



Alligator Harbor Aquatic Preserve

Management Plan



Florida Department of Environmental Protection
Florida Coastal Office
3900 Commonwealth Blvd., MS #235, Tallahassee, FL 32399
www.aquaticpreserves.org

This publication funded in part through a grant agreement from the Florida Department of Environmental Protection, Florida Coastal Management Program by a grant provided by the Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act of 1972, as amended, National Oceanic and Atmospheric Administration Award No. NA15NOS4190096(CM06M) and NA16NOS4190120(CM07M). The views, statements, finding, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida, National Oceanic and Atmospheric Administration, or any of its sub-agencies.

April 2018



Alligator Harbor Aquatic Preserve is surrounded by a range of natural communities, including salt marsh and sandy shoreline.



Alligator Harbor Aquatic Preserve

Management Plan



Florida Department of Environmental Protection
Florida Coastal Office
3900 Commonwealth Blvd., MS #235, Tallahassee, FL 32399
www.aquaticpreserves.org



Shoreline view of Alligator Harbor.

Mission Statement

The Florida Coastal Office's mission statement is: Conserving and restoring Florida's coastal and aquatic resources for the benefit of people and the environment.

The four long-term goals of the Florida Coastal Office's Aquatic Preserve Program are to:

1. protect and enhance the ecological integrity of the aquatic preserves;
2. restore areas to their natural condition;
3. encourage sustainable use and foster active stewardship by engaging local communities in the protection of aquatic preserves; and
4. improve management effectiveness through a process based on sound science, consistent evaluation, and continual reassessment.

Executive Summary

Alligator Harbor Aquatic Preserve Management Plan

Lead Agency	Florida Department of Environmental Protection's (DEP) Florida Coastal Office (FCO)
Common Name of Property	Alligator Harbor Aquatic Preserve (AHAP)
Location	Franklin County
Acreage Total	14,184
Acreage Breakdown According to Florida Natural Areas Inventory (FNAI) Natural Community Type	
<i>FNAI Natural Communities</i>	<i>Acreage according to GIS</i>
Algal Bed	Unknown
Mollusk Reef	Unknown
Seagrass Bed	3,574
Tidal Marsh	145
Unconsolidated Substrate	Unknown
Total Acreage	14,184
Management Agency:	DEP's FCO
Designation:	Aquatic Preserve
Unique Features:	AHAP is a shallow, neutral estuary and a barrier spit lagoon. The area's abundance of marine invertebrates and seagrass provide an important food source for a variety of marine species. The unspoiled waters and beaches provide valuable breeding and nesting grounds for marine turtles and migratory birds. The seagrass communities in Alligator Harbor are essential habitat to many commercially and recreationally important fish species. In addition to being a valuable natural resource, the stable saline conditions in the harbor allow clam and oyster aquaculture to thrive.
Archaeological/ Historical Sites:	The Division of Historical Resources, a division of the Department of State, has identified several archaeological sites in the immediate coastal areas of AHAP. They include shell middens, habitation sites, burial mounds, and historical military sites. Notable among the historical sites are the Yent Mound and Tucker Site.
Management Needs (See Management Issues and Goals)	
Ecosystem Science	Seagrass communities are a vital component to Florida's coastal ecology and economy. Maintaining a strategic long-term seagrass and water quality monitoring program will be crucial in sustaining the biological and ecological integrity of the harbor system for future generations.
Resource Management	Poor optical water clarity and excess nutrients, as a result of increased stormwater discharge from high precipitation events, coupled with physical stressors, such as propeller scarring and dredging, are the factors that impacted seagrass communities in AHAP.
Education and Outreach	The human dimension is an essential component of resource and ecosystem management. The intent of the aquatic preserve education and outreach program is to foster an understanding of the natural resources in the harbor. Combined with research, regulations, and habitat management, education and outreach provide a comprehensive approach to resource protection.
Public Use	Alligator Harbor and the surrounding beach area are an increasingly popular tourist destination, especially in the summer months. Popular recreational activities in AHAP include fishing, boating, sunbathing, and beachcombing. Commercial fishing and shellfish harvesting industries rely on the optimal conditions of the aquatic preserve; specific species harvested include clams, oysters, crabs, and shrimp. Clam aquaculture sites were established in 2002 and have been producing a very valuable product for Florida's economy. Alligator Harbor Aquatic Preserve encourages sustainable use of natural resources while minimizing user impacts.

Public Involvement: Public support is vital to the success of conservation programs. The goal is to foster understanding of the problems facing these fragile ecosystems and the steps needed to adequately manage this important habitat. AHAP staff held public and advisory committee meetings August 15 and 16, 2017 at Florida State University's Coastal and Marine Laboratory to receive input on the draft management plan. An additional public meeting was held in Tallahassee February 16, 2018 when the Acquisition and Restoration Council reviewed the management plan.

Coastal Zone Management Issues

Florida has the second longest coastline of any state, and nowhere else in the country are so many people so close to such an extensive and economically valuable coastline. Within these coastal communities, recreational activities such as boating, fishing and diving shape community culture and provide positive economic growth. However, rapid coastal development, increasing public access and changing land use patterns are complicating regulation and management efforts within valuable aquatic systems. To protect and enhance the unique coastal resources throughout Florida, a variety of issues that affect water quality, quantity and growth management must be addressed. Current management issues and concerns facing the AHAP include hands-on management and restoration of resources, resource protection, effective education and outreach efforts, and public use evaluations. Aquatic preserve goals will necessitate effective partnerships with a variety of private, local, regional, state and federal entities to protect the biodiversity and productivity of the harbor.

Goals

Research and monitoring associated with the AHAP will emphasize and provide a better understanding of the functioning and interrelationships of the aquatic preserve's natural systems, show the status and trends of the natural resources within the aquatic preserve over time, and provide information to allow for the best management practices to be implemented in the protection of the bay system. Research and monitoring efforts in the AHAP were developed based on the uses of and threats to the natural resources of this system. To effectively monitor the resources of the bay and to be able to document and determine the health of the bay system as well as accomplish program goals, a variety of projects and efforts must be utilized and implemented. These include hands-on management and restoration of resources, resource protection, education and outreach, and public use evaluations. There is also a need to use advanced Geographical Information System (GIS) technology and aerial imagery to accurately map sensitive habitats. Each of these goals will necessitate effective partnerships with a variety of private, local, regional, state and federal entities. In addition, prioritizing issues, objectives and strategies will lead to a cohesive management program and the long-term conservation of the natural system.

FCO/Trustees Approval

FCO Approval: 10/18/17

ARC approval: 02/16/18

Trustees approval: 06/13/18

Comments:

Acronym List

Abbreviation	Meaning
AHAP	Alligator Harbor Aquatic Preserve
ANERR	Apalachicola National Estuarine Research Reserve
CPAP	Central Panhandle Aquatic Preserves
CSO	Citizen Support Organization
DACS	Florida Department of Agriculture and Consumer Services
DEP	Florida Department of Environmental Protection
DNR	Florida Department of Natural Resources
F.A.C.	Florida Administrative Code
FCO	Florida Coastal Office
FEMA	Federal Emergency Management Agency
FNAI	Florida Natural Areas Inventory
F.S.	Florida Statutes
FSUCML	Florida State University Coastal and Marine Laboratory
FTE	Full Time Equivalent
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Florida Wildlife Research Institute
G	Global
GIS	geographic information system
HAB	harmful algal bloom
m	meter
NERR	National Estuarine Research Reserve
NOAA	National Oceanic and Atmospheric Administration
NWFWMD	Northwest Florida Water Management District
OFW	Outstanding Florida Water
OPS	Other Personal Services
S	State
SIMM	Seagrass Integrated Mapping and Monitoring
STORET	STOrage and RETrieval
SWIM	Surface Water Improvement and Management
TMDL	Total Maximum Daily Load
Trustees	Board of Trustees of the Internal Improvement Trust Fund
UF/IFAS	University of Florida, Institute of Food and Agricultural Sciences
USFWS	U.S. Fish and Wildlife Service

Table of Contents

Part One / Basis for Management

Chapter 1 / Introduction	1
1.1 / Management Plan Purpose and Scope	2
1.2 / Public Involvement	3
Chapter 2 / The Florida Department of Environmental Protection's Florida Coastal Office	5
2.1 / Introduction	5
2.2 / Management Authority	6
2.3 / Statutory Authority	7
2.4 / Administrative Rules	7
Chapter 3 / Alligator Harbor Aquatic Preserve	9
3.1 / Historical Background	9
3.2 / General Description	10
3.3 / Resource Description	11
3.4 / Values	21
3.5 / Citizen Support Organization	22
3.6 / Adjacent Public Lands and Designated Resources	22
3.7 / Surrounding Land Use	24

Part Two / Management Programs and Issues

Chapter 4 / The Alligator Harbor Aquatic Preserve Management Programs and Issues	25
4.1 / The Ecosystem Science Management Program	26
Background of Ecosystem Science at Alligator Harbor Aquatic Preserve	26
Current Status of Ecosystem Science at Alligator Harbor Aquatic Preserve	27
Issue I: Water Quality	33
Issue II: Protection of Seagrass Habitat	35
4.2 / The Resource Management Program	36
Background of Resource Management at Alligator Harbor Aquatic Preserve	36
Current Status of Resource Management at Alligator Harbor Aquatic Preserve	36
Issue I: Water Quality (continued)	41
Issue II: Protection of Seagrass Habitat (continued)	41
4.3 / The Education and Outreach Management Program	42
Background of Education and Outreach at Alligator Harbor Aquatic Preserve	42
Current Status of Education and Outreach Alligator Harbor Aquatic Preserve	42
Issue I: Water Quality (continued)	43
Issue II: Protection of Seagrass Habitat (continued)	44
4.4 / The Public Use Management Program	45
Background of Public Use at Alligator Harbor Aquatic Preserve	45
Current Status of Public Use at Alligator Harbor Aquatic Preserve	46
Issue III: Sustainable Public Use	46

Part Three / Additional Plans

Chapter 5 / Administrative Plan	49
Chapter 6 / Facilities Plan	51

List of Maps

Map 1 / Florida Coastal Office system	2
Map 2 / Alligator Harbor Aquatic Preserve	11
Map 3 / Alligator Harbor Aquatic Preserve geomorphic features	12
Map 4 / Alligator Harbor Aquatic Preserve soils	13
Map 5 / Drainage basins of Alligator Harbor Aquatic Preserve	14
Map 6 / Florida Natural Areas Inventory natural communities of Alligator Harbor Aquatic Preserve	15
Map 7 / Cultural sites associated with Alligator Harbor Aquatic Preserve	20

Map 8 / Conservation lands adjacent to Alligator Harbor Aquatic Preserve.....	22
Map 9 / Land use surrounding Alligator Harbor Aquatic Preserve.....	23
Map 10 / Water quality monitoring at Alligator Harbor Aquatic Preserve.....	29
Map 11 / Seagrass monitoring at Alligator Harbor Aquatic Preserve.....	31
Map 12 / Nest survey locations at Alligator Harbor Aquatic Preserve.....	38
Map 13 / Aquaculture at Alligator Harbor Aquatic Preserve	44
Map 14 / Public access at Alligator Harbor Aquatic Preserve	45

List of Tables

Table 1 / Florida Natural Areas Inventory natural communities of Alligator Harbor Aquatic Preserve.....	15
Table 2 / Possible effects of red tide.....	29
Table 3 / Nest survey results for 2015 and 2016.....	38

List of Figures

Figure 1 / State management structure	8
---	---

List of Appendices

Appendix A / Legal Documents	54
A.1 / Aquatic Preserve Resolution	54
A.2 / Florida Statutes	55
A.3 / Florida Administrative Code	55

Appendix B / Resource Data	56
B.1 / Glossary of Terms	56
B.2 / References.....	57
B.3 / Species Lists	61
Native Species.....	61
Listed Species	76
Invasive Non-native and/or Problem Species.....	76
B.4 / Arthropod Control Plan.....	77
B.5 / Archaeological and Historical Sites Associated with Alligator Harbor Aquatic Preserve.....	77

Appendix C / Public Involvement	
C.1 / Advisory Committee	79
List of Members and their Affiliations	79
Florida Administrative Register Posting	80
Meeting Summary.....	83
C.2 / Formal Public Meeting.....	88
Florida Administrative Register Posting	88
Advertisement Flyer	90
Newspaper Advertisement	91
Formal Public Meeting Summary.....	92

Appendix D / Goals, Objectives, and Strategies	95
D.1 / Current Goals, Objectives and Strategies Budget Table	95
D.2 / Budget Summary Table	100
D.3 / Major Accomplishments Since the Approval of the Previous Plan	100
D.4 / Gulf Restoration Priority Projects	101

Appendix E / Other Requirements	108
E.1 / Acquisition and Restoration Council Management Plan Compliance Checklist.....	108
E.2 / Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands.....	114
E.3 / Letter of Compliance with County Comprehensive Plan	115
E.4 / Division of State Lands Management Plan Approval Letter.....	117



Dense vegetation surrounding the aquatic preserve provides protection and food for a variety of animals.

Part One

Basis for Management

Chapter One

Introduction

The Florida aquatic preserves are administered on behalf of the state by the Florida Department of Environmental Protection's (DEP) Florida Coastal Office (FCO) as part of a network that includes 41 aquatic preserves, three National Estuarine Research Reserves (NERRs), a National Marine Sanctuary, Coral Reef Conservation Program, Florida Coastal Management Program, Outer Continental Shelf Program, the Clean Marinas and Clean Vessels Act Program, and the Florida Resilient Coastlines Program. This provides for a system of significant protections to ensure that our most popular and ecologically important underwater ecosystems are cared for in perpetuity. Each of these special places is managed with strategies based on local resources, issues and conditions.

The extensive coastline and wealth of aquatic resources have defined Florida as a subtropical oasis, attracting millions of residents and visitors, and the businesses that serve them. Florida's submerged lands play important roles in maintaining good water quality, hosting a diversity of wildlife and habitats (including economically and ecologically valuable nursery areas), and supporting a treasured quality of life for all. In the 1960s, it became apparent that the ecosystems that had attracted so many people to Florida could not support rapid growth without science-based resource protection and management. To this end, state legislators provided extra protection for certain exceptional aquatic areas by designating them as aquatic preserves.

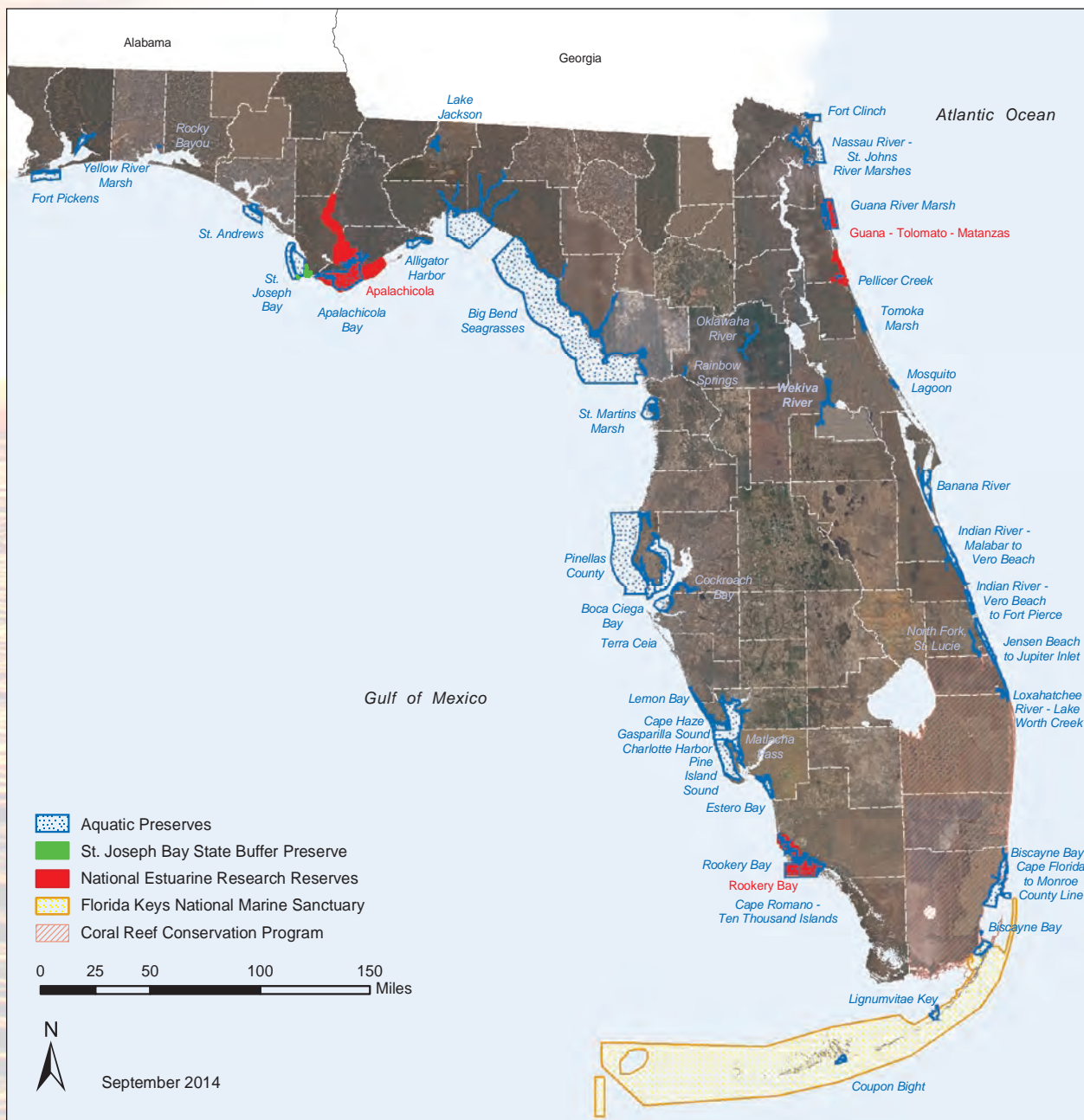
Title to submerged lands not conveyed to private landowners is held by the Board of Trustees of the Internal Improvement Trust Fund (the Trustees). The Governor and Cabinet, sitting as the Trustees, act as guardians for the people of the state of Florida (§253.03, Florida Statutes [F.S.]) and regulate the use of these public lands. Through statute, the Trustees have the authority to adopt rules related to the management of sovereignty submerged lands (Florida Aquatic Preserve Act of 1975, §258.36, F.S.). A higher layer of protection is afforded to aquatic preserves including areas of sovereignty lands that have

been “set aside forever as aquatic preserves or sanctuaries for the benefit of future generations” due to “exceptional biological, aesthetic, and scientific value” (Florida Aquatic Preserve Act of 1975, §258.36, F.S.).

The tradition of concern and protection of these exceptional areas continues, and now includes: the Rookery Bay NERR in Southwest Florida, designated in 1978; the Apalachicola NERR in Northwest Florida, designated in 1979; and the Guana Tolomato Matanzas NERR in Northeast Florida, designated in 1999. In addition, the Florida Oceans and Coastal Council was created in 2005 to develop Florida’s ocean and coastal research priorities, and establish a statewide ocean research plan. The group also coordinates public and private ocean research for more effective coastal management. This dedication to the conservation of coastal and ocean resources is an investment in Florida’s future.

1.1 / Management Plan Purpose and Scope

Florida’s aquatic resources are at risk for both direct and indirect impacts of increasing development and recreational use, as well as resulting economic pressures, such as energy generation and increased fish and shellfish harvesting to serve and support the growing population. These potential impacts to resources can reduce the health and viability of the ecosystems that contain them, requiring active management to ensure the long-term health of the entire network. Effective management plans for the



aquatic preserves are essential to address this goal and each site's own set of unique challenges. The purpose of these plans is to incorporate, evaluate, and prioritize all relevant information about the site into a cohesive management strategy, allowing for appropriate access to the managed areas while protecting the long-term health of the ecosystems and their resources.

The mandate for developing aquatic preserve management plans is outlined in Section 18-20.013 and Subsection 18-18.013(2) of the Florida Administrative Code (F.A.C.). Management plan development and review begins with the collection of resource information from historical data, research and monitoring, and includes input from individual FCO managers and staff, area stakeholders, and members of the general public. The statistical data, public comment, and cooperating agency information is then used to identify management issues and threats affecting the present and future integrity of the site, its boundaries, and adjacent areas. The information is used in the development and review of the management plan, which is examined for consistency with the statutory authority and intent of the Aquatic Preserve Program. Each management plan is evaluated periodically and revised as necessary to allow for strategic improvements. Intended to be used by site managers and other agencies or private groups involved with maintaining the natural integrity of these resources, the plan includes scientific information about the existing conditions of the site and the management strategies developed to respond to those conditions.

To aid in the analysis and development of the management strategies for the site plans, the FCO identified four comprehensive management programs applicable to all aquatic preserves. To address the goals, objectives, integrated strategies and performance measures of the four programs, relevant information about the specific site has been collected, analyzed, and compiled to provide a foundation for development of the management plan. While it is expected that unique issues may arise with regard to resource or management needs of a particular site, the following management programs will remain constant across the resource protection network:

- Ecosystem Science
- Resource Management
- Education and Outreach
- Public Use

Each aquatic preserve management plan will identify unique local and regional issues and contain the goals, objectives, integrated strategies, and performance measures to address those issues. The plan will also identify the program and facility needs required to meet the goals, objectives, and strategies of the management plan. These components are key elements for achieving the resource protection mission of each aquatic preserve.

This is an update to the previous Alligator Harbor Aquatic Preserve management plan that was approved September 23, 1986.

1.2 / Public Involvement

FCO recognizes the importance of stakeholder participation and encourages their involvement in the management plan development process. FCO is also committed to meeting the requirements of Florida's Government-in-the-Sunshine Law (§286.011, F.S.), including:

- meetings of public boards or commissions must be open to the public;
- reasonable notice of such meetings must be given; and
- minutes of the meetings must be recorded.

Several key steps are to be taken during management plan development. First, staff compose a draft plan after gathering information of current and historic uses; resource, cultural and historic sites; and other valuable information regarding the property and surrounding area. Staff then organize an advisory committee comprised of key stakeholders, and conduct, in conjunction with the advisory committee, public meetings to engage the stakeholders for feedback on the draft plan and the development of the final draft of the management plan. Additional public meetings are held when the plan is reviewed by the Acquisition and Restoration Council and the Trustees for approval. For additional information about the advisory committee and the public meetings refer to Appendix C - Public Involvement.



The sun sets over Alligator Harbor.

Chapter Two

The Florida Department of Environmental Protection's Florida Coastal Office

2.1 / Introduction

The Florida Department of Environmental Protection (DEP) protects, conserves and manages Florida's natural resources and enforces the state's environmental laws. DEP is the lead agency in state government for environmental management and stewardship and commands one of the broadest charges of all the state agencies, protecting Florida's air, water and land. DEP is divided into three primary areas: Regulatory Programs, Land and Recreation, Ecosystem Restoration. Florida's environmental priorities include restoring America's Everglades; improving air quality; restoring and protecting the water quality in our springs, lakes, rivers and coastal waters; conserving environmentally-sensitive lands; and providing citizens and visitors with recreational opportunities, now and in the future.

The Florida Coastal Office (FCO) is the unit within the DEP that manages more than four million acres of submerged lands and select coastal uplands. This includes 41 aquatic preserves, three National Estuarine Research Reserves (NERRs), the Florida Keys National Marine Sanctuary as well as providing management support through the Florida Coastal Management Program, the Outer Continental Shelf Program, the Coral Reef Conservation Program, the Clean Marinas and Clean Vessels Act Program, and the Florida Resilient Coastlines Program. The three NERRs, the Florida Keys National Marine Sanctuary, and the Coral Reef Conservation Program are managed in cooperation with the National Oceanic and Atmospheric Administration (NOAA).

FCO manages sites in Florida for the conservation and protection of natural and historical resources and resource-based public use that is compatible with the conservation and protection of these lands. FCO is a strong supporter of the NERR system and its approach to coastal ecosystem management. Florida has

three designated NERR sites, each encompassing at least one aquatic preserve within its boundaries. Rookery Bay NERR includes Rookery Bay Aquatic Preserve and Cape Romano-Ten Thousand Islands Aquatic Preserve; Apalachicola NERR includes Apalachicola Bay Aquatic Preserve; and Guana Tolomato Matanzas NERR includes Guana River Marsh Aquatic Preserve and Pellicer Creek Aquatic Preserve. These aquatic preserves provide discrete areas designated for additional protection beyond that of the surrounding NERR and may afford a foundation for additional protective zoning in the future. Each of the Florida NERR managers serves as a regional manager overseeing multiple other aquatic preserves in their region. This management structure advances FCO's ability to manage its sites as part of the larger statewide system.

2.2 / Management Authority

Established by law, aquatic preserves are exceptional areas of submerged lands and associated waters that are to be maintained in their natural or existing conditions. The intent was to forever set aside submerged lands with exceptional biological, aesthetic, and scientific values as sanctuaries, called aquatic preserves, for the benefit of future generations.

The laws supporting aquatic preserve management are the direct result of the public's awareness of and interest in protecting Florida's aquatic environment. The extensive dredge and fill activities that occurred in the late 1960s spawned this widespread public concern. In 1966, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) created the first offshore reserve, Estero Bay, in Lee County.

In 1967, the Florida Legislature passed the Randall Act (Chapter 67-393, Laws of Florida), which established procedures regulating previously unrestricted dredge and fill activities on state-owned submerged lands. That same year, the Legislature provided the statutory authority (§253.03, Florida Statutes [F.S.]) for the Trustees to exercise proprietary control over state-owned lands. Also in 1967, government focus on protecting Florida's productive water bodies from degradation due to development led the Trustees to establish a moratorium on the sale of submerged lands to private interests. An Interagency Advisory Committee was created to develop strategies for the protection and management of state-owned submerged lands.

In 1968, the Florida Constitution was revised to declare in Article II, Section 7, the state's policy of conserving and protecting natural resources and areas of scenic beauty. That constitutional provision also established the authority for the Legislature to enact measures for the abatement of air and water pollution. Later that same year, the Interagency Advisory Committee issued a report recommending the establishment of 26 aquatic preserves.

The Trustees acted on this recommendation in 1969 by establishing 16 aquatic preserves and adopting a resolution for a statewide system of such preserves. In 1975, the state Legislature passed the Florida Aquatic Preserve Act of 1975 (Act) that was enacted as Chapter 75-172, Laws of Florida, and later became Chapter 258, Part II, F.S. This Act codified the already existing aquatic preserves and established standards and criteria for activities within those aquatic preserves. Additional aquatic preserves were individually adopted at subsequent times up through 1989.

In 1980, the Trustees adopted the first aquatic preserve rule, Chapter 18-18, Florida Administrative Code (F.A.C.), for the administration of the Biscayne Bay Aquatic Preserve. All other aquatic preserves are administered under Chapter 18-20, F.A.C., which was originally adopted in 1981. These rules apply standards and criteria for activities in the aquatic preserves, such as dredging, filling, building docks and other structures that are stricter than those of Chapter 18-21, F.A.C., which apply to all sovereignty lands in the state.

This plan is in compliance with the Conceptual State Lands Management Plan, adopted March 17, 1981 by the Board of Trustees of the Internal Improvement Trust Fund and represents balanced public utilization, specific agency statutory authority, and other legislative or executive constraints. The Conceptual State Lands Management Plan also provides essential guidance concerning the management of sovereignty lands and aquatic preserves and their important resources, including unique natural features, seagrasses, endangered species, and archaeological and historical resources.

Through delegation of authority from the Trustees, the DEP and FCO have proprietary authority to manage the sovereignty lands, the water column, spoil islands (which are merely deposits of sovereignty lands), and some of the natural islands and select coastal uplands to which the Trustees hold title.

Enforcement of state statutes and rules relating to criminal violations and non-criminal infractions rests with the Florida Fish and Wildlife Conservation Commission law enforcement and local law enforcement agencies. Enforcement of administrative remedies rests with FCO, the DEP Districts, and Water Management Districts.

2.3 / Statutory Authority

The fundamental laws providing management authority for the aquatic preserves are contained in Chapters 258 and 253, F.S. These statutes establish the proprietary role of the Governor and Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund, as Trustees over all sovereignty lands. In addition, these statutes empower the Trustees to adopt and enforce rules and regulations for managing all sovereignty lands, including aquatic preserves. The Florida Aquatic Preserve Act was enacted by the Florida Legislature in 1975 and is codified in Chapter 258, F.S.

The legislative intent for establishing aquatic preserves is stated in Section 258.36, F.S.: “It is the intent of the Legislature that the state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value, as hereinafter described, be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations.” This statement, along with the other applicable laws, provides a foundation for the management of aquatic preserves. Management will emphasize the preservation of natural conditions and will include lands that are statutorily authorized for inclusion as part of an aquatic preserve.

Management responsibilities for aquatic preserves may be fulfilled directly by the Trustees or by staff of the DEP through delegation of authority. Other governmental bodies may also participate in the management of aquatic preserves under appropriate instruments of authority issued by the Trustees. FCO staff serves as the primary managers who implement provisions of the management plans and rules applicable to the aquatic preserves. FCO does not “regulate” the lands per se; rather, that is done primarily by the DEP Districts (in addition to the Water Management Districts) which grant regulatory permits. The Florida Department of Agriculture and Consumer Services through delegated authority from the Trustees, may issue proprietary authorizations for marine aquaculture within the aquatic preserves and regulates all aquaculture activities as authorized by Chapter 597, Florida Aquaculture Policy Act, F.S. Staff evaluates proposed uses or activities in the aquatic preserve and assesses the possible impacts on the natural resources. Project reviews are primarily evaluated in accordance with the criteria in the Act, Chapter 18-20, F.A.C., and this management plan.

Comments of FCO staff, along with comments of other agencies and the public are submitted to the appropriate permitting staff for consideration in their issuance of any delegated authorizations in aquatic preserves or in developing recommendations to be presented to the Trustees. This mechanism provides a basis for the Trustees to evaluate public interest and the merits of any project while also considering potential environmental impacts to the aquatic preserves. Any activity located on sovereignty lands requires a letter of consent, a lease, an easement, or other approval from the Trustees.

Florida Statutes that authorize and empower non-FCO programs within DEP or other agencies may also be important to the management of FCO sites. For example, Chapter 403, F.S., authorizes DEP to adopt rules concerning the designation of “Outstanding Florida Waters” (OFWs), a program that provides aquatic preserves with additional regulatory protection. Chapter 379, F.S., regulates saltwater fisheries, and provides enforcement authority and powers for law enforcement officers. Additionally, it provides similar powers relating to wildlife conservation and management. The sheer number of statutes that affect aquatic preserve management prevents an exhaustive list of all such laws from being provided here.

2.4 / Administrative Rules

Chapters 18-18, 18-20 and 18-21, F.A.C., are the three administrative rules directly applicable to the uses allowed in aquatic preserves specifically and sovereignty lands generally. These rules are intended to be cumulative, meaning that Chapter 18-21 should be read together with Chapter 18-18 or Chapter 18-20 to determine what activities are permissible within an aquatic preserve. If Chapter 18-18 or Chapter 18-20 are silent on an issue, Chapter 18-21 will control; if a conflict is perceived between the rules, the stricter standards of Chapter 18-18 or Chapter 18-20 supersede those of Chapter 18-21. Because Chapter 18-21 concerns all sovereignty lands, it is logical to discuss its provisions first.

Originally codified in 1982, Chapter 18-21, F.A.C., is meant “to aid in fulfilling the trust and fiduciary responsibilities of the Board of Trustees of the Internal Improvement Trust Fund for the administration, management and disposition of sovereignty lands; to insure maximum benefit and use of sovereignty lands for all the citizens of Florida; to manage, protect and enhance sovereignty lands so that the public may continue to enjoy traditional uses including, but not limited to, navigation, fishing and swimming; to manage and provide maximum protection for all sovereignty lands, especially those important to public drinking water supply, shellfish harvesting, public recreation, and fish and wildlife propagation and management; to insure that all public and private activities on sovereignty lands which generate

revenues or exclude traditional public uses provide just compensation for such privileges; and to aid in the implementation of the State Lands Management Plan.”

To that end, Chapter 18-21, F.A.C., contains provisions on general management policies, forms of authorization for activities on sovereignty lands, and fees applicable for those activities. In the context of the rule, the term “activity” includes “construction of docks, piers, boat ramps, boardwalks, mooring pilings, dredging of channels, filling, removal of logs, sand, silt, clay, gravel or shell, and the removal or planting of vegetation” (Rule 18-21.003, F.A.C.). In addition, activities on sovereignty submerged lands must be not contrary to the public interest (Rule 18-21.004, F.A.C.). Chapter 18-21 also sets policies on aquaculture, geophysical testing (using gravity, shock wave and other geological techniques to obtain data on oil, gas or other mineral resources), and special events related to boat shows and boat displays. Of particular importance to FCO site management, the rule also addresses spoil islands, preventing their development in most cases.

Chapters 18-18 and 18-20, F.A.C., apply standards and criteria for activities in the aquatic preserves that are stricter than those of Chapter 18-21. Chapter 18-18 is specific to the Biscayne Bay Aquatic Preserve and is more extensively described in that site’s management plan. Chapter 18-20 is applicable to all other aquatic preserves. It further restricts the type of activities for which authorizations may be granted for use of sovereignty lands and requires that structures that are authorized be limited to those necessary to conduct water dependent activities. Moreover, for certain activities to be authorized, “it must be demonstrated that no other reasonable alternative exists which would allow the proposed activity to be constructed or undertaken outside the preserve” (Paragraph 18-20.004(1)(g), F.A.C.).

Chapter 18-20, F.A.C., expands on the definition of “public interest” by outlining a balancing test that is to be used to determine whether benefits exceed costs in the evaluation of requests for sale, lease, or transfer of interest of sovereignty lands within an aquatic preserve. The

rule also provides for the analysis of the cumulative impacts of a request in the context of prior, existing, and pending uses within the aquatic preserve, including both direct and indirect effects. The rule directs management plans and resource inventories to be developed for every aquatic preserve. Further, the rule provides provisions specific to certain aquatic preserves and indicates the means by which the Trustees can establish new or expand existing aquatic preserves.

Aquatic preserve management relies on the application of many other DEP and outside agency rules. Perhaps most notably, Chapter 62-302, F.A.C., concerns the classification of surface waters, including criteria for OFW, a designation that provides for the state’s highest level of protection for water quality. All aquatic preserves contain OFW designations. No activity may be permitted within an OFW that degrades ambient water quality unless the activity is determined to be in the public interest. Once again, the list of other administrative rules that do not directly address FCO’s responsibilities but do affect FCO-managed areas is so long as to be impractical to create within the context of this management plan.

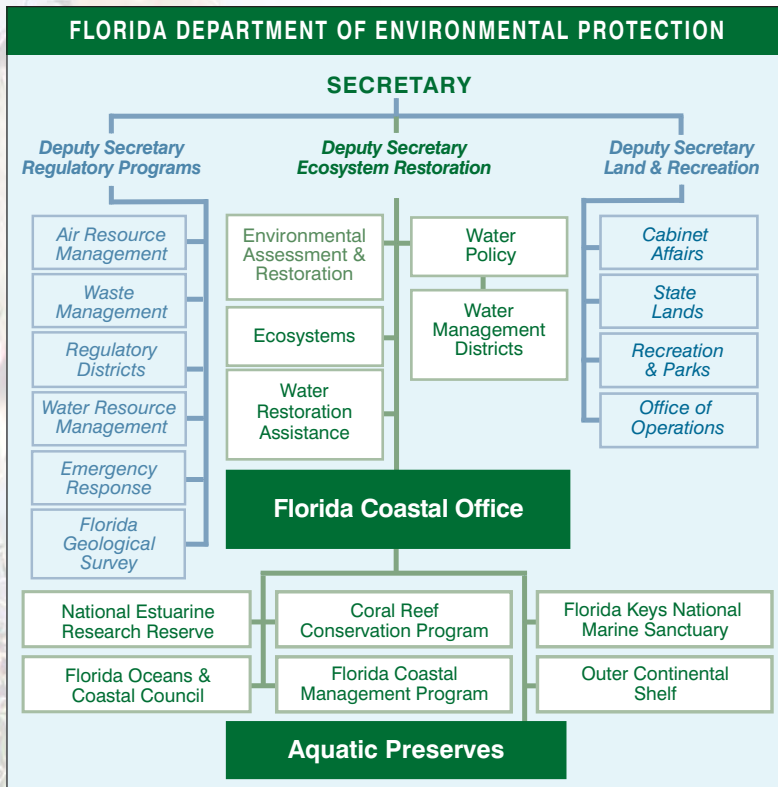


Figure 1 | State management structure.



A green sea turtle returns to the sea after being rehabilitated at Gulf Specimen Marine Lab in Panacea.

Chapter Three

Alligator Harbor Aquatic Preserve

3.1 / Historical Background

The first settlers of northwest Florida arrived at least 12,000 years ago. Due to a significant rise in sea level since the arrival of these pioneers, many Paleo-Indian coastal sites are believed to be buried under the sea, yet to be discovered (Milanich, 1998).

The areas surrounding Alligator Harbor were extensively utilized by the pre-Columbian inhabitants of the region. The abundance of natural food resources, such as fin and shellfish, provided sustenance to permanent and semi-permanent occupants of the area for many years. The Department of State, Division of Historical Resources' Florida Master Site File lists several archaeological sites located in the areas surrounding Alligator Harbor Aquatic Preserve (AHAP). These include prehistoric shell middens, village sites, and burial sites from a variety of different cultures that occurred throughout northwest Florida during the Woodland Period (1000 B.C.-1000A.D.) (A. Willis, personal communication, August 11, 2016).

There are more than 500 Deptford sites (2500 B.C.-A.D. 100) in northwest Florida, many of these containing burial sites and artifacts associated with this culture (Sears, 1964). Located in Franklin County, the Yent Mound and the Tucker Site provide evidence of the Deptford culture's presence and exhibit their extensive use of coastal resources (Milanich, 1998).

From about 1000 A.D., the Apalachee, a well-known native tribe of Florida, inhabited much of the panhandle of the state. Evidence of their habitation in the form of Indian mounds, pottery, and arrowheads have been found in Carrabelle and other areas surrounding Alligator Harbor (Saraceni, 1997).

Europeans first explored this area in the early 1500s and it remained under Spanish ownership until it was ceded to England in 1763. The Second Treaty of Paris in 1783 returned control of Florida to the Spanish. Spain lost control of this territory in 1818 during the First Seminole War, and Florida became part of the United States in 1821 (City of Apalachicola, n.d.).



Lush marsh grasses and other vegetation line much of the northern boundary inside Alligator Harbor.

AHAP is bordered by Alligator Point to the south and Bald Point State Park to the east. Seineyards were established at Bald Point during the mid-1800s and early 1900s, and these primitive campsites were used by fisherman to hang, dry and repair nets. Pine trees in this area show evidence of the early turpentine industry.

Both Alligator Point and Bald Point were sites of military maneuvers during the World War II (WWII) era (Franklin County History, n.d.). Camp Gordon Johnston was a WWII era training facility that included four separate camps that stretched from St. George Island to Alligator Point. Soldiers trained here for amphibious invasions, including D-Day operations at Normandy, France. The camp, known for its crude living conditions and dangerous training programs, is recognized as one of Florida's most important military facilities (The Florida Memory Blog, 2014; Coles, 1994).

3.2 / General Description

International/National/State/Regional Significance

The Florida Panhandle is one of the nation's six "biological hot spots," along with Hawaii, the southern Appalachians, the San Francisco Bay area, the Death Valley region, and southern California, that has many rare species that are only found in small areas. The highest biodiversity of species in the United States is found specifically within the central Florida Panhandle, along the Apalachicola River. More than 788 native vertebrate species and more than 2,000 native plants inhabit the Florida Panhandle from the Perdido River eastward to the Suwannee River (DEP, 2014).

AHAP was designated in 1969 and includes 14,184 acres of sovereign submerged lands. The aquatic preserve supports a variety of commercial and recreational fish and invertebrate species. The site also contains valuable habitats such as seagrass meadows, salt marshes, oyster bars, and beaches, and is a major foraging area for migratory birds, specifically in the fall and spring. The aquatic preserve is also home to both clam and oyster aquaculture sites (DEP, n.d.-a).

AHAP is a shallow, neutral estuary and a barrier spit lagoon. It lies just east of the Apalachicola estuary and is enclosed by the Alligator Point peninsula. The harbor is approximately four miles long and one and a half miles wide with a mean low water depth of approximately four feet. There is little freshwater inflow into the harbor and salinities do not vary much from those in the adjacent Gulf of Mexico (Florida Department of Natural Resources [DNR], 1986). AHAP is designated under the Coastal Barrier Improvement Act of 1990 as being located within the Coastal Barrier Resource System, in Peninsula Point System Unit FL-89. The Coastal Barrier Improvement Act prohibits federal funding within the Coastal Barrier Resource System for many actions including shoreline stabilization and beach nourishment, unless the project meets an

exception, and that consultation with the U.S. Fish and Wildlife Service is required for any project that will be constructed with federal funding (U.S. Fish and Wildlife Service, n.d.-a).

Due to its relatively high and stable salinities, Alligator Harbor contains many ecologically important communities. The harbor is known to be one of the world's largest feeding grounds for the Kemp's ridley sea turtle and the area's abundance of blue crabs, jellyfish, and seagrass provides an important food source to these endangered marine turtles. The protected waters of the harbor and numerous offshore reefs and channels provide high quality salt water fishing opportunities. Many local and migratory birds utilize the aquatic preserve as a foraging and resting area between migrations (DEP, n.d.-a). Clam aquaculture sites were established in 2002 in Alligator Harbor, and in 2015 the use of off-bottom aquaculture gear for oyster culture was approved in the harbor. Both have produced very valuable products for Florida's economy.

Location/Boundaries

AHAP is in Franklin County, Florida and includes 14,184 acres of sovereign submerged lands. It lies east of the Apalachicola Estuary and is bordered by St. James Island and enclosed by the Alligator Point peninsula. The Alligator Point sand spit extends about 4.8 miles westward from Lighthouse Point. The western end of the harbor, connecting with the Gulf of Mexico, is almost closed by a shallow sandbar except for a deeper channel on the north end. St. Teresa Beach and Bald Point State Park lie along the aquatic preserve boundary.

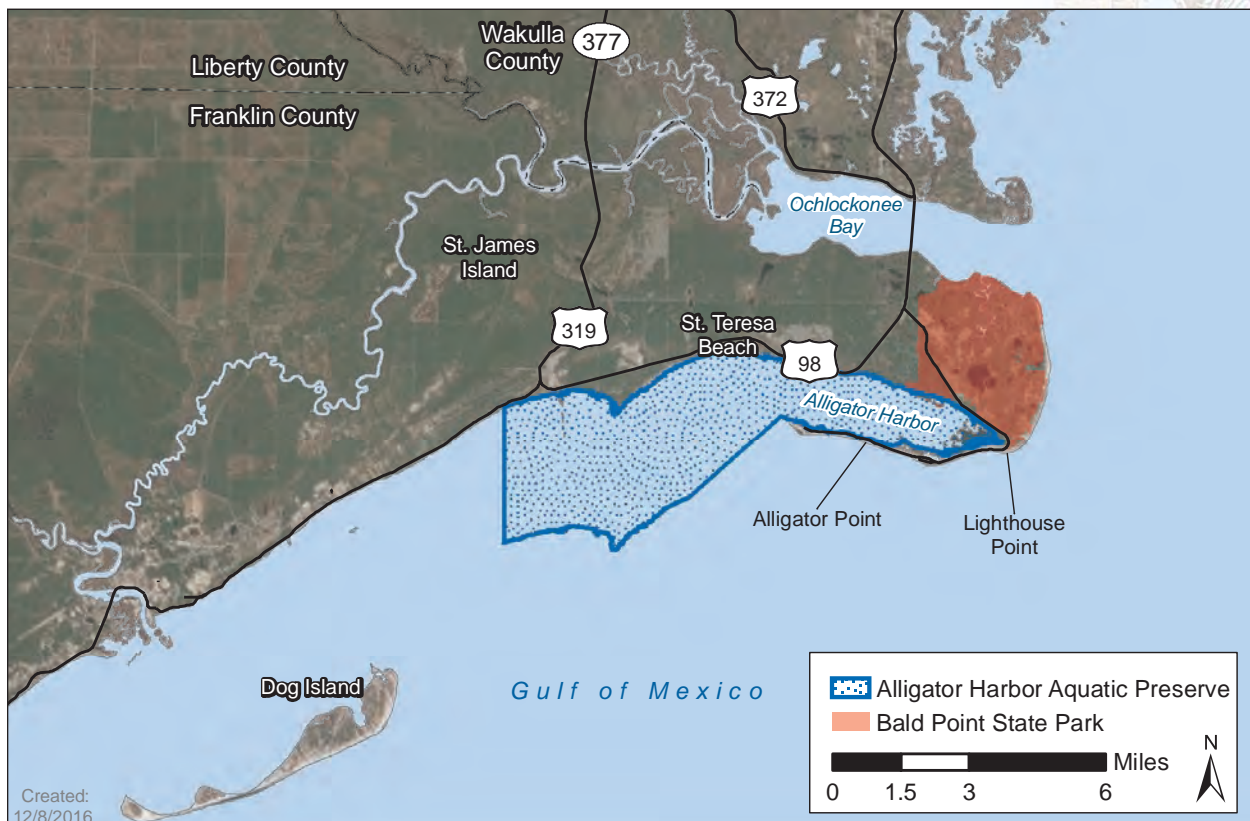
3.3 / Resource Description

The information in this section describes the resources found in the aquatic preserve.

Surrounding Population Data and Future Projected Changes

More than three-quarters of Florida's population live in coastal communities. As the population continues to rise and the demand for development, infrastructure, and services increases, there could be environmental and subsequent economic impacts that must be appropriately managed. Franklin County is a mostly rural community, but some sections are popular vacation spots. There are many single family, seasonal residences on Alligator Point and along other sections of the coastline (DNR, 1986).

According to the U.S. Census Bureau, in 2015, Franklin County's population was 11,761. The population has increased 1.8 percent since 2010. Franklin County has a population density of approximately 21.6 persons per square mile (U.S. Census Bureau, 2015).



Map 2 | Alligator Harbor Aquatic Preserve.

Topography and Geomorphology

Topography is the configuration of a surface including its relief and the position of its natural and man-made features. Geomorphology is a science that deals with the relief features of the earth.

Florida has been divided into six major geographic regions: Coastal Lowlands, Western Highlands, Marianna Lowlands, Tallahassee Hills, Central Highlands, and Upland Plains. The Gulf Coastal Lowlands are found along the Gulf of Mexico and are characterized by low elevations and poorly drained wetland areas. Barrier islands, lagoons, estuaries, coastal ridges, spits and bars are all associated with these lowland areas (McNab & Avers, 1994).

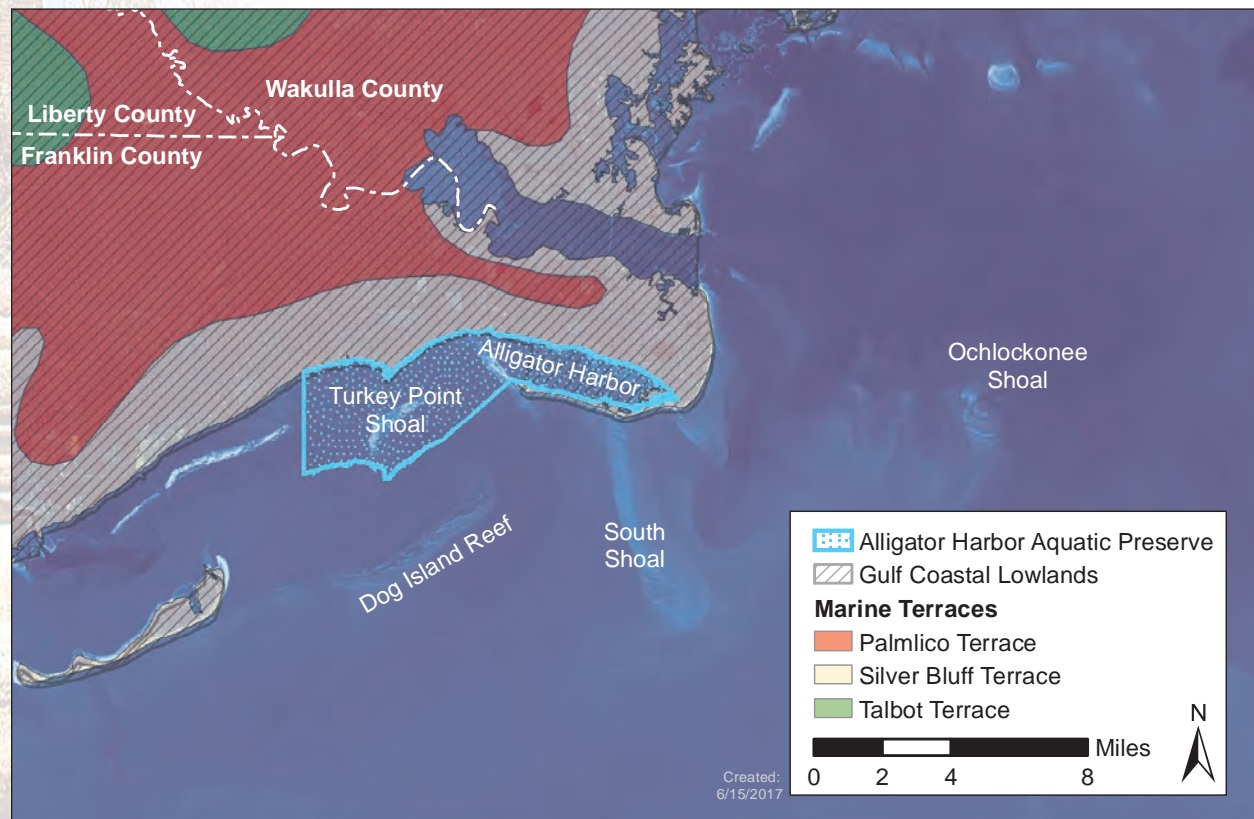
AHAP is located within the Gulf Coastal Lowlands. The area is part of a broad, sandy shore plain which is constantly being altered by wind, rainfall, and sea level change. The barrier islands and spits in the area began forming about 5,000 years ago when sea level had essentially risen to its present position.

Alligator Harbor is bordered by several prominent offshore shoal systems, Dog Island Reef to the southwest, Turkey Point Shoal just south of Turkey Point, South Shoal to the southeast, and the Ochlocknee Shoal to the east. These barrier islands and spits began as beach ridges which formed on top of the eroded remains of previous islands and dunes. Dog Island Reef is an example of a submerged barrier island, Turkey Point Shoal represents a submerged spit, the South Shoal was probably deposited by the Ochlocknee River during a lower stand of sea level, and the Ochlocknee Shoal probably represents a downed barrier island or headland (DNR, 1986).

Geology

Geology is the science of the history of the earth and its life, especially as recorded in rock. The Florida Panhandle is entirely underlain by carbonate bedrock over which sand and sediments have been deposited. Most of its surface is composed by a varying thickness of sediments consisting of siliciclastics, organics, and freshwater carbonates. The areas surrounding AHAP contain primarily Holocene and Pleistocene sediments including alluvium, beach ridges, dunes, and undifferentiated sediments. The Holocene sediments occur near the coastline at elevations generally less than five feet and include quartz sands, carbonate sands, muds, and organics (Scott et al., 2001).

The underlying limestone within the aquatic preserve is mostly composed of fossil rich St. Marks Formation limestone. The St. Marks Formation occurred during the late Miocene and is the upper most



unit of the Floridian aquifer. In Franklin County, the top of the formation ranges from 25 to 450 feet below mean sea level (DEP, 2008; DEP, 2006).

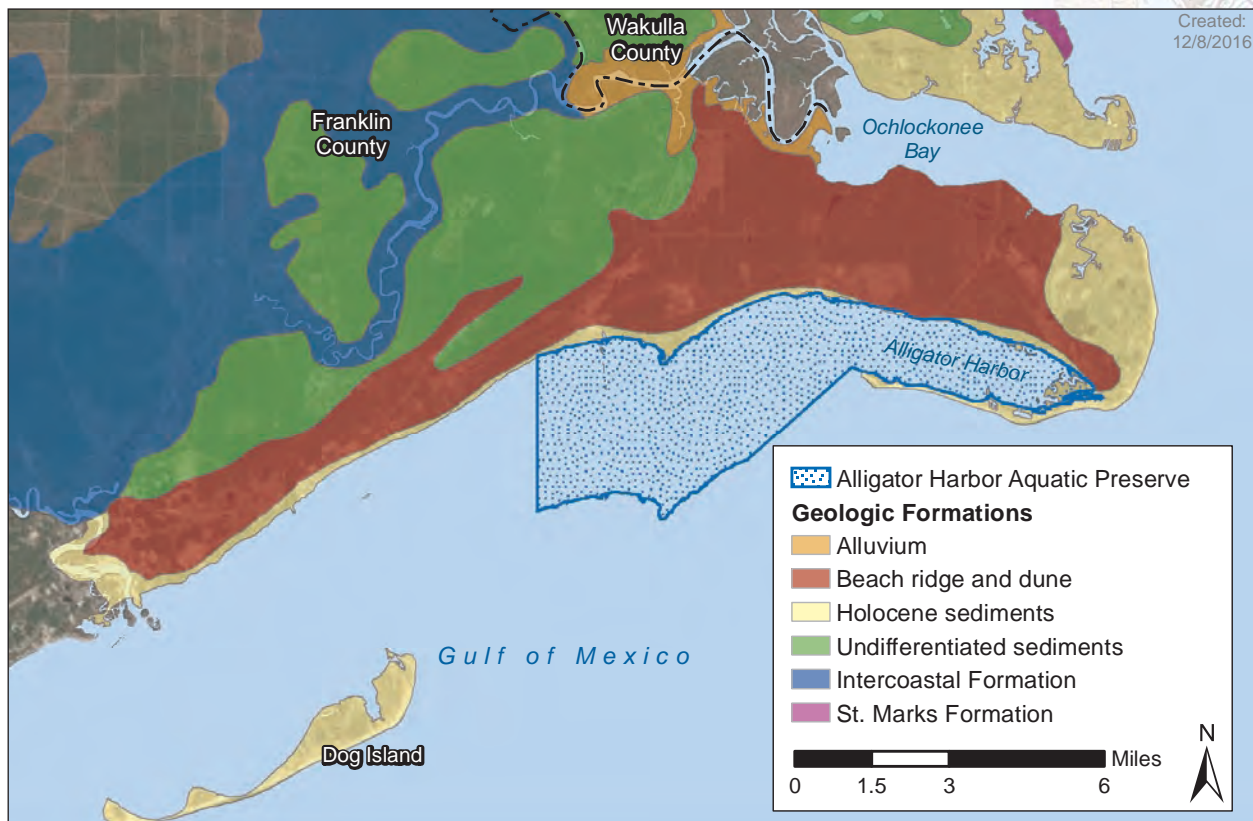
The near-surface deposits of the area include Upper Miocene limestones, clayey sands and shell beds of the Choctawhatchee Stage of the Alum Bluff Formation, younger Pliocene and post Pliocene clayey sands, and fine sands and silts associated with ancient stream alluvium and ancient shoreline development (Schmidt, 1978). The sediments overlying the limestone sequence vary depending on their location. Commonly occurring near the coast is a shell bed composed of numerous pelecypods and gastropods contained in a sand and clayey sand matrix. The shell bed is approximately 20 feet thick near the Alligator Point area and is overlain by fine-grained quartz sand and silt. Exposures of the underlying strata are rare in this area because of these sand deposits (DNR, 1986).

Hydrology and Watershed

Two aquifers underlie Franklin County - the surficial aquifer and the deeper Floridian aquifer. The surficial aquifer system contains the water table and is generally unconfined. In eastern Franklin County, the surficial aquifer system is discontinuous and contains unconsolidated quartz sand (DEP, 2008). The Floridian aquifer system is composed of the Bruce Creek limestone and the St. Marks Formation. Other deeper limestone formations are also considered part of the Floridian aquifer, but in Franklin County, they frequently contain salty water and are too deep to be used economically. The Floridian aquifer is the principal source of ground water for the county (DEP, 2006).

Since the surrounding area has a low population density, little agricultural development, no significant industrialization, and negligible freshwater inflow, the water quality in the aquatic preserve remains relatively good and stable. Due to the system's small drainage basin and regular tidal exchange with Apalachicola Bay, salinities in the area remain within a range of about 10 to 32 parts per thousand with an annual mean around 23 parts per thousand. Significant freshwater input caused by extreme rain events may cause the salinity to temporarily drop below this average (University of Florida - Institute of Food and Agricultural Sciences (UF/IFAS), 2015).

Average water depth in the harbor is about four feet. Depths at the harbor mouth range from eight to 10 feet (Yentsch, 1953). Depths between the harbor mouth and the western boundaries of the aquatic preserve range from four to 17 feet. A 10-foot-deep channel runs south from the Florida State Marine Laboratory at Turkey Point (DNR, 1986).



Map 4 | Alligator Harbor Aquatic Preserve soils.

All state surface waters have been classified by the Florida Department of Environmental Protection (DEP) per their designated use. The waters of AHAP are classified as Class II, a coastal waterway where shellfish harvesting occurs. Class II water standards are more stringent concerning bacteriological quantity than any other class because consumed, uncooked shellfish can concentrate pathogens in quantities significantly higher than the surrounding waters (DEP, n.d.-d).

AHAP is also designated as an Outstanding Florida Water (OFW). This designation is applied by DEP to certain waters that are worthy of special protection due to their natural attributes. These waters are afforded special protection based on their high quality, recreational or ecological significance, or their location within state or federally owned lands. This designation is intended to preserve the ambient water quality at the time of designation and does not allow any degradation. Strict standards are applied regarding proposed alterations or potentially damaging activities planned for these waters (DEP, n.d.-d).

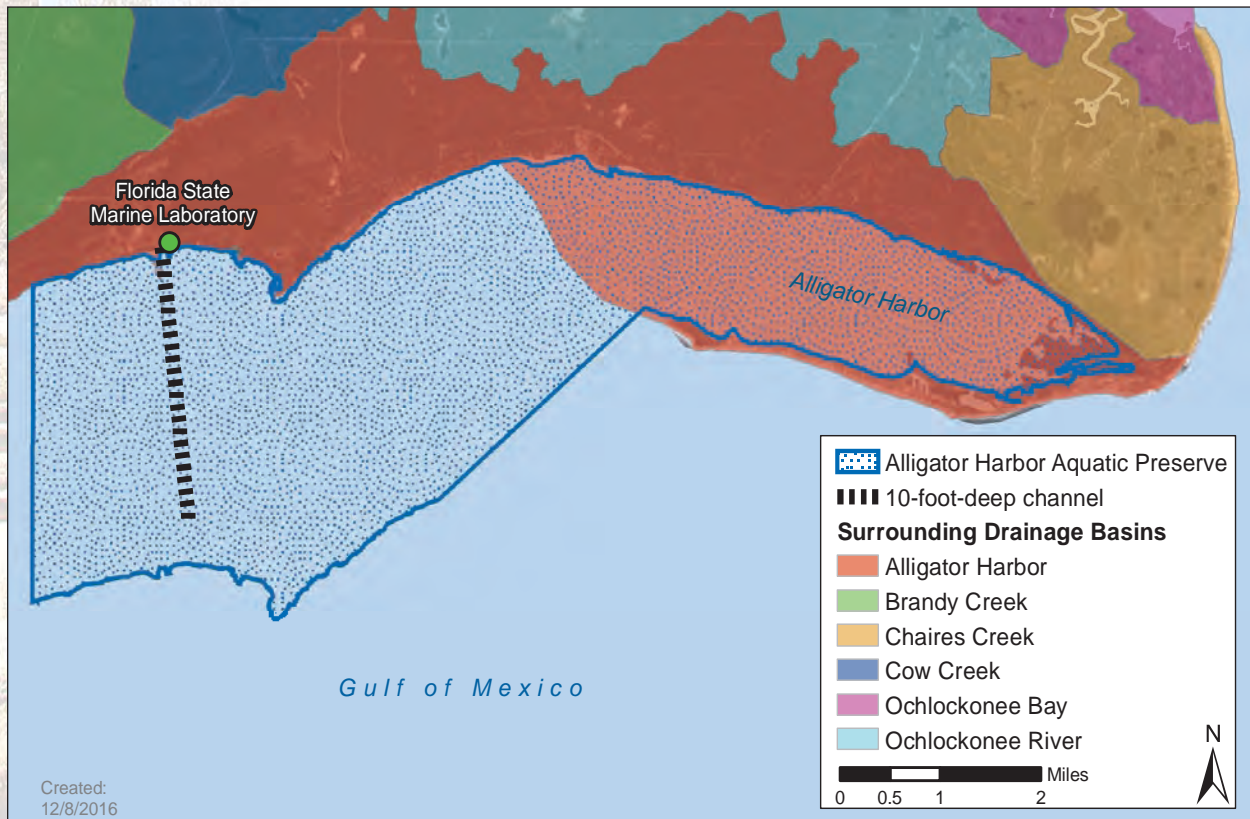
Map 5 illustrates the drainage basin for AHAP. The drainage basin covers 28.5 square miles and includes the land adjacent to the aquatic preserve (DEP, 1997). This drainage basin is located within the Apalachicola watershed which encompasses over 19,600 square miles and is recognized as one of the most diverse, productive, and economically important natural systems in the southeastern United States (Northwest Florida Water Management District, n.d.).

Climate

Franklin County is in a transitional climactic zone between the subtropical climate of peninsular Florida and the more temperate climate of the southeastern United States. The climate in AHAP is typical of the Northern Hemisphere's subtropical climate zone, with hot, humid summers and relatively mild winters. Wind conditions are generally northerly through the winter and southerly during the summer months. Winds may vary locally due to thunderstorms and the movement of fronts in the area.

Tropical storms and hurricanes are tropical low-pressure systems that are a constant threat to northwest Florida. The six-month hurricane season runs from June 1 through November 30 in Florida, and storms during these months typically cause extreme increases in wind, rainfall and tide (National Oceanic and Atmospheric Administration [NOAA], n.d.-a).

Average rainfall is about 57 inches with peak rainfall periods occurring during the summer and fall months. The monthly mean temperature ranges from 41.6 degrees Fahrenheit in January to 90.6 degrees Fahrenheit in July (Florida State University, 2010).



Natural Communities

The natural community classification system used in this plan was developed by the Florida Natural Areas Inventory (FNAI) and the Florida Department of Natural Resources, now DEP, and was updated in 2010. The community types are defined by a variety of factors, such as vegetation structure and composition, hydrology, fire regime, topography and soil type. The community types are named for the most characteristic biological or physical feature (FNAI, 2010). FNAI also assigns Global (G) and State (S) ranks to each natural community and species that FNAI tracks. These ranks reflect the status of the natural community or species worldwide (G) and in Florida (S). Lower numbers reflect a higher degree of imperilment (e.g., G1 represents the most imperiled natural communities worldwide, S1 represents the most imperiled natural communities in Florida).

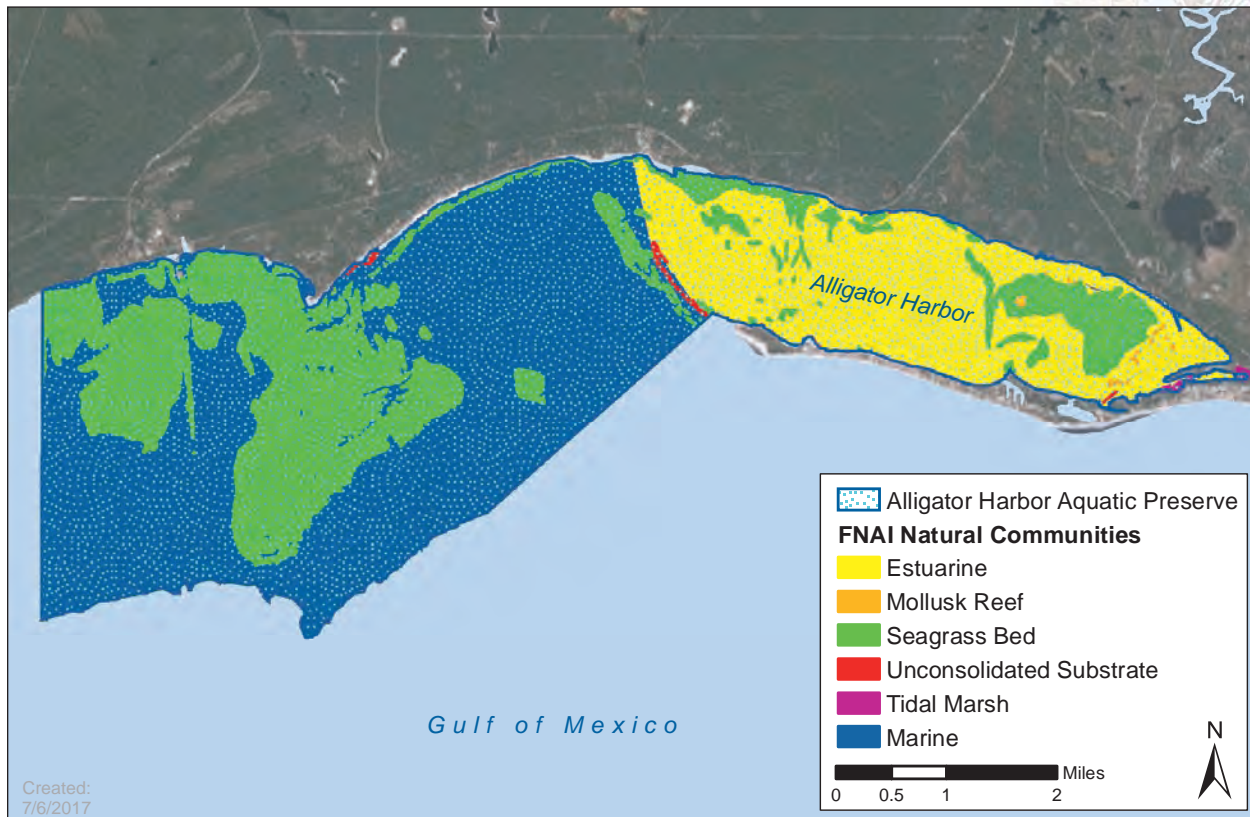
The major natural community types found adjacent to AHAP were classified by FNAI using multiple sources (Map 6). It should be noted that data used to classify communities in AHAP are not always based on comprehensive or site-specific field surveys. The descriptions of the natural community types found on AHAP have been adapted from the [Guide to the Natural Communities of Florida](#) (FNAI, 2010).

FNAI Natural Community Type	# Acres	Federal Rank	State Rank	Comments
Algal Bed	Unknown	G3	S2	
Mollusk Reef	Unknown	G3	S3	
Seagrass Bed	3,574	G2	S2	
Tidal Marsh	145	G4	S4	Salt Marsh
Unconsolidated Substrate	Unknown	G5	S5	

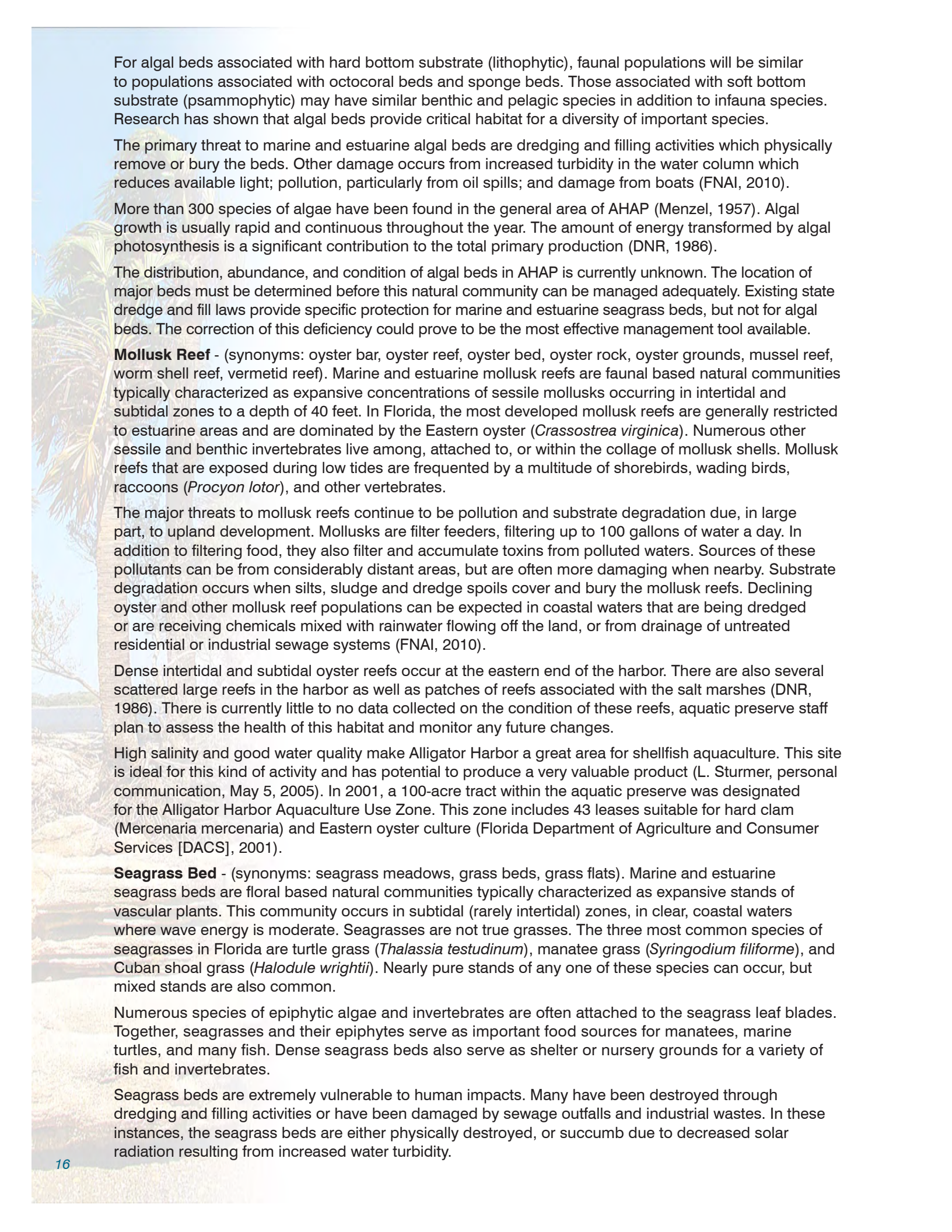
Table 1 | Florida Natural Area Inventory natural communities of Alligator Harbor Aquatic Preserve.

The following text provides descriptions of the FNAI natural communities found in Franklin County that are likely to be found in AHAP. More mapping information is needed to discern the exact acreages and percent of each natural community found in the aquatic preserve boundaries.

Algal Bed - (synonyms: algal mats, periphyton mats). Marine and estuarine algal beds are floral based natural communities characterized as large populations of nondrift macro or micro algae. This community may occur in subtidal, intertidal, and supratidal zones on soft and hard bottom substrates. Vascular plants (e.g., seagrasses) may occur in algal beds associated with soft bottoms. Sessile animals associated with algal beds will vary based on bottom type.



Map 6 | Florida Natural Areas Inventory natural communities of Alligator Harbor Aquatic Preserve.



For algal beds associated with hard bottom substrate (lithophytic), faunal populations will be similar to populations associated with octocoral beds and sponge beds. Those associated with soft bottom substrate (psammophytic) may have similar benthic and pelagic species in addition to infauna species. Research has shown that algal beds provide critical habitat for a diversity of important species.

The primary threat to marine and estuarine algal beds are dredging and filling activities which physically remove or bury the beds. Other damage occurs from increased turbidity in the water column which reduces available light; pollution, particularly from oil spills; and damage from boats (FNAI, 2010).

More than 300 species of algae have been found in the general area of AHAP (Menzel, 1957). Algal growth is usually rapid and continuous throughout the year. The amount of energy transformed by algal photosynthesis is a significant contribution to the total primary production (DNR, 1986).

The distribution, abundance, and condition of algal beds in AHAP is currently unknown. The location of major beds must be determined before this natural community can be managed adequately. Existing state dredge and fill laws provide specific protection for marine and estuarine seagrass beds, but not for algal beds. The correction of this deficiency could prove to be the most effective management tool available.

Mollusk Reef - (synonyms: oyster bar, oyster reef, oyster bed, oyster rock, oyster grounds, mussel reef, worm shell reef, vermetid reef). Marine and estuarine mollusk reefs are faunal based natural communities typically characterized as expansive concentrations of sessile mollusks occurring in intertidal and subtidal zones to a depth of 40 feet. In Florida, the most developed mollusk reefs are generally restricted to estuarine areas and are dominated by the Eastern oyster (*Crassostrea virginica*). Numerous other sessile and benthic invertebrates live among, attached to, or within the collage of mollusk shells. Mollusk reefs that are exposed during low tides are frequented by a multitude of shorebirds, wading birds, raccoons (*Procyon lotor*), and other vertebrates.

The major threats to mollusk reefs continue to be pollution and substrate degradation due, in large part, to upland development. Mollusks are filter feeders, filtering up to 100 gallons of water a day. In addition to filtering food, they also filter and accumulate toxins from polluted waters. Sources of these pollutants can be from considerably distant areas, but are often more damaging when nearby. Substrate degradation occurs when silts, sludge and dredge spoils cover and bury the mollusk reefs. Declining oyster and other mollusk reef populations can be expected in coastal waters that are being dredged or are receiving chemicals mixed with rainwater flowing off the land, or from drainage of untreated residential or industrial sewage systems (FNAI, 2010).

Dense intertidal and subtidal oyster reefs occur at the eastern end of the harbor. There are also several scattered large reefs in the harbor as well as patches of reefs associated with the salt marshes (DNR, 1986). There is currently little to no data collected on the condition of these reefs, aquatic preserve staff plan to assess the health of this habitat and monitor any future changes.

High salinity and good water quality make Alligator Harbor a great area for shellfish aquaculture. This site is ideal for this kind of activity and has potential to produce a very valuable product (L. Sturmer, personal communication, May 5, 2005). In 2001, a 100-acre tract within the aquatic preserve was designated for the Alligator Harbor Aquaculture Use Zone. This zone includes 43 leases suitable for hard clam (*Mercenaria mercenaria*) and Eastern oyster culture (Florida Department of Agriculture and Consumer Services [DACs], 2001).

Seagrass Bed - (synonyms: seagrass meadows, grass beds, grass flats). Marine and estuarine seagrass beds are floral based natural communities typically characterized as expansive stands of vascular plants. This community occurs in subtidal (rarely intertidal) zones, in clear, coastal waters where wave energy is moderate. Seagrasses are not true grasses. The three most common species of seagrasses in Florida are turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), and Cuban shoal grass (*Halodule wrightii*). Nearly pure stands of any one of these species can occur, but mixed stands are also common.

Numerous species of epiphytic algae and invertebrates are often attached to the seagrass leaf blades. Together, seagrasses and their epiphytes serve as important food sources for manatees, marine turtles, and many fish. Dense seagrass beds also serve as shelter or nursery grounds for a variety of fish and invertebrates.

Seagrass beds are extremely vulnerable to human impacts. Many have been destroyed through dredging and filling activities or have been damaged by sewage outfalls and industrial wastes. In these instances, the seagrass beds are either physically destroyed, or succumb due to decreased solar radiation resulting from increased water turbidity.

Seagrass beds are also highly vulnerable to oil spills. Low concentrations of oil are known to greatly reduce the ability of seagrasses to photosynthesize. Seagrass beds are susceptible to long term scarring cuts from boat propellers, anchors and trawls. Such gouges may require many years to become revegetated. When protected from disturbances, seagrasses can regenerate and recolonize areas. Additionally, some successful replantings of seagrass beds have been conducted. However, the best management is to preserve and protect marine and estuarine seagrass beds in their natural state (FNAI, 2010).

The submerged vegetation in coastal areas of Franklin County is generally limited by high turbidity, color, and sedimentation. The seagrass beds and associated algae are usually found only in the shallowest (usually fringing) portions of the system. Seagrasses in Alligator Harbor are abundant and are dominated by Cuban shoal grass, manatee and turtle grasses. At the eastern end of Alligator Harbor, the seagrass beds are sparse and composed primarily of Cuban shoal grass, while at the western end the seagrass beds are denser and made up of primarily turtle grass mixed with patches of Cuban shoal grass and manatee grass (U.S. Army Corps of Engineers, 1979). There are also seagrass beds associated with Turkey Point Shoal south of Turkey Point (DNR, 1986).

Seagrasses are stable in some parts of AHAP and sharply declining in others. In 1992, Alligator Harbor contained 755 acres of seagrass; however, in 2010, the acreage in the harbor had dropped to 220. Monitoring data collected in the late summer in 2009-2013 showed an abundance of Cuban shoal grass and turtle grass and a smaller portion of manatee grass was present in Alligator Harbor. The area to the west of Alligator Harbor, including Turkey Point Shoal and the western portion of AHAP, showed a 27 percent increase in acreage (Yarbro & Carlson, 2014).


Tidal Marsh (Salt Marsh) - (synonyms: saltmarsh, brackish marsh, coastal wetlands, coastal marshes, tidal wetlands). Marine and estuarine tidal marshes are floral based natural communities generally characterized as expanses of grasses, rushes and sedges along coastlines of low wave energy and river mouths. They are most abundant and most extensive in Florida north of the normal freeze line, being largely displaced by and interspersed among tidal swamps below this line. Black needlerush (*Juncus roemerianus*) and smooth cordgrass (*Spartina alterniflora*) are indicator species which usually form dense, uniform stands. The stands may be arranged in well-defined zones according to tide levels or may grade subtly over a broad area, with elevation as the primary determining factor.

Tidal marsh soils are generally very poorly drained muck or sandy clay loams with substantial organic components and often a high sulfur content. The elevation of tidal marshes range from just below sea level to slightly above sea level with vegetation occupying the intertidal and supratidal zones. Tidal marsh plants live under conditions which would stress most plants. High salt content in the soil, poor soil aeration, frequent submersion and exposure, intense sunlight, and occasional fires make the tidal marsh community inhospitable to most plants and require a wide tolerance limit for its inhabitants. The landward extent of tidal marsh along the shoreline is directly related to the degree of bottom slope; the more gradual the slope the broader the community band.

Tidal fluctuation is the most important ecological factor in tidal marsh communities, cycling nutrients and allowing marine and estuarine fauna access to the marsh. This exchange helps to make tidal marsh one of the most biologically productive natural communities in the world. In fact, primary productivity in tidal marshes surpasses that of most intensive agricultural practices. The former operates at no cost because of free energy subsidies from tides, while the latter requires costly energy subsidies in the form of fuels, chemicals, and labor. A myriad of invertebrates and fish, including most of the commercially and recreationally important species, also use tidal marshes throughout part or all of their life cycles.



Salt marshes are vital natural communities within estuaries, providing important habitat for several species, nutrient filtration and shoreline protection.



Tidal marshes are also extremely important because of their storm buffering capacity and their pollutant filtering actions. The dense roots and stems hold the unstabilized soils together, reducing the impact of storm wave surge. The plants, animals, and soils filter, absorb, and neutralize many pollutants before they can reach adjacent marine and estuarine communities. These factors make tidal marshes extremely valuable as a natural community.

Adverse impacts of urban development of tidal marshes include degradation of water quality, filling of marshes, increased erosion, and other alterations such as bulkheading and beach renourishment. The most attractive coastal areas for development activities frequently are the most ecologically fragile and are extremely vulnerable. Offshore pollution in the form of oil spills and various forms of marine debris also impact tidal marsh (FNAI, 2010).

In AHAP, salt marshes function to stabilize and bind sediments, and to provide significant nursery, feeding, and reproductive zones for a wide variety of organisms. Most of the salt marsh habitat in the aquatic preserve is found along the tidal creek system at the east end of Alligator Harbor, with smaller portions on the north shore of the spit and scattered patches between Wilson Beach and the east end of the harbor (DNR, 1986). The exact distribution, abundance, and condition of the salt marsh community in the aquatic preserve is unknown at this time.

Unconsolidated Substrate - (synonyms: beach, shore, sand bottom, shell bottom, sand bar, mud flat, tidal flat, soft bottom, coralgal substrate, marl, gravel, pebble, calcareous clay). Marine and estuarine unconsolidated substrates are mineral based natural communities generally characterized as expansive, relatively open areas of subtidal, intertidal, and supratidal zones which lack dense populations of sessile plant and animal species. Unconsolidated substrates are unconsolidated material and include coralgal, marl, mud, mud/sand, sand or shell. This community may support a large population of infaunal organisms as well as a variety of transient planktonic and pelagic organisms.

In general, marine and estuarine unconsolidated substrate communities are the most widespread communities in the world. However, unconsolidated substrates vary greatly throughout Florida, based on surrounding parent material. Unconsolidated sediments can originate from organic sources, such as decaying plant tissues (e.g., mud) or from calcium carbonate depositions of plants or animals (e.g., shell substrates). The remaining four kinds of unconsolidated substrate, mud, mud/sand, sand, and shell, are found throughout the coastal areas of Florida. While these areas may seem relatively barren, the densities of infaunal organisms in subtidal zones can reach the tens of thousands per square meter, making these areas important feeding grounds for many bottom feeding fish. The intertidal and supratidal zones are extremely important feeding grounds for many shorebirds and invertebrates (FNAI, 2010).

Unconsolidated substrates are important in that they form the foundation for the development of other marine and estuarine natural communities when conditions become appropriate. Unconsolidated substrate communities are associated with and often grade into dunes, tidal marshes, seagrass beds, mollusk reefs, and algal beds.

Muddy, soft bottom, unvegetated substrate comprises most of the open water zone in AHAP and is the dominant habitat form in the area. The relative composition of the sand, silt, clay and shell fractions of the sediments depends on the proximity to land, runoff conditions, water currents, and trends of biological productivity (Livingston, 1984). Sediment type, salinity, and water quality conditions determine the composition of infaunal and epifaunal biological components. This substrate is generally dominated by polychaetes and amphipods (DNR, 1986). The condition of this community in the aquatic preserve is unknown at this time.

Native Species

The natural communities found in AHAP provide habitat for a variety of plant and animal species. Among the species of submerged aquatic vegetation found in the aquatic preserve, turtle grass, Cuban shoal grass, and manatee grass are the most common. These grass beds provide food, shelter and nursery grounds for a variety of marine species including blue crabs (*Callinectes sapidus*), cownose rays (*Rhinoptera bonasus*), and the Florida manatee (*Trichechus manatus latirostris*).

Many recreationally and commercially important fish species utilize the aquatic preserve during part or all of their life cycle. Among these are sheepshead (*Archosargus probatocephalus*), spotted seatrout (*Cynoscion nebulosus*), ladyfish (*Elops saurus*), and spot (*Leiostomus xanthurus*).

Local bird species include American oystercatchers (*Haematopus palliatus*), black skimmers (*Rynchops niger*), snowy plovers (*Charadrius alexandrinus*), royal terns (*Sterna maxima*), and brown pelicans (*Pelecanus occidentalis*).

A complete survey of habitats and species within the aquatic preserve has not been completed. This plan addresses the need to conduct one within the next ten years.

Listed Species

AHAP provides valuable habitat and protection for a variety of rare and protected species including fish, reptiles, mammals, and birds. Listed species are those which are listed by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Florida Fish and Wildlife Conservation Commission, or FNAI as endangered, threatened or of special concern. Specific management strategies to promote the protection and recovery of these plants and animals are addressed later in this plan and all management actions will be in compliance with the conservation of these species.

The state of Florida has more threatened and endangered native species than any state excluding California and Hawaii. Nearly thirty species listed as endangered or threatened potentially inhabit or utilize resources in AHAP.

Alligator Harbor is recognized as one of the world's largest feeding grounds for the Kemp's ridley sea turtle (*Lepidochelys kempii*), which is the rarest and most endangered of all sea turtles. The waters of the aquatic preserve provide a valuable breeding ground and the beaches serve as a nesting habitat for these endangered animals (DEP, n.d.-a).

Loggerhead sea turtles (*Caretta caretta*) are also known to frequent the aquatic preserve area. Listed as a federally threatened species, loggerheads face many threats including entanglement and beach development. Continued increase in coastal development will cause degradation of vital nesting habitats for these animals, in addition to creating more artificial lighting which can cause confusion for new hatchlings (FWC, n.d.-j).

Gulf sturgeon (*Acipenser oxyrinchus desotoi*) are also among the list of federally threatened species present in the aquatic preserve. Due to overfishing, gulf sturgeon populations have declined dramatically, and the fish has been listed in Florida since the 1980s. Additional threats to these fish include development, dredging, and other man-made habitat alterations (FWC, n.d.-e).

The Florida manatee (*Trichechus manatus latirostris*), a species protected under the Endangered Species Act and Marine Mammal Protection Act, has also been documented in the aquatic preserve. These marine mammals are impacted by several anthropogenic alterations to their environment including decreasing water clarity and increasing boat traffic (FWC, n.d.-d).

The aquatic preserve is also a major foraging ground for migratory birds including piping plovers (*Charadrius melodus*), semipalmated plovers (*C. semipalmatus*), and least terns (*Sterna antillarum*). These threatened species utilize the area as a resting area and food resource during their trans-gulf migration (DEP, n.d.-a).



Many birds, including brown pelicans, utilize the oyster bars, mud flats, and beaches in and near Alligator Harbor Aquatic Preserve for feeding, nesting, and stop-overs.



The mud flats of Alligator Harbor Aquatic Preserve are home to numerous species, including the fiddler crab.

Invasive Non-native and/or Problem Species

Invasive non-native species are species that have been introduced to an area where they pose a threat to the native species. Not all introduced species become invasive, but those that compete with native residents for resources such as food and space are harmful to the ecosystem and therefore considered to be invasive or problem species.

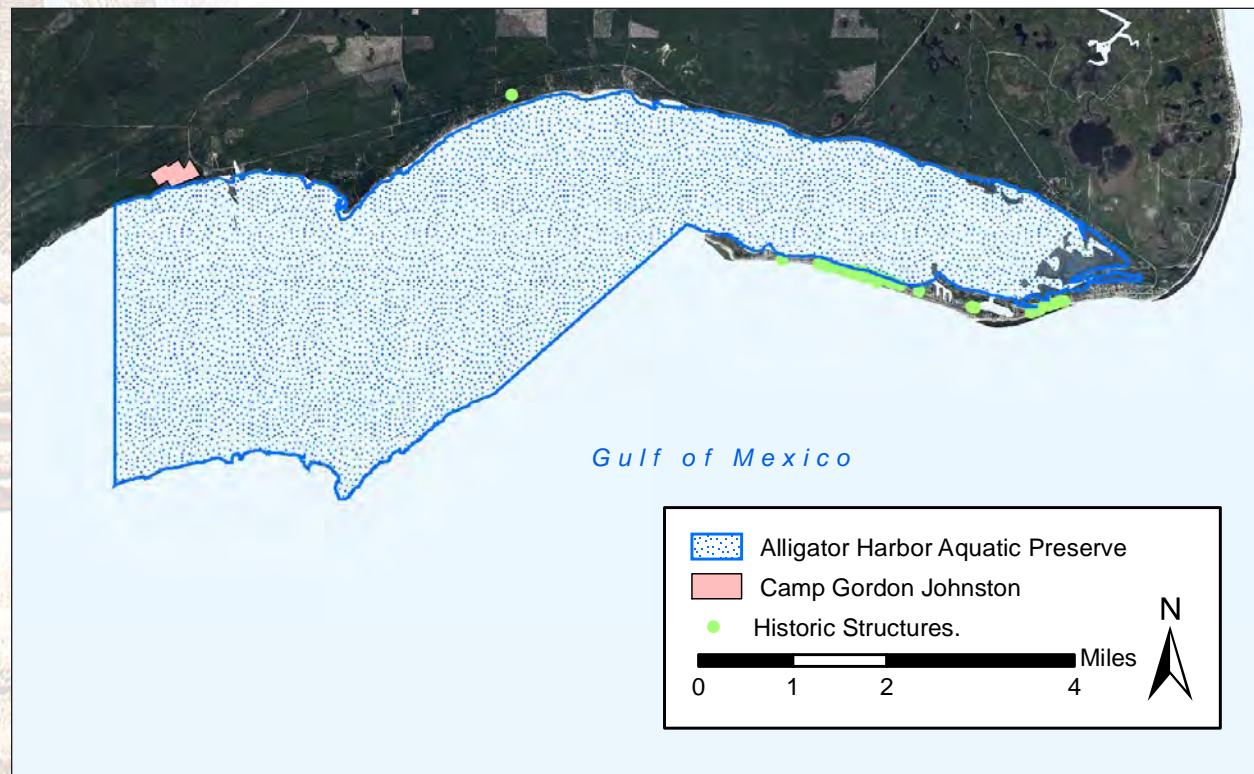
Florida is second only to Hawaii in the number of established invasive species (Simberloff, Schmitz, & Brown, 1997). An invasion of a non-native species has been classified as “the second most important threat to native species, behind habitat destruction” (Ecological Society of America, 2004). Introductions of non-native marine invertebrates and seaweeds to coastal habitats in the United States have increased one hundred-fold in the last 200 years (Jacoby, Walters, Baker, & Blyler, 2003).

Non-native species can be introduced to a natural area in a variety of ways. They can be transported in the ballast water in ships, on the hulls or propellers of recreational boats, or through international food transport. The greatest pathway by which non-natives are introduced into Florida habitats is through escape or release by pet owners (FWC, n.d.-c).

Whether intentionally released or accidentally introduced, understanding how the local and global spread of non-indigenous species affects marine and terrestrial ecosystems is critical. There are currently no documented cases of marine invasive species present in AHAP, however coyotes have been a terrestrial problem because they prey on threatened or endangered species, specifically sea turtle eggs and hatchlings. Continuous monitoring efforts will provide optimum protection of the local habitats and native species of the aquatic preserve.

Archaeological and Historical Resources

Aquatic preserves offer a window into Florida’s cultural and historical past. They are often rich in food supplies and other natural resources, making them attractive to human inhabitants of all eras. The Division of Historical Resources, a division of the Department of State, has identified 165 acres of archaeological sites in the immediate coastal areas of AHAP (see Appendix B.5). They include shell middens, habitation sites, burial mounds, historical structures and residences, and historical military sites (Map 7). Archaeological sites have been omitted from the map due to their sensitive nature. Notable among the archaeological sites are the Yent Mound (FR00005) and Tucker Site (FR00004). It should be noted that archaeological sites and historical resources are protected (Chapter 267, Florida Statutes) and are not to be disturbed unless prior permission is granted from the Department of State’s Division of Historical



Map 7 | Cultural sites associated with Alligator Harbor Aquatic Preserve.
Note: Sensitive sites have been omitted from the map.

Resources. No land clearing or ground disturbance, above or below the mean high water line, will be undertaken by staff until the Division of Historical Resources has provided a review and recommendations for the proposed activity (see Appendix E.2).

The Yent Mound is one of the best-known examples of the late Deptford and early Swift Creek phases (1000 B.C.-500 A.D.). This ceremonial mound was excavated in 1902 and contains an abundance of burials and artifacts associated with this cultural tradition.

The Tucker site is an extensive shell midden that contains some Swift Creek phase materials but is primarily an example of Weedon Island Phase (500 A.D.-1000 A.D.). This site contained a burial ground and village area. People that used this site and other Weedon Island sites in the vicinity may have followed a common subsistence pattern since all contain preserved shellfish (Milanich, 1998).

Following the Weedon island phase came the early historic phase known as Fort Walton (1000 A.D.-1600 A.D.). Sites around AHAP from this period are small and suggest brief seasonal occupations with predominant oyster consumption.

Local evidence of early European contact is scarce, but some European trade goods have been recovered from Indian burial sites near Carrabelle. In addition, various military artifacts have been discovered at the site of Camp Gordon Johnston, a WWII era training facility located along the north coast of the aquatic preserve.

While most of the archaeological sites in the vicinity of AHAP are small and disturbed to varying degrees, efforts to protect these non-renewable resources are very important. Each site is a representation of cultural remains and provides a glimpse into how people took advantage of local environments that existed in the past (DNR, 1986).

Other Associated Resources

AHAP is an ecologically important and productive natural area in Florida. The coastal waters of the aquatic preserve support an abundant and biologically diverse ecosystem that includes lush seagrass habitat, salt marshes, benthic communities, commercial and recreational fish species, sea turtles, rays, sharks, and dolphins. Seagrass covers much of the aquatic preserve and salt marsh composes a significant portion of the wetlands along the aquatic preserve boundary (Yarbro & Carlson, 2014). Seagrass and salt marsh play an important role in the food web of AHAP. A variety of commercial and recreational fish and invertebrate species utilize the aquatic preserve's extensive habitat for nursery and foraging grounds. This area also serves as an important feeding, breeding, nesting, and stopping ground for a variety of bird species.

3.4 / Values

AHAP supports a diverse ecosystem benefiting both the natural habitat and economy of surrounding populations. The calm warm waters of the harbor offer a variety of recreational activities for the public to enjoy year-round. Among these are fishing, boating, hiking (at Bald Point State Park), birding and beach-oriented activities such as surf-fishing, swimming, and sunbathing (DEP, n.d.-a).

Recreational boating is becoming increasingly popular in the Gulf of Mexico. Florida has the highest per capital number of recreational boats registered in the United States. In 2015, nearly one million vessels were registered in the state. Franklin County, a small rural county had a total of 3,319 boats registered (Florida Department of Highway Safety and Motor Vehicles, 2015).

The Gulf of Mexico is part of the NOAA Fisheries' Southeast Region which is home to the largest concentration of saltwater recreational fishing activity in the United States. Several commercially important species spend some portion of their life cycle within AHAP; these include red drum (*Sciaenops ocellatus*), spotted seatrout (*Cynoscion nebulosus*) and sheepshead (*Archosargus probatocephalus*). The economic and ecological impacts of recreational fishing are important to habitat management and conservation efforts (NOAA, n.d.-b).

Shellfish aquaculture is a rapidly growing industry in Florida. Harvest of these species has created employment and business opportunities for many coastal communities. The warm and highly productive coastal waters of Florida provide an excellent environment to support these farming methods. Due to its almost year-round growth, the northern hard clam has been harvested successfully throughout the state. Since the industry began in Florida in the 1980s, hard clams have become the single most important food item produced by Florida's aquaculture industry. In addition, Eastern oyster aquaculture is increasing quickly throughout Florida. Both clam and oyster aquaculture leases have been established within AHAP and both are producing a very valuable product for Florida's economy (NOAA, n.d.-b; DEP, n.d.-a; University of Florida, n.d.).

3.5 / Citizen Support Organization

Support from the community is vital to the success of any aquatic preserve. As of the writing of this management plan, no citizen support organization (CSO) exists for AHAP. It would be extremely beneficial for the aquatic preserve to encourage the creation of a CSO.

The Aquatic Preserve Society, Inc., a statewide CSO, was formed in June 2014 to promote the protection of the Florida's 41 aquatic preserves. The statewide CSO will vastly increase the effectiveness of the existing network and enhance awareness of aquatic preserves.

3.6 / Adjacent Public Lands and Designated Resources

Apalachicola National Forest (Liberty, Wakulla, Leon, and Franklin counties, U.S. Forest Service, 567,742 acres)

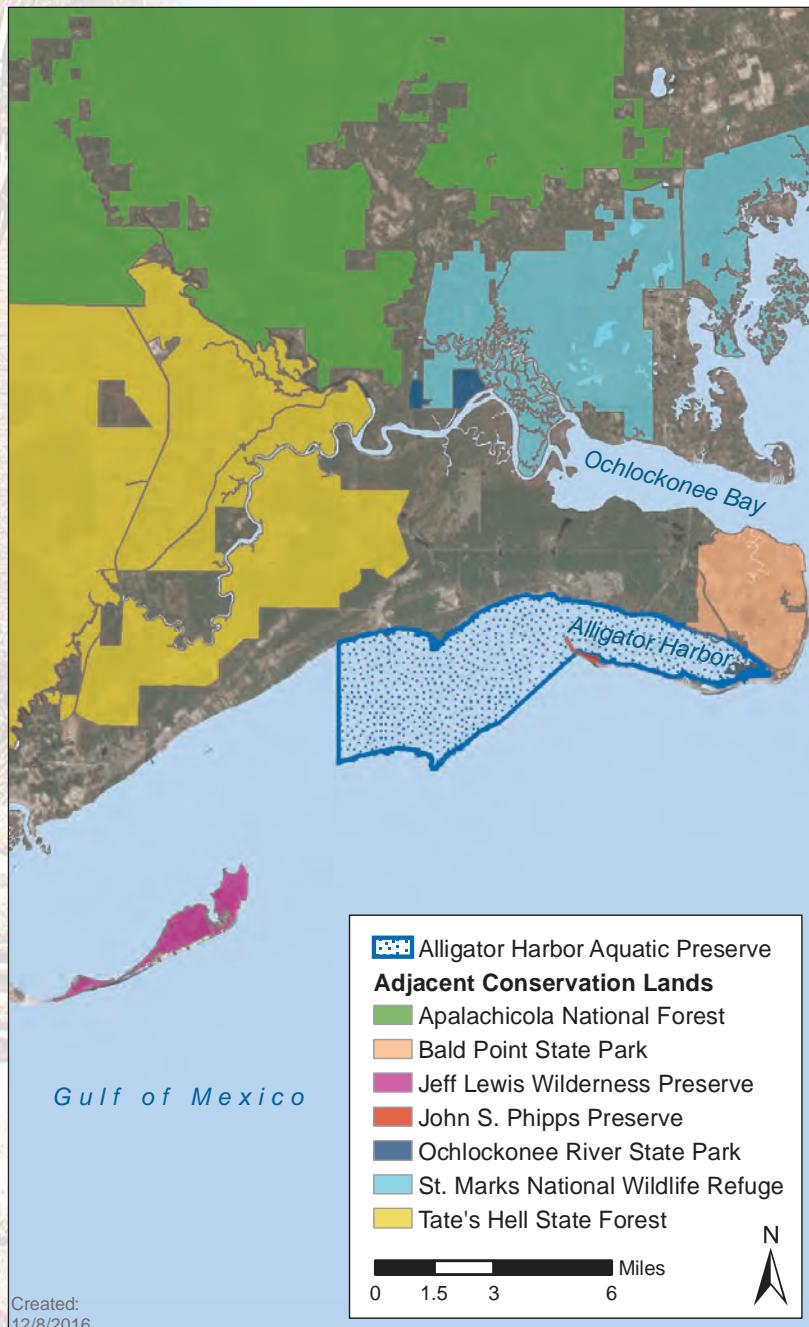
One of Florida's premier conservation areas, this forest includes vast expanses of longleaf pine (*Pinus palustris*) in sandhills and flatwoods, and harbors the largest population of red-cockaded woodpeckers (*Picoides borealis*) in the state. Wet prairies, seepage slopes, ravines, numerous blackwater creeks, and swamplands are also found here (U.S. Forest Service, n.d.). www.fs.fed.us/

Bald Point State Park (Franklin County, DEP, 4,859 acres)

This site is important for migratory shorebirds and songbirds. Located where Ochlockonee Bay meets Apalachee Bay, Bald Point State Park offers a multitude of land and water activities. Coastal marshes, pine flatwoods, and oak thickets foster a diversity of biological communities that make the park a popular destination for birding and wildlife viewing. Every fall, bald eagles (*Leucocephalus haliaeetus*), other migrating raptors, and monarch butterflies (*Danaus plexippus*) are commonly sighted as they head south for the winter. Bald Point offers access to two Apalachee Bay beaches for swimming, sunbathing, and fishing. Other activities include canoeing, kayaking, windsurfing, and hiking. Facilities include a fishing dock and picnic pavilions (DEP, n.d.-b).

Jeff Lewis Wilderness Preserve (Franklin County, The Nature Conservancy, 1,103 acres)

The lands owned by The Nature Conservancy cover the majority of Dog Island - primarily the east end. The area is a vitally important nesting area for shorebirds.



Map 8 / Conservation lands adjacent to Alligator Harbor Aquatic Preserve.

John S. Phipps Preserve (Franklin County, The Nature Conservancy, 40 acres)

Located on the west end of a small, rapidly changing peninsula known as Alligator Point, this preserve includes marsh, pine forest, and beach dune. It is an important stop-over point for migrating birds, and home to a variety of plant species.

Ochlockonee River State Park (Wakulla County, DEP, 543 acres)

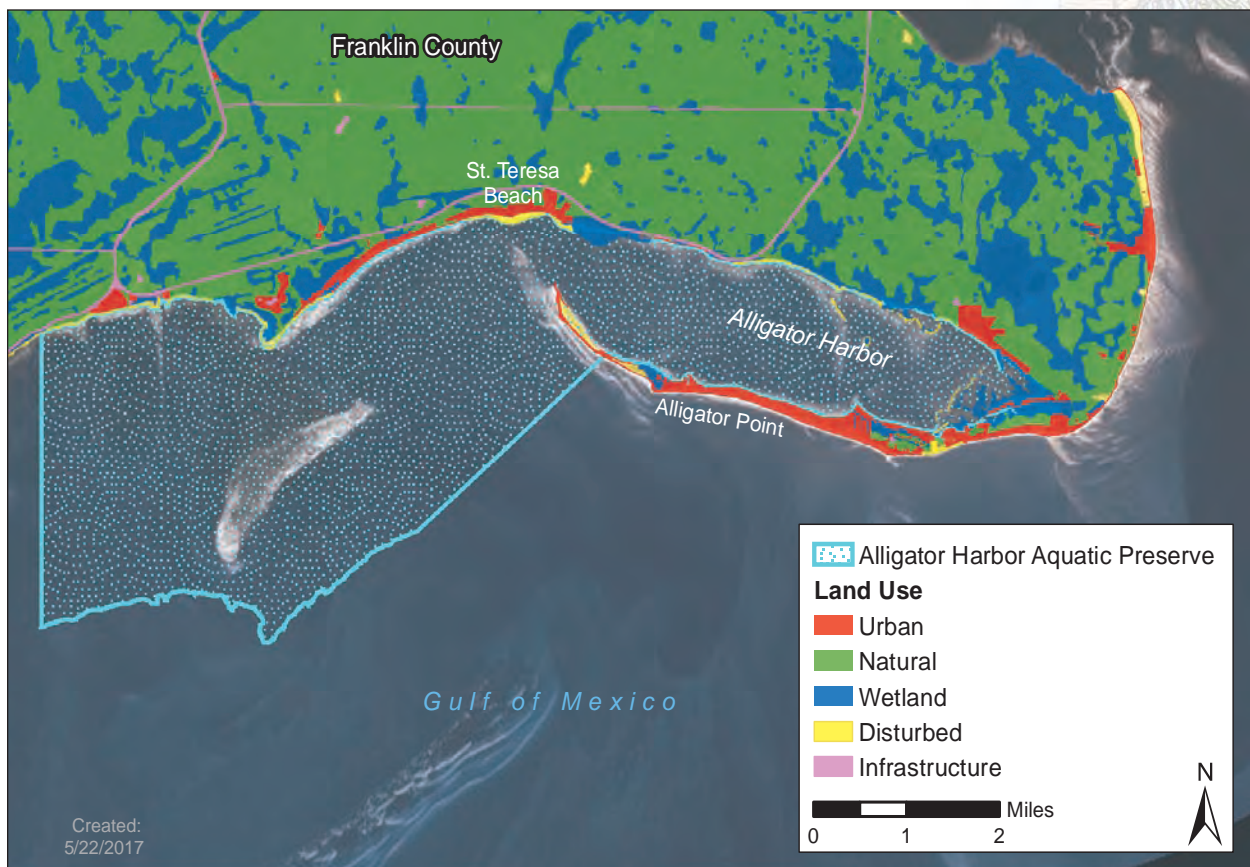
Picnic facilities and a swimming area are located near the scenic point where the Ochlockonee and Dead rivers intersect. Ochlockonee, which means “yellow waters,” is a mix of brackish, tidal surge, and fresh water. Pristine and deep, the river empties into the Gulf of Mexico. Trails allow visitors to explore the park and see the diverse wildlife, including the red-cockaded woodpecker, and natural communities such as pine flatwoods and oak thickets. A boat ramp provides easy access to the river. Both freshwater and saltwater fish inhabit the waters around the park, including largemouth bass (*Micropterus salmoides*), bream, catfish, and speckled perch (*Pomoxis nigromaculatus*). For overnight visitors, there are full-facility campsites with access to restrooms and showers. Youth group camping is also available (DEP, n.d.-c).

St. Marks National Wildlife Refuge (Jefferson, Taylor and Wakulla counties; U.S. Fish and Wildlife Service, Suwannee River Water Management District, U.S. Forest Service, 69,197 acres)

This refuge represents a large area of protected coast from the Aucilla River to Ochlockonee Bay. Natural communities include estuarine salt marsh, coastal hammock, wet flatwoods, dome swamps, depression marshes and others. The refuge has extensive artificial impoundments managed for waterfowl and used by many other bird species (U.S. Fish and Wildlife Service, n.d.-c).

Tate’s Hell State Forest (Franklin and Liberty counties, DACS- Florida Forest Service, 202,437 acres)

This land was purchased as forested watershed protection for Apalachicola Bay and for rare species protection, particularly the Florida black bear (*Ursus americanus floridanus*). Twenty-nine active red-cockaded woodpecker clusters have been found on site since purchase, in addition to several rare plant populations. The majority of the land was drained, planted with slash pine in the 1960s and 1970s, and is now undergoing restoration to a more natural condition. This area also contains some native slash and longleaf pine forests (DACs, n.d.).



Map 9 | Land use surrounding Alligator Harbor Aquatic Preserve.

3.7 / *Surrounding Land Use*

Most of the land adjacent to the aquatic preserve is urban, natural, or wetlands (Map 9). Most of the urban area includes single family homes along the Alligator Point peninsula to the south, as well as along St. Teresa Beach which lies on the northwest boundary of the harbor. The natural and wetland areas also include Bald Point State Park on the east end of the aquatic preserve, Tate's Hell State Forest to the north, and Phipps Preserve to the south of the harbor at the tip of Alligator Point.

Franklin County has included many goals and objectives into their County Comprehensive Plan designed to "ensure that the character and location of land uses in Franklin County minimize the threat to the natural environment or public health, safety, and welfare, and maximize the protection of the Apalachicola Bay (and surrounding waters), while respecting individual property rights" (Franklin County, 2008). Assuring that soil conditions, topography, drainage, and natural conditions are suitable for development is crucial in protecting local waters from impacts of future developments. An emphasis on protecting wetlands, water quality, natural vegetation, ecological communities, and fish and wildlife habitats will ensure that natural resources are preserved for current and future generations; this should include maintaining estuarine water quality to prevent loss of shellfish harvesting areas, regulation of stormwater runoff to comply with the standards for Outstanding Florida Waters, encourage the use of native vegetation in residential and public use areas, and balancing growth and coastal resources (Franklin County, 2008).



Salt marsh serves as an exclusive habitat for a variety of juvenile fish, invertebrates, birds, reptiles, and mammals.

Part Two

Management Programs and Issues

Chapter Four

The Alligator Harbor Aquatic Preserve Management Programs and Issues

The work performed by the Florida Coastal Office (FCO) is divided into components called management programs. In this management plan all site operational activities are explained within the following four management programs: Ecosystem Science, Resource Management, Education and Outreach, and Public Use.

The hallmark of Florida's Aquatic Preserve Program is that each site's natural resource management efforts are in direct response to, and designed for unique local and regional issues. When issues are addressed by an aquatic preserve it allows for an integrated approach by the staff using principles of the Ecosystem Science, Resource Management, Education and Outreach, and Public Use Programs. This complete treatment of issues provides a mechanism through which the goals, objectives and strategies associated with an issue have a greater chance of being met. For instance, an aquatic preserve may address declines in water clarity by monitoring levels of turbidity and chlorophyll (Ecosystem Science - research), planting eroded shorelines with marsh vegetation (Resource Management - habitat restoration), creating a display or program on preventing water quality degradation (Education and Outreach), and offering training to municipal officials on retrofitting stormwater facilities to increase levels of treatment (Education and Outreach).

Issue-based management is a means through which any number of partners may become involved with an aquatic preserve in addressing an issue. Because most aquatic preserves are endowed with very few staff, partnering with other agencies and stakeholders is a necessity, and by bringing issues into a broad public consciousness, partners who wish to be involved are able to do so. Involving partners in issue-based management ensures that each issue receives attention from angles that the aquatic preserve may not normally address.

This section will explore issues that impact the management of Alligator Harbor Aquatic Preserve (AHAP) directly, or are of significant local or regional importance that the aquatic preserve's participation in them may prove beneficial. While an issue may be the same from preserve to preserve, the goals, objectives and strategies employed to address the issue will likely vary depending on the ecological and socioeconomic conditions present within and around a particular aquatic preserve's boundary. In this management plan, AHAP will characterize each of its issues and delineate the unique goals, objectives and strategies that will set the framework for meeting the challenges presented by the issues.

Each issue will have goals, objectives and strategies associated with it. Goals are broad statements of what the organization plans to do and/or enable in the future. They should address identified needs and advance the mission of the organization. Objectives are a specific statement of expected results that contribute to the associated goal, and strategies are the general means by which the associated objectives will be met. Appendix D contains a summary table of all the goals, objectives and strategies associated with each issue. Beneficial projects, outside the current capacity of AHAP's funding and staffing, are identified in Appendix D.4, in case opportunities become available to support those projects in the ten-year span of this management plan.

4.1 / The Ecosystem Science Management Program

The Ecosystem Science Management Program supports science-based management by providing resource mapping, modeling, monitoring, research, and scientific oversight. The primary focus of this program is to support an integrated approach (research, education, and stewardship) for adaptive management of each site's unique natural and cultural resources. FCO ensures that, when applicable, consistent techniques are used across sites to strengthen the state of Florida's ability to assess the relative condition of coastal resources. This enables decision-makers to more effectively prioritize restoration and resource protection goals. In addition, by using the scientific method to create baseline conditions of aquatic habitats, the Ecosystem Science Management Program allows for objective analyses of the changes occurring in the state's natural and cultural resources.

4.1.1 / Background of Ecosystem Science at Alligator Harbor Aquatic Preserve

The management of AHAP and any associated ecosystem science activities, such as aquatic mapping, modeling, monitoring and research is the responsibility of the Central Panhandle Aquatic Preserves (CPAP) staff. Much of the historical ecosystem science activities that have occurred in AHAP have been conducted by university staff or graduate students and other various state and federal agencies. CPAP staff did not conduct any ecosystem science until a designated position was established in 2002, marking the beginning of ecosystem science at AHAP. In 2011, budget cuts forced FCO to reduce staff and close several aquatic preserve offices, resulting in drastically reduced oversight of AHAP. In 2016, the management of the aquatic preserve was re-established and ecosystem science management was resumed in the spring of 2016.

Mapping

To effectively manage resources within AHAP, it is imperative to conduct routine mapping of these resources. This allows for the identification of areas within the aquatic preserve where increased research, monitoring, and management emphasis is necessary. Habitat mapping within AHAP has, for the most part, focused on identifying and classifying various resources within AHAP that require protection by the management program.

- In 1942, the U.S. Department of Interior collected aerial imagery of Franklin County for a geological survey.
- In 1953, the U.S. Department of Agriculture collected aerial imagery in Franklin County for a soil conservation survey.
- In 1984, aerial photographs were taken in Franklin County for the National High Altitude Photography index.
- The U.S. Department of Agriculture collected aerial imagery of Franklin County in 1990.
- Flood hazard zone mapping was completed by the Federal Emergency Management Agency (FEMA) in 1975, with revisions occurring in 1976, 1983, 1992, 1998, 2002, and 2014 (FEMA, 2014).
- In 2012, Florida Environmental Research Institute collected multispectral imagery to derive and deliver seagrass mapping products for Alligator Harbor and St. George Sound. Areal extent, abundance, and productivity of seagrass meadows, as well as shallow water bathymetry (less than one meter [m]), were quantified and mapped across the study site from Alligator Harbor to St. George Sound using

a combination of algorithms and models. The acquisition of high resolution imagery set a baseline for many of these resource parameters that future data acquisition efforts may be compared against. The combination of identifying the location of resources and threats to those resources (ex. propeller dredging) will aid resource managers in protection efforts in aquatic preserves.

Modeling

Computational models support scientific analyses and provide scientist and resource managers better information, which ultimately supports management decisions and policies. Models increase the level of understanding about natural systems and the way in which they react to varying conditions.

- In 2008, Waycott et. al investigated the effects of accelerating seagrass loss on a global scale; much of the available data came from the Big Bend and Florida Panhandle region. Their research revealed that continued seagrass loss will result in significant ecological consequences. It was determined that if the current rate of seagrass loss is sustained or continues to accelerate, the ecological losses will also increase, causing even greater economic losses (Waycott et. al, 2009).

Monitoring and Research

Considerable water quality and fisheries data has been collected in AHAP in the past. Below are some of the historical water quality, benthic community, and fishery studies that have been conducted in the bay.

- In 1951, D.G. Carpenter completed a study of the ecology, distribution and taxonomy of the polychaetous annelids of the Alligator Harbor area.
- In 1952, E.B. Joseph identified the fishes of Alligator Harbor and provided information on their natural history.
- In 1953, G.D. Grice conducted a qualitative and quantitative seasonal study of the copepods and water fleas (Order Cladocera) of Alligator Harbor.
- In 1953, M.L. Wass performed a study of the decapods of Alligator Harbor and adjacent littoral areas.
- In 1953, C.S. Yentsch determined some of the factors influencing distribution of sessile invertebrates in Alligator Harbor.
- In 1955, F.C.W. Olson studied the hydrography of Alligator Harbor.
- In 1956, B.C. Townsend conducted research on the spot (*Leiostomus xanthurus*) in Alligator Harbor.
- In 1958, J.M. Branham completed an ecological survey of the ascidians of Alligator Harbor and the adjacent Gulf of Mexico.
- In 1958, P.D. Hoagland investigated turbidity and other water quality parameters in Alligator Harbor.
- In 1960, L.B. Trott conducted a quantitative study of certain benthic communities in Alligator Harbor.
- In 1961, A.C. Borror studied the morphology and ecology of the benthic ciliated protozoa of Alligator Harbor.
- In 1961, A.N. Sastry performed studies on the bay scallop (*Argopectin irradians*) in Alligator Harbor.
- In 1963, W.H. Sears investigated the Tucker site on Alligator Harbor.
- In 1966, S.M. Naqvi studied the effect of predation on infaunal invertebrates of the Alligator Harbor region.
- In 1969, F.E. Wells conducted an ecological study of two sympatric species of *Fasciolaria* (Mollusca: Gastropoda) in Alligator Harbor.
- In 1971, T.E. Mattis conducted a survey of tetraphyllidean cestodes of common neritic elasmobranchs from Alligator Harbor and adjacent waters.
- In 1989, N.H. Marcus investigated the abundance in bottom sediments and hatching requirements of eggs of *Centropages-Hamatus* (Copepoda, Calanoida) from the Alligator Harbor region.
- In 1989, Zieman and Zieman looked at the community profile and ecology of the seagrass meadows of the west coast of Florida.
- In 2006, the U.S. Geological Survey and U.S. Department of the Interior published trends in seagrass in the Northern Gulf of Mexico from 1940-2002.
- In 2008, Heck et. al examined how trophic transfers from seagrass meadows support diverse marine and terrestrial consumers.
- In 2008, R.B. Tyson analyzed the abundance of bottlenose dolphins (*Tursiops truncatus*) in the Big Bend of Florida, from St. Vincent Sound to Alligator Harbor.

4.1.2 / Current Status of Ecosystem Science at Alligator Harbor Aquatic Preserve

Research and monitoring are crucial components of resource and ecosystem management. Data obtained from monitoring programs provides staff with information to make effective resource management decisions. Monitoring efforts allow for the creation of baseline data as well as recognizing short and long term variation of environmental conditions. Major management issues that AHAP

confronts include: health of seagrass beds, changes in water quality, and critical/sensitive habitat protection. Florida is rapidly growing and development pressures on habitats are growing just as quickly. Therefore, sound resource management practices, public education and outreach, system-wide monitoring and research, and interagency and volunteer cooperation are integral in maintaining and protecting the natural resources within the aquatic preserve. Current ecosystem science programs within AHAP and the future needs of the program are discussed in the following sections.

Water Quality Monitoring Projects

LAKEWATCH Water Quality Monitoring

In 2001, the aquatic preserve partnered with the University of Florida's LAKEWATCH/COASTWATCH program, and began a water quality monitoring project focused on nutrients. Samples were originally collected by AHAP staff and/or volunteers from Alligator Point Environmental Conservation Organization, Inc. This data has been used to document nutrient levels, including total nitrogen and phosphorous, algae content, and water clarity. Water samples are collected at seven sites within the bay on a monthly basis and are analyzed by the University of Florida's water chemistry lab at the Department of Fisheries and Aquatic Sciences. Data collected at each station includes temperature, pH, dissolved oxygen, salinity, secchi depth, and weather conditions. Results are available in STORET (a STORage and RETrieval database), a computerized database that is available to the public. This data has established a baseline record of nutrient concentrations in the bay for comparison with future data. Results indicate a slight increase in the amount of total nitrogen and phosphorous and a decrease in water clarity over the last five years at specific sites within the bay and indicate the critical need to continue monitoring these nutrients and the future need to identify sources of this pollution.

In 2011, budget cuts forced FCO to reduce staff and close several aquatic preserve offices, resulting in drastically reduced oversight of AHAP. Thus, LAKEWATCH sampling was suspended in April of 2011. In 2016, the management of the aquatic preserve was re-established as part of the CPAP office, and the partnership and water sampling efforts resumed in the spring of 2016. Current funding only allows for bi-monthly sampling, but as more funding becomes available, the sampling schedule will revert to monthly.

Florida Department of Agriculture and Consumer Services Water Quality Monitoring

Florida Department of Agriculture and Consumer Services (DACS) assesses microbiological conditions (fecal coliform and toxic marine plankton) of coastal waters to reduce the risk of shellfish-borne illness. Sanitary surveys are conducted to identify waters where contaminants may be present in amounts that present a human health hazard; hence, should not be open to harvest. DACS routinely monitors fecal coliform and water quality parameters at established stations in each of Florida's shellfish harvesting areas. Sub-surface water samples are collected, placed in ice-filled coolers and shipped overnight to a certified laboratory. The analysis for fecal coliform takes 24 hours, and numbers of bacteria are expressed in the units of Most Probable Number per 100 milliliters.

Clam aquaculture sites were established in 2002 and have been producing a very valuable product for Florida's economy. In addition to the clam leases, some existing aquaculture leases have been modified to be able to use the water-column to cultivate oysters. It is important to monitor the water quality in these shellfish harvesting areas for harvest area classifications and closures and to prevent harm to humans. Since 2002, University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) has intermittently monitored the aquaculture sites in Alligator Harbor for ambient water quality and meteorological conditions; however, in 2012, due to a lack of funding, many of the monitoring stations had to be dismantled (UF/IFAS, 2015). UF/IFAS has made their historical data available online.

Harmful Algal Bloom Monitoring

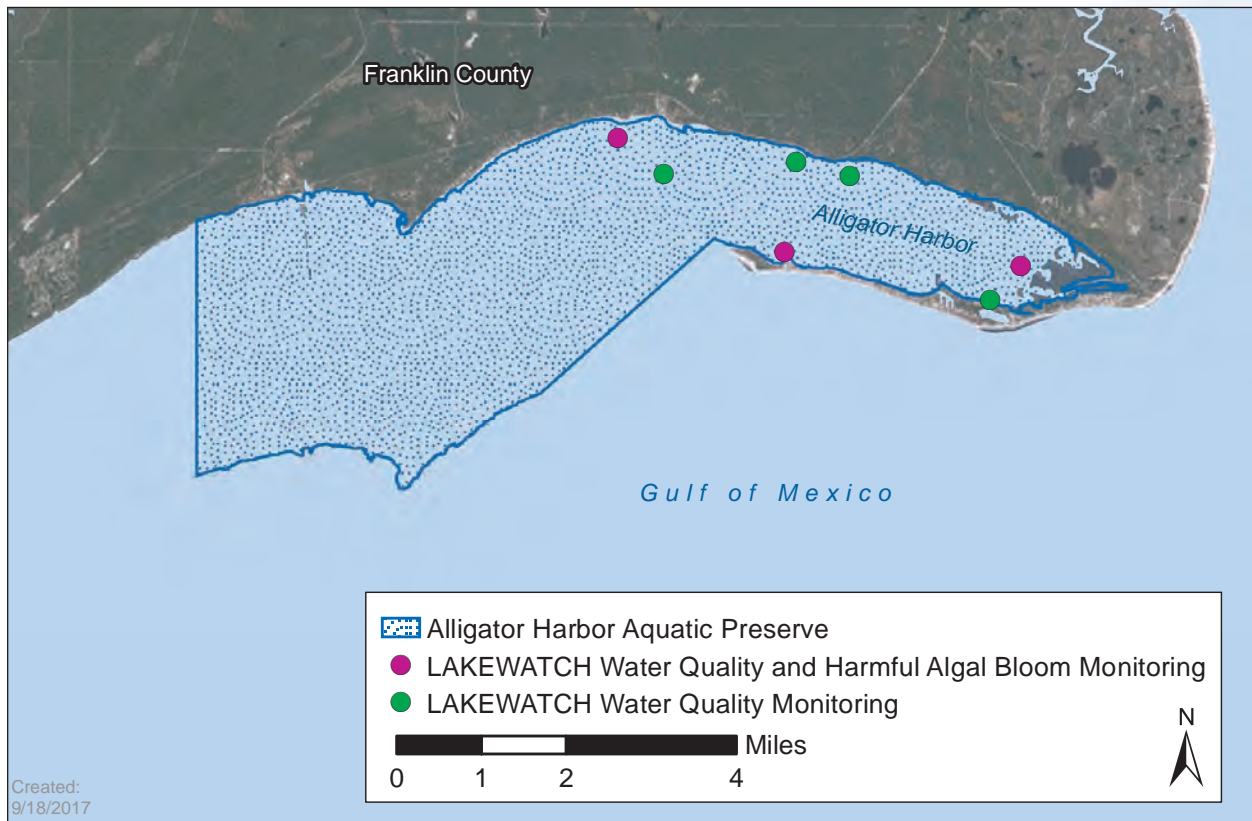
The Florida Fish and Wildlife Conservation Commission's (FWC) Florida Wildlife Research Institute (FWRI) Harmful Algal Bloom (HAB) group monitors more than 100 locations around the state weekly, twice-monthly, or monthly to detect nuisance, harmful and toxic algal blooms, including red tide. A red tide is a higher-than-normal concentration of a microscopic alga (plant-like organism). In Florida, the species that causes most red tides is *Karenia brevis*. The dinoflagellate, *Pyrodinium bahamense* produces saxitoxins that can cause paralytic shellfish poisoning or saxitoxin puffer fish poisoning in humans if contaminated shellfish or puffer fish are consumed. Some, but not all, species of *Pseudo-nitzschia* (marine planktonic diatom) produce domoic acid, which can cause amnesiac shellfish poisoning in humans if contaminated shellfish are consumed. Blooms of *Pseudo-nitzschia* spp. ($\geq 1,000,000$ cells per liter) frequently occur in Florida's marine and estuarine waters (FWC, n.d.-f). FWRI staff coordinates sample collection with state agencies, local governments and private citizens participating in a volunteer offshore monitoring program.

In Alligator Harbor, HAB sampling began in 2002; samples are collected by FWRI's Molluscan Fisheries group and/or DACS and brought back to FWRI in St. Petersburg for analyses (K. Atwood, personal communication, October 24, 2016). The samples are filtered by FWRI's HAB toxins group for toxins and DNA for reporting and on-going research projects. All data are entered into the HAB historical database. Researchers report monitoring results to managers who can then take appropriate actions, such as closing shellfish harvesting areas, as necessary, to protect human health. In addition to routine monitoring, HAB staff respond to possible blooms throughout Florida. Following reports of discolored water, respiratory irritation, fish kills, or dead or stranded marine mammals, HAB staff lead sampling trips or coordinate sampling with the same collaborators they rely on for routine monitoring. This event-response effort varies from year to year, depending on the frequency and duration of blooms (FWC, n.d.-f).

Description	<i>Karenia brevis</i> (cells/liter)	Possible Effects (<i>K. brevis</i> only)
-Not present - background	background levels of 1,000 cells or less	None anticipated
Very low	> 1,000 to 10,000	Possible respiratory irritation; shellfish harvesting closures >5,000 cells/liter
Low	> 10,000 to 100,000	Respiratory irritation, possible fish kills and bloom chlorophyll probably detected by satellites at upper limits
Medium	> 100,000 to 1,000,000	Respiratory irritation and probable fish kills
High	> 1,000,000	As above plus discoloration

Table 2 | Possible effects of red tide.

There have only been two instances of a high level (>1,000,000 cells/liter) algal bloom in Alligator Harbor since sampling begun, neither being a red tide event. The first occurred in September of 2014 (*Peridinium quinquecorne*, 1,058,333 cells/liter), and the second happened in August of 2016 (*Heterocapsa rotundata*, 1,605,833 cells/liter); it should be noted that the majority of phytoplankton abundance data have been collected in response to blooms and sampling efforts have also varied with funding and projects (K. Atwood, personal correspondence October 20, 2016). Table 2 shows the possible effects from red tide according to the level of concentration.



Map 10 | Water quality monitoring at Alligator Harbor Aquatic Preserve.

Northwest Florida Water Management District Water Quality Projects

The Northwest Florida Water Management District (NFWFMD) has completed several projects to improve water quality across Florida's Panhandle, including many stormwater retrofit projects, stabilization projects, mapping, and monitoring projects. Enacted in 1987 by the Florida Legislature to improve and manage the water quality and natural systems associated with Florida's surface waters, which include lakes, rivers, streams, estuaries, and other waterbodies, NFWFMD began publishing comprehensive plans for watershed management across major Florida Panhandle watersheds; these reports, called the Surface Water Improvement and Management Plan (SWIM), outline several projects including seagrass and water quality monitoring. Although a SWIM plan has not been previously developed for the Alligator Harbor region, plans have been developed for two adjacent watersheds (Apalachicola River and Bay – updated 1996, and Ochlockonee River and Bay Watershed – draft completed 2012). NFWFMD is developing updated SWIM plans for each of northwest Florida's major watersheds with grant funding from the National Fish and Wildlife Foundation. Updates are expected to be complete by late 2017. It should be noted that in this update process, Alligator Harbor will be included in the Apalachicola Bay SWIM plan. NFWFMD has also partnered with FEMA since 2011 to implement the Risk Mapping, Assessment and Planning program, to deliver quality data that supports risk management decisions and flood mitigation actions. AHAP will continue to coordinate with NFWFMD to expand monitoring programs and to protect the Alligator Harbor watershed.

Seagrass Monitoring

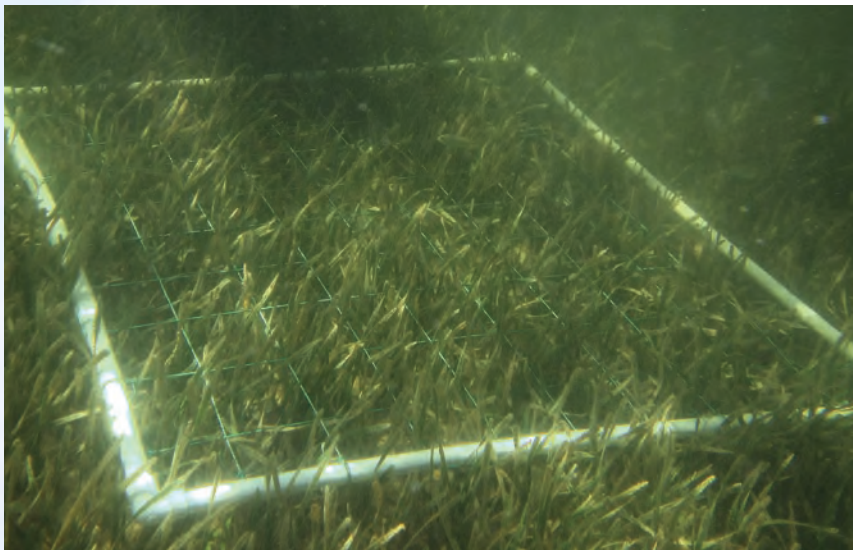
Many unique habitats, such as seagrass beds, can be found in Alligator Harbor's shallow estuarine waters. Seagrasses provide critical habitat for many commercially and recreationally important species, reduce wave energy, help stabilize the bottom sediments, which in turn improves water

quality, and are a source of food for many marine animals (FWC, n.d.-h). In the 1950s, turtle grass and manatee grass completely blanketed the bottom of Alligator Harbor (Humm, 1956). Seagrasses are stable in some parts of AHAP and sharply declining in others. Routine habitat monitoring and the acquisition of high-resolution imagery is vital to assessing the health of seagrass beds and determining resource management and/or restoration needs.

On average, the depth in Alligator Harbor is very shallow (<30 feet), creating favorable habitats for the three most prominent species of seagrass in Florida: turtle grass, manatee grass, and shoal grass. Shoal grass, a pioneer species that dominates the shallow and intertidal

bay areas, has recently become the most common species in Alligator Harbor (Yarbro & Carlson, 2016). These beds can be exposed to the air in winter when north winds push large amounts of water from the bay, and in spring when north winds combine with low spring tides (Brim & Handley, 2007). In 2009, all three species of seagrass were present in Alligator Harbor; however, by 2013 manatee grass had basically disappeared, while both turtle grass and shoal grass were declining. Manatee grass has been the most common species recorded on Turkey Point and Lanark Reef (Yarbro & Carlson, 2016).

AHAP staff utilize the Braun-Blanquet survey method, a rapid, visual assessment technique, for measuring the submerged aquatic vegetation. The information is used to analyze and understand species composition, abundance, and distribution of seagrasses within a particular area. Seagrass data provides helpful information which can be used to address management issues within the aquatic preserve; furthermore, seagrass monitoring data, coupled with water quality data, can be used to determine the overall health of these highly diverse ecosystems. It is important to collect baseline conditions of the seagrass beds to identify short and long term changes to the habitat and develop sound watershed management activities.

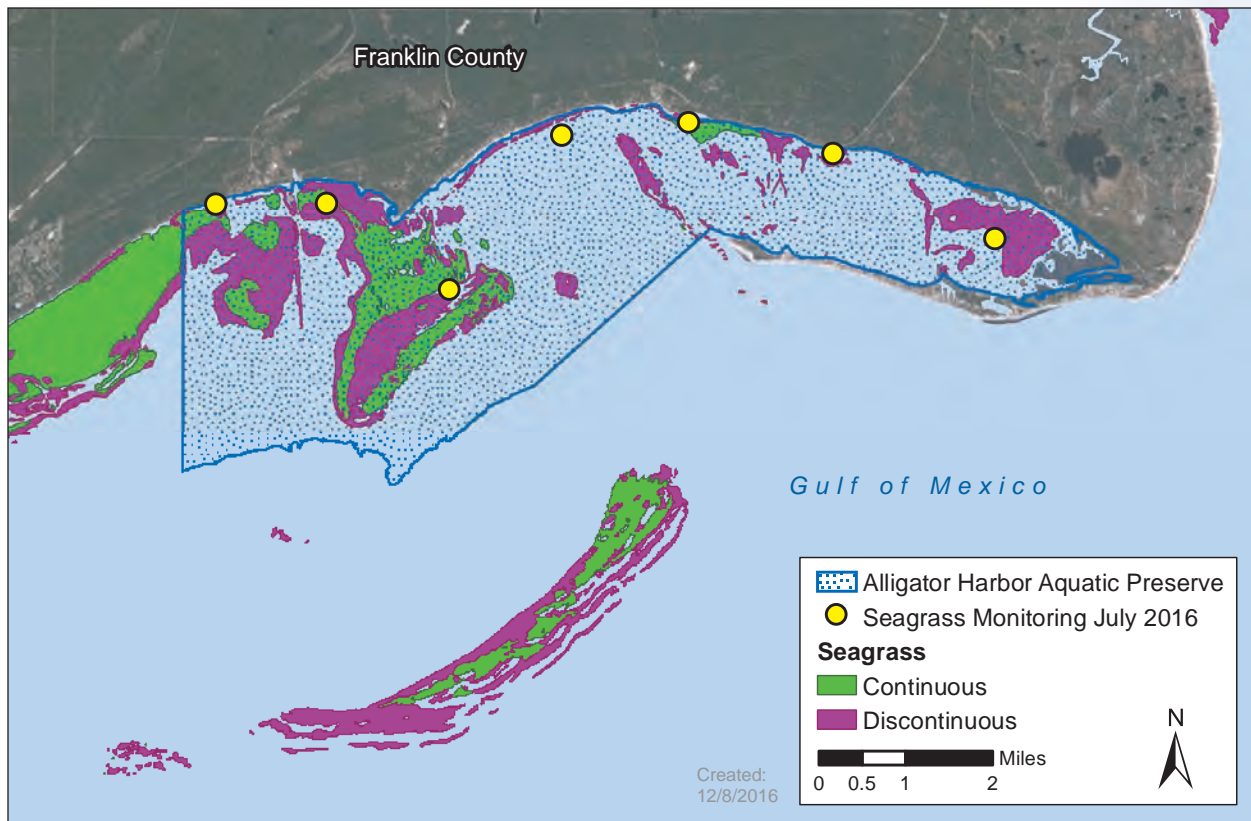


Quadrats like this one are used to visually assess percent cover of seagrasses during seagrass monitoring.

Preliminary seagrass monitoring in the area was established in 2002 using protocols from the Southwest Florida Water Management District and the Charlotte Harbor Aquatic Preserve (Wren, 2008). To compliment the efforts being executed by FWC, AHAP staff began monitoring seagrasses in AHAP in 2006. Initially, fixed transects were conducted at four monitoring locations in AHAP; fixed transects offer a precise reference of what species are present in each location, and thus provide the capability to detect long-term and short-term changes (Wren, 2008). At each site, a leaded line was laid along the imaginary line of the transect, and a 1meter² quadrat, commonly referred to as a quad, was laid down along the transect line in 10 meter increments. Within in the quad, observations are made about the seagrasses, including species occurrence, the abundance of each species (Braun-Blanquet), blade lengths and widths of each species, epiphyte density, sediment type, and the depth are determined and recorded; abiotic water quality parameters were also recorded at each monitoring site.

In 2009, two additional monitoring sites were established within AHAP; a third was planned but monitoring never began at this site. Staff availability and funding had decreased, so instead of conducting transects at each monitoring location, the quad was haphazardly thrown four times, and Braun-Blanquet visual cover assessment values were recorded for each seagrass and macro-algae species observed within the quad. Additional observations that were documented include: blade length and width, epiphyte density, sediment type, sediment depth, presence of sea urchins (*Lytechinus variegatus*) or bay scallops, and presence of propeller scars or “blowouts.” Abiotic water quality parameters (temperature, salinity, and dissolved oxygen) were recorded at each sample site as well.

CPAP’s monitoring data, as of 2009, showed that shoal grass and turtle grass were the most abundant species of seagrass encountered, with manatee grass also being recorded numerous times. After the 2009 sampling season, seagrass monitoring was suspended due to a lack of staff, and the CPAP office subsequently closed in 2011. Despite the CPAP office closure, seagrasses were still monitored by FWC’s Division of Habitat and Species Conservation and FWRI staff between 2009-2013; FWC’s 2009-2011 field monitoring data indicated that manatee grass, turtle grass, and shoal grass occur about equally in the region, but the thinning of seagrass was very evident in the 2012 and 2013 surveys (Yarbro & Carlson, 2016). Potential reasons for seagrass loss include: decreased water clarity and quality, propeller scarring, acidification of coastal marine resources, and fluctuating climatic conditions. Optical water quality measurements taken in 2012 and 2013 showed that water quality has declined in Alligator Harbor - poor water clarity, with elevated turbidity and chlorophyll-a concentrations, and reduced light penetration through the water column (Yarbro & Carlson, 2016).



Map 11 | Seagrass monitoring at Alligator Harbor Aquatic Preserve.

In collaboration with other state agencies, FWC collects data from existing monitoring inventories and mapping databases to create more accurate estimates on spatial coverage and species composition of seagrasses for the Seagrass Integrated Mapping and Monitoring (SIMM) program. This program aims to integrate seagrass mapping and monitoring across Florida. There are approximately 2.2 million acres of seagrasses that have been mapped in Florida's coastal waters (Carlson & Madley, 2007). In 1992, Alligator Harbor sub-region had approximately 755 acres of seagrass. By 2010, the Alligator Harbor sub-region had lost 535 acres or 71 percent of the seagrasses previously mapped during that 18-year period. However, seagrasses just to the west of Alligator Harbor (Turkey Point, Dog Island Reef, etc.) increased by 1,901 acres (27 percent) during the same period (Yarbro & Carlson, 2014).

In summer 2016, FWC collaborated with the Florida State University Coastal and Marine Laboratory (FSUCML) to assist with a central Panhandle seagrass monitoring effort. Seven historical sampling sites were located within AHAP. The data collected will be extremely valuable, not only to the upcoming SIMM report, but will assist CPAP staff in re-establishing and developing future seagrass monitoring efforts in AHAP. In spring 2017, staff plans to revisit historical sampling sites and locate new ones. CPAP staff will potentially acquire the sampling of the FSUCML monitoring sites within AHAP and provide that data to FWC.

Bay Scallop Monitoring

To assess the status of bay scallops in Florida waters, FWRI scientists conduct adult population abundance surveys each June along the state's Gulf coast. Scallop populations must produce enough offspring to replenish themselves or receive offspring from neighboring populations to remain stable. Scallops are extremely sensitive to changing environmental conditions such as seagrass losses, increases in fresh water, suspension of sediments, pollution, and harmful algal blooms. Because of this sensitivity and their short life span, local populations are more susceptible to periodic collapses, and natural recovery of a collapsed population can take years (Stephenson, 2016).

Annual scallop surveys have been conducted by FWRI in AHAP since 2010. Each year, five stations located in and adjacent to AHAP in depths up to 10 feet are surveyed. At each station, researchers deploy a 300-meter (984.3 feet), weighted transect line. Two divers – one on either side of the line – each count all scallops within a 2-meter-wide area along the line. Researchers compare estimates between years and sites to determine if bay scallop populations are maturing at different rates. Populations are classified as collapsed (fewer than six scallops per station), vulnerable (six – 60 scallops per station), or stable (>60 scallops per station) (Stephenson, 2016). Using the results of transect surveys, researchers can determine the health of a local scallop population based on abundance, distribution, and population. Bay scallop populations within AHAP increased from near zero in 2014 to well into the stable classification in 2015 (>60 scallops per station). This recovery was most likely due to the absence of heavy rains that occurred in 2012 and 2013 (Stephenson, 2016).

In addition to monitoring the local adult populations, FWRI scientists study juvenile bay scallops as they recruit to, or settle into, the population. Most juveniles come from the local population where they were spawned, but some come from distant populations, relocated by the ocean currents. To study the recruitment of bay scallops to local populations, scientists anchor citrus bags stuffed with black mesh to a block to collect juveniles. The collectors are deployed every month in the nearshore, seagrass habitats. The bags simulate grass blades, and juvenile bay scallops, called spat, settle out of the water column and attach to collectors. The collectors are left underwater for eight weeks and then retrieved for processing. Researchers count any scallops found on the collectors. Scientists use average recruitment rates to compare local populations, determine timing of spawning events, and evaluate the health of a population over time (FWC, 2015a). Currently, there is not any juvenile monitoring in AHAP; however, if the scallop population numbers decrease, it may become necessary.

Fisheries Monitoring

Since 1998 in Alligator Harbor, biologists from the Fisheries Independent Monitoring program of FWRI have developed a long-term program designed to monitor the relative abundance of fishery resources in Florida's major estuarine, coastal, and reef systems. The program was developed to address the critical need for effective assessment techniques for a variety of species and sizes of fishes and selected invertebrates; provide timely information for use in resource management efforts; and monitor trends in the relative abundance of taxa in a variety of estuarine and marine systems throughout Florida (FWC, 2015b).

The Fisheries Independent Monitoring program data are summarized and analyzed for all fish and selected invertebrate species collected, yielding information on the relative abundance, recruitment, habitat use, and distribution. This approach provides information on economically valuable species,

as well as many other species that may influence fisheries or may be important ecological indicators. Researchers use different types of sampling gear to target fish in multiple stages of their life history. Gear used for routine monitoring include 70 foot seines, 20-foot otter trawls, and 600-foot haul seines. Biologists collect juvenile reef fishes from high-salinity, estuarine seagrass habitat at five locations along the west and northwest Florida coast, including Alligator Harbor. Each fish caught is identified, counted, measured, and released (FWC, 2015b). Additional data collected include submerged physical features (seagrasses, bottom type, oysters, etc.), shoreline (mangroves, seawalls, emergent vegetation, etc.) habitats at each sampling site, and water quality parameters (temperature, pH, salinity, and dissolved oxygen) (FWC, n.d.-b).

In Alligator Harbor, sampling efforts occurred from 1998 to 2000; ceasing in the harbor due to shallow conditions and lack of boat ramp access (B. Gorecki, personal correspondence, November 2, 2016). Since 1998, continuous monthly sampling has occurred in the western region of AHAP, mostly near the Turkey Point Shoal. All sampling, conducted by FWRI staff stationed in the Apalachicola Field Lab in Eastpoint, occurs during daytime hours (one hour after sunrise to one hour before sunset). Additional sampling details are described in the Fisheries Independent Monitoring program's Procedure Manual.

Shark Monitoring

The FSUCML has been assessing coastal shark abundance and community structure across 10 geographic areas in the northeastern Gulf of Mexico since 2003. One of the regions, labeled the St. George Sound area, includes AHAP and the adjacent water bodies. Researchers have conducted paired surveys designed to assess the relative abundance of sharks and large bony fishes over space and time. Since the monitoring began, the three most abundant species - Atlantic sharpnose shark (*Rhizoprionodon terraenovae*), bonnethead shark (*Sphyrna tiburo*), and blacktip shark (*Carcharhinus limbatus*) - were consistently captured over all sampling regions regardless of environmental conditions. Results suggest that species diversity varies by geographic area, generally more in areas with the greatest amount of fresh and saltwater fluctuations, and estuarine conditions adjacent to river mouths may affect juvenile shark populations across similar latitudes (Bethea et al., 2014). CPAP staff will support this project as it continues and provide any necessary monitoring assistance in the aquatic preserve.

4.1.3 / Ecosystem Science Issues

Issue I: Water Quality

Water quality monitoring has increasingly become an important part of the aquatic preserve's role in understanding the bay's natural processes. Monitoring water quality allows researchers to document short-term variability and long-term changes in the status of the bay's health and facilitates in implementing appropriate protection for waterways. The collected data can be used to gain a better understanding of how water quality is impacted by external actions and will help in the understanding of the relationship between specific actions and subsequent water quality. Water quality issues influence human and environmental health. Therefore, monitoring changes to nearby waterbodies and having an adequate monitoring program is essential to being able to recognize and prevent contamination problems.

A healthy estuarine waterbody contains a balanced amount of nutrients and normal fluctuations in salinity and temperature. It also has plenty of oxygen, which is a basic requirement for nearly all aquatic biota, and little suspended sediment, so that living aquatic resources can breathe or receive enough sunlight to grow. Nutrients, like nitrogen and phosphorus, occur naturally in water, soil, and air. Just as nutrient fertilizers are used to promote plant growth on lawns and farm fields, nutrients in the bay encourage the growth of aquatic plants and algae. Although nutrients are essential to all plant life within the bay, an excess of these nutrients can be harmful. This is called nutrient pollution. The two general sources of adverse impacts on water quality are point and nonpoint source pollution. Point source pollution can be traced to a single identifiable source, such as a discharge pipe. Nonpoint source pollution comes from diffuse sources such as stormwater runoff that collects sediment, nutrients, bacteria, pesticides, fertilizers, animal or human waste, heavy metals, oil, and grease. When rain moves over and through the ground, the water absorbs and assimilates any pollutants it encounters. Following a heavy rainstorm for example, water will flow across a parking lot and pick up oil left on the asphalt by cars. When these nutrient sources are not controlled, excess nutrients find their way into the groundwater, creeks, rivers, and eventually the bay. Stormwater runoff is considered the primary water quality threat in most of the watershed. It causes habitat degradation, fish kills and closure of shellfish

beds and swimming areas (DEP, 2008). Continued long-term water quality monitoring is necessary and essential to protect the valuable natural resources in AHAP.

Goal One: Improve water quality in AHAP.

Objective One: Analyze and interpret the status and trends of water quality in AHAP to identify potential impacts to natural resources, and provide quality scientific data and recommendations to address such issues.

Integrated Strategy One: In collaboration with other entities currently doing monitoring, develop a strategic long-term water quality monitoring program that includes biotic and abiotic parameters, and compile analyzed data to evaluate water quality status and trends. This will be achieved using dataloggers at priority locations, and the collection of continuous in-situ measurements for the following water quality parameters - temperature, specific conductivity, salinity, dissolved oxygen, pH, turbidity, and depth. Aquatic preserve staff will be responsible for the implementation of this project.

Integrated Strategy Two: Monitor nutrients and water clarity in AHAP through a partnership with the University of Florida's LAKEWATCH program to determine total nitrogen and phosphorous, chlorophyll, and water clarity. Monitoring efforts began in 2001, and aquatic preserve staff will be available to conduct sampling efforts. This project will also remain a high priority over the next 10 years as coastal development increases.

Integrated Strategy Three: Evaluate and, if needed, expand LAKEWATCH water quality sampling in AHAP by adding more water quality monitoring sites within the aquatic preserve.

Goal One, Objective One - Performance Measures:

Performance Measure One: Develop a strategic, long-term water quality monitoring program within AHAP.

Performance Measure Two: Develop an annual report detailing scientific results and recommendations regarding the water quality within AHAP.

Performance Measure Three: Identify additional water quality monitoring sites.

Performance Measure Four: If needed, install dataloggers at additional water quality monitoring sites.

Objective Two: Identify specific and emerging water quality issues related to pollution sources and environmental contaminants, and with coordination from other agencies, develop a response strategy to issues that may be indicated by reports or monitoring data.

Integrated Strategy One: Partner with other state and local agencies to identify potential point and nonpoint sources of pollution in AHAP and develop a monitoring plan to effectively evaluate the impacts from this type of pollution. Efforts may include integrating current water quality data with geographic information system (GIS) technology to trace possible pollution sources.

Goal One, Objective Two - Performance Measures:

Performance Measure One: Identify potential pollution threats in coordination with other agencies.

Performance Measure Two: Develop a strategy to address issues, including planning, implementation, and assessment.

Objective Three: Ensure the sustainability of scallop, fish, and other species of concern as well as salt marsh and seagrass habitats through the development of a tiered approach to water quality monitoring that integrates biological assessments and multiple tools to define a core set of baseline indicators to possibly explain causes and/or sources of any impairment within AHAP.

Integrated Strategy One: Partner with other local and state agencies to assist in monitoring the distribution and abundance of specific indicator species, including scallops and seagrass, to determine the ecological health of the bay system. As needed, staff will contribute and assist in the data collecting and development of a technical report assessing the status of these resources, areas of concern, and recommendations. An annual bay scallop report that discusses the status and trends of bay scallop populations around the state is supplied by FWRI.

Integrated Strategy Two: Determine the biodiversity of AHAP by establishing baseline data and broad scale characterizations of benthic communities which are sensible indicators of habitat quality in an aquatic environment.

Integrated Strategy Three: Acquire data and work in conjunction with other agencies to develop a biological assessment report.

Goal One, Objective Three - Performance Measures:

Performance Measure One: Work with other state and federal agencies to develop a database of all concerned species.

Performance Measure Two: Use water quality data and other indicators to create an approach to protect and ensure sustainability.

Performance Measure Three: Develop a biological assessment plan/report.

Issue II: Protection of Seagrass Habitat

Seagrass communities are one of the most productive ecosystems in the world. They are a vital component of Florida's coastal ecology and economy. Seagrasses are a major habitat within the Alligator Harbor system and are an important natural resource that performs several significant functions. Seagrasses provide nurseries, nutrition, and shelter for a wide variety of commercial and recreational fish and invertebrate species; they provide critical habitat for animals such as wading birds, manatees, and sea turtles; and their extensive root systems stabilize sediments on the bay bottom, helping to improve water quality and clarity which in turn, keeps the bay healthy. The health and status of many commercially and recreationally important seafood species such as shrimp, crabs, scallops, redfish (*Sciaenops ocellatus*), trout, and mullet (*Mugil spp.*) is directly proportional to the health and acreage of seagrass habitat. For these reasons, many areas in Florida have implemented seagrass monitoring programs to determine the health and trends of local seagrass populations (DEP, 2008).

During the rapid population increase over the past 30 to 40 years, seagrass habitat has declined in inshore marine areas around Florida. As human populations continue to concentrate along the coastline, impacts to seagrass habitats increase through nutrient loading, light reduction, increased boat traffic, and more direct vessel impacts such as propeller scarring (Fonseca, Kenworthy, & Thayer, 1998). Deterioration in seagrass habitat has been attributed to both natural and human-induced disturbance, but human mediated disturbance is now the most serious cause of seagrass loss worldwide (Sargent, Leary, Crewz, & Kruer, 1995). Propeller scarring occurs in shallow water when a boat's propeller tears and cuts up seagrass roots, stems and leaves, leaving a long, narrow furrow devoid of seagrasses. This damage can take eight to 10 years to repair and with severe scarring these areas may never completely recover. Recovery time is different for each species and depends on the type of growth of each species, the degree of damage, water quality conditions, and sediment characteristics. The amount of destruction from an event depends on water depth and the size, speed, and path of the vessel. Some vessels create scars in areas at low tide that would not do so at high tides. Although linear features are most often associated with the term propeller scar, repeated scarring has completely denuded some areas of seagrass habitats. In other instances, a linear scar can become a larger feature if the sediments are scoured to undercut the seagrass bed. This erosion can result in detachment of large sections of seagrasses that then float away leaving behind patches of bare sediment wider than the original propeller scar (Dawes, Phillips, & Morrison, 2004).

According to an aerial seagrass survey conducted by FWRI, Florida has more than 2.5 million acres of seagrass in its shallow coastal waters. Seagrasses that are affected by propeller scarring may never completely recover and areas that have been damaged have the potential to expand and merge with other injuries resulting in even greater cumulative impacts. Additional potential reasons for seagrass loss include decreased water clarity and quality, acidification of coastal marine resources, and fluctuating climatic conditions. Impaired water clarity due to turbidity, algal blooms, and improper disposal of dredged material, as well as excessive nutrients and disease, may also degrade valuable seagrass habitat. Elevated nitrogen levels stemming from increased commercial and residential development may lead to a decline in the relative abundance of seagrasses compared to phytoplankton and macroalgae, including epiphytes. High nutrient levels may also make seagrasses more susceptible to disease (DEP, 2008).



As human populations continue to grow along Florida's coastlines, anthropogenic impacts to seagrass habitats, including propeller scarring, occur more frequently.

AHAP is a unique and fragile ecosystem that is host to abundant concentrations of marine grasses. These communities are critically important to the health and vitality of the waters of AHAP. Three different species of seagrasses have historically occurred within the aquatic preserve (shoal grass, manatee grass, and turtle grass). However, seagrass populations are declining. Prominent and increasing propeller scar damage, decreased water quality and clarity, and an increase in nutrient levels is evident and increasing in many areas. With increasing development and visitor use, these trends are expected to continue.

Goal One: Manage seagrass communities to effectively protect and maintain this habitat as a valuable, natural resource throughout AHAP.

Objective One: Monitor the status and trends of the distribution of seagrass and algal species within AHAP to determine the overall health and identify potential threats to the habitat.

Integrated Strategy One: Develop and implement a Seagrass Monitoring Plan for AHAP that maintains a strategic, long-term seagrass monitoring project to include water quality indicators, percent coverage of seagrass and algae species, algae identification, density, epiphyte load, and sediment depths. This will be done in coordination with FWC-FWRI.

Goal One, Objective One – Performance Measure: Develop an AHAP Seagrass Monitoring Report. This report will include information on the project's background, status of the resources, goals, data collection methods, sampling results, areas of concern, recommendations, and conclusions on the effectiveness of the project. At a minimum, this report will be updated every five years.

4.2 / The Resource Management Program

The Resource Management Program addresses how FCO manages AHAP and its resources. The primary concept of AHAP resource management projects and activities are guided by FCO's mission statement: "Conserving and restoring Florida's coastal and aquatic resources for the benefit of people and the environment." FCO's sites accomplish resource management by physically conducting management activities on the resources for which they have direct management responsibility, and by influencing the activities of others within and adjacent to their managed areas and within their watershed. Watershed and adjacent area management activities, and the resultant changes in environmental conditions, affect the condition and management of the resources within their boundaries. FCO managed areas are especially sensitive to upstream activities affecting water quality and quantity. FCO works to ensure that the most effective and efficient techniques used in management activities are used consistently within our sites, throughout our program, and when possible, throughout the state. The strongly integrated Ecosystem Science, Education and Outreach, and Public Use programs, provide guidance and support to the Resource Management Program. These programs work together to provide direction to the various agencies that manage adjacent properties, our partners, and our stakeholders. AHAP also collaborates with these groups by reviewing various protected area management plans. The sound science provided by the Ecosystem Science Program is critical in the development of effective management projects and decisions. The nature and condition of natural and cultural resources within AHAP are diverse. This section explains the history and current status of AHAP's resource management efforts.

4.2.1 / Background of Resource Management at Alligator Harbor Aquatic Preserve

Resource management activities have focused on both the impacts of an individual action, as well as the cumulative impacts of all changes and actions on the natural system. AHAP staff have been responsible for reviewing and commenting on proposed environmental regulatory permits, Minimum Flows and Levels, Total Maximum Daily Loads (TMDLs), land acquisition projects, and adjacent state lands management reviews. Staff provides technical support to other land managers and regulatory authorities on a regular basis such as, conducting field assessments, making comments and recommendations to appropriate agencies, ensuring consistency with all established rules and regulations, notifying the appropriate regulatory agencies of violations and illegal activities. Maintaining good communication between all local, state, and federal environmental regulatory agencies is essential to protecting the resources of AHAP. Protection of adjacent lands is one of the best ways to protect AHAP's resources.

4.2.2 / Current Status of Resource Management at Alligator Harbor Aquatic Preserve

Listed Species Management

AHAP is home to several state and/or federally listed species. A species must be federally listed to be protected under the Endangered Species Act. An endangered species is classified as one that is in

danger of extinction throughout all or a significant portion of its living range. A threatened species is classified as one that is likely to become endangered in the near future, if measures are not taken to reverse its decline. Species of Special Concern are those that warrant special attention, or that need further review, even though they do not fit the other categories. Although most bird species are not designated as protected under the Endangered Species Act, migratory birds are protected under the Migratory Bird Treaty Act. Under the provisions of the Migratory Bird Treaty Act it is unlawful, among other actions, to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except as permitted by regulations issued by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service, n.d.-b). Habitat destruction, invasive species, disease, and pollution are common causes of extinction. In many cases, these listed species will benefit most from proper management of their natural communities. Natural systems management will simultaneously help preserve the listed species which inhabit those systems. At times, however, additional management measures, such as increasing public awareness through interpretive literature and programs, are needed because of the disturbed condition of some communities, or because of unusual circumstances which aggravate the particular problems of the species.

With increasing development in the area, there is a future need to continue to monitor population trends of listed species within the aquatic preserve by direct or indirect research. Priority species will be chosen based on their listing and their susceptibility to impacts due to habitat alterations. Efforts will continue to provide technical and logistical support to research and monitoring projects and stranding events and to provide educational information to citizens, coastal decision-makers, and government agencies on these species and the habitat they utilize within the aquatic preserve. Listed species currently monitored within the aquatic preserve are discussed in the following sections.

Shorebird nesting research and monitoring - Shorebird nesting surveys are completed each year on Alligator Point and Bald Point State Park as a partnership between FWC, DEP's Florida Parks Service, and Audubon Florida. Breeding season for shorebirds is typically recognized as February 15 to August 15; however, surveys end when the last brood fledges, which can be as late as the last week of September (DEP, 2016). FWC lists the nesting season in the Panhandle as February 15 – September 1 (FWC, 2016).

Phipps Preserve, a Critical Wildlife Area located on the end of Alligator Point, is a significant stop-over for many important migratory breeding shorebirds including snowy plover, Wilson's plover (*Charadrius wilsonia*), American oystercatcher, least tern, and willet (*Tringa semipalmata*). This area has been owned by The Nature Conservancy since 1977 and has been classified as a Critical Wildlife Area since 1984. Phipps Preserve is the only suitable shorebird nesting area along Alligator Point because most other areas are too disturbed to support nesting (A. Warren, personal communication, November 8, 2016). Phipps Preserve is closed to public access April 1-September 1. Emergent lands are posted each spring to protect nesting shorebirds. Shorebird nesting data for Phipps Preserve has been available in FWC's Shorebird Database since 2011. All nesting surveys are completed following established protocol by FWC, Florida Shorebird Alliance, and the Division of Recreation and Parks standard and specific requirements for the district (FWC, 2016).

During the nesting season, the shorelines on Phipps Preserve are monitored for nesting activity on a weekly basis by Audubon Florida, while oyster bars within Alligator Harbor are monitored for snowy plover, Wilson's plover, American oystercatcher, least tern and black skimmer nests by Bald Point State Park staff (A. Warren, personal communication, November 8, 2016). While Phipps Preserve had been monitored since 2011, monitoring the shorelines and oyster bars within Alligator Harbor did not begin until 2015. Nests are located (Map 12) and monitored for fate (hatch or fail). If nests fail, efforts are made to determine the cause for failure (e.g., predation, overwash, abandonment, etc.). During the non-nesting season, biweekly surveys are conducted to collect detailed spatial information of select focal species (all breeding species, plus red knots [*Calidris canutus rufa*] and piping plovers), spatial information on flocks (i.e., any group of shorebirds greater than 10), and spatial locations of any banded individual regardless of species. For each of these 'groups,' time, tide, behavior (i.e., roosting versus foraging), habitat type, observed disturbances, amount of wrack present, etc. This is a state-wide survey developed by FWC, but only used by a few groups until a web-based database is completed (R. Pruner, personal communication, November 8, 2016).

In 2016, Audubon Florida conducted weekly surveys in Phipps Preserve along the northwest shoreline of Alligator Point. Nine total nests (three American oystercatcher, three Wilson's plover, and three snowy plover) were recorded; other birds such as willets were observed nesting but nest data was not recorded. Two of the three nests hatched for both the oystercatcher and Wilson's plover, but zero snowy plover nests hatched (M. Miller, personal communication, November 9, 2016). Continued loss of nesting habitat from storm events is an increasing issue in Phipps Preserve; much of the vegetation that protects

nests has been washed out. Phipps Preserve has been a popular destination for many vacationers, and the increased presence of humans and dogs has disrupted nesting birds over the years (M. Miller, personal communication, November 9, 2016).

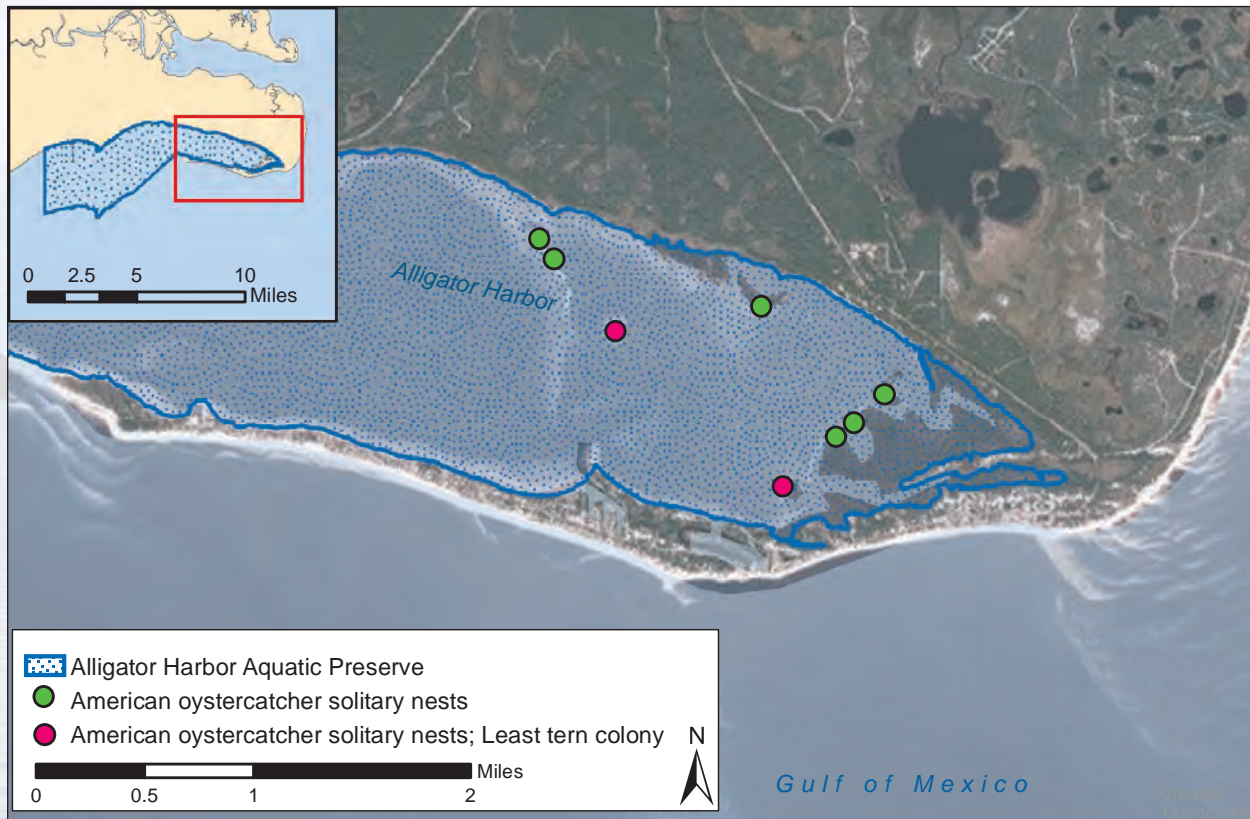
Year / location	Type	Number	# nests hatched	Possible reason(s)	Species
(S) = southern end; (N) = northern end					
2015 (S)	solitary nests	5	0	avian predation	American Oystercatcher
	colony nests	5	0	avian predation	Least Tern
2015 (N)	solitary nests	4	0		American Oystercatcher
	colony nests	85-115	almost all		Least Tern
2016 (S)	solitary nests	6	1	predation, overwash, trampled	American Oystercatcher
	colony nests	0	0		
2016 (N)	solitary nests	3	1		American Oystercatcher
	colony nests	64	0	Tropical Storm Colin	Least Tern

In the southern end of Alligator Harbor, ten nests (five colony nests and five solitary nests) were recorded in 2015, and unfortunately, zero nests hatched, most likely due to avian predation. On the northern side of Alligator Harbor, four solitary nests and between 85-115 colony nests were observed in 2015; while almost all the colony nests hatched, none of the solitary nests hatched. In 2016, six solitary nests were observed in the southern end, and only one hatched while the remaining ones were predated, overwashed, or trampled. In 2016, three solitary nests were observed in the northern end, with one nest hatching. Sixty-four colony nests were observed, but the storm surge from Tropical Storm Colin (June 6, 2016) wiped out the colony (DEP, 2016) (see Table 3).

For Wilson's plover and snowy plover nests that hatch, efforts are made to color-band adults and chicks. Bands are used in the short term to monitor

Table 3 | Alligator Harbor sea turtle nests survey results for 2015 & 2016.

fledge rates and establish local population abundance. Over the long term, banding is used for survival analysis. For the banding program, emphasis is placed on the chicks because doing so establishes known-age cohorts. In the aquatic preserve, state park staff started banding efforts for snowy plovers and Wilson's plover in 2015. All banding efforts are in collaboration with FWC, U.S. Fish and Wildlife



Service, and the University of Florida. For colonial nesting species (i.e., least terns, black skimmers, and gull-billed terns (*Gelochelidon nilotica*), nests are monitored for fate. Once nests hatch, chicks at various stages are counted (e.g., downy, pin-feather, or fledged) to get an idea of hatch and fledge rates by species for the colony.

In collaboration with FSUCML, FWC's Marine/Estuarine Habitat program initiated nesting shorebird monitoring at FSUCML in 2017 and plans to continue monitoring for nesting activity for the next several years. Restoration of approximately 0.25 acres of shorebird nesting habitat is planned for the FSUCML shoreline area by 2020.

Sea turtle nesting research and monitoring - Since 1998, from May 1 to October 31, Bald Point State Park staff and Alligator Point Turtle Patrol volunteers conduct sea turtle nest surveys along Alligator Point and St. Teresa Beach daily as per FWC Marine Turtle Conservation Guidelines (FWC, n.d.-j). This monitoring effort is part of FWC's Statewide Nesting Beach Survey; its purpose is to document the total distribution, seasonality and abundance of sea turtle nesting in Florida. The loggerhead sea turtle (*Caretta caretta*) is the most common turtle to nest on Alligator Point (B. Wargo, personal communication November 7, 2016). AHAP is known as one of the largest feeding grounds for Kemp's ridley sea turtles, but only a few nests have been encountered on beaches within the aquatic preserve. In 2009, volunteers filmed a Kemp's ridley nesting on Alligator Point (Walton Outdoors, 2009).

As of 2016, the average number of sea turtle nests on Alligator Point is between 25-35 nests. Coyotes, dogs, storm surge and artificial lighting are the main threats to sea turtle nests and hatchlings on Alligator Point. Some turtles occasionally become stranded on the beaches within and adjacent to the aquatic preserve; on average, 10-15 strandings are reported annually (B. Wargo, personal communication November 7, 2016). Volunteers report all stranding data to FWC. Injured sea turtles encountered on Alligator Point are taken to the Gulf Specimen Marine Lab in Panacea, Florida, where the turtles are typically rehabilitated to be released back into the Gulf. Gulf Specimen Marine Lab treats and releases five to 20 endangered Kemp's ridley sea turtles and protected loggerhead sea turtles per year, most commonly for swallowing fishing hooks. Gulf Specimen Marine Lab also receives turtles from other regions, rehabilitates them, and then releases them back into the Gulf, often at Bald Point State Park.

Habitat Restoration and Enhancement

The Society for Ecological Restoration defines ecological restoration as an "intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability." Restoration activities should reestablish the ecological integrity of degraded ecosystems including structure, composition, and the natural processes of biotic communities and the physical environmental. Ecosystems with integrity are self-sustaining and resilient natural systems that can accommodate stress and change. Restoration activities should be designed to achieve ecological integrity at the greatest extent that is practical under current environmental conditions and limitations. An important step in any restoration project is to identify the causes of degradation and eliminate or remediate those causes. Restoration efforts are likely to fail if the sources of degradation persist. Early in the planning stage, it is important to identify if the restoration project is scientifically, financially, socially, and ecologically feasible to ensure that limited fiduciary resources are used in the most appropriate manner and to increase the probability of success. Restoration projects must have clear, measurable and achievable goals to help guide project implementation activities and provide the standard for measuring project success. Each restoration project presents a unique set of environmental conditions, variables and project goals (U.S. Environmental Protection Agency, 2012). Therefore, it is important to evaluate each project on a case by case basis.

Seagrass Restoration - The seagrass habitat in AHAP has experienced loss in the Alligator Harbor sub-region, but has increased in the Dog Island and Turkey Point region (Yarbro & Carlson, 2014). Poor optical water clarity and excess nutrients, as a result of increased stormwater discharge from increased precipitation in 2012 and 2013, coupled with physical stressors, such as propeller scarring and dredging, are the factors that impacted seagrass communities in AHAP. Seagrasses typically are slow to recover when damaged or cut. The actual recovery time is different for each species and depends on the type of growth of each species, the degree of damage, water quality conditions, and sediment characteristics. Repairing damaged areas protects vital coastal habitats and those commercial and recreational industries dependent on them.

High resolution spectral imagery and analyses provide invaluable information from remotely sensed imagery. Mapping efforts should continue to be performed approximately every three to five years to determine changes in the amount and condition of the submerged habitats. The protection of critical

resources is a high priority item for each of the Central Panhandle's aquatic preserves. In order to adequately manage the aquatic preserves, natural and historical resources, which are integral to maintaining the productivity of the bay, must be monitored, documented, and mapped. This will allow for the identification of areas within the aquatic preserves where increased management and/or restoration is necessary. CPAP has acquired Natural Resource Damage Assessment funding to collect high resolution imagery of seagrasses in Alligator Harbor, St. Andrews Bay, and St. Joseph Bay aquatic preserves during the fall of 2017, with the intent of identifying primary areas of seagrass that require restoration. Currently, there have not been any seagrass restoration efforts in AHAP, but aquatic preserve staff will continue to monitor the status of the seagrass communities and work with partnering agencies to determine the possibility of restoration projects within the aquatic preserve.

Shoreline Restoration - Extreme high tides, wave action, strong currents, human impacts, and storm events can all contribute to shoreline erosion. Storm surge and wave activity from hurricanes can have devastating erosive effects along beaches and sparsely vegetated shorelines. Also, human impacts such as bulkheads or seawalls can be poor dissipaters of wave energy. This can cause scouring of the bottom beneath seawalls and accelerated erosion, adjacent to seawalls. The use of more environmentally friendly practices such as oyster shell, vegetative planting and biologically manufactured logs have shown success in stabilizing eroding shorelines. Restoring and preserving shorelines is necessary for the protection of critical habitat that is home to much of Florida's wildlife. Landowners and volunteers alike can play a role in maintaining Florida in its natural state. Planting natural vegetation along shorelines can help prevent erosion, improve water quality, and improve access to the water. Along with the aesthetic appeal, natural vegetation also creates habitat for animals like wading birds, migratory birds, fish, and crabs (NFWFMD, 2000). AHAP is a supporter of the Florida Panhandle Living Shorelines Initiative that is sponsored by the U.S. Fish and Wildlife Service.

The Living Shoreline Initiative assists property owners by assessing the feasibility of using native plants instead of armoring for shoreline stabilization. Homeowners pay for native marsh plants (smooth cordgrass), and help with the planting. These opportunities are a solution where everyone benefits. Additionally, a breakwater, typically constructed of bagged fossilized oyster shell or fossilized limestone boulders, is typically installed just offshore to reduce wave action and prevent further erosion of the shoreline. In most cases, restoring a shoreline using natural techniques is less expensive than armoring with seawalls, provides valuable habitat for wildlife, and has proven to be effective at preventing additional erosion. There are many benefits to a natural marsh shoreline over a modified hardened shoreline. Marsh grasses help to prevent erosion by buffering the impact of wind and waves on the shoreline. As the plants grow, they trap sediment which will stabilize and build the shoreline, a benefit not provided by shoreline armoring. They help improve water quality by filtering pollutants that run off the land and into the bays, creeks, and bayous (St. Andrew Bay Resource Management Association, 2016; Ray-Culp, 2007). AHAP plans to coordinate and/or participate in any future living shoreline projects in or near the aquatic preserve.

Multiple beach renourishment projects around the aquatic preserve have been submitted to the Natural Resource Damage Assessment portal as potential restoration projects using RESTORE Act funds from the Deepwater Horizon oil spill. These projects are located on Alligator Point and Dog Island. Staff will participate in the planning and coordination of these projects with partnering agencies.

Invasive Non-native and Native Removal and Treatment - Invasive animals can be detrimental to many aquatic habitats and the organisms within them. Coyotes (*Canis latrans*) are opportunistic scavengers that have been known to decimate sea turtle nests in pursuit of eggs. This could pose a serious problem if local animals on Alligator Point and St. James Island acquire this learned behavior. The beach is routinely monitored during the nesting season. Any signs of nest depredation by coyotes should be reported to the Florida State Park's District 1 biological section so that U.S. Department of Agriculture contracted trappers can be notified and directed to remove the non-indigenous predators (DEP, 2006).

Invasive Indo-Pacific lionfish are proving to be an ever-present danger to the balance of marine ecosystems along the Gulf of Mexico. Lionfish have not been documented in AHAP, but they continue to be documented in coastal areas along the Panhandle (U.S. Geological Survey, 2012). Lionfish are a predatory reef fish. They eat native fish, which can reduce native populations and have negative effects on the overall reef habitat and health. They can eliminate species that serve important ecological roles, such as fish that keep algae in check on the reefs. Lionfish also compete for food with native predatory fish such as grouper and snapper (FWC, n.d.-g).

Currently, FWC is encouraging the harvest of lionfish which are reported as excellent table fare. Effective August 2012, FWC announced changes to the lionfish harvest. Harvesting invasive lionfish no longer will require a fishing license when using certain gear, and there is no recreational or commercial bag limit.

FWC has also hosted several “Lionfish Derby” events and workshops to encourage divers to spear lionfish (FWC, n.d.-i). If lionfish become established nearby, AHAP will coordinate with FWC to organize workshops and derby events to work toward eradicating lionfish in the aquatic preserve and surrounding waters.

4.2.3 / Resource Management Issues

Issue I: Water Quality (Continued from same issue in Ecosystem Science section.)

Goal One: Develop a strategic, long-term water quality monitoring program within AHAP that will assist with identifying and addressing issues pertaining to the natural resources. (Same goal as in Ecosystem Science section.)

Objective Two: Identify specific and emerging water quality issues related to pollution sources and environmental contaminants and with coordination from other agencies, develop a response strategy to issues that may be indicated by reports or monitoring data. (Same objective as in Ecosystem Science section.)

Integrated Strategy Two: (Numbering continued from Objective Two integrated strategies in Ecosystem Science section.) Support the development of nutrient criteria. In a collaborative effort with other agencies, staff contributes water quality data to assist in the development of nutrient criteria.

Integrated Strategy Three: Support the development of TMDLs. Staff will contribute water quality data to assist in the development of an assessment report documenting scientific data, results, conclusions, and recommendations regarding TMDLs within AHAP.

Goal One, Objective Two - Performance Measures:

Performance Measure Three: In coordination with other agencies, identify potential pollution threats.

Performance Measure Four: Develop a strategy to address issues, including planning, action and prevention.

Issue II: Protection of Seagrass Habitat. (Continued from same issue in Ecosystem Science section.)

Goal One: Manage seagrass communities to effectively protect and maintain this habitat as a valuable, natural resource throughout AHAP. (Continued from same goal in Ecosystem Science section.)

Objective One: Monitor the status and trends of seagrass distribution within AHAP to determine the overall health and trends and identify potential threats to the habitat. (Continued from same objective in Ecosystem Science section.)

Integrated Strategy Two: (Numbering continued from the same issue, goal, and objective in Ecosystem Science section.) Continue to collaborate with FWC and other state agencies on the Seagrass Integrated Mapping and Monitoring report to produce a resource for seagrass monitoring, mapping, and data sharing.

Integrated Strategy Three: Utilize advanced GIS technology and hyperspectral imagery to quantify gains or losses to seagrass acreages, identify severely scarred areas to determine restoration needs, assess management options and develop a seagrass restoration plan for AHAP.

Integrated Strategy Four: Establish and maintain close communication with all federal, state, and local land managers that are responsible for making resource management decisions that could affect water quality or seagrass habitat in AHAP. Work with DEP district’s and water management district’s permitting and regulatory offices for input on proposed projects, site inspections, assessing potential impacts and participating in quarterly DEP Environmental Resource Permit meetings.

Goal One, Objective One – Performance Measure: Develop an AHAP Seagrass Monitoring Plan.

This report will include information on the project’s background, status of the resources, goals, data collection methods, sampling results, areas of concern, recommendations, and conclusions on the effectiveness of the project. At a minimum, this report will be updated every five years.

Goal Two: (Numbering continued from Issue II in Ecosystem Science section.) Restore areas of seagrass loss and severely scarred seagrass to prevent further loss of the resource.

Objective One: Develop a seagrass restoration plan for AHAP.

Integrated Strategy One: Partner with Florida Park Service and FWC to survey the regions with the greatest habitat loss and the most severely scarred areas to prioritize areas with the greatest need for restoration.

Integrated Strategy Two: Seek funding for future seagrass habitat restoration projects in AHAP.

Integrated Strategy Three: Coordinate with FWC law enforcement to ensure enforcement of the seagrass law prohibiting destruction of seagrasses in AHAP.

Goal Two, Objective One Performance Measures:

Performance Measure One: Develop a Seagrass Restoration Plan for AHAP, identifying areas with the greatest need for restoration, and appropriate restoration methods based on the cause of habitat loss. This plan will be updated every five years.

Performance Measure Two: Measure acreage of restored areas and percentage of success of the restored areas.

4.3 / The Education and Outreach Management Program

The Education and Outreach Management Program components are essential management tools used to increase public awareness and promote informed stewardship by local communities. Education programs include on and off-site education and training activities. These activities include: field studies for students and teachers; the development and distribution of media; the distribution of information at local events; the recruitment and management of volunteers; and, training workshops for local citizens and decision-makers. The design and implementation of education programs incorporates the strategic targeting of select audiences. These audiences include all ages and social classes; however, each represents key stakeholders and decision-makers. These efforts by the Education and Outreach Program allow the aquatic preserve to build and maintain relationships and convey knowledge to the community; invaluable components to successful management.

4.3.1 / Background of Education and Outreach at Alligator Harbor Aquatic Preserve

Education and outreach programs conducted by AHAP are designed to promote the goal of maintaining aquatic preserves at their current level of environmental quality for future generations. Coordinating and participating in education and outreach events proves difficult at times due to a lack of staff and budget. Common target audiences for education and outreach events include: landowners and developers, commercial and recreational resource users, students at all grade levels, organized groups, the public, and government agencies (local, regional, state, and federal). Specific examples of education and outreach activities include: presenting research and resource management goals to local communities; coordinating volunteer networks; developing and distributing informational brochures, posters, kiosks, and signage; participating in local events and festivals; organizing coastal marine debris removal programs; and participating in a variety of workshops and conferences. In the Panhandle region, classroom lectures, public events and festivals, constructing kiosks, and publishing brochures, pamphlets and posters are the most effective methods to communicate information about coastal resources. Specific areas of volunteer involvement include, but are not limited to: assisting with field sampling, data entry, routine maintenance, kiosk construction, and providing support at outreach events.

4.3.2 / Current Status of Education and Outreach at Alligator Harbor Aquatic Preserve

The human dimension is an essential component of resource and ecosystem management. Education and outreach are tools managers can use to address the human dimensions of resource issues. Combined with research, regulations, and habitat management, education and outreach provide a comprehensive approach to resource protection. The adoption and implementation of education and outreach programs improves the public's knowledge for species and habitat protection and conservation. The intent of the aquatic preserve education and outreach efforts is to foster informed and responsible stakeholders of the natural resources in the bay. Goals include educating citizens, coastal managers, user groups, and developers to use the environment in ways that preserve it, consider environmental issues when planning and making decisions which could affect the environment, and take part in decisions affecting nearby natural resources.

AHAP strives to provide accurate and comprehensible information about the natural resources within the aquatic preserve to the stakeholders, the general public, and local, state, and federal agencies. Staff has worked with other agencies and local governments to install consistent signage in the area, providing important information regarding AHAP, boater safety, aquaculture, and protecting seagrasses and other habitats. In addition to distributing informational pamphlets and brochures, staff had previously posted informational signage in a kiosk installed by DACS at the St. Teresa Wayside Park primitive boat ramp. However, this kiosk was destroyed by Hurricane Hermine in September 2016. Staff plan to install informational kiosks at many of the local boat ramps in the future.

Staff attends local and regional meetings and working groups to present and disseminate relevant information about AHAP, such as data trends in water quality and seagrass, focusing on the protection, preservation, and enhancement of the environment and encouraging sound decision-making regarding

land use and natural resources. Additionally, staff participates in a variety of local events that promote environmental protection and resource conservation; these include, but are not limited to International Coastal Cleanup, Seagrass Awareness Month, Earth Day, Estuaries Day, and many others.

In the future, AHAP aims to maintain and continue current education and outreach efforts to educate the public, stakeholders, and local, state, and regional officials. Staff will continue to update and distribute informational handouts and brochures. Additionally, kiosks will be maintained, updated, or installed at new locations, as new and more pertinent information needs to be presented. Also, AHAP staff will continue to attend local and regional meetings and conferences to obtain, discuss, and distribute vital information pertaining to the protection, conservation, and enhancement of resources within the aquatic preserve. Social media has become an increasingly popular and convenient way to reach a wide range of audiences. AHAP will work toward a bigger presence in social media, particularly Facebook and Twitter, to update local residents and visitors about upcoming events, research, and other pertinent information.

Aquatic preserve staff also hopes to continue participating in many outreach events and festivals to encourage sound resource management and the conservation and protection of AHAP. Furthermore, expanding the volunteer network within AHAP is a major goal. Volunteer support enables staff to more effectively complete field work and participate in many outreach events. AHAP staff rely heavily on other agencies for volunteer coordination when participating in local events throughout the Panhandle; with such a small staff, maintaining current records of volunteers proves difficult. Creating a “friends group” or citizen support organization strictly for AHAP would be beneficial for promoting volunteer opportunities within the aquatic preserve. AHAP aims to develop a more structured and sound volunteer program in the future. There is also a need to develop a school-based program to bring the bay to the local students. The aquatic preserve will coordinate with local schools in the future to develop and implement an educational program that will involve lectures, information, and field trips to the bay to discuss the importance of the ecosystem. Education and Outreach programs in AHAP are critical to the protection, conservation, and enhancement of the aquatic and coastal resources.

4.3.3 / Education and Outreach Issues

Issue I: Water Quality (Continued from same issue in Resource Management section.)

Goal Two: (Numbering continued from Resource Management section.) Provide timely and accurate water quality data and information to the public and other entities/agencies.

Objective One: Acquire an additional repository to store water quality data in a centralized database that is user-friendly, provides quality assurance and quality control for the data collection effort, and can be accessed via the internet to provide site specific information, generate reports, graphs, tables and metadata for review by the public and other entities/agencies.

Integrated Strategy One: Work with UF’s LAKEWATCH to contribute to a centralized water quality storage database and website. LAKEWATCH samples are collected and evaluated and results are available in DEP’s STORET (a STOrage and RETrieval database). STORET is a storage database and website that provides data to the public in a timely manner, and increases data sharing throughout the water quality monitoring network.

Goal Two, Objective One - Performance Measure: Contribute to a storage database, in collaboration with DEP and the UF, to ensure data is available to the public.

Objective Two: Utilize a variety of methods to inform the public and other entities regarding water quality conditions, the importance of water quality, and suggestions to improve water quality within AHAP.

Integrated Strategy One: Utilize educational signage at strategic access points to AHAP, and social media to educate the public on the ecological significance of the bay and how the public can assist in conserving natural resources.

Integrate Strategy Two: Coordinate and participate in public lectures and other events where staff can address water quality issues and discuss methods for improving water quality.

Integrated Strategy Three: Provide and/or create opportunities for the public to volunteer to assist with monitoring efforts and unique events (i.e. Earth Day).

Goal Two, Objective Two - Performance Measures

Performance Measure One: Create and revise informational brochures to disseminate to the public.

Performance Measure Two: Track number of AHAP kiosks that are installed, updated, or repaired throughout the Franklin County area.

Performance Measure Three: Track number of public lectures and other outreach events attended or hosted by AHAP staff.

Performance Measure Four: Track number of people that attend public lectures on water quality or other outreach events.

Performance Measure Five: Post up-to-date information regarding water quality on social media (Facebook, Twitter, etc.) monthly or more often.

Issue II: Protection of Seagrass Habitat (Continued from same issue in Resource Management section.)

Goal One: (Continued from same goal in Ecosystem Science section.) Manage seagrass communities to effectively protect and maintain this habitat as a valuable, natural resource throughout AHAP.

Objective Two: (Numbering continued from Ecosystem Science section.) Promote the importance of seagrass habitats by making use of a variety of informational outlets that target recreational, commercial, and scientific user groups operating in AHAP.

Integrated Strategy One: Design and distribute brochures and other outreach materials that include information on the importance of seagrass habitat, water quality, and sound user practices that can be used to prevent destruction of seagrasses.

Integrated Strategy Two: Repair, replace, or install education signage pertaining to resource protection at public and private boat ramps and marinas throughout AHAP.

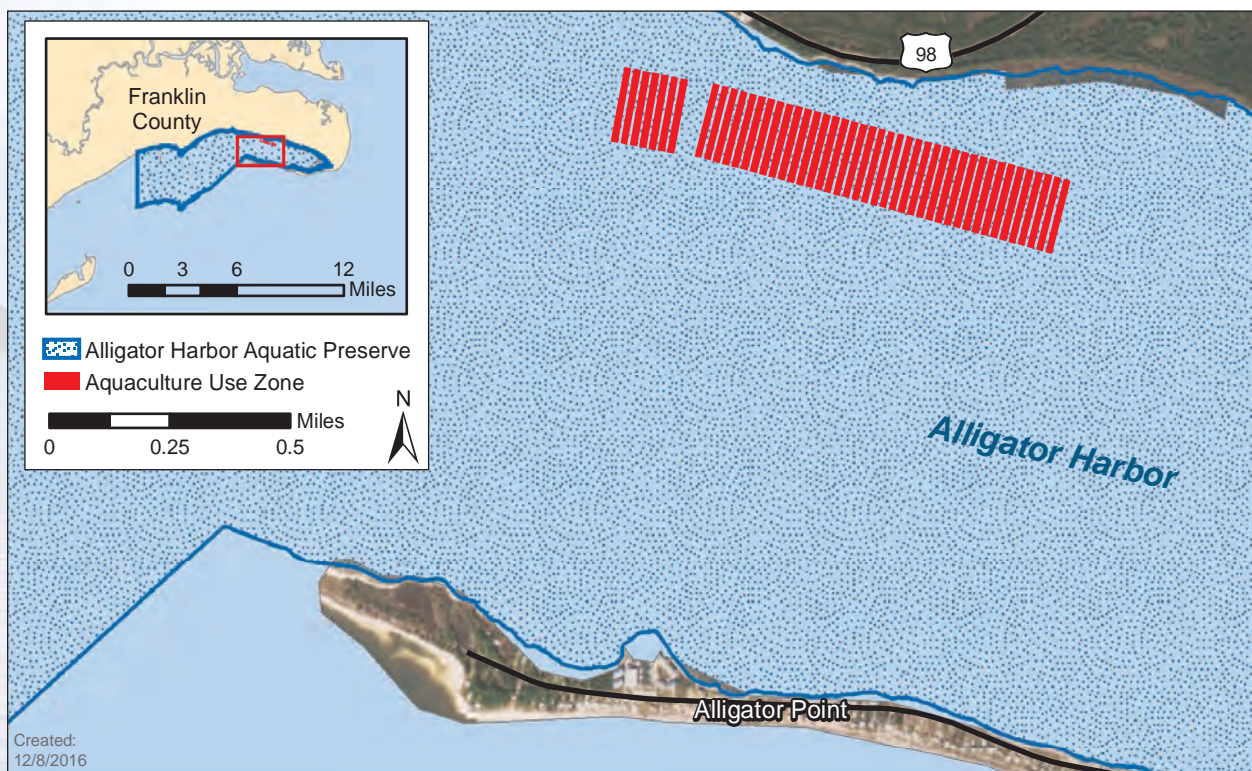
Integrated Strategy Three: Provide educational and informational materials, such as boater's guides and brochures to local businesses, marinas, and tour operators.

Integrated Strategy Four: Continue to participate in education and outreach events throughout the Panhandle to promote the importance of seagrass and other estuarine habitats.

Integrated Strategy Five: Coordinate with local boat and personal watercraft rental companies, fishing charter companies, and other tourism-driven businesses to inform visitors of proper boating practices to reduce the amount of propeller scarring in seagrasses. This could include but is not limited to informational brochures, public service announcements or videos to be shown prior to outings in AHAP.

Goal One, Objective Two – Performance Measures:

Performance Measure One: Produce and acquire brochures and signage informing users of the importance of seagrass habitat, water quality, and good boating practices that can be used to prevent destruction of seagrasses.



Performance Measure Two: Track number of signs that are repaired or installed.

Performance Measure Three: Track number of events attended.

Performance Measure Four: Track number of attendees at lectures and other outreach events.

Performance Measure Five: Track education and outreach measures used by rental companies.

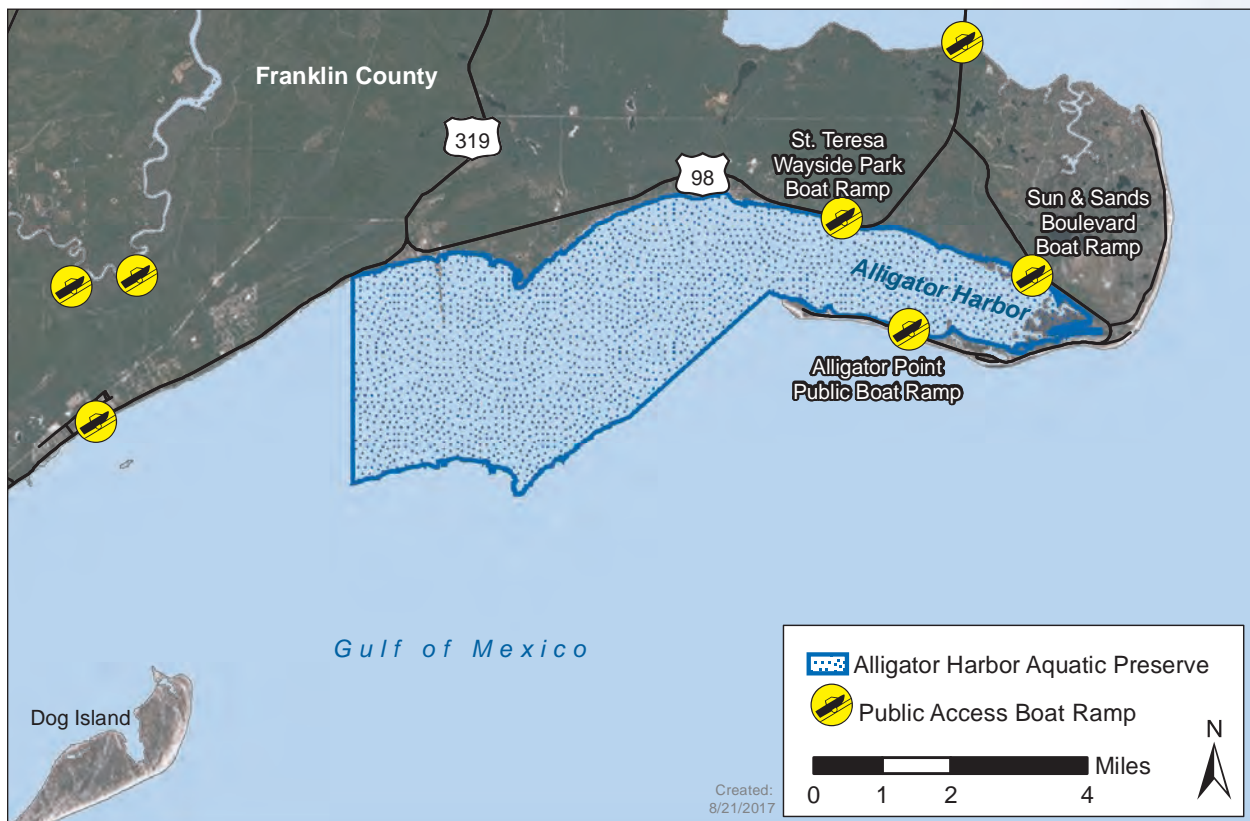
4.4 / *The Public Use Management Program*

The Public Use Management Program addresses the delivery and management of public use opportunities at the aquatic preserve. The components of this program focus on providing the public recreational opportunities within the site's boundaries which are compatible with resource management objectives. The goal for public access management in FCO managed areas is to promote and manage public use of our preserves and reserves that is consistent with natural and cultural resource protection and supports the research, education, and stewardship mission of FCO.

While access by the general public has always been a priority, the conservation of FCO's sites is the primary management concern for FCO. It is essential for staff to analyze existing public uses and define management strategies that balance these activities where compatible in a manner that protects natural, cultural, and aesthetic resources. This requires gathering existing information on use, needs, and opportunities, as well as a thorough consideration of the existing and potential impacts to critical upland, wetland, and submerged habitats. This includes the coordination of visitor program planning with social science research. One of FCO's critical management challenges during the next 10 years is balancing anticipated increases in public use with the need to ensure preservation of site resources. This section explains the history and current status of our public use efforts.

4.4.1 / *Background of Public Use at Alligator Harbor Aquatic Preserve*

Popular recreational activities in AHAP include fishing, boating, sunbathing, and beachcombing. Commercial fishing and shellfish harvesting industries rely on the optimal conditions of the AHAP; specific species harvested include clams, oysters, crabs, and shrimp. Clam aquaculture sites (Map 13) were established in 2002 and have been producing a very valuable product for Florida's economy. In addition to the clam leases, the public has more recently applied for modifications to some existing leases to be able to use the water-column for aquaculture, more specifically, to cultivate oysters. Besides the clam and oyster



Map 14 / *Public access at Alligator Harbor Aquatic Preserve.*

aquaculture, commercial fishing and shellfish harvesting within AHAP is somewhat limited. In 2009, only 148 commercial blue crab and 42 stone crab harvesting licenses were sold in Franklin County (FWC, 2009).

Primary public use issues in AHAP include aquaculture use, boater use and safety, water quality, and marine debris. As development and population pressures increase, potential negative impacts may affect water quality in the aquatic preserve. Water quality is very important within the aquatic preserve, and it is a major goal of AHAP to maintain and improve water quality. The aquaculture industry relies upon good water quality to produce profitable yields. Similarly, seagrass beds are vital habitat for many commercially important species; the seagrass coverage has been declining within Alligator Harbor due to increased stormwater runoff (decreased water clarity) and increased propeller scar damage. The shallow waters and unmarked sandbars, coupled with boater carelessness, pose a threat to seagrass beds. Staff will continue to monitor seagrass health and water quality in the aquatic preserve to assess effects of recreational and developmental pressures.

4.4.2 / Current Status of Public Use at Alligator Harbor Aquatic Preserve

AHAP encourages sustainable use of natural resources while minimizing user impacts. Public support and participation are imperative to protecting natural resources. Strong citizen support is vital to the success of the aquatic preserve's programs. Public participation in resource management enables them to understand the important ecological and economic issues of the system. The goal is to foster understanding of the problems facing these fragile ecosystems and the steps needed to adequately manage this important habitat. In addition, it is important to target specific user groups that enjoy the area. Knowledge of how the bay system works and the resources that make up the system can contribute to the reduction of habitat and species decline. Providing factual, timely information that is appropriate to the target user groups, coastal managers, citizens, and developers is a major goal of the aquatic preserve. Additionally, upland development activity has the potential to have a significant adverse impact on the natural resources of the aquatic preserve. Regularly scheduled meetings between the county and the aquatic preserve should be coordinated to discuss the effectiveness of the management plan and to discuss the enforcement of applicable resource laws and ordinances.

The major public uses of AHAP continue to revolve around shellfish harvesting and recreational activities. The aquaculture leases within Alligator Harbor are some of the most productive in the region. In the western side of AHAP, the clear and shallow waters of the aquatic preserve offer excellent fishing opportunities due to the lush seagrass habitat that supports a variety of commercial and recreational fish species. Although seagrasses are patchier in Alligator Harbor, many commercially and recreationally important species can be found there.

Most of the vessels in AHAP are recreational boats. There are four boat ramps that provide access directly into the Alligator Harbor - Alligator Point Public Boat Ramp, St. Teresa Wayside Park Primitive Boat Ramp, and Sun and Sands Boulevard Primitive Boat Ramp (Map 14). Additional public boat ramps exist to the west of the aquatic preserve, although some are private, only to be used by government officials, or require a fee.

Many users of the bay may not be aware of how their daily activities impact the natural resources in the aquatic preserve; therefore, an education and outreach component is crucial to accomplishing the aquatic preserve's goals and ensuring effective management of the bay system from future impacts. Increased use of the aquatic preserve, for recreation and visitation, coupled with development pressure, results in increased potential to degrade water quality through stormwater runoff and other nonpoint pollution sources. A need exists to acquire information regarding visitor use to provide recreation access that is consistent with resource protection.

AHAP will continue to assist the local government with public access issues by providing recommendations based on natural resource information and data. Staff will attend regularly scheduled county meetings to keep local officials informed of aquatic preserve efforts, as well as provide the public opportunities to inform staff of issues of concern. Management efforts will continue to focus on research and monitoring activities that provide sound, scientific data to make appropriate management decisions and improve public education with signage, presentations, brochures, and marked channels.

4.4.3 / Public Use Issues

Water quality and protection of seagrass habitat are two key issues for AHAP. While both have public use components, those components overlap with components for other management programs, particularly the Education and Outreach Program. Since they were addressed in that section, those objectives and strategies will not be repeated here.

Issue III: Sustainable Public Use

AHAP and the surrounding areas are popular tourist destinations, especially in the summer months. Sandy beaches and boating and fishing opportunities bring in visitors from near and far. The area surrounding AHAP is relatively undeveloped and provides many opportunities for the public to enjoy the aquatic preserve's natural resources. Popular recreational activities include fishing, boating, hiking (at Bald Point State Park), birding and beach-oriented activities such as surf-fishing, swimming, and sunbathing (DEP, n.d.-a).

AHAP encourages sustainable use of natural resources while minimizing user impacts. Public support and interagency participation are imperative to protecting natural resources. Public participation in resource management enables them to understand the important ecological and economic issues of the system. By examining existing public use and natural resource patterns and trends, AHAP staff can proactively identify potential conflicts and work with stakeholders to prioritize strategies to sustain a healthy ecosystem for the benefit of Florida residents and visitors. Ecological services derived from healthy ecosystems include aesthetics, water, food, carbon storage, storm buffers, and pollution abatement. These can sustain human life and support social and economic prosperity (Turner et al., 2007). Raising public awareness for the valuable services that a healthy bay provides is a priority objective to build stakeholder support to conserve and restore this important natural resource.

Addressing issues, such as marine debris, are important in assessing the overall health of the aquatic preserve. Marine debris presents a real and chronic threat to wildlife and public safety; entanglement, ingestion, and the release of toxins into the environment are issues related to debris. Additionally, the presence of debris detracts from the aesthetic value of natural landscapes. Marine debris can include paper and plastic products, construction debris, derelict vessels, and derelict aquaculture and fisheries gear (ropes, buoys, nets, PVC, etc.). Lost and abandoned stone crab and blue crab traps have been identified as a problem in Florida's marine environment by various stakeholders, including the commercial fishing industry. Once traps become derelict, they may create user conflicts, "ghost fish" (continue to trap marine organisms until traps degrade enough to allow escape), visually pollute, cause damage to sensitive habitats, and become hazards to navigation (FWC, n.d.-a).

Goal One: Encourage user experiences and public recreation opportunities consistent with natural resource conservation.

Objective One: Inform local residents and visitors about actions they can take to conserve and restore resources of AHAP.

Integrated Strategy One: Partner with other agencies to develop and distribute information identifying potential use conflicts and methods of prevention.

Integrated Strategy Two: Develop informational brochures and/or participate in local meetings to educate user groups of potential impacts to the natural resources associated with user activities.

Integrated Strategy Three: Post educational signage at public access points. Partnerships with public access managers will be formed to install educational kiosks at high-use public boat ramps within and near AHAP. Aquatic preserve signage currently exists at only one public ramp. Informational and aesthetic displays that highlight natural resources found in the aquatic preserve will be constructed at additional public boat ramps.

Integrated Strategy Four: Partner with other agencies to keep the public informed about preserving the historical resources in the area and the proper routes of communication to report damaged or previously undiscovered cultural sites. Staff will alert DHR to any or potentially undiscovered sites.

Goal One, Objective One - Performance Measures:

Performance Measure One: Track quantity of brochures distributed and/or public education meetings attended.

Performance Measure Two: Track quantity and location of educational signage at public boat ramps.

Performance Measure Three: Develop a plan of action to identify, locate, protect, and preserve or otherwise use cultural resources in and surrounding AHAP. Staff will consult with DHR and other aquatic preserves for advice on developing a specific plan to preserve and protect cultural resources.

Objective Two: Examine public use patterns and trends within AHAP to proactively identify potential resource/public use conflicts and by working with key stakeholders, develop conservation strategies to minimize damage to the natural resources.

Integrated Strategy One: In an effort to identify resource/public use conflicts and develop conservation strategies, AHAP staff will create an aquatic preserve visitor use survey.

Goal One, Objective Two - Performance Measures:

Performance Measure One: Continue to attend and track quarterly meetings with regulatory staff and NFWFMD staff to provide updates and discuss relevant issues within AHAP.

Performance Measure Two: Create a visitor use survey and produce a summary report on visitor use.

Goal Two: Promote low-impact, sustainable recreational opportunities.

Objective One: Increase awareness of non-consumptive use opportunities such as wildlife viewing, paddle boarding, sailing, kayaking, canoeing, swimming, and snorkeling.

Integrated Strategy One: Promote the Florida Circumnavigational Trail through educational signage paddling launch sites. Staff will work with Florida Greenways and Trails to provide updated information pertaining to resources found along the trail.

Goal Two, Objective One Performance Measure: Work with adjacent land managers and government agencies to promote expansion of non-consumptive activities.

Goal Three: Address areas impacted by human use while educating users of the effects of improper use.

Objective One: Reduce the amount of debris, contaminants, and other resource damages associated with user groups.

Integrated Strategy One: Understand and address consumptive use impacts from fisheries, such as shrimping, crabbing, scalloping, and aquaculture, and others that utilize gear and methods that can be harmful to natural resources in AHAP, while recognizing the importance to local economies.

Integrated Strategy Two: Coordinate with other resource agencies and law enforcement to support efforts to address derelict and/or illegal fisheries gear and harvesting activities and to assist in the removal of derelict fishing gear and/or illegal fisheries gear in AHAP.

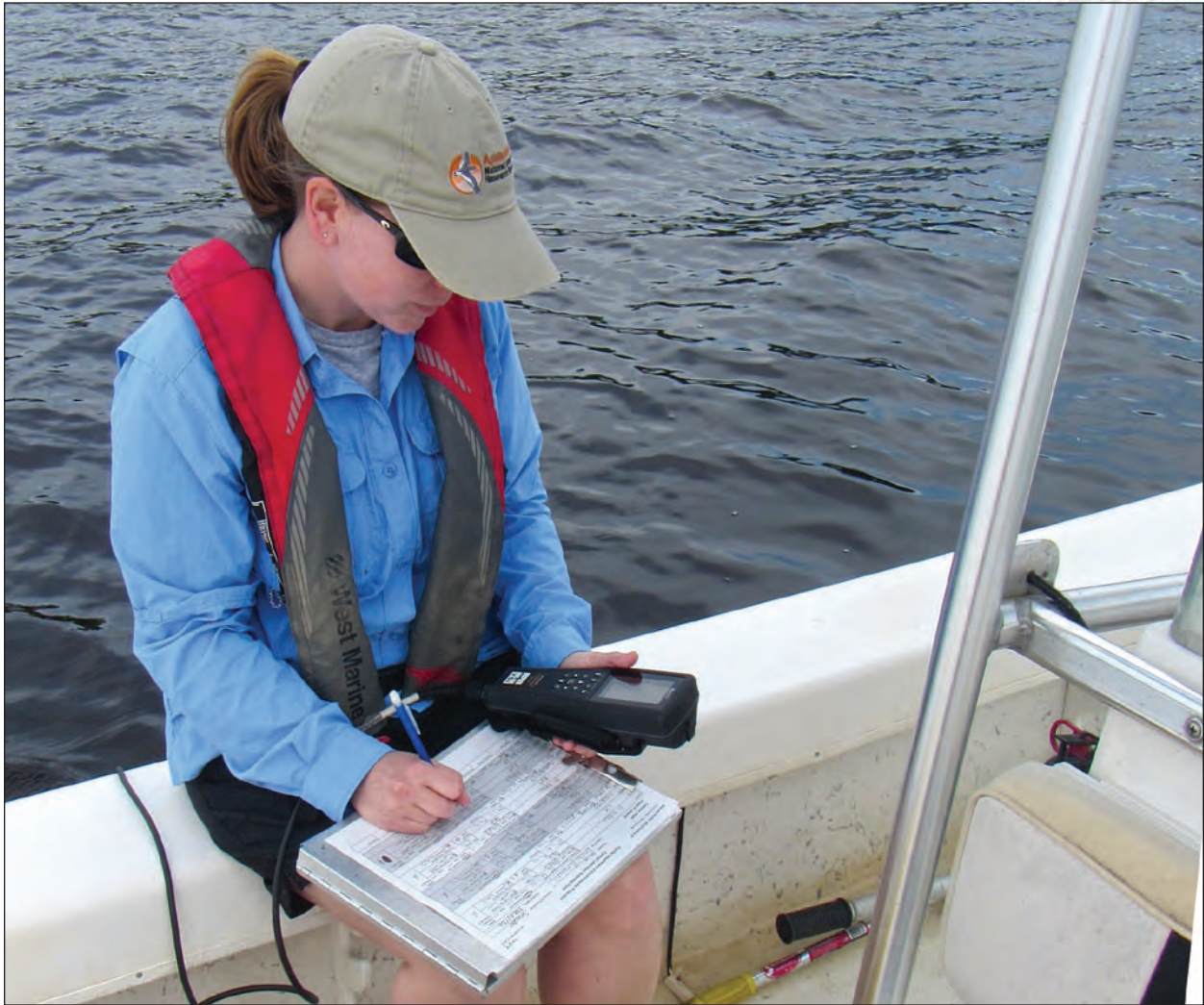
Integrated Strategy Three: Partner with FWC and other agencies to secure funding for and develop habitat restoration projects involving the removal of marine debris.

Goal Three, Objective One – Performance Measures:

Performance Measure One: Partner with local citizens, state agencies, and federal agencies to complete at least one marine debris removal project annually in areas of concern to protect and restore resources.

Performance Measure Two: Track quantity of education and outreach measures regarding marine debris.

Performance Measure Three: Produce a summary report every five years of efforts made in marine debris removal/restoration.



Aquatic preserve staff use a handheld sonde to collect water quality information.

Part Three

Additional Plans

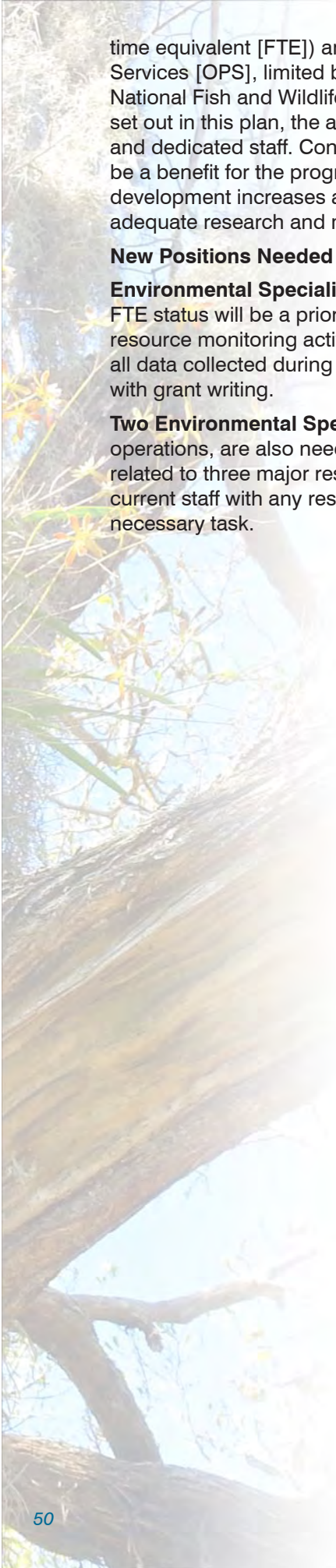
Chapter Five

Administrative Plan

Successful implementation of the Alligator Harbor Aquatic Preserve research, education and resource management programs outlined in this management plan depends on an effective administration strategy and framework that provides for adequate staffing, facilities, funding, and cooperation with other agencies and citizen support. The objectives of the aquatic preserve's administrative program include the following: 1) to supervise and administer programs and maintain facilities; 2) to comply with all legal rules, contracts, agreements and regulations; 3) to maintain all records needed for operating, budgeting, planning and purchasing; and 4) to communicate and coordinate with all entities involved in research, education, commercial, and recreational utilization or management within the aquatic preserve.

Staffing

The Central Panhandle Aquatic Preserves office is responsible for the management of four aquatic preserves in Bay, Gulf, and Franklin counties; these include St. Andrews State Park Aquatic Preserve (25,000 acres), St. Joseph Bay Aquatic Preserve (73,000 acres), Apalachicola Bay Aquatic Preserve (80,875 acres), and Alligator Harbor Aquatic Preserve (14,184 acres), respectively. As of the 2016 – 2017 fiscal year, staff is composed of the Aquatic Preserve Manager (Environmental Specialist III, full-



time equivalent [FTE]) and Special Projects Coordinator (Environmental Specialist III, Other Personal Services [OPS], limited benefits). The Special Projects Coordinator position is grant-funded through the National Fish and Wildlife Foundation. In order to run an effective program and accomplish the goals set out in this plan, the aquatic preserve must offer some kind of incentive to retain and attract talented and dedicated staff. Converting the Special Projects Coordinator position from OPS to FTE status would be a benefit for the program and is a high priority for the aquatic preserve. Over the next 10 years, as development increases along the coast, additional FTE and OPS staff will be necessary to continue adequate research and monitoring efforts within the Central Panhandle Aquatic Preserves.

New Positions Needed

Environmental Specialist III (FTE) – Converting the Special Projects Coordinator position from OPS to FTE status will be a priority as this position assists the Aquatic Preserve Manager, plans and implements resource monitoring activities including seagrass and water quality, and enters, analyzes, and interprets all data collected during monitoring activities. This position also heads up restoration efforts and assists with grant writing.

Two Environmental Specialist I (OPS) – Two full time OPS positions, which would be dedicated to field operations, are also needed. The main priority of these positions will be to assist with monitoring efforts related to three major restoration projects over the next ten years. These positions would also assist current staff with any research and monitoring, education and outreach, or any other mission critical or necessary task.



Public beach access points like this one on Alligator Point allow everyone to enjoy the beauty of Alligator Harbor Aquatic Preserve.

Chapter Six

Facilities Plan

Facilities

The Central Panhandle Aquatic Preserves office is currently housed within the Apalachicola National Estuarine Research Reserve's (ANERR) Eastpoint, Florida facility. The ANERR facility is sited on 26 acres along the shore of Apalachicola Bay near the northern terminus of the St. George Island bridge. The facility is approximately 18,000 square feet and was funded by both National Oceanic and Atmospheric Administration acquisition and construction grant funds and money appropriated by the Florida Legislature. The building includes both lab and office space, as well as larger conference rooms for preserve staff to host meetings. ANERR has also provided storage space, for aquatic preserve staff to house field instruments and supplies.

Upon the occasion of a hurricane storm event, staff will follow the procedures outlined in the ANERR Hurricane Plan. This plan is updated annually, and accounts for how all facilities, equipment and data sources are to be protected in the event of a storm, and provides for the relocation of vehicles, vessels and sensitive equipment.

Vehicles

The Central Panhandle Aquatic Preserves office does not currently have a vehicle assigned to it. Vehicles are borrowed from ANERR's fleet when needed. A dedicated truck, capable of pulling up to a 25-foot boat, is needed for the aquatic preserve to accomplish management goals.

Vessels

- **19' Twin Vee Bay Cat** – In 2004, the aquatic preserve acquired a 19-foot Twin Vee Bay Cat Skiff and trailer that are utilized to accomplish program management goals. When the offices closed in 2011, the Twin Vee was absorbed by ANERR's research program. The aquatic preserve office now borrows this boat from ANERR when it is available. A dedicated vessel is needed for the aquatic preserve to fully accomplish program management goals.

- **Tandem Kayak** – Acquired in 2002 to use while monitoring seagrass habitat in shallow areas.

List of Appendices

Appendix A / Legal Documents	54
A.1 / Aquatic Preserve Resolution	54
A.2 / Florida Statutes	55
A.3 / Florida Administrative Code	55
Appendix B / Resource Data	56
B.1 / Glossary of Terms	56
B.2 / References	57
B.3 / Species Lists	61
Native Species	61
Listed Species	76
Invasive Non-native and/or Problem Species.....	76
B.4 / Arthropod Control Plan.....	77
B.5 / Archaeological and Historical Sites Associated with Alligator Harbor Aquatic Preserve	77
Appendix C / Public Involvement	
C.1 / Advisory Committee	79
List of Members and their Affiliations.....	79
Florida Administrative Register Posting.....	80
Meeting Summary	83
C.2 / Formal Public Meeting	88
Florida Administrative Register Posting.....	88
Advertisement Flyer.....	90
Newspaper Advertisement.....	91
Formal Public Meeting Summary	92
Appendix D / Goals, Objectives, and Strategies	95
D.1 / Current Goals, Objectives and Strategies Budget Table	95
D.2 / Budget Summary Table.....	100
D.3 / Major Accomplishments Since the Approval of the Previous Plan.....	100
D.4 / Gulf Restoration Priority Projects	101
Appendix E / Other Requirements	108
E.1 / Acquisition and Restoration Council Management Plan Compliance Checklist	108
E.2 / Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands	114
E.3 / Letters of Compliance with County Comprehensive Plan.....	115
E.4 / Division of State Lands Management Plan Approval Letter	117

Legal Documents

A.1 / Aquatic Preserve Resolution

WHEREAS, the State of Florida, by virtue of its sovereignty, is the owner of the beds of all navigable waters, salt and fresh, lying within its territory, with certain minor exceptions, and is also the owner of certain other lands derived from various sources; and

WHEREAS, title to these sovereignty and certain other lands has been vested by the Florida Legislature in the State of Florida Board of Trustees of the Internal Improvement Trust Fund, to be held, protected and managed for the long range benefit of the people of Florida; and

WHEREAS, the State of Florida Board of Trustees of the Internal Improvement Trust Fund, as a part of its overall management program for Florida's state-owned lands, does desire to insure the perpetual protection, preservation and public enjoyment of certain specific areas of exceptional quality and value by setting aside forever these certain areas as aquatic preserves or sanctuaries; and

WHEREAS, the ad hoc Florida Inter-Agency Advisory Committee on Submerged Land Management has selected through careful study and deliberation a number of specific areas of state-owned land having exceptional biological, aesthetic and scientific value, and has recommended to the State of Florida Board of Trustees of the Internal Improvement Trust Fund that these selected areas be officially recognized and established as the initial elements of a statewide system of aquatic preserves for Florida;

NOW, THEREFORE, BE IT RESOLVED by the State of Florida Board of Trustees of the Internal Improvement Trust Fund:

THAT it does hereby establish a statewide system of aquatic preserves as a means of protecting and preserving in perpetuity certain specially selected areas of state-owned land: and

THAT specifically described, individual areas of state-owned land may from time to time be established as aquatic preserves and included in the statewide system of aquatic preserves by separate resolution of the State of Florida Board of Trustees of the Internal Improvement Trust Fund; and

THAT the statewide system of aquatic preserves and all individual aquatic preserves established thereunder shall be administered and managed, either by the said State of Florida Board of Trustees of the Internal Improvement Trust Fund or its designee as may be specifically provided for in the establishing resolution for each individual aquatic preserve, in accordance with the following management policies and criteria:

- (1) An aquatic preserve is intended to set aside an exceptional area of state-owned land and its associated waters for preservation essentially in their natural or existing condition by reasonable regulation of all human activity which might have an effect on the area.
- (2) An aquatic preserve shall include only lands or water bottoms owned by the State of Florida, and such private lands or water bottoms as may be specifically authorized for inclusion by appropriate instrument from the owner. Any included lands or water bottoms to which a private ownership claim might subsequently be proved shall upon adjudication of private ownership be automatically excluded from the preserve, although such exclusion shall not preclude the State from attempting to negotiate an arrangement with the owner by which such lands or water bottoms might be again included within the preserve.
- (3) No alteration of physical conditions within an aquatic preserve shall be permitted except: (a) minimum dredging and spoiling for authorized public navigation projects, or (b) other approved activity designed to enhance the quality or utility of the preserve itself. It is inherent in the concept of the aquatic preserve that, other than as contemplated above, there be: no dredging and filling to create land, no drilling of oil wells or excavation for shell or minerals, and no erection of structures on stilts or otherwise unless associated with authorized activity, within the confines of a preserve - to the extent these activities can be lawfully prevented.
- (4) Specifically, there shall be no bulkhead lines set within an aquatic preserve. When the boundary of a preserve is intended to be the line of mean high water along a particular shoreline, any bulkhead line subsequently set for that shoreline will also be at the line of mean high water.
- (5) All human activity within an aquatic preserve shall be subject to reasonable rules and regulations promulgated and enforced by the State of Florida Board of Trustees of the Internal Improvement Trust Fund and/or any other specifically designated managing agency. Such rules and regulations shall not interfere unduly with lawful and traditional public uses of the area, such as fishing (both sport and commercial), hunting, boating, swimming and the like.
- (6) Neither the establishment nor the management of an aquatic preserve shall infringe upon the lawful and traditional riparian rights of private property owners adjacent to a preserve. In furtherance of these

rights, reasonable improvement for ingress and egress, mosquito control, shore protection and similar purposes may be permitted by the State of Florida Board of Trustees of the Internal Improvement Trust Fund and other jurisdictional agencies, after review and formal concurrence by any specifically designated managing agency for the preserve in question.

(7) Other uses of an aquatic preserve, or human activity within a preserve, although not originally contemplated, may be permitted by the State of Florida Board of Trustees of the Internal Improvement Trust Fund and other jurisdictional agencies, but only after a formal finding of compatibility made by the said Trustees on the advice of any specifically designated managing agency for the preserve in question.

IN TESTIMONY WHEREOF, the Trustees for and on behalf of the State of Florida Board of Trustees of the Internal Improvement Trust Fund have hereunto subscribed their names and have caused the official seal of said State of Florida Board of Trustees of the Internal Improvement Trust Fund to be hereunto affixed, in the City of Tallahassee, Florida, on this the 24th day of November A. D. 1969.

CLAUDE R. KIRK, JR, Governor

TOM ADAMS, Secretary of State

EARL FAIRCLOTH, Attorney General

FRED O. DICKINSON, JR., Comptroller

BROWARD WILLIAMS, Treasurer

FLOYD T. CHRISTIAN, Commissioner of Education

DOYLE CONNER, Commissioner of Agriculture

As and Constituting the State of Florida Board of Trustees of the Internal Improvement Trust Fund

A.2 / Florida Statutes

All the statutes can be found according to number at www.leg.state.fl.us/Statutes

Florida Statutes, Chapter 253: State Lands

Florida Statutes, Chapter 258: State Parks and Preserves
Part II (Aquatic Preserves)

Florida Statutes, Chapter 267 (Historical Resources)

Florida Statutes, Chapter 370: Saltwater Fisheries

Florida Statutes, Chapter 372: Wildlife

Florida Statutes, Chapter 403: Environmental Control

(Statute authorizing the Florida Department of Environmental Protection (DEP) to create Outstanding Florida Waters is at 403.061 (27))

Florida Statutes, Chapter 597: Aquaculture

A.3 / Florida Administrative Codes

All rules can be found according to number at www.flrules.org/Default.asp

Florida Administrative Code, Chapter 18-20: Florida Aquatic Preserves
<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=18-20>

Florida Administrative Code, Chapter 18-21: Sovereignty Submerged Lands Management
www.flrules.org/gateway/ChapterHome.asp?Chapter=18-21

Florida Administrative Code, Chapter 62-302: Surface Water Quality Standards
(Rule designating Outstanding Florida Waters is at 62-302.700)
www.flrules.org/gateway/ChapterHome.asp?Chapter=62-302

Resource Data

B.1 / Glossary of Terms

References to these definitions can be found at the end of this list and in Appendix B.2 (References).

aquaculture - the cultivation of aquatic organisms. (Lincoln et al., 2003)

codify - to arrange laws and rules systematically. (Neufeldt & Sparks, 1990)

diversity - a measure of the number of species and their relative abundance in a community. (Lincoln et al., 2003)

drainage basin (catchment) - the area from which a surface watercourse or a groundwater system derives its water; watershed. (Allaby, 2005)

easement - a right that one may have in another's land. (Neufeldt & Sparks, 1990)

ecosystem - a community of organisms and their physical environment interacting as an ecological unit. (Lincoln et al., 2003)

emergent - an aquatic plant having most of the vegetative parts above water; a tree which reaches above the level of the surrounding canopy. (Lincoln et al., 2003)

endangered species - an animal or plant species in danger of extinction throughout all or a significant portion of its range. (U.S. Fish and Wildlife Service [USFWS], 2015)

epifauna - the total animal life inhabiting a sediment surface or water surface; epibenthos. (Lincoln et al., 2003)

extinction - the disappearance of a species from a given habitat. (Lincoln et al., 2003)

fauna - the animal life of a given region, habitat or geological stratum. (Lincoln et al., 2003)

flora - the plant life of a given region, habitat or geological stratum. (Lincoln et al., 2003)

geographic information system (GIS) - computer system supporting the collection, storage, manipulation and query of spatially referred data, typically including an interface for displaying geographical maps. (Lincoln et al., 2003)

infauna - the animal life within a sediment. (Lincoln et al., 2003)

intertidal zone - the shore zone between the highest and lowest tides; littoral. (Lincoln et al., 2003)

listed species - a species, subspecies, or distinct population segment that has been added to the Federal list of endangered and threatened wildlife and plants. (USFWS, 2015)

mandate - an order or command; the will of constituents expressed to their representative, legislature, etc. (Neufeldt & Sparks, 1990)

midden - a refuse heap; used especially in archaeology. (Lincoln et al., 2003)

population - all individuals of one or more species within a prescribed area. A group of organisms of one species, occupying a defined area and usually isolated to some degree from other similar groups. (Lincoln et al., 2003)

psammophyte - a plant growing or moving in unconsolidated sand. (Lincoln et al., 2003)

runoff - part of precipitation that is not held in the soil but drains freely away. (Lincoln et al., 2003)

salinity - a measure of the total concentration of dissolved salts in seawater. (Lincoln et al., 2003)

sessile - non-motile; permanently attached at the base. (Lincoln et al., 2003)

species - a group of organisms, minerals or other entities formally recognized as distinct from other groups; the basic unit of biological classification. (Lincoln et al., 2003)

species of concern - an informal term referring to a species that might be in need of conservation action. This may range from a need for periodic monitoring of populations and threats to the species and its habitat, to the necessity for listing as threatened or endangered. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing. A similar term is "species at risk," which is a general term for listed species as well as unlisted ones that are declining in population. Canada uses the term in its new "Species at Risk Act." "Imperiled species" is another general term for listed as well as unlisted species that are declining. (USFWS, 2015)

stakeholder - any person or organization who has an interest in the actions discussed or is affected by the resulting outcomes of a project or action. (USFWS, 2015)

subtidal - environment which lies below the mean low water level. (Allaby, 2005)

supratidal - the zone on the shore above mean high tide level. (Lincoln et al., 2003)

threatened species - an animal or plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. (USFWS, 2015)

turbid - cloudy; opaque with suspended matter. (Lincoln et al., 2003)

upland - land elevated above other land. (Neufeldt & Sparks, 1990)

vegetation - plant life or cover in an area; also used as a general term for plant life. (Lincoln et al., 2003)

water column - the vertical column of water in a sea or lake extending from the surface to the bottom. (Lincoln et al., 2003)

watershed - an elevated boundary area separating tributaries draining in to different river systems; drainage basin. (Lincoln et al., 2003)

wetland - an area of low lying land, submerged or inundated periodically by fresh or saline water. (Lincoln et al., 2003)

wildlife - any undomesticated organisms; wild animals. (Allaby, 2005)

B.2 | References

- Bethea, B.M., Ajemian, M.J., Carlson, J.K., Hoffmayer, E.R., Imhoff, J.L., Grubbs, R.D., Peterson, C.T., & Burgess, G.H. (2015). Distribution and community structure of coastal sharks in the northeastern Gulf of Mexico. *Environmental Biology of Fishes*, 98: 1233.
- Brim, M.S. & Handley, L.R. (2007). St. Andrew Bay. In L. Handley, D. Altsman, & R. DeMay (Eds.), *Seagrass status and trends in the northern Gulf of Mexico: 1940-2002*. (U.S. Geological Survey Scientific Investigations Report 2006-5287 and U.S. Environmental Protection Agency 855-R-003). pp. 155-169. Reston, VA: U.S. Geological Survey.
- Carlson, P.R. & Madley, K. (2007). Statewide Summary of Florida. In: Handley, D. Altsman, & R. DeMay (Eds.), *Seagrass status and trends in the northern Gulf of Mexico: 1940-2002*. (U.S. Geological Survey Scientific Investigations Report 2006-5287 and U.S. Environmental Protection Agency 855-R-003). pp. 99-114. Reston, VA: U.S. Geological Survey.
- City of Apalachicola. (n.d.). *Apalachicola history*. Retrieved August 16, 2016, from <http://www.cityofapalachicola.com/history.cfm>
- Coles, D.J. (1994). "Hell-By-The-Sea": Florida's Camp Gordon Johnston in World War II. *The Florida Historical Quarterly*, 73(1), 1-22. Retrieved from <http://www.jstor.org/stable/30148724>
- Dawes, C.J., Phillips, R.C., & Morrison, G. (2004). *Seagrass communities of the Gulf Coast of Florida: Status and ecology – final report*. St. Petersburg, FL: Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute and the Tampa Bay Estuary Program.
- Ecological Society of America. (2004). *Invasion* [Brochure]. Retrieved from <http://www.esa.org/esa/wp-content/uploads/2012/12/invasion.pdf>
- Florida Department of Agriculture and Consumer Services. (2001). Residents apply for Alligator Harbor leases. *Florida Aquaculture*, 10, 3.
- Florida Department of Agriculture and Consumer Services. (n.d.) Tate's Hell State Forest. Retrieved from <http://www.freshfromflorida.com/Divisions-Offices/Florida-Forest-Service/Our-Forests/State-Forests/Tate-s-Hell-State-Forest>
- Florida Department of Environmental Protection. (1997). Florida drainage basins 1997. Retrieved from http://geodata.dep.state.fl.us/datasets/6ceca90e86c84aeda5ee2b9ac9298518_0/features/1921
- Florida Department of Environmental Protection. (2006). *Bald Point State Park unit management plan*. Retrieved from <http://www.dep.state.fl.us/parks/planning/parkplans/BaldPointStatePark.pdf>
- Florida Department of Environmental Protection. (2008). *St. Joseph Bay Aquatic Preserve management plan*. Tallahassee, FL: Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed Areas.
- Florida Department of Environmental Protection. (2014). *Apalachicola National Estuarine Research Reserve management plan*. Tallahassee, FL: Florida Department of Environmental Protection, Florida Coastal Office.
- Florida Department of Environmental Protection. (2016). *Alligator Harbor shorebird nesting data*. Tallahassee, FL: Florida Department of Environmental Protection.
- Florida Department of Environmental Protection. (n.d.-a). Alligator Harbor Aquatic Preserve. Retrieved from <http://www.dep.state.fl.us/coastal/sites/alligator/>
- Florida Department of Environmental Protection. (n.d.-b). Bald Point State Park. Retrieved from <https://www.floridastateparks.org/park/Bald-Point>
- Florida Department of Environmental Protection. (n.d.-c). Ochlockonee River State Park. Retrieved from <https://www.floridastateparks.org/park/Ochlockonee-River>
- Florida Department of Environmental Protection. (n.d.-d). Surface Water Quality Standards. Retrieved from <http://www.dep.state.fl.us/water/wqssp/classes.htm>
- Florida Department of Highway Safety and Motor Vehicles. (2015). 2015 Alphabetical Vessel Statistics by County. Retrieved from <http://www.flhsmv.gov/dmv/TaxCollDocs/vesselstats2015.pdf>
- Florida Department of Natural Resources. (1986). *Alligator Harbor Aquatic Preserve management plan*. Retrieved from http://www.dep.state.fl.us/coastal/sites/alligator/pub/Alligator_Harbor_AP_Management_Plan_1983.pdf

- Florida Fish and Wildlife Conservation Commission. (2009). *Marine fisheries information system: 2008-2009 license/permit summary*. Retrieved from http://myfwc.com/media/203563/sumcnty_lic_0809.pdf
- Florida Fish and Wildlife Conservation Commission. (2015a). *Florida Bay Scallop 2014 Annual Report*. St. Petersburg, FL: Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute. Retrieved from http://myfwc.com/media/2144988/bs_2014_annual_report.pdf
- Florida Fish and Wildlife Conservation Commission. (2015b). *Fisheries-Independent Monitoring Program 2015 Annual Data Summary Report* (pp. 3-6). St. Petersburg, FL: Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute.
- Florida Fish and Wildlife Conservation Commission. (2016). *Shorebird Breeding Seasons and FWC Regional Shorebird Contacts*. Retrieved from <http://myfwc.com/media/2972075/ShorebirdCountyAssignments.pdf>
- Florida Fish and Wildlife Conservation Commission. (n.d.-a). *Derelict trap cleanup events*. Retrieved from <http://myfwc.com/fishing/saltwater/trap-debris/volunteer-program/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-b). *Fisheries-Independent Monitoring using stratified-random sampling*. Retrieved from <http://myfwc.com/research/saltwater/fish/research/fim-stratified-random-sampling/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-c). *Florida's exotic fish and wildlife*. Retrieved from <http://myfwc.com/wildlifehabitats/nonnatives/how-do-they-get-here/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-d). *Florida Manatee Program*. Retrieved from <http://myfwc.com/manatee/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-e). *Gulf sturgeon: *Acipenser oxyrinchus desotoi**. Retrieved from <http://myfwc.com/wildlifehabitats/profiles/saltwater/gulf-sturgeon/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-f). *Harmful algal bloom monitoring*. Retrieved from <http://myfwc.com/research/redtide/monitoring/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-g). *Harvesting and reporting lionfish*. Retrieved <http://www.myfwc.com/wildlifehabitats/nonnatives/marine-species/lionfish/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-h). *Importance of seagrass*. Retrieved from <http://myfwc.com/research/habitat/seagrasses/information/importance/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-i). *Lionfish recreational regulations*. Retrieved from <http://www.myfwc.com/fishing/saltwater/recreational/lionfish/>
- Florida Fish and Wildlife Conservation Commission. (n.d.-j). *Marine turtle protection*. Retrieved from <http://myfwc.com/wildlifehabitats/managed/sea-turtles/protection/>
- The Florida Memory Blog. (2014). *Preparing for D-Day: Camp Gordon Johnston near Carrabelle*. Retrieved August 18, 2016, from <https://www.floridamemory.com/blog/2014/06/06/preparing-for-d-day-camp-gordon-johnston-near-carrabelle/>
- Florida Natural Areas Inventory. (2010). *Guide to the Natural Communities of Florida*. Tallahassee, FL: Florida Natural Areas Inventory.
- Florida State University. (2010). Florida Climate Center. Apalachicola. Retrieved from <http://climatecenter.fsu.edu/products-services/data/1981-2010-normals/apalachicola>
- Fonseca, M.S., Kenworthy, W.J. & Thayer, G.W. (1998). *Guidelines for the conservation and restoration of seagrasses in the United States and adjacent waters* (Decision Analysis Series No. 12). Silver Spring, MD: National Oceanic and Atmospheric Administration, Coastal Ocean Program.
- Franklin County. (2008). Franklin County growth management comprehensive plan. Retrieved from http://www.co.franklin.wa.us/planning/documents/2008ComprehensivePlan-Entirepdfwebsite_000.pdf
- Franklin County History. (n.d.). History. Retrieved August 17, 2016 from <http://www.saltyflorida.com/things-to-do/history/>
- Humm, H.J. (1956). Sea grasses of the northern Gulf coast. *Bulletin of Marine Science of the Gulf and Caribbean*, 6, 305-308.
- Jacoby, J., Walters, L., Baker, S., & Blyler, K. (2003). *A primer on invasive species in coastal and marine waters* (SGEB 60). Gainesville, FL: University of Florida, Sea Grant, Florida. Retrieved from <http://nsgl.gso.uri.edu/flsgp/flsgpg05001.pdf>
- McNab W.H., & Avers, P.E. (1994). *Ecological Subregions of the United States*. Retrieved September 7, 2016 from <http://www.fs.fed.us/land/pubs/ecoregions/ch21.html#232D>
- Menzel, R.W. (1957). Marine biology of Alligator Harbor, FL. *ASB Bulletin*, 4(4), 51-54.
- Milanich, J.T. (1998). *Florida's Indians from Ancient Times to the Present. Ancient Floridians*. Retrieved from http://www.fimnh.ufl.edu/vertpaleo/auquilla11_1/milanich.htm
- National Oceanic and Atmospheric Administration. (n.d.-a). National Hurricane Center. Retrieved from <http://www.nhc.noaa.gov/>

- National Oceanic and Atmospheric Administration. (n.d.-b). NOAA Fisheries. *Recreational Fishing*. Retrieved from http://sero.nmfs.noaa.gov/recreational_fishing/
- Northwest Florida Water Management District. (2000). *St. Andrew Bay Watershed Surface Water Improvement and Management Plan*. Retrieved from http://www.nwfwmd.state.fl.us/system/assets/70/original/St.AndrewBay_SWIM_Plan.pdf
- Northwest Florida Water Management District. (n.d.). NFWFMD Regional Wetland Mitigation: Apalachicola Watershed. Retrieved March 20, 2017 from <http://www.nwfwmdwetlands.com/Umbrella-Plan/Watersheds/Apalachicola-Watershed>
- Ray-Culp, M. (2007). A living shoreline initiative for the Florida Panhandle: Taking a softer approach. *National Wetlands Newsletter*, 6(29), 9-11, 19.
- Saraceni, J.E. (1997). Apalachee surface in Louisiana. *Archaeology Archive*. Retrieved August 31, 2016 from <http://archive.archaeology.org/online/news/apalachee.html>
- Sargent, F.J., Leary, T.J., Crewz, D.W. & Kruer, C.W. (1995). *Scarring of Florida's seagrasses: Assessment and management options*. (FMRI Technical Report TR-1). St. Petersburg, FL: Florida Department of Environmental Protection, Florida Marine Research Institute.
- Schmidt, W. (1978). *Environmental geology series, Apalachicola sheet* [Map]. Tallahassee, FL: Florida Department of Natural Resources. Bureau of Geology.
- Scott, M.T., Campbell, K.M., Rupert, F.R., Arthur, J.D., Missimer, T.M., Lloyd, J.M., Yon, J.W., Duncan, J.G. (2001). *Geologic Map of the State of Florida – Panhandle*. Retrieved from http://sofia.usgs.gov/publications/maps/florida_geology/Tflmappanh.jpg
- Sears, W.T. (1964). The Tucker Site on Alligator Harbor, Franklin County, Florida. *American Anthropologist*, 66(3), 710. doi:10.1525/aa.1964.66.3.02a00650
- Simberloff, D., Schmitz, D.C., Brown, T.C. (Eds.) (1997). *Strangers in paradise: Impact and management of nonindigenous species in Florida*. Washington, DC: Island Press.
- Stephenson, S. (2016). *Florida Bay Scallop 2015 Annual Report*. Retrieved Florida Fish and Wildlife Conservation Commission website: <http://myfwc.com/research/saltwater/mollusc/bay-scallops/research/>
- Turner, W.R, Brandon, K., Brooks, T.M., Constanza, R., Da Fonseca, G.A.B., & Portela, R. (2007). Global conservation of biodiversity and ecosystem services. *Bioscience*, 57(10), 868-873. doi:10.1641/B571009 I
- United States Army Corps of Engineers. (1979). Coordination Report: Detailed Project Study on Alligator Harbor, Florida. Mobile, AL: United States Army Corps of Engineers, Mobile District.
- United States Census Bureau. (2015). Franklin County, Florida. Retrieved from <http://www.census.gov/quickfacts/table/PST045215/12037>
- United States Environmental Protection Agency. (2012). *Principles for the ecological restoration of aquatic resources*. Retrieved from <http://www.epa.gov/owow/restore/principles.html>
- United States Fish and Wildlife Service. (n.d.-a). *Coastal Barrier Resource System*. Retrieved September 6, 2017 from <https://www.fws.gov/cbra/maps/index.html>
- United States Fish and Wildlife Service. (n.d.-b). *Migratory Bird Treaty Act*. Retrieved from <https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>
- United States Fish and Wildlife Service. (n.d.-c). *St. Marks National Wildlife Refuge, Florida*. Retrieved from https://www.fws.gov/refuge/st_marks/
- United States Forest Service. (n.d.). *Apalachicola National Forest*. Retrieved from <https://www.fs.usda.gov/apalachicola>
- United States Geological Survey. (2012). *Non-indigenous aquatic species, Pterois volitans/miles*. Retrieved October 21, 2016 from <http://nas.er.usgs.gov/queries/factsheet.aspx>
- University of Florida. (n.d.). Online resource guide for Florida shellfish aquaculture: About the industry. Retrieved from <http://shellfish.ifas.ufl.edu/industry/>
- University of Florida Institute of Food and Agricultural Sciences. (2015). LAKEWATCH Report for Alligator Harbor-1 by Franklin County. Retrieved from http://lakewatch.ifas.ufl.edu/database/water_chemistry/estuary/Franklin%20County%20Estuary%20Jan%202016%20Reports.pdf
- Walton Outdoors. (2009). Alligator Point Sea Turtle Patrol videos loggerhead and Kemp's ridley nesting. Retrieved from <http://www.waltonoutdoors.com/alligator-point-sea-turtle-patrol-videos-loggerhead-and-kemps-ridley-nesting/>
- Waycott, M., Duarte, C.M., Carruthers, T.J.B., Orth, R.J., Dennison, W.C., Olyarnik, S., Calladine, A., Fourqurean, J.W., Heck, K.L., Hughes, A.R., Kendrick, G.A., Kenworthy, W.J., Short, F.T. & Williams, S.L. (2009). Accelerating loss of seagrasses across the globe threatens coastal ecosystems. *Proceedings of the National Academy of Sciences of the United States of America*, 106(30), 12377-12381. doi: 10.1073/pnas.0905620106
- Wren, K. (2008). Technical Report. *Alligator Harbor, Apalachicola Bay, and St. Joseph Bay seagrass monitoring project*. Eastpoint, FL: Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed Areas.

Yarbro, L. & Carlson, P.R. (2014). Summary report for Franklin County Coastal Waters. In L. Yarbro & P.R. Carlson (Eds.) *Seagrass Integrated Mapping and Monitoring Report No. 1.1*. St. Petersburg, FL: Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute.

Yarbro, L. & Carlson, P.R. (2016). Summary report for Franklin County Coastal Waters. In L. Yarbro & P.R. Carlson (Eds.) *Seagrass Integrated Mapping and Monitoring Report No. 2.0*. St. Petersburg, FL: Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute.

Yentsch, S.C. (1953). *Some of the factors influencing distribution of sessile Invertebrates in Alligator Harbor, a neutral estuary*. Tallahassee, FL: Florida State University.



B.3 / Species Lists

B.3.1 / Native Species List

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Macroalgae		
	<i>Acanthophora</i> sp.	
Mermaid's wineglass	<i>Acetabularia crenulata</i>	
	<i>Caulerpa</i> sp.	
	<i>Gracilaria</i> sp.	
	<i>Hypnea</i> sp.	
	<i>Sargassum</i> sp.	
	<i>Ulva flexuosa</i>	
Sea lettuce	<i>Ulva lactuca</i>	
	<i>Ulva linza</i>	
	<i>Ulva prolifera</i>	
Vascular plants		
Bushy bluestem	<i>Andropogon glomeratus</i>	
Milkweed	<i>Asclepias viridula</i>	
False willow	<i>Baccharis angustifolia</i>	
Saltbush	<i>Baccharis halimifolia</i>	
Saltwort	<i>Batis maritima</i>	
Bushy seaside oxeye	<i>Borrichia frutescens</i>	
Apalachicola dolls daisy	<i>Boltonia apalachicolensis</i>	
Watergrass	<i>Bulbostylis barbata</i>	
Capillary hairsedge	<i>Bulbostylis ciliatifolia</i>	
Ware's hairsedge	<i>Bulbostylis warei</i>	
Sweet shrub	<i>Calycanthus floridus</i>	
Godfrey's goldenaster	<i>Chrysopsis godfreyi</i>	
Sawgrass	<i>Cladium jamaicense</i>	
Baldwin's flatsedge	<i>Cyperus croceous</i>	
Swamp flatsedge	<i>Cyperus distinctus</i>	
Haspan flatsedge	<i>Cyperus haspan</i>	
Epiphytic flatsedge	<i>Cyperus lanceolatus</i>	
Leconte's flatsedge	<i>Cyperus lecontei</i>	
Fragrant flatsedge	<i>Cyperus odoratus</i>	
Many-spike flatsedge	<i>Cyperus polystachyos</i>	
Low flatsedge	<i>Cyperus pumilus</i>	
Pinebarren flatsedge	<i>Cyperus retrorsus</i>	
Tropical flatsedge	<i>Cyperus surinamensis</i>	
Spoon-leaf sundew	<i>Drosera intermedia</i>	
Gulf Coast spikerush	<i>Eleocharis cellulose</i>	
Canada spikerush	<i>Eleocharis geniculata</i>	
Carolina fimbry	<i>Fimbristylis caroliniana</i>	
Forked fimbry	<i>Fimbristylis dichotoma</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Marsh fimbry	<i>Fimbristylis spadicea</i>	
Saltmarsh umbrella sedge	<i>Fuirena breviseta</i>	
Southern umbrella sedge	<i>Fuirena scirpoidea</i>	
Largeleaf marsh pennywort	<i>Hydrocotyle bonariensis</i>	
Mayflower marsh pennywort	<i>Hydrocotyle umbellata</i>	
Swamp pennywort	<i>Hydrocotyle verticillata</i>	
St. John's-wort	<i>Hypericum spp.</i>	
Yaupon	<i>Ilex vomitoria</i>	
Saltmarsh morning glory	<i>Ipomea sagittata</i>	
Marsh elder	<i>Iva frutescens</i>	
Tapertip rush	<i>Juncus acuminatus</i>	
Toad rush	<i>Juncus bufonius</i>	
Leathery rush	<i>Juncus coriaceus</i>	
Forked rush	<i>Juncus dichotomus</i>	
Soft rush	<i>Juncus effuses</i>	
Shore rush	<i>Juncus marginatus</i>	
Bighead rush	<i>Juncus megacephalus</i>	
Annual rush	<i>Juncus pelocarpus</i>	
Black needlerush	<i>Juncus roemarianus</i>	
Needlepod rush	<i>Juncus scirpoides</i>	
Path rush	<i>Juncus tenuis</i>	
Saltmarsh mallow	<i>Kosteletzkya virginica</i>	
Bogbutton	<i>Lachnocaulon digynum</i>	
Corkwood	<i>Leitineria floridana</i>	
Godfrey's blazing star	<i>Liatris provincialis</i>	
Dense gayfeather	<i>Liatris spicata</i>	
Sea-lavender	<i>Limonium carolinianum</i>	
Primrose-willow	<i>Ludwigia alata</i>	
Large-leaved jointweed	<i>Polygonella macrophylla</i>	
Cabbage palm	<i>Sabal palmetto</i>	
Largeflower marsh pink	<i>Sabatia grandiflora</i>	
Rose of Plymouth	<i>Sabatia stellaris</i>	
Annual glasswort	<i>Salicornia biglovii</i>	
Perennial glasswort	<i>Salicornia perennis</i>	
Fringed nutrush	<i>Scleria ciliata</i>	
Saw palmetto	<i>Serenoa repens</i>	
Sea-purslane	<i>Sesuvium portulacastrum</i>	
Giant bristlegrass	<i>Setaria magna</i>	
Marsh bristlegrass	<i>Setaria parviflora</i>	
Smooth cordgrass	<i>Spartina alterniflora</i>	
Saltmeadow cordgrass	<i>Spartina patens</i>	
Gulf cordgrass	<i>Spartina spartinae</i>	
Virginia dropseed	<i>Sporobolus virginicus</i>	

Common Name	Species Name	Status
-------------	--------------	--------

Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered
ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act
C= commercially exploited

Annual saltmarsh American aster	<i>Symphotrichum subulatum</i>	
Perennial saltmarsh aster	<i>Symphotrichum tenuifolium</i>	
Sea oats	<i>Uniola paniculata</i>	

Submerged Aquatic Vegetation

Shoal grass	<i>Halodule wrightii</i>	
Star grass	<i>Halophia engelmannii</i>	
Manatee grass	<i>Syringodium filiforme</i>	
Turtle grass	<i>Thalassia testudinum</i>	

Mollusks

Atlantic abra	<i>Abra aequalis</i>	
Transverse ark	<i>Anadara transversa</i>	
Eared ark	<i>Anadara notabilis</i>	
Rayed creekshell	<i>Anodontoides radiatus</i>	
Atlantic paper mussel	<i>Arcuatula papyrium</i>	
Bay scallop	<i>Argopecten irradians</i>	
Rigid penshell	<i>Atrina rigida</i>	
Scorched mussel	<i>Brachiodontes exustus</i>	
Common Atlantic bubble	<i>Bulla striata</i>	
Lightning whelk	<i>Busycon contrarium</i>	
Pear whelk	<i>Busycon spiratus</i>	
Channeled whelk	<i>Busycotypus canaliculatus</i>	
Sculptured topshell	<i>Calliostoma euglyptum</i>	
Cancellate cantharus	<i>Cantharus cancellarius</i>	
Broad-ribbed cardita	<i>Carditamera floridana</i>	
Florida cross-barred venus	<i>Chione elevata</i>	
Gray pygmy venus	<i>Chioneryx grus</i>	
Eastern oyster	<i>Crassostrea virginica</i>	
Cuminga	<i>Cumingia tellinoides</i>	
Thin cyclinella	<i>Cyclinella tenuis</i>	
Atlantic dipلودon	<i>Diplodonta punctata</i>	
Minor jackknife	<i>Ensis minor</i>	
Ponderous ark	<i>Eontia ponderosa</i>	
Sharp-rib drill	<i>Eupleura sulcidentata</i>	
Banded tulip	<i>Fasciolaria hunteria</i>	
True tulip	<i>Fasciolaria tulipa</i>	
Southern ribbed mussel	<i>Geukensia granosissima</i>	
Lampshell	<i>Glottidia pyramidata</i>	
Morton eggcockle	<i>Laevicardium mortoni</i>	
Chestnut mussel	<i>Lioberus castaneus</i>	
Atlantic brief squid	<i>Lolliguncula brevis</i>	
Florida lucine	<i>Lyonsia floridana</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Sunray venus	<i>Macrocallista nimbosa</i>	
Sunray venus	<i>Macrocallista nimbosa</i>	
Fragile surf clam	<i>Macrotrötoma fragilis</i>	
Boring clam	<i>Martesia smithi</i>	
Gulf moccasinshell	<i>Medionidus penicillatus</i>	
Florida crown conch	<i>Melongena corona</i>	
Southern quahog	<i>Mercenaria campechiensis</i>	
American horse mussel	<i>Modiolus americanus</i>	
Dwarf surfclam	<i>Mulinia lateralis</i>	
Lace murex	<i>Murex florifer</i>	
Bruised nassa	<i>Nassarius vibex</i>	
Shark eye	<i>Neverita duplicata</i>	
Impressed odostome	<i>Odostomia impressa</i>	
Crested oyster	<i>Ostrea equestris</i>	
Ice cream cine worm	<i>Pectinaria gouldii</i>	
Chalky pitar	<i>Pitar simpsoni</i>	
Lobed moon snail	<i>Polinices duplicatus</i>	
Common Atlantic marginella	<i>Prunum apicinum</i>	
Atlantic wing oyster	<i>Pteria colymbus</i>	
Sculptured pigtoe	<i>Quincuncina infucata</i>	
Purplish tagelus	<i>Tagelus divisus</i>	
White crested tellin	<i>Tellidora cristata</i>	
Alternate tellin	<i>Tellina alternata</i>	
Eastern auger	<i>Terebra dislocata</i>	
Southern oyster drill	<i>Thais haemastoma</i>	
Florida prickly cockle	<i>Trachycardium egmontianum</i>	
Horse conch	<i>Triplofusus giganteus</i>	
Chestnut turban	<i>Turbo castaneus</i>	
Gulf oyster drill	<i>Urosalpinx perrugata</i>	

Echinoderms

Atlantic purple sea urchin	<i>Arbacia punctulata</i>	
Spiny sea star	<i>Echinaster spinulosus</i>	
Netted sea star	<i>Luidia clathrata</i>	
Variegated sea urchin	<i>Lytechinus variegatus</i>	
Sand dollar	<i>Mellita tenuis</i>	
Brittle star	<i>Ophioderma brevispinum</i>	

Cnidarians

Moon jelly	<i>Aurelia aurita</i>	
American tube-dwelling sea anemone	<i>Ceriantheopsis americanus</i>	

Arthropods

Aviu shrimp	<i>Actes americanus</i>	
-------------	-------------------------	--

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C= commercially exploited		
Banded snapping shrimp	<i>Alpheus armillatus</i>	
Green snapping shrimp	<i>Alpheus normanni</i>	
Shrimp	<i>Ambidexter symmetricus</i>	
Flame crab	<i>Calappa ocellata</i>	
Blue crab	<i>Callinectes sapidus</i>	
Lesser blue crab	<i>Callinectes similis</i>	
Thinstripe hermit crab	<i>Clibanarius vittatus</i>	
Gulf grassflat crab	<i>Dyspanopeous texana</i>	
Shrimp species	<i>Farfantepenaeus</i> spp.	
Brown shrimp	<i>Farfantepenaeus aztecus</i>	
Pink shrimp	<i>Farfantepenaeus duorarum</i>	
Smooth mud crab	<i>Hexapanopeous angustifrons</i>	
False zostera shrimp	<i>Hippolyte pleuracanthus</i>	
Zostera shrimp	<i>Hippolyte zostericola</i>	
Brown grass shrimp	<i>Leander tenuicornis</i>	
Longnose spider crab	<i>Libinia dubia</i>	
White shrimp	<i>Litopenaeus setiferus</i>	
Stone crab	<i>Menippe</i> spp.	
Florida grassflat crab	<i>Neopanope packardii</i>	
Mud crab	<i>Neopanope texana</i>	
Florida lady crab	<i>Ovalipes floridanus</i>	
Hermit crab	<i>Pagurus</i> spp.	
Florida grass shrimp	<i>Palaemon floridanus</i>	
Green porcelain crab	<i>Petrolisthes armatus</i>	
Portunus crab	<i>Portunus</i> spp.	
Rock shrimp	<i>Sicyonia brevirostris</i>	
Kinglet rock shrimp	<i>Sicyonia typica</i>	
Arrow crab	<i>Tozeuma carolinense</i>	
Fiddler crab	<i>Uca</i> spp.	
Mud crabs	<i>Xanthidae</i> spp.	

Fishes		
Scrawled cowfish	<i>Acanthostracion quadricornis</i>	
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	FT
Hardhead catfish	<i>Acropsis felis</i>	
Spotted eagle ray	<i>Aetobatus narinari</i>	
Striped anchovy	<i>Anchoa hepsetus</i>	
Bay anchovy	<i>Anchoa mitchilli</i>	
Ocellated flounder	<i>Ancylopsetta quadrocellata</i>	
Sheepshead	<i>Archosargus probatocephalus</i>	
Hardhead catfish	<i>Ariopsis felis</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Gafftopsail catfish	<i>Bagre marinus</i>	
Silver perch	<i>Bairdiella chrysoura</i>	
Menhaden	<i>Brevoortia</i> spp.	
Gulf menhaden	<i>Brevoortia patronus</i>	
Yellowfin menhaden	<i>Brevoortia smithi</i>	
Grass porgy	<i>Calamus arctifrons</i>	
Blue runner	<i>Caranx crysos</i>	
Creville jack	<i>Caranx hippos</i>	
Horse-eye jack	<i>Caranx latus</i>	
Blacknose shark	<i>Carcharhinus acronotus</i>	
Spinner shark	<i>Carcharhinus brevipinna</i>	
Finetooth shark	<i>Carcharhinus isodon</i>	
Bull shark	<i>Carcharhinus leucas</i>	
Blacktip shark	<i>Carcharhinus limbatus</i>	
Sandbar shark	<i>Carcharhinus plumbeus</i>	
Black sea bass	<i>Centropristis striata</i>	
Atlantic spadefish	<i>Chaetodipterus faber</i>	
Florida blenny	<i>Chasmodes saburrae</i>	
Striped burrfish	<i>Chilomycterus schoepfii</i>	
Atlantic bumper	<i>Chloroscombrus chrysurus</i>	
Spotted whiff	<i>Citharichthys macrops</i>	
Bay whiff	<i>Citharichthys spilopterus</i>	
Darter goby	<i>Ctenogobius boleosoma</i>	
Sand seatrout	<i>Cynoscion arenarius</i>	
Spotted seatrout	<i>Cynoscion nebulosus</i>	
Sheepshead minnow	<i>Cyprinodon variegatus</i>	
Southern stingray	<i>Dasyatis americana</i>	
Atlantic stingray	<i>Dasyatis sabina</i>	
Bluntnose stingray	<i>Dasyatis say</i>	
Sand perch	<i>Diplectrum formosum</i>	
Spottail pinfish	<i>Diplodus holbrookii</i>	
Gizzard shad	<i>Dorosoma cepedianum</i>	
Threadfin shad	<i>Dorosoma petenense</i>	
Sharksucker	<i>Echeneis naucrates</i>	
Ladyfish	<i>Elops saurus</i>	
Fringed flounder	<i>Etropus crossotus</i>	
Silver jenny	<i>Eucinostomus gula</i>	
Tidewater mojarra	<i>Eucinostomus harengulus</i>	
Mojarra	<i>Eucinostomus</i> spp.	
Little tunny	<i>Euthynnus alletteratus</i>	
Gulf killifish	<i>Fundulus grandis</i>	
Striped killifish	<i>Fundulus majalis</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Tiger shark	<i>Galeocerdo cuvier</i>	
Mosquitofish	<i>Gambusia holbrooki</i>	
Nurse shark	<i>Ginglymostoma cirratum</i>	
Darter goby	<i>Gobionellus boleosoma</i>	
Naked goby	<i>Gobiosoma bosc</i>	
Smooth butterfly ray	<i>Gymnura micrura</i>	
Scaled sardine	<i>Harengula jaguana</i>	
Lined seahorse	<i>Hippocampus erectus</i>	
Dwarf seahorse	<i>Hippocampus zosterae</i>	
False silver halfbeak	<i>Hyporhamphus meeki</i>	
Pinfish	<i>Lagodon rhomboides</i>	
Spot	<i>Leiostomus xanthurus</i>	
Spotted gar	<i>Lepisosteus oculatus</i>	
Longnose gar	<i>Lepisosteus osseus</i>	
Bluegill	<i>Lepomis macrochirus</i>	
Tripletail	<i>Lobotes surinamensis</i>	
Rainwater killifish	<i>Lucania parva</i>	
Gray snapper	<i>Lutjanus griseus</i>	
Lane snapper	<i>Lutjanus synagris</i>	
Rough silverside	<i>Membras martinica</i>	
Silversides	<i>Menidia</i> spp.	
Kingfish	<i>Menticirrhus</i> sp.	
Southern kingfish	<i>Menticirrhus americanus</i>	
Gulf kingfish	<i>Menticirrhus littoralis</i>	
Northern kingfish	<i>Menticirrhus saxatilis</i>	
Clown goby	<i>Microgobius gulosus</i>	
Atlantic croaker	<i>Micropogonias undulatus</i>	
Largemouth bass	<i>Micropterus salmoides</i>	
Planehead filefish	<i>Monacanthus hispidus</i>	
Striped mullet	<i>Mugil cephalus</i>	
White mullet	<i>Mugil curema</i>	
Florida smooth hound	<i>Mustelus norrisi</i>	
Gag	<i>Mycteroperca microlepis</i>	
Speckled worm eel	<i>Myrophis punctatus</i>	
Lemon shark	<i>Negraprion brevirostris</i>	
Polk-dot batfish	<i>Ogcocephalus cubifrons</i>	
Leatherjacket	<i>Oligoplites saurus</i>	
Atlantic thread herring	<i>Opisthonema oglinum</i>	
Gulf toadfish	<i>Opsanus beta</i>	
Pigfish	<i>Orthopristis chrysoptera</i>	
Gulf flounder	<i>Paralichthys albigutta</i>	
Southern flounder	<i>Paralichthys lethostigma</i>	
Gulf butterfish	<i>Peprilus burti</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C= commercially exploited		
Harvestfish	<i>Peprilus paru</i>	
Black drum	<i>Pogonias cromis</i>	
Bluefish	<i>Pomatomus saltatrix</i>	
Leopard searobin	<i>Prionotus scitulus</i>	
Bighead searobin	<i>Prionotus tribulus</i>	
Bluenose shiner	<i>Pteronotropis welaka</i>	ST
Cobia	<i>Rachycentron canadum</i>	
Clearnose ray	<i>Raja eglanteria</i>	
Cownose ray	<i>Rhinoptera bonasus</i>	
Atlantic sharpnose shark	<i>Rhizoprionodon terraenovae</i>	
Red drum	<i>Sciaenops ocellatus</i>	
King mackerel	<i>Scomberomorus cavalla</i>	
Spanish mackerel	<i>Scomberomorus maculatus</i>	
Barbfish	<i>Scorpaena brasiliensis</i>	
Bigeye scad	<i>Selar crumenophthalmus</i>	
Look-down	<i>Selene vomer</i>	
Pygmy sea bass	<i>Serraniculus pumilio</i>	
Southern puffer	<i>Sphoeroides nephelus</i>	
Northern sennet	<i>Sphyrna borealis</i>	
Scalloped hammerhead	<i>Sphyrna lewini</i>	
Great hammerhead	<i>Sphyrna mokarran</i>	
Bonnethead shark	<i>Sphyrna tiburo</i>	
Planehead filefish	<i>Stephanolepis hispidus</i>	
Atlantic needlefish	<i>Strongylura marina</i>	
Redfin needlefish	<i>Strongylura notata</i>	
Blackcheeked tonguefish	<i>Symphurus plagiusa</i>	
Dusky pipefish	<i>Syngnathus floridae</i>	
Chain pipefish	<i>Syngnathus louisianae</i>	
Gulf pipefish	<i>Syngnathus scovelli</i>	
Inshore lizardfish	<i>Synodus foetens</i>	
Florida pompano	<i>Trachinotus carolinus</i>	
Permit	<i>Trachinotus falcatus</i>	
Hogchoker	<i>Trinectes maculatus</i>	
Houndfish	<i>Tylosurus crocodilus</i>	
Reptiles		
American alligator	<i>Alligator mississippiensis</i>	FT(S/A)
Loggerhead sea turtle	<i>Caretta caretta</i>	FT
Green sea turtle	<i>Chelonia mydas</i>	FT
Leatherback sea turtle	<i>Dermochelys coriacea</i>	FE
Eastern indigo snake	<i>Drymarchon corais couperi</i>	FT
Hawksbill sea turtle	<i>Eretmochelys imbricata imbricata</i>	FE
Gopher tortoise	<i>Gopherus polyphemus</i>	ST

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C= commercially exploited		
Barbour's map turtle	<i>Graptemys barbouri</i>	ST
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	FE
Alligator snapping turtle	<i>Macrocllemys temminickii</i>	SSC
Gulf salt marsh snake	<i>Nerodia clarkii clarkii</i>	
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	ST
Suwannee cooter	<i>Pseudemys concinna suwanniensis</i>	

Birds		
Cooper's hawk	<i>Accipiter cooperii</i>	
Sharp-shinned hawk	<i>Accipiter striatus</i>	
Spotted sandpiper	<i>Actitis macularia</i>	
Red-winged blackbird	<i>Agelaius phoeniceus</i>	
Bachman's sparrow	<i>Aimophila aestivalis</i>	
Wood duck	<i>Aix sponsa</i>	
Seaside sparrow	<i>Ammodramus maritimus</i>	
Nelson's sharp-tailed sparrow	<i>Ammodramus nelsoni</i>	
Northen pintail	<i>Anas acuta</i>	
American widgeon	<i>Anas americana</i>	
Northern shoveler	<i>Anas clypeata</i>	
Green-winged teal	<i>Anas crecca</i>	
Blue-winged teal	<i>Anas discolor</i>	
Mallard	<i>Anas platyrhynchos</i>	
Gadwall	<i>Anas strepera</i>	
Anhinga	<i>Anhinga anhinga</i>	
Black-chinned hummingbird	<i>Archilochus alexandri</i>	
Ruby-throated hummingbird	<i>Archilochus colubris</i>	
Great egret	<i>Ardea alba</i>	
Great blue heron	<i>Ardea herodias</i>	
Ruddy turnstone	<i>Arenaria interpres</i>	
Short-eared owl	<i>Asio flammeus</i>	
Golden eagle	<i>Aquila chrysaetos</i>	
Lesser scaup	<i>Aythya affinis</i>	
Redhead	<i>Aythya americana</i>	
Ring-necked duck	<i>Aythya collaris</i>	
Greater scaup	<i>Aythya marila</i>	
Canvasback	<i>Aythya valisineria</i>	
Tufted titmouse	<i>Baeolophus bicolor</i>	
Upland sandpiper	<i>Bartramia longicauda</i>	
Cedar waxwing	<i>Bombycilla cedrorum</i>	
American bittern	<i>Botaurus lentiginosus</i>	
Great horned owl	<i>Bubo virginianus</i>	
Cattle egret	<i>Bubulcus ibis</i>	
Bufflehead	<i>Bucephala albeola</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Common goldeneye	<i>Bucephala clangula</i>	
Red-tailed hawk	<i>Buteo jamaicensis</i>	
Red-shouldered hawk	<i>Buteo lineatus</i>	
Broad-winged hawk	<i>Buteo platypterus</i>	
Swainson's hawk	<i>Buteo swainsoni</i>	
Green heron	<i>Butorides virescens</i>	
Lark bunting	<i>Calamospiza melanosorys</i>	
Sanderling	<i>Calidris alba</i>	
Dunlin	<i>Calidris alpina</i>	
Red knot	<i>Calidris canutus rufa</i>	FT
Western sandpiper	<i>Calidris mauri</i>	
Pectoral sandpiper	<i>Calidris melanotis</i>	
Least sandpiper	<i>Calidris minutilla</i>	
Semipalmated sandpiper	<i>Calidris pusilla</i>	
Chuck-will's widow	<i>Caprimulgus carolinensis</i>	
Northern cardinal	<i>Cardinalis cardinalis</i>	
American goldfinch	<i>Carduelis tristis</i>	
House finch	<i>Carpodacus mexicanus</i>	
Turkey vulture	<i>Cathartes aura</i>	
Veery	<i>Catharus fuscescens</i>	
Hermit thrush	<i>Catharus guttatus</i>	
Gray-cheeked thrush	<i>Catharus minimus</i>	
Wood thrush	<i>Catharus mustelinus</i>	
Swainson's thrush	<i>Catherus ustulatus</i>	
Belted kingfisher	<i>Ceryle alcyon</i>	
Chimney swift	<i>Chaetura pelagica</i>	
Snowy plover	<i>Charadrius alexandrinus</i>	ST
Piping plover	<i>Charadrius melodus</i>	FT
Semipalmated plover	<i>Charadrius semipalmatus</i>	
Killdeer	<i>Charadrius vociferus</i>	
Wilson's plover	<i>Charadrius wilsonia</i>	
Blue goose	<i>Chen caerulescens</i>	
Black tern	<i>Chlidonias niger</i>	
Common nighthawk	<i>Chordeiles minor</i>	
Northern harrier	<i>Circus cyaneus</i>	
Marian's marsh wren	<i>Cistothorus palustris marianae</i>	ST
Sedge wren	<i>Cistothorus platensis</i>	
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	
Northern flicker	<i>Colaptes auratus</i>	
Black vulture	<i>Coragyps atratus</i>	
American crow	<i>Corvus brachyrhynchos</i>	
Fish crow	<i>Corvus ossifragus</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C= commercially exploited		
Blue jay	<i>Cyanocitta cristata</i>	
Black-throated blue warbler	<i>Dendroica caerulescens</i>	
Bay-breasted warbler	<i>Dendroica castanea</i>	
Cerulean Warbler	<i>Dendroica cerulea</i>	
Yellow-rumped warbler	<i>Dendroica coronata</i>	
Prairie warbler	<i>Dendroica discolor</i>	
Yellow-throated warbler	<i>Dendroica dominica</i>	
Blackburnian warbler	<i>Dendroica fusca</i>	
Magnolia Warbler	<i>Dendroica magnolia</i>	
Black-throated gray warbler	<i>Dendroica nigrescens</i>	
Palm warbler	<i>Dendroica palmarum</i>	
Chestnut-sided warbler	<i>Dendroica pensylvanica</i>	
Yellow warbler	<i>Dendroica petechia</i>	
Pine warbler	<i>Dendroica pinus</i>	
Blackpoll warbler	<i>Dendroica striata</i>	
Cape may warbler	<i>Dendroica tigrina</i>	
Black-throated green warbler	<i>Dendroica virens</i>	
Bobolink	<i>Dolichonyx oryzivorus</i>	
Pileated woodpecker	<i>Dryocopus pileatus</i>	
Gray catbird	<i>Dumetella carolinensis</i>	
Little blue heron	<i>Egretta caerulea</i>	ST
Reddish egret	<i>Egretta rufescens</i>	ST
Snowy egret	<i>Egretta thula</i>	
Tricolored heron	<i>Egretta tricolor</i>	ST
American swallow-tailed kite	<i>Elanoides forficatus</i>	
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	
Least flycatcher	<i>Empidonax minimus</i>	
Acadian flycatcher	<i>Empidonax virescens</i>	
White ibis	<i>Eudocimus albus</i>	
Rusty blackbird	<i>Euphagus carolinus</i>	
Merlin	<i>Falco columbarius</i>	
Peregrine falcon	<i>Falco peregrinus</i>	
American kestrel	<i>Falco sparverius</i>	
Magnificent frigatebird	<i>Fregata magnificens</i>	
American coot	<i>Fulica americana</i>	
Common snipe	<i>Gallinago gallinago</i>	
Common loon	<i>Gavia immer</i>	
Red-throated loon	<i>Gavia stellata</i>	
Pacific loon	<i>Gavia pacifica</i>	
Common yellowthroat	<i>Geothlypis trichas</i>	
Common moorhen	<i>Gallinula chloropus</i>	
Sandhill crane	<i>Grus canadensis</i>	
Blue grosbeak	<i>Guiraca caerulea</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
American oystercatcher	<i>Haematopus palliatus</i>	ST
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Worm-eating warbler	<i>Helmitheros vermivorus</i>	
Cliff swallow	<i>Hirundo pyrrhonota</i>	
Barn swallow	<i>Hirundo rustica</i>	
Harlequin duck	<i>Histrionicus histrionicus</i>	
Baltimore oriole	<i>Icterus galbula</i>	
Orchard oriole	<i>Icterus spurius</i>	
Mississippi kite	<i>Ictinia mississippiensis</i>	
Least bittern	<i>Ixobrychus exilis</i>	
Dark-eyed junco	<i>Junco hyemalis</i>	
Herring gull	<i>Larus argentatus</i>	
Laughing gull	<i>Larus atricilla</i>	
Ring-billed gull	<i>Larus delawarensis</i>	
Lesser black-backed gull	<i>Larus fuscus</i>	
Glaucous gull	<i>Larus hyperboreus</i>	
Bonaparte's gull	<i>Larus philadelphia</i>	
Franklin gull	<i>Larus pipixcan</i>	
Short-billed dowitcher	<i>Limnodromus griseus</i>	
Marbled godwit	<i>Limo safedoa</i>	
Swainson's warbler	<i>Limnothlypis swainsonii</i>	
Hooded merganser	<i>Lophodytes cucullatus</i>	
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	
Greater white-fronted Goose	<i>Melanitta fusca</i>	
Black scoter	<i>Melanitta nigra</i>	
Surf scoter	<i>Melanitta perspicillata</i>	
Swamp sparrow	<i>Melospiza georgiana</i>	
Lincoln's sparrow	<i>Melospiza lincolni</i>	
Song sparrow	<i>Melospiza melodia</i>	
Red-breasted merganser	<i>Mergus serrator</i>	
Northern mockingbird	<i>Mimus polyglottos</i>	
Black-and-white warbler	<i>Mniotilta varia</i>	
Bronzed cowbird	<i>Molothrus aeneus</i>	
Brown-headed cowbird	<i>Molothrus ater</i>	
Shiny cowbird	<i>Molothrus bonariensis</i>	
Wood stork	<i>Mycteria americana</i>	FT
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	
Great crested flycatcher	<i>Myiarchus crinitus</i>	
Brown-crested flycatcher	<i>Myiarchus tyrannulus</i>	
Long-billed curlew	<i>Numenius americanus</i>	
Whimbrel	<i>Numenius phaeopus</i>	
Yellow-crowned night-heron	<i>Nyctanassa violacea</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Snowy owl	<i>Nyctea scandiaca</i>	
Black-crowned night heron	<i>Nycticorax nycticorax</i>	
Connecticut warbler	<i>Oporonis agilis</i>	
Kentucky warbler	<i>Oporonis formosus</i>	
Eastern screech owl	<i>Otus asio</i>	
Ruddy duck	<i>Oxyura jamaicensis</i>	
Osprey	<i>Pandion haliaetus</i>	
Northern parula	<i>Parula americana</i>	
Fox sparrow	<i>Passerella iliaca</i>	
Painted bunting	<i>Passerina ciris</i>	
American white pelican	<i>Pelecanus erythrorhynchos</i>	
Brown pelican	<i>Pelecanus occidentalis</i>	
Double-crested cormorant	<i>Phalacrocorax auritus</i>	
Black-headed grosbeak	<i>Pheucitus melanocephalus</i>	
Downy woodpecker	<i>Picoides pubescens</i>	
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	
Western tanager	<i>Piranga ludoviciana</i>	
Scarlet tanager	<i>Piranga olivacea</i>	
Summer tanager	<i>Piranga rubra</i>	
Roseate spoonbill	<i>Platalea ajaja</i>	ST
Glossy ibis	<i>Plegadis falcinellus</i>	
Black-bellied plover	<i>Pluvialis squatarola</i>	
Horned grebe	<i>Podiceps auritus</i>	
Pied-billed grebe	<i>Podilymbus podiceps</i>	
Carolina chickadee	<i>Poecile carolinensis</i>	
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	
Sora	<i>Porzana carolina</i>	
Purple martin	<i>Progne subis</i>	
Prothonotary warbler	<i>Protonotaria citrea</i>	
Sooty shearwater	<i>Puffinus griseus</i>	
Boat-tailed grackle	<i>Quiscalus major</i>	
Common grackle	<i>Quiscalus quiscula</i>	
Clapper rail	<i>Rallus longirostris</i>	
King rail	<i>Rallus elegans</i>	
Virginia rail	<i>Rallus limicola</i>	
American avocet	<i>Recurvirostra americana</i>	
Ruby-crowned kinglet	<i>Regulus calendula</i>	
Golden-crowned kinglet	<i>Regulus satrapa</i>	
Bank swallow	<i>Riparia riparia</i>	
Black skimmer	<i>Rynchops niger</i>	ST
Eastern phoebe	<i>Sayornis phoebe</i>	
Say's phoebe	<i>Sayornis saya</i>	
Woodcock	<i>Scolopax minor</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Rufous hummingbird	<i>Selasphorus rufus</i>	
Allen's hummingbird	<i>Selasphorus sasin</i>	
Ovenbird	<i>Seiurus aurocapillus</i>	
Louisiana waterthrush	<i>Seiurus motacilla</i>	
Northern waterthrush	<i>Seiurus noveboracensis</i>	
American redstart	<i>Setophaga ruticilla</i>	
Eastern bluebird	<i>Sialia sialis</i>	
Brown-headed nuthatch	<i>Sitta pusilla</i>	
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	
Dickcissel	<i>Spiza americana</i>	
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	
Calliope hummingbird	<i>Stellula calliope</i>	
Parasitic jaeger	<i>Stercorarius parasiticus</i>	
Bridled tern	<i>Sterna anaethetus</i>	
Caspian tern	<i>Sterna caspia</i>	
Sooty tern	<i>Sterna fuscata</i>	
Forster's tern	<i>Sterna forsteri</i>	
Common tern	<i>Sterna hirundo</i>	
Royal tern	<i>Sterna maxima</i>	
Gull-billed tern	<i>Sterna nilotica</i>	
Sandwich tern	<i>Sterna sandvicensis</i>	
Least tern	<i>Sternula antillarum</i>	ST
Barred owl	<i>Strix varia</i>	
Eastern meadowlark	<i>Sturnella magna</i>	
Northern gannet	<i>Sula bassanus</i>	
Masked booby	<i>Sula dactylatra</i>	
Brown booby	<i>Sula leucogaster</i>	
Tree swallow	<i>Tachycineta bicolor</i>	
Carolina wren	<i>Thryothorus ludovicianus</i>	
Brown thrasher	<i>Toxostoma rufum</i>	
Lesser yellowlegs	<i>Tringa flavipes</i>	
Greater yellowlegs	<i>Tringa melanoleuca</i>	
Willet	<i>Tringa semipalmatus</i>	
Solitary sandpiper	<i>Tringa solitaria</i>	
House wren	<i>Troglodytes aedon</i>	
American robin	<i>Turdus migratorius</i>	
Buff-breasted sandpiper	<i>Tryngites subruficollis</i>	
Eastern kingbird	<i>Tyrannus tyrannus</i>	
Barn owl	<i>Tyto alba</i>	
Orange-crowned warbler	<i>Vermivora celata</i>	
Golden-winged warbler	<i>Vermivora chrysoptera</i>	
Tennessee warbler	<i>Vermivora peregrina</i>	
Blue-winged warbler	<i>Vermivora pinus</i>	
Nashville warbler	<i>Vermivora ruficapilla</i>	

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C= commercially exploited		
Black-whiskered vireo	<i>Vireo altiloquus</i>	
Bell's Vireo	<i>Vireo bellii</i>	
Yellow-throated vireo	<i>Vireo flavifrons</i>	
White-eyed vireo	<i>Vireo griseus</i>	
Red-eyed vireo	<i>Vireo olivaceus</i>	
Philadelphia vireo	<i>Vireo philadelphicus</i>	
Solitary vireo	<i>Vireo solitarius</i>	
Canada warbler	<i>Wilsonia canadensis</i>	
Hooded warbler	<i>Wilsonia citrina</i>	
Wilson's warbler	<i>Wilsona pusilla</i>	
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	
White-winged dove	<i>Zenaida asiatica</i>	
Mourning dove	<i>Zenaida macroura</i>	
Gold-crowned sparrow	<i>Zonotrichia atricapilla</i>	
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	
Mammals		
Shorttailed shrew	<i>Blarina carolinensis</i>	
Coyote	<i>Canis latrans</i>	
Beaver	<i>Castor canadensis</i>	
Least shrew	<i>Cryptotis parva</i>	
Nine-banded armadillo	<i>Dasypus novemcinctus</i>	
Virginia opossum	<i>Didelphis virginiana</i>	
Big brown bat	<i>Eptesicus fuscus</i>	
Bobcat	<i>Felis rufus</i>	
River otter	<i>Lutra canadensis</i>	
Striped skunk	<i>Mephitis mephitis</i>	
Long-tailed weasel	<i>Mustela frenata</i>	
Southeastern myotis bat	<i>Myotis austroriparius</i>	
Gray bat	<i>Myotis grisescens</i>	
Round-tailed muskrat	<i>Neofiber alleni</i>	
Eastern woodrat	<i>Neotoma floridana</i>	
Eastern pipistrelle	<i>Pipistrellus subflavus</i>	
Southeastern big-eared bat	<i>Plectotus rafinesquii</i>	
Florida mouse	<i>Podomys floridanus</i>	
Raccoon	<i>Procyon lotor</i>	
Florida panther	<i>Puma concolor coryi</i>	
Eastern mole	<i>Scalopus aquaticus</i>	
Gray squirrel	<i>Sciurus carolinensis</i>	
Marsh rabbit	<i>Sylvilagus palustris</i>	
Florida manatee	<i>Trichechus manatus latirostris</i>	FT
Bottle-nosed dolphin	<i>Tursiops truncatus</i>	
Gray fox	<i>Urocyon cinereoargenteus</i>	
Florida black bear	<i>Ursus americanus floridanus</i>	

B.3.2 / Listed Species

Common Name	Species Name	Status
Legend: FT = Federally- and State-Designated Threatened • FE = Federally- and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • SSC = State Species of Special Concern • (S/A) = listed due to similarity of appearance • BGEPA = Bald and Golden Eagle Protection Act C = commercially exploited		
Fishes		
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	FT
Bluenose shiner	<i>Pteronotropis welaka</i>	ST
Reptiles		
American alligator	<i>Alligator mississippiensis</i>	FT(S/A)
Loggerhead sea turtle	<i>Caretta caretta</i>	FT
Green sea turtle	<i>Chelonia mydas</i>	FT
Leatherback sea turtle	<i>Dermochelys coriacea</i>	FE
Eastern indigo snake	<i>Drymarchon corais couperi</i>	FT
Hawksbill sea turtle	<i>Eretmochelys imbricata imbricata</i>	FE
Gopher tortoise	<i>Gopherus polyphemus</i>	ST
Barbour's map turtle	<i>Graptemys barbouri</i>	ST
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	FE
Alligator snapping turtle	<i>Macrocllemys temminickii</i>	SSC
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	ST
Birds		
Red knot	<i>Calidris canutus rufa</i>	FT
Piping plover	<i>Charadrius melodus</i>	FT
Marian's marsh wren	<i>Cistothorus palustris marianae</i>	ST
Little blue heron	<i>Egretta caerulea</i>	ST
Reddish egret	<i>Egretta rufescens</i>	ST
Tricolored heron	<i>Egretta tricolor</i>	ST
American oystercatcher	<i>Haematopus palliatus</i>	ST
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Wood stork	<i>Mycteria americana</i>	FT
Roseate spoonbill	<i>Platalea ajaja</i>	ST
Black skimmer	<i>Rynchops niger</i>	ST
Least tern	<i>Sternula antillarum</i>	ST
Mammals		
Florida manatee	<i>Trichechus manatus latirostris</i>	FT

B.3.3 / Invasive Non-native and/or Problem Species

Common Name	Species Name	Plants (FLEPPC* Category) Others (Invasive Status)
Mammals		
Coyote	<i>Canis latrans</i>	

B.4 / Arthropod Control Plan

Spatial data (e.g. shapefiles) for the boundaries of the aquatic preserve have been made accessible to the appropriate mosquito control district. The aquatic preserve is deemed highly productive and environmentally sensitive. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation. Mosquito control plans are typically proposed by local mosquito control agencies when they desire to treat on public lands.

B.5 / Archaeological Sites Associated with Alligator Harbor Aquatic Preserve

The list below was derived from shapefiles obtained from the Florida Department of State, Division of Historical Resources on October 23, 2017, and includes sites (approximately 165 acres) within .25 miles of Alligator Harbor Aquatic Preserve.

Registry ID	Historic Site Name	Date	Significance	Location
FR00004	Tucker	Multiple	Swift Creek & Weedon Island burials and artifacts	Within 0.25 miles of AHAP
FR00005	Yent Mound	Multiple	Deptford & early Swift Creek artifacts, ceremonial mound	Within 0.25 miles of AHAP
FR00026	Lab	Prehistoric	Prehistoric habitation site	Within 0.25 miles of AHAP
FR00036	NN	Prehistoric	Prehistoric habitation site	Within AHAP
FR00038	Lighthouse Point	Prehistoric	Prehistoric shell midden	Within 0.25 miles of AHAP
FR00041	NN	Prehistoric	Prehistoric habitation site	Within 0.25 miles of AHAP
FR00042	Whiskey	Prehistoric	Prehistoric shell midden	Within 0.25 miles of AHAP
FR00043	Canal Site	Prehistoric	Prehistoric habitation site	Within AHAP
FR00044	Turkey Point Site	Multiple	Archaic, Deptford, Norwood, Seminole, Weedon Island middens & artifacts	Within AHAP
FR00045	Ditch	Prehistoric	Prehistoric habitation site	Within 0.25 miles of AHAP
FR00046	Wade	Prehistoric	Prehistoric habitation site	Within AHAP
FR00048	Upgrade	Prehistoric	Prehistoric shell midden	Within 0.25 miles of AHAP
FR00049	NN	Prehistoric	Prehistoric shell midden	Within 0.25 miles of AHAP
FR00068	Drum Point	Prehistoric	Prehistoric habitation site	Within AHAP
FR00808	Mud Cove Mound	Prehistoric	Burial mound	Within AHAP
FR00826	Franklin County Alligator Point	Multiple	Middle Archaic & Weedon Island 1 ceramic scatter	Within 0.25 miles of AHAP
FR00831	St. Teresa	500-1000 A.D.	Archaic & Weedon Island midden	Within AHAP
FR00900	Camp Gordon Johnston	1942	WWII Military site	Within AHAP
FR00901	Temp[#1	Prehistoric	Prehistoric ceramic artifacts	Within AHAP
FR00902	Temp #2	Prehistoric	Prehistoric ceramic artifacts	Within AHAP
FR00907	Combat Team No. 2 - Camp Gordon Johnston	1900-present	Historic road segment	Within 0.25 miles of AHAP
FR00942	Bonnie Allen	Prehistoric	Prehistoric habitation site	Within 0.25 miles of AHAP
FR01261	Wilson Beach Cottage	c1942	Private residence	Within 0.25 miles of AHAP
FR01319	Alligator Point Water Resources District	1900-present	Building complex	Within 0.25 miles of AHAP
FR01320	1254 Alligator Dr	c1962	Private residence	Within 0.25 miles of AHAP
FR01321	1260 Alligator Dr	c1965	Private residence	Within 0.25 miles of AHAP
FR01322	1266 Alligator Dr	c1958	Private residence	Within 0.25 miles of AHAP
FR01323	1270 Alligator Dr	c1962	Private residence	Within 0.25 miles of AHAP
FR01324	1274 Alligator Dr	c1959	Private residence	Within 0.25 miles of AHAP
FR01325	1278 Alligator Dr	c1948	Private residence	Within 0.25 miles of AHAP

Registry ID	Historic Site Name	Date	Significance	Location
FR01326	1286 Alligator Dr	c1962	Private residence	Within 0.25 miles of AHAP
FR01327	1290 Alligator Dr	c1962	Private residence	Within 0.25 miles of AHAP
FR01328	1290 Alligator Dr - Building 2	c1960	Private residence	Within 0.25 miles of AHAP
FR01329	1292 Alligator Dr	c1948	Private residence	Within 0.25 miles of AHAP
FR01330	10 Tom Roberts Rd	c1970	Private residence	Within 0.25 miles of AHAP
FR01331	Water Tower, 1378 Alligator Drive	c1963	Water Tower or Supply Structure	Within 0.25 miles of AHAP
FR01332	1378 Alligator Dr - Office Building	c1963	Office building	Within 0.25 miles of AHAP
FR01333	1378 Alligator Dr - Pump House	c1963	Water Tower or Supply Structure	Within 0.25 miles of AHAP
FR01334	1336 Alligator DR	c1940	Private residence	Within 0.25 miles of AHAP
FR01335	1464 Alligator DR	c1942	Private residence	Within 0.25 miles of AHAP
FR01336	1490 Alligator DR	c1955	Private residence	Within 0.25 miles of AHAP
FR01337	1494 Alligator DR	c1951	Private residence	Within 0.25 miles of AHAP
FR01338	1500 Alligator DR	c1966	Private residence	Within 0.25 miles of AHAP
FR01339	1502 Alligator DR	c1967	Private residence	Within 0.25 miles of AHAP
FR01340	1506 Alligator DR	c1963	Private residence	Within 0.25 miles of AHAP
FR01341	1510 Alligator DR	c1952	Private residence	Within 0.25 miles of AHAP
FR01342	1512 Alligator DR	c1950	Private residence	Within 0.25 miles of AHAP
FR01343	1522 Alligator DR	c1940	Private residence	Within 0.25 miles of AHAP
FR01344	1524 Alligator DR	1954	Private residence	Within 0.25 miles of AHAP
FR01345	1536 Alligator DR	c1963	Private residence	Within 0.25 miles of AHAP
FR01346	1546 Alligator DR	c1940	Private residence	Within 0.25 miles of AHAP
FR01347	1631 Alligator DR	c1966	Private residence	Within 0.25 miles of AHAP
FR01348	1589 Alligator DR	c1940	Private residence	Within 0.25 miles of AHAP
FR01349	1587 Alligator DR	c1970	Private residence	Within 0.25 miles of AHAP
FR01350	1577 Alligator DR	1958	Private residence	Within 0.25 miles of AHAP
FR01351	1567 Alligator DR	c1971	Private residence	Within 0.25 miles of AHAP
FR01352	1563 Alligator DR	c1948	Private residence	Within 0.25 miles of AHAP
FR01353	1561 Alligator DR	c1967	Private residence	Within 0.25 miles of AHAP
FR01354	1559 Alligator DR	c1963	Private residence	Within 0.25 miles of AHAP
FR01355	1543 Alligator DR	c1958	Private residence	Within 0.25 miles of AHAP
FR01356	1551A Alligator DR	c1961	Private residence	Within 0.25 miles of AHAP
FR01357	1543 Alligator DR	1953-	Private residence	Within 0.25 miles of AHAP
FR01358	1541 Alligator DR	c1945	Private residence	Within 0.25 miles of AHAP
FR01359	1537B Alligator DR	c1958	Private residence	Within 0.25 miles of AHAP
FR01360	1537A Alligator DR	c1960	Private residence	Within 0.25 miles of AHAP
FR01361	1535B Alligator DR	c1948	Private residence	Within 0.25 miles of AHAP
FR01362	1533 Alligator DR	c1940	Private residence	Within 0.25 miles of AHAP
FR01363	1529 Alligator DR	c1950	Private residence	Within 0.25 miles of AHAP
FR01364	1527 Alligator DR	c1953	Private residence	Within 0.25 miles of AHAP
FR01365	1523 Alligator DR	c1953	Private residence	Within 0.25 miles of AHAP
FR01366	1521 Alligator DR	c1961	Private residence	Within 0.25 miles of AHAP

Public Involvement

C.1 / Advisory Committee

The following appendices contain information about the advisory committee meeting which was held in order to obtain input from the Alligator Harbor Aquatic Preserve Management Plan Advisory Committee regarding the draft management plan.

C.1.1 / List of members and their affiliations

Name	Affiliation
Felicia Coleman	FSUCML
Sandra Brooke	FSUCML
Kristin Ebersol	Ochlocknee River and Bald Point state parks
Paul Thorpe	NFWFMD
Karen Kebart	NFWFMD
Kent Smith	FWC
Paul Carlson	FWC
Cheryl K. Sanders	Franklin County Commissioner
Bonnie Samuelsen	Audubon
Rob Rowe	FWC Law Enforcement
Charles Wood	FWC Law Enforcement
Melody Ray-Culp	U.S. Fish and Wildlife Service
Erik Lovestrand	UF/IFAS
Bill Wargo	Land owner / Alligator Point Sea Turtle Patrol
Darryl Boudreau	The Nature Conservancy
Rosalyn Kilcollins	interested individual
Rick Harter	Ecology and Environment, Inc.
Walter Armistead	Franklin County Soil & Water Conservation
Nijole (Nia) Wellendorf	DEP Division of Environmental Assessment and Restoration
Kal Knickerbocker	DACS - Aquaculture
Clayton Lewis	St. Teresa Clam Company
Cody Moody	My Fishing Adventure Charters
Jill Fleiger	DACS

agency at least 48 hours before the workshop/meeting by contacting: Jon Brucker at (850)670-7723. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION
The Florida Department of Environmental Protection, Florida Coastal Office announces a public meeting to which all persons are invited.

DATE AND TIME: Wednesday, August 16, 2017, 9:00 a.m.

PLACE: Apalachicola National Estuarine Research Reserve Nature Center, 108 Island Drive, Eastpoint, FL 32328

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Alligator Harbor Aquatic Preserve Management Plan Advisory Committee will meet to discuss possible revisions to the draft Alligator Harbor Aquatic Preserve Management Plan and comments received at the public meeting scheduled for August 15, 2017 and separately noticed. The draft plan is available for viewing or download at <http://publicfiles.dep.state.fl.us/CAMA/plans/aquatic/Alligator-Harbor-AP-Management-Plan.pdf>.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Jon Brucker at Jonathan.Brucker@dep.state.fl.us or (850)670-7723.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Jon Brucker at (850)670-7723. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Florida Department of Environmental Protection announces a public meeting to which all persons are invited.

DATE AND TIME: July 26, 2017, 10:00 a.m.

PLACE: SFWMD Lower West Coast Service Center, 2301 McGregor Boulevard, Ft. Myers, FL 33901

GENERAL SUBJECT MATTER TO BE CONSIDERED: This is a public meeting of interested stakeholders to discuss the Caloosahatchee Estuary Basin Management Action Plan (BMAP) 5-Year Review. The BMAP is the means for implementation of the adopted Total Maximum Daily Loads (TMDLs). The primary purpose of this meeting is to discuss the process of developing the 5-Year Review and its components.

A copy of the agenda may be obtained by contacting: Sara C. Davis, Watershed Planning and Coordination Section, Florida Department of Environmental Protection, 2600 Blair Stone Road, MS 3565, Tallahassee, Florida 32399-2400 or by e-mail at Sara.C.Davis@dep.state.fl.us.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Sara C. Davis at (850)245-8825. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of the Secretary

The Recreational Trails Program Advisory Committee announces a telephone conference call to which all persons are invited.

DATE AND TIME: July 26, 2017, 2:00 p.m.

PLACE: Dial: 1(888)670-3525, follow instructions for participant, enter: 1518575507, then press #

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Advisory Committee will vote on priority ranking of project applications for the 2017 Recreational Trails Program Priority List and any other business deemed necessary.

A copy of the agenda may be obtained by contacting: Pamela Lister, Office of Operations, Florida Department of Environmental Protection, 3800 Commonwealth Boulevard, MS 795, Tallahassee, Florida 32399-3000, Pamela.Lister@dep.state.fl.us, (850)245-2501.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 5 days before the workshop/meeting by contacting: Pamela Lister using the contact information shown above. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF HEALTH

Board of Chiropractic Medicine

The Board of Chiropractic Medicine announces a telephone conference call to which all persons are invited.

DATE AND TIME: July 26, 2017, 1:00 p.m.

PLACE: 1(888)670-3525, participant code: 7342425515

GENERAL SUBJECT MATTER TO BE CONSIDERED: Probable Cause Panel Meeting.

A copy of the agenda may be obtained by contacting: <http://floridaschiropracticmedicine.gov/>.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 7 days before the workshop/meeting by contacting: Gail.Curry@flhealth.gov. If you are hearing or speech impaired, please contact the agency using the Florida

contacting: Rebecca Sammons. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice). If any person decides to appeal any decision made by the Board with respect to any matter considered at this meeting or hearing, he/she will need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence from which the appeal is to be issued. For more information, you may contact: Rebecca Sammons, rsammons@fbpe.org.

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

Board of Professional Engineers

The Florida Board of Professional Engineers Application Committee and/or Educational Advisory Committee announces a public meeting to which all persons are invited.

DATE AND TIME: August 9, 2017 at the conclusion of the FBPE Board Meeting

PLACE: Crowne Plaza Orlando Universal, 7800 Universal Boulevard, Orlando, FL 32819

GENERAL SUBJECT MATTER TO BE CONSIDERED: Review applications for licensure and other general business of the committees.

A copy of the agenda may be obtained by contacting: Rebecca Sammons, rsammons@fbpe.org.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 10 days before the workshop/meeting by contacting: Rebecca Sammons. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

If any person decides to appeal any decision made by the Board with respect to any matter considered at this meeting or hearing, he/she will need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence from which the appeal is to be issued.

For more information, you may contact: Rebecca Sammons, rsammons@fbpe.org.

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

Board of Professional Engineers

The Florida Board of Professional Engineers Structural Rules Committee announces a telephone conference call to which all persons are invited.

DATE AND TIME: August 9, 2017, 10:00 a.m.

PLACE: Crowne Plaza Orlando Universal, 7800 Universal Boulevard, Orlando, FL 32819; telephone conference information below

GENERAL SUBJECT MATTER TO BE CONSIDERED: General business of the committee. The call-in number to participate in the telephone conference is: 1(888)392-4560; for the participant code, contact Rebecca Sammons at (850)521-0500, ext. 114, at least 10 days prior to the meeting.

A copy of the agenda may be obtained by contacting: Rebecca Sammons, rsammons@fbpe.org.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 10 days before the workshop/meeting by contacting: Rebecca Sammons. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

If any person decides to appeal any decision made by the Board with respect to any matter considered at this meeting or hearing, he/she will need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence from which the appeal is to be issued.

For more information, you may contact: Rebecca Sammons, rsammons@fbpe.org.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Florida Department of Environmental Protection, Florida Coastal Office announces a public meeting to which all persons are invited.

DATE AND TIME: Wednesday, August 16, 2017, 9:00 a.m.

PLACE: Florida State University, Coastal and Marine Laboratory, 3618 Coastal Highway 98, St. Teresa, FL 32358

MEETING UPDATE: The location of the Alligator Harbor Aquatic Preserve Management Plan Advisory Committee has been moved to FSU's Coastal and Marine Laboratory.

The advisory committee will be meeting there to discuss possible revisions to the draft management plan and comments received at the public meeting scheduled for August 15, 2017. The draft plan is available for viewing or download at <http://publicfiles.dep.state.fl.us/CAMA/plans/aquatic/Alligator-Harbor-AP-Management-Plan.pdf>.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Jon Brucker at Jonathan.Brucker@dep.state.fl.us or (850)670-7723.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Jon Brucker at (850)670-7723. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).



Florida Department of Environmental Protection

Central Panhandle Aquatic Preserves
108 Island Drive
Eastpoint, Florida 32328

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

Alligator Harbor Aquatic Preserve Draft Management Plan Advisory Committee Meeting

Wednesday, August 16, 2017, 9:00 a.m.
Florida State University
Coastal and Marine Laboratory
3618 Coastal Highway 98
St. Teresa, Florida 32358

Attendees: Melody Ray-Culp, Kristin Ebersol, Jill Fleiger, Carrie Jones, Karen Kebart, Rosalyn Kilcollins, Erik Lovestrand
Staff: Jonathan Brucker, Katie Davis, Nikkie Cox, Megan Christopher, Earl Pearson, Penny Isom

Penny welcomed everyone and introductions were done around the room. A brief recap of the previous night's public meeting was given with the comments from each station read aloud.

The floor was open to discussion regarding the identified issues and any other issues. The discussion flowed across all of the issues but for summary purposes, comments were categorized under one of the three issue sections below.

General Comments

- Kristin Ebersol mentioned that she didn't like the format of the public meeting. She felt that splitting up into groups made it difficult to hear everyone's comments and to get them written down accurately. She felt she was missing 2/3 of all the information from not being a part of all the groups. She stated that people comment same thing at all the different topics, no matter what the topic is to get their voice heard and message across. She mentions that we can't expect them to read the full management plan before the meeting happens, maybe provide more information in the presentation for the public to become more aware.
- Karen Kebart, of the Northwest Florida Water Management District (NFWMD) agreed, and said there needed to be an educational element in front of the meeting. Jon and Penny pointed out the PowerPoint presentation that Jon gave as an

overview to the aquatic preserve (AP) and the plan. Kristin then mentioned that the Alligator Point Taxpayers' Association is a good group to get the information about the AP out to, as most of the public who came to the meeting were part of that group.

- Kristin pointed out a typo on page 20 on the third paragraph (“and” should be “an”).
- Why is it called Alligator Harbor (AH)? Are there any census data of alligators in this harbor? There is a species list and the alligator is not mentioned. This may be a good addition to the harbor, how it got its namesake.
- Melody said Lanark Reef should be protected.
- Rosalyn emphasized the use of consistent messaging and positive messages. Signs for an issue should be the same across the state, regardless of the agency or region so that the public can recognize them easily.

Issue One: Water Quality (WQ)

- Public interested in dataloggers returning to AH, especially by the aquaculture and freshwater creeks. Rosalyn stated this should be something that can be connected directly to oil spill money.
- Jon brought up the dataloggers that were in AHAP previously, and that they were near the aquaculture sites and were done in partnership with Cedar Key University of Florida/ Institute of Food and Agricultural Sciences (UF/IFAS). He also said that the AP is working with Florida State University's Coastal and Marine Lab (FSUCML) to get a datalogger station in AHAP. The AP already has two dataloggers so they could be swapped out as needed. They would continuously collect data and the data can be made available in real-time. He also mentioned that the data is publicly available on the Department of Environmental Protection's (DEP) STorage and RETrieval database (STORET), but it is not very user-friendly, especially for non-science people. Karen mentioned that Leon County has a two-page summary for lakes that is available online and has a dial with red and green (red=bad water quality, green=good), making it very easy for the average person to interpret. She said Johnny Richardson would be the person to contact for more information.
- Rosalyn Kilcollins mentioned that infographics are a good way to get complicated information out to the public. We should include a link to the water quality data on the website.
- Kristin said that the main thing that the clam and oyster aquaculture harvesters are looking for is data from real-time dataloggers. Aquaculture people would like dataloggers out in the harbor with the automatic updates that get posted online. Between the Florida Department of Agriculture and Consumer Services (DACS), UF-IFAS, and the Florida Coastal Office (FCO), there should be enough funds to buy one.
- Carrie Jones with DACS mentioned that the previous data loggers were maintained by DACS and provided real-time data. Melody asked if there is a way to get the aquaculture workers involved in funding or assisting with WQ.
- Jon, Jill, and Kristin spoke about the cost for upkeep and maintenance of the dataloggers. Jon mentioned that Central Panhandle Aquatic Preserves (CPAP)

currently has no state funding/operating budget and is run solely on National Resource Damage Assessment (NRDA) grants.

- Kristin asked if there is a shellfish harvester organization in AH. Carrie said no, but there is one in Wakulla County. Jon said that the Taxpayer's Association may be a funding source for datalogger upkeep. Kristen also comments that AH tax payers are good people and care about the area they live in. They also have a connection to ~200 people and are usually willing to email blast all their people.
- Rosalyn mentioned monies from the Deepwater Horizon spill. Jon said that there is potentially money for boat ramp improvement in AH. Penny added that a project for water quality is included in the Gulf Priority Restoration Projects in the appendix of the plan.
- Karen noted that AH is included in the Surface Water Improvement and Management (SWIM) plan for Apalachicola Bay. She said that the SWIM plans are less specific on projects so that they can be flexible, which is a subsequent year strategy. She also mentioned that if anyone has specific information for the SWIM plan, the time to comment is now.
- Carrie mentioned that DACS also takes harmful algal bloom (HAB) samples in the Harbor.
- Kristin asked if the Department of Health does water quality sampling in the Gulf side of AH. (No one seemed to know for sure...we should look up).
- Rosalyn suggested the AP target homeowners for education and outreach, focusing on best practices for lawns, etc. as it pertains to water quality.
- Kristin brought up the fact that Franklin County has no requirements for secondary septic. She suggested that the AP push for/work with the county to strengthen septic tank rules
- Karen noted that there are DEP portal projects (Deepwater Horizon funding) that relate to septic. Kristin said we can't regulate but we can educate people on septic.
- Kristen pointed out that the points on the map of water quality stations don't match the text. The text says there are three HAB stations but only two are noted on the map on page 29. Carrie mentioned that DACS also takes HAB samples at the aquaculture leases.
- Kristin suggested using thermal imaging to identify freshwater seeps into the AP. She has experience with U.S. Geological Survey in using thermal imagery to locate spring sources. Melody suggested added any freshwater seeps to the AP map.

Issue Two: Protection of Seagrass

- Jon brought up Issue 2 – seagrass protection. He mentioned gaps in the data from years the AP office was closed. Since re-establishing seagrass monitoring CPAP has increased the number of monitoring sites to 12. This allows us to get a better understanding of seagrass abundance and composition. He mentioned the Florida Fish and Wildlife Commission (FWC) Seagrass Integrated Mapping and Monitoring (SIMM) report and the upcoming NRDA imagery project.
- Kristin suggested there is an interest in a seagrass and natural resource inventory inside AHAP.
- Karen asked about the natural communities table on page 15. She wanted to know why the seagrass acreages are listed as “unknown” when the coverage is shown

on the map. She suggested we estimate the acreages or delete the table. Kristin agreed that we should at least estimate the acreages and that it shouldn't be difficult to get that information from aerial imagery. Penny said that the table is required in the plan. She mentions this looks bad to have unknown in the table and suggests even an estimate would look better on the table and for educational purposes later. FWC SIMM incorporate most recent of available data for outreach purposes. At the top of pg. 32, she would like to see seagrass acreage updated. Jon mentioned that we will be getting updated aerial imagery from the NRDA seagrass project.

- Carrie asked if there was any talk of seagrass buoys like the ones in St. Joseph Bay AP going into AHAP. Jon said not at the moment. The plan is to educate boaters through signs at boat ramps, brochures, etc. He mentioned that there doesn't seem to be a need for buoys in AHAP.
- Kristin suggested that we incorporate seagrass areas on boaters' guides/maps, similar to the recreational guide created by the Apalachicola National Estuarine Research Reserve (ANERR).
- Jon said drone mapping of seagrass beds in the aquatic preserve is planned for fall.

Issue Three: Public Use

- Jon mentioned that a lot of the public comments had to do with the closing of the harbor entrance, and that there is not much the AP can do about it. Melody Ray-Culp of the U.S. Fish and Wildlife Service (USFWS) suggested talking about natural barrier dynamics in educational signage or brochures. She also mentioned that the spit is in the Coastal Barrier Resources Act zone, and since it is not a maintained channel it could not be dredged. She has a map to give Jon because the area is protected, and dredging may not be allowed nor something the AP can take on. She feels this is an opportunity to educate the public. Federal funding isn't available for dredging anyway because it's not a maintained channel.
- Melody also spoke about the importance of highlighting what makes AHAP special – things like it being a feeding ground for Kemp's Ridley sea turtles, etc.
- Need to highlight sea turtle (Kemp's) information in the plan, on kiosks, etc.
- She then mentioned having Quick Response (QR) codes on signage or a fun-facts sheet about the AP. This could include info about alligators in the harbor (hence the name).
- Melody suggested adding an appendix to the plan that would serve as a homeowner's/property owner's guide. Melody mentions that this new management plan will be a go-to document for homeowners and that there should be an appendix that pertains to homeowners and different rules. She would like to see rules of the septic tanks in Franklin County, dock regulations for the AP, a guide to seawalls in the county/armoring in the AP, rules/aquaculture best management practices (BMPs) (Jill said there's a link to BMPs), sea turtle lighting, proper wildlife viewing, not feeding/harassing wildlife, new leash law, leave no trace ordinance, etc.
- Melody praised the Living Shoreline section on page 40 and was glad to see that the AP is encouraging them. She also mentioned the Systems Approach to Geomorphic Engineering (SAGE) brochure that was put out by the National

Oceanic and Atmospheric Administration (NOAA) and the Army Corps of Engineers that shows a “green to gray” continuum for shoreline stabilization. She did not agree that rip rap was an environmentally friendly option, as stated on page 39 & 40. She suggested emphasizing the natural processes of shorelines and stated that living shorelines are still a construction project, and are only appropriate when “do nothing” is not an option. Kristin mentioned that ANERR did a great job on living shoreline education. Kim Wren has lots of great information regarding living shorelines.

- Kristin suggest AP hold a presentation on Living Shorelines.
- Rosalyn stated the regular oyster bags are plastic, but there’s a new bag made out a palm oil byproduct that’s biodegradable.
- Melody said the substrate needs to be bagged, and consolidated.
- Melody asked if the plan included a map of the aquaculture leases. Yes, it is on page 44. She then suggested incorporating rules for aquaculture into the previously mentioned homeowners guide. Jill said there is a link to the BMPs on the DACS website.
- Jon mentioned more signage and educational material is needed for AHAP. He suggested signage at boat ramps and brochures to hand out to rental companies. Kristin asked if AHAP is included in the Apalachee Bay boater’s guide, and said the AP should encourage the updating of Boater’s Guides by FWC. She also suggested making sure information about the AP is correct on guides/brochures/maps being handed out by other groups/agencies. She asked if ANERR’s Roadmap to Recreation includes AHAP.
- Kristin noted that there is no boat ramp in Bald Point State Park, as shown on the map on page 45. There is a kayak launch at that location.
- Kristin pointed out that the paragraph on page 37 about colonial nesting birds doesn’t mention which species is being referred to. She also said the state park does not monitor for nesting sea turtles daily, they do it five days a week. They are a state nesting beach through FWC’s nesting protocols. Each group has their own nest marking protocols, and the protocol that is described in the plan is not the protocol that the state park follows.
- Kristin brought up coyote trapping, she said that the U.S. Department of Agriculture trappers are not necessary on Bald Point and that they only trap if funding is available.
- Eric Lovestrang suggested adding the green porcelain crab to the list of non-native species on page 20. Kristin suggested adding the giant pink barnacle.
- Kristin questioned how pertinent the sea turtle nesting data is to the AHAP plan, since the boundaries don’t extend into the Gulf. Penny asked if the state park’s sea turtle nesting data is accessible. Kristin said it should be found in FWC’s state nesting beaches index.
- Erik suggested added oysters to the section about aquaculture on page 16 in Mollusk Reef section. Portia from DACS has sent her comments with updated information about oyster aquaculture in AHAP.
- Rosalyn agreed with a public comment from meeting about consistent messaging and positive representation. Jon agreed, saying that he has spoken to Audubon about consistent signage for bird nesting areas.

At the close of the meeting, Penny explained the next steps in the management plan process: Acquisition and Restoration Council meeting (a public meeting in Tallahassee), and Governor and Cabinet meeting. The advisory council was reminded that comments could still be added on or before August 29, 2017, and they were thanked for their time and effort.

Meeting was adjourned.

C.2 / Formal Public Meeting

The following appendices contain information about the Formal Public Meeting(s) which was held in order to obtain input from the public about the Alligator Harbor Aquatic Preserve Draft Management Plan.

C.2.1 / Florida Administrative Register Posting

Florida Administrative Register

Volume 43, Number 135, July 13, 2017

agency at least 5 days before the workshop/meeting by contacting: Joyce Gainous-Harris at (850)410-8615 or at JoyceGainous-Harris@fdle.state.fl.us. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF TRANSPORTATION

The Florida Department Of Transportation, District II announces a public meeting to which all persons are invited.

DATE AND TIME: July 20, 2017, 4:30 p.m.

PLACE: North Jacksonville Church of God, 7600 Kenya Street, Jacksonville, FL 32208

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Florida Department of Transportation (FDOT) invites you to attend a public meeting to discuss proposed improvements to SR-111 (Edgewood Avenue) North, from US-1 (New Kings Road) to Moncrief Creek, Financial Project ID: 437616-1 in Jacksonville, Florida. The FDOT is proposing to mill and resurface the roadway, update ADA facilities, and remove on-street parking between Lem Turner Boulevard and I-95 to allow for the addition of bike lanes. Also included with this project are repairs to drainage pipes, sidewalks and guardrail within the project limits. Doors will open at 4:30 p.m. to 6:30 p.m. with an "Open House" format, for visitors to come by and review project displays and talk with Department Staff. Public participation is solicited without regard to race, color, sex, age, religion, national origin, disability or family status.

A copy of the agenda may be obtained by contacting: Mr. Stephen Browning, District Planning and Environmental Manger, Florida Department of Transportation District 2, 1109 S. Marion Avenue, MS 2007, Lake City, Florida 32025-5874, (386)961-7455 or 1(800)749-2967, extension 7455.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 7 days before the workshop/meeting by contacting: Mr. Stephen Browning, District Planning and Environmental Manger, Florida Department of Transportation District 2, 1109 S. Marion Avenue, MS 2007, Lake City, Florida 32025-5874, (386)961-7455 or 1(800)749-2967, extension 7455. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

REGIONAL PLANNING COUNCILS

Treasure Coast Regional Planning Council

The Treasure Coast Regional Planning Council announces a workshop to which all persons are invited.

DATE AND TIME: July 24, 2017, 6:00 p.m.

PLACE: Gifford Community Center, 4855 43rd Avenue, Vero Beach, Florida 32967

GENERAL SUBJECT MATTER TO BE CONSIDERED: Former Gifford Road Landfill Site Redevelopment Plan.

A copy of the agenda may be obtained by contacting: Stephanie Heidt, (772)221-4060 or sheidt@tcrpc.org.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Stephanie Heidt, (772)221-4060 or sheidt@tcrpc.org. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Florida Department of Environmental Protection, Florida Coastal Office announces a public meeting to which all persons are invited.

DATE AND TIME: Tuesday, August 15, 2017, 6:00 p.m. – 7:30 p.m.

PLACE: Florida State University, Coastal and Marine Laboratory, 3618 Coastal Highway 98, St. Teresa, FL 32358

GENERAL SUBJECT MATTER TO BE CONSIDERED: A draft Alligator Harbor Aquatic Preserve Management Plan has been prepared by the Florida Coastal Office. The draft plan is available for viewing or download at <http://publicfiles.dep.state.fl.us/CAMA/plans/aquatic/Alligator-Harbor-AP-Management-Plan.pdf>. The Florida Coastal Office seeks public comment on the draft. Members of the Alligator Harbor Aquatic Preserve Management Plan Advisory Committee have also been invited to attend, and listen to comments.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager, Jon Brucker at Jonathan.Brucker@dep.state.fl.us or (850)670-7723.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the

agency at least 48 hours before the workshop/meeting by contacting: Jon Brucker at (850)670-7723. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION
The Florida Department of Environmental Protection, Florida Coastal Office announces a public meeting to which all persons are invited.

DATE AND TIME: Wednesday, August 16, 2017, 9:00 a.m.
PLACE: Apalachicola National Estuarine Research Reserve Nature Center, 108 Island Drive, Eastpoint, FL 32328
GENERAL SUBJECT MATTER TO BE CONSIDERED: The Alligator Harbor Aquatic Preserve Management Plan Advisory Committee will meet to discuss possible revisions to the draft Alligator Harbor Aquatic Preserve Management Plan and comments received at the public meeting scheduled for August 15, 2017 and separately noticed. The draft plan is available for viewing or download at <http://publicfiles.dep.state.fl.us/CAMA/plans/aquatic/Alligator-Harbor-AP-Management-Plan.pdf>.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Jon Brucker at Jonathan.Brucker@dep.state.fl.us or (850)670-7723.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Jon Brucker at (850)670-7723. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION
The Florida Department of Environmental Protection announces a public meeting to which all persons are invited.

DATE AND TIME: July 26, 2017, 10:00 a.m.
PLACE: SFWMD Lower West Coast Service Center, 2301 McGregor Boulevard, Ft. Myers, FL 33901
GENERAL SUBJECT MATTER TO BE CONSIDERED: This is a public meeting of interested stakeholders to discuss the Caloosahatchee Estuary Basin Management Action Plan (BMAP) 5-Year Review. The BMAP is the means for implementation of the adopted Total Maximum Daily Loads (TMDLs). The primary purpose of this meeting is to discuss the process of developing the 5-Year Review and its components. A copy of the agenda may be obtained by contacting: Sara C. Davis, Watershed Planning and Coordination Section, Florida Department of Environmental Protection, 2600 Blair Stone Road, MS 3565, Tallahassee, Florida 32399-2400 or by e-mail at Sara.C.Davis@dep.state.fl.us.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting: Sara C. Davis at (850)245-8825. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of the Secretary
The Recreational Trails Program Advisory Committee announces a telephone conference call to which all persons are invited.

DATE AND TIME: July 26, 2017, 2:00 p.m.
PLACE: Dial: 1(888)670-3525, follow instructions for participant, enter: 1518575507, then press #
GENERAL SUBJECT MATTER TO BE CONSIDERED: The Advisory Committee will vote on priority ranking of project applications for the 2017 Recreational Trails Program Priority List and any other business deemed necessary.

A copy of the agenda may be obtained by contacting: Pamela Lister, Office of Operations, Florida Department of Environmental Protection, 3800 Commonwealth Boulevard, MS 795, Tallahassee, Florida 32399-3000, Pamela.Lister@dep.state.fl.us, (850)245-2501.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 5 days before the workshop/meeting by contacting: Pamela Lister using the contact information shown above. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).


DEPARTMENT OF HEALTH
Board of Chiropractic Medicine
The Board of Chiropractic Medicine announces a telephone conference call to which all persons are invited.

DATE AND TIME: July 26, 2017, 1:00 p.m.
PLACE: 1(888)670-3525, participant code: 7342425515
GENERAL SUBJECT MATTER TO BE CONSIDERED: Probable Cause Panel Meeting.

A copy of the agenda may be obtained by contacting: <http://floridaschiropracticmedicine.gov/>.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 7 days before the workshop/meeting by contacting: Gail.Curry@flhealth.gov. If you are hearing or speech impaired, please contact the agency using the Florida

Florida Department of Environmental Protection • Florida Coastal Office



Alligator Harbor Aquatic Preserve Public Meeting

Tuesday, August 15, 2017
6:00 pm - 7:30 pm

Florida State University
Coastal and Marine Laboratory
3618 Coastal Highway 98
St. Teresa, FL 32358

To view the draft plan, please visit:
www.aquaticpreserves.org

The Florida Department of Environmental Protection's Florida Coastal Office (FCO) is responsible for the management of Florida's 41 aquatic preserves, three National Estuarine Research Reserves, a National Marine Sanctuary, Florida Coastal Management Program, Outer Continental Shelf Program, and Coral Reef Conservation Program. These protected areas comprise more than 4 million acres of the most valuable submerged lands and select coastal uplands in Florida. FCO is updating these management plans, and is currently seeking input on the draft Alligator Harbor Aquatic Preserve management plan.

Meeting objectives:

1. Review purpose and process for revising the Alligator Harbor Aquatic Preserve management plan.
2. Present current draft plan with a focus on issues, goals, objectives and strategies.
3. Receive input on the draft management plan.

The information from the meeting will be compiled and used by FCO in the revision of the draft management plan.

Please contact Jon Brucker (850)670-7723, Jonathan.Brucker@dep.state.fl.us or visit our website at www.aquaticpreserves.org for more information or to request a written copy of the plan. Written comments are welcome and can be submitted by email to FloridaCoasts@dep.state.fl.us on or before **August 29, 2017**.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 48 hours before the workshop/meeting by contacting Jon Brucker at (850)670-7723 or Jonathan.Brucker@dep.state.fl.us. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, (800) 955-8771 (TDD) or (800) 955-8770 (Voice).

This publication funded in part through a grant agreement from the Florida Department of Environmental Protection, Florida Coastal Management Program by a grant provided by the Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act of 1972, as amended, National Oceanic and Atmospheric Administration Award No. NA15NOS4190096(CM06M) and NA16NOS4190120(CM07M). The views, statements, finding, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida, National Oceanic and Atmospheric Administration, or any of its sub-agencies. July 2017.





Alligator Harbor Aquatic Preserve meeting Tuesday

Posted Aug 11, 2017 at 8:22 AM

Updated Aug 11, 2017 at 12:06 PM

The Florida Department of Environmental Protection, Florida Coastal Office announces a public meeting to receive comments on the Alligator Harbor Aquatic Preserve draft management plan. The meeting will be Tuesday, August 15 from 6 to 7:30 p.m. at the Florida State University Coastal and Marine Laboratory, 3618 Coastal Highway 98, St. Teresa, FL 32358.

A copy of the draft plan is posted at www.aquaticpreserves.org. For the agenda, contact the preserve Manager, Jonathan Brucker by e-mail: Jonathan.Brucker@dep.state.fl.us, by phone 670-7723, or by mail: 108 Island Drive, Eastpoint, FL 32328.

If special accommodation is required for participation contact the manager 48 hours in advance. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, (800) 955-8771 (TDD) or (800) 955-8770 (Voice).



Florida Department of Environmental Protection

Central Panhandle Aquatic Preserves
108 Island Drive
Eastpoint, Florida 32328

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

Alligator Harbor Aquatic Preserve Draft Management Plan Public Meeting

Tuesday, August 15, 2017, 6:00 – 7:30 p.m.
Florida State University
Coastal and Marine Laboratory
3618 Coastal Highway 98
St. Teresa, Florida 32358

Attendees (20): Melody Ray-Culp, Kristin Ebersol, Laura Gorey, Hanna Heinke-Green, Kevin Griffin, Vicki Heinke, Bob Hoelzle, Ben Houston, Carol Kimbrough, Katie Konchar, Ann Maruszak, Emory Maxwell, Barbara and David Rosen, Caity Reilanel-Smith, Eddie Sosebee, Lynn Sosebee, John Sullivan, Ezra Thompson, Nancy Widener
Staff: Jonathan Brucker, Katie Davis, Nikkie Cox, Megan Christopher, Kim Wren, Earl Pearson, Penny Isom

Penny welcomed everyone, gave a brief introduction about the purpose of the meeting, and introduced staff from the aquatic preserve, Northwest Region, and Tallahassee.

Jon gave a PowerPoint presentation about Alligator Harbor Aquatic Preserve, accomplishments, work being conducted, and issues identified in the management plan.

After the presentation, Penny explained the commenting process. The room was set up so there were three stations, one for each of the three issues identified in the management plan. Attendees were split into three groups, and assigned to an issue station. Staff provided background on each issue and recorded comments the public had pertinent to each issue (listed below). After about 20 minutes, groups rotated to the next issue station.

Issue One: Water Quality

- Funding to allow data logger stations around the harbor
- Data loggers to return to aquaculture leases
- Data logger data in real-time available online and easy to read (comment was seconded by another group)
- Data loggers need to be serviced regularly

- Water quality has changed since last management plan
- Partnering with other agencies for over-lapping data
- More attention to Alligator Harbor, collaborate/partner with UF IFAS
- Data logger station at the fresh water (creek) input to Alligator Harbor- assess mixture, conditions with fresh water and salt water
- Concerned of condition of wells along Hwy 98- inland (Alligator Point Water Department has info)
- Keep up harmful algal bloom sample collection
- More targeted sampling after large crowds/tourist times
- Encourage work to see effects of sea level rise to the harbor, water quality
- Long term monitoring/management of opening to the harbor (comment was seconded by another group)
- Monitor storm water runoff
- Interested in trend data- make publicly available
- Concerned about septic tank conditions- vacant lots (where trailers stay temporarily)
- Encourage oyster gardens- citizen science
- Management plan should have executive summary
- Explain what water quality is- define better in plan
- Partnering with local schools to build kiosks, etc.
- Educate, more outreach with local schools
- Go into schools- water quality related to health. Give children information
- Concerns about storm water runoff
- Encourage purchase of lands to help with water quality
- Clarity as it relates to food chains
- Look/study for pollutants/contaminants as relates to clarity
- Update members of community/homeowners two times a year (Taxpayer Association)

Issue Two: Protection of Seagrass Habitat

- Look at why the northside of Alligator Harbor has seagrass, but southside (along peninsula) doesn't
- Need specific signage along edges of seagrass beds in Alligator Harbor and elsewhere (see 1.2.1)
- Conduct inventory of baseline data of the natural resource
- Look at whether there has been an improvement in water quality due to oysters and clams (identify trends)
- Oyster farming off of docks to further improve water quality
- Look into recent seagrass mounds washing up on shore (off-season when they shouldn't be dying)
- Address shifting sands and eventual closure of Alligator Harbor and impacts on the water body
- Water flow is connected to water clarity
- Look into reduced scallop (and crabs?) populations. Most crabbing is recreational.
- Focus on education of boaters, especially out-of-towners

- Hold a boating class on how to avoid seagrass and reduce damage if you do hit them
- Talk with real estate people to put brochures in rental places
- Ensure good communication between Florida Coastal Office and Department of Agriculture and Consumer Services
- Educational materials in marinas in Panacea; there aren't many local facilities and many users come from there
- Also educate in restaurants
- Make connection between the natural resource and what you're eating at the restaurant; Focus on importance of seagrass beds
- Look at whether shrimping is done in Alligator Harbor Aquatic Preserve
- Keep kiosks consistent (show all aquatic preserves and similarities); information on the importance of seagrasses should also include percentage of species dependent on seagrasses
- Mention seagrass law on sign (and penalties); make sure there are plenty of signs
- Put contact info (including ANERR) on signs
- Water clarity makes it difficult for seagrass except winter and spring
- Connection between water level in ponds and clams (low water in the ponds and the clams don't do well); sulfur springs (?)

Issue Three: Sustainable Public Use

- Address size limits/signage of shellfish harvesting
- Increase signage for proper fishing/harvest areas
- Increase information re: resources at local facilities- church, marinas, ramps, beach accesses, realtors, etc.
- Address issue of sediment transport/dredging in case of closing off harbor (emergency contingency plan)
- Cooperation with other agencies to share data (synthesize seagrass monitoring data)
- Incorporate restoration goals into plan (not just appendices)
- Education re: responsible wildlife viewing
 - Proper signage (300 ft. from oystercatchers)
 - Consistent message across agencies
 - New leash laws
 - Highlights- aquatic preserves; species profiles (positive representation)
- Education and outreach materials for public
- Improve accessibility (priority project- appendix)

After the comments were received, the group reconvened and Penny explained the next steps in the management plan process: an advisory committee meeting, Acquisition and Restoration Council meeting (a public meeting in Tallahassee), and Governor and Cabinet meeting. The public was reminded that comments could still be submitted on or before August 29, 2017. They were thanked for taking time out of their busy schedules to attend and provide valuable feedback.

Meeting was adjourned.

Goals, Objectives, and Strategies

D.1 / Current Goals, Objectives and Strategies Table

The following table provides a cost estimate for conducting the management activities identified in this plan. The data is organized by year and Management Program with subtotals for each program and year. The following represents the actual budgetary needs for managing the resources of the aquatic preserve. This budget was developed using data from the Florida Coastal Office (FCO) and other cooperating entities, and is based on actual costs for management activities, equipment purchases and maintenance, and for development of fixed capital facilities, however, does not adjust for inflation. This budget assumes optimal staffing levels and does not include the costs associated with staffing such as salary or benefits. Budget categories identified correlate with the FCO Management Program Areas. The Funding Source column depicts the source of funds with “S” designated for state, “F” for federal, and “O” for other funding sources (e.g. non-profit groups, etc.). Dollar figures in red font indicate funding not available at this time.

Large, beneficial projects, outside the current capacity of AHAP’s funding and staffing, are identified in Appendix D.4, in case opportunities become available to support those projects in the ten-year span of this management plan.

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Issue 1: Water Quality															
Goal 1: Develop a strategic, long-term water quality monitoring program within AHAP that will assist with identifying and addressing issues pertaining to the natural resources.															
Objective 1: Analyze and interpret the status and trends of water quality in AHAP to identify potential impacts to natural resources, and provide quality scientific data and recommendations to address such issues.															
Strategy 1: Develop a strategic long-term water quality monitoring program that includes biotic and abiotic parameters, and compile analyzed data to evaluate water quality status and trends.	Ecosystem Science	2017	Ongoing	\$13,500	S	\$5,000	\$35,000	\$35,000	\$35,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Strategy 2: Monitor nutrients and water clarity in AHAP through a partnership with the University of Florida’s LAKEWATCH program to determine total nitrogen and phosphorous, chlorophyll, and water clarity.	Ecosystem Science	2017	Ongoing	\$12,500	S	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500
Strategy 3: Evaluate and, if needed, expand LAKEWATCH water quality sampling in AHAP by adding more water quality monitoring sites within the aquatic preserve.	Ecosystem Science	2017	Ongoing	TBD	S	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Objective 2: Identify specific and emerging water quality issues related to pollution sources and environmental contaminants and develop a response strategy to issues that may be indicated by reports or monitoring data.															
Strategy 1: Partner with other state and local agencies to identify potential point and nonpoint sources of pollution in Alligator Harbor and develop a monitoring plan to effectively evaluate the impacts from this type of pollution.	Ecosystem Science	2017	Ongoing	\$1,000	S	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Strategy 2: Support the development of nutrient criteria.	Resource Mgmt.	2017	Ongoing	w/water qty mntr.	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 3: Support the development of TMDLs.	Resource Mgmt.	2017	Ongoing	w/water qty mntr.	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Objective 3: Ensure the sustainability of scallop, fish, and other concerned species as well as salt marsh and seagrass habitats through the development of a tiered approach to water quality monitoring.															
Strategy 1: Partner with other local and state agencies to assist in monitoring the distribution and abundance of specific indicator species to determine the ecological health of the bay system.	Ecosystem Science	2018	Ongoing	\$4,000			\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
Strategy 2: Determine the biodiversity of AHAP by establishing baseline data and broad scale characterizations of benthic communities.	Ecosystem Science	2018	Ongoing	\$2,000			\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
Strategy 3: Acquire data and work in conjunction with other agencies to develop a biological assessment report.	Ecosystem Science	2017	Ongoing	In benthic data collect.			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Goal 2: Provide timely and accurate water quality data and information to the public and other entities/agencies.															
Objective 1: Acquire an additional repository to store water quality data in a centralized database.															
Strategy 1: Work with UF's LAKEWATCH to contribute to a centralized water quality storage database and website.	Education & Outreach	2017	Ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Objective 2: Utilize a variety of methods to inform the public and other entities regarding water quality conditions, the importance of water quality, and suggestions to improve water quality within AHAP.															
Strategy 1: Utilize educational signage at strategic access points to AHAP to educate the public on the ecological significance of the bay and how the public can assist in conserving natural resources.	Education & Outreach	2018	Ongoing	\$1,000			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Strategy 2: Coordinate and participate in public lectures and other events where staff can address water quality issues and discuss methods for improving water quality.	Education & Outreach	2017	Ongoing	\$500	S	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Strategy 3: Provide and/or create opportunities for the public to volunteer to assist with monitoring efforts and unique events (i.e. Earth Day).	Education & Outreach	2017	Ongoing	\$500	S	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Issue 2: Protection of Seagrass															
Goal 1: Manage seagrass communities to effectively protect and maintain this habitat as a valuable, natural resource throughout AHAP.															
Objective 1: Monitor the status and trends of seagrass distribution within AHAP to determine the overall health and identify potential threats to the habitat.															
Strategy 1: Develop and implement a Seagrass Monitoring Plan for AHAP.	Ecosystem Science	2018	Ongoing	\$15,000			\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Strategy 2: Continue to collaborate with FWC and other state agencies on the Seagrass Integrated Mapping and Monitoring report.	Resource Mgmt.	2017	Ongoing	On-going w/ seagrass monitor.	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 3: Utilize advanced GIS technology and hyperspectral imagery to quantify gains or losses to seagrass acreages, identify severely scarred areas to determine restoration needs, assess management options and develop a seagrass restoration plan for AHAP.	Resource Mgmt.	2018	Ongoing	\$0			\$50,000					\$50,000			
Strategy 4: Establish and maintain close communication with all federal, state, and local land managers that are responsible for making resource management decisions that could affect water quality or seagrass habitat in AHAP.	Resource Mgmt.	2017	Ongoing	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Objective 2: Promote the importance of seagrass habitats by generating a variety of informational outlets that target recreational, commercial, and scientific user groups operating in AHAP.															
Strategy 1: Design and distribute brochures and other outreach materials that can be used to prevent destruction of seagrasses.	Education & Outreach	2018	Ongoing	\$3,000	F	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Strategy 2: Repair, replace, or install education signage throughout AHAP pertaining to resource protection.	Education & Outreach	2017	Ongoing	\$1,000	S	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Strategy 3: Provide educational and informational materials, such as boater's guides and brochures to local businesses, marinas, and tour operators.	Education & Outreach	2018	Ongoing	\$1,000			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Strategy 4: Continue to participate in education and outreach events throughout the Panhandle to promote the importance of seagrass and other estuarine habitats.	Education & Outreach	2017	Ongoing	Included in Strategy 1			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Strategy 5: Coordinate with local tourism-driven businesses to inform visitors of proper boating practices to reduce the amount of propeller scarring in seagrasses.	Education & Outreach	2017	Ongoing	\$500	O	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Goal 2: Restore areas of seagrass loss and severely scarred seagrass to prevent further loss of the resource.															
Objective 1: Develop a seagrass restoration plan for AHAP.															
Strategy 1: Partner with DEP's Florida Park Service and FWC to survey the regions with the greatest habitat loss and the most severely scarred areas.	Resource Mgmt.	2017	Ongoing	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 2: Seek funding for future seagrass habitat restoration projects in AHAP.	Resource Mgmt.	2017	Ongoing	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 3: Coordinate with FWC law enforcement to ensure enforcement of the seagrass law prohibiting destruction of seagrasses in AHAP.	Resource Mgmt.	2017	Ongoing	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Issue 3: Public Use															
Goal 1: Encourage user experiences and public recreation opportunities consistent with natural resource conservation.															
Objective 1: Inform local residents and visitors about actions they can take to conserve and restore resources of the AHAP.															
Strategy 1: Partner with other agencies to develop and distribute information identifying potential use conflicts and methods of prevention.	Resource Mgmt.	2017	Ongoing	\$1,000			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Strategy 2: Develop informational brochures and/or participate in local meetings to educate user groups of potential impacts to the natural resources associated with user activities.	Education & Outreach	2017	Ongoing	\$1,000			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Strategy 3: Post educational signage at public access points.	Education & Outreach	2017	Ongoing	TBD		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Strategy 4: Partner with other agencies to keep the public informed about preserving the historical resources in the area and the proper routes of communication to report damaged or previously undiscovered cultural sites. Staff will alert DHR to any or potentially undiscovered sites.	Education & Outreach	2018	Ongoing	TBD			TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Objective 2: Examine public use patterns and trends within AHAP to proactively identify potential resource/public use conflicts.															
Strategy 1: In an effort to identify resource/public use conflicts and develop conservation strategies, AHAP staff will create an aquatic preserve visitor use survey.	Resource Mgmt.	2018	Ongoing	\$1,000			\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Goal 2: Promote low-impact, sustainable recreational opportunities.															
Objective 1: Increase awareness of non-consumptive use opportunities.															
Strategy 1: Promote the Florida Circumnavigational Trail through educational signage at paddling launch sites.	Education & Outreach	2018	Ongoing	\$0			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Goal 3: Address areas impacted by human use while educating users of the effects of improper use.															
Objective 1: Reduce the amount of debris, contaminants, and other resource damages associated with user groups.															
Strategy 1: Understand and address consumptive use impacts from fisheries, such as shrimping, crabbing, scalloping, and aquaculture, and others that utilize gear and methods that can be harmful to natural resources in AHAP, while recognizing the importance to local economies.	Ecosystem Science	2018	Ongoing	\$0			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 2: Coordinate with other resource agencies and law enforcement to support efforts to address derelict and/or illegal fisheries gear and harvesting activities and to assist in the removal of derelict fishing gear and/or illegal fisheries gear in AHAP.	Resource Mgmt.	2018	Ongoing	\$500			\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Strategy 3: Partner with FWC and other agencies to secure funding for and develop habitat restoration projects involving the removal of marine debris.	Resource Mgmt.	2018	Ongoing	\$500			\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500

D.2 / Budget Summary Table

The following table provides a summary of cost estimates for conducting the management activities identified in this plan.


Fiscal Year	Ecosystem Science	Resource Management	Education & Outreach	Public Use	Annual Total
2017-2018	\$18,500	\$0	\$5,500	\$0	\$24,000
2018-2019	\$69,500	\$53,000	\$9,500	\$0	\$132,000
2019-2020	\$69,500	\$3,000	\$9,500	\$0	\$82,000
2020-2021	\$69,500	\$3,000	\$9,500	\$0	\$82,000
2021-2022	\$39,500	\$3,000	\$9,500	\$0	\$52,000
2022-2023	\$39,500	\$3,000	\$9,500	\$0	\$52,000
2023-2024	\$39,500	\$53,000	\$9,500	\$0	\$102,000
2024-2025	\$39,500	\$3,000	\$9,500	\$0	\$52,000
2025-2026	\$39,500	\$3,000	\$9,500	\$0	\$52,000
2026-2027	\$39,500	\$3,000	\$9,500	\$0	\$52,000
Ten Year Totals	\$464,000	\$127,000	\$91,000	\$0	\$682,000

D.3 / Major Accomplishments Since the Approval of the Previous Plan

- Developed long term water quality monitoring program, which provides valuable data about the health of the bay.
- Developed seagrass monitoring program, which provides valuable information about the health of the habitat.
- Developed partnerships with multiple federal, state, and local agencies that enable more effective management of the aquatic preserve.
- Worked to protect the aquatic preserve from developmental pressures, thus preventing damage to many natural communities.

D.4 | Gulf Restoration Priority Projects

Florida's expansive coastline and wealth of aquatic resources have defined it as a subtropical oasis, attracting millions of residents and visitors, and the businesses that serve them. Florida's submerged lands play important roles in maintaining good water quality and hosting a diversity of wildlife and habitats (including economically and ecologically valuable nursery areas). The following projects are proposed by the Florida Coastal Office as top priorities for the Alligator Harbor Aquatic Preserve in regards to creating and maintaining healthy ecosystems and economies.



Central Panhandle Aquatic Preserves

CPAP

The image shows a circular logo for the Florida Department of Environmental Protection. The logo features a landscape with a sun, a tree, and water. To the right of the logo, the text 'Central Panhandle Aquatic Preserves' is written in a bold, black font, with 'CPAP' centered below it. A thin vertical line is positioned between the logo and the text.



CPAP PRIORITY RESTORATION PROJECTS

Mapping and Monitoring Seagrass Habitat

Partners:
FDEP/FCO/CAMA

Funding Required:
\$200,000

Location:
Franklin, Gulf, Bay
Counties
29.8981° N, 84.3801° W
29.6851° N, 85.3171° W
30.0701° N, 85.7000° W

Project Timeline:

Project Objectives:

Utilizing Unmanned Aerial Systems (UAS) technology and high resolution imagery sensors to adequately map and monitor seagrass habitat and the extent of prop scar damage across the Central Panhandle Aquatic Preserves is a major priority. This project would focus specifically on the extent of prop scar damage with the goal of mapping additional seagrass habitat mapped if funding allowed. This project budget would include data collection, analysis, and products in a usable format as well as ground-truthing efforts.

A major objective of this project is to improve the effectiveness of state and federal programs related to habitat conservation and restoration strategies.



Project Outcomes:

State agencies will have data in a usable format that can be analyzed to further understand the extent of prop scar damage in the panhandle aquatic preserves.

Staff will be able to expand monitoring initiatives to further assess the health of seagrass beds in the Central Panhandle.

Areas of high priority will be identified for future restoration projects.



CPAP PRIORITY RESTORATION PROJECTS

Mapping and Monitoring Seagrass Habitat

Location in aquatic preserve management plan(s):
--

Apalachicola Bay

Issue II, Goal 2.1, Objective 2.1.3, Int. Strategy 1-4,7,8 Issue II, Goal 2.1, Objective 2.1.4, Int. Strategy 3-6
--

St. Joseph's Bay

Issue II, Goal I, Objective I, Int. Strategy II & III

St. Andrews

Issue II, Goal I, Objective I, Int. Strategy II & III

Alligator Harbor

Issue II, Goal I, Objective 1, Int. Strategy III



CPAP PRIORITY RESTORATION PROJECTS

Imagery Assessment of Propeller Scar Damage in Alligator Harbor

Partners:
FDEP/FCO/CAMA

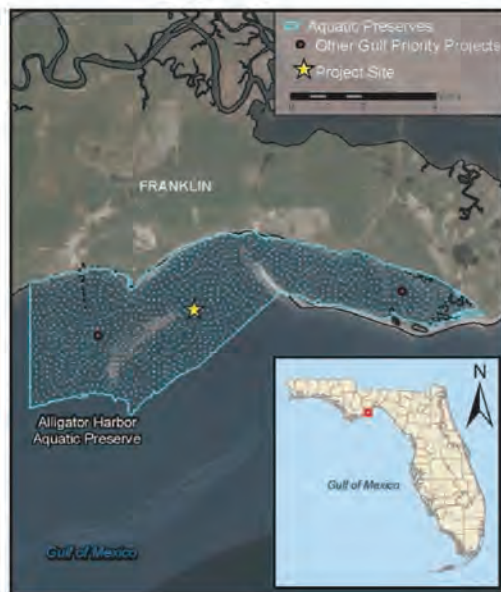
Funding Required:
\$50,000

Location:
Franklin County
29.8981° N, 84.3601° W

Project Objectives:

Utilizing Unmanned Aerial Systems (UAS) technology and high resolution imagery sensors to adequately map and monitor seagrass habitat and the extent of prop scar damage in the Alligator Harbor Aquatic Preserve is the objective of this project. This project would focus specifically on the extent of prop scar damage with the goal of mapping additional seagrass habitat, if funding allowed. This project budget would include data collection, analysis, and products in a usable format as well as ground-truthing efforts.

A major objective of this project is to improve the effectiveness of state and federal programs related to habitat conservation and restoration strategies.



Project Outcomes:

State agencies will have data in a usable format that can be analyzed to further understand the extent of prop scar damage in the Alligator Harbor Aquatic Preserve.

Staff will be able to expand monitoring initiatives to further assess the health of seagrass beds in the AP.

Areas of high priority will be identified and restoration projects will be designed in those areas.



CPAP PRIORITY RESTORATION PROJECTS

Imagery Assessment of Propeller Scar Damage in Alligator Harbor

Location in aquatic preserve management plan(s):

Alligator Harbor

Issue II, Goal I, Objective 1, Int. Strategy III



CPAP PRIORITY RESTORATION PROJECTS

Extend and Enhance Water Quality Monitoring

Project Objectives:

Gulf Coast communities face a number of pressing challenges, such as storm risk, sea-level rise, land loss, depletion of natural resources, and compromised water quality. A major focus of this project is to reduce the amount of nutrients flowing into the Gulf and to undertake other measures to enhance water quality. Within this goal, projects will aim to integrate the creation of resilient communities with ecosystem restoration through the development of comprehensive coastal planning programs.

This project aims to further develop and expand water quality monitoring efforts across the Florida Panhandle AP's. The objective of this effort is to quantify the spatial/temporal variability and trends, both seasonally and as a function of tidal forcing, of selected abiotic parameters (e.g. establish baseline data) within the preserve. Through the implementation of a long-term, community-based water quality monitoring initiative, the development of long-term database of baseline water quality conditions and trends can be established. Public outreach and education programs will be developed and enhanced to compliment this monitoring effort.

Partners:
FDEP/FCO/CAMA

Funding Required:
\$200,000

Location: Franklin,
Gulf, Bay Counties
29.8981° N, 84.3801° W
29.6851° N, 85.3171° W
30.0701° N, 85.7000° W

Project Timeline:



Project Outcomes:

Coordinate and expand existing water quality monitoring efforts supporting adaptive management of programs and projects designed to improve water quality.

This project will enhance and create programs that monitor and preserve high water quality for a sustainable environment and economic growth in and around the Aquatic Preserves, resulting in better quality of life for the residents and improved environment for the general public.

CPAP will coordinate with local governments and the public, implement contribute to estuarine habitat restoration projects, and provide supporting public outreach.



CPAP PRIORITY RESTORATION PROJECTS

Extend and Enhance Water Quality Monitoring

Location in aquatic preserve management plan(s):
Apalachicola Bay Issue III, Goal 3.1, Objective 3.1.1, Int. Strategy 1-8 Issue III, Goal 3.2, Objective 3.2.1, Int. Strategy 1-8 Issue V, Goal 5.1, Objective 5.1.1, Int. Strategy 1-4, 6
St. Joseph's Bay Issue I, Goal I, Objective I, Int. Strategy I, II, III Issue I, Goal I, Objective II, Int. Strategy III & IV
St. Andrews Issue I, Goal I, Objective II, Int. Strategy I, II, III Issue I, Goal II, Objective I, Int. Strategy I

Alligator Harbor

Issue I, Goal I, Objective I, Int. Strategy I,&II
Issue I, Goal I, Objective II, Int. Strategy I, II, & III
Issue I, Goal II, Objective II, Int. Strategy I, II, & III

Other Requirements

E.1 / Acquisition and Restoration Council Management Plan Compliance Checklist

Land Management Plan Compliance Checklist Required for State-owned conservation lands over 160 acres			
Item #	Requirement	Statute/Rule	Pg#/App
Section A: Acquisition Information Items			
1	The common name of the property.	18-2.018 & 18-2.021	Ex. Sum.
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	p. 1
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	p. 1, 6-8
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	Ex. Sum & p. 10
5	A map showing the approximate location and boundaries of the property, and the location of any structures or improvements to the property.	18-2.018 & 18-2.021	p. 11
6	An assessment as to whether the property, or any portion, should be declared surplus. Provide Information regarding assessment and analysis in the plan, and provide corresponding map.	18-2.021	N/A
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. Please clearly indicate parcels on a map.	18-2.021	N/A
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	p. 23
9	A statement of the purpose for which the lands were acquired, the projected use or uses as defined in 253.034 and the statutory authority for such use or uses.	259.032(10)	p. 6
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	p. 21-23
Section B: Use Items			
11	The designated single use or multiple use management for the property, including use by other managing entities.	18-2.018 & 18-2.021	p. 7
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	p. 9-11, 20-21, 23, 44-48
13	A description of alternative or multiple uses of the property considered by the lessee and a statement detailing why such uses were not adopted.	18-2.018	N/A
14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	p. 6-8, 25-48
15	Include a provision that requires that the managing agency consult with the Division of Historical Resources, Department of State before taking actions that may adversely affect archeological or historical resources.	18-2.021	App. E.2
16	Analysis/description of other managing agencies and private land managers, if any, which could facilitate the restoration or management of the land.	18-2.021	N/A
17	A determination of the public uses and public access that would be consistent with the purposes for which the lands were acquired.	259.032(10)	p. 44-48
18	A finding regarding whether each planned use complies with the 1981 State Lands Management Plan, particularly whether such uses represent "balanced public utilization," specific agency statutory authority and any other legislative or executive directives that constrain the use of such property.	18-2.021	p. 6-8
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	App. E.3

**Land Management Plan Compliance Checklist
Required for State-owned conservation lands over 160 acres**

Item #	Requirement	Statute/Rule	Pg#/App
20	An assessment of the impact of planned uses on the renewable and non-renewable resources of the property, including soil and water resources, and a detailed description of the specific actions that will be taken to protect, enhance and conserve these resources and to compensate/mitigate damage caused by such uses, including a description of how the manager plans to control and prevent soil erosion and soil or water contamination.	18-2.018 & 18-2.021	p. 12-14, 25-48
21	*For managed areas larger than 1,000 acres, an analysis of the multiple-use potential of the property which shall include the potential of the property to generate revenues to enhance the management of the property provided that no lease, easement, or license for such revenue-generating use shall be entered into if the granting of such lease, easement or license would adversely affect the tax exemption of the interest on any revenue bonds issued to fund the acquisition of the affected lands from gross income for federal income tax purposes, pursuant to Internal Revenue Service regulations.	18-2.021 & 253.036	N/A
22	If the lead managing agency determines that timber resource management is not in conflict with the primary management objectives of the managed area, a component or section, prepared by a qualified professional forester, that assesses the feasibility of managing timber resources pursuant to section 253.036, F.S.	18-021	N/A
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	N/A

*The following taken from 253.034(10) is not a land management plan requirement; however, it should be considered when developing a land management plan: The following additional uses of conservation lands acquired pursuant to the Florida Forever program and other state-funded conservation land purchase programs shall be authorized, upon a finding by the Board of Trustees, if they meet the criteria specified in paragraphs (a)-(e): water resource development projects, water supply development projects, storm-water management projects, linear facilities and sustainable agriculture and forestry. Such additional uses are authorized where: (a) Not inconsistent with the management plan for such lands; (b) Compatible with the natural ecosystem and resource values of such lands; (c) The proposed use is appropriately located on such lands and where due consideration is given to the use of other available lands; (d) The using entity reasonably compensates the titleholder for such use based upon an appropriate measure of value; and (e) The use is consistent with the public interest.

Section C: Public Involvement Items

24	A statement concerning the extent of public involvement and local government participation in the development of the plan, if any.	18-2.021	App. C
25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(10)	N/A
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.	259.032(10)	App. C
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	App. C
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.	253.034(5) & 259.032(10)	App. C
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. Include manager's replies to the team's findings and recommendations.	259.036	N/A
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	N/A

**Land Management Plan Compliance Checklist
Required for State-owned conservation lands over 160 acres**

Item #	Requirement	Statute/Rule	Pg#/App
31	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	N/A
Section D: Natural Resources			
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. Use brief descriptions and include USDA maps when available.	18-2.021	p. 12-13
33	Insert FNAI based natural community maps when available.	ARC consensus	p. 15
34	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding outstanding native landscapes containing relatively unaltered flora, fauna and geological conditions.	18-2.021	Ex Sum
35	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding unique natural features and/or resources including but not limited to virgin timber stands, scenic vistas, natural rivers and streams, coral reefs, natural springs, caverns and large sinkholes.	18-2.018 & 18-2.021	p. 15-18
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	p. 18
37	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding mineral resources, such as oil, gas and phosphate, etc.	18-2.018 & 18-2.021	p. 12-13, App. A.1
38	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding fish and wildlife, both game and non-game, and their habitat.	18-2.018 & 18-2.021	p. 15-19, App. B.3.1
39	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	p. 15-19, App. B.3.2
40	The identification or resources on the property that are listed in the Natural Areas Inventory. Include letter from FNAI or consultant where appropriate.	18-2.021	p. 15-18
41	Specific description of how the managing agency plans to identify, locate, protect and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032(10)	p. 20, p. 25-48, App. E.2
42	Habitat Restoration and Improvement	259.032(10) & 253.034(5)	
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.	259.032(10) & 253.034(5)	p. 25-48, App. D.1
42-B.	Provide a detailed description of both short (2-year planning period) and long-term (10-year planning period) management goals, and a priority schedule based on the purposes for which the lands were acquired and include a timeline for completion.	259.032(10) & 253.034(5)	App. D.1
42-C.	The associated measurable objectives to achieve the goals.	259.032(10) & 253.034(5)	App. D.1
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. Include fire management plans - they can be in plan body or an appendix.	259.032(10) & 253.034(5)	App. D.1
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.	259.032(10) & 253.034(5)	App. D.1
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. See footnote.	253.034(5)	Ex Sum

**Land Management Plan Compliance Checklist
Required for State-owned conservation lands over 160 acres**

Item #	Requirement	Statute/Rule	Pg#/App
44	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10)	
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	18-2.021, 253.034(5) & 259.032(10)	N/A
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	18-2.021, 253.034(5) & 259.032(10)	N/A
44-C.	Measurable objectives (see requirement for #42-C).	18-2.021, 253.034(5) & 259.032(10)	N/A
44-D.	Related activities (see requirement for #42-D).	18-2.021, 253.034(5) & 259.032(10)	N/A
44-E.	Budgets (see requirement for #42-E).	18-2.021, 253.034(5) & 259.032(10)	N/A
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5)	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	p. 25-48, App. D.1
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	App. D.1
45-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	App. D.1
45-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1
45-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. See footnote.	253.034(5)	App. B.3.3
47	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT require- ment via lease language	App. B.4
48	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5)	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	p. 25-48 App. D.1
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	App. D.1
48-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	App. D.1
48-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1
48-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1

Section E: Water Resources

49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.	18-2.018 & 18-2.021	p. 1-4
----	---	------------------------	--------

**Land Management Plan Compliance Checklist
Required for State-owned conservation lands over 160 acres**

Item #	Requirement	Statute/Rule	Pg#/App
50	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding water resources, including water classification for each water body and the identification of any such water body that is designated as an Outstanding Florida Water under Rule 62-302.700, F.A.C.	18-2.021	p. 1-4, 13-14
51	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding swamps, marshes and other wetlands.	18-2.021	p. 15-18
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. See footnote.	253.034(5)	Ex. Sum
53	Hydrological Preservation and Restoration	259.032(10) & 253.034(5)	
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	App. D.1
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	App. D.1
53-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	App. D.1
53-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1
53-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1

Section F: Historical, Archaeological and Cultural Resources

54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.	18-2.018, 18-2.021 & per DHR's request	Ex. Sum, p 20, App. B.5, E.2
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	Ex. Sum, p 20, App. B.5, E.2
56	A description of actions the agency plans to take to locate and identify unknown resources such as surveys of unknown archeological and historical resources.	18-2.021	App. D.1
57	Cultural and Historical Resources	259.032(10) & 253.034(5)	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	App. D.1
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	App. D.1
57-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	App. D.1
57-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1
57-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1

**While maps of Native American sites should not be included in the body of the management plan, the DSL urges each managing agency to provide such information to the Division of Historical Resources for inclusion in their proprietary database. This information should be available for access to new managers to assist them in developing, implementing and coordinating their management activities.

Section G: Facilities (Infrastructure, Access, Recreation)

58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. See footnote.	253.034(5)	p. 51
59	Capital Facilities and Infrastructure	259.032(10) & 253.034(5)	

**Land Management Plan Compliance Checklist
Required for State-owned conservation lands over 160 acres**

Item #	Requirement	Statute/Rule	Pg#/App
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	p. 51, App. D.1
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	App. D.1
59-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	App. D.1
59-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1
59-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	p. 44-48
61	Public Access and Recreational Opportunities	259.032(10) & 253.034(5)	
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	App. D.1
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	App. D.1
61-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	App. D.1
61-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1
61-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1

Section H: Other/ Managing Agency Tools

62	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	Front & App. E.1
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	Ex. Sum
64	If this LMP is a 10-year update, note the accomplishments since the drafting of the last LMP set forth in an organized (categories or bullets) format.	ARC consensus	App. D.3
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	p. 25-48
66	Summary budget for the scheduled land management activities of the LMP including any potential fees anticipated from public or private entities for projects to offset adverse impacts to imperiled species or such habitat, which fees shall be used to restore, manage, enhance, repopulate, or acquire imperiled species habitat for lands that have or are anticipated to have imperiled species or such habitat onsite. The summary budget shall be prepared in such a manner that it facilitates computing an aggregate of land management costs for all state-managed lands using the categories described in s. 259.037(3) which are resource management, administration, support, capital improvements, recreation visitor services, law enforcement activities.	253.034(5)	App. D.1
67	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032(10)	App. D.1
68	A statement of gross income generated, net income and expenses.	18-2.018	N/A

*** = The referenced inventories shall be of such detail that objective measures and benchmarks can be established for each tract of land and monitored during the lifetime of the plan. All quantitative data collected shall be aggregated, standardized, collected, and presented in an electronic format to allow for uniform management reporting and analysis. The information collected by the DEP pursuant to s. 253.0325(2) shall be available to the land manager and his or her assignee.

E.2 / Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands (revised March 2013)

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, '*Historic property*' or '*historic resource*' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. *These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state.*"

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at: www.flheritage.com/preservation/compliance/guidelines.cfm

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at: www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Deena S. Woodward

Division of Historical Resources, Bureau of Historic Preservation, Compliance and Review Section

R. A. Gray Building, 500 South Bronough Street

Tallahassee, FL 32399-0250

Phone: (850) 245-6425, Toll Free: (800) 847-7278, Fax: (850) 245-6435



**Florida Department of
Environmental Protection**

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 235
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

October 2017

Mark Curenton, County Planner
Franklin County Planning and Building Department
34 Forbes Street, Suite 1
Apalachicola, Florida 32320

Dear Mr. Curenton:

Attached is a copy of the draft Alligator Harbor Aquatic Preserve Management Plan. (The plan can also be found at <http://www.dep.state.fl.us/coastal/sites/alligator/>) The plan was developed with input from the public and the Alligator Harbor Aquatic Preserve Management Plan Advisory Group. We anticipate the plan being reviewed by the Acquisition and Restoration Council at their February 2018 meeting in Tallahassee (<http://dep.state.fl.us/lands/arc.htm>). We respectfully request, within 30 days of receipt of this letter, your review of the Aquatic Preserve plan for its compliance with the Franklin County Comprehensive Plan. Please reply to the physical address at the top of the letter (or e-mail address) regarding whether the Alligator Harbor Aquatic Preserve Management Plan is in compliance with the county's comprehensive plan. Thank you in advance for your time and effort in this matter.

If you have any questions, please don't hesitate to contact me at (850)245-2098 or Penny.Isom@dep.state.fl.us.

Sincerely,

A handwritten signature in blue ink, appearing to read "Penny Isom".

Penny Isom
Planning Manager
Florida Coastal Office

www.dep.state.fl.us

FRANKLIN COUNTY

REPLY TO:
BOARD OF COUNTY COMMISSIONERS
33 MARKET STREET, SUITE 203
APALACHICOLA, FL 32320
(850) 653-8861, EXT. 100
(850) 653-4795 FAX



REPLY TO:
PLANNING & BUILDING DEPARTMENT
34 FORBES STREET, SUITE 1
APALACHICOLA, FL 32320
(850) 653-9783
(850) 653-9799 FAX

November 7, 2017

Earl Pearson
Florida Coastal Office
Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 235
Tallahassee, Florida 32399-3000

RE: Alligator Harbor Aquatic Preserve Management Plan

Dear Mr. Pearson:

The Alligator Harbor Aquatic Preserve Management Plan is in compliance with Franklin County's Comprehensive Plan.

Sincerely,

A handwritten signature in blue ink that reads "Mark C. Curenton".

Mark C. Curenton
County Planner

RICKY D. JONES
DISTRICT ONE

CHERYL SANDERS
DISTRICT TWO

NOAH LOCKLEY, JR.
DISTRICT THREE

JOSEPH PARRISH
DISTRICT FOUR

WILLIAM MASSEY
DISTRICT FIVE



**Florida Department of
Environmental Protection**

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

February 16, 2018

Mr. Earl Pearson
Florida Coastal Office
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 235
Tallahassee, Florida 32399-3000

RE: Alligator Harbor Aquatic Preserve Management Plan

Dear Mr. Pearson:

On **February 16, 2018**, the Acquisition and Restoration Council recommended approval of the **Alligator Harbor Aquatic Preserve** management plan. Please advise Mr. James Parker of this office when the plan has been approved by the Board of Trustees.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ray Spaulding", is written over the typed name.

Raymond V. Spaulding
Office of Environmental Services
Division of State Lands
Department of Environmental Protection



Alligator Harbor Aquatic Preserve
Management Plan

**Florida Department of Environmental Protection
Florida Coastal Office**

3900 Commonwealth Blvd., MS #235
Tallahassee, FL 32399 • www.aquaticpreserves.org