major effect would equate to a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely…" or "not likely to adversely affect" the species or critical habitat.

Padre Island National Seashore has no designated critical habitat within the park's boundary for any federally listed species. An existing U.S. Fish and Wildlife Recovery Plan for the Kemp's Ridley sea turtle assigns the task of patrolling for nesting sea turtles to the park. According to a September 18, 2003 listing of federally protected species and the Texas Parks and Wildlife Department's website (TPWD http://tpwd.state.tx.us/nature/endang/), 42 listed federal and four state protected species potentially occur at Padre Island National Seashore (Appendix 1). Of these, the 26 species that have actually been documented at Padre Island National Seashore are listed in Table 10 below. The remaining 15 species have either not been documented and/or there is not suitable habitat within the park, and therefore will not be affected by the proposed project. Table 10 also includes four state-protected species (*) that have been documented in the park and will be addressed within this document because the NPS recognizes their sensitive status and provides them a high level of protection, similar to Federal listed species.

Table 9. State and federally protected species occurring or likely to occur at Padre Island National Seashore.

SPECIES	FEDERAL	STATE
(T – Threatened, E – Endangered, SOC – Species of Concern, and S/A – Similar in Appearance)		
Reptiles and Amphibians		
American Alligator (*Alligator mississippiensis)*	T (S/A)	
Texas Horned Lizard (*Phrynosoma cornutum*)	SOC	T
Texas Indigo Snake (*Drymarchon corais erebennus)* *		T
Turtles		
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)*	E	E
Loggerhead Sea Turtle (*Caretta caretta)*	T	T
Green Sea Turtle (*Chelonia mydas)*	T	T
Atlantic Hawksbill Sea Turtle (*Eretmochelys imbricata*)	E	E
Leatherback Sea Turtle (*Dermochelys coriacea*)	E	E
Birds		
Eastern Brown Pelican (*Pelecanus occidentalis*)	E	E
Reddish Egret (*Egretta rufescens*)	SOC	T
White-faced Ibis (*Plegadis chihi*)	SOC	T
Wood Stork (*Mycteria americana*) *		T
Sooty Tern (*Sterna fuscata*)	T	
Black Tern *(Chlidonias niger)*	SOC	
Piping Plover (*Charadrius melodous*)	T	T
Bald Eagle (lower 48 states) (*Haliaeetus leucocephalus*)	T	T
Northern Aplomado Falcon (*Falco femoralis septentrionalis*)	E	E
Ferruginous Hawk *(Buteo regalis)*	SOC	
Swallow-tailed Kite (*Elanoides forficatus*) *		T
White-tailed Hawk (*Buteo albicaudatus*) *		T
Peregrine Falcon (*Falco peregrinus*)	Delisted	E
Cerulean Warbler *(Dendroica cerulea)*	SOC	
Black-capped Vireo (*Vireo atricapillus*)	E	E
Tropical Parula (*Parula pitiayumi*)	SOC	T
Loggerhead Shrike *(Lanius ludovicianus)*	SOC	
Plants		
Roughseed Sea-purslane *(Sesuvium trianthemoides)*	SOC	

There are several species from Table 10 known to occur or would have suitable habitat in or adjacent to the project area (Gulf shoreline, upland, grasslands, and wetlands). These species include the Texas horned lizard, Texas Indigo snake, all five species of sea turtle, Eastern Brown Pelican, Black Tern, Piping Plover, Peregrine and Aplomado Falcons, White-tailed Hawk, and the Loggerhead Shrike.

Several drilling operations could take place in the winter 2004 and spring of 2005. These operations include: 1) the drilling of the Lemon/Lemon seed wells located at the 12.5-mile marker, 2) the drilling of the Dunn-Peach # 2, 3, 4, 5, and 6 wells, which are the subject of this EA, and 3) the possible drilling of the proposed Novus-Manzano well, which is located near the

Dunn-Peach location. With the increased oil and gas vehicular traffic on the beach and the cumulative affects resulting from this increased activity, the park is pursuing formal consultation with the U.S. Fish and Wildlife Service. The resulting Biological Opinion could have additional mitigation measures.

Table 11 summarizes the impacts on each species or suitable habitat analyzed in this section. Impacts on species and suitable habitat under the Proposed Action range from negligible to moderate. Existing impacts within the analysis area under both alternatives on species and suitable habitat range from no impact to moderate.

Table 10. Summary of impacts by species.

Species	Alternative A: No Action	Alternative B: Proposed Action
Texas Horned Lizard (*Phrynosoma cornutum*) Suitable Habitat	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Texas horned lizard suitable habitat. However, continuing operation of two gas pipelines and the Dunn-Peach # 1 well within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from the implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the wells are placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas horned lizard suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from implementation of this alternative.
Texas Indigo Snake (*Drymarchon corais erebennus)* * Suitable Habitat	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat. However, continuing operation of segments of two gas pipelines and the Dunn-Peach # 1 well within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from the implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the wells were placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas indigo snake suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from implementation of this alternative.

Species	Alternative A: No Action	Alternative B: Proposed Action
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)* **Loggerhead Sea Turtle** (*Caretta caretta)* **Green Sea Turtle** (*Chelonia mydas)* **Atlantic Hawksbill Sea Turtle** (*Eretmochelys imbricata*) **Leatherback Sea Turtle** (*Dermochelys coriacea*)	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on sea turtles. However, existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would result from the implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the wells are placed into production, vehicle access along the 6.9 mile segment of Gulf beach. In addition to existing vehicle access along the beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from implementation of this alternative.
Eastern Brown Pelican (*Pelecanus occidentalis*)	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the Eastern Brown Pelican. However, existing visitor uses and vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts along the Gulf shoreline. No impairment to the Eastern Brown Pelican would result from implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing visitor uses and vehicle access within this beach corridor, would result in localized, short to long-term negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts to Eastern Brown Pelican. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican. No impairment to Eastern Brown Pelican would result from implementation of this alternative.

Species	Alternative A: No Action	Alternative B: Proposed Action
Black Tern (Chlidonias niger), and **Piping Plover** (*Charadrius melodous*)	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the Black Tern and Piping Plover. However, existing visitor uses and vehicle access on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts. No impairment to Black Tern and Piping Plover would result from implementation of this alternative	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing vehicle access and visitor uses along this segment of beach, would result in localized, short to long-term negligible, direct, adverse impacts on Black Terns and Piping Plovers. Cumulative impacts would be similar to those described under Alternative A, No Action, with vehicle use along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Black Terns and Piping Plovers. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on Black Terns and Piping Plovers. No impairment to Black Tern and Piping Plover would result from implementation of this alternative.
Peregrine Falcon (*Falco peregrinus*) and **Northern Aplomado Falcon** (*Falco femoralis septentrionalis)*	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the Peregrine and Northern Aplomado Falcons. However, existing uses on the Gulf foredunes, result in localized, short to long-term, negligible, adverse impacts on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in localized, short to long-term, negligible to minor, adverse impacts on the Peregrine and Northern Aplomado Falcons. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. The drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Peregrine and Northern Aplomado Falcons, resulting in localized and long-term, negligible, beneficial impacts, for the falcons. Cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.
White-tailed Hawk (*Buteo albicaudatus*) *	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the White-tailed Hawk; and, there are no existing impacts within the analysis area. Cumulative impacts from park developments and operations, recreational activities, existing and future oil and gas operations that may	Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. BNP's proposed well pad expansion and construction of additional flowlines would directly impact 5.84 acres of grassland habitat preferred by the White-tailed Hawk, resulting in localized, short-term, minor adverse

Species	Alternative A: No Action	Alternative B: Proposed Action
	be located within the park's grasslands and wind-tidal flats preferred by this species would result in localized, short to long-term, negligible, adverse impacts on the White-tailed Hawk. No impairment to the White- tailed Hawk would result from implementation of this alternative.	impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned. The drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for White-tailed Hawks, resulting in localized and long-term, negligible, beneficial impacts. Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short to long-term, negligible, adverse impacts on the White-tailed Hawk. No impairment to the White- tailed Hawk would result from implementation of this alternative.
Loggerhead Shrike *(Lanius ludovicianus)* and **Neotropical Migratory Songbirds**	Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Loggerhead Shrikes and Neotropical migratory songbirds. However, existing operation of 2 gas pipelines and the Dunn-Peach # 1 well would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.	Dunn-Peach #2, 3, 4, 5, and 6 wells would be drilled and may be produced; The 1.24 acres well pad expansion impacting grasslands would result in localized, short to long-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

Texas Horned Lizard

Affected Environment

The Texas horned lizard (*Phrynosoma cornutum*) is considered a species of concern at the federal level and listed as threatened by the state. The distribution of the Texas horned lizard ranges from Kansas down to Louisiana through Texas, Arizona, and into northern Mexico (Bockstanz, http://www.zo.utexas.edu/research/txherps/lizards/phrynosoma.cornutum.html). In Texas, it was originally seen throughout the state, but numbers dropped dramatically in the 1950's-60 due to the pet trade, habitat loss, and introduction of the exotic fire ant. As of 1998, Texas horned lizards are only seen in the western third of the state. It is generally found in deserts, temperate grasslands, prairies, and scrubland, in sandy, open areas with little vegetation, often inhabiting abandoned animal burrows or simply covering itself with loose sand. (Todd, UMMZ) These lizards are often found in close proximity to harvester ant (*Pogonomyrmex* spp) mounds, which are its main source of prey, but it will also forage on grasshoppers, beetles, and isopods. In order to obtain enough energy, adult Texas Horned Lizards must forage from several Harvester ant colonies so their daily feeding activities coincide with the times of highest ant activity.

The Texas horned lizard does not migrate but will hibernate from late summer to late spring. Therefore, it is only seen on warm days in late spring and summer. Breeding begins once they emerge from hibernation usually in late April and continuing into July. The age of reproductive maturity is not known, however they are full-grown adults at three years of age.

Texas horned lizards have been found on Padre Island north of the park in the mid-1980, but have not been documented within the park. A herpetological survey completed in 2004 did not document the presence of this species (TNC, 2004). No critical habitat has been designated for this species.

During surveys conducted by park biologists in August, September, and December 2001, this species was not found within the analysis area for the proposed Dunn-Peach # 1 well; and none have been found in subsequent visits in the past three years, therefore, this impact analysis focuses on the potential for impacts on suitable habitat for this species.

Impacts of Alternative A, No Action, on Texas Horned Lizard

Under Alternative A, No Action, the Dunn-Peach #2, 3, 4, 5 and 6 wells would not be drilled, resulting in no impacts on the Texas horned lizard suitable habitat.

Impacts on Texas horned lizard suitable habitat within the analysis area would continue as the result of the continuing operation of two gas pipelines and the Dunn-Peach # 1 well (5.84 acres) resulting in localized, negligible to minor, adverse impacts.

Cumulative Impacts

Some of the 13 existing oil and gas operations and flowlines throughout the park are located within suitable habitat for this species. If the Texas horned lizard had been occupying the park prior to the park's establishment, when many of the existing oil and gas operations were developed, displacement of this species may have occurred from these operations.
Under Alternative A, No Action, cumulative impacts on Texas horned lizard suitable habitat could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would

be plugged and abandoned, and reclaimed, and therefore, impacts would be distributed over time. Park activities that could contribute to impacting suitable habitat include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. In the future, biological surveys would be performed prior to selecting a proposed oil and gas development site or conducting park operations; thereby identifying whether the species is in the proposed project vicinity or if suitable habitat exists so that avoidance and minimization of impacts can be planned. As a result, suitable habitat could be utilized for developments and operations, resulting in short to long-term, negligible to moderate, adverse impacts on suitable habitat, localized at development and activities throughout the park.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Texas horned lizard suitable habitat. However, continuing operation of two gas pipelines and the Dunn-Peach # 1 well, within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Texas Horned Lizard
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled, and if completed, would result in short-term loss of suitable habitat for Texas horned lizard on 1.24 acres, and the long-term occupancy of 3.08 acres. Well pad expansion and construction of additional flowlines would occur in areas of suitable habitat for Texas horned lizard, resulting in localized, short to long-term, negligible, adverse impacts.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Texas horned lizard suitable habitat throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the well is placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas horned lizard suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from implementation of this alternative.

Texas Indigo Snake

Affected Environment
The Texas indigo snake (*Drymarchon corais erebennus*) is not federally listed, but is state listed as threatened.

This species ranges from southern Texas southward along the Gulf coast into Veracruz and Hidalgo, Mexico generally inhabiting burrows in moist riparian breaks in the thorn brush woodlands and coastal mesquite savannah. It may also be seen in grassy plains or on coastal sandhill habitats (University of Texas, Http://www.zo.utexas.edu/research/txherps/snakes/drymarchon.corais.html).

Unlike many other snakes, indigo snakes are primarily diurnal predators. The Texas indigo snake feeds on frogs, turtles, small mammals, birds, and other snake species. This species mates between November and February and lays eggs between April and May. Indigo snakes also spend the first two years of life in seclusion (CCWild, Http://ccwild.cbi.tamucc.edu/naturalhistory/texas_indigo_snake/tisacc.htm).

Padre Island National Seashore has grassy plains and coastal sandhill habitats that may be suitable for this species. Only one known specimen has been documented from the park and was curated in the mid-1980 by Texas A&M University-Kingsville (Donna Shaver PhD, personal communication). No other individuals of this species have been documented since. A herpetological survey completed in 2004 did not document the presence of this species (TNC, 2004). No critical habitat has been designated for this species.

During surveys conducted by park biologists in August, September, and December 2001, this species was not found within the analysis area for the proposed Dunn-Peach # 1 well; and none have been found in subsequent visits in the past three years, therefore, this impact analysis focuses on the potential for impacts on suitable habitat for this species.

Impacts of Alternative A, No Action, on Texas Indigo Snake
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat.

Impacts on Texas indigo snake suitable habitat within the analysis area would continue as the result of the continuing operation of segments of two gas pipelines and the Dunn-Peach # 1 well, resulting in localized, negligible to minor, adverse impacts. Existing visitor uses and vehicle traffic along the 6.9 mile segment of Gulf beach would not impact Texas indigo snake suitable habitat.

Cumulative Impacts
Some of the 13 existing oil and gas operations and flowlines throughout the park are located within suitable habitat for this species. If the Texas indigo snake had been occupying the park prior to the park's establishment, when many of the existing oil and gas operations were developed, displacement of this species may have occurred from these operations.

Under Alternative A, No Action, cumulative impacts on Texas indigo snake suitable habitat could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged and abandoned, and reclaimed and therefore, impacts would be distributed over time. Park activities that could contribute to impacting suitable habitat include prescribed fires, future park development, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. In the future, biological surveys would be performed prior to selecting a proposed oil and gas development site or conducting park operations; thereby identifying whether the species is in the proposed project vicinity or if suitable habitat exists so that avoidance and minimization of impacts can be planned. As a result, suitable habitat could be utilized for developments and operations, resulting in short to long-term, negligible to moderate, adverse impacts on suitable habitat, localized at developments and activities throughout the park.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat. However, continuing operation of segments of two gas pipelines and the Dunn-Peach # 1 well within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Texas Indigo Snake
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled, and if completed, would result in the short-term loss of suitable habitat for Texas indigo snake on 1.24 acres and the long-term occupancy of 3.08 acres. Expansion of the well pad and construction of the additional flowlines would occur in areas with Texas indigo snake suitable habitat, resulting in localized, short to long-term, negligible, adverse impacts.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Texas indigo snake suitable habitat throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the well were placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas indigo snake suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from implementation of this alternative.

Sea Turtles
Including Kemp's Ridley Turtle, Loggerhead Sea Turtle, Green Sea Turtle, Atlantic Hawksbill Sea Turtle, and Leatherback Sea Turtle

Affected Environment
The **Kemp's ridley sea turtle** (*Lepidochelys kempii)* is federally listed as an endangered species. It is the smallest of the sea turtles, and adults reach maturity at about 10-15 years of age. Kemp's ridley turtles nest mostly during the daytime, often in groups called "arribadas". An individual Kemp's ridley may nest as many as three times a season (USFWS and NMFS, 1992), with an average of 2.5 clutches per season. Clutch size averages around 100 eggs. Hatchlings emerge after about 50 days of incubation and hatchling emergence occurs during the night or day. Kemp's ridleys are found in the Gulf of Mexico and Atlantic Ocean and some adjoining estuarine areas. Nesting occurs primarily in the vicinity of Rancho Nuevo, Tamaulipas, Mexico. Each year, some nests are also found at scattered locations between the Texas coastline and Veracruz, Mexico. Very rarely, Kemp's ridleys nest at other locations in the U.S. outside of Texas. More Kemp's ridley nests are consistently found at Padre Island National Seashore than at any other location in the U.S., making it the most important nesting beach in the U.S. for this species.

Historic nesting frequency of this sea turtle on the south Texas coast is poorly known and only six Kemp's ridley turtles were documented there prior to 1979 (Shaver and Caillouet, 1998). A

total of 199 Kemp's ridley nests have been documented along the Texas coast between 1979 and 2004, 104 for of them at PAIS. Kemp's ridley is a native nester at Padre Island National Seashore (Hildebrand, 1963, 1981, 1983; Shaver, 1998a; Shaver and Caillouet, 1998). Since 1978, an international, experimental project involving the National Park Service at Padre Island National Seashore, USFWS, NMFS/NOAA, etc., has been on-going to establish a secondary nesting colony of Kemp's ridley turtles at the park.

Eggs were collected in Mexico, transported to Padre Island National Seashore, and placed into an NPS incubation facility in the park. Hatchlings were released on the beach, allowed to enter the surf and were recaptured. They were then shipped to the National Marine Fisheries Service Laboratory in Galveston, Texas, for 9-11 months of rearing in captivity (head-starting) and the yearling turtles were subsequently released into the Gulf of Mexico. It was hoped that these procedures would cause the turtles to be imprinted to Padre Island National Seashore and return there to nest when they were sexually mature. Since 1996, some turtles from this project have been documented returning to Padre Island National Seashore and nearby vicinity to lay eggs (Shaver, 1997, 1998a, 1999a, 1999b; Shaver and Caillouet, 1998).

In 1986, an NPS program was initiated to detect, monitor, and protect sea turtle nests at Padre Island National Seashore. Detection involves patrols to look for nesting activity, public education, and investigation of reports from patrollers, beach workers, and the public. Patrollers (NPS staff members and volunteers) use ATVs to search the park and adjacent State beaches to the north of the park for sea turtle tracks and nesting Kemp's ridley turtles each day, from April through mid–July. From 1979-2004, 104 Kemp's ridley nests were confirmed in the park, but additional nests were likely missed, especially when patrols were not conducted or were less comprehensive. During 2002, three Kemp's ridley nests were found at hatching on the Texas coast, including one within the patrol route at the park. During 2004, one Kemp's ridley nest was found at hatching on Mustang Island. These observations confirm that some Kemp's nests are missed at egg laying despite patrols and public education. The 104 Kemp's ridley nests were distributed along the entire Gulf beachfront length of Padre Island National Seashore.

The date of the nesting season varies slightly each year. In Mexico, Kemp's ridley nests have been recorded as early as March and as late as August. The 104 nests documented at Padre Island National Seashore from 1979-2004 were found during the months of April, May, June, and July; the months that beach surveys were conducted most intensively. Nesting may also occur at the national seashore during other months, but this has not been confirmed. A dead Kemp's ridley turtle containing eggs was found washed ashore at the national seashore during July.

At the park, some Kemp's ridley turtle's nest every year and many are found stranded (washed ashore, alive or dead) (Shaver, 1997, 1998a, 1998b, 1999a, 1999b; Shaver and Caillouet, 1998). Additionally, Kemp's ridley turtles sometimes inhabit nearshore Gulf of Mexico waters at Padre Island National Seashore for foraging or migration.

No critical habitat has been designated for this species. An existing Recovery Plan for the Kemp's ridley defines specific park tasks in the recovery efforts, which are being conducted (patrols, monitoring, and habitat management). This is the only federally listed species in the park with Recovery Plan responsibilities assigned to this park.

As mentioned above, an NPS and USFWS program was initiated in 1986 to detect, study, and protect Kemp's ridley turtle nests at Padre Island National Seashore and this on-going program has expanded to include the four other species of sea turtle. Detection for the following four

species of sea turtles involves patrols to look for nesting activity, public education, and investigation of reports from patrollers, beach workers, in-park contractors, and the public. Patrollers (NPS staff members and volunteers) use ATVs to search Padre Island National Seashore and the adjacent northern area of State beaches for sea turtle tracks and nesting turtles. Each day, from April through mid-July, they repeatedly patrol the entire Gulf beachfront of the national seashore during daylight hours. The patrol season and procedures are designed primarily to detect nesting by Kemp's ridley turtles, but the other sea turtle nests have also been documented and recovered. Daily runs to the Mansfield Channel and back are made from mid-July through August to look for signs of nesting activity, but these patrols are subject to funding and staff availability, and reports from the public.

No **critical habitat** has been designated in the park for any of the following four sea turtle species. There is no specific Recovery Plan task assigned to the park for the remaining four species of sea turtle occurring at the national seashore, however NPS staff members and volunteers conduct, support and assist in the daily patrols for this species to protect, document, and monitor nesting occurrence.

The **loggerhead sea turtle** (*Caretta caretta)* is federally listed as a threatened species. It occurs in temperate and tropical waters of both hemispheres. The species inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian oceans. Historic nesting frequency on the Texas coast is poorly known. Hildebrand (1981) suggested that nesting likely occurred within the last 300 years, but the earliest loggerhead nest that he was able to confirm for the Texas coast was found in 1977.

Adult loggerhead turtles reach maturity in 25 to 30 years. Loggerheads are nocturnal nesters, although some daytime nesting occurs. They nest from one to seven times within a nesting season (average of approximately 4.1 clutches); clutch size averages 100-125 eggs along the southeastern U.S. coast (NMFS and USFWS, 1991b). Hatchling emergence typically occurs at night. In the Gulf of Mexico, there are distinct nesting populations on the coast of the Florida panhandle and the Yucatan Peninsula. Scattered nests can be found occasionally along other areas of the U.S. Gulf coast including the Chandeleur Islands, Louisiana, in the north and to the U.S./Mexico border in the south.

At the park, loggerhead turtles sometimes inhabit nearshore Gulf of Mexico waters for foraging or migration. Additionally, a few occasionally nest at the national seashore and many more are found stranded there (Shaver, 1998b, 1999b). From 1979-2004, 23 loggerhead nests were documented at Padre Island National Seashore (at various locations scattered along the coast of the national seashore), but additional nests were likely missed, especially when patrols are reduced and less comprehensive after the mid-July Kemp's ridley patrol season ends. Loggerhead nests are found on North Padre Island from mid-May through early August, although nesting has been documented in the southeastern U.S. from late-April through early September.

The **green sea turtle** (*Chelonia mydas)* is federally listed as threatened in all of its range except the waters of Florida and the Pacific coast of Mexico, where it is endangered. It is circumglobal in tropical and sub-tropical waters. A green turtle fishery, operating almost exclusively within inshore waters (bays, estuaries, passes), began in Texas in the mid-1800's. By the early 1900's, the catch declined to such an extent that the turtle fishing and processing industry collapsed (Hildebrand, 1981). Although historic nesting by green turtles on the Texas coast is suspected, the first confirmed nest was not documented there until 1987 (Shaver, 2000).

Adult green turtles reach maturity at 30 to 50 years of age. Female green turtles nest at night. From one to seven clutches are deposited within a breeding season (the average number is usually two to three clutches) (NMFS and USFWS, 1991a). Average clutch size is usually 110-115 eggs. Hatchling emergence occurs at night. In this region, nesting sites include southern Florida and scattered locations in Mexico, although nesting occasionally occurs in south Texas.

At the park, juvenile green sea turtles inhabit waters of the nearshore Gulf of Mexico, the Laguna Madre, and the Mansfield Channel. Additionally, a few green turtles occasionally nest within the national seashore and many are found stranded there each year (Shaver, 1989, 1998b, 2000). From 1979-2004, 12 green turtle nests were documented at the park, all in roughly the southern two-thirds of the park (Shaver, 1989, 2000). The 12 green turtle nests were found during June and July, although nesting occurs from May through September in this region.

The **hawksbill sea turtle** (*Eretmochelys imbricata)* is federally listed as endangered. It occurs in tropical and subtropical seas of the Atlantic, Pacific, and Indian oceans. Young hawksbills occur with some regularity in Texas waters, since northern currents carry them from nesting beaches in Mexico (Hildebrand, 1981). Historic nesting by this species on the Texas coast is unknown. Female hawksbill turtles nest mostly during the night, but rare daytime nesting is known. They nest an average of 4.5 times per season (up to 12 clutches); clutch size averages approximately 140 eggs (NMFS and USFWS, 1993). Hatchling emergence occurs at night. Hawksbills nest on scattered islands and beaches between 25 degrees North and South latitude including beaches in southeastern Florida and the states of Campeche and Yucatan in Mexico. Nesting does not regularly occur on the Texas coast.

At the park, young hawksbills occasionally inhabit waters of the nearshore Gulf of Mexico and Mansfield Channel. Additionally, many are found stranded in the park each year, but nesting very rarely occurs here (Shaver, 1998b, 1999b).

The **leatherback** sea turtle (*Dermochelys coriacea)* is federally listed as an endangered species. It ranges throughout the tropical waters of the Atlantic, Pacific, and Indian oceans, but has also been recorded from the North Atlantic, North Pacific, South Atlantic, and South Pacific. The leatherback is the largest and most pelagic sea turtle species and is normally found in the deeper waters of the Gulf of Mexico where it may undertake extensive migrations.

Nesting occurs primarily at night and diurnal nesting occurs only occasionally. They nest five to seven times per year, with an average clutch size of 110-116 eggs (NMFS and USFWS, 1992). Hatchling emergence typically occurs at night. Leatherback nesting grounds are distributed circumglobally. Leatherbacks infrequently strand at Padre Island National Seashore (Shaver, 1998b).

Hildebrand (1963, 1981) reported leatherback nesting at Little Shell on Padre Island National Seashore, including one documented nesting in 1928 and at least one observed nesting in the mid 1930's. No leatherback nests have been confirmed on the Texas coast since that time.

No leatherback nests have been recorded within the park during recent years, although it is possible that a few were missed, especially when patrols were not conducted or were less comprehensive. In the U.S. and Caribbean, nesting begins in February and continues through July.

Impacts of Alternative A, No Action, on Sea Turtles
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on sea turtles. However, impacts on sea turtles in the analysis area would continue along the 6.9 mile segment of Gulf beach as the result of routine park operations, recreational activities and visitor vehicle use along the 6.9 mile segment of Gulf beach; continuing operation of the two gas pipelines, and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operations, and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Thirty-five percent (133,507 visitors) take the opportunity to access remote beach areas south of the 10-mile marker, such as Yarborough Pass and the Mansfield Channel, that are accessible only to four-wheel drive vehicles. Park staff conducts routine park operations along the beach. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would occasionally travel the beach corridor. These trips include up to three pickup sized trucks that run down, daily, to the sites near the 3 mile and 6 mile markers. Twice monthly, a larger truck runs to the South Sprint Facility near the 6 mile marker to remove gas by-products or "condensate" from a holding tank. Additional traffic is limited to emergency or periodic, routine trips for maintenance or inspections of flowlines and facilities.

There may be times when turtle eggs, nesting turtles, hatchlings, and stranded turtles could be directly vulnerable to vehicle traffic on the 6.9 mile segment of Gulf beach. Operation of all vehicles, including oil and gas heavy equipment, on the beach can crush nesting turtles, stranded turtles, hatchlings, and some eggs, producing an immediate, lethal impact and may cause changes in the structure or density of beach sand, indirectly affecting nesting and incubation habitat (Mann, 1977; NMFS and USFWS, 1991a, 1991b, 1992-1993; Ernest et al., 1998). Vehicles could also remove sea turtle tracks, making it impossible for the NPS staff members and volunteers to find a nest for investigation and protection.

Eggs could be crushed in nests that are not detected. Eggs located close to the sand surface would be most vulnerable to crushing. Each year, a portion of the nests found have the uppermost eggs within only an inch or two of the sand surface. Patrollers and monitors locate nests primarily by searching for the tracks left in the sand by the nesting females. However, the nesting turtles do not always leave visible tracks on the beach, particularly in areas with very hard packed sand, very soft and blowing sand, and thick seaweed. For example, at the first nest discovered at Padre Island National Seashore during 2003, the female barely left any trace of tracks on the hard-packed sand at the nest site, 0.5 miles south of the end of the paved road. Patrol staff that arrived while the turtle was nesting noted that they would not have found her tracks and that the nest would not have been found if visitors had not spotted her crawling on the beach.

The three Kemp's ridley nests found at hatching were located in the dunes. In contrast, the other 35 Kemp's ridley nests found on the Texas coast during the 2002 were documented along the entire beach width, from the high tide line into the dunes. One would expect the beach position distribution of undetected and detected nests to be similar, but that was not the case. Perhaps other nests went undetected at lower beach positions, but did not survive to hatching because of beach driving, human disturbance, predation, or high tides occurring lower on the beach.

Vibrations and noise caused by moving vehicles on the beach could frighten nesting turtles, causing them to abandon their nesting attempt (false crawl) (NMFS and USFWS 1991a, 1991b, 1992; Ernest et al., 1998). Current scientific data are not available for the Kemp's ridley sea

turtle, however several mitigation measures and specific conditions of approval are implemented to reduce the potential risk to sea turtles (Tables 4 and 5).

Turtle hatchlings and smaller stranded sea turtles could become trapped in the ruts for short or long periods of time causing them to weaken, invert, or succumb due to predation, disorientation, crushing, or dehydration (Hosier et al., 1981; Fletemeyer, 1996; Ernest et al., 1998). The depth and slope of the ruts will influence the amount of impact. Deeper and more steeply sloped ruts will cause the greatest impact. Hosier et al. (1981) found that 10-15 cm deep tracks may serve as a significant impediment to loggerhead hatchlings. The smaller the turtle the more that it will be impacted by rut size.

A study in Florida on a nourished beach found that vehicles can also compact the sand, making it more difficult or impossible for nesting turtles to excavate a nest cavity leading to increased false crawls and nests with shallow egg chambers (Fletemeyer, 1996). Compaction could also make it more difficult for hatchlings to emerge from an undetected nest. Data on the level of compaction necessary to inhibit or prevent nesting, or inhibit or prevent hatchling emergence is not available. There is no documented evidence that suggests that the level of traffic in this sandy environment, of Padre Island National Seashore, is a serious concern or noticeable to the sea turtle. In fact, 2002 and 2004 nesting levels appear to contradict this assumption.

Large vehicles associated with oil and gas operations can produce deeper ruts in the sand, which could affect movements of nesting females and hatchlings. To reduce direct impacts that can occur from rutting, the park requires operators to mitigate the impacts by backfilling ruts. However, since backfilling ruts and leveling of the beach surface may cause indirect and direct impacts (including compaction of sand, covering or removal of sea turtle tracks, and crushing of nests and turtles), existing methods used to fill ruts will be reviewed and monitored on a periodic basis by the NPS and USFWS. There are no data to show that sand in these backfilled areas is compacted enough to inhibit nesting.

Vibrations could also harm incubating eggs. It is difficult to assess these areas as scientific data is lacking to fully understand the level of impact on sea turtles from traffic vibrations or noise. From observations of traffic and wildlife interactions, in most instances seeing the vehicle at the water's edge would cause the sea turtle to move back into the water. One would expect this type of reaction of wildlife to man's presence (on foot or in a vehicle). The effect of vibrations from people or from vehicles on the beach during a nesting event does not show a strong negative correlation to date. People driving on the beach often spot nesting sea turtles and can often approach them without disturbing the nesting activity, once laying the eggs begins.

Vehicle and operation lights behind the dunes can cause direct impacts on nesting turtles leading to false crawls and can disorient hatchlings so that they crawl in the wrong direction rather than enter the sea, thereby becoming vulnerable to crushing, predation, and dehydration (NMFS and USFWS 1991a, 1991b; Fletemeyer, 1996). Since oil and gas nighttime transportation of heavy equipment is not permitted during the sea turtle nesting season, the vehicular light issue is confined to four-wheel drive trucks associated with 2-wheel and 4-wheel drive vehicles used by the visitors. It is understood that there are an estimated 278,458 vehicles down the analysis area of 6.9 miles of Gulf beach each year by park visitors, many of which operate at night. Lights from operations behind the dunes could impact this species if the lights are visible from the beach; however, there are no current operations within proximity to the beach that have night lighting. Nesting Kemp's ridley turtles, which are primarily daytime nesters and Kemp's ridley hatchlings, which emerge generally in the daytime, will most likely not be affected. Conditions of approval and mitigation measures applied to the existing 13 approved oil and gas operations would reduce the potential impact associated with lighting.

To reduce and or eliminate the impact of light pollution on the sea turtle (and to the visitor) the following measures of night sky protection are currently being applied as mitigation measures by the park: 1) use of directional and shielded lighting on the drilling rigs and no lighting of production facilities; 2) use of a required setback of 500 feet from the dunes and other light-sensitive areas; and 3) placing night driving restrictions on operators of heavy equipment and trucks during the sea turtle nesting and hatchling emergence period. These steps are expected to be adequate to prevent any light pollution impact, given current scientific data.

Species of sea turtle that nest primarily at night (green, loggerhead and hawksbill) are likely to be the most affected by night driving and associated lighting. Based on documented nesting, the total number of these three species of sea turtle nesting at Padre Island National Seashore, within the analysis area, would be less than three over a 15-year span. The risk of loss to nesting turtles of these species is therefore very small. This would also apply to those hatchlings that emerge at night or early in the morning from the few in-situ nests possibly missed by the daily patrols conducted by the NPS and volunteers.

Currently the NPS removes all sea turtle eggs that are located from the beach and transfers them to the incubation facility within the park. Hatching success is usually elevated substantially for eggs that are transferred to this facility rather than left on the beach in-situ. Some nests missed by the patrol and monitoring effort may go undetected and unprotected from predation, insect infestation, tidal inundation, and crushing. Additionally, some nesting and stranded turtles are not immediately found and protected by the NPS.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf of Mexico shoreline for over 50 years with no documented case of a crushing of a nesting sea turtle within the park. However, outside the park, a passing vehicle struck a Kemp's ridley turtle that laid eggs on the Matagorda Peninsula during 2002. Visitors put her back into the water, but they noted that she was injured and a dead adult Kemp's ridley washed ashore about five miles away, two weeks later. During 2002, beach visitors found and reported three Kemp's ridley nests at hatching, including one located at Padre Island NS, one on North Padre Island north of the national seashore, and one on Mustang Island. No hatchlings were killed at the park, but 14 were crushed and killed by passing vehicles at the two nests sites outside the park. During the 2003, three turtles were documented nesting in the vehicular roadway at the park, including two within visible ruts. Two hatchlings were killed by passing vehicles at the Kemp's ridley nest found hatching on Mustang Island during 2004.

The risk to a sea turtle in the analysis area is low when looking at past nesting activity. The average number of nests per year over a five-year span, for the first 15 miles of south beach, is approximately three. In 2002, one of the highest nesting activity years since the beginning of the patrol program (1986), there were six nests found within the analysis area. The 2004 season had two nests within the analysis area, both were found by BNP monitors. Current nesting activity does not seem to indicate compaction from vehicles, either by visitors or from the existing 13 oil and gas operators, is causing a negative affect.

Recent nesting activity seems to support the idea that existing traffic levels (approximately 381,449 vehicles (2003) on the Gulf beach) do not currently have a measurable effect on nesting sea turtles. Looking at nesting data collected over the past 20 years for the action area, and given that most nests are found and removed from the beach by NPS staff, the potential impact of vibrations to eggs and crushing of nests would appear to be minimal. The chance that hatchlings could be killed by vehicle use at night along the stretch of beach within the action area of the project is real, but minimal.

There is the very small chance that the four sea turtle species (loggerhead, green, hawksbill, or leatherback) would be directly impacted by vehicle use on the beach, including the crushing of stranded turtles and undiscovered nests or hatchlings. Impacts that are more likely to occur would be indirect impacts, including noise and vibration to nests or hatchlings; and direct impacts from night- time lighting, from vehicles and project area lighting that may cause changes in sea turtle behavior can affect these species. All of the existing 13 oil and gas operations located throughout the park are located a sufficient distance behind the foredunes so that any night lighting would not shine onto the beach. The NPS conservation efforts related to these sea turtles are conducted to promote and enhance their recovery. Please refer to the measures employed for use in the Kemp's ridley sea turtle effort as measures used to assist this and other species of sea turtle.

Existing vehicle access along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on sea turtles would result primarily from vehicle access along the Gulf beach from the continuing operation of 13 nonfederal oil and gas operations within the park, future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario, park staff, and visitors. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Leaks and spills from oil and gas operations could be serious, with negligible to moderate, impacts on sea turtles. Spills from oil and gas operations in the Gulf of Mexico, including tanker traffic, could be transported by water onto the Gulf beach shoreline, causing widespread impacts and resulting in long-term clean-up and remediation. Mitigation measures are expected to substantially reduce the impacts.

The risk of impacting one of the four species of sea turtle (loggerhead, green, hawksbill, and leatherback), however, is reduced to a much greater degree because of the limited possibility of encountering one on the seashore. This is particularly true within the existing areas of oil and gas operation. As night driving by all companies is restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles. The greatest potential for a direct, adverse impact would occur from vehicle traffic crushing an undocumented nest or emerging hatchlings, and causing hatchling mortality due to vehicle rutting.

Cumulative impacts on sea turtles throughout the park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to

moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Sea Turtles
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced.

Existing impacts on sea turtles within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, direct and indirect, negligible to minor, adverse impacts associated with vehicle use along the 6.9 mile segment of Gulf beach.

BNP would use the 6.9 mile segment of Gulf beach to access its proposed expanded well pad located approximately 6,400 feet west of the Gulf of Mexico beach. BNP would be required to confine vehicle use above the "wet-line" and apply other mitigation measures specifically designed to avoid or minimize impacts on sea turtles (Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). As described above under No Action, vehicles could compact and rut beach sands, and if poorly maintained, could drip or leak motor oil, coolant, and other lubricants on the beach.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf beach for over 50 years with no documented case of a nesting sea turtle being crushed within the park. The risk to a sea turtle in the analysis area of this project is reduced when looking at past nesting activity. The average number of nests per year over a five-year span (between 2000 and 2004), for the first 6.9 miles of south beach is 2.0 nests. Current nesting activity does not seem to indicate compaction of sand from vehicles, either by the public or from the operator, is causing a negative affect. During the peak sea turtle nesting season, from April 16 to June 30, drilling would not likely take place. However, there are six operational conditions (Table 4) that may require drilling during the peak sea turtle nesting season. The primary impacts would be obstacles to emerging hatchlings from unfilled ruts and the possibility of crushing both hatchlings and eggs in undetected nests. The requirements for daytime driving only and trained staff accompanying equipment and larger trucks down the beach will reduce the potential for impacts to hatchlings.

The four species of sea turtles (loggerhead, green, hawksbill, and leatherback) nest primarily at night and hatchling emergence is usually at night or very early in the morning. As the numbers of nests in the park and within the project area are historically few, the impact on these species is expected to be less than for Kemp's Ridley sea turtles. Therefore, the risk of impacting one of these species of sea turtles is greatly reduced because of the limited possibility of encountering one on the seashore. As night driving by BNP would be restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles. The greatest potential for a direct, adverse impact is to the loggerhead and any remaining undiscovered sea turtle nests. The only real potential for impacts is from vehicle traffic resulting in the crushing of undocumented nests or emerging hatchlings, and causing hatchling mortality due to vehicle tracks and rutting. There is still a risk of injury or mortality from BNP truck traffic, but visitor use of the Gulf beach (pick-up trucks and recreational vehicles/motor homes) increases to its highest point during the month of July, August and September, this alternative is less likely to cause direct impacts to the turtle; however, it would be minimal in the near and long-term.

Vehicle access along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles. Mitigation

measures and monitoring of the proposed project would reduce the potential impact on sea turtles, and help to ensure that the project is not likely to adversely affect these species.

Cumulative Impact
Cumulative impacts on sea turtles throughout the park would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. If the wells are placed into production, vehicle access along the 6.9 mile segment of Gulf beach; in addition to existing vehicle access along the beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from implementation of this alternative.

Eastern Brown Pelican

Affected Environment
Eastern Brown Pelicans *(Pelecanus occidentalis)* are federally and state listed as endangered. This bird's population fell to less than 100 birds between 1967 and 1974 (TPWD, http://tpwd.state.tx.us/nature/endang/birds/bpelican.htm). It is a coastal inhabitant whose range includes the southern United States and northern South America - from North Carolina to Venezuela and Trinidad in the Atlantic and from British Columbia to Chile on the Pacific coast.

This species is found along salt bays, beaches, and oceans. It is generally found near shallow waters adjacent to the coast, especially on sheltered bays. Occasionally Brown Pelicans are seen well out to sea. Brown Pelicans feed almost entirely on fish including menhaden, smelt, and anchovies but can occasionally feed on crustaceans.

Brown pelicans nest in colonies on isolated islands where they are safe from predators. These islands may be either bare or rocky or covered with small mangroves, shrubs, or other trees. Stray individuals may appear on freshwater lakes inland. Nests may be a simple scrape, a heap of debris with a depression on the top, or a large stick nest located in a tree. Breeding season generally begins in early March and lasting until August. After the breeding season, flocks move north along both Atlantic and Pacific coasts. These birds return southward to warmer waters by winter. Small numbers of immatures regularly wander inland in summer, especially in the Southwest (Peterson Multimedia Guides, http://www.petersononline.com/birds/month/brpe/index.html).

Eastern Brown Pelicans occur in the park year-round along both the Gulf and Laguna Madre sides of Padre Island. Individuals utilize the park for resting and foraging, and are typically found in the nearshore and washover habitats. Some individuals migrate south during the winter months and return during the breeding season. Brown Pelicans forage along the Gulf beach shoreline searching for fish near the surface of the water.

In 1993, Dr. Allan Chaney recorded 356 Brown Pelicans over 64 miles of beach between Yarborough Pass and Port Mansfield Channel during a 1992-1993 shorebird survey. Twelve individuals were observed on the Laguna Madre shoreline while the remaining 344 individuals were observed in the washover channels located south of the 33 mile marker. Forty-four individuals were observed between the park's north boundary and the 6.5 mile mark (Chaney *et. al*., 1993a). In 1995, 553 birds were surveyed along the Gulf beach between the park's northern boundary and Yarborough Pass (Chaney *et. al*., 1995b). In comparison, only one Brown Pelican was documented along the Laguna Madre shoreline between Yarborough Pass and the park's northern boundary (Chaney *et. al*., 1995a). It is evident that Brown Pelicans prefer the Gulf beach shoreline instead of the Laguna Madre shoreline.

Brown Pelicans are generally found along the Gulf beach tide line in the morning hours and along the Laguna Madre shoreline and washover channels located in the southern portion of the park in the afternoons. When observed in the washover channels, Brown Pelicans were generally associated with Double Crested Cormorants, gulls, and terns. Brown Pelicans are not observed in other habitats within the park.

Based on nearly thirty years of park colonial waterbird census data, Brown Pelicans have not been documented nesting within the park (TCWD, http://texascoastalprogram.fws.gov/Texas_Colonial_Waterbird_Census_2002.xls). However, they do nest on an island located in Corpus Christi Bay, which is located approximately 20 miles from the park and on islands located in the Laguna Madre outside of the park.

Impacts of Alternative A, No Action, on Eastern Brown Pelican
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts to the Eastern Brown Pelican. However, existing impacts on Eastern Brown Pelicans in the analysis area would continue as the result of vehicle access and visitor uses along the 6.9 mile segment of Gulf beach and continuing operation of the two gas pipelines, and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operations, and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Thirty-five percent (133,507 visitors) take the opportunity to access remote beach areas south of the 10 mile marker, such as Yarborough Pass and the Port Mansfield Channel that are accessible only to four-wheel drive vehicles. Park staff conducts routine park operations along the beach. Vehicles on the Gulf beach would include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Vehicle traffic associated with oil and gas operations normally use -wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continuing operation of 13 oil and operations throughout the park that require access through this 6.9 mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored and are expected to be driven at the posted speed limit of 15 or 25 mph.

Visitor activities on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Visitor activities and vehicles traveling within or close to the "wet-zone" would displace Eastern Brown Pelicans and cause them to take flight. They most likely

would fly along the shoreline to another suitable location and land, or they could fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing vehicle access and visitor use along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelicans within the analysis area.

Cumulative Impact
Under Alternative A, No Action, cumulative impacts on Eastern Brown Pelican would occur from visitor uses, and vehicle access along the Gulf beach by the park, visitors, and oil and gas operators as a result of the continuing operation of 13 nonfederal oil and gas operations and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed, and therefore, impacts would be distributed over time. Cumulative impacts of visitor uses and vehicle access along the Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on the Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican, primarily along the Gulf shoreline.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the Eastern Brown Pelican. However, existing visitor uses and vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts along the Gulf shoreline. No impairment to the Eastern Brown Pelican would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Eastern Brown Pelican
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced.

Existing impacts on Eastern Brown Pelican within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area from visitor uses and vehicle access on the 6.9 mile segment of Gulf beach.

BNP would use a 6.9 mile segment of Gulf beach to access its proposed expanded well pad. Vehicles would displace Eastern Brown Pelicans causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary, but potentially more frequent than those of the public, especially during the higher

frequency of heavy vehicle use during the well pad expansion and construction of additional flowlines, and placement and removal of the drill rig. Shorebirds disturbed by park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the Eastern Brown Pelicans for the duration of the drilling project.

BNP would be required to confine vehicle use above the "wet-line" (see Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, large vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph for park visitors. This should reduce the amount of disturbance on the Eastern Brown Pelican, as reducing speed and the number of times the bird is displaced would lessen the overall impact to the species. It is known that reduced speed does have less of an affect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

Cumulative Impact
Under Alternative B, Proposed Action, cumulative impacts on Eastern Brown Pelican throughout the park would be similar to those described under No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short-term, negligible to minor, direct, adverse impacts on the Eastern Brown Pelican. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to minor, indirect, adverse impacts on the Eastern Brown Pelican.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing visitor uses and vehicle access within this beach corridor, would result in localized, short to long-term negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts to Eastern Brown Pelican. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican. No impairment to Eastern Brown Pelican would result from implementation of this alternative.

Black Tern and Piping Plover

Affected Environment
The **Black Tern** (*Chlidonias niger*) is considered a species of concern at the federal level, and there is no critical habitat designated within the national seashore.

Black Terns inhabit temperate grassland, freshwater lake, freshwater rivers, prairies, lakeshores and marshes with fairly dense cattail or other marsh vegetation and pockets of open water (Null, 1997). The breeding habitat for Black Terns consists of dead canes of marsh or on floating masses of dead plants. Black Terns breed in north central United States northward into Canada and the Northwest Territories. Sporadic nesting is observed in California, Oregon, and Kansas. Wintering habitat is located along the Pacific coast of Mexico, Central and South America and

the northern coast of South America. Non-breeding summer habitat consists of marine and coastal areas located along the Gulf of Mexico (Dunn and Agro, 1995).

Black Terns forage on insects such as dragonflies, moths, grasshoppers, and beetles, and freshwater fish when at the breeding grounds. Prey consists of small marine fish including anchovies and silversides, and they will eat crayfish and mollusks. Terns are seen foraging in the coastal waters off Padre Island National Seashore during the summer months. The Black Tern is a spring and fall migrant through the park, and is a common summer resident along the Gulf shore within Padre Island National Seashore. No breeding has been documented along the Texas coast (Rappole and Blacklock, 1985). Terns generally nest in colonies from March to early August.

In a 1994 – 1995 survey, 5,107 Black Terns were documented in the park, with three times as many black terns documented on the Laguna Madre side of the park than on the Gulf beach (Chaney *et. al*., 1995b). These high totals were found in August, prior to their fall migration.

The **Piping Plover** (*Charadrius melodus*), one of the least common members of the plover family, is considered threatened both federally and by the state of Texas. The population is currently estimated to be approximately 1,400 pairs (USFWS, http://pipingplover.gws.gov/overview.html).

The Piping Plover is a shorebird that migrates from Nova Scotia south to North Carolina and winters along the Gulf Coast from Florida to Mexico, along the Atlantic Coast from Florida to North Carolina, and in the Caribbean. They are found on sandy beaches, lakeshores, dunes, and often well above the water line (Sibley, 2000).

Piping Plovers breed along prairie-rivers and on alkali wetlands of the Northern Great Plains, sandy beaches along Great Lakes shorelines, and Atlantic coast beaches. These birds nest in shallow depressions built in the sand with both parents incubating the eggs and exhibiting a monogamous mating system. Breeding can occur between March and August with both fledglings and parents leaving the nest by September. It is clear that direct interference of nests by vehicles, humans, and dogs significantly affects breeding success (TPWD, http://tpwd.state.tx.us/nature/ending/birds/piplover.htm). Piping Plovers disturbed during nesting by flooding or other disturbance may abandon the nest and establish a second nest in the vicinity at a new location (USFWS, http://pipingplover.gws.gov/overview.html).

Piping Plovers forage mostly on benthic invertebrates, insects, and crustaceans found within the inter-tidal areas of ocean beaches, wash over areas, mudflats, sand flats, wrack lines, and shorelines of coastal ponds, lagoons or salt marshes. Piping Plovers have been documented defending feeding territories, and foraging on benthic invertebrates and insect larvae along both the Laguna Madre and Gulf beach inter-tidal areas within the park.

Piping Plovers have been documented throughout the park as a winter and summer resident and fall/spring migrant (Chaney *et. al*., 1993a, 1993b, 1995a, and 1995b). Piping Plovers are generally found along the Laguna Madre, Gulf beach, and washover channels within the park and occur at the park 11 months of the year with the exception of February (Chaney *et. al*., 1993a and 1993b), with the highest concentrations occurring between August and December. September typically has the highest numbers (Chaney *et. al*., 1995b) of Piping Plovers found in the park. Padre Island National Seashore protects substantial acreage of wintering habitat for the Piping Plover, with the most important area being the broad wind tidal flats located at the north boundary of the park. It is estimated that between 60-65% of all Piping Plovers winter in South Texas (Chaney *et. al*., 1995a).

From 1992 – 1993, a study documented 602 plovers over the entire 60 miles of south beach, with 400 of these being found along the Gulf beach foreshore (Chaney *et. al*., 1993a). Of the 600 birds observed, 87 Plovers occurred between the zero and 12-mile mark accounting for nearly 14% of the total number of Plovers counted (Chaney *et. al*., 1993a). In 1994 – 1995, 150 plovers were documented between the zero and 15-mile mark on the Gulf Beach with the majority of these inhabiting the Gulf beach foreshore (Chaney *et. al*., 1995b).

No nesting has been documented in south Texas or Padre Island National Seashore to date, and there is no critical habitat designated for this species. In 2000, the US Fish and Wildlife Service proposed 80% of the park as Piping Plover critical habitat. Final habitat designation figures did not include Padre Island National Seashore as critical habitat. Part of the reason was that the species is already protected by existing NPS regulations, policies, and management measures, and designating critical habitat would not provide a greater level of protection.

Impacts of Alternative A, No Action, on Black Tern, and Piping Plover
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Black Terns and Piping Plovers. However, existing impacts on Black Terns and Piping Plovers in the analysis area would continue as the result of vehicle access and visitor uses along the 6.9 mile segment of Gulf beach and continuing operation of the two gas pipelines, and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operations, and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Thirty-five percent (133,507 visitors) take the opportunity to access remote beach areas south of the 10 mile marker, such as Yarborough Pass and the Port Mansfield Channel, that are accessible only to four-wheel drive vehicles. Park staff conduct routine park operations along the beach. Vehicles on the Gulf beach would include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Vehicle traffic associated with oil and gas operations normally use 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days. Vehicles would rut the beach sand. There would be some loss of benthic organisms due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. As noted in the wildlife section of this chapter, in a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continuing operation of 13 oil and gas operations throughout the park that require access through this 6.9 mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored and are expected to be driven at the posted speed limit of 15 to 25 mph.

Black Tern prefer the “wet-zone” along the Gulf beach for resting, loafing, and feeding while Piping Plovers utilize the Laguna Madre wind-tidal flats and Gulf beach for foraging and resting. Benthic invertebrates are the primary food source for Piping Plovers.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Visitor activities and vehicles traveling within or close to the "wet-zone" would displace Black Terns and Piping Plovers and cause them to take flight. They most likely would fly along the shoreline to another suitable location and land, or they could fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August, and would be concentrated in the first five miles of Gulf beach.

Existing vehicle access and visitor use along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Black Terns and Piping Plovers within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on Black Terns and Piping Plovers would occur from visitor uses and vehicle access along the Gulf beach by park staff, visitors, and oil and gas operators as a result of the continuing operation of 13 nonfederal oil and gas operations and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed, and therefore, impacts would be distributed over time. Cumulative impacts of visitor uses and vehicle access along the Gulf beach would continue to cause these shorebirds to be flushed, resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Black Terns and Piping Plovers. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on these species, primarily along the park's shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Black Tern and Piping Plover; however, existing visitor uses and vehicle access on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts. However, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts. No impairment to Black Tern and Piping Plover would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Black Tern, and Piping Plover
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced.

Existing impacts on Black Terns and Piping Plovers within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area from visitor uses and vehicle access on the 6.9 mile segment of Gulf beach, and continuing operation of the two gas pipelines, and the Dunn-Peach # 1 well.

BNP would use a 6.9 mile segment of Gulf beach to access its proposed expanded well pad. Vehicles would displace terns and Piping Plovers causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary. Shorebirds disturbed by park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the terns and Piping Plovers for the duration of the drilling project.

BNP would be required to confine vehicle use above the "wet-line" (see Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, large vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph for park visitors. This should reduce the amount of disturbance on the Black Terns and Piping Plover, as reducing speed and the number of times the bird is displaced would lessen the overall impact to them. It is known that reduced speed does have less of an effect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

The proposed project is expected to take place between December and July, which is the time of the year when the highest concentrations of Piping Plovers occur at the park. Based on previous studies, approximately 14% of the total Piping Plovers occurring in the park are likely to be utilizing this segment of Gulf beach. Piping Plovers utilize both sides of the park depending on available habitat and time of day, but do not nest at Padre Island.

Existing visitor uses and vehicle access along the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Black Tern, and Piping Plover.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Black Terns, and Piping Plovers throughout the park would be similar to those described under No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, direct, negligible to minor, adverse impacts on these species. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on Black Tern and Piping Plover.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 6.9 mile segment of Gulf beach, in addition to existing vehicle access and visitor uses along this segment of beach would result in localized, short to long-term negligible, direct, adverse impacts on Black Terns and Piping Plovers. Cumulative impacts would be similar to those described under Alternative A, No Action, with vehicle use along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Black Terns and Piping Plovers. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on Black Terns and Piping Plovers. No impairment to Black Tern, and Piping Plover would result from implementation of this alternative.

Peregrine and Northern Aplomado Falcons

Affected Environment

The **Peregrine Falcon** (*Falco peregrinus*) has been federally de-listed but is still listed as endangered at the state level. The Peregrine Falcon has nearly worldwide distribution, thriving in a great variety of habitats from arctic tundra to tropical rain forests. In North America, this species is best known as inhabitants of canyons and cliffs, though it has been documented to reside amongst the skyscrapers of large cities.

The Peregrine Falcon is a migratory species that winters along the Gulf of Mexico and as far south as Central and South America. They are known as common winter inhabitants of the southern portion of Padre Island National Seashore, arriving sometime in early fall and departing mid-May (Chaney *et. al*., 1993a). This falcon is generally only seen twice a year as it migrates through the state in spring and fall (TPWD, http://tpwd.state.tx.us/nature/ending/birds/peregrine.htm).

Peregrines breed in a wide range of habitats including the edge of cliffs, raised mounds on the ground in bare open spaces, in hollow tree stumps, and ledges of large city buildings. Peregrines tend to return to the same site annually. Breeding season begins in early March in the south and mid-May in the north. A single brood of three to four eggs are laid in a hollow scrape with no materials added to it. Females closely tend their young for the first 14 days, but leave them more each day as they grow. The nestlings fly at 35-42 days, but appear to be dependent on the adults for an additional two months.

This species predates upon waterbirds but normally does not attack ducks that are sitting on the water. Those individuals who have become city dwellers are most likely attracted to the high populations of Rock Doves (pigeons). They typically feed on Neotropical migrants, waterfowl, and shorebirds while in the area of Padre Island National Seashore. No critical habitat has been designated for this species at the park.

Peregrine Falcons are an increasingly common migrant at the park, especially in the fall, and they are a rare winter resident. Peregrine Falcons hunt on broad mudflats along the Laguna Madre shoreline, and rest on any higher elevation, typically on the foredunes along the Gulf beach (Chaney *et. al*., 1995b). They rarely predate shorebirds that forage and rest on the Gulf beach. These birds are generally concentrated in the southern portion of Padre Island National Seashore, which is unique in that it is a main component of the migration route "staging area," particularly for juveniles, during the spring and fall migration (Maechtle, 1993). From actual counts, more than 2,000 Peregrine Falcons have utilized this area annually during their fall migration (Maechtle, 1993). The Gulf beach is a very important stopover area for foraging, resting, and is a landmark guide for many migratory birds (Chaney *et. al*., 1993a). Padre Island National Seashore and South Padre Island are the only known localities in the Western Hemisphere where Peregrine Falcons can be found in such high concentrations during their spring migration.

The **Northern Aplomado Falcon** (*Falco femoralis septentrionaliss*) is considered a rare species at Padre Island National Seashore. Over the past ten years, approximately four sightings of individual Northern Aplomado Falcons have occurred in the park along the main road, beach foredunes, and grasslands of the Northern ten miles of the park. These sporadic sightings generally occurred in winter and early spring. The most recent park sighting of a Northern Aplomado Falcon occurred in December 1999 on the park's northern boundary. Individuals sighted appear to be transients, and no established adult pairs, territories, or nests

have been documented within the park. The effects to this species are similar to those for the Peregrine Falcon and therefore, they are presented together.

Impacts of Alternative A, No Action, on Peregrine and Northern Aplomado Falcons
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Peregrine and Northern Aplomado Falcons. However, impacts on the falcons in the analysis area would continue as the result of occasional forays by park staff, visitors, and oil and gas operators onto the Gulf foredunes.

Park staff, 13 oil and gas operations, and an estimated 278,458 park visitors (49% of total visitation or 73% of annual Gulf beach visitation) use the 6.9 mile segment of Gulf beach for vehicular access. Visitor uses along this segment of Gulf beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Peregrine and Northern Aplomado Falcons rest on any high elevation within the park. Along this segment of Gulf beach, falcons have routinely been seen resting on foredunes. Park staff performing routine park operations, recreating visitors, and nonfederal oil and gas operators occasionally hike to/or over the foredunes into the backcountry. These activities on the dunes may displace a resting falcon and cause it to take flight. The potential for displacement would be highest during the primary visitor use period from May through September, peaking in August, and would be concentrated in the first 5 miles of Gulf beach.

Existing park and visitor uses along the 6.9 mile segment of Gulf beach and the continuing operation of the two gas pipelines and the Dunn-Peach # 1 well would result in localized, short-term, negligible, adverse impacts on Peregrine and Northern Aplomado Falcons within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on Peregrine and Northern Aplomado Falcons could occur from park activities, visitor uses, and oil and gas activities in the vicinity of the Gulf foredunes or Laguna Madre shoreline where falcons primarily rest or feed. Developments and activities that could impact these areas include the continuing operation of up to 13 nonfederal oil and gas operations, and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed and therefore, impacts would be distributed over time. Cumulative impacts would result in localized, short to long-term, negligible to minor, adverse impacts on Peregrine and Northern Aplomado Falcons.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the Peregrine and Northern Aplomado Falcons. However, existing uses on the Gulf foredunes, result in localized, short-term, negligible, adverse impacts on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in localized, short to long-term, negligible to minor, adverse impacts on the Peregrine and Northern Aplomado Falcons. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Peregrine and Northern Aplomado Falcons
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. Existing impacts on Peregrine and Northern Aplomado Falcons within

the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible, adverse impacts on the falcons resulting from occasional forays by park staff performing routine park operations, recreating visitors, and nonfederal oil and gas operators hiking to/or over the foredunes and displacing/flushing falcons.

The likelihood of a Peregrine or Northern Aplomado Falcon being affected by vehicular traffic along the Gulf beach is negligible. These falcons are not known to predate shorebirds along the Gulf shoreline; and resting is confined to high points, preferably on the dunes. Beach traffic might on occasion displace a resting Peregrine or Northern Aplomado Falcon from its perch on the foredunes, but the distance between beach traffic and the foredunes is sufficiently great to not cause falcons to normally do so.

Expansion of the well pad, construction of the additional flowlines, and drilling and production operation would not impact Peregrine Falcons. These activities would take place in grassland and wetland habitats. These areas are void of trees and shrubs that could be used for perching. In addition, these habitats are not suitable foraging habitats for the Peregrine falcon. Therefore, these habitats are not likely to be used to any degree other than when this species flies between park shorelines to forage or rest. The proposed drilling and production operation may provide structures that could be used for perching. Drilling and production equipment will be higher than the surrounding terrain and provide an opportunity for this species to perch. Since few perching structures exist and the historic use of oil and gas equipment by falcons, it is likely that equipment associated with this alternative could be used by these species. In addition, should the well be placed in production, BNP proposes to plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors, and provide and perpetuate habitat for migratory birds. The additional perches that Peregrine and Northern Aplomado Falcons could use to rest, eat prey, and seek out prey; and the perpetuation of habitat for migratory birds which are one of the Peregrine's food sources, would result in localized and long-term, negligible, beneficial impacts, for the Peregrine and Northern Aplomado Falcons.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. The drill rig, production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Peregrine and Northern Aplomado Falcons, resulting in localized and long-term, negligible, beneficial impacts, for the falcons. Cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

White-tailed Hawk

Affected Environment

The **White-tailed Hawk** (*Buteo albicaudatus*) is not federally listed but is listed as threatened by the state. There is no critical habitat designated for this species in the park.
The White-tailed Hawk is a tropical and subtropical species ranging from southern Texas (year round) to Mexico and Central and South America: also some of the islands of the South Caribbean. Its preferred habitat includes open, semi-open, or thinly forested country, whether flat or hilly. In southern Texas, they are most visible in the grassland prairies near the coast, often where there are only scattered bushes, yuccas, or large cacti (Channing, http://www.hawk-conservancy.org/priors/whitetailedhawk.html). White-tailed Hawks are considered common to uncommon in south Texas (Rappole and Blacklock, 1994).

In southern Texas, where rabbits are abundant, White-tailed Hawks feed upon them extensively, although not exclusively. It has been known to take cotton rats, snakes, lizards, frogs, grasshoppers, cicadas, and beetles, and occasionally a quail or other bird. When the wind is favorable, the White-tailed Hawk resorts to hovering while hunting.

Breeding begins late January and usually ends in July (Baicich and Harrison, 1997). This Buteo builds a large nest of freshly broken twigs, often thorny ones, mixed with bunches of dry grass and lined with finer material, among which are some green sprays of mesquite or other plants. The nest is added to each year and may become quite large, measuring almost three feet across (Channing, http://www.hawk-conservancy.org/priors/whitetailedhawk.shtml).

Within the park, the White-tailed Hawk is common during the winter months and uncommon throughout spring, summer, and fall (McCraken and Clark, 1990).

White-tailed Hawks have been observed in grassland and wind-tidal flat habitats within the park. In 1993, four White-tailed Hawks were seen flying over the wind tidal flats between the 19 and 26-mile mark while 20 birds were observed between Yarborough Pass and the north boundary (Chaney *et. al*., 1993b and 1995a). White-tailed Hawks have been observed during the fall and winter months within the park. Less than 10% of the White-tailed Hawks documented in 1995 occurred over the Gulf beach habitat while the remaining 90% were seen flying over the wind tidal flats of the Laguna Madre (Chaney *et. al*., 1995b). This indicates that the White-tailed Hawk generally prefers the western portion of the park.

Nesting accounts for White-tailed Hawks are rare. However, a single nest was documented in the park in 2002, in a grassland habitat located 6.5 miles south of the end of Park Road 22. The nest was built in a 6-foot huisache (*Acacia farnesiana*) and appeared to be have been used previously which may indicate that the hawk had been nesting for several years.

Impacts of Alternative A, No Action, on White-tailed Hawks

Under Alternative A, No Action, the Dunn-Peach #2, 3, 4, 5, and 6 well would not be drilled, resulting in no new impacts on White-tailed Hawks. There are no existing impacts on White-tailed Hawks within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on White-tailed Hawks throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres that may be located within the park's grasslands and wind-tidal flats preferred by this

species. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed, and therefore, impacts would be distributed over time. Other activities that could contribute to impacting this species include prescribed fires, routine park operations, and recreational activities. Cumulative impacts on White-tailed Hawks throughout the park are expected to be localized near developments, with short to long-term, negligible, adverse impacts.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the White-tailed Hawk. There are no existing impacts within the analysis area. Cumulative impacts from park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species would result in localized, short to long-term, negligible, adverse impacts on the White-tailed Hawk.

Impacts of Alternative B, Proposed Action, on White-tailed Hawks
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced.

Expansion of the existing Dunn-Peach # 1 well pad would directly impact 1.24 acres of grassland habitat preferred by the White-tailed Hawk. If the wells do not go into production, 3.17 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned.

However, if the wells are placed in production, the well pad (3.52 acres) would be reduced to 2.02 acres. Additional flowlines construction would re-disturb 1.7 acres adjacent to the access road,. The pipeline corridor has been previously disturbed for the Dunn-Peach # 1 well flowline installation and mitigations measures are currently in place. The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Expansion of the well pad and construction of the additional flowlines, and drilling and production of the wells would cause the loss of habitat for the White-tailed Hawk, resulting in localized, short to long-term, negligible to minor, adverse impacts.

If the wells are placed in production, BNP proposes to plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors, and provide and perpetuate habitat for migratory birds. The trees would provide additional perches for White-tailed Hawks to rest, eat prey, seek prey, and possibly nest in. Further, the drill rig and production facilities may also provide additional perches for this species. These additional perches would result in localized and long-term, negligible, beneficial impacts, for the White-tailed Hawk.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on White-tailed Hawks throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short- to long-term, negligible, adverse impacts on the White-tailed Hawk.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced. BNP's proposed well pad expansion pad would directly impact 1.24

acres of grassland habitat preferred by the White-tailed Hawk, resulting in localized, short-term, minor adverse impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned. However, the drill rig and production facility and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for White-tailed Hawks, resulting in localized and long-term, negligible, beneficial impacts. Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short- to long-term, negligible, adverse impacts on the White-tailed Hawk. No impairment to the White-tailed Hawk would result from implementation of this alternative.

Loggerhead Shrikes and Neotropical Migratory Songbirds

Affected Environment

The **Loggerhead Shrike** (*Lanius ludovicianus*) is considered a species of concern at the federal level. All populations within the United States seem to be declining which has been attributed to the loss of habitat. This species is found throughout most of the United States, Mexico, and south-central Canada. It's wintering range includes the southern United States and into Mexico. Loggerhead Shrikes prefer open country such as savannas, prairie, and farmland with patches of trees or shrubs present. This species is a permanent resident throughout most of the state but is uncommon to rare in southern Texas (Rappole and Blacklock, 1994).

Shrikes are often found hunting from low perches where they can strike their prey quickly and return to the perch. They do not have talons and kill with a stunning blow from their beaks. They are known for their unique habit of impaling their prey on thorns or barb-wired fences and returning to feed later. Loggerhead Shrikes forage on insects in the summer and mice in winter. This species is solitary except for the breeding season, which begins in early May and continues into mid-July. Nests are constructed of twigs, bark, and other materials and usually found in isolated small trees. Loggerhead Shrikes can produce up to two broods annually.

Loggerhead shrikes commonly occur in park grasslands throughout the park and black willow and small shrub habitats that occur in the northern section of the park. This species is common during the spring, fall, and winter (McCracken and Clark, 1990) and considered rare in summer (Rappole and Blacklock, 1994). In 1997, a Loggerhead shrike was captured and banded in a dune area near Bird Island Basin (Blacklock *et. al*., 1997). There has been no documented nesting of Loggerhead Shrikes at Padre Island National Seashore.

Padre Island National Seashore provides migratory habitat for a broad number of **Neotropical migratory songbirds** that occur within the park during the spring and fall migrations. Based on Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, Padre Island National Seashore has imposed the mitigation measures outlined in Tables 3 and 4 to protect these resources from impacts associated with oil and gas operations within the park.

Impacts of alternative A, No Action, on Loggerhead Shrikes and Neotropical Migratory Songbirds

Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on Loggerhead shrikes and Neotropical migratory songbirds. However, impacts on Loggerhead shrikes and Neotropical migratory songbirds would continue as the result of continuing operation of two existing pipelines and the Dunn-Peach # 1 well within the analysis area.

Existing operation of the two gas pipelines and the Dunn-Peach # 1 well located within the analysis area, would continue to impact grassland habitat preferred by these species. Routine maintenance along the two pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect pipeline integrity. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. The occasional presence of vehicles and work crews, and associated engine noise could displace Loggerhead shrikes and Neotropical migratory songbirds during the occasional, short periods that maintenance activities are being conducted along these segments of pipeline. The resulting disturbance would likely cause this species to take flight and move to other suitable habitat nearby. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on these species. However, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced. The continuing operation of the two pipeline segments and the Dunn-Peach # 1 well within the analysis area would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds, for the long life of these pipelines, which could be 20 years or longer.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on Loggerhead shrikes and Neotropical migratory songbirds on grassland habitat preferred by these species throughout the park could result from the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park development on 391 acres, and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed, and therefore, impacts would be distributed over time, resulting in cumulative impacts, localized near development within grasslands throughout the park, with short to long-term, negligible to minor, adverse impacts. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts.

Conclusion

Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on the Loggerhead Shrikes and Neotropical Songbirds. Existing operation of two gas pipelines and the Dunn-Peach # 1 Well would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands. However, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Loggerhead Shrikes and Neotropical Migratory Songbirds

Under Alternative B, Proposed Action, the Dunn-Peach #2, 3, 4,5, and 6 wells would be drilled and may be produced, resulting in the short-term disturbance to grassland habitat preferred by Loggerhead shrikes and Neotropical migratory birds on 1.25 acres, and if completed to produce hydrocarbons, the long-term occupancy of 3.08 acres.

Existing impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible, adverse impacts associated with continuing operation of two gas pipelines and the Dunn-Peach # 1 well.

However, if the wells are placed in production, the well pad (3.52 acres) would be reduced to 2.02 acres. Additional flowline construction would re-disturb 1.7 acres adjacent to the access road,. The pipeline corridor has been previously disturbed for the Dunn-Peach # 1 well flowline installation and mitigations measures are currently in place. A temporary loss of grassland habitat would occur while the flowline is being buried, until the corridor is re-vegetated. Adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds from pad reclamation and flowline placement would be localized, minor, and short-term (lasting up to one year or more) during construction and re-vegetation activities. The continued use of the site for production operations would result in localized, long-term, negligible to minor, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds in the analysis area.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on grassland habitat. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

An indirect, localized, short-term, negligible beneficial impact may occur from the presence of shielded lighting on the drilling rig. This lighting would attract insects, which would provide a food source for the Loggerhead Shrike and Neotropical migratory songbirds. In addition, the use of barbed wire around the wellpad could be utilized by this species for impaling prey. Finally, if the well goes into production, trees that would be planted for visual screening could result in localized, negligible, long-term beneficial impacts to Loggerhead Shrike and Neotropical migratory songbirds by providing perching and foraging habitat for these species.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Loggerhead Shrikes and Neotropical migratory songbirds throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations resulting in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced, resulting in the short-term disturbance to grasslands habitat preferred by Loggerhead shrikes and Neotropical migratory songbirds on up to 7.08 acres, and the long-term occupancy of 3.08 acres. Expansion of existing Dunn-Peach # 1 well pad and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts. Drill rig lighting, barbed-wire fencing, and planting willow shrubs or trees around production facilities would perpetuate perching and foraging habitat for these species, resulting in localized, short to long-term, negligible, beneficial impacts on these species. Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, and existing and future oil and gas operations that may be located within the park's grasslands preferred by these species resulting in localized, short- to long-term,

negligible, adverse impacts on the Loggerhead Shrikes and Neotropical migratory songbirds. No impairment to the Loggerhead Shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

3.8 Impacts on Visitor Use and Experience

Methodology
Visitor surveys and personal observations of visitation patterns combined with an assessment of services and recreational opportunities available to visitors under current management were used to estimate the effects of the actions in the alternatives**.**

Negligible: the impact is barely detectable and/or will affect few visitors.

Minor: the impact is slightly detectable and/or will affect few visitors.

Moderate: the impact is readily apparent and/or will affect some visitors.

Major: the impact is severely adverse or exceptionally beneficial and/or will affect many visitors.

Affected Environment
The northern portion of the National Seashore is where most park development is located. Current park development includes a visitor center, entrance station, park headquarters and maintenance facilities, campground, and the Bird Island Basin recreational area. Please refer to the section “Park Development and NPS Operations” in the introduction to this section, on pages xx and xx, for an expanded description of park developments.

Visitor use typically begins to increase in May and peaks in August, with the fewest visitors in December. Annual park visitation in 2003 was 568,732, representing a 6% increase from 2002. Scott and Lai’s (2004) publication, “A Survey of Visitors to Padre Island National Seashore: A Final Report,” in conjunction with Ditton and Gramann’s (1987) publication, “A survey of Down-Island Visitors and Their Use Patterns at Padre Island National Seashore,” indicated the following patterns:

1. Twenty-seven percent of visitors interviewed reported traveling no farther down-island than Milepost 0, the end of the paved road (Park Road 22).
2. Thirty-eight percent of beach users interviewed utilize the first ten miles of south beach for their visit.
3. Thirty-five percent of interviewed visitors travel south of Little Shell Beach, even though individual destinations south of Little Shell Beach do not display high visitation.
4. Visitation patterns are similar in July, August, and September.
5. More fishermen use areas south of Yarborough Pass (15-mile Marker) than beach users.

The beach areas can be divided up into two-wheel drive accessible, four-wheel drive recommended, and "closed" beach (no vehicle use). The Dunn-Peach # 2, 3, 4, 5, and 6 wells project area encompasses the first 6.9 miles of "South" beach, beginning at the end of the paved section of Park Road 22 and terminating at an existing gated caliche road through the dunes at the 6.9-mile mark. Most camping and a large portion of beach day use occur on the first five miles of "South" beach. South of the 5-mile marker, at the four-wheel drive only sign, the number of visitors heading south towards Mansfield Channel dramatically decreases.

Recent statistics show that about 37% of annual visitors (210,430) utilize Bird Island Basin to camp and have access to the Laguna Madre for their recreational pursuits. This is a 12% increase from the Ditton study. Approximately 11% of these visitors (23,147) will also use the Gulf for day use activities.

The Gulf shoreline is used for recreational opportunities such as surf fishing, swimming, shell collection, sunbathing, camping, and vehicle access to more remote areas of the beach, by an estimated 381,449 visitors. Padre Island National Seashore estimates that 27% (102,991) of beach users concentrate their use on the Gulf shoreline at "North beach," the Malaquite Visitor Center adjacent to "closed" beach, and the zero-mile marker of "South beach".

Extrapolating visitation figures, the park estimates approximately 144,950 people recreate on the Gulf shoreline between the 0 and the 10-mile marker of South Beach each year. Of these users, 70% (101,465 visitors) utilize only the first 5 miles (denoted by "4 wheel drive only" sign). Thirty-five percent (133,507 visitors) take the opportunity to access remote beach areas south of the 10-mile marker, such as Yarborough Pass and the Mansfield Channel, that are accessible only to four-wheel drive vehicles.

Use of the backcountry, the area behind the dune line and across the island to the Laguna Madre, is less popular than the beach in part because of the lack of access, and park regulations restricting the use of the dunes and wind tidal flats, etc., found in the center of the island.

Impacts on the visitor from the BNP project are expected to be from visual obstruction due to increased truck traffic, and being subjected to the noise generated by the larger trucks used for hauling drilling and production equipment, etc. to and from the site (see Tables 3, 4, and 5 for additional mitigation measures and operating stipulations). Utilizing an existing drill location would significantly reduce the number and duration of required truck traffic.

Impacts of Alternative A, No Action, on Visitor Use and Experience
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on visitor use and experience. However, existing impacts on visitor use and experience in the analysis area would continue as the result of vehicle access and visitor uses along the 6.9 mile segment of Gulf beach and continuing operation of the two gas pipelines, and the Dunn-Peach # 1 well.

Park staff, 13 oil and gas operators, and an estimated 278,458 (49% of total visitation or 73% of those using the Gulf beach) park visitors use the 6.9 mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach include two and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5-mile marker. Vehicles would rut the beach sand and if poorly maintained could drip or leak motor oil, coolant, and other lubricants on the beach. Some drivers could drive over the speed limit, honk their horns, or play their radios loudly. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the primary visitor use period from May through September, peaking in August, and would be concentrated in the first five miles of Gulf beach. Vehicle traffic associated with oil and gas operations normally uses four-wheel drive trucks, however, a large vehicle like a vacuum truck, would travel the beach corridor approximately every 10 days to access 13 existing oil and gas operations located throughout the park in order to perform routine maintenance.

The existing operation of the two pipelines located to the east of the existing Dunn-Peach # 1 well site would continue. However, there should be no impact on visitor use and experience as these pipeline segments are sited 2,700 to 1,700 feet from the dune line in the backcountry where no vehicular access available to the public. Company vehicles access the pipeline corridors either near the end of Park road 22 or from Yarborough Pass road. If visitors hike from the Gulf beach over the foredunes to view the backcountry in the vicinity of these pipeline segments, nothing would be seen because these pipeline segments are buried and the surface of the pipeline corridor is vegetated. In the rare event that pipeline maintenance activities are occurring at the same time that a visitor looks towards the Laguna Madre, the pipeline maintenance activities occurring 2,700 to 1,700 feet away from the dune line would have little visual impact.

Existing uses, including vehicle access along the 6.9 mile segment of Gulf beach, would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area.

Cumulative Impacts
Under Alternative A, No Action, cumulative impacts on visitor use and experience throughout the park could result from the visual impact of human developments on the natural scenery associated with the continuing operation of 13 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 16 wells projected in the park's reasonably foreseeable development scenario on up to 241.75 acres. Other park activities that could contribute to impacts include prescribed fires, future park development, routine maintenance of park roads, and park and visitor vehicle use. Cumulative impacts could also result from conflicts between visitor uses and over-use of park resources and developments. Degradation of park resources and values could affect park visitors' perception of the park and their experience. Dredging and maintenance of the Gulf Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park and damage seagrass beds and fishery resources. Spills from oil and gas activities located in and adjacent to the park, including tanker traffic in the Gulf of Mexico, could cause widespread impacts and result in long-term clean-up and remediation, and areas that would be closed to visitors. Spills of hydrocarbons and other contaminating or hazardous substances could also pose serious health and safety concerns. Some oil and gas operations and park operations would introduce elevated noise and odors. With the application of mitigation measures detailed in the park's OGMP, and incorporated into operators' plans of operations, impacts would be avoided or minimized.

Cumulative impacts on visitor use and experience throughout the park are expected to be localized near developments or activities, with short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion
Under Alternative A, No Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would not be drilled, resulting in no new impacts on visitor use and experience. Existing vehicle use on the 6.9 mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts

could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Visitor Use and Experience
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 7.08 acres, and long-term occupancy by oil and gas developments on 3.08 acres.

Existing impacts on visitor use and experience within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, adverse impacts associated with vehicle use on the 6.9 mile segment of Gulf beach.

BNP would use the 6.9 mile segment of Gulf beach to access its proposed well pad. BNP would be required to confine vehicle use above the "wet-line" and observe speed limits (see Tables 3, 4, 5, and 6 for mitigation measures and operating stipulations). As described above under No Action, vehicles rut beach sands, and poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. BNP vehicle access on the beach could result in deeper and wider rutting, possible conflicts with visitors sharing the beach driving corridor, and repeated exposure to trucks each day. Truck traffic directly related to the drilling activities of the Dunn-Peach # 1 well represented only 2.36 % of the 57,213 vehicles on south beach during that three month period (Table 6). If the wells are productive, occasional gas vehicular traffic would traverse the Gulf beach to perform routine, periodic maintenance and removal of condensate from the well.

Expansion of the existing Dunn-Peach # 1 well pad and production facility could result in the short-term loss of natural scenery of up to 7.08 acres. If the well(s) are not placed in production, the well pad would be reduced to 0.345 acres. If the wells are placed in production, the well pad would be reduced by 1.5 acres and additional flowline construction would re-disturb 1.7 acres adjacent to the access road. The pipeline corridor has been previously disturbed for the Dunn-Peach # 1 well flowline installation and mitigations measures are currently in place. The natural visual scenery along the pipeline corridor would return when the surface is successfully reclaimed. Long-term occupancy by oil and gas developments on the well/production pad would be confined on 3.08 acres.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on visitor use and experience. However, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including selecting a proposed operations area located away from visitor use developments and recreational use areas, providing security and a three-strand barbed-wire fence during the drilling operations to prevent unauthorized entry into the operations area (Table 3), would result in avoiding or minimizing impacts on visitor use and experience.

BNP vehicle access on the Gulf beach, expansion of the well pad and production facility; and drilling and producing the well would result in the short-term loss of natural scenery on up to 7.08 acres, and long-term occupancy by oil and gas developments on 3.08 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on visitor use and experience throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion
Under Alternative B, Proposed Action, the Dunn-Peach # 2, 3, 4, 5, and 6 wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 7.08 acres, and long-term occupancy by oil and gas developments on 3.08 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Expansion of the well pad and production facility, and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts. In the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

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4.0. CONSULTATION AND COORDINATION

A Notice of Availability for the Plan of Operations, EA , and draft Floodplains Statement of Findings will be published in the *Federal Register* and the local *Corpus Christi Caller-Times* newspaper, announcing the availability of these documents for a 30-day public review and comment period.

Following the 30-day public review and comment period, NPS will consider written comments received. Additional mitigation measures resulting from the public involvement process may be applied by the NPS as conditions of approval of the Plan of Operations. Copies of the decision document will be sent to those who comment on the Plan of Operations, EA, and draft Floodplains Statement of Findings during the public review period, or request a copy.

4.1. Individuals and Agencies Consulted

Persons and agencies contacted for information, or that assisted in identifying important issues, developing alternatives, or analyzing impacts are listed below:

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Agencies
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4.2. List of Document Recipients

The Plan of Operations, EA, and draft Floodplains Statement of Findings will be sent to the following:

BNP Petroleum and Consultants
Paul Black, President, BNP
Scott Taylor, Consultant
Charlie Belaire, Belaire Environmental

Congressional Delegation
Senator Kay Bailey Hutchison
Senator John Cornyn
Honorable Ruben Hinojosa
Honorable Solomon P. Ortiz

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State Government
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Environmental Interests
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Jennifer Walter, Lone Star Chapter-Sierra Club
Chris Wilhite, Southern Plains Region, Sierra Club, Austin TX
Teresa Carrillo, Coastal Bend Bays Foundation

Local Papers
Corpus Christi Caller Times, Mat Sturdevant
The North Padre Island Moon
The Observer, Mary Beth Nelson

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5.0. BIBLIOGRAPHY

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6.0. APPENDIX ONE

Federally Listed Endangered and Threatened Species

Gulf Coast Jaguarundi	(E)	*Herpailurus yagouaroundi cacomitli*
Ocelot	(E)	*Leopardus pardalis*
West Indian manatee (=Florida)	(E)	*Trichechus manatus*
Coues' rice rat	(SOC)	*Oryzomys couesi aquaticus*
Green sea turtle	(T)	*Chelonia mydas*
Loggerhead sea turtle	(T)	*Caretta caretta*
Hawksbill sea turtle	(E w/CH‡)	*Eretmochelys imbricata*
Kemp's Ridley sea turtle	(E)	*Lepidochelys kempii*
Leatherback sea turtle	(E w/CH‡)	*Dermochelys coriacea*
Black-spotted newt	(SOC)	*Notophthalmus meridionalis*
Rio Grande lesser siren	(SOC)	*Siren intermedia texana*
Texas horned lizard	(SOC)	*Phrynosoma cornutum*
American alligator	(TSA)	*Alligator mississipiensis*
Whooping Crane	(E w/CH)	*Grus americana*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Piping Plover	(T w/CH)	*Charadrius melodus*
Loggerhead Shrike	(SOC)	*Lanius ludovicianus*
White-faced Ibis	(SOC)	*Plegadis chihi*
Brown Pelican	(E)	*Pelecanus occidentalis*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Audubon's Oriole	(SOC)	*Icterus graduacauda audubonii*
Cerulean Warbler	(SOC)	*Dendroica cerulea*
Ferruginous Hawk	(SOC)	*Buteo regalis*
Black Tern	(SOC)	*Chlidonias niger*
Reddish Egret	(SOC)	*Egretta rufescens*
Sennett's Hooded Oriole	(SOC)	*Icterus cucullatus sennetti*
Texas Botteri's Sparrow	(SOC)	*Aimophila botterii texana*
Texas Olive Sparrow	(SOC)	*Arremonops rufivirgatus rufivirgatus*
Tropical Parula	(SOC)	*Parula pitiayumi nigrilora*
Mountain Plover	(P/T)	*Charadrius montanus*
Brownsville Common Yellowthroat	(SOC)	*Geothlypis trichas insperata*
Bailey's ballmoss	(SOC)	*Tillandsia baileyi*
Roughseed sea-purslane	(SOC)	*Sesuvium trianthemoides*
South Texas ambrosia	(E)	*Ambrosia cheiranthifolia*
Black lace cactus	(E)	*Echinocereus reichenbachii* var. *albertii*
Slender rush-pea	(E)	*Hoffmannseggia tenella*
Welder machaeranthera	(SOC)	*Psilactis heterocarpa*
Texas Ayenia	(E)	*Ayenia limitaris*
Lilia de los llanos	(SOC)	*Echeandia chandleri*
Los Olmos tiger beetle	(SOC)	*Cicindela nevadica olmosa*
Maculated manfreda skipper	(SOC)	*Stalligsia maculosus*

State Listed Threatened and Endangered Species

Texas horned lizard	(T)	*Phrynosoma cornutum*
Indigo snake	(T)	*Drymobius corias*
Loggerhead sea turtle	(T)	*Caretta caretta*
Green sea turtle	(T)	*Chelonia mydas*
Atlantic hawksbill sea turtle	(E)	*Eretmochelys imbricata*

Kemp's ridley sea turtle	(E)	*Lepidochelys kempi*
Leatherback sea turtle	(E)	*Dermochelys coriacea*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Southwestern Willow Flycatcher	(E)	*Empidonax trailii extimus*
Eastern Brown Pelican	(E)	*Pelecanus occidentalis*
Piping Plover	(T)	*Charadrius melodus*
Reddish Egret	(T)	*Egretta rufescens*
White-Faced Ibis	(T)	*Plegadis chihi*
Wood Stork	(T)	*Mycteria Americana*
Swallow-Tailed Kite	(T)	*Elannoides forticatus*
White-Tailed Hawk	(T)	*Buteo albonotatus*
Peregrine Falcon	(E)	*Falco femoralis septentrionalis*
Black-Capped Vireo	(E)	*Vireo atricapillus*
Tropical Parula	(E)	*Parula ptiayumi nigrilora*

Fishes
No listed species documented at this times within Padre Island National Seashore.

Marine Mammals
All marine mammals, excluding the West Indian Manatee, only occur in the Padre Island National Seashore when stranded due to illness or death.

Index
Statewide or areawide migrants are not included by county, except where they breed or occur in concentrations. The whooping crane is an exception; an attempt is made to include all confirmed sightings on this list.

E	=	Species in danger of extinction throughout all or a significant portion of its range.
T	=	Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
C	=	Species for which the Service has on file enough substantial information to warrant listing as threatened or endangered.
CH	=	Critical Habitat (in Texas unless annotated ‡)
P/E	=	Species proposed to be listed as endangered.
P/T	=	Species proposed to be listed as threatened.
TSA	=	Threatened due to similarity of appearance.
SOC	=	Species for which there is some information showing evidence of vulnerability, but not enough data to support listing at this time.
‡	=	CH designated (or proposed) outside Texas
~	**=**	**Protection restricted to populations found in the "interior" of the United States. In Texas, the least tern receives full protection, except within 50 miles (80 km) of the Gulf Coast.**

7.0. APPENDIX TWO

Statement of Findings for Floodplains
"Executive Order 11988, "Floodplains management"

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STATEMENT OF FINDINGS FOR FLOODPLAINS

Introduction

Proposed Action:
BNP Petroleum Corporation proposes to drill and produce the Dunn-Peach # 2, 3, 4, 5, and 6 wells from the existing Dunn-Peach #1 location within Padre Island National Seashore (PAIS) (Figure 1). The surface location is 153.66 feet from the north line and 425.5 feet from the east line (Boyles Meander Line) of the Nicholas and Juan Jose Balli Survey, Abstract-10, Kleberg County, Texas. This drill site is approximately 6.9 miles south of the end of Park Road 22 and 6,400 feet west of the Gulf of Mexico (Figure 2).

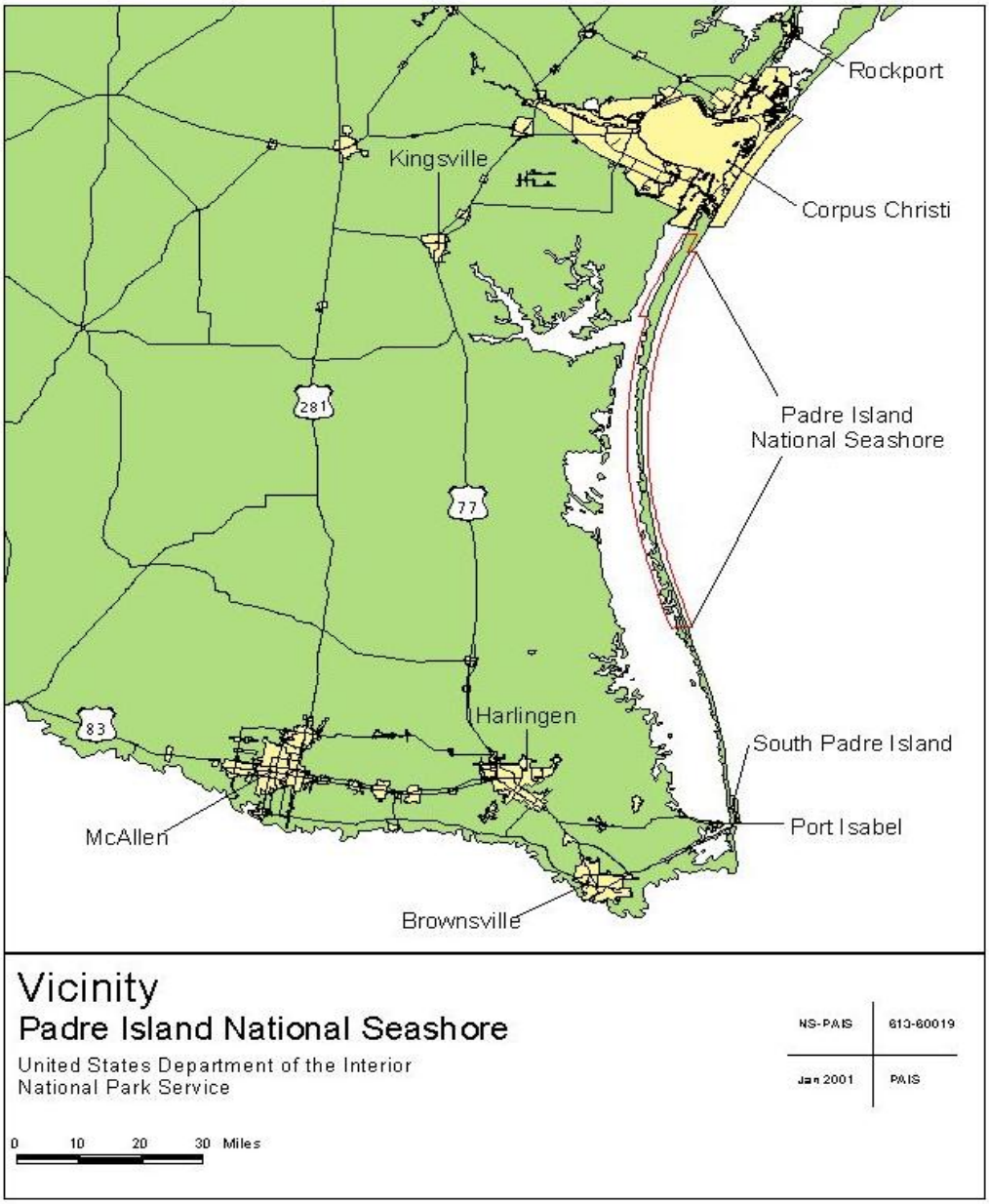


Figure 1. Vicinity

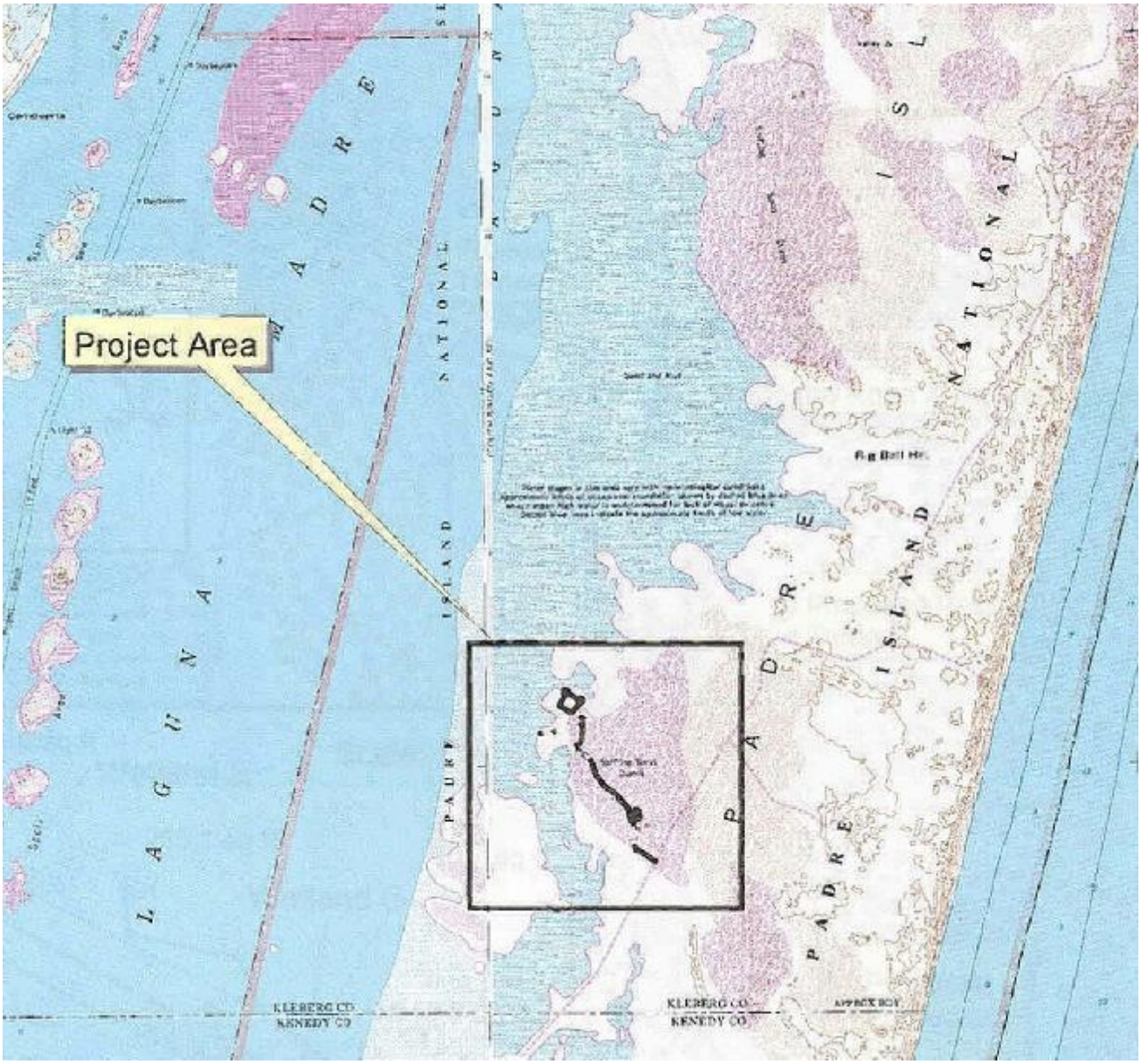


Figure 2. General location of the Dunn-Peach # 1 well and the proposed Dunn-Peach # 2, 3, 4, 5, and 6 wells in relation to Padre Island National Seashore, the Kleberg–Kenedy county line is approximately the 10-mile marker.

Access

All vehicles used during well pad expansion, drilling, and production operations would enter the park via Park Road 22 and then proceed approximately 6.9 miles along the Gulf Beach to a gated dune pass and an existing shell/caliche road that extends approximately 4 miles to the Dunn-Peach # 1 well location.

Surface Location and Well pad

BNP's original Dunn-Peach #1 drill site was selected because it avoided or minimized adverse impacts to wetlands, tidal flats, dunes, and other sensitive resource areas. The utilization of a previously developed site reduces the impacts to the park and exhibits best management practices. The existing well pad represents 2.28 acres and would be expanded by approximately 1.24 acres (3.52 total acres) (Figure 3). This expansion will provide the necessary space required for the drilling of the proposed 5 new wells. The proposed pad expansion remains within upland habitat area and does not impact wetlands.

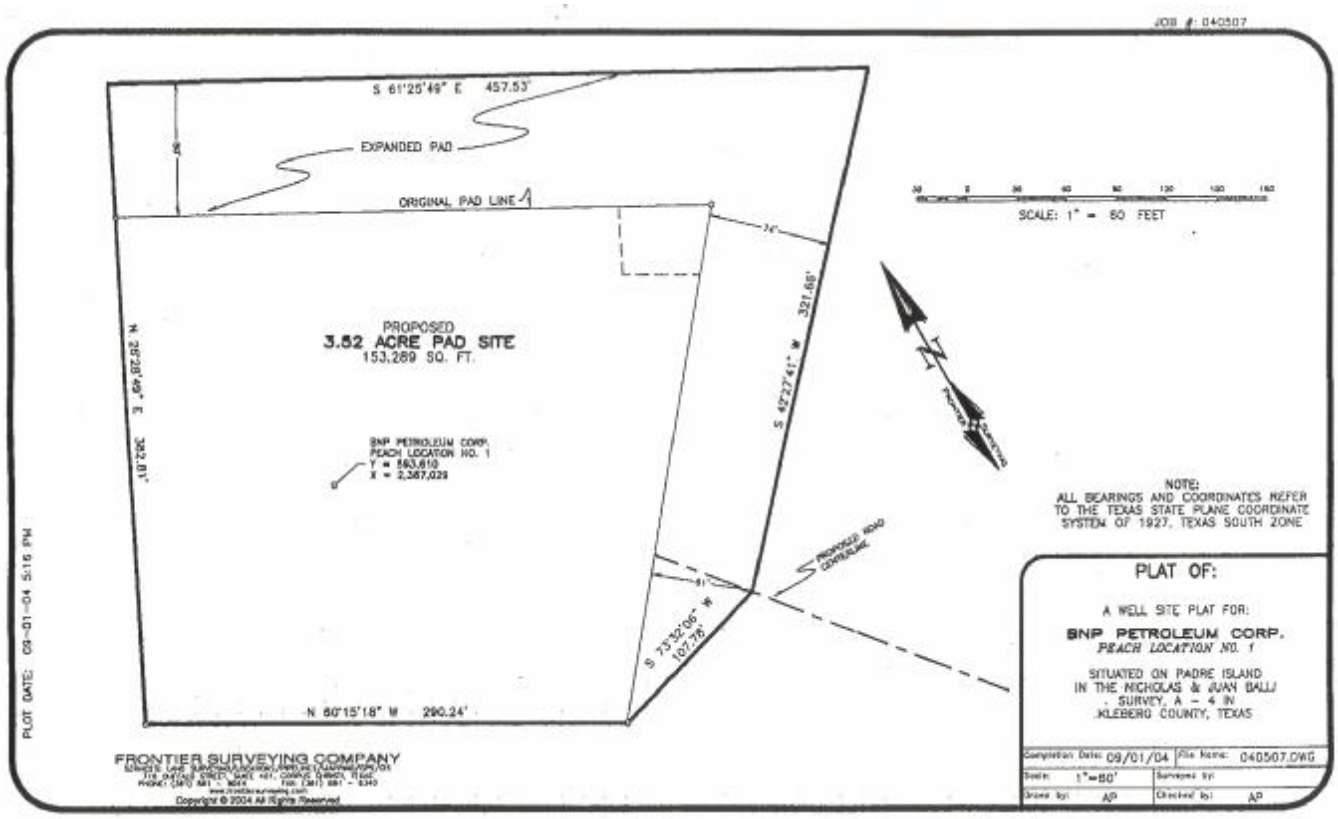


Figure 3. Existing Dunn-Peach #1 well pad with proposed expansion areas

Conventional foundation construction techniques would be used to construct the 1.24 acre addition (54,014 square foot). One bulldozer and one maintainer would be used first to level the expansion area of the drilling pad. After leveling, a lease crew would cover the area with a 20 mm thick polyethylene protective liner. Eighteen-yard "belly dump" trucks would be used to place approximately 300 cubic yards of material on the pad expansion at a depth of 18 inches. The material would be spread with a bulldozer and leveled with a maintainer. A compactor and water truck would be used to compact the material and water the road and pad. A 3-foot high berm would be constructed around the perimeter of the pad area for containment.

All equipment, machinery, and living quarters would be placed within the 3.52 acre (153,331 square foot) pad area. Should the wells be productive, the well pad would be reduced by approximately 1.5 acres (65,340 square feet). This previously developed 65,340 square-foot area would be reclaimed to original condition.

Production Facility
All final production, handling, and metering facilities will be located at the A-4 site production facility developed for the Dunn-Peach #1 well. No additional tanks or production equipment beyond those approved in the original Plan should be necessary as additional wells are added the system. The production unit may need to be resized per future volume demands; however, this will not affect the overall site size and general equipment layout. One additional piece of interim measuring equipment, a well test separator, is planned as an option for the drill pad site. This test unit can be used in lieu of individual flow lines for each new well. The test separator which is equipped with gas, oil, and water meters will be skid mounted (approximately 6 feet x 12 feet) and located on the drill pad site where it can be tied into the individual wellheads by a header pipe system and discharged into the flow line(s) leaving the location. As new wells are added to the system, this test unit can be utilized to measure individual well production volumes necessary for royalty and production allocations. The test unit eliminates the need for installing individual flowlines each time a new well is added to the system. This system for production measurement and allocation is currently approved and widely used by other state and federal agencies for “confined” operations throughout the Gulf of Mexico.

The second option for transporting full wellstream (oil, water, and gas) production from the well heads to the facility site is to trench one new ditch within the existing pipeline corridor and lay multiple flowlines at one time to accommodate all future wells. This option allows maximum output from each well whereas the test unit option allows the stronger well(s) to dominate the flow system until all pressures in the reservoir are equal. These individual flowlines can be appropriately sized and buried in the existing pipeline corridor at such time as future wells are completed. Reservoir and production data acquired from the on-line operations of the Dunn-Peach #1 well will help in determining the best option for flowline requirements.

Production from the wells could continue for up to 20 years.

Flowlines and Gathering Lines
If the Peach 2 through 6 wells are placed in production, additional flowlines would be needed. Construction of additional flowlines would be within the existing access road/flowline route to tie into an existing 12-inch pipeline operated by AEP located approximately 3,700 feet east of the existing Dunn-Peach #1 well. The flowline corridor is approximately 3,700 feet long and 20-feet wide. A ditch of approximately 24 inches wide and 42 inches deep would be dug from the well pad to lay additional flowlines.

Site Description

Padre Island National Seashore (PAIS) is located on a largely undeveloped barrier island in southern Texas, along the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore-island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre, back-island dunes, and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made spoil islands in the Laguna also lie within the National Seashore.

Nature of Flooding in the Area:

Hurricanes, tropical storms, or other storm events that bring high winds or substantial rainfall may result in periodic flooding, due to the low elevations.

Justification for Use of the Floodplain:

Established by Congress on September 28, 1962, private owners retained all mineral interests underlying the park. Two sections of the park's enabling legislation provide guidance regarding the management of nonfederal oil and gas. Under Section 4(a) of the park's enabling legislation and the NPS Organic Act (16U.S.C. §3), Congress authorized the Secretary of the Interior to promulgate the NPS Non-federal Oil and Gas Rights Regulations, 36 CFR Part 9, Subpart B.

There is no practical alternative to locating the proposed, well pad expansion, and pipeline outside the 100-year floodplain because the entire park, with the exception of the fore dunes, is located within floodplains. The formal designation of the floodplain status of Padre Island National Seashore was initially conducted by the Federal Emergency Management Agency's National Flood Insurance Program on August 17, 1971, and revised on March 1, 1984.

Site-Specific Flood Risk:

The greatest percentage of hurricanes occur in August, September, and October. The number of tropical storms occurring during a season may vary from 4 to 12. The average for the past 40 years has been 10 storms per year within the Gulf of Mexico. The Corpus Christi area has had significant effects from only a small percentage of hurricanes, averaging one storm event every 15 years.

Under normal weather patterns, any flooding of the back island area or the beach face is of short duration. Water is pushed up by winds associated with a northern frontal passage and generally recedes during the subsequent tide cycles.

Padre Island N. S. utilizes a three stage alert system when a tropical storm is in the Gulf of Mexico.

- GREEN ALERT will be set when a weather system is developing a circular pattern with winds above 39 miles per hour within 700 miles or 48 hours of PAIS and appears to be heading for the coastal bend area. Visitors are advised a storm is in the Gulf of Mexico.
- YELLOW ALERT will be set anytime a storm building up to hurricane force moves to within 500 miles or 36 hours of PAIS. Visitors are evacuated.
- RED ALERT will be set anytime a storm is expected to reach hurricane force within 300 miles or 24 hours of PAIS. A Red Alert will be set when the National Weather Service establishes a Hurricane Warning. The park will be closed, gates locked, and employees and visitors evacuated.

Should a storm suddenly develop in the western Gulf area, or if an approaching storm suddenly increases its forward speed, any or all of the alerts may be bypassed and the park would immediately come under red alert.

The possibility of severe or significant storm events has been taken into consideration during the planning of this project. Hurricane preparedness and evacuation plans are included as appendices to the BNP Plan of Operations for Dunn-Peach # 2, 3, 4, 5, and 6 wells.

Project Contingencies:

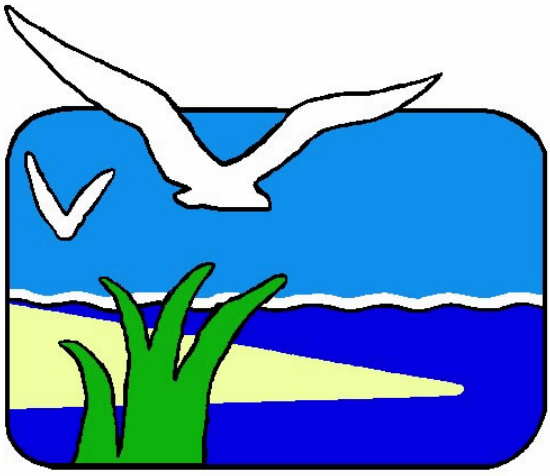
Project impacts would be reduced by locating the proposed operations on an existing site, requiring the expansion of the pad in upland habitats, applying mitigation and restoration measures, such as collecting sewage and hauling it offsite for disposal, and constructing a berm around the drilling equipment area on the well pad and the production facility. The berm will provide primary and secondary spill containment to prevent the release of any leaked or spilled hydrocarbons, or hazardous substances off the operations pad into the environment. As a result of applying these and other mitigation and restoration measures, construction, drilling, and production operations would result in localized, short to long-term, minor adverse impacts on water resources and floodplains.

BNP has developed a hurricane plan in conjunction with the PAIS hurricane plan. Their plan addresses: shutting in, securing the well and equipment, and evacuating personnel.

Summary:

The National Park Service concludes that there is no practical alternative for the placement of BNP's proposed construction, maintenance, drilling, and production of the wells outside of designated floodplains. The proposed action would result in localized, short to long-term, minor adverse impacts on water resources and floodplains. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11988: "Floodplain Management."

Preparer: Arlene Wimer, Environmental Protection Specialist; National Park Service; Padre Island National Seashore; P. O. Box 181300, Corpus Christi, Texas 78480-1300. Telephone (361) 949-8173 x 224.



Environmental Assessment

BNP Petroleum Corporation
Lemon/Lemon Seed Units
No. 1-1000S and No. 1-1008S
Padre Island National Seashore • Texas

July 2002

Environmental Assessment

BNP Petroleum Corporation
Lemon/Lemon Seed Unit Wells
Padre Island National Seashore, Texas

Summary

On November 26, 2001, BNP Petroleum Corporation (BNP) submitted a Plan of Operations to the National Park Service (NPS) to drill and produce the Lemon/Lemon Seed Unit wells from a surface location approximately 12.5 miles south, from the end of Park Road 22. The wells would be directionally drilled to bottom-hole locations east of the surface location in the Gulf of Mexico.

This Environmental Assessment (EA) evaluates two alternatives for BNP to drill and produce the Lemon/Lemon Seed Unit wells. Alternative A evaluates baseline conditions under No Action. In this case, No Action means that BNP would not drill the wells. Under No Action, there would be no additional impacts on the affected environment, and no impact on the domestic energy supply. However there would a moderate to major adverse impact on BNP due to the investment in preparing a plan of operation and not being able to develop its private mineral interest. Alternative B evaluates the Plan of Operations, as submitted by BNP, to drill and produce the wells. Due to mitigation measures, most notably directional drilling, there would be no impacts to seagrass beds or algal flats, trees, cultural resources; and impacts on air quality, geology and soils, water resources and floodplains, vegetation, natural soundscapes, wildlife, state and federally protected species, and visitor use and experience would be localized and long-term, with adverse impacts ranging from negligible to moderate. A section of the foredunes would be impacted with the construction of the new access road, with measures taken to stabilize this cut immediately after construction. A small portion of emergent wetlands would be impacted during the construction of the pipeline. We recognize that these are sensitive resource areas and would be managed as per mitigation measures established in the Padre Island Oil and Gas Management Plan (March 2001) and developed through this environmental assessment. Alternative B is the proposed action. Alternative A is the environmentally preferred alternative.

Public Comment

If you wish to comment on the Plan of Operations, Environmental Assessment, draft Floodplains Statement of Findings, or draft Wetlands Statement of Findings please mail comments to the name and address below. These documents will be on public review for 30 days. The Notice of Availability will be published in the *Corpus Christi Caller Times*. Please note that names and addresses of people who comment become part of the public record. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

Superintendent
Padre Island National Seashore
P.O. Box 181300
Corpus Christi, Texas 78480

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1.0. PURPOSE AND NEED

This Environmental Assessment (EA) evaluates two alternatives for the National Park Service (NPS) to permit BNP Petroleum Corporation (BNP) to drill and produce the Lemon/Lemon Seed Unit Wells (Nos. 1-1000S and 1-1008S) within Padre Island National Seashore. The purpose of this analysis is to provide a decision-making framework for the NPS to approve the use of parklands for BNP to explore and develop its mineral rights, while protecting and preventing impairment to park resources and values, and allowing for a safe visitor experience; and to determine whether an Environmental Impact Statement (EIS) should be prepared.

When Congress authorized the establishment of Padre Island National Seashore on September 28, 1962 (16 U.S.C. §459d, *et seq.*), surface ownership within the area was acquired by the U.S. Government. Private entities or the State of Texas retained the subsurface mineral interests on these lands. Thus, the federal government does not own any of the subsurface oil and gas rights in the park, yet the NPS is required by its laws, policies and regulations to protect the park from any actions, including gas operations, that may adversely impact or impair park resources and values. Padre Island National Seashore was created "in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped …". Currently, there are 12 nonfederal gas operations within the park. The park comprises 130,473 acres. Figure 1 is a region/vicinity map.

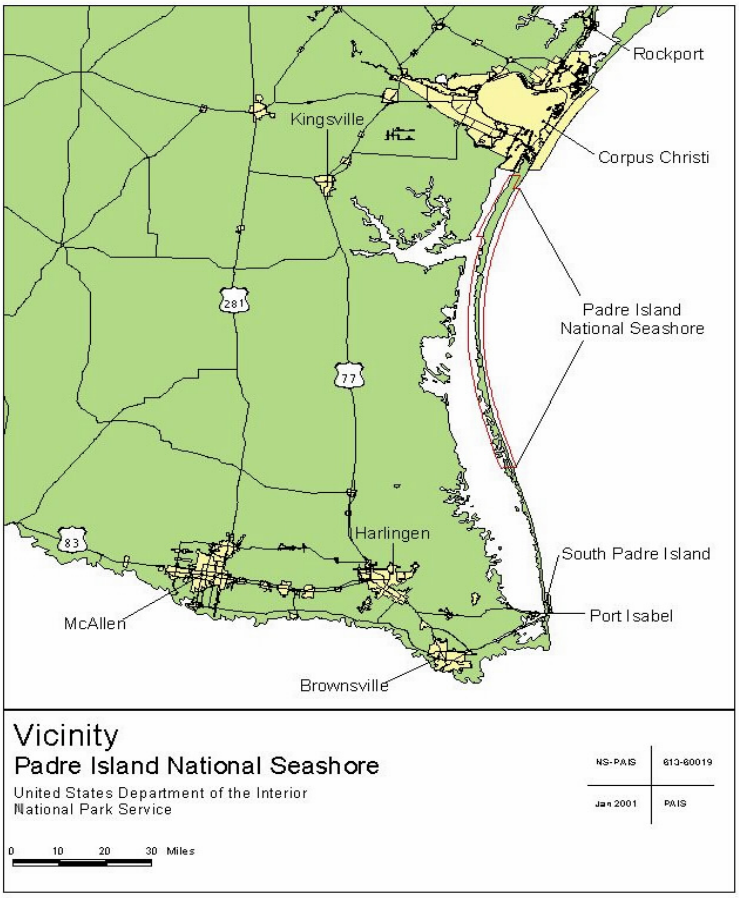


Figure 1. Region/Vicinity map depicting the location of Padre Island National Seashore in relation to the Gulf of Mexico coastline.

On November 26, 2001, BNP submitted to Padre Island National Seashore a Plan of Operations to drill and produce the Lemon/Lemon Seed Unit. The NPS reviewed and determined the plan to be substantially complete December 13, 2001. BNP has revised the Plan of Operations to include all NPS recommendations. The NPS must decide whether to approve the plan and if additional mitigation measures are needed.

The analysis area in this EA for evaluating direct and indirect impacts includes:

- The direct area of impact would include the access road from the park entrance via paved Park Road 22, along 12.5 miles on the Gulf beach vehicle corridor to a proposed cut through the foredunes, and then along a proposed 790-foot long caliche access road to the wellpad; and the footprint for constructing the 4.17-acre well/production pad and a 0.8-mile long by 25 to 50-foot wide corridor for a flowline.
- The indirect area of impact for each park resource or value could vary for each impact topic; but generally would not extend 1500 feet beyond the wells (NPS has selected the analysis area for natural soundscapes and a 100-foot corridor around the access road and the flowline.
- For State and Federally Protected Species, the analysis area for direct and indirect impacts is defined for each species in the Environmental Consequences section of this EA.
- For the impact topic, "Nonfederal Oil and Gas Development," the analysis area includes the effect on BNP and the mineral owner to meet NPS permitting requirements (including cost and time involved for BNP to prepare a plan of operations and contractor efforts, increased mitigation measures and reclamation requirements inside an NPS unit, the effect of proceeding or not proceeding to drill and produce the wells), and the effect of drilling and producing the 2 wells on the domestic energy supply.

The analysis area for evaluating cumulative impacts on park resources and values may extend beyond the boundaries of the park

1.1. Objectives of Taking Action

There are three objectives for this project:

- Provide BNP Petroleum Corporation, as holder of nonfederal oil and gas mineral interests, reasonable access for exploration and development.
- Avoid or minimize impacts on park resources and values, visitor use and experience, and human health and safety.
- Prevent impairment of park resources and values.

1.2. Special Mandates and Direction

The NPS evaluates project-specific proposals for oil and gas production and transportation on a case-by-case basis by applying a variety of Current Legal and Policy Requirements prior to issuing a permit under the general regulatory framework of the NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B). The following discussion is a summary of the basic management direction the NPS follows for permitting nonfederal oil and gas operations in units of the National Park System.

1.2.1. NPS Organic Act and General Authorities Act - Prevention of Impairment

The NPS Organic Act of 1916 (16 U.S.C. § 1, *et seq.*) provides the fundamental management direction for all units of the National Park System. Section 1 of the Organic Act states, in part, that the NPS shall:

> "…promote and regulate the use of the Federal areas known as national parks, monuments, and reservations…by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 16 U.S.C. §1.

The National Park System General Authorities Act of 1970 (16 U.S.C. § 1a-1 *et seq*.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The Act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Subsequently, the 1978 Redwood Act Amendments to the General Authorities Act further clarified Congress' mandate to the NPS to protect park resources and values. The Amendments state, in part: "[t]he authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." 16 U.S.C. § 1a-1.

Current laws and policies require the analysis of potential effects to determine whether or not actions would impair park resources. While Congress has given the NPS the managerial discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the federal courts) that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise (2001 Management Policies, §1.4).

These authorities all prohibit an impairment of park resources and values. Not all impacts are impairments. **An impairment** is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. The NPS Management Policies explain that an impact would be <u>more likely</u> to constitute an impairment to the extent that it affects a resource or value whose conservation is:

1). Necessary to fulfill a specific purpose identified in the establishing legislation or proclamation of the park;
2). Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
3). Identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be <u>less likely</u> to constitute impairment to the extent that it is an unavoidable result, which cannot be reasonably further mitigated, of an action necessary to preserve or restore the integrity of park resources or values.

NPS Management Policies explain that "resources and values" mean the full spectrum of tangible and intangible attributes for which the parks are established and are being managed, including the Organic Act's fundamental purposes (as supplemented), and any additional purposes as stated in a park's establishing legislation. Park resources and values that are subject to the no impairment standard include: the biological and physical processes which created the park and that continue to act upon it; scenic features; natural visibility; natural soundscapes and smells; water and air resources; soils;

geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures and objects; museum collections; and native plants and animals. Additional resources and values that are subject to the non-impairment standard include the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system.

For these reasons, the Environmental Consequences section of this EA provides an analysis of the potential for impairment for each of the resource topics covered in this EA.

1.2.2. NPS Nonfederal Oil and Gas Regulations, 36 CFR 9B

The authority to manage and protect federal property arises from the Property Clause of the United States Constitution. The Property Clause provides that "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States . . ." U.S. Const. Art. IV, ¶ 3, cl. 2.

In 1916, Congress exercised its power under the Property Clause and passed the NPS Organic Act, 16 U.S.C. § 1 *et seq*. Section 3 of the Organic Act authorizes the Secretary of the Interior to "make and publish such rules and regulations as he may deem necessary or proper for the use of the parks…" 16 U.S.C. § 3.

Pursuant to section 3 of the NPS Organic Act and individual park statutes, the Secretary of the Interior promulgated regulations at 36 CFR Part 9, Subpart B ("9B regulations") in 1979. The 9B regulations apply to operations that require access on or through federally owned or controlled lands or waters in connection with nonfederally owned oil and gas in all National Park System units (36 CFR § 9.30(a)).

The NPS Nonfederal Oil and Gas Rights Regulations (36 CFR 9B) and other regulatory requirements assist park managers in managing oil and gas activities so they may be conducted in a manner consistent with the NPS mandate to protect park resources and values. The application and implementation of these regulations on the ground must be assessed parkwide for each site-specific oil and gas activity to determine if these activities have the potential to impair park resources and values.

1.2.3. NPS oversight and Monitoring of Nonfederal Oil and Gas Operations

Under 36 CFR §9.37(f) "[a]pproval of each plan of operations is expressly conditioned upon the Superintendent having such reasonable access to the site as is necessary to properly monitor and insure compliance with the plan of operations." At Padre Island National Seashore, park staff patrols the beach every day during turtle nesting season, and visits certain oil and gas sites several times a week. Park resource managers conduct a monitoring oversight patrol at least two times per week. In the event of an accident or spill, BNP will notify its dispatch immediately, and BNP's dispatch will then immediately notify park resource managers. All approved plans of operations have a spill contingency plan that is reviewed and approved by the NPS.

Pursuant to 36 CFR §9.51(a) an "operator shall be held liable for <u>any</u> damages to federally-owned or controlled lands, waters, or resources, resulting from his failure to comply with . . . his plan of operations" (emphasis added). Undertaking any operations within the boundaries of a park system unit in violation of the 9B regulations shall be deemed a trespass against the United States and shall be cause for revocation of approval of an operator's plan of operations. If an operator violates a term or condition of its approved plan of operation the Superintendent has the authority to temporarily suspend the operation and give the operator the chance to cure the violation. 36 CFR §9.51(c) outlines the Superintendent's suspension authority and procedure. If an operator fails to correct any violation or

damage to federally owned or controlled lands, waters or resources the operator's approval will be revoked. 36 CFR §9.51(c)(3).

In addition to the remedies available to the NPS under the 9B regulations, an operator is also subject to the remedial provisions found in all applicable federal, state, and local laws. For instance, under 16 U.S.C. §19jj, commonly known as the "Park System Resource Protection Act," any person who destroys, causes the loss of, or injures any park system resource is strictly liable to the United States for response costs and for damages resulting from such destruction, loss or injury.

1.2.4. Approved Park Planning Documents

Approved park planning documents also provide a framework for determining how nonfederal oil and gas operations are conducted within Padre Island National Seashore.

The General Management Plan (GMP) is the major planning document for all National Park System units. The GMP sets forth the basic philosophy of the unit, and provides strategies for resolving issues and achieving identified management objectives required for resource management and visitor use. The GMP includes environmental analysis and other required compliance documentation. A GMP/Development Concept Plan (GMP/DCP) was completed along with an environmental assessment for Padre Island National Seashore in 1983.

An Oil and Gas Management Plan/Environmental Impact Statement (OGMP/EIS) was completed for Padre Island National Seashore on August 14, 2000 (PAIS 2000). The OGMP/EIS describes the overall approaches that will be implemented over the next 15 to 20 years, or longer, to manage existing and anticipated oil and gas operations, including the exploration, development and transportation of nonfederal oil and gas underlying Padre Island National Seashore, in a manner that provides for hydrocarbon development while protecting natural and cultural resources, human health and safety, and allowing for public use and enjoyment of those resources. The Oil and Gas Management Plan:

1) Identifies park resources and values most sensitive to oil and gas exploration and development disturbance, and defines impact mitigation requirements to protect such resources and values,
2) Establishes reasonable oil and gas exploration and development performance standards to protect park resources and values,
3) Develops reasonable alternatives for oil and gas development in the park and analyzes the impacts of those alternatives on park resources and values, and
4) Provides pertinent information to oil and gas owners and operators that will facilitate operations planning and compliance with all applicable regulations.

During the scoping and development of the Plan of Operations and of this environmental assessment, the planning framework provided in the park's GMP/DCP and OGMP have been followed. Table 1, below, summarizes many, but not all, of the statutes, regulations, executive orders and policies that govern the exercise of nonfederal oil and gas rights in National Park units.

Table 1. Current Legal and Policy Requirements.

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
Statutes and Applicable Regulations	
National Park Service (NPS) Organic Act of 1916, as amended, 16 U.S.C. §§ 1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
National Park System General Authorities Act, 16 U.S.C. §§ 1a-1 *et seq.*	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
NPS Omnibus Management Act of 1998, 16 U.S.C. §§ 5901 *et seq.*	Any living or non-living resource
NPS Nonfederal Oil and Gas Regulations – 36 Code of Federal Regulations (CFR) Part 9, Subpart B	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
16 U.S.C. § 19jj (commonly referred to as the Park System Resource Protection Act)	Any living or non-living resource that is located within the boundaries of a unit of the National Park system, except for resources owned by a nonfederal entity
American Indian Religious Freedom Act, as amended, 42 U.S.C. §§ 1996 – 1996a; 43 CFR Part 7	Cultural and historic resources
Antiquities Act of 1906, 16 U.S.C. §§ 431-433; 43 CFR Part 3	Cultural, historic, archeological, and paleontological resources
Archeological Resources Protection Act of 1979, 16 U.S.C. §§ 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7	Archeological resources
Clean Air Act, as amended, 42 U.S.C. §§ 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23	Air resources
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675; 40 CFR Parts 279, 300, 302, 355, and 373	Human health and welfare and the environment
Endangered Species Act of 1973, as amended, 16 U.S.C. §§ 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450	Plant and animal species or subspecies, and their habitat, which have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service
Federal Insecticide, Fungicide, and Rodenticide Act, as amended (commonly referred to as Federal Environmental Pesticide Control Act of 1972), 7 U.S.C. §§ 136 *et. seq.;* 40 CFR Parts 152-180, except Part 157	Human health and safety and the environment
Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. §§ 1251 *et seq.;* 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328	Water resources, wetlands, and waters of the U.S.
Historic Sites, Buildings, and Antiquities Act (Historic Sites Act of 1935), 16 U.S.C. §§ 461-467; 18 CFR Part 6; 36 CFR Parts 1, 62, 63 and 65	Historic sites, buildings, and objects
Lacey Act, as amended, 16 U.S.C. §§ 3371 *et seq.;* 15 CFR Parts 10, 11, 12, 14, 300, and 904	Fish, wildlife, and vegetation
Migratory Bird Treaty Act, as amended, 16 U.S.C. §§ 703-712; 50 CFR Parts 10, 12, 20, and 21	Migratory birds
National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §§ 4321 *et seq.;* 40 CFR Parts 1500-1508	The human environment (e.g. cultural and historic resources, natural resources, biodiversity, human health and safety, socioeconomic environment, visitor use and experience)
National Historic Preservation Act of 1966, as amended, 16 U.S.C. §§ 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810	Cultural and historic properties listed in or determined to be eligible for listing in the National Register of Historic Places
Native American Graves Protection and Repatriation Act, 25 U.S.C. §§ 3001-3013; 43 CFR Part 10	Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony
Noise Control Act of 1972, 42 U.S.C. §§ 4901-4918; 40 CFR Part 211	Human health and welfare
Oil Pollution Act, 33 U.S.C. §§ 2701-2761; 15 CFR Part	Water resources and natural resources

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
990; 33 CFR Parts 135, 137, and 150; 40 CFR Part 112; 49 CFR Part 106	
Pipeline Safety Act of 1992, 49 U.S.C. §§ 60101 *et seq*.; 49 CFR Subtitle B, Ch 1, Parts 190-199	Human health and safety and the environment
Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 *et. seq*.; 40 CFR Parts 240-280; 49 CFR Parts 171-179	Natural resources and human health and safety
Rivers and Harbors Act of 1899, as amended, 33 U.S.C. §§ 401 *et. seq*.; 33 CFR Parts 114, 115, 116, 321, 322, and 333	Shorelines and navigable waterways, tidal waters, and wetlands
Safe Drinking Water Act of 1974, 42 U.S.C. §§ 300f *et seq*.; 40 CFR Parts 141-148	Human health and water resources
Executive Orders	
Executive Order (E.O.) 11593 – Protection and Enhancement of the Cultural Environment, 36 Federal Register (Fed. Reg.) 8921 (1971)	Cultural resources
E.O. 11988 - Floodplain Management, 42 Fed. Reg. 26951 (1977)	Floodplains and human health, safety, and welfare
E.O. 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)	Wetlands
E.O. 12088 – Federal Compliance with Pollution Control Standards, 43 Fed. Reg. 47707 (1978)	Natural resources and human health and safety
E.O. 12630 – Governmental Actions and Interference with Constitutionally Protected Property Rights, 53 Fed. Reg. 8859 (1988)	Private property rights and public funds
E.O. 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, amended by Exec. Order No. 12948, 60 Fed. Reg. 6379 (1995)	Human health and safety
E.O. 13007–Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)	Native Americans' sacred sites
E.O. 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)	Vegetation and wildlife
E.O. 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)	Migratory birds
E.O. 13212 - Actions To Expedite Energy-Related Projects (2001)	
Policies, Guidelines and Procedures	
NPS Management Policies (2001)	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, and visual resources
Department of the Interior (DOI), Departmental Manual (DM) 516 –NEPA policies	Human health and safety and the environment
DOI, DM 517 - Pesticides	Archeological and prehistoric resources, historic resources, Native American human remains, and cultural objects
DOI, Onshore Oil and Gas Order Number 2, Section III, Drilling Abandonment Requirements, 53 Fed. Reg. 46,810-46,811 (1988)	All resources, including air resources, cultural and historic resources, natural resources, biological diversity, human health and safety, endangered and threatened species, visitor use and experience, socioeconomic development, and visual resources
NPS Director's Order (D.O.) –12 and Handbook – National Environmental Policy Act (2001)	Cultural, historic, and ethnographic resources
NPS D.O. - 28 – Cultural Resource Management (1997)	Natural resources and human health and safety
NPS 66 – Minerals Management Guideline (1990)	Natural resources
NPS 77 – Natural Resources Management Guideline	Wetlands

AUTHORITIES	RESOURCES AND VALUES AFFORDED PROTECTION
(1991)	
NPS D.O. 77-1 – Wetland Protection	Floodplains
NPS Special Directive 93-4 – Floodplain Management Guideline	Cultural and historic resources
Secretary of the Interior's "Standards and Guidelines for Archeology and Historic Preservation," 48 Fed. Reg. 44716 (1983), also published as Appendix C of NPS D.O. 28 – Cultural Resource Management	Native American Tribal rights and interests
Government-to-Government Relations with Native American Tribal Governments, Presidential Memorandum signed April 29, 1994	

1.3. Issues and Impact Topics Evaluated

Early in the planning and development of the Plan of Operations by BNP, the NPS met with BNP and its contractor, Belaire Environmental, Inc. (BEI), to identify resources, values, and other concerns that could be potentially impacted by drilling and producing the Lemon/Lemon Seed Unit wells. In addition, early input from other federal, state and local agencies was sought. Scoping with the U.S. Fish and Wildlife Service (FWS), U.S. Army Corps of Engineers (COE), and Texas Natural Resources Conservation Commission (TNRCC) involved contacts by telephone, written correspondence, and meetings at the proposed project location within Padre Island National Seashore. Scoping involved defining appropriate alternatives, impact determinations, mitigation measures, and identification of major issues. Based on scoping, the NPS identified the following park resources, values, and other concerns for evaluation in this EA:

- nonfederal oil and gas development
- air quality
- geology and soils
- water resources and floodplains
- wetlands
- vegetation
- natural soundscapes
- wildlife
- state and federally protected species
- visitor use and experience

Based on the above list of park resources, values, and other concerns identified during scoping, issue statements were developed to define problems or benefits pertaining to the proposal to drill and produce the Lemon/Lemon Seed Unit wells. The issue statements in Table 2, below, describe a cause-and-effect relationship between an activity and a resource, value, or concern. The issue statements were used in developing and evaluating alternatives.

Table 2. Issue Statements.

Impact Topic	Issue Statement
Nonfederal Oil and Gas Development	• The NPS permitting process, regulatory requirements, and operating stipulations generally increase the cost to operate on parklands, compared to operating on non-NPS lands. These increased costs could reduce income to mineral owners (or mineral interest holders) and operators, and influence an owner's or operator's decision to defer, modify, undertake as planned, or not conduct certain nonfederal oil and gas operations. • Production of the nonfederal mineral interest would contribute hydrocarbon resources to meet the nation's domestic energy demands.

Impact Topic	Issue Statement
Air Quality	• Construction and maintenance of roads, wellpads, production facilities, and pipelines; vehicle use on and off paved roads; and exhaust from combustion of gasoline and diesel-powered vehicles and equipment used for drilling and production operations would increase emissions of particulate matter which could affect air quality, including visibility in the general vicinity of the operations. • Maintenance activities, including the application of herbicides for vegetation control on and around operations sites, would emit pollutants, including nitrogen oxides, volatile organic compounds, carbon monoxide, sulfur dioxide, particulate matter, and objectionable odors. These emissions could degrade air quality within the park and could contribute toward regional air quality degradation. Nitrogen oxides and volatile organic compounds are primary precursors to ozone formation, which, depending on ambient concentrations, can have damaging effects on some vegetation and on the health of humans and wildlife.
Geology and Soils	• Grading and leveling of hummocky uplands and barrier foredunes for the oil and gas access road and wellpad and the placement of nonnative materials (caliche) on the access road and wellpad would result in soil and sand compaction and loss of productivity on approximately 4.14 acres for the duration of the oil and gas operation(s). • Construction of an oil and gas access road through the foredunes would modify dune structure and eolian sand transport, and could result in the funneling of water through the dunes during extremely high tides. • The release of hydrocarbons or other contaminating and hazardous substances from vehicles, equipment, and pipelines during exploration and production operations, could alter the chemical and physical properties of the soil and sand in the vicinity of the operation(s). Changes in the soil and sand properties could result directly from contact with contaminants on-site, or indirectly, via runoff from contaminated areas. • Vehicle use along the Gulf Beach, particularly from heavy vehicles transporting the drilling rig, water, and drilling muds for disposal outside the park, could cause rutting and compaction of the sands on the beach.
Water Resources and Floodplains	• Vehicle use; removal or modification of vegetation; and surface disturbance associated with construction, maintenance and use of the oil and gas access road, wellpad, production facility, and flowline could alter surface and subsurface drainage patterns in the vicinity of operation(s). • The release of hydrocarbons and contaminating or hazardous substances from vehicles, equipment, or pipelines used for exploration and production operations could degrade water quality. • The siting, maintenance, and use of the oil and gas access road, wellpad, production facility, and flowline in the floodplain, or the release of hydrocarbons and contaminating or hazardous substances from these operations, could adversely affect floodplain functions, values and uses, including: the natural moderation of floods, water quality, sediment control, ground water recharge or discharge, fish and wildlife habitat, maintenance of biodiversity, recreational opportunities, and natural beauty. • Reclamation of the oil and gas access road and wellpad could adversely affect water quality and floodplain functions, values and uses over the short-term. However, long-term benefits include the re-establishment of surface and surface water flow, the control of non-native vegetation, and

Impact Topic	Issue Statement
	re-establishment of native vegetative communities.
Wetlands	• Construction of the flowline through 0.03 acre of an emergent wetland would result in vegetation removal and alteration of the surface and subsurface hydrology of the site for approximately one year. • Reclamation activities that re-establish the contours of the area, restore surface and subsurface water flow, control non-native vegetation, and re-establish native vegetative communities would restore natural and beneficial wetland functions, values, and uses.
Vegetation	• Vegetation would be totally removed on 9.0 acres for the construction of an oil and gas access road, wellpad, production facility, and flowline. Vegetation removal could change the structure and composition of vegetative communities in the project area; alter wildlife habitat and species composition; increase storm runoff; and increase soil and sand erosion. • Construction and use of the oil and gas access roads, wellpad, production facility, and flowline could disrupt the surface, and subsurface water flow that is necessary to maintain vegetative communities. • The release of hydrocarbons and contaminating or hazardous substances could damage or kill vegetation directly, via contact with contaminants on-site, or indirectly, via pathways from contaminated areas. • Disturbances/removal of native vegetation could lead to the unintentional spread and establishment of non-native plant species transported in or on drilling and maintenance equipment. • Reclamation of the oil and gas site could re-establish native vegetative communities and surface and subsurface drainage patterns necessary to support vegetative growth.
Natural Soundscapes	• Vehicles and equipment used for construction and maintenance of the oil and gas access road, wellpad, production facility, and flowlines could result in increased noise, adversely affecting wildlife and visitor uses and experience
Wildlife	• Oil and gas activities, including vehicle use and the construction, maintenance, and use of the oil and gas access road, wellpad, production facility, and flowline could increase predation in open areas; directly harm or kill wildlife; and disrupt wildlife feeding, denning, nesting, spawning/reproduction, and other behavior. Oil and gas activities could also result in avoidance of the area by wildlife due to increased noise and human presence. • Loss or modification of wildlife habitat could occur from the construction of the oil and gas access road, wellpad, production facility, and flowline. These activities could increase edge effects, increase human access, and alter wildlife species, composition, and migration. • Liquids that collect in secondary containment structures at the oil and gas production site could attract, harm, and possibly kill birds. • The release of hydrocarbons and hazardous or contaminating substances from vehicles, drilling and production equipment, and pipelines could injure wildlife. The adverse effects could become worse over time if wildlife species ingest the contaminants and are consumed by other wildlife species. • Heavy equipment used for reclamation operations could injure or kill wildlife over the short-term. However, reclamation of oil and gas sites over the long-term could re-establish native vegetative communities and surface and subsurface water quality and quantity

Impact Topic	Issue Statement
	that support wildlife populations.
State and Federally Protected Species	• Trucks driving along the Gulf beach could compact the sand, which would make it difficult for the sea turtles to dig a nest cavity. • Trucks (both commercial and private vehicles) driving along the Gulf beach could run over sea turtles, egg clutches and hatchlings, and other T&E species (e.g., birds). • Deep ruts made from large commercial vehicles could be an obstacle to sea turtle during nesting and to hatchlings moving towards the sea. Hatchlings could become vulnerable to depredation, desiccation, and exhaustion. • Noise, artificial lighting, and other nighttime activities during drilling operations could affect other T & E wildlife species. • Noise, odors, artificial lighting, and vibrations could interfere with the imprinting process of the hatchling sea turtles.
Visitor Use and Experience	• Oil and gas operations could pose a threat to human health and safety from the use of the Gulf Beach by commercial vehicles (particularly vehicles with less maneuverability and visibility); hazardous equipment at wells and production facilities; and the release of hydrocarbons and hazardous or contaminating substances. Spilled or released hydrocarbons and contaminating or hazardous substances could be inhaled, absorbed, or ingested by human beings. • The oil and gas operations could adversely affect air quality; alter scenic resources and the night sky; increase background sound levels and could degrade the quality of visitor uses and experiences in the park.

1.4. Issues and Impact Topics Eliminated from Further Analysis

The following topics have been eliminated from further analysis in this environmental assessment for the reasons described.

1.4.1. Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, environmental justice was dismissed as an impact topic in this EA.

1.4.2. Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland is defined as soil that produces specialty crops such as fruits, vegetables, and nuts. There were no prime or unique farmlands located in Padre Island National Seashore; therefore, prime and unique farmlands was dismissed as an impact topic in this EA.

1.4.3. Cultural Resources

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq.*); the National Environmental Policy Act of 1969 (42 USC 4321 *et seq.*); and the National Park Service's Director's Order #28, *Cultural Resource Management Guideline (1997)*, *Management Policies, 2001* (2000), and Director's Order #12, *Conservation Planning, Environmental Impact Analysis, and Decision Making* (2001) require the consideration of impacts on cultural resources listed in or eligible to be listed in the National Register of Historic Places. The National Park Service recognizes five categories of cultural resources: historic structures; ethnographic resources; cultural landscapes; archeological resources; and museum collections.

There are no historic structures, ethnographic resources, or cultural landscapes within or near the operations area. During project scoping, a literature search was conducted to determine the extent and continuing adequacy of past archeological surveys that had been performed in the analysis area. An inventory for archeological resources was conducted as part of 3-D seismic surveys conducted in 1999 and 2000, which covered a majority of the park. Archeological data is lacking in some areas; therefore, BNP contracted for, and the NPS permitted, further archeological surveys to be conducted. William Moore and James Warren were used to survey for archeological resources in the area of the proposed project. The survey was conducted between November 27 and December 6, 2001 and found no archeological or historic resources in the survey area. The survey was submitted to the State Historic Preservation Office (SHPO) for review and approval. Receipt of the SHPO written concurrence of "no adverse affect" received March 12, 2002.

1.4.4. Local and Regional Economics

Local and regional economics was dismissed as an impact topic in this EA because the outcome of whether two wells are drilled would have negligible impact on the local or regional economies.

2.0. ALTERNATIVES

Two Alternatives, A and B, are described and evaluated in this EA. Alternative locations and strategies that were considered but dismissed from further analysis are then described. An analysis for selecting the environmentally preferred alternative is also provided. This section concludes with three summary tables comparing the two alternatives.

2.1. Alternative A, No Action

The No Action Alternative is required under the National Environmental Policy Act (NEPA) and establishes a baseline or benchmark from which to compare the effects of permitting the proposed acitity to proceed. Under No Action, the wells would not be drilled, upkeep and maintenance of the existing 12 gas operations throughout the park would continue. Truck traffic access would be along the Gulf of Mexico shoreline. Daily trips by pickup sized trucks and the periodic larger trucks removing "condensate" from holding tanks can be expected.

2.2. Alternative B, Proposed Action

Under Alternative B, Proposed Action, the NPS would approve BNP's Plan of Operations, to drill and produce the Lemon/Lemon Seed Unit wells.

Location of the Well. The surface location of well No. 1-000S is located 150,320 feet from the north line and 1082.1 feet from the east line (Boyles Meander Line) of the Juan Jose and Nicolas Balli Survey, Abstract-10, Kenedy County, Texas. The No. 1-1008S location is approximately fifty feet south of Well No. 1-10002 at 150,372 feet from the north line and 1094.7 feet from the east line of the referenced survey. This drill site is approximately 12.5 miles south

of the end of Park Road 22 and approximately 19.5 miles east-southeast of Rivera Beach, across Baffin Bay and the Laguna Madre (Figure 2.)

Figure 2. General location of the proposed Lemon/Lemon Seed unit in relation to Padre Island National Park.

Additional maps include:

Figure 3: Surface and bottom locations of Lemon/Lemon Seed Units, wells No. 1-1000S and No. 1-1008S.

Figure 4: Proposed location of the Lemon/Lemon Seed Units, 12.5-mile marker on Padre Island National Seashore. Depicts location of access road, pad/production site, proposed pipeline, and wetland area.
Figure 5: Close-up of wetland area within the 25-foot work corridor marked

The global positioning system (GPS) measurements based on Texas State Plane Coordinate System of 1927, Texas South Zone, for the surface and bottom-hole locations (Figure 3) of the two proposed well of the Lemon/Lemon Seed Unit are:

Lemon/Lemon Seed Unit No. 1-1000S

Surface location:	X = 2,370,294.68 E	Y = 573,000.58 N
Bottom-hole location:	X = 2,378,765.40 E	Y = 571,625.86 N

True Vertical Depth (TD)	15,000 feet
Measured Vertical Depth (MVD)	19,000 feet
Surface Offset Distance	8,579 feet

Lemon/Lemon Seed Unit No. 1-1008S

Surface location:	X = 2,370,273.32 E	Y = 572,955.37N
Bottom-hole location	X = 2,372,210.02 E	Y = 569,791.88 N

True Vertical Depth (TD)	9,200 feet
Measured Vertical Depth (MVD)	10,500 feet
Surface Offset Distance	3,709 feet

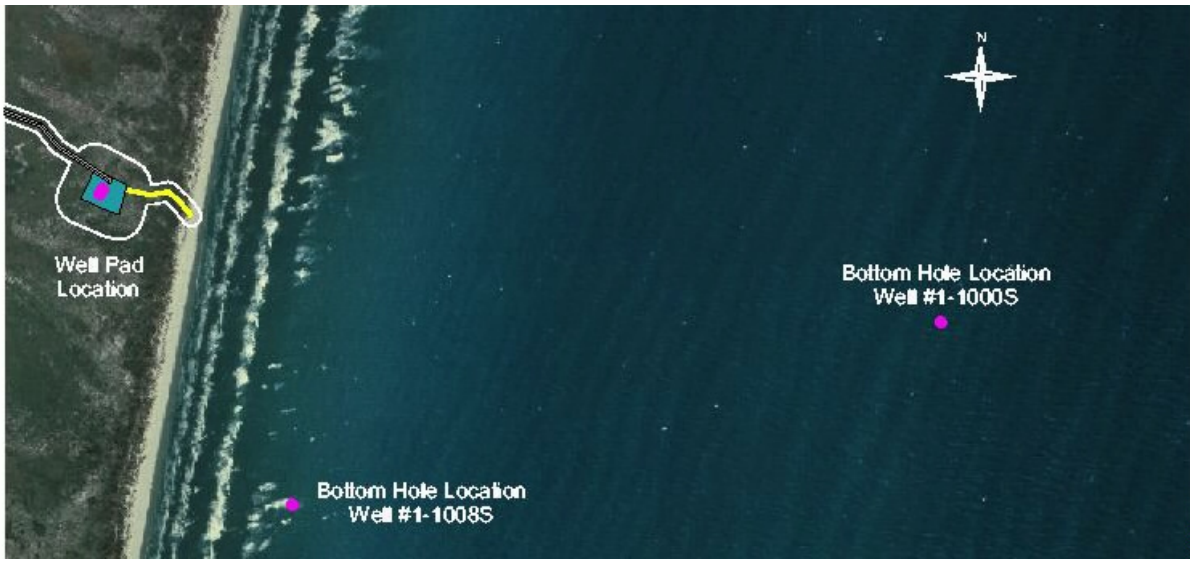


Figure 3. Surface and bottom locations of Lemon/Lemon Seed Unit wells No.1-1000S and No. 1-1008S.

Access: All vehicles used during construction, drilling, and production operations would enter the park via Park Road 22 and then proceed approximately 12.5 miles along the Gulf Beach to the proposed access road through the dunes (Figure 4). The well site would be located approximately 900 feet west of the Gulf beach. The proposed roadway would result in the filling

and leveling of 790 linear feet (21,800 square feet). Of the 790 linear feet, approximately 640 linear feet (12,800 square feet) are hummocky uplands and approximately 150 linear feet (9000 square feet) are barrier foredunes. Conventional road and foundation construction techniques would be used to construct the access road. The dune pass would be oriented southeast to north-west and built at an elevation high enough to prevent "water funneling" through the dunes during extremely high tides, but low enough to allow for long industrial sized vehicles to travel without complications.

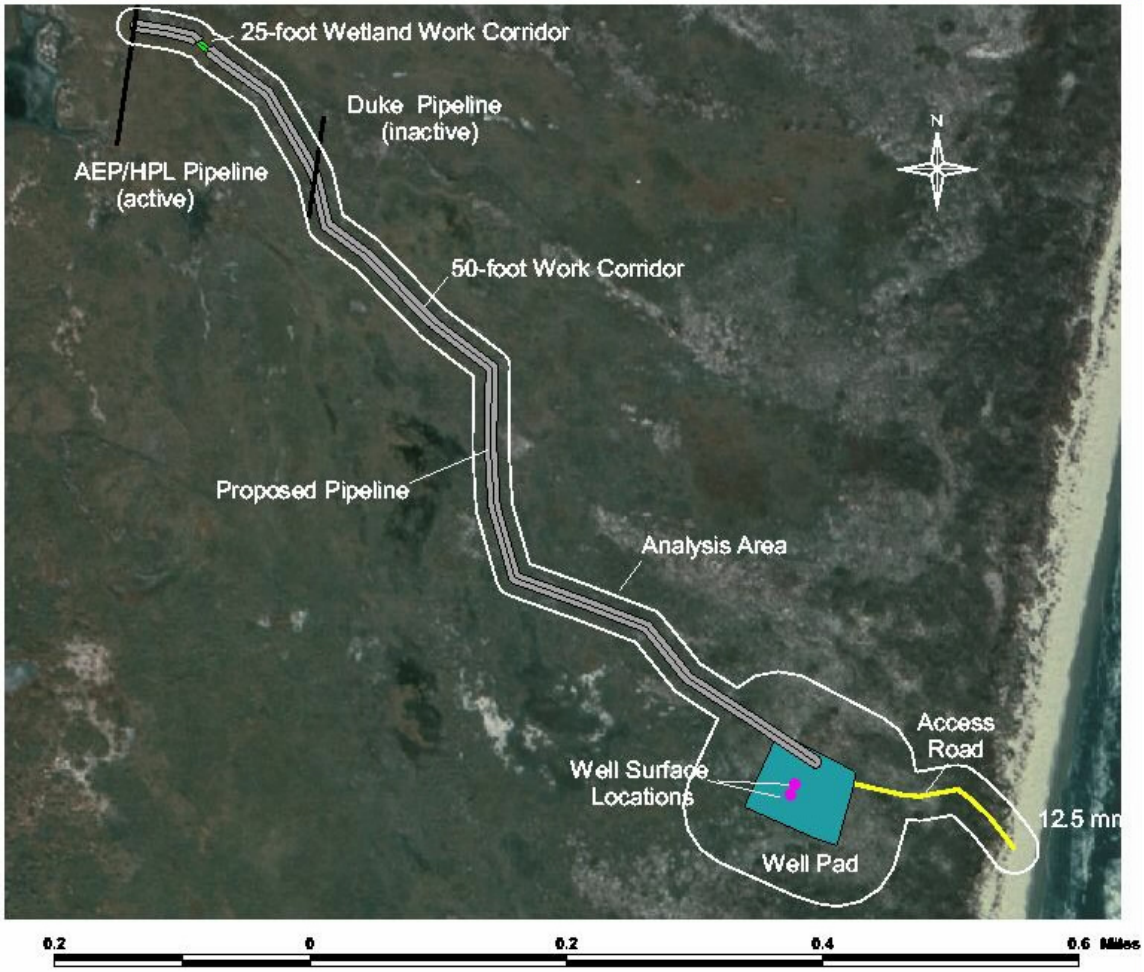


Figure 4. Proposed location of the Lemon/Lemon Seed Unit, 12.5 miles on Padre Island National Seashore. Depicts location of access road, pad/production site, proposed flowline, and wetland area.

In order to provide an idea of the level of truck traffic expected during this project, Table 3 lists the weekly number of oil and gas vehicles that were involved in a drilling operation located at Yarborough Pass. This operation spanned four months and averaged approximately 13 total trucks each day, which included four escorted large trucks and nine pickup trucks.

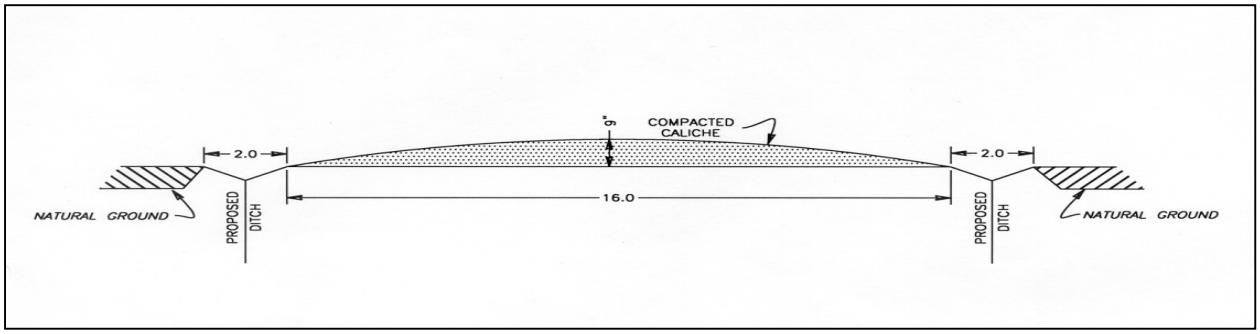
Surface Location and Wellpad: BNP's proposed drill site was selected because it would avoid adverse impacts to wetlands, tidal flats, dunes, and other sensitive resource areas. Conventional foundation construction techniques would be used to construct the 136,603-square foot (3.14 acres) polygon shaped drill site. An additional 22,500 square feet (0.5 acres) would be added to the pad area for extra storage. One bulldozer and one maintainer would be used

Survey markers of the proposed access road, foredune terminus.

Table 3. Weekly Number of Oil and Gas Vehicles Driving on the Gulf Beach to Access the Dunn-Murdock Well Location at Yarborough Pass.

Week Of	Weekly Truck Total	Pickup Trucks	Escorted Large Trucks
Feb. 3 – 9	12	10	2
Feb. 10 – 16	12	12	0
Feb. 16 – 23	11	10	1
Feb. 24 – Mar. 2	85	57	28
Mar. 3 – 9	56	33	23
Mar. 10 – 16	16	15	1
Mar. 10 – 16	16	15	1
Mar. 17 – 23	193	103	90
Mar. 24 – 30	166	126	40
Mar. 31 – April	149	89	60
April 7 – 13	128	81	47
April 14 – 20	149	94	55
April 21 – 27	122	76	46
April 28 – May 4	93	72	21
May 5 – 11	81	54	27
May 12 – 18	74	57	17
May 19 – 25	69	52	17
May 26 – June 1	79	49	30
Total 117 days	**1,495**	**990**	**505**

first to level the roadbed and drilling pad. After leveling, a lease crew would cover the pad with a 20 mm thick polyethylene protective liner. Eight to ten dump trucks would be used to place caliche on the road and pad. The caliche would be spread with a bulldozer and leveled with a maintainer. A compactor and a water truck would be used to compact the caliche and water the road and pad. A 3-foot high berm would be constructed around the perimeter of the pad area for containment. Caliche berms would also be constructed around the diesel tanks for containment.



Typical Road Cross Section.

All equipment, machinery, and living quarters would be placed within the 159,103 square foot pad area. This pad would be utilized for both wells, and may also be used for additional drilling in the future. Should the well be productive, all production equipment would be placed within the pad area. If a production facility were constructed, the remaining pad area would be reduced to a rectangle with the approximate dimensions of 340 feet x 210 feet x 320 feet x 210 feet, or 69,300 square feet. In the previously developed 89,803 square-foot area the ground would be reclaimed to original condition.

This isolated area remains virtually untainted by artificial light sources. Drilling the well, however, requires work around-the-clock. Therefore, artificial lighting must be brought in to facilitate work during the night in a safe work environment. BNP would strive to maintain a balance between human safety, preservation of the park's night sky, and reduction of impacts to wildlife. To the extent possible, artificial lighting would be directionally focused on the work site, and light bulbs would be recessed inside concave shields to avoid unnecessary glare.

Use of Water for Drilling: BNP proposes to drill a temporary water well on the wellpad to deliver the approximately 1,302,000 gallons of water needed to drill the wells. BNP would provide a means for metering water volume at Padre Island National Seashore's request. The water well would be drilled into the Goliad formation, between 1,400 feet and 1,700 feet. Providing this well has sufficient volume, BNP would not have to purchase water from the park. If a water supply well is maintained at the location, BNP would adjust the surface casing setting depth for Well #1008S as a precautionary well control measure to minimize the risk of communication developing to the water supply well. Instead of setting the surface casing at 1750 feet, the operator would set surface casing at approximately 2200 feet, thereby providing nearly 500 feet of vertical separation between the casing shoe and the total depth of the water supply well.

The potential for a successful drilling of a water source well at the location has yet to be determined. Previously, Sun Oil plugged their Dunn-McCampbell #1A well to a water source well with perforations in the Goliad sand from 1,530 feet to 1,560 feet. No information regarding fresh water production rates has been found. The Laguna Madre well #1 near Yarborough Pass was also used as a water source well according to Texas Natural Resource Conservation Commission (TNRCC), but no information regarding its production is available. Drilling a water

source well at the Dunn-Murdock No. 1 location at Yarbrough Pass was successful. A similar well will be attempted at the Lemon/Lemon Seed location. If a water source well cannot be made, two options are available to obtain the needed water: pump water or fill water trucks from the Dunn-Murdock #1 location to the Lemon/Lemon Seed location; or, obtain water from the fire hydrant at the south end of Park Road 22. A check valve and water meter would be installed at the hydrant. Padre Island National Seashore would be paid for the water at the end of the drilling operation. The water would be hauled by transport to the location. At 1,300 barrels per load, this would require approximately 155 loads of water hauled during the course of drilling Well No.1-1000S and approximately 85 loads while drilling Well No.1-1008S.

BNP plans to file an application with the Railroad Commission of Texas (TRRC) for a minor permit for annular disposal of drilling mud for both Well No.1-1000S and No. 1-1008S using the annulus of Well No.1-1000S. Should the TRRC deny the application, or if injection were prevented for some mechanical reason (i.e., excessive injection pressure, failure of casing integrity, etc.), BNP would be required to haul the excess liquids by transport out of the park to an approved disposal site. The estimated volumes of liquids are 9,000 barrels for Well No. 1-1000S and 3,000 barrels for Well No.1-1008S. At an average of 100 barrels per load due to weight restrictions, this equals 120 loads hauled from the site while drilling the two wells.

Production Facility: Should BNP's proposed well prove to be productive, the production facilities would be placed on the existing wellpad. The pad size would be reduced to 340 ft. x 320 ft. x 210 ft., approximately half the original size. By placing the production facility on the same pad as the well, no additional impacts to previously undisturbed habitats would occur. Production could continue for up to twenty years.

Pipeline: There are two pipelines in the area of proposed operations (Figure 4). Duke Energy owns a currently inactive ten (10) inch pipeline approximately 2,400 feet west of the proposed wellsite. AEP (formerly Enron/HPL) operates and maintains an active twelve (12) inch pipeline that lies approximately 3,300 feet west of the proposed wellsite. The pipelines extend north and south on the island for several miles from the location. BNP plans to tie into either of these existing pipelines**.** The construction of BNP's proposed flowline route would briefly impact approximately 3280 linear feet for the Duke pipeline, or 4300 feet for the AEP pipeline of hummocky uplands. Prior to the tie-in point for the AEP pipeline, the route crosses an emergent wetland. Utilizing the 50-foot construction corridor, 2,765 square feet (0.0636 acres) of emergent wetland would be impacted. The NPS stipulation of a 25-foot construction corridor in wetlands reduces the impacts to 1,382.5 square feet (0.032 acres) (Figure 5).

The new line, ranging from a minimum of three (3) to a maximum of (10) inches, is contingent on the production rates obtained during the testing phase of the well. A ditch of approximately 24 inches wide and 42 inches deep would be dug from the wellpad to the tie-in point. The procedure used to tie-in the pipeline is a "hot tap". This method allows pipelines that are in service to be connected without the contents being released. A 15-foot by 15-foot (225 square foot) excavation will be required to make the tie-in. Any ground water that seeps into the excavation would be pumped out using PVC well points and diaphragm pumps. The liquids would be diverted and filtered through a silt screen and hay bales before being released onto the surrounding area. Any contaminated liquids or soils would be removed and hauled to a State-approved disposal site.

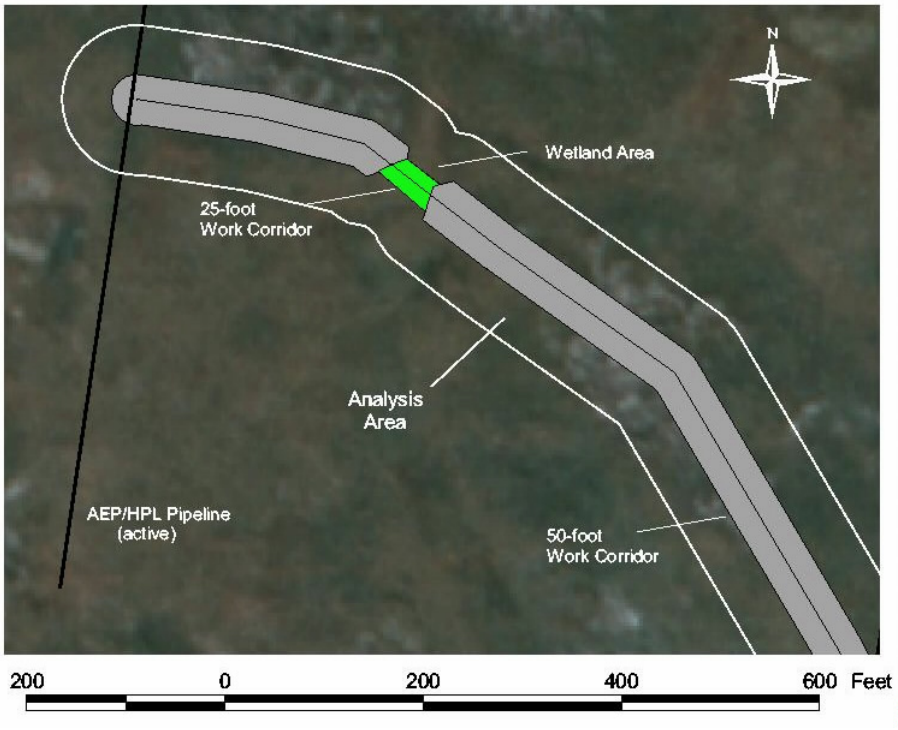


Figure 5. Close-up of wetland area with 25-foot work corridor marked.

Reclamation Plan: As soon as possible after completion of approved operations but no later than six (6) months thereafter unless a longer period of time is authorized by the Regional Director, BNP would initiate reclamation. [36 CFR 9.39(a) (2)]. Reclamation would follow both the drilling and production phases of operations. After drilling the wells, and if the wells are placed in production, the wellpad size would be reduced for the production phase, as described above under "Production Facility."

At the completion of production operations, the wells would be plugged, and all above ground structures, equipment, and other man-made debris resulting form operations would be removed; and any contaminating substances would be removed or neutralized. [36 CFR 9.39 (a)(2)]. The pad and road areas would be re-contoured as near as possible to the original contour. The re-contoured ground would be fertilized at 40 pounds per acre of 40/30/0 fertilizer, the area ripped to 18 inches, and mulched with native hay containing seeds from the previously existing vegetation. During annual monitoring efforts, undesirable species would be controlled either by herbicide application or hand/tool removal, as approved by the NPS. Restored areas would be monitored annually until 70 percent coverage of targeted species is achieved. An annual report would be submitted to the park documenting restoration activities and results. Monitoring would cease after 70 percent of the original vegetative coverage of two target species, seacoast bluestem (*Schizachyrium scoparium* var. *littoralis*) and gulfdune paspalum (*Paspalum monostachyum*), was achieved or after the site had been approved by the park Superintendent.

Mitigation Measures: In order to reduce the impacts to park resources and values, the mitigating measures described in Table 4 and Table 5, would be applied to the gas operations. BNP and its contractor, BEI, sought the views and advice of personnel of Padre Island National Seashore, COE, and other experts. BNP and BEI also relied on the recommendations of the park's Final Oil and Gas Management Plan/Environmental Impact Statement (DOI 2000) for

operating standards and other information. As a result of these and other efforts, BNP has agreed to apply all mitigation measures outlined in Table 4. The location of each mitigation measure in the Plan of Operations is included for ease of reference.

Table 4. Mitigation Measures under Alternative B, Proposed Action.

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
1	Pre-activities	Direct impacts to wind-tidal algal flats, seagrass beds, trees, and cultural resources would be avoided by directionally drilling the well from a location using a polygon-shaped well/production pad which would utilize approximately 159,103 square feet (3.67 acres) of hummocky uplands and 0.5 acres for the 790 foot long access road.	Section X, Item D (1), page 39
2	Pre-activities	BNP would educate all employees and contractors regarding the need for and ways and means of minimizing disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore.	Section X, Item D (3), page 39
3	Pre-activities	BNP would print a Padre Island National Seashore approved list of conduct and operating procedures while working within the park to be reviewed by all BNP related personnel before they begin working inside the park to minimize disturbances to the land, natural and cultural resources, wildlife, and visitors at Padre Island National Seashore.	Section X, Item D (50), page 43
4	Pre-activities	In accordance with Padre Island National Seashore's approved Hurricane Preparedness and Evacuation Plan, BNP would secure the well site in the event of a hurricane. If a hurricane or tropical storm is within 540 miles or 36 hours of the operation site and the operation site is predicted to be in the severe weather area, BNP would fill the hold with drilling mud; set drill pipe slips safety clamps and safety valves 50 ' above the deepest casing string; lay down and secure drill pipe; close and lock pipe rams and annular BOP; secure loose tools, equipment and electrical connections; lower drilling derrick; close all valves in mud system; and place generators, SCR on oilfield truck floats and chain down. If the well is producing hydrocarbons, BNP would close the storm valve in the well or install backpressure valve in the tree, shut in all valves on tree, replace all hydrocarbons in storage tanks with water, and remove or secure all lose equipment and supplies. In the event of a hurricane, this mitigation measure is intended to result in protecting human life and property, reducing flood hazards, and protecting natural floodplain values.	Section X, Item D (29) page 41
5	Pre-activities	Collection and sampling of soils and surface and ground water would be performed following NPS protocols (Exhibit D) prior to the start of construction, to establish baseline conditions, and at the completion of operations, to determine if	Section VII, Item E, page 28;Section X, Item A

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		contaminating substances are present in concentrations that pose a threat to wildlife populations or human health, or would jeopardize reestablishment of native vegetation.	(2), page 33, and Item D (43), page 43
6	Pre-activities	BNP would have in place fire suppression equipment to prevent wildfires.	Section X, Item D (30), pages 41& 42
7	Pre-activities	BNP has included a Contaminating or Toxic Substance Spill Control Plan in the Plan of Operations to describe actions to be performed in the event of an oil spill, brine spill, release of drilling fluids, blow-out or release of any toxic substance.	Section VI, pages 24-27, Section X, Item D (39), page 42
8	Pre-activities	Should contaminated soils be found, the contaminated soil would be excavated to clean soil and hauled to a state-approved off-site disposal facility where applicable. The excavation would be filled with clean native soil. If necessary, contaminated soils would be remediated on-site using Padre Island National Seashore -approved remediation methods.	Section VII, Item F, page 28; Section X, Item D (44), page 43
9	Pre-activities	The pipeline route was selected to minimize impacts to wetlands. The construction of the proposed pipeline route would impact approximately 4,245 linear feet (212,235 square feet) of hummocky uplands and 55.3 linear feet (1,387.5 square feet) of emergent wetlands, over the short-term until restoration of wetlands is successfully achieved within 1 growing season.	Section X, Item D (2), page 39.Section X, Item E, Land Features, page 44
10	Construction	If at any time, any unknown cultural resource were discovered during the conducting of approved operations, and such resource might be altered or destroyed by the operations, the operator would immediately cease operations in the immediate area and notify the Superintendent. The operator must leave the discovery intact until the Superintendent grants permission to proceed with the operations. Before any further activities occur, a qualified cultural resource expert would assess the cultural resources, evaluate their National Register eligibility, and consult with the State Historic Preservation Officer.	Section X, Item D (9), page 40
11	Construction	BNP would cut and store vegetation before ground-disturbing activities for use later in mulching and native seeding activities for reclamation/re-vegetation. All equipment would be hosed off/cleaned of mud/soils/plant debris prior to entering the park to reduce potential introduction of non-native seed/pests into the park.	Section X, Item D (8), page 40
12	Construction, Duration of Operation	The dune pass would be oriented southeast to northwest in order to reduce sand accumulation over the road during the term of operations and facilitate restoration of dune line.	Section V, Item O (4), page 23; Section X,

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
			Item D (48), page 43
13	Construction, Duration of Operation	During construction BNP would prevent unauthorized visitors from entering the access road either by installing a warning sign, installing a gate, or stationing a human monitor at the entrance. Once all drilling is complete, a gate would be installed across the entrance of the access road to keep unauthorized visitors out of the production facility.	Section V, Item O (4), page 23; Section X, Item D (48), page 43
14	Construction	BNP would stabilize the dune pass side slopes as described in the Plan of Operations, immediately after cutting and leveling.	Section V, Item A, page 8 Sect. X, Item D (49), p.43
15	Construction	BNP proposes to install culverts, as needed, along the proposed 790-foot access road, where fill may directly affect surface water run-off. Culvert locations would be selected to minimize alteration of natural surface drainage patterns and would be approved by the National Park Service.	Section X, Item D (5), page 39; and Section X, Item E. Water Resources, page 45
16	Construction, Maintenance	BNP would maintain the 790-foot long access road by keeping it passable with a maintainer on an as-needed basis to minimize the potential of vehicles driving off the road.	Section V, Item K (13), page 30; Section X, Item D (32), page 42
17	Construction	During construction and drilling, BNP would utilize a dispatcher at a suitable site approved by Padre Island National Seashore (i.e.: Malaquite Parking lot, Gulf beach at the end of Park Road 22) to help regulate the flow of traffic up and down the beach. BNP representatives at the well site would be able to communicate with the dispatcher and would be able to report on existing conditions (i.e.: traffic, tides, etc.) further down the beach. The dispatcher would maintain logs of all personnel entering the project and would supply copies of the log to Park personnel at their request but at least weekly. The dispatcher would provide each driver a copy of BNP/Padre Island National Seashore requirements for traffic, environmental and public safety while in the park.	Section X, Item D (51), page 43
18	Construction	Throughout the drilling operations, a bulldozer would be used to assist vehicles in the transportation of personnel, services and materials, and a maintainer would be on-site to smooth out any rutting that may occur.	Section V, Item B, page 9; Section X, Item D (16), page 40
19	Construction	After leveling the access road and pad area, a 20-millimeter thick polyethylene protective liner would	Section X, Item D (15),

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		be placed on the pad area. A 3-foot high caliche berm would be constructed around the perimeter of the pad for emergency containment. The berm and liner would provide temporary containment of spills and fires and prevent the downward movement of fluids through the soil from reaching the ground water.	page 40, Item E, Soils, page 44
20	Construction	An 8-foot diameter by 8-foot deep corrugated steel cellar would be placed around Well No. 1000S, and a 6-foot diameter by 6-foot deep corrugated galvanized steel cellar would be placed around Well No. 1008S. The cellars are designed to collect spilled contaminating substances and facilitate their removal. Drainage ditches would be dug (12 inches wide and 8 inches deep) to route all runoff to the cellars. A portable sump pump would be used to pump the gathered liquids to steel tanks for re-use or disposal.	Section V, Item a, page 9; Section X, Item D (13), page 40
21	Construction	A temporary, three-strand, barbed-wire fence would be placed around the perimeter of the project, prior to when the pad is constructed, to deter unauthorized persons from entering the operations area during drilling and completion operations. If production were established, a gate and permanent chain link fence would be installed around the production facilities of a design specified by the Superintendent.	Section V, Item N (6), page 22; Section X, Item D (19), page 41
22	Drilling	To the extent possible in regard to rig scheduling and availability, BNP intends to use a diesel electric (SCR) rig to drill the well to reduce impacts to the natural soundscape.	Section X, Item D (6), page 39
23	Drilling	After setting surface casing and installing the braidenhead, a blowout preventer would be installed on the well. Additional well control equipment would include a choke manifold equipped with a hydraulic, remote-controlled, adjustable choke. This mitigation would reduce the potential of a well blowout.	Section V, Item C (1) and (2), page 10; Section X, Item D (17), page 40
24	Drilling	BNP would utilize a water-based drilling mud for drilling the well, reducing the amount of hazardous substances and the likelihood of contamination.	Section X, Item D (11), page 40; Section X, Item E, page 47
25	Drilling	Lost circulation mud additives would be used to prevent and control lost circulation, reducing the time needed to drill.	Section II C (5), page 5; Section X, Item D (12), page 40
26	Drilling	To prevent accumulation of oil and other materials deemed to be fire hazards, all flammable liquids (i.e. condensate, compressor oil, etc.) would be stored in steel or fiberglass tanks and contained	Section V, Item N (8), page 22; Section X,

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		inside the firewall or a berm at the central facility. All materials not necessary for the operation of the well would be removed. Any surplus or emergency materials or supplies that need to be kept at the well site would be stored at the central facility in a locked storage shed or parts box. All containers would be labeled as to their contents.	Item D (37), page 42
27	Drilling	A closed loop "zero discharge system" would be utilized for drilling the well. No earthen pits would be utilized. All mud, drill cuttings, sewage and produced water would be collected in steel tanks for re-use or hauled by sealed dump trucks for disposal at state-approved disposal facilities outside of the park boundaries, or disposed down the well annulus. This measure would reduce the likelihood of accidental death to migratory birds and other animals.	Section V, Item D (2) and (3), page 12 & 13; Section VII, Item B, page 28; Section X, Item D (18), page 41
28	Drilling	The following methods would be applied to prevent leaks and spills of hydrocarbons and produced water: All separators would be equipped with pressure relief valves that vent to the water tank; the inside wing valve on the tree would be equipped with a pressure controlled hi-lo safety shut-off actuator; all tanks would be equipped with liquid level controls to prevent overflow; and cathodic protection would be installed at each end of the proposed pipeline.	Section IIC 5(a), page 5; Section X, Item D (10), page 40
29	Drilling, Production	Signs would be posted at the entrance of the access road, on the tree, and on the tank battery giving operator name, lease name, well number, and Railroad Commission of Texas ID number. BNP would display a public information sign that would generally describe the management of oil and gas exploration within Padre Island National Seashore, and the important relationships between Padre Island National Seashore, the general public, and oil and gas exploration. Signs would be posted as necessary on the flowline showing operator name and telephone number. If the well were produced, signs would be posted at the entrance prohibiting public access and smoking and requiring safety equipment.	(PO) Section V, Item N (5 & 7), page 22; Section X, Item D (34), page 42
30	Production	A tank battery and a berm or "firewall" would be constructed and maintained to contain 1.5 times the volume of the largest tank, and an impermeable liner would be installed at the tank battery to protect soils and ground water.	Section V, Item K (2), page 19; Section X, Item D (21), page 41
31	Production	During production, the gauger would check the facilities daily for leaks, damage, corrosion, etc. and repair as needed. If leaks, damage, etc. were found, the gauger would report the status to Padre Island National Seashore staff upon leaving the site.	Section V, Item K (6)(c), page 20; Section X, Item D (26), page 41

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
32	Production	During production, the gauger would check supply gas pressure daily. A hi-lo pressure sensor would be installed at a strategic point in the flowstream to monitor the system pressure. Should system pressure go above or below the safe range of operating pressure set by a technician, the sensor would trip a relay that actuates the safety valve, shutting in the well.	Section V, Item K (7)(C), page 20; Section X, Item D (27), page 41
33	Production	During production, and as the reservoir depletes and compressors are placed at the central tank battery to maintain the gas production rates, all compressors would be equipped with hospital mufflers to reduce noise levels and oriented so that the exhaust faces away from prevailing wind direction (SE).	Section V, Item D (30), page 41; Section X, Item D (31), page 42
34	Production	If shut-in of the well occurred and drilling or production operations were suspended for 24 hours or more but less than 30 days, the drill pipe would be run in the hole to approximately 100 feet above the last casing depth. The pipe rams would be closed and locked, and at least one safety valve would be installed in the top of the drill pipe and closed.	Section V, Item N (3) (a), page 22; Section X, Item D (35), page 42
35	Production	If production operations should be suspended for 30 days or more, a backpressure valve would be installed in the tree, the tree gate valves would be closed, and the valve handles would be removed.	Section V, Item N (4), page 22; Section X, Item D (36), page 42
36	Maintenance	BNP would plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors. Plantings of native trees or shrubs would also provide and perpetuate valuable habitat for migratory birds.	Section X, Item D (24), page 41
37	Maintenance	Vegetation growth within the facility and along access road would be maintained using mowers and hand tools to minimize threats from wildfire.	Section V, Item K (6) (g), page 19; Section X, Item D (28), Page 41
38	Reclamation	The well would be plugged in compliance with NPS standards (Federal Onshore Oil and Gas Order No. 2) and Railroad Commission of Texas requirements. These standards ensure protection of useable quality aquifers.	Section V, Item L, pages 20-21; Section X, Item D (40), page 43
39	Reclamation	Reclamation of the site would be initiated as soon as possible following completion of operations, and no later than six months unless the Regional Director authorizes a longer period of time. BNP would reduce the pad size following drilling operations as feasible for production operations.	Section VII, Items A, D page 28; Section X, Item D (39), page 42

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		All imported fill materials used to construct the access road and pad would be loaded in dump trucks and hauled offsite for disposal or re-use, and the liner would be removed and hauled off for disposal.	
40	Reclamation	All disturbed areas, including any rutting deeper than one inch, would be re-contoured and re-vegetated.	Section X, Item D (42), page 42
41	Reclamation	Some soils and sands from outside Padre Island National Seashore on Padre Island may be hauled in to achieve pre-project contours or to restore any spill clean-up areas. Such soils and sands would be similar in character to pre-project soils and sands with regards to particle size, free of unacceptable contaminants, certified weed-free, and approved by the Superintendent prior to purchase/use, minimize the potential for exotic species.	Section X, Item D (33), page 42; Item E, Soils, page 44
42	Reclamation	After the pad and access road have been re-contoured and the soil has been prepared, previously harvested hay, baled from the proposed access road and pad area and containing native plant seeds, would be used to revegetate the disturbed areas. If needed, additional hay for mulching and seed would be obtained by a commercial harvester approved by the NPS to prevent introduction of exotic plant species.	Section VII, Item H (2), page 29; Section X, Item D (45), page 43
43	Reclamation	Herbicide application or hand-tool removal would be used to control exotic plant species in the reclamation area, as approved by the Superintendent.	Section VII, Item H (5), page 29; Section X, Item D (46), page 43
44	Reclamation	Re-vegetation of the operations would be determined satisfactory when 70 percent coverage of targeted species is achieved.	Section VII, Item H (6), page 29; Section X, Item D (47), page 43
45	Reclamation	After operations cease and all materials have been removed, BNP would install sand fencing parallel to the barrier dune ridge to stop sand and reestablish the dune line.	Section VII, Item G, page 29; Section X, Item D (52), page 43
Number	**Resource Concern**	**Mitigation Measures**	**Reference**
46	Sea Turtles	Driving will be conducted above the Gulf beach “wet line” to prevent excessive erosion along the beach	Section X, Item D (14) page 40
47	Sea Turtles	If possible, BNP would avoid moving the rig via the Gulf beach during the months of April through September in order to avoid disturbing sea turtle	Section X, Item D (7), page 40

Number	Actions	Mitigation Measures under Alternative B, Proposed Action	Reference
		nests and nesting activity. However, should rig scheduling force BNP to move equipment down the beach during this period, a monitor would be utilized to avoid potential adverse impacts to turtle nesting.	
48	Sea Turtles and Birds	BNP would utilize shielded lights to prevent unnecessary glare and direct all lighting at the rig toward the rig work area itself.	Section X, Item D (14), page 40
49	Birds	All open-topped tanks and/or secondary containments will be covered with netting or other covering, to effectively eliminate the likelihood of accidental deaths to migratory birds.	Section X, Item D (23), page 41
50	Birds	If the well were placed in production, all produced water would be stored in a closed top fiberglass tank(s). The water would be transported to an off-site, state-approved disposal facility by vacuum truck to reduce likelihood of accidental death to migratory birds.	Section V, Item K (4), page 19; Section X, Item D (20), Page 41
51	Birds	All open-vent exhaust stacks on production vessels designed to heat the product using an open flame would be constructed in a manner that prevents birds and bats from entering or perching.	Section X, Item D (22), page 41

Conditions of Approval: The Regional Director has authority to attach conditions to plans of operations under the NPS' nonfederal Oil and Gas Regulations (36 CFR 9.37(b)(2)). The approval of the Plan of Operations would be conditioned upon BNP meeting the additional mitigations in Table 5.

Table 5. Conditions of Approval.

Number	Concern	Conditions of Approval
1	Park Infrastructure	"The Superintendent of Padre Island National Seashore, or his representative, shall have reasonable access to the operations as is necessary to properly monitor and insure compliance with the conditions of the plan of operations under the provisions of 36 CFR §9.37(f)"
2	Park Infrastructure	The approval of the Plan of Operations would be conditioned upon BNP tendering a performance bond to: (1) ensure timely and effective plugging of the well and reclamation of the operations area upon abandonment; and (2) guarantee rapid and effective response and cleanup of a spill. The regulations further state that the amount of the surety cannot exceed the sum of: (1) the cost of plugging the well and reclaiming the operations area; and (2) the liability amount estimated by the Superintendent required to effectively contain, cleanup, and minimize the damages resulting from the operation. The regulations limit the liability amount for the operation of a single well to $50,000. The regulations further limit the maximum overall bond for any entity to not exceed $200,000 for operations by a given operator within a unit of the National Park System.
3	Park Infrastructure	The well plugging and surface reclamation costs listed in Section 1 of the Reclamation Plan total more than $200,000. By regulation, the NPS has set the performance bond for the Lemon/Lemon Seed Unit wells at $200,000. BNP already has on file with the park a bond specific to the Dunn-Murdock Well No. 1 plan of operations. As a condition of approving the Plan of Operations, the NPS would require BNP to modify the

Number	Concern	Conditions of Approval
		language of the bond to include the Lemon/Lemon Seed Unit operations.
4	Park Infrastructure	Damage to paved surfaces due to trucks carrying construction and drilling equipment will be assessed. BNP will be charged for the cost of repair of these surfaces because these roads were not constructed for heavy industrial equipment and loads. Typical repairs of this type include road resurfacing, site preparation, pack coat, and seal and chip. Price would be determined based upon wear to the road.
5	Park Infrastructure	For all releases to the ground of contaminating or toxic substances, BNP would promptly report the following initial information to Padre Island National Seashore: time of spill discovery, type of product spilled, location of spill, estimated spill volume, cause of spill, area covered; estimated rate or release if spill is ongoing; direction of spill movement; description of contaminated area; proximity to surface waters, roads or trails; weather conditions; steps being taken to remedy the situation; and initial response equipment required. For releases in excess of 5 barrels in the aggregate, BNP would provide a written report to Padre Island National Seashore within 10 working days of the incident. In addition to the information reported in the initial notification, the written report would include steps that would be or have been taken to prevent recurrence of the incident
6	Park Infrastructure	Source of water and annular injection: The water well would be drilled into the Goliad formation, between 1,400 feet and 1,700 feet. Providing this well has sufficient volume, BNP would not have to purchase water from the park or haul water via water trucks along the Gulf beach. Assuming BNP drills a usable water source well for the Lemon/Lemon Seed Unit wells, communication between the water well and well No 1-1008S in the event of a high-pressure gas kick is possible and would be a concern. Below is a comparison of the kick tolerances for surface casing setting depths of 1,750 feet and 2,230 feet. This is based on a formation pressure of 5200 psi (equivalent mud weight of 11.0 ppg) at a true vertical depth of 9,300 feet.
7	Turtles	NPS awareness training provided to BNP employees and contractors that includes identification of tracks, notification protocol, and how to mark tracks or nest area if they are unable to stay on site until official crew arrives. FES, 5-11(9)
8	Turtles and Visitors	Trained escort will lead all large vehicles when traveling to or from the well site
9	Turtles and Visitors	Escorts will utilize an ATV as the primary vehicle preceding heavy equipment on the Gulf beach during peak Kemp's ridley nesting. FEIS, 5-11 (9).
10	Turtles and Visitors	All large trucks will drive 15 mph or less in the posted 25 mph speed zone and speed limits will be strictly enforced
11	Turtles and Visitors	A backhoe will be stationed on the Gulf beach to smooth out ruts as needed
12	Turtles and Visitors	No large vehicles will travel at night to minimize disturbance
13	Turtles /Birds	Larger vehicles will be limited to 20 round trips per day
14	Turtles /Birds	Large vehicles will be scheduled to facilitate caravanning
15	Turtles /Birds	Lighting on the drilling rig will be shielded and directed inward to reduce the distraction potential for turtle hatchlings. FEIS, 5-11 (10), Section X, Item D (14), page 40.
16	Turtles	Use of a required setback of 500 feet from the dunes and other light-sensitive areas;
17	Turtles	During peak Kemp's ridley nesting season, vehicle convoys will not leave before an NPS/USGS turtle patroller patrols the beach ahead of them
18	Birds	Driving will be conducted above the Gulf beach "wet line" to help prevent disturbance to resting birds and crushing of benthic invertebrates

Number	Concern	Conditions of Approval
19	Turtles/Birds	Large vehicles will be scheduled to facilitate caravanning
20	Birds	Native vegetation will be planted around the well site to minimize noise and provide habitat for birds
21	Visitors	Location of the wellpad is suitable for drilling to multiple targets and eliminates the need for additional wellpads, minimizing topographic impacts
22	Visitors	Increasing wellpad size by approximately 0.5 acres to allow the temporary storage of drilling byproducts and flexibility in scheduling larger disposal vehicles
23	Visitors	Drilling crew will utilize shuttle service provided by escort vehicle to limit traffic
24	Visitors	Lighting on the drilling rig will be directed inward to meet human safety requirements and reduce night sky impacts
25	Visitors	Use of a diesel electric drilling rig and hospital mufflers on compressors to reduce noise levels
26	Visitors	Fencing and signing the operations area to exclude and protect visitors
27	Visitors	Use of secondary containment to prevent leaks and spills of hydrocarbons or hazardous substances from being released to the environment
28	Visitors	Production facility equipment and wellhead would be painted a neutral, earth-tone color, such as Sherwin Williams Burlap, or a similar NPS approved color, to blend with the natural environment
29	Visitors	Planting native willow trees or shrubs around the production facility to provide visual screening

M 2.3. Alternatives Considered but Dismissed from Further Analysis

During the scoping process for this project, alternative locations and methods were considered for siting the proposed wellpad, access road, production facilities, and flowline in consultation with the USFWS, BNP, park staff, Regional Support Office, and Washington Support Office for technical guidance. For the reasons described below, these alternatives were not subjected to further analysis:

Northern Alternative

A surface location approximately 1,500 ft. north of the proposed Lemon/Lemon Seed location was considered. The access road to this location would be approximately 1,800 linear feet and as wide as 22 feet due to the steepness of the dune system and requirements for slope stabilization and re-vegetation. This road would impact 1,010 linear ft. more of dunes and grasslands than the presently proposed access road. This alternative location would allow only one gas formation to be targeted because of the drilling angle, and would ultimately require an additional wellpad location and associated access road to be constructed in another area to hit the presently proposed targets.

Based on the greater impacts to park wildlife habitat and dune system, the increased need for more access routes through the dunes, the increased economic costs from construction, wellpad development, access, and the likelihood of missing targeted multiple gas formations, and the decrease in impacts to Padre Island National Seashore resources of this action, this Northern alternative was dismissed.

Southern Alternative

Another surface location approximately 3,000 ft. south of the proposed Lemon/Lemon Seed location was considered. During the field visit to the site, it was felt that the impacts associated with this location would be similar to the other alternative locations, but would have a greater impact on the dune system than either the Northern alternative or the proposed Lemon/Lemon seed location. The dunes in this location were formed in two separate rows and extend a greater distance back from the shoreline. Reclamation and stabilization of this site would have been more difficult. The length of the access road associated with this alternative would be longer, with a width of at least 22 feet to allow for slope stabilization and restoration efforts in the dunes. The wellpad would be similar in size to the

Lemon/Lemon seed proposal, but with greater overall wildlife habitat removal and impacts. While visually assessing a tentative flowline route from the pad to one the existing pipelines, it was evident that wetland avoidance would be very difficult. Based on the visual assessment, additional impacts to dunes and vegetation, and the fact that another wellpad would have to be used to reach the second target, this site was dropped from consideration.

Gulf of Mexico Alternative

An offshore location in the Gulf of Mexico was also considered as a possible location to access the targeted gas reserves. A well location in the Gulf of Mexico within two miles of the park would increase the risk of a spill event, increase the potential for litter-related environmental impacts, negatively impact the viewshed, and increase the cost of drilling and operating the well. This location would also reduce options for drilling to multiple targets, as it would be against the fault angle, and therefore prohibit the drilling to multiple bottom-hole locations from a single offshore location. To reach multiple bottom-hole locations, a jack-up rig would need to be re-positioned for each location during the drilling phase. In the event that gas production occurred at each location, multiple production platforms would be constructed and thereby pose long-term visual impacts and increase the potential for gas byproducts, such as condensate to spill into the Gulf and affecting beach visitors and shoreline wildlife.

Lastly, the targeted bottom-hole locations occur within a 2-mile setback from the shoreline agreed to by the National Park Service and the Texas General Land Office. Oil or gas exploratory wells and production operations, targeting reserves within two miles of the shoreline, are to be drilled from outside of two miles between September 15 to March 15 (PAIS, 2000, pg. 4-56) to minimize visual impacts to visitors, and secondarily to protect sea turtles. Additionally, there is a three-mile setback from March 15 to September 15 during the height of the visitor season and secondarily during the sea turtle nesting season. Where possible, park policy is to place wells behind the dunes and drill directionally to reduce visual impacts to the greater majority of visitors. This alternative proposal does not comply with this policy.

Based on the increased risk of a spill event, long-term visual impacts to park visitors recreating on the Gulf beach, a greater potential for accidental spill events, the estimated increase in costs associated with the drilling of multiple offshore well locations to reach all targeted bottom-hole locations, and the non-compliance with park policy (PAIS, 2000) the Gulf of Mexico alternative was dismissed.

Alternative Flowline Location

An alternative flowline route approximately three miles south of the presently proposed location was examined. This route was proposed because it is an existing pipeline facility located at Yarborough Pass, which is operated by Duke Energy. The Duke Energy pipeline is not in operation and is in non-compliance because there are portions of the pipeline that are exposed aboveground thereby violating state regulations. The pipeline cannot be used to transport product within Padre Island National Seashore until Duke Energy brings the pipeline into compliance with its Plan of Operations. To do this, approximately 784,080 sq. ft. (18 ac.) of uplands and 10,890 sq. ft. (0.25 ac.) of wetlands would need to be disturbed to rebury the exposed portions of the pipeline. In addition, to tie it into the Lemon or Lemon Seed flowlines, another 164,000 sq. ft. (3.8 ac.) of uplands and 1,383 sq. ft. (.032 ac.) of wetlands would be impacted by the proposed flowline.

Based on the increased impact to park upland and wetland habitats, associated access and maintenance requirements, and the issue of non-compliance of Duke Energy's pipeline, this alternative was dismissed.

Alternative Well Access

An alternate access route for accessing the presently proposed Lemon/Lemon seed well location was suggested by BNP. This route involved the establishment of a new access road behind the dunes, originating at the end of pavement of Park Road 22 and extending 12.5 miles south to the proposed well

locations. This route would entail six and one-half (6.5) miles of new road from Park Road 22, connecting to an existing unpaved route at the Pan Am Road for approximately three (3) miles, then construct new road for the next two and one-half (2.5) miles to the proposed well site. The last part of the road construction would follow the proposed flowline route, and be placed adjacent to the line. Expected impacts to large acreages of uplands, backdune habitat, wetlands, bird habitat, cultural resources, and the potential to impact Piping plover foraging areas make this alternative unattractive. In addition, to meet the executive order outlining no net loss of wetlands, impacts to wetland habitats would require replacement mitigation, at the current NPS policy rate of 2:1 or as much as 5:1. There are no known freshwater wetland mitigation sites within the park, and NPS policies and the General Management Plan (1983) for Padre Island National Seashore does not support development in the backcountry, or use of natural open space for the creation of "man made" wetland areas. So, due to the potential loss of wetland habitat, costs to construct such a road, and the potential for misuse by unauthorized recreational vehicle use, this idea was rejected early in the process.

Alternative Seasonal Closure

A seasonal closure for the protection of sea turtle species and their habitat, and for protected shorebirds was also considered. This closure would occur between March 15 to September 30, affecting all oil and gas exploration and drilling activity, that requires heavy equipment and truck traffic down the beach. A closure of this type would require all oil and gas operations to be conducted outside of the sea turtle nesting and hatchling emergence season, allowing drilling to occur only during the months of October thru February. There are also concerns with closures related to hurricane season, the winter occurrence of the threatened Piping Plover and endangered Brown Pelican, and seasonally occurring above average high tides.

The nonfederal mineral owners hold a right of reasonable access across the federal surface to explore for and develop their mineral interest. The NPS, however, has the right under federal law to reasonably regulate access to protect park resources and values. While federal law is supreme to and supplants state law that is in conflict with it, Congress has recognized the exercise of oil and gas rights at Padre Island N.S. The NPS has neither found, nor has it been presented with data that would support a decision for a seasonal beach closure applied to oil and gas operators. The NPS will attach reasonable mitigation measures to an oil and gas operator's access, e.g. speed limits and monitors that are designed to provide protection against harm to park resources and values. A seasonal closure may also require that the drilling rig(s) to be demobilized and moved repeatedly up and down the beach, or to have more than one rig operating at a time. Impacts associated with the repeated mobilization of the drilling rig and associated equipment would increase impacts to visitors, other non-sea turtle species of concern, vegetation habitats, and increase the operating costs to the contractor. Such a closure would result in a concentration of impacts over a shorter amount of time, and may not allow for natural recovery of the beach and associated access routes between operations.

Some benefits may occur to shoreline species, e.g. Piping Plover, that utilize the beach to nest, forage, or loaf during a closure. The public would not be subjected to the type of traffic volume during high visitation periods, and the risk of crushing or impacting nesting sea turtles, their nests, or any hatchlings left on the beach would be somewhat reduced. There would, however, still be potential impacts from public use and recreation of the beach during this seasonal closure. Even though there are added benefits to sea turtles and summer visitors, the potential for greater impacts due to heavier concentration of oil and gas activities created by the seasonal window outweighed the potential benefits.

Based on the lack of data supporting a seasonal beach closure as applied to oil and gas operator access in particular, the greater concentration of impacts in the short-term, the increased risk to equipment and personnel, the health and safety issues related to hurricanes, the potential impact to Piping Plovers and other protected and non-protected species of shorebirds, and the expected increase in economic costs

associated with more frequent or repeated mobilization of the drilling rig and associated equipment, this alternative was dismissed

2.4. NPS Environmentally Preferred Alternative

Section 101 of NEPA states that "…it is the continuing responsibility of the Federal Government to…(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources" [42 U.S.C. §4321 *et seq.* §101 (b)].

The environmentally preferred alternative for drilling and producing the Lemon/Lemon Seed Units is based on these national environmental policy goals. Under Alternative A, No Action, the wells would not be drilled.
Because there would be no new impacts, Alternative A would provide the greatest protection of area and park resources and values. Alternative A meets five of the six criteria (1 thru 4, and 6) and is the environmentally preferred alternative.

BNP's Proposal, Alternative B, would have greater effects on the environment because of the drilling and production operations. Alternative B meets four of the six criteria (1,2,4, and 5). Although mitigating measures would reduce effects to park resources and values, there would still be effects, and therefore this alternative would not meet the Park Service's environmental policy goals as well as the No Action Alternative.

2.5. NPS Preferred Alternative

The environmentally preferable alternative is Alternative A because it surpasses Alternative B in realizing the full range of national environmental policy goals as stated in §101 of NEPA. However, because the enabling legislation of Padre Island National Seashore respects the exercise of oil and gas rights, the environmentally preferred alternative was not selected as the NPS preferred alternative. The NPS preferred alternative is the Alternative B, Proposed Action. The NPS believes this alternative would fulfill its mandates and direction, giving due consideration to environmental, economic, technical, and other factors.

Table 6. Extent that Each Alternative Meets Objectives.

Objectives	Does Alternative A: No Action Meet Objective?	Does Alternative B: Proposed Action Meet Objective?
Provide BNP Petroleum Corporation, as a holder of nonfederal oil and gas mineral interests, reasonable access for exploration and development,	**No (-)** The wells would not be permitted to be drilled, precluding BNP Petroleum Corporation reasonable access to develop its nonfederal oil and gas mineral interests.	**Yes (+)** The wells would be permitted to be drilled and produced, with the application of mitigation measures to meet other objectives.
Avoid or minimize impacts on park resources and values, visitor use and experience, and	**Yes (++)** Without drilling the wells, there would be no impacts.	**Yes (+)** Mitigation measures would avoid and minimize impacts.

Objectives	Does Alternative A: No Action Meet Objective?	Does Alternative B: Proposed Action Meet Objective?
human health and safety,		
Prevent impairment of park resources and values.	**Yes (++)** Without drilling the wells, there would be no potential for park resources and values to be impaired.	**Yes (+)** Mitigation measures would result in no impairment of park resources and values.

Table 7. Comparative Summary of Alternatives.

Actions	Alternative A: No Action	Alternative B: Proposed Action
Access	Access road would not be constructed.	BNP related traffic would utilize Park Road 22 along with approximately 12.5 miles of Gulf Beach. BNP would construct a 790' x 20' access road through the foredunes to the wellpad.
Surface Location Wellpad	Wellpad would not be constructed.	BNP would construct a 159,103 square-foot drill site on uplands using conventional foundation construction techniques. Berms would be constructed around the perimeter and around the diesel tanks. All equipment, machinery and living quarters would be placed on the pad.
Production Facility	Production facility would not be constructed.	It the wells proved to be productive, BNP would place a production facility on the wellpad. Therefore, no additional impacts would occur to previously undisturbed habitats.
Pipeline	Pipeline would not be constructed.	BNP proposes to construct a 3,280 linear feet route through uplands to the existing Duke Energy pipeline (inactive) or 4,300 linear feet upland route, in which 55.3 linear feet crosses an emergent wetland. Both are located west of the drill site.
Reclamation Plan	No reclamation plan would be needed because the wells would not be drilled.	BNP would remove all foreign materials from the park. All surface disturbances would be re-contoured as near as possible to the original contour. The ground would be fertilized and mulched with native hay. The mulch would be disked into the ground. Hand tools or herbicides would control undesirable species. The restored area would be

Actions	Alternative A: No Action	Alternative B: Proposed Action
		monitored until 70% native vegetation cover was achieved. Sand fencing would be installed across the dune pass to aid foredune re-establishment.

Table 8. Comparative Summary of Impacts.

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
Nonfederal Oil and Gas Development	Lemon/Lemon Seed Unit wells would not be drilled or developed, resulting in no impact on domestic energy supplies, and a moderate to major adverse impact on BNP. If BNP decides not to drill additional wells in the vicinity of the park there could be a moderate to major, cumulative, adverse impact on BNP and a cumulative, moderate, adverse impact on domestic energy supplies.	Lemon/Lemon Seed Unit wells would be drilled, and if hydrocarbons are produced, could result in a negligible beneficial impact on domestic energy supplies. There would be a minor adverse impact on BNP due to costs and time invested in preparing a plan of operations, drilling and completing and/or plugging the wells. If additional wells are drilled and completed in the vicinity of the park, there could be a minor, beneficial cumulative impact on domestic energy supplies and a minor to major, beneficial cumulative impact on BNP and associated mineral owners
Air Quality	Lemon/Lemon Seed Unit wells would not be drilled; resulting in no new impacts on air quality. Existing park, commercial, and recreational vehicle use on the 12.5-mile segment of Gulf beach; visitor use on the beach; and continuing operation of two gas pipelines would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the park, and to remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and could be placed in production. Construction of the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts would be similar to those described under No Action, with localized, negligible to minor, adverse impacts on air quality throughout the park, and would remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.
Geology and Soils	Lemon/Lemon Seed Unit wells would not be drilled; however, existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near	Lemon/Lemon Seed Unit wells would be drilled and could possibly produced hydrocarbons, resulting in the short-term disturbance to geology and soils on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	developments throughout the park; however, in the event of spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.	Alternative A, No Action, with short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park. No impairment
Water Resources and Floodplains	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled, resulting in the short-term occupancy of 100-year floodplains on up to 9 acres, and if produced, result in the long-term occupancy of 2.16 acres. Constructing the dune-cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.
Wetlands	Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be short-term, direct impacts on 0.032 acres of emergent wetlands associated with the placement of the flowline, until the surface of the flowline corridor is reclaimed. Vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, and construction and maintenance of the flowline within 0.032 acre of emergent wetlands, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
		along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.
Vegetation	Lemon/Lemon Seed Unit wells would not be drilled; however, existing uses, including the continuing operation of two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be short-term loss of vegetative cover on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts on vegetation throughout the park. No impairment to vegetation would result from implementation of this alternative.
Natural Soundscapes	Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and may be produced. Construction of the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts on natural soundscapes throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.
Wildlife	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wildlife; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the	Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be short-term loss of wildlife habitat on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the park. No impairment

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
	park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.	to wildlife would result from implementation of this alternative.
State and Federally Protected Species	Lemon/Lemon Seed Unit wells would not be drilled, with no impacts on suitable habitat or species. Existing impacts on suitable habitat and species range would range from no impact, to localized, short to long-term, negligible to minor, adverse impacts. Cumulative impacts would range from localized, short to long-term, negligible to moderate adverse impacts. No impairment to species or suitable habitat would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled, and may be placed in production. Existing impacts on suitable habitat and species are the same as under Alternative A, No Action. Impacts on suitable habitat and species from the construction and maintenance of the access road, well /production pad (4.17 acres), and pipeline (4.88 acres), and drilling and production of the well would result in d localized, short to long-term, negligible to minor, adverse impacts, and negligible beneficial impacts on T&E species. Cumulative impacts would be similar to those described under No Action, with localized to widespread, short to long-term, negligible to moderate adverse impacts throughout the park. No impairment to species or suitable habitat would result from implementation of this alternative
Visitor Use and Experience	Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts, but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.	Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 9 acres, and long-term occupancy by oil and gas developments on 2.16 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate

Impact Topic	Alternative A: No Action	Alternative B: Proposed Action
		adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

3.0. AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

Methodology

This section describes direct, indirect, and cumulative impacts under the two alternatives. Impacts are described in terms of context, duration, and intensity. The context or extent of the impact may be **localized** (affecting the project area or a single company) or **widespread** affecting other areas of the park and/or the project area, or an industry). The duration of impacts could be **short-term**, ranging from days to three years in duration, or **long-term**, extending up to 20 years or longer. Generally, short-term impacts would apply to construction activities and long-term impacts would apply to roads, production operations, and pipelines. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. Where the intensity of an impact can be described quantitatively, the numerical data are presented. However, most impact analyses are qualitative.

Cumulative Impacts: The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). The following descriptions of park development and operations, nonfederal oil and gas development, and adjacent land uses provide the basis for analyzing cumulative impacts in this chapter:

The following descriptions of park development and operations, and adjacent land uses provide the basis for analyzing cumulative impacts in this EA. These descriptions should be used in conjunction with the description of the affected environment for nonfederal oil and gas development that follows in the next section:

Park Development and Operations: Padre Island National Seashore was established to save and preserve a portion of the diminishing seashore of the United States that remains undeveloped, for the purposes of public recreation, benefit, and inspiration. Any developments are vulnerable to the harsh corrosive salt-air atmosphere and require constant maintenance. Park developments are confined to the northernmost 10 miles of the park and consist of the minimum necessary to support park management and approximately 750,00 visitors annually. The Malaquite visitor center and concession facility was built in 1988 to replace the older pavilion structure damaged by Hurricane Allen. In 1999, Hurricane Bret struck the park from the 32.5 to 56.8 mile markers, and created 21 washover channels. In addition to the Malaquite visitor center/concession facility, there is a 1,150-vehicle parking lot, a park headquarters/ranger station/turtle incubation facility, 2 park housing units, a 40-site RV Campground, wastewater treatment facility, Bird Island Basin and Yarborough Pass boat docks, an unpaved cross-island Yarborough Pass road, and a ¾-mile unpaved Grasslands Nature Trail. The paved, two-lane Park Road 22 provides access into the park, westward to Bird Island Basin, or south to Malaquite Beach at which point the Gulf beach becomes the primary transportation corridor south. The beach is hard and accessible by both two and four-wheel drive vehicles for 5-miles at which point the beach corridor is recommended accessible only by four-wheel-drive vehicles. Access to the park is also available via boat in the Laguna Madre or Gulf of Mexico. In total, existing park developments occupy 391 acres or 0.3% of

the park. There are no past developments or activities that continue to impact the park's resources or values; and no new developments are planned in the future.

Park activities that could contribute to impacts on park resources and values include prescribed fires, routine maintenance of the park roads, park and visitor vehicle use, and public recreational activities such as motor boating, and burning of campfires.

Adjacent Land Uses. Drilling and production of state-owned oil and gas is expected to continue from state tracts adjacent to the park boundaries, either on the east in the Gulf of Mexico, or on the west in the Laguna Madre. Exploration and development of federally-owned oil and gas in the Gulf of Mexico's outer continental shelf will also continue. In addition, tankers transporting products through the Gulf of Mexico could potentially impact the park should there be a spill incident. These activities have the potential to impact all park resources and values.

Impairment: a major, adverse impact to a resource or value whose conservation is: 1) necessary to fulfill a specific purpose identified in the establishing legislation of Padre Island National Seashore; 2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or 3) identified as a goal in the park's general management plan or other relevant NPS planning documents.

The impact analyses are organized by impact topic. Under each impact topic, the affected environment is described, impacts under each alternative is given, a cumulative impact analysis is provided (analysis area is parkwide), and a conclusion is stated. The conclusion section summarizes all major findings, including whether or not an impairment of resources or values is likely or would occur. Impairment analyses are only performed for park resources and values.

3.1. Impacts on Nonfederal Oil and Gas Development

Methodology

To analyze the impacts on nonfederal oil and gas development, the park reviewed current and historic drilling operations that have been conducted within the park since the mid 1900's. Information from the parks enabling legislation, current state and federal laws and regulations, and the parks approved Oil and Gas Management Plan were also utilized.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely measurable, and/or would not affect domestic energy supplies or BNP.

Minor: the impact is slight but measurable, and/or would affect domestic energy supplies or BNP.

Moderate: the impact is readily apparent, and/or would affect domestic energy supplies or BNP.

Major: the impact is severely adverse or exceptionally beneficial, and/or would affect domestic energy supplies or BNP.

Affected Environment

Oil and gas exploration and production have been actively pursued on Padre Island since 1951. A total of 73 operations have occurred within the current boundaries of the park. During 1982-1992, two-dimensional seismic surveys were conducted over many areas of the park. Currently, there are 12 gas operations, including 6 wells, 1 saltwater well, and 6 pipelines occupying 349 acres or 0.27 percent of the

park. All are under approved plans of operations. Four operations, including 1 abandoned production facility have ongoing clean-up and remediation activities associated with releases of oil and gas and other contaminating or hazardous substances (South Sprint Facility, Vector site, American Exploration/Louis Dreyfus abandoned production facility, and the former Chevron USA Onshore Production Facility). Until cleanup is successfully completed, impacts on park resources and values persist.

Two existing gas pipelines are located within the analysis area of the proposed project. AEP operates and maintains a 12-inch pipeline 3,300 feet west of the proposed wellsites. Duke Energy owns a currently inactive 10-inch pipeline located 2,400 feet west of the proposed wellsites. BNP proposes to connect a flowline into one of these pipelines should the wells be placed in production. Also included in the analysis area of the proposed Lemon/Lemon Seed Unit wells is a 12.5-mile segment of Gulf beach that BNP would use to access its wells. This segment of Gulf beach is currently used by 12 nonfederal oil and gas operators to access existing operations located throughout the park, by park staff to conduct routine park operations, and by an estimated 95,000 (18% of annual visitation) park visitors that venture further than the Little Shell area (6 to 9-miles).

In 1999, the NPS prepared a reasonably foreseeable development (RFD) scenario for inclusion in the park's Draft Oil and Gas Management Plan/Environmental Impact Statement. The RFD projects that three-dimensional seismic surveys could be conducted over the entire park, and up to 18 wells could be drilled and produced over the next 30 years to develop the 80 BCF of natural gas estimated by the U.S. Geological Survey that remains beneath the park. The NPS projects that 3-D seismic surveys would directly impact up to 748 acres; and the 18 wells and associated construction of roads, well and production pads, and flowlines would directly impact up to 250 acres, for a total direct surface use of up to 998 acres or 0.77% of the park. It is expected that 3-D seismic surveys would result in short-term impacts lasting no more than 3 years until reclamation is satisfactorily achieved. It is reasonable to assume that, as some wells are being drilled and produced that others would be plugged and abandoned. As of 2001, 3-D seismic surveys have been completed over the northern three-quarters of the park. There are negligible to minor impacts on park resources and values from those seismic surveys. In June 2002, BNP drilled the Dunn-Murdock #1 well in the vicinity of the Yarborough Pass boat dock. This constituted the first of the possible 18 wells that the NPS's RFD scenario projected could be drilled over the next 30 years. The Dunn-Murdock #1 well directly disturbed 2.01 acres within the park. Should the well be placed in production, BNP would reduce the pad size by 0.92 acres so that the long-term production phase of operations would utilize 1.09 acres.

Impacts of Alternative A, No Action, on Nonfederal Oil and Gas Development

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no impact on domestic energy supplies. There could be moderate to major adverse impacts on BNP due to the cost to collect data, and prepare a plan of operations, and lost revenues since BNP would not develop their private mineral interests at this location.

Cumulative Impacts

Under Alternative A, No Action, if BNP decides to not drill additional oil and gas wells in the vicinity of the park, there could be a moderate to major, cumulative, adverse impact on BNP, and a cumulative, moderate, adverse impact on domestic energy supplies from potential production of oil and gas.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled or developed, resulting in no impact on domestic energy supplies, and a moderate to major adverse impact on BNP. If BNP decides to not drill additional wells in the vicinity of the park there could be a moderate to major, cumulative, adverse impact on BNP and a cumulative, moderate, adverse impact on domestic energy supplies.

Impacts of Alternative B, Proposed Action, on Nonfederal Oil and Gas Development

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if hydrocarbons are discovered and produced, could result in a negligible beneficial impact on domestic energy supplies. If a commercial field is discovered, the financial impacts on BNP and the associated mineral owners could range from minor to moderate beneficial impacts, depending on the quality of the discovery. Costs and time BNP has invested in preparing a plan of operations, drilling and completing and/or plugging the wells would result in a minor adverse impact on BNP.

Cumulative Impacts

Under Alternative B, Proposed Action, if the Lemon/Lemon Seed Unit wells were not produced, the cumulative impact on nonfederal oil and gas development would be the same as under the no-action alternative. Should additional exploration and development wells be drilled and completed, production of petroleum resources under the park would increase, and may result in a minor, beneficial, cumulative impact on domestic energy supplies and a minor to major, beneficial, cumulative impact on BNP and associated mineral owners.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if hydrocarbons are produced, could result in a negligible beneficial impact on domestic energy supplies. There would be a minor adverse impact on BNP due to costs and time invested in preparing a plan of operations, drilling and completing and/or plugging the wells. If additional wells are drilled and completed in the vicinity of the park, there could be a minor, beneficial cumulative impact on domestic energy supplies and a minor to major, beneficial cumulative impact on BNP and associated mineral owners.

3.2. Impacts on Air Quality

Methodology

To analyze the impacts on air quality, the park reviewed current state and federal laws regarding air quality and the parks approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable and would not affect the parks designation as a Class II air shed.

Minor: the impact is slight but detectable and would not affect the parks designation as a Class II air shed.

Moderate: the impact is readily apparent and would not affect the parks designation as a Class II air shed.

Major: the impact is severely adverse and/or would affect the parks designation as a Class II air shed.

Affected Environment

According to the TNRCC and the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS 2000), Kenedy County continues to be an attainment area for regulated pollutants. Prevailing southeast winds from March through September and north-northeasterly winds from October through February are likely to dissipate any pollutants in the park (PAIS 2000). Padre Island National Seashore is designated as a Class II air shed by the State of Texas, as authorized by the Prevention of Significant Deterioration provisions of the Clean Air

Act. The park's air quality is protected by allowing limited increases over baseline concentrations of sulfur dioxide, nitrogen oxides, and particulate matter (PAIS 2000).

Impacts of Alternative A, No Action, on Air Quality

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on air quality. However, impacts on air quality in the analysis area would continue as the result of vehicle use along the 12.5 mile segment of Gulf beach by park staff, visitors, and 12 nonfederal oil and gas operators; visitor campfires along this segment of Gulf beach; and the continuing operation of 2 gas pipelines. The possibility exists for leaks or spills of hydrocarbon products along the two pipelines. Spilled hydrocarbon products could volatize and enter the atmosphere. In the vicinity of a leak, concentrations of gas and other constituents could provide a source for explosion or fire. These impacts could be localized, with minor to major, short-term adverse impacts on air quality; however, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts are reduced. Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor use on the beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on air quality within the analysis area.

Cumulative Impacts

Under Alternative A, cumulative impacts on air quality throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park; and from new drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to air quality impacts include prescribed fires; routine maintenance of park roads; park, commercial, and recreational vehicle use; and public recreational activities such as motor boating and burning of camp fires. Adjacent land uses that could contribute to impacts on the park's air quality include state- and federally-leased oil and gas operations in the Laguna Madre or Gulf of Mexico. As a result of these activities, cumulative impacts on air quality in the park is expected to be localized around point sources, short-term because emissions would be readily dissipated by prevailing winds, and range from negligible to minor adverse impacts. Air quality is expected to stay within state and federal standards.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; resulting in no new impacts on air quality. Existing park, commercial, and recreational vehicle use on the 12.5-mile segment of Gulf beach; visitor use on the beach; and continuing operation of two gas pipelines would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park; routine park operations; park, commercial, and recreational vehicle uses, and visitor uses are expected to result in localized, negligible to minor, adverse impacts on air quality throughout the park, and to remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Air Quality

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be completed to produce hydrocarbons.

Existing impacts on air quality within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the access road, well/production pad and flowline would result in localized and short-term increases in particulate matter during ground-disturbing activities such as importing and compacting caliche base materials, and use of vehicles and other machinery. Emissions of particulate matter, nitrogen oxides, carbon monoxide, carbon dioxide, and sulfur dioxide would be greatest during the short-term drilling and workover operations due to increased use of vehicles and large gasoline and diesel engines used to power the drill rig, pumps, and auxiliary equipment, resulting in short-term, negligible to minor adverse impacts on air quality, localized near the wellsite. Prevailing winds are expected to dissipate emissions quickly out of the area. If the wells were not productive, impacts on air quality would return to levels described under the No Action Alternative. However, if the wells were placed in production, emissions would continue but at reduced levels, resulting in localized, long-term, negligible, adverse impacts on air quality.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts localized point sources resulting in negligible to minor, adverse impacts on air quality throughout the park, and within state and federal standards.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and could be placed in production. Construction of the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts on air quality within the analysis area. Cumulative impacts would be similar to those described under No Action, with localized, negligible to minor, adverse impacts on air quality throughout the park, and would remain within state and federal standards. No impairment to air quality would result from implementation of this alternative.

3.3. Impacts on Geology and Soils

Methodology

To analyze the impacts on geology and soils, all available information on geological resources in the park was compiled including: research, previous plans of operations, and the parks approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Padre Island consists of Pleistocene and Holocene sands, silts, clays, and shell fragments, which were transported by wind and water (PAIS FEIS, 2001). According to the U.S.

Department of Agriculture (1965), soil pH generally ranges from 5.5 to 8.0, with higher pH occurrences nearer the Gulf side of the island. Soils are comprised of the Galveston and Mustang series on the majority of the barrier island. Soil types in the project area consist of Padre series on sand hummocks and Mustang series on lower poorly drained swales. The Padre series is characterized as being well-drained, moderately deep sandy soil with depth to water at around 80 inches. Mustang series is characterized as being poorly drained shallow soils with depth to water at around 30 inches. A soil survey is being conducted park wide by the Natural Resources Conservation Service (NRCS) and is expected to be completed by 2003.

To establish baseline conditions of hydrocarbon and organic levels, BNP would sample soils immediately prior to the start of construction. Soils would be collected and tested according to the sampling protocol prescribed by the NPS (see Appendix F in Oil and Gas Management Plan/Final Environmental Impact Statement, PAIS 2000).

Impacts of Alternative A, No Action, on Geology and Soils

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on geology and soils. However, impacts on geology and soils in the analysis area would continue as the result of vehicle use along the 12.5-mile segment of Gulf beach, and the continuing operation of 2 gas pipelines.

Park staff, 12 oil and gas operators, and an estimated 95,000 (18% of annual visitation) park visitors use the 12.5-mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include 2 and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5-mile marker. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. An estimated 527,800 visitors annually use the Gulf beach. Approximately 95,000 visitors (18% of those using the Gulf beach) travel between the 6 to 12.5-mile marker, with some going below this point. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so.

Existing operation of the two gas pipelines located to the west of the proposed wellsites would continue to impact geology and soils within the analysis area. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, long-term, negligible to minor, adverse impacts on geology and soils within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on geology and soils throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's

reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Leaks and spills from oil and gas operations could result in localized, minor to major, impacts on geology and soils. Spills from oil and gas operations and tankers in the Laguna Madre or Gulf of Mexico, could be transported by water into the park and cause widespread impacts that would require long-term clean-up and remediation. Park, commercial, and recreational vehicle use along the beach and off road vehicle use within the park would continue to compact and rut soils. Dredging and maintenance of the Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park. Cumulative impacts on geology and soils throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on park geology and soils, primarily along park shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, and continuing operation of the two pipelines, would result in localized, negligible to minor, adverse impacts on geology and soils within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to geology and soils would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Geology and Soils

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and produced, resulting in the short-term disturbance to geology and soils on up to 9 acres, and if completed to produce hydrocarbons, the long-term occupancy of 2.16 acres.

Existing impacts on geology and soils within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the cut through the foredunes, access road, well/production pad, and flowline for the proposed Lemon/Lemon Seed Unit wells would directly impact up to 9 acres, resulting in the long-term loss of soil productivity and localized, short- to long-term, negligible to minor, adverse impacts on geology and soils in the analysis area.

The construction of the access road and well/production pad would directly impact 4.17 acres of undisturbed soils. The area would be leveled and caliche brought in to build the road and pad. Mitigation measures to protect soils during the drilling and production phase of operations would include constructing a sloped 8' x 8' corrugated steel well cellar, and lining the pad underneath the caliche with a 20-millimeter thick polyethylene liner that would extend over a 3-high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation into native soil underlying the caliche pad. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on geology and soils until the site is satisfactorily reclaimed.

However, if the wells are placed in production, the well pad would be reduced by 2.1 acres and a flowline installed to connect with one of the existing pipelines located west of the proposed wells. The imported

caliche would be removed, the site recontoured to natural conditions, and native vegetation re-established to meet 70% cover. The continued use of the site for production operations would result in localized, long-term, minor adverse impacts on geology and soils.

Flowline construction would disturb an additional 4.88 acres of hummocky uplands, of which 0.032 acres are hydric soils associated with emergent wetlands. A temporary displacement of soils would occur until the flowline is being buried. Once the flowline is buried, soils would be replaced and the corridor would be revegetated. Adverse impacts on geology and soils from flowline placement would be localized, minor, and short-term during construction and revegetation activities.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on geology and soils throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park, resulting in short to long-term, negligible to minor adverse impacts localized near developments. In the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and could possibly produced hydrocarbons, resulting in the short-term disturbance to geology and soils on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on geology and soils. Cumulative impacts would be similar to those described under Alternative A, No Action, with short- to long-term, negligible to moderate, adverse impacts on geology and soils throughout the park. No impairment to geology and soils would result from implementation of this alternative.

3.4. Impacts on Water Resources and Floodplains

Methodology

To analyze the impacts on water resources and floodplains, all available information on water resources and floodplains in the park was compiled including: personal observations, consultation with other agencies, the parks approved Oil and Gas Management Plan, other park documents, and landcover classification data.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Padre Island National Seashore (NS) is located on a largely undeveloped barrier island in southern Texas, on the Gulf of Mexico. The barrier island is a dynamic system subject to many geologic forces and climatic events. The barrier island was formed, and is continually being reshaped, by the actions of wind, gulf currents, and waves. The seashore's landscape changes from broad, white, fine-sand beaches on the Gulf side, to ridges of fore-island sand dunes, to grassy interior upland flats dotted with smaller dunes, ephemeral ponds, and freshwater wetlands. The Laguna Madre and the back-island dunes and wind tidal flats that merge with the waters of the Laguna Madre define the western portion of the Seashore. Two natural and 20 man-made spoil islands in the Laguna also lie within the National Seashore.

The foredunes of the park provide protection from hurricanes and tropical storms for the island's backcountry and the Texas mainland. The dunes are fragile and, once impacted, can easily be destroyed through erosion and wind action. Dunes are created when vegetation stabilizes blowing sands that are moved across the beach. Small coppice dunes form first and become primary dunes as vegetation stabilizes more sand. This results in a line of dunes forming parallel to the beach that varies in height from less than 6 feet to approximately 50 feet above sea level. This primary dune line extends the entire length of Padre Island National Seashore, broken only in a few places where hurricane washover channels have occurred.

The proposed project is located on foredunes and hummocky uplands. No wetlands are present in the wellpad vicinity. Drainage from rainfall events tends to accumulate in lower-lying areas before seeping into the ground water, draining to the Laguna Madre tidal flats, or evaporating. Ground water at the site is approximately 2 to 5 feet deep, depending upon the season.

According to the Final Oil and Gas Management Plan/Environmental Impact Statement (PAIS 2000), and Federal Emergency Management Agency floodplain maps, most of the park and all of the project area lies within the 100-year floodplain. The exception is higher dune areas. The hurricane season begins June 1 and continues through November 30.

Impacts of Alternative A, No Action, on Water Resources and Floodplains

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on water resources and floodplains. However, impacts on water resources and floodplains in the analysis area would continue as a result of park, commercial, and recreational vehicle use along the 12.5-mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

Park staff, 12 oil and gas operators, and an estimated 95,000 (18% of annual visitation) park visitors use the 12.5-mile segment of Gulf beach for vehicular access. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, adverse impacts on water quality of the Gulf.

Visitor uses on the beach, including camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized and short-term, negligible, adverse impacts on water quality of the Gulf.

Existing operation of the two pipelines located to the west of the proposed wellsites would continue to impact water resources and floodplains within the analysis area. Because the entire park is located within the 100-year floodplain, with the exception of the foredunes, there was no practicable alternative to siting the pipelines within the 100-year floodplain. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis excavating small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. These activities could cause sedimentation during times when the work area is inundated; however, it is anticipated that work of this nature would be scheduled during dry periods (winter months). There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating surface or groundwater. If leaks or spills occur during flood events, contaminants could be transported via surface waters great distances, thereby increasing flood hazards and degrading floodplain values. Impacts from spills could be localized to widespread, with minor to major, adverse impacts on water resources and floodplains. However, with mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced.

Existing uses, including park, commercial, and recreational vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two gas pipelines, would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on water resources and floodplains throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase turbidity to Laguna Madre waters inside the park. Other activities that could impact water resources and floodplains parkwide include prescribed fires; routine maintenance of park roads; park, commercial, and recreational vehicle use; and recreational activities.

Existing and future development of oil and gas access roads and pads within the park could result in altering surface water flow and locally increasing soil erosion. Leaks and spills from oil and gas operations could be localized to widespread, with minor to major, impacts on water resources and floodplains. Spills from oil and gas operations or tankers in the Laguna Madre or Gulf of Mexico could be transported by water into the park and cause widespread impacts and result in long-term clean-up and remediation.

Cumulative impacts on water resources and floodplains throughout the park are expected to be localized near developments, with short to long-term, negligible to minor, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, adverse impacts on the park's water resources and floodplains, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on water resources. Existing park, commercial, and recreational vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines would result in localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area. Cumulative impacts from existing and future oil and gas operations in and

adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Water Resources and Floodplains

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, resulting in the short-term occupancy of 100-year floodplains on up to 9 acres; and if completed to produce hydrocarbons, long-term occupancy of 2.16 acres.

Existing impacts on water resources and floodplains within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, adverse impacts associated with park, commercial, and recreational vehicle use on the 12.5-mile Gulf beach, visitor use on the beach, and the continuing operation of two gas pipelines.

There is no practicable alternative to siting the proposed access road, well/production pad, and flowline within the 100-year floodplain because the entire park, with the exception of the higher dunes, is located within floodplains. Impacts could result from changes in surface and subsurface hydrology and risk of contamination from contaminating and hazardous substances. The application of mitigation measures and conditions of approval in the plan of operations would reduce the potential for these impacts to occur.

The proposed road cut would cause the loss of 9,000 square feet of foredunes. If the wells were not placed in production, the foredune would be stabilized and revegetated. If the wells were placed in production, the sides of the pass would be vegetated to prevent additional erosion from wind passing through the break in the dunes. The proposed cut through the foredunes would result in a localized, short to long-term, negligible, adverse impact on the barrier island's role as a defense to prevent or slow the affects of hurricanes on the Texas mainland.

The drilling of the wells would require the use of 1.3 million gallons of water. This water could be obtained from either a new water well; connecting a temporary delivery line from an existing water well at the Dunn-Murdock#1 location 2.5-miles south, along the beach, to the proposed wellsite; or by hauling 155 loads (1300 barrels per load) of water from a park fire hydrant located at the end of Park Road 22 to drill Well No. 1-1000S and 85 loads to drill Well No. 1-1008S. The potential impact associated with drilling a water well includes depletion or contamination of the aquifer in the Goliad formation located between 1400 and 1700 feet. The Texas Natural Resources Conservation Commission has identified useable-quality ground water in this zone; and the Railroad Commission of Texas and NPS have applied mitigation measures to ensure that drilling, production and plugging operations would not impact ground water quality.

Use of the delivery line and pumps would eliminate the potential for trucks transporting water along the 12.5-mile segment of Gulf beach to leak or spill motor oil, coolant, or other lubricants on the beach, but would cause other issues related to refueling, secondary containment, noise, public safety, and the need for multiple pumps to push the water to the well site. Acquiring water from any of the sources; the park fire hydrant, existing water well, or from a new well, would cause widespread, short-term, negligible, adverse impacts to water resources.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on water resources and floodplains; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells would result in impacts similar to those described under No Action, with localized, long-term, negligible to minor, adverse impacts on water resources and floodplains within the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on water resources and floodplains throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor, adverse impacts localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, resulting in the short-term occupancy of 100-year area, would result in localized, short to long-term negligible to minor, adverse impacts on water resources and floodplains. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to water resources and floodplains would result from implementation of this alternative.

3.5. Impacts to Wetlands

Methodology

To analyze the impacts on wetlands, all available information on water resources in the park was compiled including: personal observations, consultation with other agencies and wetland specialist, the parks approved Oil and Gas Management Plan, landcover classification data, and wetland maps.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a natural physical resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a natural physical resource, but the change would be small and of little consequence.

Moderate: an action that could result in a change to a natural physical resource; the change would be measurable and of consequence.

Major: an action that would result in a noticeable change to a natural physical resource; the change would be measurable and result in a severely adverse or major beneficial impact.

Affected Environment

Wetland categories occurring in the park include marine, estuarine, and palustrine wetlands. Marine wetlands include beaches and the splash zone of the open Gulf of Mexico. Estuarine wetlands include intertidal aquatic beds such as seagrasses and unconsolidated shores such as

wind-tidal flats. Palustrine wetlands include emergent wetlands and freshwater and ephemeral ponds. Approximately 60% of the park is comprised of wetlands.
On August 24, 2001, BEI, under contract by BNP, and Frontier Surveying Co. performed a site visit and the wetland determination of the proposed analysis area. BEI personnel performed another site visit on September 6, 2001, to verify the lack of hydrology and hydric soils along the proposed pipeline route after Padre Island National Seashore had received the majority of it's 7.46 inches of rain in August, 2001. Based on a site survey performed by BEI, the proposed pad site, operations area, and access road are located in uplands: therefore, a U.S. Army Corps of Engineers Section 404 permit would not be needed for these areas of the proposed operations. There are emergent wetlands located along a 55.3-foot section of the pipeline corridor near the AEP's pipeline tie-in point. Wetlands totaling 2,765 square feet (0.0636 acres) would be directly impacted by construction and maintenance of this segment of pipeline. To minimize the impacts, the 50 foot wide construction corridor for the pipeline would be reduced to 25 foot in the wetland, resulting in a reduction of impacts to 1,382.5 square feet (0.032 acres). The NPS adheres to the administration's "no-net loss" principle for wetlands protection. The adversely impacted area represents less then one tenth of an acre, therefore compensation for the disturbed wetland is not required.

Impacts of Alternative A, No Action, on Wetlands

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wetlands. However, impacts on wetlands in the analysis area would continue as the result of vehicle use along the 12.5-mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

Park staff, 12 oil and gas operators, and an estimated 95,000 (18% of annual visitation) park visitors use the 12.5-mile segment of Gulf beach for vehicular access. Vehicle access on the Gulf beach is recommended above the Gulf beach "wet line" to prevent excessive erosion along the beach. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 12.5-mile segment of Gulf beach.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. Visitor uses would result in localized, long-term, negligible, direct and indirect adverse impacts on the marine wetlands along the 12.5-mile segment of Gulf beach.

View of wetland area with AEP pipeline marker in the distance.

Two gas pipelines are located west of the proposed wellsites. Both pipelines are operating under approved plans of operations pursuant to the NPS's 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Lemon/Lemon Seed Unit wells, and within emergent wetlands. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating small sections of the pipelines to inspect the integrity of the pipe. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed pipeline in emergent wetlands areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of wetlands within the immediate area of work. If there is standing water, sedimentation could indirectly impact a larger area around the worksite. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating emergent wetlands. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wetlands beyond the immediate area and degrading wetlands values. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on wetlands. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.
Existing uses, including vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on wetlands throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase sedimentation in the Laguna Madre waters inside the park, resulting in covering of seagrasses. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wetlands parkwide include prescribed fires, routine maintenance of park roads, park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact wetlands. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on wetlands. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the park's shorelines, comprised of marine wetlands on the Gulf shore and wind-tidal flats on the Laguna Madre shore, causing widespread impacts and resulting in long-term clean-up and remediation.

Cumulative impacts on wetlands throughout the park are expected to result in short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines, would result in localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wetlands

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if completed to produce hydrocarbons would result in short-term, direct impacts on 0.032 acres of emergent wetlands associated with the placement of the flowline, until the surface of the flowline corridor is reclaimed.

Existing impacts on wetlands within the analysis area would be similar to Alternative A, No Action, with localized, long-term, negligible to minor, direct and indirect, adverse impacts on marine and emergent wetlands associated with vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines.

Project design would minimize impacting park wetlands. There is no practicable alternative to siting a segment of the proposed flowline within emergent wetlands, or for using the Gulf beach as an access corridor.

BNP would use a 12.5-mile segment of Gulf beach to access its proposed cut/access road through the foredunes to access the proposed site for the well/production pad and flowline. BNP would be required to confine vehicle use above the "wet-line" (see Table 5 for mitigation measures applied by the NPS as conditions of approval). As described above under No Action, poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. These substances could then be introduced into the Gulf by surface run-off or extremely high tides, resulting in localized, long-term, negligible, indirect adverse impacts on the marine wetlands along the 12.5-mile segment of Gulf beach.

Emergent wetlands are located along a 55.3-foot section of the proposed flowline corridor near the AEP's pipeline tie-in point. Construction and maintenance of the flowline would impact emergent wetlands. To minimize impacts, the NPS would require that the standard 50-foot wide construction corridor be reduced to 25-foot in the wetlands, resulting in reducing impacts to emergent wetlands to 1,382.5 square feet (0.032 acres). The flowline would be connected to the existing AEP/HPL pipeline using a procedure known as a "hot tap". This method allows pipelines that are in service to be connected without the contents being released. A 15-foot by 15-foot (225 square foot) area would be excavated to make the tie-in. Any ground water that seeps into the excavation would be pumped out using PVC well points and diaphragm pumps. The liquids would be diverted and filtered through a silt screen and native hay bales. Any contaminated liquids or soils would be removed and disposed at a State-approved disposal facility outside the park, while the remaining collected water would be released onto the surrounding area.

The NPS adheres to the administration's principle of "no-net loss of wetlands." The area that would be directly impacted would comprise less then one tenth of an acre. No indirect wetlands impacts from the construction of the flowline is anticipated; however, the NPS's Director's Order 77.1 gives the Superintendent the option to waive compensation of wetlands impacts when wetlands do not exceed

1/10 acre. In this specific case, the Superintendent has determined that compensation for direct/indirect impacts on wetlands would not be required.

Vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, and construction and maintenance of the flowline within 0.032 acre of emergent wetlands would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on wetlands throughout the park would be similar to those described under No Action, with short to long-term, minor, direct and indirect, adverse impacts localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be short-term, direct impacts on 0.032 acres of emergent wetlands associated with the placement of the flowline, until the surface of the flowline corridor is reclaimed. Vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, and construction and maintenance of the flowline within 0.032 acre of emergent wetlands, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect adverse impacts on wetlands. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wetlands, primarily along the park's shorelines. No impairment to wetlands would result from implementation of this alternative.

3.6. Impacts on Vegetation

Methodology

To analyze the impacts on vegetation, the park utilized research, other park plans, the parks approved Oil and Gas Management Plan, personal observations, and consultation with other permitting agencies. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource.

Affected Environment

Drawe (1992) provides a detailed characterization of species composition and abundance in the various vegetation types on Padre Island. He found 140 species of plants, including 27 grasses, 92 forbs, 3 cacti, 3 wood species, and 15 other species.

The area in the vicinity (i.e. within 1,000 feet) of the proposed operations area is comprised of a diverse group of habitats. Higher elevations near the Gulf beach were made up of two rows of foredunes adjacent to the Gulf beach and high dune fields with scattered upland swales. The two rows of foredunes were typically dominated by silver-leaf croton gulf croton (*Croton punctatus*), beach morning-glory (*Ipomea imperati*), goatfoot morning-glory (*Ipomea pre-caprae*), camphorweed (*Heterotheca subaxillaris*), prairie clover (*Dalea sp.*), western ragweed (*Ambrosia psilostachya*), and seaoats (*Uniola paniculata*) with associated species. The foredunes typically have vegetation coverage of 60%-90%.

The high dune fields were generally dominated by camphorweed, prairie clover, seaoats, seacoast bluestem (*Schizachyrium littorale*), western ragweed, and some tropic croton (*Croton glandulosus* var. *lindheimeri*). The area in the vicinity of the proposed work is comprised of a diverse group of habitats. The majority of the work area is comprised of hummocky uplands. Hummocky uplands are typically dominated by gulfdune paspalum (*Paspalum monostachyum*), and seacoast bluestem. Slim-leaf panicum (*Dichanthelium linearifolium*) tends to dominate the lower areas. Other species inhabiting the hummocky uplands include bulrush (*Schoenoplectus pungens* var. *pungens*), seaside (Marsh) large leaf pennywort (*Hydrocotyle bonariensis*), blue mist flower (*Conoclinium coelestinum*), narrow-leaf sumpweed (*Iva angustifolia*), bushy bluestem (*Andropogon glomeratus*), prairie clover, partridge pea (*Chamaecrista fasciculate* var. *fasiculata*), camphorweed, and American snoutbean (*Rhynchosia americana*). High hummock ridges are generally comprised of prairie clover, partridge pea, gulfdune paspalum, and camphorweed, with Eastern prickly pear (*Opuntia ficus-indica*), seaoats, white-stem wild indigo (*Baptisia bracteata* var. *leucophaea*), and narrow-leaf sumpweed. High hummock ridges are typically 75%-90% covered with vegetation.

Lower lying areas are comprised of transitional areas and sparsely vegetated to unvegetated sand flats. The transitional areas are typically dominated by marshhay cordgrass (*Spartina patens*), bulrush, and gulfdune paspalum, with sea ox-eye daisy (*Borrichia frutescens*), narrow-leaf sumpweed, bushy bluestem, sea lavender (*Limonium carolinianum*), blue mistflower, largeleaf pennywort, frog fruit (*Phyla nodiflora*), and slim-leaf dichanthelium. Transitional areas are usually 60%-85% covered with vegetation. The sparsely vegetated to unvegetated sand flats are dominated by marshhay cordgrass and sea oxeye daisy. Vegetation coverage ranges from 0%-60%. These flats are non-tidal. Drawe (1992) provides a detailed characterization of species composition and abundance in the various vegetation types on Padre Island. There are no state or federally listed threatened or endangered plant species known to occur in the project area (NPS 2001).

Impacts of Alternative A, No Action, on Vegetation

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on vegetation. However, impacts on vegetation in the analysis area would continue as the result of the continuing operation of 2 gas pipelines.

Two gas pipelines are located west of the proposed wellsites. Both pipelines are operating under approved plans of operations pursuant to the NPS's 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Lemon/Lemon Seed Unit wells. Vegetation covers the pipeline corridors. Routine maintenance along the pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of

the pipeline to inspect the integrity of the pipeline. A backhoe/front-loader would be used to excavate and replace segments of pipe. If trucks accessed pipeline in areas when the soils were saturated, vehicles could cause rutting or compaction of soils, and damage or kill vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment is not covered with water. Removal of vegetation and excavation of segments of pipeline for inspection and/or replacement, would directly impact a small area of vegetation within the immediate area of work.

There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and damaging or killing vegetation. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on vegetation. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Existing uses, including the continuing operation of two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on vegetation throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting vegetation parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park could directly and indirectly impact vegetation. Leaks and spills from oil and gas operations could be serious, with minor to major, impacts on vegetation; however, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced.

Cumulative impacts on vegetation throughout the park are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing uses, including the continuing operation of two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, routine park operations, and visitor uses are expected to result in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's vegetation, primarily along the park's shorelines. No impairment to vegetation would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Vegetation

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if completed to produce hydrocarbons would result in short-term loss of vegetative cover on up to 9 acres, and the long-term occupancy of 2.16 acres.

Existing impacts on vegetation within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts associated with the continuing operation of two gas pipelines located west of the proposed wellsites.

Construction of the cut through the foredunes, access road and well/production pad would result in the direct loss of approximately 4.17 acres of hummocky uplands vegetation. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, minor, adverse impacts on vegetation until the site is satisfactorily reclaimed. If the well is placed in production, the well pad would be reduced by 2.1 acres; and a flowline would be installed to connect with one of the existing pipelines located west of the proposed wells. The reduction of the well pad by 2.1 acres would result in a localized, short-term, minor, adverse impact on vegetation until the site is revegetated to 70% native cover.

The flowline would temporarily disturb an additional 4.88 acres of hummocky uplands, of which 0.032 acres are emergent wetlands, while the flowline is being buried, and until the flowline corridor is revegetated. Over the long-term operation of the flowline, occasional disturbance to vegetation within the flowline corridor could occur as a result of routine maintenance, including access over the corridor by truck or ATV to inspect surface equipment, and on occasion excavating a section of the flowline to inspect the integrity of the line.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on vegetation; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Mitigation measures include constructing a sloped 8' x 8' corrugated steel well cellar, and lining the pad underneath the caliche with a 20-millimeter thick polyethylene liner that would extend over a 3'-high berm surrounding the perimeter of the pad. These measures are intended to contain any spilled substances and prevent the downward percolation.

Direct and indirect impacts on vegetation could occur as a result of the introduction of exotic vegetation resulting from the placement of fill material or the use of construction equipment. However, with the mitigation measures included with this alternative, the potential and intensity of impacts would be reduced.

Upon plug and abandonment of the wells, the imported caliche would be removed, the site recontoured to natural conditions, and native vegetation re-established to 70% cover. Plugging and reclamation activities would result in a localized, short-term, minor, adverse impact on vegetation.

Construction of the dune cut/access road and well/production pad, and flowline; and drilling and producing the wells would result in the long-term loss of vegetation on up to 9 acres, and localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts would be similar to those described under No Action, with impacts from existing and future oil and gas operations in the park, park developments and operations, and visitor uses, resulting in short to long-term, minor, direct and indirect, adverse impacts, localized near developments throughout the park.

Conclusion
Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be short-term loss of vegetative cover on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on vegetation. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, minor, direct and indirect, adverse impacts on vegetation throughout the park. No impairment to vegetation would result from implementation of this alternative.

3.7. Impacts to Natural Soundscapes

Methodology
To analyze the impacts on natural soundscapes, the park utilized personal observation, research, and the parks approved Oil and Gas Management Plan.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: the impact is barely detectable.

Minor: the impact is slight but detectable.

Moderate: the impact is readily apparent.

Major: the impact is severely adverse.

Affected Environment
The natural quiet of Padre Island National Seashore contributes heavily to a positive visitor experience. Surveys in 1987 (Ditton and Gramann) and 1989 (Gramann and Ruddell) examined visitor motive for coming to Padre Island. The top motives include "to get away," "be outdoors," and "for rest and relaxation." In 1998, the NPS contracted Dr. Jim Foch of Livermore Laboratory to record background sound measurements at various locations in the park. A useful measure of background sounds is the sound level observed 90% of the time, abbreviated L90. Although measurements were not recorded at the exact location of the project area, the relatively constant sound level of the surf (about 62 dB at 60 yards from the water) is considered the "background" noise level along the Gulf shoreline. The L90 levels inland fall off in a systematic manner with distance from the surf (Foch, 1998).

Impacts of Alternative A, No Action, on Natural Soundscapes
Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on natural soundscapes. However, impacts on natural soundscapes in the analysis area would continue as the result of vehicle use along the 12.5 mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

Vehicle use and visitor uses on the 12.5-mile segment of Gulf beach could occasionally result in sounds that exceed the 60-decibel background sound levels when drivers honk horns, and radios are very loud.

Existing operation of the 2 pipelines located to the west of the proposed wellsites could impact natural soundscapes more readily due to the background sound measurements being very low, in the 30 to 45 decibel range. Routine maintenance of the pipeline from using a backhoe/front loader would be heard

several hundred feet away, but backcountry visitor use is not common, and visitors recreating on the Gulf beach would not hear these activities.

Existing uses, including vehicle access along the Gulf beach, visitor uses on the beach, and continuing operation of the two pipelines, would result in short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area.

Cumulative Impacts

Under Alternative A, cumulative impacts on natural soundscapes throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park; and from new drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some operations are developed, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to natural soundscapes include routine maintenance of park roads, park and visitor vehicle use, and recreational activities such as motor boating and playing radios at a high volume. On occasional, military over flights over the park introduces noise and super-sonic booms audible in the park. As a result of these activities, cumulative impacts on natural soundscapes throughout the park is expected to result in short to long-term, negligible to moderate, adverse impacts, localized near sources.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in localized, short-term, negligible to minor, adverse impacts on natural soundscapes within the analysis area. Cumulative impacts from existing and future oil and gas operations in the park, routine park operations, and visitor uses are expected to result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Natural Soundscapes

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be completed to produce hydrocarbons.

Existing impacts on natural soundscapes within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines.

Construction of the dune cut/access road, well/production pad and flowline, and routine maintenance activities during production would result in localized and short-term increases in noise associated with vehicle traffic, heavy equipment and ground-disturbing activities. Elevated noise would be greatest during the short-term drilling of the wells. Sound levels could reach 90 decibels on the drill rig. At 1,500 feet from the drill rig, sound levels would approach background levels ranging from 30 to 45 decibels. Elevated noise during the drilling phase would result in localized, short-term, minor to moderate, adverse impacts on natural soundscapes within 1,500 feet of the wellpad. During the long-term production life of the wells, occasional workover operations could occur at 5 to 10-year intervals and take one to two weeks to complete. Workovers would increase noise levels, but at much lowest intensity and duration of drilling a well. Production operations would result in localized, long-term, negligible to minor, adverse impacts from routine daily pickup truck traffic, periodic larger truck traffic necessary to remove produced liquids, and the use of a compressor to remove gas if necessary.

Construction of the dune cut/access road and well/production pad and flowline, and drilling and producing the wells would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized near sources in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on natural soundscapes throughout the park would be similar to those described under No Action, with existing and future oil and gas operations in the park, routine park operations, visitor uses, and occasional military over flights resulting in localized, short to long-term, negligible to moderate, adverse impacts near sources.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. Construction of the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in short to long-term, negligible to moderate, adverse impacts on natural soundscapes, localized around sources. Cumulative impacts would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts on natural soundscapes throughout the park. No impairment to natural soundscapes would result from implementation of this alternative.

3.8. Impacts on Wildlife

Methodology

To analyze the impacts on wildlife, the park utilized research, other park plans, the parks approved Oil and Gas Management Plan, personal observations, and consultation with other permitting agencies.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource

Affected Environment

During Belaire Environmental Inc.'s (BEI) August 24 and September 6, 2001 field investigations, personnel made notes of wildlife observed in the area of the proposed access road and wellpad. The only species observed were the Mourning Dove (*Zenaida macroura*), coyote (*Canis latrans*), Northern Bobwhite Quail (*Colinus virginianus*), Black-tailed jackrabbit (*Lepus californicus*) and white-tailed deer (*Odocoileus virginianus*). The diverse vegetation offers feeding opportunities for a wide variety of birds and other wildlife.

Birds. Continental Shelf Associates (CSA), Inc. (1985), Chapman (1981, 1988), Brown and Huey (1991) and U.S. Department of the Interior (2000), provide data and discussions of the

wildlife utilization of the project area. Ecoservices (1993) surveyed bird activity south of the project site from July 1992 through April 1993. A total of 281,045 birds of 97 species were identified and counted. Important species included the Brown Pelican (*Pelecanus occidentalis*), Piping Plover (*Charadrius melodus*), Snowy Plover (*C. alexandrinus*), Peregrine Falcon (*Falco peregrinus*), and the Reddish Egret (*Egretta rufescens*). Species of goose, duck, gull, tern and sandpiper were also observed. Padre Island has 322 species of birds, including migratory and resident waterfowl, shorebirds, neo-tropical songbirds and raptors. During fall and winter, Sandhill Cranes (*Grus canadensis*) frequent the west side of Padre Island, near Bird Island Basin. The cranes can be observed feeding in the wetlands, uplands, and shallow water of the Laguna Madre. Many bird species utilize ephemeral and freshwater ponds. They include Northern Bobwhite Quail (*Colinus virginianus*), Northern Harrier (*Circus cyaneus*), Sandhill Crane, Great Egret (*Casmerodius albus*), Great Blue Heron (*Ardea herodias*), Long-billed Curlew (*Numenius americanus*), Sanderling (*Caldris alba*), Killdeer (*Charadrius vociferus*), terns, ducks, and grebes (DOI 2000).

Mammals. Mammals likely to utilize habitat in the general project area include the gulf coast kangaroo rat (*Dipodomys compactus*.), Texas pocket gopher (*Geomys personatus*), coyote (*Canis latrans*), northern grasshopper mouse *(Onychomys leucogaster*), eastern mole (*Scalopus aquaticus*), raccoon (*Procyon lotor*), the eastern cottontail (*Sylvilagus floridanus*), and Mexican free-tailed bat (*Tadarida brasiliensis mexicana*) (CSA 1985, and DOI 2000).

Reptiles and Amphibians. Reptiles likely to utilize habitat in the general project area include the keeled earless *lizard (Holbrookia propinqua propinqua*), whiptail lizard (*Cnemidophorus sp*.), western diamondback rattlesnake (*Crotalus atrox*), slender glass lizard (*Ophisaurus attenuatus*), western massasauga rattlesnake (*Sistrurus tergeminus*), western hog-nosed snake (*Heterodon nasicus*), glossy snake (*Arizona elegans*), checkered garter snake (*Thamnophis marcianus*), diamondback water snake (*Nerodia rhombifer*), Texas coral snake (*Micrurus fulvius*), red-eared slider (*Trachemys scripta elegans*), and the yellow mud turtle (*Kinosternon flavescens*) (Chapman 1988, CSA 1985, and DOI 2000). The ornate box turtle (*Terrapene ornata ornata*) has also been reported on the island (CSA 1985). Amphibians found on the island include the northern leopard frog (*Rana pipiens*), green tree frog (*Hyla cinerea*) and Hurter's spadefoot toad (*Scaphiopus holbrookii hurterii*).

Impacts of Alternative A, No Action, on Wildlife

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wildlife. Existing impacts on wildlife in the analysis area would continue as the result of vehicle use along the 12.5- mile segment of Gulf beach by park staff, visitors, and 12 nonfederal oil and gas operators. Vehicles on the Gulf beach would include 2 and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites. At the 5-mile marker, the Gulf beach is recommended for 4-wheel drive vehicles only. Vehicle use along the Gulf beach would compact and rut the beach sand.

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wildlife. However, impacts on wildlife in the analysis area would continue as the result of vehicle use along the 12.5-mile segment of Gulf beach, visitor uses on the beach, and the continuing operation of 2 gas pipelines.

This segment of Gulf beach is currently used by 12 nonfederal oil and gas operators to access existing operations located throughout the park, by park staff to conduct routine park operations, and by an estimated 95,000 (18% of annual visitation) park visitors that venture further than the Little Shell area (6 to 9-miles). Vehicle access would result in short-term movement of bird species utilizing the shoreline for loafing or resting. Shorebirds would take temporary flight when vehicles approach too close, and

land to resume their activity after vehicles have passed. Displaced wildlife could increase competition in adjacent areas over the short-term, resulting in a negligible, adverse impact on shorebirds.

Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Surface run-off or extremely high tides could transport these spilled substances into the wet-zone. In a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. Some loss of benthic organisms would be expected due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Vehicle impacts would result in localized, short-term, negligible to minor, adverse impacts on shorebirds and benthic organisms.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. The visitor use period extends from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. Visitor uses on the beach would displace wildlife, primarily shorebirds, resulting in localized, negligible to minor, adverse impacts on shorebirds.

Two gas pipelines are located west of the proposed wellsites. Both pipelines are operating under approved plans of operations pursuant to the NPS's 36 CFR 9B regulations. Segments of both pipelines are located within the analysis area for the proposed Lemon/Lemon Seed Unit wells. Routine maintenance along the pipeline corridors would include work crews occasionally accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on occasional basis excavating small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. Use of heavy equipment could result in the incidental take of individuals, and alter habitat by rutting or compacting soils, and damaging or killing vegetation. The use of an ATV using a one-way pass technique would minimize these impacts by reducing the severity of rutting, and vegetation would be temporarily laid over rather than crushed or broken. Unless there was an emergency, work of this nature would be limited to periods when the pipeline segment located within emergent wetlands is not covered with water. Damage or removal of soil and vegetation along segments of the pipelines would result in the short-term modification of wildlife habitat. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating vegetation and soils. If leaks or spills occur during periods of high water, contaminants could be transported via surface waters great distances, thereby increasing the potential for impacting wildlife habitat beyond the immediate area. Impacts from spills could be serious, with affects ranging from localized to widespread, with minor to major, adverse impacts on wildlife. However, with the mitigation measures included in the operators' plans of operations, and prompt response in the event of a spill, the intensity of impacts are reduced. Impacts from the continuing operation and maintenance of the two pipeline segments within the analysis area would result in localized, short to long-term, negligible to minor, adverse impacts on wildlife.

Existing uses, including vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines, would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on wildlife throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. Dredging and maintenance of the Intracoastal Waterway and other channels in the Laguna Madre near the park could increase

turbidity in the Laguna Madre waters inside the park. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other park activities that could contribute to impacting wildlife parkwide include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities.

Existing and future development of oil and gas-related roads, pads and flowlines within the park would result in the direct loss of wildlife habitat. Displaced wildlife could potentially die of natural causes or displace other wildlife. There is a remote possibility for the incidental take of wildlife during the course of operations from vehicle use, construction activities, or from ingesting leaked or spilled hydrocarbons and contaminating or hazardous substances. Leaks and spills from oil and gas operations could be serious, with negligible to moderate, impacts on wildlife. Spills from oil and gas operations in the Laguna Madre or Gulf of Mexico could be transported by water onto the Gulf or Laguna Madre shores, causing widespread impacts and resulting in long-term clean-up and remediation. Elevated noise levels, particularly during drilling operations, could displace wildlife, but most wildlife are expected to return after becoming acclimated to some noise disturbance. Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, fencing the operations area to exclude wildlife, using primary and secondary containment to prevent leaks and spills from being released into the environment, preventing birds and bats from entering open-vent exhaust stacks, covering all open-topped tanks to minimize accidental injury or death of migratory birds, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat, preventing the introduction of exotic species, careful use of NPS-approved herbicides, good housekeeping, and routine monitoring and inspection of operations, are expected to substantially reduce the impacts to wildlife to short to long-term, negligible to minor, adverse impacts, localized around developments throughout the park.

Cumulative impacts on wildlife throughout the park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized near developments and activities throughout the park; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the park's wildlife, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on wildlife; however, existing vehicle use on the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of two gas pipelines would result in short to long-term, negligible to minor, direct and indirect, adverse impacts on wildlife, localized near developments and activities within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, negligible to minor, adverse impacts, localized near developments throughout the park; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts. No impairment to wildlife would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Wildlife

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if completed to produce hydrocarbons would result in the short-term loss of wildlife habitat on up to 9 acres, and the long-term occupancy of 2.16 acres.

Existing impacts on wildlife within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct and indirect, adverse impacts associated with vehicle access along the 12.5-mile segment of Gulf beach, visitor use on the beach, and continuing operation of the two gas pipelines.

BNP would use a 12.5-mile segment of Gulf beach to access its proposed wellpad. BNP would be required to confine vehicle use above the "wet-line" (see Table 5 for mitigation measures applied by the NPS as conditions of approval). As described above under No Action, vehicles could compact and rut beach sands; and poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicle impacts would result in localized, short to long-term, negligible to minor, indirect, adverse impacts on shorebirds and benthic organisms.

Construction of the dune cut/access road, well/production pad, and flowline would result in the short to long-term loss of up to 9 acres of habitat and displacement of wildlife. Elevated noise levels, particularly during drilling operations, could displace wildlife, but most wildlife are expected to return after becoming acclimated to some noise disturbance. Displaced wildlife could increase competition in adjacent areas over the short-term. The construction of the access road and well/production pad would directly impact 4.17 acres of wildlife habitat. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, negligible to minor, adverse impacts on wildlife.

If the wells are placed in production, the well pad would be reduced in half and a flowline installed to connect with one of the existing pipelines located west of the proposed wells. The reduction of the well pad by 2.1 acres would result in localized, short-term, negligible to minor, adverse impacts on wildlife. Flowline construction would disturb an additional 4.88 acres of hummocky uplands habitat, of which 0.032 acres are emergent wetlands. A temporary alteration of habitat would occur while the flowline is being buried, and until the surface is reclaimed. Impacts on wildlife from flowline placement would result in localized, short-term, negligible to minor, adverse impacts.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on geology and soils; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including use of diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, fencing the operations area to exclude wildlife, using primary and secondary containment to prevent leaks and spills from being released into the environment, preventing birds and bats from entering open-vent exhaust stacks, covering all open-topped tanks to minimize accidental injury or death of migratory birds, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat, preventing the introduction of exotic species, careful use of NPS-approved herbicides, good housekeeping, and routine monitoring and inspection of operations, are expected to substantially reduce the impacts to wildlife.

Construction of the dune cut/access road and well/production pad, and flowline; and drilling and producing the wells would result in short-term loss of wildlife habitat on up to 9 acres, and the long-term occupancy of 2.16 acres, with localized, short to long-term, negligible to minor, adverse impacts, on wildlife in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on wildlife throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, negligible to minor adverse impacts localized near developments; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be short-term loss of wildlife habitat on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on wildlife. Cumulative impacts would be similar to those described under Alternative A, No Action, with short to long-term, negligible to moderate, adverse impacts on wildlife throughout the park. No impairment to wildlife would result from implementation of this alternative.

3.9. Impacts on State and Federally Protected Species

Methodology

Information on state and federally protected species within Padre Island National Seashore was gathered from state and federal permitting agencies, research, personal observation, consultation with specialists, and reference materials. Known impacts caused by road and beach access by visitors and existing gas operations were also considered.

The thresholds of change for the intensity of an impact are defined as follows:

Negligible: an action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: an action that could result in a change to a population or individuals of a species or a resource. The change would be small and of little consequence.

Moderate: an action that could result in a change to a population or individuals of a species or a resource. The change would be measurable and of consequence to the species or resource.

Major: an action that would have a noticeable change to a population or individuals of a species or a resource. The change would be measurable and result in a severely adverse or major beneficial impact, or possible permanent consequence, upon the species or resource

Padre Island National Seashore has no designated critical habitat within the park's boundary for any federally listed species. An existing U.S. Fish and Wildlife Recovery Plan for the Kemp's Ridley sea turtle assigns the task of patrolling for nesting sea turtles to the park. According to a January 8, 2002 listing of federally protected species and the Texas Parks and Wildlife Department's website (TPWD http://tpwd.state.tx.us/nature/endang/), 42 listed federal and four state protected species potentially occur at Padre Island National Seashore (Appendix 1). Of these, the 27 species that have actually been documented at Padre Island National Seashore are listed in Table 9 below. The remaining 15 species have either not been documented and/or there is not suitable habitat within the park, and therefore will not be affected by the proposed project. Table 9 also includes four state-protected species (*) that have been documented in the park and will be addressed within this document because the NPS recognizes their sensitive status and provides them a high level of protection, similar to Federal listed species.

Table 9. State and Federally Protected Species Occurring or likely to Occur at Padre Island National Seashore.

SPECIES	FEDERAL	STATE
(T – Threatened, E – Endangered, SOC – Species of Concern, and S/A – Similar in Appearance)		
Reptiles and Amphibians		
American Alligator (*Alligator mississippiensis)*	T (S/A)	
Texas Horned Lizard (*Phrynosoma cornutum*)	SOC	T
Texas Indigo Snake (*Drymarchon corais erebennus)* *		T
Turtles		
Kemp's Ridley Sea Turtle *(Lepidochelys kempii)*	E	E
Loggerhead Sea Turtle (*Caretta caretta)*	T	T
Green Sea Turtle (*Chelonia mydas)*	T	T
Atlantic Hawksbill Sea Turtle (*Eretmochelys imbricata*)	E	E
Leatherback Sea Turtle (*Dermochelys coriacea*)	E	E
Birds		
Eastern Brown Pelican (*Pelecanus occidentalis*)	E	E
Reddish Egret (*Egretta rufescens*)	SOC	T
White-faced Ibis (*Plegadis chihi*)	SOC	T
Wood Stork (*Mycteria americana*) *		T
Interior Least Tern (*Sterna antillarum*)	E	E
Sooty Tern (*Sterna fuscata*)	T	
Black Tern *(Chlidonias niger)*	SOC	
Piping Plover (*Charadrius melodous*)	T	T
Bald Eagle (lower 48 states) (*Haliaeetus leucocephalus*)	T	T
Northern Aplomado Falcon (*Falco femoralis septentrionalis*)	E	E
Ferruginous Hawk *(Buteo regalis)*	SOC	
Swallow-tailed Kite (*Elanoides forficatus*) *		T
White-tailed Hawk (*Buteo albicaudatus*) *		T
Peregrine Falcon (*Falco peregrinus*)	Delisted	E
Cerulean Warbler *(Dendroica cerulea)*	SOC	
Black-capped Vireo (*Vireo atricapillus*)	E	E
Tropical Parula (*Parula pitiayumi*)	SOC	T
Loggerhead Shrike *(Lanius ludovicianus)*	SOC	
Plants		
Roughseed Sea-purslane *(Sesuvium trianthemoides)*	SOC	

There are several species from Table 9 known to occur or would have suitable habitat in or adjacent to the project area (Gulf shoreline and upland grasslands and wetlands). These species include the Texas horned lizard, Texas Indigo snake, all five species of sea turtle, Eastern Brown Pelican, Interior Least Tern, Black Tern, Piping Plover, Peregrine and Aplomado Falcons, White-tailed Hawk, and the Loggerhead Shrike.

The following table summarizes the impacts on the species or suitable habitat analyzed in this section. Impacts on species and suitable habitat under the Proposed Action range from

negligible to moderate. Existing impacts within the analysis area under both alternatives on species and suitable habitat range from no impact to moderate.

The NPS prepared and submitted a Biological Assessment to the U.S. Fish and Wildlife (USFWS). The USFWS concurred on July 22, 2002, with the NPS's determination that with the application of mitigation measures, the proposed action would "not likely to adversely affect" the species or suitable habitat evaluated in this section.

Table 10. Summary of Impacts by Species.

Species	Alternative A: No Action	Alternative B: Proposed Action
Texas Horned Lizard (*Phrynosoma cornutum*) Suitable Habitat	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Texas horned lizard suitable habitat; however, continuing operation of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in **localized, short to long-term, negligible, adverse impacts.** Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in **localized, short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas horned lizard suitable habitat would result from the implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas horned lizard suitable habitat. Cumulative impacts would be similar to No Action, with **localized, short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas horned lizard suitable habitat would result from implementation of this alternative
Texas Indigo Snake (*Drymarchon corais erebennus*) * Suitable Habitat	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat. However, continuing operation of segments of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in **localized, short to long-term, negligible, adverse impacts.** Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in **short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas indigo snake suitable habitat would result from the implementation of this alternative.	Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be **localized, short to long-term, negligible, adverse impacts** on Texas indigo snake suitable habitat. Cumulative impacts would be similar to No Action, with **localized, short to long-term, negligible to moderate, adverse impacts**. No impairment to the Texas indigo snake suitable habitat would result from implementation of this alternative

Species	Alternative A: No Action	Alternative B: Proposed Action
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*) **Loggerhead Sea Turtle** (*Caretta caretta*) **Green Sea Turtle** (*Chelonia mydas*) **Atlantic Hawksbill Sea Turtle** (*Eretmochelys imbricata*) **Leatherback Sea Turtle** (*Dermochelys coriacea*)	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 12.5-mile segment of Gulf beach would result **in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts** on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in **short to long-term, negligible to minor, direct and indirect, adverse impacts localized** along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would likely result from the implementation of this alternative.	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 12.5-mile segment of Gulf beach would result **in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts** on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in **short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach;** but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would likely result from the implementation of this alternative.
Eastern Brown Pelican (*Pelecanus occidentalis*)	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the Eastern Brown Pelican; however, existing visitor uses and vehicle use on the 12.5-mile segment of Gulf beach would result **in localized, short to long-term, negligible to minor, direct, adverse impacts** on Eastern Brown Pelican within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in **localized, short to long-term, negligible to minor, direct, adverse impacts**; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be **long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts** along the Gulf shoreline. No impairment to the Eastern Brown Pelican would result from implementation of this alternative. .	Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, in addition to existing visitor uses and vehicle access within this beach corridor, would result in **localized, short to long-term negligible, direct, adverse impacts** on Eastern Brown Pelican within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in **localized, short to long-term, negligible to minor, direct, adverse impacts** to Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on the Eastern Brown Pelican. No impairment to Eastern Brown Pelican would result from implementation of this alternative.
Interior Least Tern (*Sterna antillarum*), **Black Tern** (Chlidonias niger), and **Piping Plover** (*Charadrius melodous*)	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the Interior Least Tern, Black Tern, and Piping Plover; however, existing visitor uses and vehicle access on the 12.5-mile segment of Gulf beach would result **in localized, short to long-term, negligible to minor, direct, adverse impacts** on these species within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors,	Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, in addition to existing vehicle access and visitor uses along this segment of beach would result in **localized, short to long-term negligible, direct, adverse impacts** on Interior Least and Black Terns and Piping Plovers. Cumulative impacts would be similar to those described under Alternative A, No

Species	Alternative A: No Action	Alternative B: Proposed Action
	and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, **negligible to minor, direct, adverse impacts**; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could **be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts**. No impairment to the Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative	Action, with vehicle use along the Gulf beach resulting in **localized, short to long-term, negligible to minor, direct, adverse impacts** on Interior Least and Black Terns and Piping Plovers; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be **widespread, with negligible to moderate, indirect, adverse impacts** on the Interior Least and Black Terns and Piping Plovers. No impairment to Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative.
Peregrine Falcon (*Falco peregrinus*) and **Northern Aplomado Falcon** (*Falco femoralis septentrionalis)*	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the Peregrine and Northern Aplomado Falcons; however, existing uses on the Gulf foredunes, result **in localized, short-term, negligible, adverse impacts** on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in **localized, short to long-term, negligible to minor, adverse impacts** on the Peregrine and Northern Aplomado Falcons. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's proposed cut through the foredunes would result in the loss of Peregrine and Northern Aplomado Falcon habitat, with **localized, short- to long-term, negligible, adverse impact on** the falcons. However, the drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Peregrine and Northern Aplomado Falcons, resulting in **localized and long-term, negligible, beneficial impacts**, for the falcons. Cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with **localized, short to long-term, negligible to minor, adverse** impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.
White-tailed Hawk (*Buteo albicaudatus*) *	Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the White-tailed Hawk; and, there **are no existing impacts** within the analysis area. Cumulative impacts from park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species would result in **localized, short to long-term, negligible, adverse impacts** on the White-tailed Hawk. No impairment to the White- tailed Hawk would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's proposed construction of an access road, well/production pad and flowline would directly impact 4.17 acres of grassland habitat preferred by the White-tailed Hawk, resulting **in localized, short-term, minor adverse impacts** on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned. However, the drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for White-tailed Hawks, resulting **in localized and long-**

Species	Alternative A: No Action	Alternative B: Proposed Action
		term, negligible, beneficial impacts. Cumulative impacts throughout the park White-tailed Hawk (*Buteo albicaudatus*) would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in **localized, short to long-term, negligible, adverse impacts** on the White-tailed Hawk. No impairment to the White-tailed Hawk would result from implementation of this alternative.
Loggerhead Shrike *(Lanius ludovicianus)* and Neotropical **Migratory Songbirds**	Lemon/Lemon Seed Unit wells would not be drilled, resulting in **no impacts** on Loggerhead Shrikes and Neotropical migratory songbirds; however, existing operation of 2 gas pipelines would result **in localized, short-term, negligible, adverse impacts** on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in **localized short to long-term, negligible to minor adverse impacts,** near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced **to negligible to moderate, adverse impacts**. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.	Lemon/Lemon Seed Unit wells would not be drilled; however, existing operation of 2 gas pipelines would result in **localized, short to long-term, negligible, adverse impacts** on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in **localized, short to long-term, negligible to minor adverse impacts,** near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to **negligible to moderate, adverse impacts**. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

Texas Horned Lizard

Affected Environment

The Texas horned lizard (*Phrynosoma cornutum*) is considered a species of concern at the federal level and listed as threatened by the state.

The distribution of the Texas horned lizard ranges from Kansas down to Louisiana through Texas, Arizona, and into northern Mexico (Bockstanz, http://www.zo.utexas.edu/research/txherps/lizards/phrynosoma.cornutum.html). In Texas, it was originally seen throughout the state, but numbers dropped dramatically in the 1950' s-60 due to the pet trade, habitat loss, and introduction of the exotic fire ant. As of 1998, Texas horned lizards are only seen

in the western third of the state. It is generally found in deserts, temperate grasslands, prairies, and scrubland, in sandy, open areas with little vegetation, often inhabiting abandoned animal burrows or simply covering itself with loose sand. (Todd, UMMZ) These lizards are often found in close proximity to harvester ant (*Pogonomyrmex* spp) mounds, which are its main source of prey, but it will also forage on grasshoppers, beetles, and isopods. In order to obtain enough energy, adult Texas Horned Lizards must forage from several Harvester ant colonies so their daily feeding activities coincide with the times of highest ant activity.

The Texas horned lizard does not migrate but will hibernate from late summer to late spring. Therefore, it is only seen on warm days in late spring and summer. Breeding begins once they emerge from hibernation usually in late April and continuing into July. The age of reproductive maturity is not known, however they are full-grown adults at three years of age.

Texas horned lizards have been found on Padre Island north of the park in the mid-1980's, but have not been documented within the park. A herpetological survey is currently underway to document species occurrence and presence within the park. Information from this inventory will be used to develop management actions, increase park knowledge of those species documented, and help to formulate future protection measures. No critical habitat has been designated for this species.

During surveys conducted by park biologists in August, September, and December 2001, this species was not found within the analysis area for the proposed Lemon/Lemon Seed Unit wells; therefore, this impact analysis focuses on the potential for impacts on suitable habitat for this species.

Impacts of Alternative A, No Action, on Texas Horned Lizard

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no impacts on the Texas horned lizard suitable habitat.

Impacts on Texas horned lizard suitable habitat within the analysis area would continue as the result of the continuing operation of 2 gas pipelines, resulting in localized, negligible to minor, adverse impacts.

Cumulative Impacts

Some of the 12 existing oil and gas operations and flowlines throughout the park are located within suitable habitat for this species. If the Texas horned lizard had been occupying the park prior to the park's establishment, when many of the existing oil and gas operations were developed, displacement of this species may have occurred from these operations.

Under Alternative A, No Action, cumulative impacts on Texas horned lizard suitable habitat could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged and abandoned, and reclaimed; therefore, impacts would be distributed over time. Park activities that could contribute to impacting suitable habitat include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. In the future, biological surveys would be performed prior to selecting a proposed oil and gas development site or conducting park operations; thereby identifying whether the species is in the proposed project vicinity or if suitable habitat exists so that avoidance and minimization of impacts can be planned. As a result, suitable habitat could be utilized for developments and operations, resulting in short to long-term, negligible to moderate, adverse impacts on suitable habitat, localized at developments and activities throughout the park.

Conclusion
Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Texas horned lizard suitable habitat; however, continuing operation of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Texas Horned Lizard
Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if completed, would result in short-term loss of suitable habitat for Texas horned lizard on up to 9 acres, and the long-term occupancy of 2.16 acres. Construction of the dune cut/access road, well/production pad, and flowline would occur in areas with Texas horned lizard suitable habitat, resulting in localized, short to long-term, negligible, adverse impacts.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Texas horned lizard suitable habitat throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas horned lizard suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas horned lizard suitable habitat would result from implementation of this alternative.

Texas Indigo Snake

Affected Environment
The Texas indigo snake (*Drymarchon corais erebennus*) is not federally listed, but is state listed as threatened.

This species ranges from southern Texas southward along the Gulf coast into Veracruz and Hidalgo, Mexico generally inhabiting burrows in moist riparian breaks in the thorn brush woodlands and coastal mesquite savannah. It may also be seen in grassy plains or on coastal sandhill habitats (University of Texas, Http://www.zo.utexas.edu/research/txherps/snakes/drymarchon.corais.html).

Unlike many other snakes, indigo snakes are primarily diurnal predators. The Texas indigo snake feeds on frogs, turtles, small mammals, birds, and other snake species. This species mates between November and February and lays eggs between April and May. Indigo snakes also spend the first two years of life in seclusion (CCWild, Http://ccwild.cbi.tamucc.edu/naturalhistory/texas_indigo_snake/tisacc.htm).

Padre Island National Seashore has grassy plains and coastal sandhill habitats that may be suitable for this species. Only one known specimen has been documented from the park and was curated in the mid-1980's by Texas A&M University-Kingsville (Donna Shaver-Miller PhD, personal communication). No other individuals of this species have been documented since. A herpetological survey is currently underway to document species within the park. Information from this inventory will be used to develop management actions, increase park knowledge of those species documented, and help to formulate future protection measures. No critical habitat has been designated for this species.

During surveys conducted by park biologists in August, September, and December 2001, this species was not found within the analysis area for the proposed Lemon/Lemon Seed Unit wells; therefore, this impact analysis focuses on the potential for impacts on suitable habitat for this species.

Impacts of Alternative A, No Action, on Texas Indigo Snake

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat.

Impacts on Texas indigo snake suitable habitat within the analysis area would continue as the result of the continuing operation of segments of 2 gas pipelines, resulting in localized, negligible to minor, adverse impacts. Existing visitor uses and vehicle traffic along the 12.5-mile segment of Gulf beach would not impact Texas indigo snake suitable habitat.

Cumulative Impacts

Some of the 12 existing oil and gas operations and flowlines throughout the park are located within suitable habitat for this species. If the Texas indigo snake had been occupying the park prior to the park's establishment, when many of the existing oil and gas operations were developed, displacement of this species may have occurred from these operations.

Under Alternative A, No Action, cumulative impacts on Texas indigo snake suitable habitat could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres, and spills from oil and gas activities located adjacent to the park, including tanker traffic in the Gulf of Mexico. As some oil and gas operations are developed in the park, others would be plugged and abandoned, and reclaimed; therefore, impacts would be distributed over time. Park activities that could contribute to impacting suitable habitat include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use, and recreational activities. In the future, biological surveys would be performed prior to selecting a proposed oil and gas development site or conducting park operations; thereby identifying whether the species is in the proposed project vicinity or if suitable habitat exists so that avoidance and minimization of impacts can be planned. As a result, suitable habitat could be utilized for developments and operations, resulting in short to long-term, negligible to moderate, adverse impacts on suitable habitat, localized at developments and activities throughout the park.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Texas indigo snake suitable habitat. However, continuing operation of segments of two gas pipelines within the analysis area occupy areas of suitable habitat for this species, resulting in localized, short to long-term, negligible, adverse impacts. Cumulative impacts on suitable habitat from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses would result in short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Texas Indigo Snake

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled, and if completed, would result in the short-term loss of suitable habitat for Texas indigo snake on up to 9 acres, and the long-term occupancy of 2.16 acres. Construction of the dune cut/access road, well/production pad, and flowline would occur in areas with Texas indigo snake suitable habitat, resulting in localized, short to long-term, negligible, adverse impacts.

Cumulative Impacts
Under Alternative B, Proposed Action, cumulative impacts on Texas indigo snake suitable habitat throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to moderate, adverse impacts.

Conclusion
Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells were placed into production, there would be localized, short to long-term, negligible, adverse impacts on Texas indigo snake suitable habitat. Cumulative impacts would be similar to No Action, with localized, short to long-term, negligible to moderate, adverse impacts. No impairment to the Texas indigo snake suitable habitat would result from implementation of this alternative.

Sea Turtles
Including Kemp's Ridley Turtle, Loggerhead Sea Turtle, Green Sea Turtle, Atlantic Hawksbill Sea Turtle, and Leatherback Sea Turtle

Affected Environment
The **Kemp's ridley sea turtle** (*Lepidochelys kempii)* is federally listed as an endangered species. It is the smallest of the sea turtles, and adults reach maturity at about 10-15 years of age. Kemp's ridley turtles nest mostly during the daytime, often in groups called "arribadas". An individual Kemp's ridley may nest as many as three times a season (USFWS and NMFS, 1992), with an average of 2.5 clutches per season. Clutch size averages around 100 eggs. Hatchlings emerge after about 50 days of incubation and hatchling emergence occurs during the night or day. Kemp's ridleys are found in the Gulf of Mexico and Atlantic Ocean and some adjoining estuarine areas. Nesting occurs primarily in the vicinity of Rancho Nuevo, Tamaulipas, Mexico. Each year, some nests are also found at scattered locations between the Texas coastline and Veracruz, Mexico. Very rarely, Kemp's ridleys nest at other locations in the U.S. outside of Texas. More Kemp's ridley nests are consistently found in south Texas, including at Padre Island National Seashore, than at any other location in the U.S.

Historic nesting frequency of this sea turtle on the south Texas coast is poorly known and only six Kemp's ridley turtles were documented there prior to 1979 (Shaver and Caillouet, 1998). A total of 100 Kemp's ridley nests have been documented along the Texas coast between 1979 and 2001. Kemp's ridley is a native nester at Padre Island National Seashore (Hildebrand, 1963, 1981, 1983; Shaver, 1998a; Shaver and Caillouet, 1998). Since 1978, an international, experimental project involving the National Park Service at Padre Island National Seashore, USFWS, NMFS/NOAA, etc., has been on-going to establish a secondary nesting colony of Kemp's ridley turtles at Padre Island National Seashore.

Eggs were collected in Mexico, transported to Padre Island National Seashore, and placed into an NPS incubation facility in the park. Hatchlings were released on the beach, allowed to enter the surf and were recaptured. They were then shipped to the National Marine Fisheries Service Laboratory in Galveston, Texas, for 9-11 months of rearing in captivity (head-starting) and the yearling turtles were subsequently released into the Gulf of Mexico. It was hoped that these procedures would cause the turtles to be imprinted to Padre Island National Seashore and return there to nest when they were sexually mature. Since 1996, some turtles from this project have been documented returning to south Texas and Padre Island National Seashore to lay eggs (Shaver, 1997, 1998a, 1999a, 1999b; Shaver and Caillouet, 1998).

In 1986, an NPS and USFWS program was initiated to detect, monitor, and protect sea turtle nests at Padre Island National Seashore as part of the Kemp's Ridley Recovery Plan, and this on-going program has expanded since that time. Detection involves patrols to look for nesting activity, public education, and investigation of reports from patrollers, beach workers, and the public. Patrollers (U.S. Geological Survey (USGS) and NPS staff members and volunteers) use ATVs to search the park and adjacent State beaches to the north of the park for sea turtle tracks and nesting Kemp's ridley turtles each day, from

April through mid–July. From 1979-2001, 45 Kemp's ridley nests were confirmed in the park, but additional nests were likely missed, especially when patrols were not conducted or were less comprehensive. The 45 Kemp's ridley nests were distributed along the entire Gulf beachfront length of Padre Island National Seashore.

The date of the nesting season varies slightly each year. In Mexico, Kemp's ridley nests have been recorded as early as March and as late as August. The 45 nests documented at Padre Island National Seashore from 1979-2001 were found during the months of April, May, and June, the months that beach surveys were conducted most intensively. Nesting may also occur at the national seashore during other months, but this has not been confirmed. A dead Kemp's ridley turtle containing eggs was found washed ashore at the national seashore during July, and Kemp's ridley tracks have been documented in July as well.

At the national seashore, some Kemp's ridley turtles nest every year and many are found stranded (washed ashore, alive or dead) (Shaver, 1997, 1998a, 1998b, 1999a, 1999b; Shaver and Caillouet, 1998). Additionally, Kemp's ridley turtles sometimes inhabit nearshore Gulf of Mexico waters at Padre Island National Seashore for foraging or migration.

No critical habitat has been designated for this species. An existing Recovery Plan for the Kemp's ridley defines specific park tasks in the recovery efforts, which are being conducted (patrols, monitoring, habitat management). This is the only federally listed species in the park with Recovery Plan responsibilities assigned to this park.

As mentioned above, an NPS and USFWS program was initiated in 1986 to detect, study, and protect Kemp's ridley turtle nests at Padre Island National Seashore and this on-going program has expanded to include the four other species of sea turtle. Detection for the following four species of sea turtles involves patrols to look for nesting activity, public education, and investigation of reports from patrollers, beach workers, in-park contractors, and the public. Patrollers (NPS and USGS staff members and volunteers) use ATVs to search Padre Island National Seashore and the adjacent northern area of State beaches for sea turtle tracks and nesting turtles. Each day, from April through mid-July, they repeatedly patrol the entire Gulf beachfront of the national seashore during daylight hours. The patrol season and procedures are designed primarily to detect nesting by Kemp's ridley turtles, but the other sea turtle nests have also been documented and recovered. Daily runs to the Port Mansfield Channel and back are made from mid-July through August to look for signs of nesting activity, but these patrols are subject to funding and staff availability, and reports from the public.

No **critical habitat** has been designated in the park for any of the following four sea turtle species. There is no specific Recovery Plan task assigned to the park for the remaining four species of sea turtle occurring at the national seashore, however park and USGS staff and volunteers conduct, support and assist in the daily patrols for this species to protect, document, and monitor nesting occurrence.

The **loggerhead sea turtle** (*Caretta caretta*) is federally listed as a threatened species. It occurs in temperate and tropical waters of both hemispheres. The species inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian oceans. Historic nesting frequency on the Texas coast is poorly known. Hildebrand (1981) suggested that nesting likely occurred within the last 300 years, but the earliest loggerhead nest that he was able to confirm for the Texas coast was found in 1977.

Adult loggerhead turtles reach maturity in 25 to 30 years. Loggerheads are nocturnal nesters, although some daytime nesting occurs. They nest from one to seven times within a nesting season (average of approximately 4.1 clutches); clutch size averages 100-125 eggs along the southeastern U.S. coast (NMFS and USFWS, 1991b). Hatchling emergence typically occurs at night. In the Gulf of Mexico, there are

distinct nesting populations on the coast of the Florida panhandle and the Yucatan Peninsula. Scattered nests can be found occasionally along other areas of the U.S. Gulf coast including the Chandeleur Islands, Louisiana, in the north and to the U.S./Mexico border in the south.

At Padre Island National Seashore, loggerhead turtles sometimes inhabit nearshore Gulf of Mexico waters for foraging or migration. Additionally, a few occasionally nest at the national seashore and many more are found stranded there (Shaver, 1998b, 1999b). From 1979-2001, 19 loggerhead nests were documented at Padre Island National Seashore (at various locations scattered along the coast of the national seashore), but additional nests were likely missed, especially when patrols are reduced and less comprehensive after the mid-July Kemp's ridley patrol season ends. Loggerhead nests are found on North Padre Island from mid-May through early August, although nesting has been documented in the southeastern U.S. from late-April through early September.

The **green sea turtle** (*Chelonia mydas*) is federally listed as threatened in all of its range except the waters of Florida and the Pacific coast of Mexico, where it is endangered. It is circumglobal in tropical and sub-tropical waters. A green turtle fishery, operating almost exclusively within inshore waters (bays, estuaries, passes), began in Texas in the mid-1800's. By the early 1900's, the catch declined to such an extent that the turtle fishing and processing industry collapsed (Hildebrand, 1981). Although historic nesting by green turtles on the Texas coast is suspected, the first confirmed nest was not documented there until 1987 (Shaver, 2000).

Adult green turtles reach maturity at 30 to 50 years of age. Female green turtles nest at night. From one to seven clutches are deposited within a breeding season (the average number is usually two to three clutches) (NMFS and USFWS, 1991a). Average clutch size is usually 110-115 eggs. Hatchling emergence occurs at night. In this region, nesting sites include southern Florida and scattered locations in Mexico, although nesting occasionally occurs in south Texas.

At Padre Island National Seashore, juvenile green sea turtles inhabit waters of the nearshore Gulf of Mexico, the Laguna Madre, and the Mansfield Channel. Additionally, a few green turtles occasionally nest within the national seashore and many are found stranded there each year (Shaver, 1989, 1998b, 2000). From 1979-2001, seven green turtle nests were documented at the park, all in roughly the southern half of the park (Shaver, 1989, 2000). The seven green turtle nests were found during June and July, although nesting occurs from May through September in this region.

The **hawksbill sea turtle** (*Eretmochelys imbricata*) is federally listed as endangered. It occurs in tropical and subtropical seas of the Atlantic, Pacific, and Indian oceans. Young hawksbills occur with some regularity in Texas waters, since northern currents carry them from nesting beaches in Mexico (Hildebrand, 1981). Historic nesting by this species on the Texas coast is unknown. Female hawksbill turtles nest mostly during the night, but rare daytime nesting is known. They nest an average of 4.5 times per season (up to 12 clutches); clutch size averages approximately 140 eggs (NMFS and USFWS, 1993). Hatchling emergence occurs at night. Hawksbills nest on scattered islands and beaches between 25 degrees North and South latitude including beaches in southeastern Florida and the states of Campeche and Yucatan in Mexico. Nesting does not regularly occur on the Texas coast.

At Padre Island National Seashore, young hawksbills occasionally inhabit waters of the nearshore Gulf of Mexico and Mansfield Channel. Additionally, many are found stranded in the park each year, but nesting very rarely occurs here (Shaver, 1998b, 1999b).

The **leatherback** sea turtle (*Dermochelys coriacea*) is federally listed as an endangered species. It ranges throughout the tropical waters of the Atlantic, Pacific, and Indian oceans, but has also been recorded from the North Atlantic, North Pacific, South Atlantic, and South Pacific. The leatherback is the largest

and most pelagic sea turtle species and is normally found in the deeper waters of the Gulf of Mexico where it may undertake extensive migrations.

Nesting occurs primarily at night and diurnal nesting occurs only occasionally. They nest five to seven times per year, with an average clutch size of 110-116 eggs (NMFS and USFWS, 1992). Hatchling emergence typically occurs at night. Leatherback nesting grounds are distributed circumglobally. Leatherbacks infrequently strand at Padre Island National Seashore (Shaver, 1998b).

Hildebrand (1963, 1981) reported leatherback nesting at Little Shell on Padre Island National Seashore, including one documented nesting in 1928 and at least one observed nesting in the mid 1930's. No leatherback nests have been confirmed on the Texas coast since that time.

No leatherback nests have been recorded within the park during recent years, although it is possible that a few were missed, especially when patrols were not conducted or were less comprehensive. In the U.S. and Caribbean, nesting begins in February and continues through July.

Impacts of Alternative A, No Action, on Sea Turtles

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on sea turtles. However, impacts on sea turtles in the analysis area would continue along the 12.5-mile segment of Gulf beach as the result of park, commercial, and visitor vehicle use along the 12.5-mile segment of Gulf beach; routine park operations; and recreational activities.

Park staff, 12 oil and gas operators, and an estimated 527,800 visitors annually use the 12.5-mile segment of Gulf beach for vehicle access. Approximately 95,000 visitors (18% of those using the Gulf beach) travel between the 6 to 12.5-mile marker, with some going below this point. Park staff conducts routine park operations along the beach. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would occasionally travel the beach corridor. These trips include up to three pickup sized trucks that run down, daily, to the sites near the 3-mile and 6-mile markers. Twice monthly, a larger truck runs to the south Sprint facility near the 6-mile marker to remove gas by-products or "condensate" from a holding tank. Additional traffic is limited to emergency or periodic, routine trips for maintenance or inspections of flowlines and facilities.

There may be times when turtle eggs, nesting turtles, hatchlings, and stranded turtles could be directly vulnerable to vehicle traffic on the 12.5-mile segment of Gulf beach. Operation of all vehicles, including oil and gas heavy equipment, on the beach can crush nesting turtles, stranded turtles, hatchlings, and some eggs, producing an immediate, lethal impact and may cause changes in the structure or density of beach sand, indirectly affecting nesting and incubation habitat (Mann, 1977; NMFS and USFWS, 1991a, 1991b, 1992-1993; Ernest et al., 1998). Vehicles could also remove sea turtle tracks, making it impossible for the USGS and NPS to find a nest for investigation and protection. Vibrations and noise caused by moving vehicles on the beach could frighten nesting turtles, causing them to abandon their nesting attempt (false crawl) (NMFS and USFWS 1991a, 1991b, 1992; Ernest et al., 1998). Current scientific data is not available for the Kemp's ridley sea turtle, however several mitigation measures and specific conditions of approval are implemented to reduce the potential risk to sea turtles (See Tables 4 and Table 5).

Turtle hatchlings and smaller stranded sea turtles could become trapped in the ruts for short or long periods of time causing them to weaken, invert, or succumb due to predation, disorientation, crushing, or dehydration (Hosier et al., 1981; Fletemeyer, 1996; Ernest et al., 1998). According to Dr. Donna Shaver, sea turtle expert and Station Leader of the USGS Padre Island Field Research Station, the depth and slope of the ruts will influence the amount of impact (personal observation). Deeper and more steeply sloped ruts will cause the greatest impact. Hosier et al. (1981) found that 10-15 cm deep tracks may serve as a

significant impediment to loggerhead hatchlings. The smaller the turtle the more that it will be impacted by rut size.

A study in Florida on a nourished beach found that vehicles can also compact the sand, making it more difficult or impossible for nesting turtles to excavate a nest cavity leading to increased false crawls and nests with shallow egg chambers (Fletemeyer, 1996). Compaction could also make it more difficult for hatchlings to emerge from an undetected nest. Data on the level of compaction necessary to inhibit or prevent nesting, or inhibit or prevent hatchling emergence is not available. There is no documented evidence that suggests that the level of traffic in this sandy environment, of Padre Island National Seashore, is a serious concern or noticeable to the sea turtle. In fact, 2002 nesting levels appear to contradict this assumption.

Large vehicles associated with oil and gas operations can produce deeper ruts in the sand, which could affect movements of nesting females and hatchlings. To reduce direct impacts that can occur from rutting, the park requires operators to mitigate the impacts by backfilling ruts. However, since backfilling ruts and leveling of the beach surface may cause indirect and direct impacts (including compaction of sand, covering or removal of sea turtle tracks, and crushing of nests and turtles), existing methods used to fill ruts will be reviewed and monitored on a periodic basis by the NPS, USGS and USFWS. There is no data to show that sand in these backfilled areas is compacted enough to inhibit nesting.

Vibrations could also harm incubating eggs. It is difficult to assess these areas as scientific data is lacking to fully understand the level of impact on sea turtles from traffic vibrations or noise. From observations of traffic and wildlife interactions, there is no question that seeing the vehicle at the water's edge would cause the sea turtle to move back into the water. One would expect this type of reaction of wildlife to man's presence (on foot or in a vehicle). The effect of vibrations from people or from vehicles on the beach during a nesting event does not show a strong negative correlation to date. People driving on the beach often spot nesting sea turtles and can often approach them without disturbing the nesting activity, once laying the eggs begins.

Vehicle and operation lights behind the dunes can cause direct impacts on nesting turtles leading to false crawls and can disorient hatchlings so that they crawl in the wrong direction rather than enter the sea, thereby becoming vulnerable to crushing, predation, and dehydration (NMFS and USFWS 1991a, 1991b; Fletemeyer, 1996). Since oil and gas nighttime transportation of heavy equipment is not permitted during the sea turtle nesting season, the vehicular light issue is confined to four-wheel drive trucks associated with 2-wheel and 4-wheel drive vehicles used by the visitors. It is understood that there are over 500,000 trips down the analysis area of 12.5 miles of Gulf beach each year by park visitors, many of which operate at night. Lights from operations behind the dunes could impact this species if the lights are visible from the beach; however, there are no current operations within proximity to the beach that have night lighting. Nesting Kemp's ridley turtles, which are primarily daytime nesters and Kemp's ridley hatchlings, which emerge generally in the daytime, will most likely not be affected. Conditions of approval and mitigation measures applied to the existing 12 approved oil and gas operations would reduce the potential impact associated with lighting.
To reduce and or eliminate the impact of light pollution on the sea turtle (and to the visitor) the following measures of night sky protection are currently being applied as mitigation measures by the park: 1) use of directional and shielded lighting on the drilling rigs and no lighting of production facilities; 2) Use of a required setback of 500 feet from the dunes and other light-sensitive areas; and 3) placing night driving restrictions on operators of heavy equipment and trucks during the sea turtle nesting and hatchling emergence period. These steps are expected to be adequate to prevent any light pollution impact, given current scientific data.

So this leaves those species of sea turtle that nest primarily at night (green, loggerhead and hawksbill) likely to be the most affected by night driving and associated lighting. Based on documented nesting, the

total number of these three species of sea turtle nesting at Padre Island National Seashore, within the analysis area, would be less than three over a 15-year span. The risk of loss to nesting turtles of these species is therefore very small. This would also apply to those hatchlings that emerge at night or early in the morning from the few in-situ nests possibly missed by the daily patrols conducted by the NPS and USGS staff and volunteers.

Currently the USGS and NPS remove all sea turtle eggs that are located from the beach and transfer them to the incubation facility at Padre Island National Seashore. Hatching success is elevated substantially for eggs that are transferred to this facility rather than left on the beach in-situ. Some nests missed by the patrol and monitoring effort may go undetected and unprotected from predation, insect infestation, tidal inundation, and crushing. Additionally, some nesting and stranded turtles are not immediately found and protected by the NPS.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf of Mexico shoreline for over 20 years with no documented case of a crushing of a nesting sea turtle within the park. The risk to a sea turtle in the analysis area is low when looking at past nesting activity. The average number of nests per year over a five-year span, for the first 15 miles of south beach, is approximately three. In 2002, one of the highest nesting activity years since the beginning of the program (1986), there were six nests found within the analysis area. Current nesting activity does not seem to indicate compaction from vehicles, either by visitors or from the existing 13 oil and gas operators, is causing a negative affect.

Nesting activity for 2002 seem to support the idea that existing traffic levels (approximately 500,000 vehicles annually) do not currently have a measurable effect on nesting sea turtles. Looking at nesting data collected over the past 20 years for the action area, and given that most nests are found and removed from the beach by NPS and USGS staff, the potential impact of vibrations to eggs and crushing of nests would appear to be minimal. The chance that hatchlings could be killed by vehicle use at night along the stretch of beach within the action area of the project is real, but minimal.

There is the very small chance that the four sea turtle species (loggerhead, green, hawksbill, or leatherback) would be directly impacted by vehicle use on the beach, including the crushing of stranded turtles and undiscovered nests or hatchlings. Impacts that are more likely to occur would be indirect impacts, including noise and vibration to nests or hatchlings; and direct impacts from night- time lighting, from vehicles and project area lighting that may cause changes in sea turtle behavior can affect these species. All of the existing 12 Oil and Gas Operations located throughout the park are located a sufficient distance behind the foredunes so that any night lighting would not shine onto the beach. The NPS conservation efforts related to these sea turtles are conducted to promote and enhance their recovery. Please refer to the measures employed for use in the Kemp's ridley sea turtle effort as measures used to assist this and other species of sea turtle.

Existing vehicle access along the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on sea turtles would result primarily from vehicle access along the Gulf beach from the continuing operation of 12 nonfederal oil and gas operations within the park, future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario, park staff, and visitors. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Leaks and spills from oil and gas operations could be serious, with negligible moderate, impacts on sea turtles. Spills from oil and gas operations in the Gulf of Mexico, including tanker traffic, could be

transported by water onto the Gulf beach shoreline, causing widespread impacts and resulting in long-term clean-up and remediation. Mitigation measures are expected to substantially reduce the impacts.

The risk of impacting one of the four species of sea turtle (loggerhead, green, hawksbill, and leatherback), however, is reduced to a much greater degree because of the limited possibility of encountering one on the seashore. This is particularly true within the existing areas of oil and gas operation. As night driving by all companies is restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles. The greatest potential for a direct, adverse impact would occur from vehicle traffic crushing an undocumented nest or emerging hatchlings, and causing hatchling mortality due to vehicle rutting.

Cumulative impacts on sea turtles throughout the park are expected to result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on sea turtles; however, existing vehicle use on the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct and indirect, adverse impacts on sea turtles within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park in the Gulf of Mexico, and vehicle access along the Gulf beach, would result in short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to the sea turtles would likely result from the implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Sea Turtles

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced.

Existing impacts on sea turtles within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, direct and indirect, negligible to minor, adverse impacts associated with vehicle use along the 12.5-mile segment of Gulf beach.

BNP would use the 12.5-mile segment of Gulf beach to access its proposed wellpad located approximately 900 feet behind the foredunes. BNP would be required to confine vehicle use above the "wet-line" and apply other mitigation measures specifically designed to avoid or minimize impacts on sea turtles (see Table 4 for mitigation measures included in BNP's plan of operations, and Table 5 for mitigation measures applied by the NPS as conditions of approval). As described above under No Action, vehicles could compact and rut beach sands. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Truck traffic associated with drilling the Lemon/Lemon Seed Unit wells would range from a low of 4 to a maximum of 20, with 13 trips being the project average over the busiest four months. Once drilling of the two wells are completed, the number of large vehicles used in long-term production operations would substantially decrease.

There has been vehicle traffic, both from visitors and heavy equipment operators, on the Gulf beach for over 20 years with no documented case of a crushing of a nesting sea turtle within the park. The risk to a sea turtle in the analysis area is low when looking at past nesting activity. The average number of Kemp's sea turtle nests per year over a five-year span, for the first 15 miles of south beach, is approximately three. In 2002, one of the highest nesting activity years since the beginning of the program (1986), there were

six nests found within the analysis area. Current nesting activity does not seem to indicate compaction from vehicles, either by the public or from the operator, is causing a negative affect.

Drilling of the Lemon/Lemon Seed Unit wells would occur outside of the Kemp's ridley nesting season; therefore, direct impacts would be few to none as a result of the drilling phase, mostly occurring to any unfound nests that produce hatchlings. Therefore, the primary impact would be obstacles to emerging hatchlings from unfilled ruts, from vehicle traffic, and the possibility of crushing. With daytime driving only, and the requirement for trained staff to precede equipment and truck traffic down the beach, the potential impact would be reduced.

The four species of sea turtles (loggerhead, green, hawksbill, and leatherback) nest primarily at night and hatchling emergence is usually at night or very early in the morning. As the number of nests in the park and within the project area are historically few, the impact on these species is expected to be less than for Ridley sea turtles. Therefore, the risk of impacting one of these species of sea turtles is greatly reduced because of the limited possibility of encountering one on the seashore. As night driving by BNP would be restricted during the sea turtle nesting season, the chance of injuring an adult is remote, especially for the green, hawksbill and leatherback sea turtles. The greatest potential for a direct, adverse impact is to the loggerhead and any remaining undiscovered sea turtle nests. The only real potential for impacts is from vehicle traffic resulting in the crushing of undocumented nests or emerging hatchlings, and causing hatchling mortality due to vehicle tracks and rutting. Since the number of trips per day by oil and gas operators driving large trucks along the Gulf beach is greater than four truck trips per day, and given that the typical use by existing operators is restricted to the daylight hours, this alternative has the higher potential for negative impacts on these four species of sea turtles. Since seasonal visitor use of the beach (pick-up trucks and recreational vehicles/motor homes) increases to its highest point at this time of year, this alternative is less likely to cause direct impacts to the turtle. There is still a risk of injury or mortality from BNP truck traffic; however, it would be minimal in the near and long-term.

Vehicle access along the 12.5-mile segment of Gulf beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles. Mitigation measures and monitoring of the proposed project would reduce the potential impact on sea turtles, and help to ensure that the project is not likely to adversely affect these species.

Construction of the dune cut/access road, well/production pad, and flowline would have no impact on sea turtles.

Cumulative Impact

Cumulative impacts on sea turtles throughout the park would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. If the wells are placed into production, vehicle access along the 12.5-mile segment of Gulf beach; in addition to existing vehicle access along the beach would result in localized, short to long-term, direct and indirect, negligible to minor, adverse impacts on sea turtles within the analysis area. Cumulative impacts would be similar to those described under No Action, with short to long-term, negligible to minor, direct and indirect, adverse impacts localized along the Gulf beach; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on sea turtles, primarily along the Gulf shoreline. No impairment to sea turtles would result from implementation of this alternative.

Eastern Brown Pelican

Affected Environment

Eastern Brown Pelicans *(Pelecanus occidentalis)* are federally and state listed as endangered. This bird's population fell to less than 100 birds between 1967 and 1974 (TPWD, http://tpwd.state.tx.us/nature/endang/birds/bpelican.htm). It is a coastal inhabitant whose range includes the southern United States and northern South America - from North Carolina to Venezuela and Trinidad in the Atlantic and from British Columbia to Chile on the Pacific coast.

This species is found along salt bays, beaches, and oceans. It is generally found near shallow waters adjacent to the coast, especially on sheltered bays. Occasionally Brown Pelicans are seen well out to sea. Brown Pelicans feed almost entirely on fish including menhaden, smelt, and anchovies but can occasionally feed on crustaceans.

Brown pelicans nest in colonies on isolated islands where they are safe from predators. These islands may be either bare and rocky or covered with small mangroves, shrubs, or other trees. Stray individuals may appear on freshwater lakes inland. Nests may be a simple scrape, a heap of debris with a depression on the top, or a large stick nest located in a tree. Breeding season generally begins in early March and lasting until August. After the breeding season, flocks move north along both Atlantic and Pacific coasts. These birds return southward to warmer waters by winter. Small numbers of immatures regularly wander inland in summer, especially in the Southwest (Peterson Multimedia Guides, http://www.petersononline.com/birds/month/brpe/index.html).

Eastern Brown Pelicans occur in the park year-round along both the Gulf and Laguna Madre sides of Padre Island. Individuals utilize the park for resting and foraging, and are typically found in the nearshore and washover habitats. Some individuals migrate south during the winter months and return during the breeding season. Brown Pelicans forage along the Gulf beach shoreline searching for fish near the surface of the water.

In 1993, Dr. Allan Chaney recorded 356 Brown Pelicans over 64 miles of beach between Yarborough Pass and Port Mansfield Channel during a 1992-1993 shorebird survey. Twelve individuals were observed on the Laguna Madre shoreline while the remaining 344 individuals were observed in the washover channels located south of the 33-mile marker. Forty-four individuals were observed between the park's north boundary and the 12.5-mile mark (Chaney *et. al.*, 1993a). In 1995, 553 birds were surveyed along the Gulf beach between the park's northern boundary and Yarborough Pass (Chaney *et. al.*, 1995b). In comparison, only one Brown Pelican was documented along the Laguna Madre shoreline between Yarborough Pass and the park's northern boundary (Chaney *et. al.*, 1995a). It is evident that Brown Pelicans prefer the Gulf beach shoreline instead of the Laguna Madre shoreline.

Brown Pelicans are generally found along the Gulf beach tide line in the morning hours and along the Laguna Madre shoreline and washover channels located in the southern portion of the park in the afternoons. When observed in the washover channels, Brown Pelicans were generally associated with Double Crested Cormorants, gulls, and terns. Brown Pelicans are not observed in other habitats within the park.

Based on nearly thirty years of park colonial waterbird census data, Brown Pelicans have not been documented nesting within the park (TCWD, http://texascoastalprogram.fws.gov/Texas_Colonial_Waterbird_Census_2002.xls). However, they do nest on an island located in Corpus Christi Bay, which is located approximately 20 miles from the park.

Impacts of Alternative A, No Action, on Eastern Brown Pelican

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts to the Eastern Brown Pelican. However, existing impacts on Eastern Brown Pelicans in the analysis area would continue as the result of vehicle access and visitor uses along the 12.5-mile segment of Gulf beach

Park staff, 12 oil and gas operators, and an estimated 527,800 visitors annually use the 12.5- mile segment of Gulf beach for vehicle access. Approximately 95,000 visitors (18% of those using the Gulf beach) travel between the 6 to 12.5-mile marker, with some going below this point. Park staff conducts routine park operations along the beach. Vehicles on the Gulf beach would include 2 and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continuing operation of 13 oil and operations throughout the park that require access through this 12.5-mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored and are expected to be driven at the posted speed limit of 15 to 25 mph.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

Visitor activities and vehicles travelling within or close to the "wet-zone" would displace Eastern Brown Pelicans and cause them to take flight. They most likely would fly along the shoreline to another suitable location and land, or they can fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing vehicle access and visitor use along the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelicans within the analysis area.

Cumulative Impact

Under Alternative A, No Action, cumulative impacts on Eastern Brown Pelican would occur from visitor uses, and vehicle access along the Gulf beach by the park, visitors, and oil and gas operators as a result of the continuing operation of 12 nonfederal oil and gas operations and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Cumulative impacts of visitor uses and vehicle access along the Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on the Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican, primarily along the Gulf shoreline.

Conclusion
Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the Eastern Brown Pelican; however, existing visitor uses and vehicle use on the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts along the Gulf shoreline. No impairment to the Eastern Brown Pelican would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Eastern Brown Pelican
Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced.

Existing impacts on Eastern Brown Pelican within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area from visitor uses and vehicle access on the 12.5-mile segment of Gulf beach.

BNP would use a 12.5-mile segment of Gulf beach to access its proposed wellpad. Vehicles would displace Eastern Brown Pelicans causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary, but potentially more frequent than those of the public, especially during the higher frequency of heavy vehicle use during the construction of the access road, well/production pad, and flowline, and placement and removal of the drill rig. Shorebirds disturbed by park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the Eastern Brown Pelicans for the duration of the drilling project.

BNP would be required to confine vehicle use above the "wet-line" (see Table 4 for mitigation measures included in BNP's plan of operations, and Table 5 for mitigation measures applied by the NPS as conditions of approval). This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph. This should reduce the amount of disturbance on the Eastern Brown Pelican, as reducing speed and the number of times the bird is displaced would lessen the overall impact to the tern. It is known that reduced speed does have less of an affect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.
Existing vehicle access and visitor use on the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Eastern Brown Pelican.

Cumulative Impact
Under Alternative B, Proposed Action, cumulative impacts on Eastern Brown Pelican throughout the park would be similar to those described under No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short-term, negligible to minor, direct, adverse impacts on the Eastern

Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to minor, indirect, adverse impacts on the Eastern Brown Pelican.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, in addition to existing visitor uses and vehicle access within this beach corridor, would result in localized, short to long-term negligible to minor, direct, adverse impacts on Eastern Brown Pelican within the analysis area. Cumulative impacts would be similar to those described under Alternative A, No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts to Eastern Brown Pelican; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Eastern Brown Pelican. No impairment to Eastern Brown Pelican would result from implementation of this alternative.

Interior Least Tern, Black Tern, and Piping Plover

Affected Environment

The **Interior Least Tern** (*Sterna antillarum)* is the smallest member of the tern family (Nebraska Game and Parks Commission, http://www.ngpc.state.ne.us/wildlife/ltern.html). Only colonies located 50 miles from the coast are considered endangered at the federal level. However, all colonies of Interior Least Terns throughout the state are considered endangered at the state level. They are found along the western and eastern coasts of the United States and from southern Maine to the southern tip of Texas. No critical habitat has been designated for this species in this park.

Their habitat includes mudflats, beaches, and sandbars (Scott, 1983). Interior Least Terns forage on small fish captured in shallow coastal waters. Fall migration begins mid to late July and continues through early September. Wintering habitat for Interior Least Terns exist along the beaches of Central and South America.

Interior Least Terns are colonial nesters that breed throughout the United States on riverbeds, sandbars, and beaches. Both sexes participate in making shallow nest scrapes. The female will select a suitable scrape. If the first clutch of eggs is lost, Interior Least Terns will re-nest up to two times with each re-nesting attempt taking place at a new site. Nesting season begins in spring and ends in early August. Migration from breeding areas to winter grounds usually begins in August and is complete by early September (Nebraska Game and Parks Commission, http://www.ngpc.state.ne.us/wildlife/ltern.html). Interior Least Terns are present at Padre Island National Seashore seasonally between April and September and utilize the park for foraging, nesting, and migration. These colonial nesters utilize the isolated manmade and natural islands in the Laguna Madre. Nesting season in south Texas generally occurs between April and July and has occurred within the park since 1973 (TCWD, http://texascoastalprogram.fws.gov/Texas_Colonial_Waterbird_Census_2002.xls). Documentation shows that Interior Least Terns generally prefer the Laguna Madre shoreline during June and July possibly for breeding, and the Gulf beach shoreline during April, May, August, and September (Chaney *et. al*., 1995b). In 2002, at least two pairs of Interior Least Terns nested on a manmade island 17 miles north of the project area. Interior Least Terns have not been documented nesting on the Gulf beach within the park, however, based on surveys in 1993 and 1995, the Interior Least Tern population appears to be stable with 8 birds/mile surveyed (Chaney *et. al*., 1995b)

The **Black Tern** (*Chlidonias niger*) is considered a species of concern at the federal level, and there is no critical habitat designated within the national seashore.

Black Terns inhabit temperate grassland, freshwater lake, freshwater rivers, prairies, lakeshores and marshes with fairly dense cattail or other marsh vegetation and pockets of open water (Null, 1997). The breeding habitat for Black Terns consists of dead canes of marsh or on floating masses of dead plants. Black Terns breed in north central United States northward into Canada and the Northwest Territories. Sporadic nesting is observed in California, Oregon, and Kansas. Wintering habitat is located along the Pacific coast of Mexico, Central and South America and the northern coast of South America. Non-breeding summer habitat consists of marine and coastal areas located along the Gulf of Mexico (Dunn and Agro, 1995).

Black Terns forage on insects such as dragonflies, moths, grasshoppers, and beetles, and freshwater fish when at the breeding grounds. Prey consists of small marine fish including anchovies and silversides, and they will eat crayfish and mollusks. These Terns are seen foraging in the coastal waters off Padre Island National Seashore during the summer months. The Black Tern is a spring and fall migrant through the park, and is a common summer resident along the Gulf shore within Padre Island National Seashore. No breeding has been documented along the Texas coast (Rappole and Blacklock, 1985). These Terns generally nest in colonies from March to early August.

In a 1994 – 1995 survey, 5,107 Black Terns were documented in the park, with three times as many black terns documented on the Laguna Madre side of the park than on the Gulf beach (Chaney *et. al*., 1995b). These high totals were found in August, prior to their fall migration.

The **Piping Plover** (*Charadrius melodus*), one of the least common members of the plover family, is considered threatened both federally and by the state of Texas. The population is currently estimated to be approximately 1400 pairs (USFWS, http://pipingplover.gws.gov/overview.html).

The Piping Plover is a shorebird that migrates from Nova Scotia south to North Carolina and winters along the Gulf Coast from Florida to Mexico, along the Atlantic Coast from Florida to North Carolina, and in the Caribbean. They are found on sandy beaches, lakeshores, dunes, and often well above the water line (Sibley, 2000).

Piping Plovers breed along prairie-rivers and on alkali wetlands of the Northern Great Plains, sandy beaches along Great Lakes shorelines, and Atlantic coast beaches. These birds nest in shallow depressions built in the sand with both parents incubating the eggs and exhibiting a monogamous mating system. Breeding can occur between March and August with both fledglings and parents leaving the nest by September. It is clear that direct interference of nests by vehicles, humans, and dogs significantly affects breeding success (TPWD, http://tpwd.state.tx.us/nature/ending/birds/piplover.htm). Piping Plovers disturbed during nesting by flooding or other disturbance may abandon the nest and establish a second nest in the vicinity at a new location (USFWS, http://pipingplover.gws.gov/overview.html).

Piping Plovers forage mostly on benthic invertebrates, insects, and crustaceans found within the inter-tidal areas of ocean beaches, wash over areas, mudflats, sand flats, wrack lines, and shorelines of coastal ponds, lagoons or salt marshes. Piping Plovers have been documented defending feeding territories, and foraging on benthic invertebrates and insect larvae along both the Laguna Madre and Gulf beach inter-tidal areas within the park.
Piping Plovers have been documented throughout the park as a winter resident and fall/spring migrant (Chaney *et. al*., 1993a, 1993b, 1995a, and 1995b). Piping Plovers are generally found along the Laguna Madre, Gulf beach, and washover channels within the park and occur at the park 11 months of the year with the exception of February (Chaney *et. al*., 1993a and 1993b), with the highest concentrations occurring between August and December. September typically has the highest numbers (Chaney *et. al*., 1995b) of Piping Plovers found in the park. Padre Island National Seashore protects substantial acreage of wintering habitat for the Piping Plover, with the most important area being the broad wind tidal flats

located at the north boundary of the park. It is estimated that between 60-65% of all Piping Plovers winter in South Texas (Chaney *et. al*., 1995a).

In 1992 – 1993, a study documented 602 plovers over the entire 60 miles of south beach, with 400 of these being found along the Gulf beach foreshore (Chaney *et. al*., 1993a). Of the 600 birds observed, 87 Plovers occurred between the zero and twelve-mile mark accounting for nearly 14% of the total number of Plovers counted (Chaney *et. al*., 1993a). In 1994 – 1995, 150 plovers were documented between the zero and fifteen-mile mark on the Gulf Beach with the majority of these inhabiting the Gulf beach foreshore (Chaney *et. al*., 1995b).

No nesting has been documented in south Texas or Padre Island National Seashore to date, and there is no critical habitat designated for this species. In 2000, the US Fish and Wildlife Service proposed 80% of the park as Piping Plover critical habitat. Final habitat designation figures did not include Padre Island National Seashore as critical habitat. Part of the reason was that the species is already protected by existing NPS regulations, policies, and management measures, and designating critical habitat would not provide a greater level of protection.

Impacts of Alternative A, No Action, on Interior Least Tern, Black Tern, and Piping Plover

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Interior and Black Terns and Piping Plovers. However, impacts on these species in the analysis area would continue as the result of vehicle access and visitor uses along the 12.5-mile segment of Gulf beach.

Park staff, 12 oil and gas operators, and an estimated 527,800 visitors annually use the 12.5- mile segment of Gulf beach for vehicle access. Approximately 95,000 visitors (18% of those using the Gulf beach) travel between the 6 to 12.5-mile marker, with some going below this point. Park staff conducts routine park operations along the beach. Vehicles on the Gulf beach would include 2 and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so. Vehicles would compact and rut the beach sand. There would be some loss of benthic organisms due to crushing by tires and changes in the aerobic conditions of the compressed wetted sand environment. As noted in the wildlife section of this chapter, in a study conducted by Texas A&M, Center for Coastal Studies (Englehard and Withers 1997), it was found that benthic organisms recovered quickly, within 10 days of the disturbance, following mechanical raking of the beach. It is expected that similar recovery of the benthic organisms would occur in the case of infrequent vehicle travel in the wet zone. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. Vehicles associated with the continuing operation of 13 oil and operations throughout the park that require access through this 12.5-mile segment of beach, are required by the NPS to drive above the tide line, which is generally farther away from the shorebirds that are found on the Gulf beach. The number of oil and gas-related vehicles are few; and operators are free to come and go to their operations to perform work specified in their approved plans of operations. These vehicles are not monitored and are expected to be driven at the posted speed limit of 15 to 25 mph.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

The "wet-zone" along the Gulf beach is preferred by the Interior Least Tern and Black Tern for resting, loafing, and feeding. Piping Plovers utilize the Laguna Madre wind-tidal flats and Gulf beach for foraging and resting. Benthic invertebrates are the primary food source for Piping Plovers.

Visitor activities and vehicles traveling within or close to the "wet-zone" would displace terns and Piping Plovers and cause them to take flight. They most likely would fly along the shoreline to another suitable location and land, or they can fly offshore. This displacement would be temporary since shorebirds disturbed by vehicles or park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing vehicle access and visitor use along the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least Terns, Black Terns, and Piping Plovers within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on Interior Least and Black Terns and Piping Plovers would occur from visitor uses and vehicle access along the Gulf beach by park staff, visitors, and oil and gas operators as a result of the continuing operation of 12 nonfederal oil and gas operations and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Cumulative impacts of visitor uses and vehicle access along the Gulf beach would continue to cause these shorebirds to be flushed, resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least and Black Terns and Piping Plovers; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on these species, primarily along the park's shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the Interior Least Tern, Black Tern, and Piping Plover; however, existing visitor uses and vehicle access on the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area. Cumulative impacts from visitor uses and vehicle access along the Gulf beach by the park, visitors, and operators of existing and future oil and gas operations in and adjacent to the park, are expected to result in localized, short to long-term, negligible to minor, direct, adverse impacts; however, in the event of a spill from offshore oil and gas operations or tankers, impacts could be long-term and widespread, ranging from negligible to moderate, indirect, adverse impacts. No impairment to the Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Interior Least Tern, Black Tern, and Piping Plover

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced.

Existing impacts on Interior Least and Black Terns and Piping Plovers within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, direct, adverse impacts on these species within the analysis area from visitor uses and vehicle access on the 12.5-mile segment of Gulf beach.

BNP would use a 12.5-mile segment of Gulf beach to access its proposed wellpad. Vehicles would displace terns and Piping Plovers causing them to take flight and either fly along the shoreline to another suitable location and land, or fly offshore. This displacement would be temporary. Shorebirds disturbed

by park visitors are generally seen landing a short distance away and continuing to perform their pre-disturbance behavior, and this is expected to be the same for the terns and Piping Plovers for the duration of the drilling project.

BNP would be required to confine vehicle use above the "wet-line" (see Table 4 for mitigation measures included in BNP's plan of operations, and Table 5 for mitigation measures applied by the NPS as conditions of approval). This zone is generally farther away from the shorebirds that are found on the Gulf beach. Additionally, vehicles associated with this project would be grouped together prior to entering the beach, escorted to the site, and limited to a reduced speed of 15 mph, versus the posted speed limit of 25 mph. This should reduce the amount of disturbance on the Eastern Brown Pelican, as reducing speed and the number of times the bird is displaced would lessen the overall impact to the tern. It is known that reduced speed does have less of an effect on many shorebirds. It is expected that as the larger trucks approach, the birds would take flight no matter what the speed, due in part to the size of the vehicle and greater noise generated. As a result of mitigation measures, the intensity of impacts of vehicle use on the shoreline would be reduced.

The proposed project is expected to take place between August and December, which is the time of the year when the highest concentrations of Piping Plovers occur at the park. Based on previous studies, approximately 14% of the total Piping Plovers occurring in the park are likely to be utilizing this segment of Gulf beach. Piping Plovers utilize both sides of the park depending on available habitat and time of day. Piping Plovers do not nest at Padre Island.

Visitor uses on the beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing.

Existing visitor uses and vehicle access along the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least Tern, Black Tern, and Piping Plover.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on Interior Least Terns, Black Terns, and Piping Plovers throughout the park would be similar to those described under No Action, with visitor uses and vehicle access along the Gulf beach resulting in localized, short to long-term, direct, negligible to minor, adverse impacts on these species; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Interior Least Tern, Black Tern, and Piping Plover.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's vehicle access above the "wet-line" along the 12.5-mile segment of Gulf beach, in addition to existing vehicle access and visitor uses along this segment of beach would result in localized, short to long-term negligible, direct, adverse impacts on Interior Least and Black Terns and Piping Plovers. Cumulative impacts would be similar to those described under Alternative A, No Action, with vehicle use along the Gulf beach resulting in localized, short to long-term, negligible to minor, direct, adverse impacts on Interior Least and Black Terns and Piping Plovers; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate, indirect, adverse impacts on the Interior Least and Black Terns and Piping Plovers. No impairment to Interior Least Tern, Black Tern, and Piping Plover would result from implementation of this alternative.

Peregrine and Northern Aplomado Falcons

Affected Environment

The **Peregrine Falcon** (*Falco peregrinus*) has been federally de-listed but is still listed as endangered at the state level. The Peregrine Falcon has nearly worldwide distribution, thriving in a great variety of habitats from arctic tundra to tropical rain forests. In North America, this species is best known as inhabitants of canyons and cliffs, though it has been documented to reside amongst the skyscrapers of large cities.

The Peregrine Falcon is a migratory species that winters along the Gulf of Mexico and as far south as Central and South America. They are known as common winter inhabitants of the southern portion of Padre Island National Seashore, arriving sometime in early fall and departing mid-May (Chaney *et. al.*, 1993a). This falcon is generally only seen twice a year as it migrates through the state in spring and fall (TPWD, http://tpwd.state.tx.us/nature/ending/birds/peregrine.htm).

Peregrines breed in a wide range of habitats including the edge of cliffs, raised mounds on the ground in bare open spaces, in hollow tree stumps, and ledges of large city buildings. Peregrines tend to return to the same site annually. Breeding season begins in early March in the south and mid-May in the north. A single brood of three to four eggs are laid in a hollow scrape with no materials added to it. Females closely tend their young for the first 14 days, but leave them more each day as they grow. The nestlings fly at 35-42 days, but appear to be dependent on the adults for an additional two months.

This species predates upon waterbirds but normally does not attack ducks that are sitting on the water. Those individuals who have become city dwellers are most likely attracted to the high populations of Rock Doves (pigeons). They typically feed on Neotropical migrants, waterfowl, and shorebirds while in the area of Padre Island National Seashore. No critical habitat has been designated for this species at the park.

Peregrine Falcons are an increasingly common migrant at the park, especially in the fall, and they are a rare winter resident. Peregrine Falcons hunt on broad mudflats along the Laguna Madre shoreline, and rest on any higher elevation, typically on the foredunes along the Gulf beach (Chaney *et. al.*, 1995b). They rarely predate shorebirds that forage and rest on the Gulf beach. These birds are generally concentrated in the southern portion of Padre Island National Seashore, which is unique in that it is a main component of the migration route "staging area," particularly for juveniles, during the spring and fall migration (Maechtle, 1993). From actual counts, more than 2,000 Peregrine Falcons have utilized this area annually during their fall migration (Maechtle, 1993). The Gulf beach is a very important stopover area for foraging, resting, and is a landmark guide for many migratory birds (Chaney *et. al.*, 1993a). Padre Island National Seashore and South Padre Island are the only known localities in the Western Hemisphere where Peregrine Falcons can be found in such high concentrations during their spring migration.

The **Northern Aplomado Falcon** (*Falco femoralis septentrionaliss*) is considered a rare species at Padre Island National Seashore. Over the past ten years, approximately four sightings of individual Northern Aplomado Falcons have occurred in the Park along the main road, beach foredunes, and grasslands of the Northern ten miles of the park. These sporadic sightings generally occurred in winter and early spring. The most recent park sighting of a Northern Aplomado Falcon occurred in December 1999 on the park's northern boundary. Individuals sighted appear to be transients, and no established adult pairs, territories, or nests have been documented within the park. The effects to this species are similar to those for the Peregrine Falcon and therefore, they are presented together.

Impacts of Alternative A, No Action, on Peregrine and Northern Aplomado Falcons

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Peregrine and Northern Aplomado Falcons. However, impacts on the falcons in the

analysis area would continue as the result of occasional forays by park staff, visitors, and oil and gas operators onto the Gulf foredunes.

Park staff, 12 oil and gas operators, and an estimated 95,000 (18% of those using the Gulf beach) park visitors use the 12.5-mile segment of Gulf beach for vehicular access. Visitor uses along this segment of Gulf beach include camping, fishing, swimming, wading, picnicking, nature viewing, and beachcombing. Peregrine and Northern Aplomado Falcons rest on any high elevation within the park. Along this segment of Gulf beach, falcons have routinely been seen resting on the foredunes. Park staff performing routine park operations, recreating visitors, and nonfederal oil and gas operators occasionally hike to/or over the foredunes into the backcountry. These activities on the dunes may displace a resting falcon and cause it to take flight. The potential for displacement would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs.

Existing park and visitor uses along the 12.5-mile segment of Gulf beach would result in localized, short-term, negligible, adverse impacts on Peregrine and Northern Aplomado Falcons within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on Peregrine and Northern Aplomado Falcons could occur from park activities, visitor uses, and oil and gas activities in the vicinity of the Gulf foredunes or Laguna Madre shoreline where falcons primarily rest or feed. Developments and activities that could impact these areas include the continuing operation of up to 12 nonfederal oil and gas operations, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Cumulative impacts would result in localized, short to long-term, negligible to minor, adverse impacts on Peregrine and Northern Aplomado Falcons.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the Peregrine and Northern Aplomado Falcons; however, existing uses on the Gulf foredunes, result in localized, short-term, negligible, adverse impacts on the falcons. Cumulative impacts from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore, are expected to result in localized, short to long-term, negligible to minor, adverse impacts on the Peregrine and Northern Aplomado Falcons. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Peregrine and Northern Aplomado Falcons

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced.

Existing impacts on Peregrine and Northern Aplomado Falcons within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible, adverse impacts on the falcons resulting from occasional forays by park staff performing routine park operations, recreating visitors, and nonfederal oil and gas operators hiking to/or over the foredunes and displacing/flushing falcons.

BNP's access to the proposed Lemon/Lemon Seed Unit wells would require a 20-foot wide cut through a lower-lying Gulf foredune at the 12.5-mile marker. The proposed dune cut would result in the loss of 9,000 square feet (0.20 ac.) of dune habitat preferred by Peregrine and Northern Aplomado Falcons for resting. If the wells were not placed in production, the foredune would be stabilized and revegetated. If the wells were placed in production, the sides of the pass would be vegetated to prevent additional

erosion from wind passing through the break in the dunes. Given the approximate 257,000,000 square feet (5,900 ac.) of Gulf beach dune habitat available within the park, the proposed cut through the foredunes and loss of Peregrine and Northern Aplomado Falcon habitat would result in a localized, short- to long-term, negligible, adverse impact on the falcons.

The likelihood of a Peregrine or Northern Aplomado Falcon being affected by vehicular traffic along the Gulf beach is negligible. These falcons are not known to predate shorebirds along the Gulf shoreline; and resting is confined to high points, preferably on the dunes. Beach traffic might on occasion displace a resting Peregrine or Northern Aplomado Falcon from its perch on the foredunes, but the distance between beach traffic and the foredunes is sufficiently great to not cause falcons to normally do so.

Construction of the access road, well/production pad, and flow line, and drilling and production operations would not impact Peregrine and Northern Aplomado Falcons. These activities would take place in grassland and wetland habitats. These areas are void of trees and shrubs that could be used for perching. In addition, these habitats are not suitable foraging habitats for the falcon. Therefore, these habitats are not likely to be used to any degree other than when this species flies between park shorelines to forage or rest. The proposed drilling and production operations may provide structures that could be used for perching. Drilling and production equipment will be higher than the surrounding terrain and provide an opportunity for this species to perch. Peregrine and Northern Aplomado Falcons have been documented using oil and gas facilities in the park for perching. Since few perching structures exist and the historic use of oil and gas equipment by falcons, it is likely that equipment associated with this alternative could be used by these species. In addition, should the wells be placed in production, BNP proposes to plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors, and provide and perpetuate habitat for migratory birds. The additional perches that Peregrine and Northern Aplomado Falcons could use to rest, eat prey, and seek out prey; and the perpetuation of habitat for migratory birds which is one of the Peregrine's food sources, would result in localized and long-term, negligible, beneficial impacts, for the Peregrine and Northern Aplomado Falcons.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's proposed cut through the foredunes would result in the loss of Peregrine and Northern Aplomado Falcon habitat, with localized, short- to long-term, negligible, adverse impact on the falcons. However, the drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for Peregrine and Northern Aplomado Falcons, resulting in localized and long-term, negligible, beneficial impacts, for the falcons. Cumulative impacts on Peregrine and Northern Aplomado Falcons throughout the park would be similar to those described under No Action, with localized, short to long-term, negligible to minor, adverse impacts resulting from park activities, visitor uses, and existing and future oil and gas operations in and adjacent to the park on the Gulf foredunes and wind tidal flats along the Laguna Madre shore. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

White-tailed Hawk

Affected Environment

The White-tailed Hawk (*Buteo albicaudatus*) is not federally listed but is listed as threatened by the state. There is no critical habitat designated for this species in the park.

The White-tailed Hawk is a tropical and subtropical species ranging from southern Texas (year round) to Mexico and Central and South America: also some of the islands of the South Caribbean. It's preferred habitat includes open, semi-open, or thinly forested country, whether flat or hilly. In southern Texas, they are most visible in the grassland prairies near the coast, often where there are only scattered bushes, yuccas, or large cacti (Channing, http://www.hawk-conservancy.org/priors/whitetailedhawk.html). White-tailed Hawks are considered common to uncommon in south Texas (Rappole and Blacklock, 1994).

In southern Texas, where rabbits are abundant, White-tailed Hawks feed upon them extensively, although not exclusively. It has been known to take cotton rats, snakes, lizards, frogs, grasshoppers, cicadas, and beetles, and occasionally a quail or other bird. When the wind is favorable, the White-tailed Hawk resorts to hovering while hunting.

Breeding begins late January and usually ends in July (Baicich and Harrison, 1997). This Buteo builds a large nest of freshly broken twigs, often thorny ones, mixed with bunches of dry grass and lined with finer material, among which are some green sprays of mesquite or other plants. The nest is added to each year and may become quite large, measuring almost three feet across (Channing, http://www.hawk-conservancy.org/priors/whitetailedhawk.shtml).

Within the park, the White-tailed Hawk is common during the winter months and uncommon throughout spring, summer, and fall (McCraken and Clark, 1990).

White-tailed Hawks have been observed in grassland and wind-tidal flat habitats within the park. In 1993, four White-tailed Hawks were seen flying over the wind tidal flats between the 19 and 26-mile mark while 20 birds were observed between Yarborough Pass and the north boundary (Chaney *et. al.*, 1993b and 1995a). White-tailed Hawks have been observed during the fall and winter months within the park. Less than 10% of the White-tailed Hawks documented in 1995 occurred over the Gulf beach habitat while the remaining 90% were seen flying over the wind tidal flats of the Laguna Madre (Chaney *et. al.*, 1995b). This indicates that the White-tailed Hawk generally prefers the western portion of the park.

Nesting accounts for White-tailed Hawks are rare. However, a single nest was documented in the park in 2002, in a grassland habitat located 6.5 miles south of the end of Park Road 22. The nest was built in a 6-foot huisache (Acacia farnesiana) and appeared to be have been used previously and may indicate that the hawk had been nesting for several years.

Impacts of Alternative A, No Action, on White-tailed Hawks

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on White-tailed Hawks. There are no existing impacts on White-tailed Hawks within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on White-tailed Hawks throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres that may be located within the

park's grasslands and wind-tidal flats preferred by this species. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time. Other activities that could contribute to impacting this species include prescribed fires, routine park operations, and recreational activities. Cumulative impacts on White-tailed Hawks throughout the park are expected to be localized near developments, with short to long-term, negligible, adverse impacts.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on the White-tailed Hawk; and, there are no existing impacts within the analysis area. Cumulative impacts from park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species would result in localized, short to long-term, negligible, adverse impacts on the White-tailed Hawk.

Impacts of Alternative B, Proposed Action, on White-tailed Hawks

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. There are no existing impacts within the analysis area.

The construction of the access road and well/production pad would directly impact 4.17 acres of grassland habitat preferred by the White-tailed Hawk. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned.

However, if the wells are placed in production, the well pad would be reduced in half and a flowline installed to connect with one of the existing pipelines located west of the proposed wells. Flowline construction would disturb an additional 4.88 acres of hummocky uplands, of which 0.032 acres are within emergent wetlands. The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced. Construction of the access road, well/production pad and flowline, and drilling and production of the wells would cause the loss of habitat for the White-tailed Hawk, resulting in localized, short to long-term, negligible to minor, adverse impacts.

If the wells are placed in production, BNP proposes to plant native willow shrubs or trees around the production facility to minimize visual impacts to visitors, and provide and perpetuate habitat for migratory birds. The trees would provide additional perches for White-tailed Hawks to rest, eat prey, seek out prey, and possibly nest in. Further, the drill rig and production facilities may also provide additional perches for this species. These additional perches would result in localized and long-term, negligible, beneficial impacts, for the White-tailed Hawk.

Cumulative Action

Under Alternative B, Proposed Action, cumulative impacts on White-tailed Hawks throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short- to long-term, negligible, adverse impacts on the White-tailed Hawk.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced. BNP's proposed construction of an access road, well/production pad and flowline would directly impact 4.17 acres of grassland habitat preferred by the White-tailed Hawk, resulting in localized,

short-term, minor adverse impacts on White-tailed Hawk until the site is satisfactorily reclaimed and habitat returned. However, the drill rig and production facilities, and BNP's planting of willow shrubs or trees around the production facility would provide additional perches for White-tailed Hawks, resulting in localized and long-term, negligible, beneficial impacts. Cumulative impacts throughout the park would be similar to those described under No Action, with park developments and operations, recreational activities, existing and future oil and gas operations that may be located within the park's grasslands and wind-tidal flats preferred by this species resulting in localized, short- to long-term, negligible, adverse impacts on the White-tailed Hawk. No impairment to the Peregrine Falcon and Northern Aplomado Falcon would result from implementation of this alternative.

Loggerhead Shrikes and Neotropical Migratory Songbirds

Affected Environment

The **Loggerhead Shrike** (*Lanius ludovicianus*) is considered a species of concern at the federal level. All populations within the United States seem to be declining which has been attributed to the loss of habitat. This species is found throughout most of the United States, Mexico, and south-central Canada. It's wintering range includes the southern United States and into Mexico. Loggerhead Shrikes prefer open country such as savannas, prairie, and farmland with patches of trees or shrubs present. This species is a permanent resident throughout most of the state but is uncommon to rare in southern Texas (Rappole and Blacklock, 1994).

Shrikes are often found hunting from low perches where they can strike their prey quickly and return to the perch. They do not have talons and kill with a stunning blow from their beaks. They are known for their unique habit of impaling their prey on thorns or barb-wired fences and returning to feed later. Loggerhead Shrikes forage on insects in the summer and mice in winter. This species is solitary except for the breeding season, which begins in early May and continues into mid-July. Nests are constructed of twigs, bark, and other materials and usually found in isolated small trees. Loggerhead Shrikes can produce up to two broods annually.

Loggerhead shrikes commonly occur in park grasslands throughout the park and black willow and small shrub habitats that occur in the northern section of the park. This species is common during the spring, fall, and winter (McCracken and Clark, 1990) and considered rare in summer (Rappole and Blacklock, 1994). In 1997, a Loggerhead shrike was captured and banded in a dune area near Bird Island Basin (Blacklock *et. al*., 1997). There has been no documented nesting of Loggerhead Shrikes at Padre Island National Seashore.

Padre Island National Seashore provides migratory habitat for a broad number of **Neotropical migratory songbirds** that occur within the park during the spring and fall migrations. Based on Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, Padre Island National Seashore has imposed the mitigation measures outlined in Tables 4 and 5 to protect these resources from impacts associated with oil and gas operations within the park.

Impacts of Alternative A, No Action, on Loggerhead Shrikes and Neotropical Migratory Songbirds

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on Loggerhead shrikes and Neotropical migratory songbirds. However, impacts on Loggerhead shrikes and Neotropical migratory songbirds would continue as the result of continuing operation of 2 existing pipelines within the analysis area.

Existing operation of the two gas pipelines located within the analysis area, west of the proposed wellsites, would continue to impact grassland habitat preferred by these species. Routine maintenance

along the two pipeline corridors would include accessing the pipeline corridor by truck or ATV to inspect surface equipment, and on an annual basis to excavate small sections of the lines to inspect the integrity of the pipelines. On occasion, a backhoe/front-loader would be used to excavate and replace segments of pipe. The occasional presence of vehicles and work crews, and associated engine noise could displace Loggerhead shrikes and Neotropical migratory songbirds during the occasional, and short periods that maintenance activities are being conducted along these segments of pipeline. The resulting disturbance would likely cause this species to take flight and move to other suitable habitat nearby. There is a potential for the pipelines to leak or rupture, releasing hydrocarbon products and contaminating soil. Impacts from spills could be localized, with minor to major, short-term adverse impacts on these species; however, with the mitigation measures and prompt response in the event of a spill, the intensity of impacts would be reduced. The continuing operation of the two pipeline segments within the analysis area would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds, for the long life of these pipelines which could be 20 years or longer.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on Loggerhead shrikes and Neotropical migratory songbirds on grassland habitat preferred by these species throughout the park could result from the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. As some oil and gas operations are developed in the park, others would be plugged, abandoned, and reclaimed; therefore, impacts would be distributed over time, resulting in cumulative impacts, localized near developments within grasslands throughout the park, with short to long-term, negligible to minor, adverse impacts. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing operation of 2 gas pipelines would result in localized, short-term, negligible, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations are expected to result in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts. No impairment to Loggerhead shrikes and Neotropical migratory songbirds would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Loggerhead Shrikes and Neotropical Migratory Songbirds

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced, resulting in the short-term disturbance to grassland habitat preferred by Loggerhead shrikes and Neotropical migratory birds on up to 9 acres, and if completed to produce hydrocarbons, the long-term occupancy of 2.16 acres.

Existing impacts on Loggerhead shrikes and Neotropical migratory songbirds within the analysis area would be similar to Alternative A, No Action, with localized, short-term, negligible, adverse impacts associated with continuing operation of two gas pipelines.

Construction of the cut through the foredunes, access road, well/production pad, and flowline for the proposed Lemon/Lemon Seed Unit wells would directly impact up to 9 acres, resulting in the loss of grassland habitat preferred by these species for foraging and resting. The construction of the access road and well/production pad would directly impact 4.17 acres of undisturbed habitat. If the wells do not go into production, the entire 4.17 acres would be reclaimed, resulting in localized, short-term, minor adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds, until the site is reclaimed.

However, if the wells are placed in production, the well pad would be reduced by 2.1 acres and a flowline installed to connect with one of the existing pipelines located west of the proposed wells. The imported caliche would be removed, the site recontoured to natural conditions, and native vegetation re-established to meet 70% cover. Flowline construction would disturb an additional 4.88 acres of hummocky uplands, of which 0.032 acres are hydric soils associated with emergent wetlands. A temporary loss of grassland habitat would occur while the flowline is being buried, until the corridor is revegetated. Adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds from pad reclamation and flowline placement would be localized, minor, and short-term (lasting up to one year or more) during construction and revegetation activities. The continued use of the site for production operations would result in localized, long-term, minor, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be localized, with minor to major, short-term adverse impacts on grassland habitat; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Construction of the cut through the foredunes, access road, well/production pad, and flowline for the proposed Lemon/Lemon Seed Unit wells would directly impact up to 9 acres, resulting in the short- to long-term loss of grassland habitat and localized, negligible to minor, adverse impacts on Loggerhead shrikes and Neotropical migratory songbirds in the analysis area.

An indirect, localized, short-term, negligible beneficial impact may occur from the presence of shielded lighting on the drilling rig. This lighting would attract insects, which would provide a food source for the Loggerhead Shrike. In addition, the use of barbed wire around the wellpad could be utilized by this species for impaling prey. Finally, if the well goes into production, trees that would be planted for visual screening could result in localized, negligible, long-term beneficial impacts to Loggerhead Shrike and Neotropical migratory songbirds by providing perching and foraging habitat for these species.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on Loggerhead shrikes and Neotropical migratory songbirds throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, and park developments and operations resulting in short to long-term, negligible to minor adverse impacts, localized near developments in grasslands preferred by these species throughout the park. Leaks and spills from oil and gas operations would be localized, with minor to major, adverse impacts on grasslands; however, with the application of mitigation measures and prompt response in the event of a spill, impacts would be reduced to negligible to moderate, adverse impacts.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and could possibly produce hydrocarbons, resulting in the short-term disturbance to grasslands habitat preferred by Loggerhead shrikes and Neotropical migratory songbirds on up to 9 acres, and the long-term occupancy of 2.16 acres. Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term, negligible to minor, adverse impacts; however, drill rig lighting, barbed-

wire fencing, and planting willow shrubs or trees around production facilities would perpetuate perching and foraging habitat for these species, resulting in localized, short to long-term, negligible, beneficial impacts on these species.

3.10 Impacts on Visitor Use and Experience

Methodology

Visitor surveys and personal observations of visitation patterns combined with an assessment of what is available to visitors under current management were used to estimate the effects of the actions in the alternatives.

Negligible: the impact is barely detectable, and/or will affect few visitors.

Minor: the impact is slightly detectable, and/or will affect few visitors.

Moderate: the impact is readily apparent and/or will affect some visitors.

Major: the impact is severely adverse or exceptionally beneficial and/or will affect many visitors.

Affected Environment

The northern portion of the National Seashore is where most park development is located. Current park development includes a Visitor Center, Entrance Station, Park Headquarters and Maintenance facilities, Malaquite Campground, and Bird Island Basin.

Visitor use typically begins to increase in May and peaks in August, with the fewest visitors in December. Annual park visitation in 2000 was 754,045. There are no recent figures tracking use on park beaches, but information from Ditton and Gramann's (1987) publication, "A survey of Down-Island Visitors and Their Use Patterns at Padre Island National Seashore," indicated the following patterns:

1. Over one-half of visitors interviewed reported traveling no farther down-island than four miles past the end of the paved road (Park Road 22).
2. Seventy percent of beach users utilize the first 5 miles of south beach (denoted by "4-wheel drive only" sign) for their visit.
3. Almost 18% travel south of Little Shell Beach, even though individual destinations south of Little Shell Beach do not display high visitation.
4. Visitation patterns are similar in July, August, and September.
5. More fishermen use areas south of Yarborough Pass (15 mile Marker) than beach users.

Extrapolating visitation figures from Ditton and Gramann's 1987 study, given little or no change in visitor use patterns, the park estimates approximately people recreate on the Gulf shoreline of South Beach each year. Of these users, only 18%, or 95,000 visitors, venture farther south than Little Shell Beach. Little Shell Beach begins around Mile Marker 6 and extends south to Mile Marker 9, approximately.

These beach areas can be divided up into two-wheel drive accessible, four-wheel drive only recommended, and "closed" beach (no vehicle use). The Lemon/Lemon Seed project area encompasses the first 12.5 miles of "South" beach, beginning at the end of the paved section of Park road 22 and terminating just north of Yarborough Pass at the 12.5-mile mark. Most camping and a large portion of beach day use occur on the first five miles of "South" beach. South of the five-mile marker, at the four-wheel drive only sign, the number of visitors heading south towards Mansfield Channel decreases considerably.

Statistics show that about 25% of annual visitors utilize Bird Island Basin to camp and provide access to the Laguna Madre for their recreational opportunities. Some of these visitors will also use the Gulf for day use activities. The Gulf shoreline is used for recreational opportunities like surf fishing, swimming, shell collection, sunbathing, camping, and vehicle access to more remote areas of the beach (60+ miles). Padre Island National Seashore estimates that up to 50% of beach users arrive in two-wheel drive vehicles and concentrate their use on the Gulf shoreline at "North beach," the Malaquite Visitor Center (using "closed" beach), and the first five miles of "South beach." Eighteen percent (95,000 visitors) take the opportunity to access remote beach areas south of the five-mile marker, like Yarborough Pass and the Port Mansfield Channel, that are accessible (recommended) only to four-wheel drive vehicles.

Use of the backcountry, behind the dune line and across the island to the Laguna Madre, are of more limited interest in part because of the lack of access, and Padre Island National Seashore regulations and restrictions regarding the use of the dunes and wind tidal mud flats, etc., found in the center of the island.

Impacts on the visitor from the BNP project are expected to be from viewing the increased truck traffic, and being subjected to the noise generated by the larger trucks used for hauling drilling and production equipment, etc. to and from the site (see Table 3).

Impacts of Alternative A, No Action, on Visitor Use and Experience

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled, resulting in no new impacts on visitor use and experience. However, impacts on visitor use and experience in the analysis area would continue as the result of vehicle use along the 12.5-mile segment of Gulf beach by park staff, visitors, and 12 nonfederal oil and gas operators.

Park staff, 12 oil and gas operators, and an estimated 95,000 (18% of those using the Gulf beach) park visitors use the 12.5-mile segment of Gulf beach for vehicular access. Vehicles on the Gulf beach would include 2 and 4-wheel drive cars and trucks, recreational vehicles, and on occasion larger vehicles associated with routine maintenance activities at the oil and gas sites located throughout the park. Four-wheel drive vehicles are recommended for travel below the 5-mile marker. Vehicles would compact and rut the beach sand. Poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants. Some drivers could drive over the speed limit, or honk their horns and play their radios very loudly. The intensity of impacts would be variable, depending on number of vehicles using the beach on a given day. Impacts would be highest during the visitor use period from May through September, peaking in August; and would be concentrated in the first 5 miles of Gulf beach where most visitor use occurs. An estimated 527,800 visitors annually use the Gulf beach. Vehicle traffic associated with oil and gas operations normally uses 4-wheel drive trucks, however, a large vehicle like a pumper-truck, would travel the beach corridor approximately every 10 days or so to access 12 existing oil and gas operations located throughout the park in order to perform routine maintenance.

The existing operation of the 2 pipelines located to the west of the proposed wellsites would continue. However, there should be no impact on visitor use and experience as these pipeline segments are sited 3,200 to 4,000 feet from the dune line in the backcountry where there is no vehicular access available. Company vehicles access onto the pipeline corridors either near the end of Park road 22 or from the Yarborough Pass road. If visitors were to hike from the Gulf beach over the foredunes to view the backcountry in the vicinity of these pipeline segments, there would be nothing to see because these pipeline segments are buried and the surface of the pipeline corridor is vegetated. In the rare event that pipeline maintenance activities are occurring at the same time that a visitor was looking towards the Laguna Madre, the pipeline maintenance activities occurring 3,200 to 4,000 feet away from the dune line would have little visual impact.

Existing uses, including vehicle access along the 12.5-mile segment of Gulf beach, would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area.

Cumulative Impacts

Under Alternative A, No Action, cumulative impacts on visitor use and experience throughout the park could result from the visual impact of human developments on the natural scenery associated with the continuing operation of 12 nonfederal oil and gas operations within the park on 349 acres, park developments on 391 acres, and future drilling and production of up to 17 wells projected in the park's reasonably foreseeable development scenario on up to 248 acres. Other park activities that could contribute to impacts include prescribed fires, routine maintenance of park roads, and park and visitor vehicle use. Cumulative impacts could also result from conflicts between visitor uses and over-use of park resources and developments.

Degradation of park resources and values could affect park visitors' perception of the park and their experience. Dredging and maintenance of the Intracoastal Waterway and other channels near the park could increase sedimentation within the Laguna Madre in the park and damage seagrass beds and fishery resources. Spills from oil and gas activities located in and adjacent to the park, including tanker traffic in the Gulf of Mexico, could cause widespread impacts and result in long-term clean-up and remediation, and areas that would be closed to visitors. Spills of hydrocarbons and other contaminating or hazardous substances could also pose serious health and safety concerns. Some oil and gas operations and park operations would introduce elevated noise and odors. With the application of mitigation measures detailed in the park's Oil and Gas Management Plan and Final Environmental Impact Statement (PAIS 2000), and incorporated into operators' plans of operations, impacts would be avoided or minimized.

Cumulative impacts on visitor use and experience throughout the park are expected to be localized near developments or activities, with short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion

Under Alternative A, No Action, the Lemon/Lemon Seed Unit wells would not be drilled; however, existing vehicle use on the 12.5-mile segment of Gulf beach would result in localized, short to long-term, negligible to minor, adverse impacts on visitor use and experience within the analysis area. Cumulative impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses are expected to result in short to long-term, minor to moderate, adverse impacts, but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

Impacts of Alternative B, Proposed Action, on Visitor Use and Experience

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 9 acres, and long-term occupancy by oil and gas developments on 2.16 acres.

Existing impacts on visitor use and experience within the analysis area would be similar to Alternative A, No Action, with localized, short to long-term, negligible to minor, adverse impacts associated with vehicle use on the 12.5-mile segment of Gulf beach.

BNP would use the 12.5-mile segment of Gulf beach to access its proposed wellpad. BNP would be required to confine vehicle use above the "wet-line" and observe speed limits (see Table 5 for mitigation

measures applied by the NPS as conditions of approval). As described above under No Action, vehicles could compact and rut beach sands; and poorly maintained vehicles could drip or leak motor oil, coolant, and other lubricants on the beach. BNP vehicle access on the beach could result in deeper and wider rutting, possible conflicts with visitors sharing the beach driving corridor, and repeated exposure to up to 20 trucks each day. These vehicular impacts could last for up to 141 days for drilling both wells. If water needed to drill the wells were transported down the beach by water truck, this would require approximately 155 loads of water hauled during the course of drilling Well No.1-1000S and approximately 85 loads while drilling Well No.1-1008S. Another alternative for delivering water to the well site would involve the use of a temporary delivery line that traverses the beach and originates at the Dunn-Murdock #1 location approximately 1.5 mile south of the proposed Lemon/Lemon Seed Unit wells. Use of the delivery line and pumps would eliminate this truck traffic, but would cause other issues related to refueling, secondary containment, noise, public safety, and the need for multiple pumps to push the water to the well site. If the wells were productive, occasional gas vehicular traffic would traverse the Gulf beach to perform routine, periodic maintenance and removal of condensate from the wells.

Construction of the dune cut/access road, well/production pad, and flowline could result in the short-term loss of natural scenery on up to 9 acres. If the wells were not placed in production, the entire 4.17 acres for the well/production pad would be reclaimed. If the wells are placed in production, the well pad would be reduced in half and a flowline installed to connect with one of the existing pipelines located west of the proposed wells. Flowline placement would disturb 4.88 acres of hummocky uplands habitat, of which 0.032 acres are emergent wetlands. The natural visual scenery along the pipeline corridor would return when the surface is successfully reclaimed. Long-term occupancy by oil and gas developments on the well/production pad would be confined on 2.16 acres.

The potential for leaks and spills exists during all phases of oil and gas operations, resulting in impacts that could be serious on a very local level, with minor to major, short-term adverse impacts on visitor use and experience; however, with the mitigation measures included with this alternative, the intensity of impacts would be reduced.

Mitigation measures, including selecting a proposed operations area located away from visitor use developments and recreational use areas, providing security and a 3-strand barbed-wire fence during the drilling operations to prevent unauthorized entry into the operations area, fencing and gating the production operations, stationing a maintainer on the Gulf beach to smooth out any rutting that occurs to facilitate continued visitor access along the beach, using a diesel electric drilling rig and hospital mufflers and compressors to reduce noise levels, using primary and secondary containment to prevent leaks and spills from being released into the environment, planting native willow shrubs or trees around production facilities to provide and perpetuate migratory bird habitat and minimize visual impacts to visitors, caravanning large vehicles along the Gulf beach and enforcing speed limits, restricting large vehicle access on the Gulf beach at night, and painting the production facility a neutral color to blend with the surrounding environment, would result in avoiding or minimizing impacts on visitor use and experience.

BNP vehicle access on the Gulf beach; construction of the dune cut/access road and well/production pad, and flowline; and drilling and producing the wells would result in the short-term loss of natural scenery on up to 9 acres, and long-term occupancy by oil and gas developments on 2.16 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Cumulative Impacts

Under Alternative B, Proposed Action, cumulative impacts on visitor use and experience throughout the park would be similar to those described under No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting

in short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines.

Conclusion

Under Alternative B, Proposed Action, the Lemon/Lemon Seed Unit wells would be drilled and may be produced, resulting in the short-term loss of natural scenery on up to 9 acres, and long-term occupancy by oil and gas developments on 2.16 acres, with localized, short to long-term, negligible to minor, adverse impacts, on visitor use and experience in the analysis area.

Constructing the dune cut/access road, well/production pad, and flowline; and drilling and producing the wells, in addition to existing activities within the analysis area, would result in localized, short to long-term negligible to minor, adverse impacts on visitor use and experience. Cumulative impacts on visitor use and experience throughout the park would be similar to those described under Alternative A, No Action, with impacts from existing and future oil and gas operations in and adjacent to the park, park developments and operations, and visitor uses, resulting in short to long-term, minor to moderate, adverse impacts; but in the event of a spill from offshore oil and gas operations or tankers, impacts could be widespread, with negligible to moderate adverse impacts on visitor use and experience, primarily along park shorelines. No impairment to visitor use and experience would result from implementation of this alternative.

4.0. CONSULTATION AND COORDINATION

A Notice of Availability for the Plan of Operations, EA, draft Floodplains Statement of Findings, and draft Wetlands Statement of Findings will be published in the local *Corpus Christi Caller-Times* newspaper, announcing the availability of these documents for a 30-day review.

Following the 30-day public review period, NPS will consider written comments received. Additional mitigation measures resulting from the public involvement process may be applied by the NPS as conditions of approval of the Plan of Operations. Additional mitigation measures will be identified in the decision document. Copies of the decision document will be sent to those who comment on the Plan of Operations, EA, draft Floodplains Statement of Findings, and draft Wetlands Statement of Findings during the public review period, or request a copy.

4.1. Individuals and Agencies Consulted

Persons and agencies contacted for information, or that assisted in identifying important issues, development alternatives, or analyzing impacts are listed below:

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6.0. APPENDIX ONE

Federally Listed Endangered and Threatened Species

Gulf Coast Jaguarundi	(E)	*Herpailurus yagouaroundi cacomitli*
Ocelot	(E)	*Leopardus pardalis*
West Indian manatee (=Florida)	(E)	*Trichechus manatus*
Coues' rice rat	(SOC)	*Oryzomys couesi aquaticus*
Green sea turtle	(T)	*Chelonia mydas*
Loggerhead sea turtle	(T)	*Caretta caretta*
Hawksbill sea turtle	(E w/CH‡)	*Eretmochelys imbricata*
Kemp's Ridley sea turtle	(E)	*Lepidochelys kempii*
Leatherback sea turtle	(E w/CH‡)	*Dermochelys coriacea*
Black-spotted newt	(SOC)	*Notophthalmus meridionalis*
Rio Grande lesser siren	(SOC)	*Siren intermedia texana*
Texas horned lizard	(SOC)	*Phrynosoma cornutum*
American alligator	(TSA)	*Alligator mississipiensis*
Least Tern	(E ~)	*Sterna antillarum*
Whooping Crane	(E w/CH)	*Grus americana*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Piping Plover	(T w/CH)	*Charadrius melodus*
Loggerhead Shrike	(SOC)	*Lanius ludovicianus*
White-faced Ibis	(SOC)	*Plegadis chihi*
Brown Pelican	(E)	*Pelecanus occidentalis*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Audubon's Oriole	(SOC)	*Icterus graduacauda audubonii*
Cerulean Warbler	(SOC)	*Dendroica cerulea*
Ferruginous Hawk	(SOC)	*Buteo regalis*
Black Tern	(SOC)	*Chlidonias niger*
Reddish Egret	(SOC)	*Egretta rufescens*
Sennett's Hooded Oriole	(SOC)	*Icterus cucullatus sennetti*
Texas Botteri's Sparrow	(SOC)	*Aimophila botterii texana*
Texas Olive Sparrow	(SOC)	*Arremonops rufivirgatus rufivirgatus*
Tropical Parula	(SOC)	*Parula pitiayumi nigrilora*
Mountain Plover	(P/T)	*Charadrius montanus*
Brownsville Common Yellowthroat	(SOC)	*Geothlypis trichas insperata*
Bailey's ballmoss	(SOC)	*Tillandsia baileyi*
Roughseed sea-purslane	(SOC)	*Sesuvium trianthemoides*
South Texas ambrosia	(E)	*Ambrosia cheiranthifolia*
Black lace cactus	(E)	*Echinocereus reichenbachii* var. *albertii*
Slender rush-pea	(E)	*Hoffmannseggia tenella*
Welder machaeranthera	(SOC)	*Psilactis heterocarpa*
Texas Ayenia	(E)	*Ayenia limitaris*
Lilia de los llanos	(SOC)	*Echeandia chandleri*
Los Olmos tiger beetle	(SOC)	*Cicindela nevadica olmosa*
Maculated manfreda skipper	(SOC)	*Stalligsia maculosus*

State Listed Threatened and Endangered Species

Texas horned lizard	(T)	*Phrynosoma cornutum*
Indigo snake	(T)	*Drymobius corias*
Loggerhead sea turtle	(T)	*Caretta caretta*
Green sea turtle	(T)	*Chelonia mydas*
Atlantic hawksbill sea turtle	(E)	*Eretmochelys imbricata*
Kemp's ridley sea turtle	(E)	*Lepidochelys kempi*
Leatherback sea turtle	(E)	*Dermochelys coriacea*
Bald Eagle	(T)	*Haliaeetus leucocephalus*
Northern Aplomado Falcon	(E)	*Falco femoralis septentrionalis*
Southwestern Willow Flycatcher	(E)	*Empidonax trailii extimus*
Eastern Brown Pelican	(E)	*Pelecanus occidentalis*
Piping Plover	(T)	*Charadrius melodus*
Reddish Egret	(T)	*Egretta rufescens*
White-Faced Ibis	(T)	*Plegadis chihi*
Wood Stork	(T)	*Mycteria Americana*
Swallow-Tailed Kite	(T)	*Elannoides forticatus*
White-Tailed Hawk	(T)	*Buteo albonotatus*
Peregrine Falcon	(E)	*Falco femoralis septentrionalis*
Least Tern	(E)	*Sterna antillarum athalassos*
Black-Capped Vireo	(E)	*Vireo atricapillus*
Tropical Parula	(E)	*Parula ptiayumi nigrilora*

Fishes
No listed species documented at this times within Padre Island National Seashore.

Marine Mammals
All marine mammals, excluding the West Indian Manatee, only occur in the Padre Island National Seashore when stranded due to illness or death.

Index
Statewide or areawide migrants are not included by county, except where they breed or occur in concentrations. The whooping crane is an exception; an attempt is made to include all confirmed sightings on this list.

E	=	Species in danger of extinction throughout all or a significant portion of its range.
T	=	Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
C	=	Species for which the Service has on file enough substantial information to warrant listing as threatened or endangered.
CH	=	Critical Habitat (in Texas unless annotated ‡)
P/E	=	Species proposed to be listed as endangered.
P/T	=	Species proposed to be listed as threatened.
TSA	=	Threatened due to similarity of appearance.
SOC	=	Species for which there is some information showing evidence of vulnerability, but not enough data to support listing at this time.
‡	=	CH designated (or proposed) outside Texas
~	=	protection restricted to populations found in the "interior" of the United States. In Texas, the least tern receives full protection, except within 50 miles (80 km) of the Gulf Coast.