



Cockroach Bay Aquatic Preserve

Management Plan



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

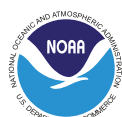
This publication funded in part through a grant agreement from the Florida Department of Environmental Protection, Florida Coastal Management Program by a grant provided by the Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act of 1972, as amended, National Oceanic and Atmospheric Administration Award No. NA14NOS4190053- CM504.

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.

March 2017



The area provides important habitat for the reproduction of animals like the horseshoe crab.



Cockroach Bay Aquatic Preserve Management Plan

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



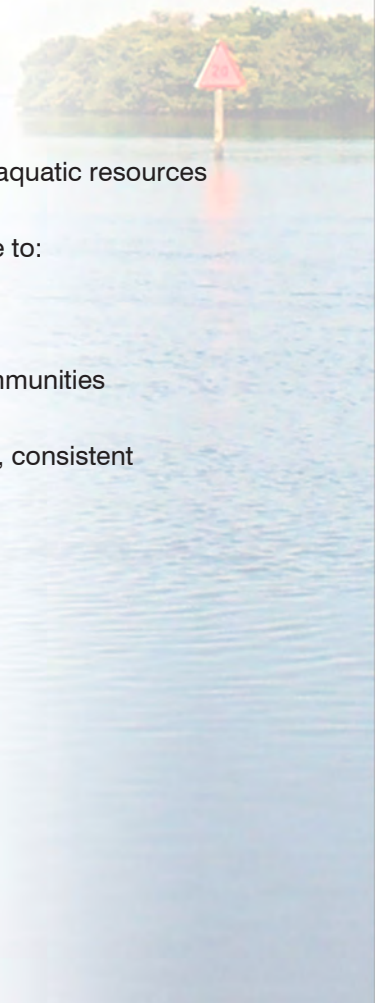
Mangrove tunnels add interest and a welcome respite from the sun to the paddling trails.

Mission Statement

The Florida Coastal Office's mission is to conserve and restore 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

Cockroach Bay Aquatic Preserve Management Plan	
Lead Agency:	Florida Department of Environmental Protection's (DEP) Florida Coastal Office (FCO)
Common Name of Property:	Cockroach Bay Aquatic Preserve (CBAP)
Location:	Hillsborough County, Florida
Acreage Total:	4,871
Acreage Breakdown for FCO Management Units According to Florida Natural Areas Inventory (FNAI) Natural Community Types	
<i>FNAI Natural Communities</i>	<i>Acreage according to GIS</i>
Unconsolidated Substrate:	106 acres
Consolidated Substrate: (hardbottom)	13 acres
Mollusk Reef:	11
Seagrass Bed:	1,775
Blackwater Stream:	734
Salt Marsh:	150
Mangrove Swamp:	640
Total:	4,871
Management Agency:	Florida Coastal Office
Designation:	Aquatic Preserve
Unique Features:	Intact coastal habitats in an otherwise urban watershed.
Archaeological/ Historical Sites:	Pre-Columbian sites including middens, ceremonial mounds and burial mounds
Management Needs:	Improved public awareness of the resources. Prevent and mitigate shoreline alterations. Facilitate low-impact public access. Reduce boating impacts.
Ecosystem Science:	Emphasis is on updating spatial data management through the new geodatabase approach and integrating field data collection to this system for a more seamless process.
Resource Management:	Emphasis is on maintaining the natural features of the area with targeted efforts to restore previous disturbances.
Education & Outreach:	Emphasis is on improved partnerships with existing programs and providing site based information at public access points.
Public Use:	Paddling access is encouraged, and impacts of boating activities will be addressed.
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. Cockroach Bay Aquatic Preserve staff held a public meeting June 20, 2016 in Ruskin and an advisory committee meeting June 22, 2016 in Terra Ceia to receive input on the draft management plan. An additional public meeting was held in Tallahassee on February 17, 2017 when the Acquisition and Restoration Council reviewed the management plan.

Coastal Zone Management Issues

The Cockroach Bay Aquatic Preserve is in an area that is beginning to experience rapid growth and development. Likely increases in public use of the aquatic preserve will necessitate enhanced resource management efforts to minimize per capita impacts. Human demand for freshwater and other area resources may challenge the availability of those resources to the aquatic preserve's estuarine ecosystem. Because new residents may not be familiar with the aquatic preserve's resources, their intrinsic value and the need for low-impact use, education and awareness will be especially important.

Goals

Better resource inventories and spatial data management/analysis techniques will increase efficiency and effectiveness of management activities in the aquatic preserve. Active removal of exotic species and stabilization of eroding shorelines are land-based activities that will also affect the aquatic habitats. Partnerships and public engagement will be key to addressing the issues defined in this plan.

FCO Approval: Nov. 2, 2016 **ARC approval:** Feb. 17, 2017 **Trustees approval:** Apr 11, 2017
Comments:

Acronym List

Abbreviation	Meaning	Abbreviation	Meaning
C	Celsius	FWRI	Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute
CSO	Citizen Support Organization	G	Global
DEP	Florida Department of Environmental Protection	MHW	Mean high water
DNR	Florida Department of Natural Resources	NERR	National Estuarine Research Reserve
ELAPP	Environmental Lands Acquisition and Protection Program (Hillsborough County)	NOAA	National Oceanic and Atmospheric Administration
EPC	Environmental Protection Commission (Hillsborough County)	OFW	Outstanding Florida Water
F	Fahrenheit	QR code	quick response code
F.A.C.	Florida Administrative Code	S	State
F.A.R.	Florida Administrative Register	SWIM	Surface Water Improvement and Management
FCO	Florida Coastal Office	TBAP	Tampa Bay Aquatic Preserves
FNAI	Florida Natural Areas Inventory	TBEP	Tampa Bay Estuary Program
F.S.	Florida Statutes	TPA	Tampa Port Authority
FWC	Florida Fish and Wildlife Conservation Commission	Trustees	Board of Trustees of the Internal Improvement Trust Fund

Table of Contents

Part I / 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 / The Cockroach Bay Aquatic Preserve	9
3.1 / Historical Background	9
3.2 / General Description	10
3.3 / Resource Description	11
3.4 / Values	22
3.5 / Citizen Support Organizations	22
3.6 / Adjacent Public Lands and Designated Resources	22
3.7 / Surrounding Land Use	24

Part II / Management Programs and Issues

Chapter 4 / The Cockroach Bay Aquatic Preserve’s Management Programs & Issues	25
4.1 / The Ecosystem Science Management Program at Cockroach Bay Aquatic Preserve	26
4.1.1 / Background of Ecosystem Science	26
4.1.2 / Current Status of Ecosystem Science	26
4.1.3 / Ecosystem Science Issue	27
Issue 1 / Enhancing Enforcement, Mapping Data and Research	27
4.2 / The Resource Management Program at Cockroach Bay Aquatic Preserve	28
4.2.1 / Background of Resource Management	28
4.2.2 / Current Status of Resource Management	28
4.2.3 / Resource Management Issues	29
Issue 2 / Marine Debris	29
Issue 3 / Shoreline Alterations	29
4.3 / The Education and Outreach Management Program at Cockroach Bay Aquatic Preserve	32
4.3.1 / Background of Education and Outreach	32
4.3.2 / Current Status of Education and Outreach	32
4.3.3 / Education and Outreach Issues	32
Issue 1 / Enhancing Enforcement, Mapping Data and Research (cont. from Ecosystem Science)	32
Issue 2 / Marine Debris (cont. from Resource Management)	33
Issue 4 / Reducing Per-Capita Impacts By Users	34
4.4 / The Public Use Management Program at Cockroach Bay Aquatic Preserve	35
4.4.1 / Background of Public Use	36
4.4.2 / Current Status of Public Use	36
4.4.3 / Public Use Issue	37
Issue 4 / Reducing Per-Capita Impacts By Users (cont. from Education and Outreach)	37

Part III / Additional Plans

Chapter 5 / Administrative Plan	39
Chapter 6 / Facilities Plan	41

List of Maps

Map 1 / Florida Coastal Office system.....	2
Map 2 / Cockroach Bay Aquatic Preserve.	10
Map 3 / Bathymetry of Cockroach Bay Aquatic Preserve.	11
Map 4 / Geomorphology and soils of Cockroach Bay Aquatic Preserve.....	12
Map 5 / Drainage basins of Cockroach Bay Aquatic Preserve.	13
Map 6 / Florida Natural Areas Inventory natural communities within Cockroach Bay Aquatic Preserve. ...	15
Map 7 / Seagrass coverage in Cockroach Bay Aquatic Preserve.	18
Map 8 / Manatee Protection Zones in Cockroach Bay Aquatic Preserve.....	20
Map 9 / Conservation lands adjacent to Cockroach Bay Aquatic Preserve.	22
Map 10 / Land use surrounding Cockroach Bay Aquatic Preserve.	23
Map 11 / Public access at Cockroach Bay Aquatic Preserve.	37

List of Tables

Table 1 / Summary of natural communities in Cockroach Bay Aquatic Preserve.....	16
Table 2 / Archaeological and historic sites within and adjacent to Cockroach Bay Aquatic Preserve...	21

List of Figures

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

List of Appendices

Appendix A / Legal Documents	44
A.1 / Aquatic Preserve Resolution	44
A.2 / Florida Statutes	45
A.3 / Florida Administrative Code	45
A.4 / Management Agreements	46
A.4.1 / Lease Agreement	46
Appendix B / Resource Data	59
B.1 / Glossary of Terms	59
B.2 / References.....	60
B.3 / Species Lists	61
B.3.1 / Native Species	61
B.3.2 / Listed Species	84
B.3.3 / Invasive, Non-Native and/or Problem Species	85
B.4 / Arthropod Control Plan.....	85
Appendix C / Public Involvement	86
C.1 / Advisory Committee	86
C.1.1 / List of Members and Affiliations.....	86
C.1.2 / Florida Administrative Register Posting	87
C.1.3 / Summary of the Advisory Committee Meeting.....	88
C.2 / Formal Public Meeting.....	93
C.2.1 / Florida Administrative Register Posting	93
C.2.2 / Advertisement Flyer.....	95
C.2.3 / Newspaper Advertisement.....	96
C.2.4 / Summary of the Formal Public Meeting.....	97
Appendix D / Goals, Objectives and Strategies	100
D.1 / Current Goals, Objectives and Strategies Budget Table	100
D.2 / Budget Summary Table	105
D.3 / Major Accomplishments Since the Approval of the Previous Plan	105
D.4 / Gulf Restoration Priority Projects	105
Appendix E / Other Requirements	107
E.1 / Acquisition and Restoration Council Management Plan Compliance Checklist	107
E.2 / Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands.....	113
E.3 / Letters of Compliance with County Comprehensive Plans	114
E.4 / Division of State Lands Management Plan Approval Letter.....	117



Mangrove islands come in all sizes in Cockroach Bay's shallow waters.

Part I

Basis for Management

Chapter One

Introduction

The Florida Coastal Office (FCO) of the Florida Department of Environmental Protection (DEP) administers the state's aquatic preserve system as part of an integrated program that includes 41 aquatic preserves, three National Estuarine Research Reserves (NERRs), a National Marine Sanctuary (the Florida Keys), the Coral Reef Conservation Program, the Florida Coastal Management Program, and the Outer Continental Shelf Program (Map 1). Management of the program as a whole provides coordinated and complementary protection of the state's aquatic resources to ensure that our most popular and ecologically important underwater ecosystems are cared for in perpetuity for future generations. Although administered as part of the statewide network, each of these special places is managed through the application of strategies based on local resources, issues, and conditions.

Our 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 continue to support the state's rapid growth without science-based resource protection and management. To this end, state legislators enacted special laws to protect exceptional submerged areas by designating them as aquatic preserves.

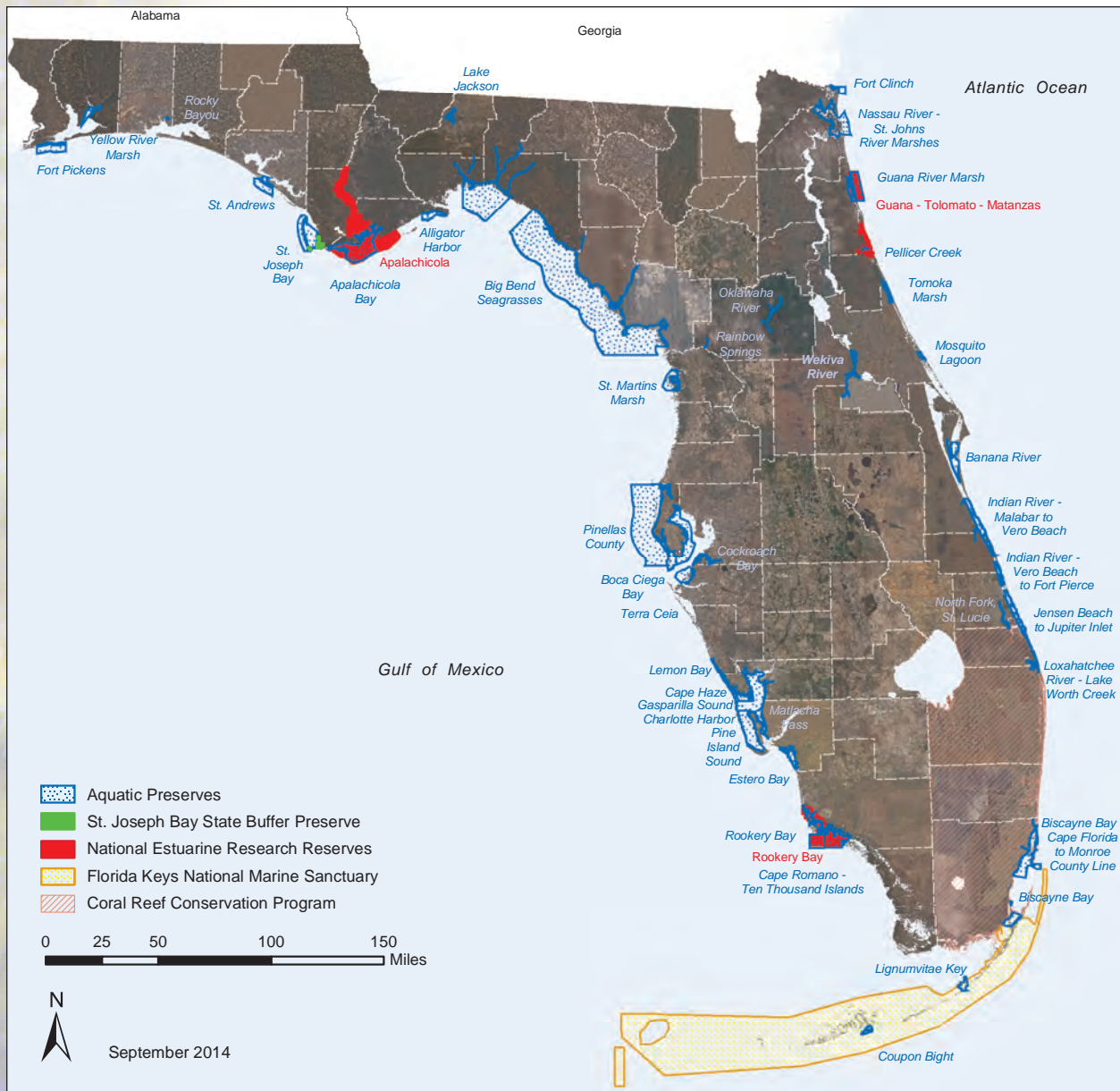
Title to submerged lands not conveyed to private landowners is held by the Board of Trustees of the Internal Improvement Trust Fund (the Trustees). The Governor and Cabinet, sitting as the Trustees, act

as guardians for the people of the state of Florida (§253.03, Florida Statutes [F.S.]) and regulate the use of these public lands. The Florida Aquatic Preserve Act of 1975 authorized the Trustees to adopt administrative rules for the management of sovereignty (state-owned) submerged lands (§ 258.36, F.S.). The statute and rules provide a heightened level of protection for the “exceptional biological, aesthetic, and scientific value[s]” of aquatic preserves, including areas of sovereignty lands “set aside forever as aquatic preserves or sanctuaries for the benefit of future generations.” (Florida Aquatic Preserve Act of 1975, §258.36, F.S.).

The tradition of concern for 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 resource 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 the plans is to assimilate, evaluate and prioritize all relevant information about each 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), 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 also 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 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 of information and development of management strategies for each site, 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 plan is an update of previous plans. The most recent comprehensive submerged land management plan for Cockroach Bay Aquatic Preserve was approved by the Board of Trustees of the Internal Improvement Trust Fund (Governor and Cabinet) in 1987. Another plan was commissioned in 1999 by the Tampa Port Authority and the Hillsborough County Board of County Commissioners, but it was primarily a watershed/water quality plan.

1.2 / Public Involvement

FCO recognizes the importance of stakeholder participation and encourages public involvement in management plan development. 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.



Orchids bloom on islands within the aquatic preserve boundary during summer.

Chapter Two

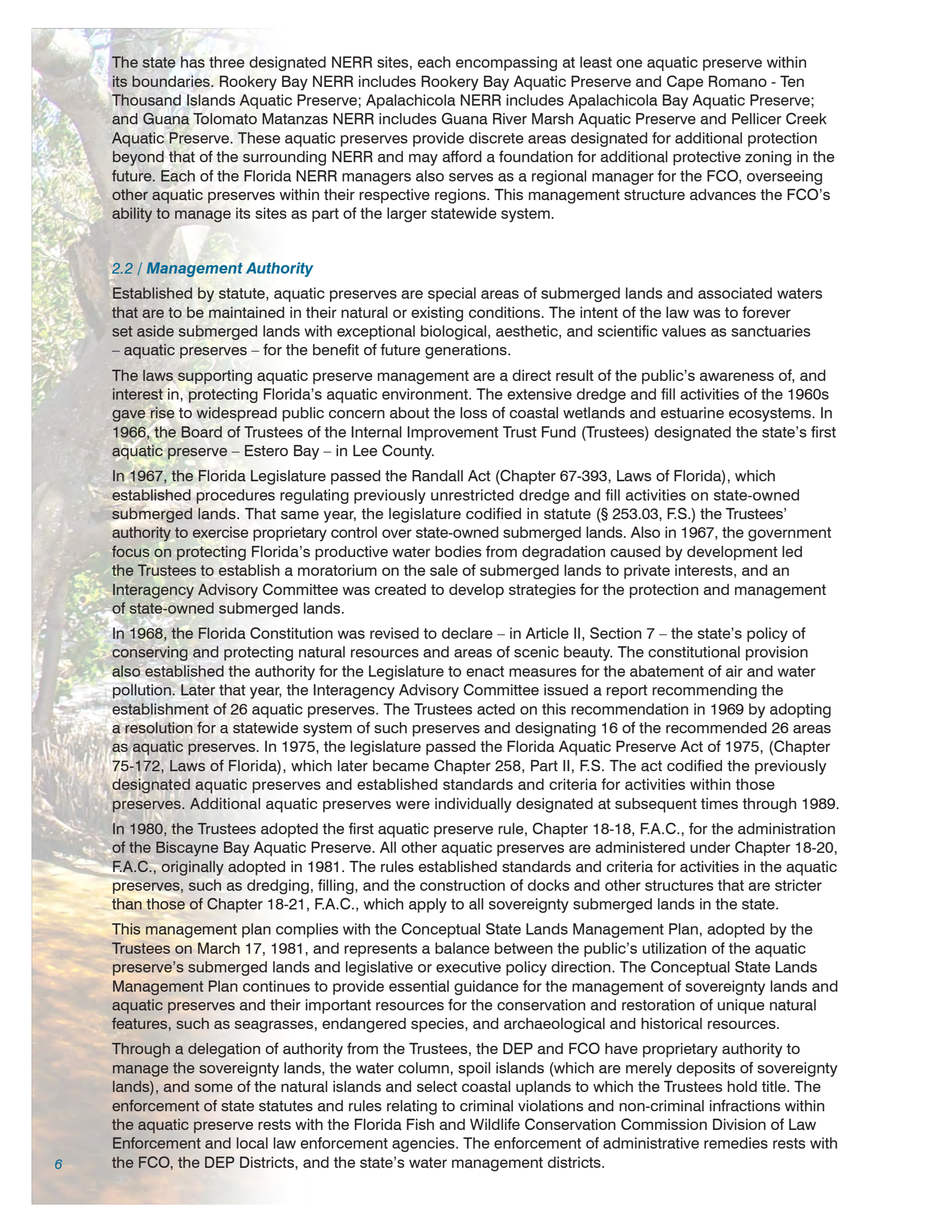
The Florida Department of Environmental Protection's Florida Coastal Office

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. The DEP is the lead agency in state government for environmental management and stewardship, commanding one of the broadest charges of all state agencies: protecting Florida's air, water and land. The DEP is organized into three principal areas: Regulatory Programs, Land and Recreation, and Water Policy and 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, 3 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, and the Coral Reef Conservation 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.



The state 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 also serves as a regional manager for the FCO, overseeing other aquatic preserves within their respective regions. This management structure advances the FCO's ability to manage its sites as part of the larger statewide system.

2.2 / Management Authority

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

The laws supporting aquatic preserve management are a direct result of the public's awareness of, and interest in, protecting Florida's aquatic environment. The extensive dredge and fill activities of the 1960s gave rise to widespread public concern about the loss of coastal wetlands and estuarine ecosystems. In 1966, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) designated the state's first aquatic preserve – 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 codified in statute (§ 253.03, F.S.) the Trustees' authority to exercise proprietary control over state-owned submerged lands. Also in 1967, the government focus on protecting Florida's productive water bodies from degradation caused by development led the Trustees to establish a moratorium on the sale of submerged lands to private interests, and 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. The constitutional provision also established the authority for the Legislature to enact measures for the abatement of air and water pollution. Later that year, the Interagency Advisory Committee issued a report recommending the establishment of 26 aquatic preserves. The Trustees acted on this recommendation in 1969 by adopting a resolution for a statewide system of such preserves and designating 16 of the recommended 26 areas as aquatic preserves. In 1975, the legislature passed the Florida Aquatic Preserve Act of 1975, (Chapter 75-172, Laws of Florida), which later became Chapter 258, Part II, F.S. The act codified the previously designated aquatic preserves and established standards and criteria for activities within those preserves. Additional aquatic preserves were individually designated at subsequent times through 1989.

In 1980, the Trustees adopted the first aquatic preserve rule, Chapter 18-18, 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., originally adopted in 1981. The rules established standards and criteria for activities in the aquatic preserves, such as dredging, filling, and the construction of docks and other structures that are stricter than those of Chapter 18-21, F.A.C., which apply to all sovereignty submerged lands in the state.

This management plan complies with the Conceptual State Lands Management Plan, adopted by the Trustees on March 17, 1981, and represents a balance between the public's utilization of the aquatic preserve's submerged lands and legislative or executive policy direction. The Conceptual State Lands Management Plan continues to provide essential guidance for the management of sovereignty lands and aquatic preserves and their important resources for the conservation and restoration of unique natural features, such as seagrasses, endangered species, and archaeological and historical resources.

Through a 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. The enforcement of state statutes and rules relating to criminal violations and non-criminal infractions within the aquatic preserve rests with the Florida Fish and Wildlife Conservation Commission Division of Law Enforcement and local law enforcement agencies. The enforcement of administrative remedies rests with the FCO, the DEP Districts, and the state's water management districts.

2.3 / Statutory Authority

The fundamental laws providing management authority for the aquatic preserves are contained in Chapter 258, Part II (Florida Aquatic Preserve Act of 1975) and Chapter 253 (State Lands), 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, the statutes empower the Trustees to adopt and enforce rules and regulations for managing all sovereignty lands, including aquatic preserves.

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 other applicable laws, provide clear guidance for FCO’s management of aquatic preserves with an emphasis on the preservation of exceptional resources on lands authorized in statute as part of an aquatic preserve.

Management responsibilities for aquatic preserves may be fulfilled directly by the Trustees or by DEP staff through a delegation of authority from the Trustees. Other governmental bodies may also participate in the management of aquatic preserves under appropriate instruments of authority issued by the Trustees. As the primary on-site resource managers, FCO staff implement provisions of the management plans and rules applicable to the aquatic preserves. The FCO does not “regulate” the use of submerged lands *per se*; that is handled by the DEP Districts, water management districts and Hillsborough County Environmental Protection Commission through the issuance of regulatory permits. The Florida Department of Agriculture and Consumer Services, through delegated authority from the Trustees, has the authority to issue proprietary authorizations for and regulate marine aquaculture activities within the aquatic preserves, as authorized by Chapter 597, F.S. (Florida Aquaculture Policy Act). The FCO staff evaluate proposed uses or activities in the aquatic preserve and assess possible impacts on the natural resources. Projects are evaluated in accordance with the standards and criteria contained in Chapter 258, Part II, Chapter 18-20, F.A.C., and this management plan.

Comments of FCO staff, along with those of other agencies and the public are submitted to the appropriate permitting office for consideration during its evaluation of activities proposed in aquatic preserves or for developing recommendations to be presented to the Trustees. This mechanism provides a basis for the Trustees’ evaluation of potential environmental impacts to the aquatic preserve, as well as the public’s interest and the merits of any project. 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 and in 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., empowers the Florida Fish and Wildlife Conservation Commission to regulate wildlife and saltwater fisheries and provides enforcement authority for implementation of the statute to law enforcement officers. 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 in sovereignty lands generally. The rules are cumulative, meaning that Chapter 18-21 should be read together with Chapter 18-18 or Chapter 18-20 to determine whether a particular activity is 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 arises in the application of the rules to a specific activity, the stricter standards of Chapter 18-18 or Chapter 18-20 will supersede those of Chapter 18-21. Because Chapter 18-21 applies to all sovereignty lands, it is logical to discuss its provisions first.

Originally codified in 1982, Chapter 18-21, F.A.C., was intended “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, board walks, 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 (use of gravity, shock wave and other geological techniques to obtain data on oil, gas or other subsurface 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.

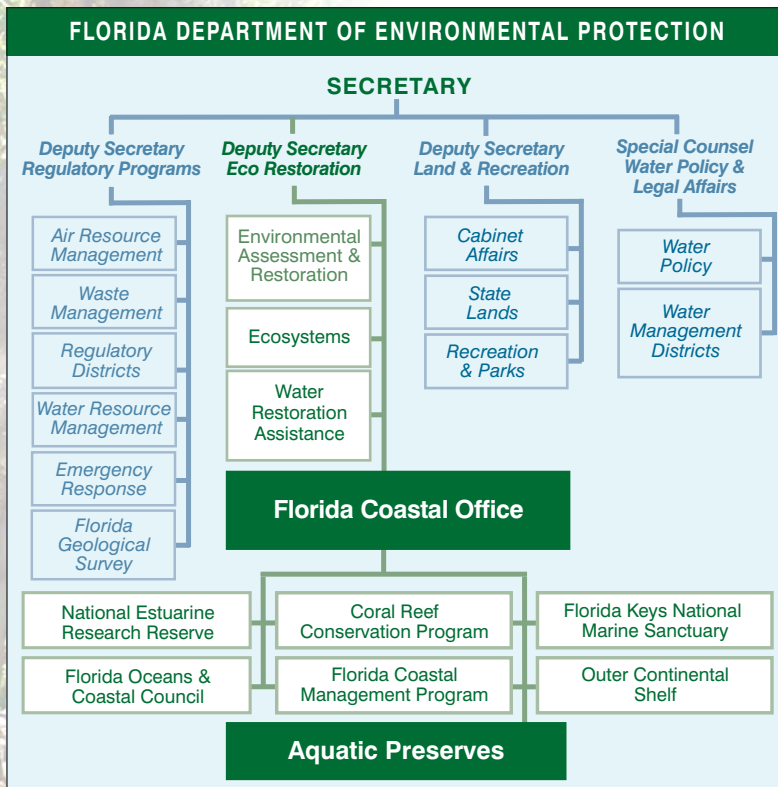


Figure 1 | State structure for managing Aquatic Preserves.

aquatic preserve. The rule also provides for the analysis of the cumulative impacts of a proposed activity 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, and includes provisions specific to certain aquatic preserves to indicate 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., which addresses the classification of surface waters, including criteria for designation as an OFW, 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. As was the case with statutes, the list of other administrative rules that do not directly address the FCO’s responsibilities but do affect FCO sites is so long as to be impractical to create within the context of this management plan.

Chapters 18-18 and 18-20, F.A.C., provide standards and criteria for activities in aquatic preserves that are more restrictive than those of Chapter 18-21. Applicable only to the Biscayne Bay Aquatic Preserve, Chapter 18-18 is described in that site’s management plan. Chapter 18-20 is applicable to all other aquatic preserves. It restricts the type of activities for which authorizations may be granted for the use of sovereignty submerged lands and requires structures 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.” Rule 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 must be applied to determine whether the benefits of the activity exceed the environmental costs. The test is applied during the evaluation of requests for sale, lease, or transfer of interests in sovereignty lands within an



The preferred transportation in the aquatic preserve hasn't changed much throughout the centuries.

Chapter Three

Cockroach Bay Aquatic Preserve

3.1 / Historical Background

The presence of prehistoric cultures in and near Cockroach Bay Aquatic Preserve is evidenced by large ceremonial and burial shell mounds and smaller middens found across the area. When Hernando de Soto's men marched northward from Terra Ceia to the Uzita village near Ruskin, they likely encountered the latter generations of these pre-Columbian inhabitants. The dominance of Native Americans in the area was brought to a close with the end of the Seminole Wars. Anglo-American settlers found the area rather harsh, however, so the early pioneers ranched, timbered and produced turpentine from the pine trees that were abundant in the 1800s (Ruskin Historical Society, 2005). Development of the area was spurred in the late 1800s when Dr. George Miller founded the nearby town named after British utopian philosopher John Ruskin. Growth ensued until a fire in 1918 destroyed Ruskin College, a focal point of the community (Ruskin Historical Society, 2005).

Growth on the southeastern shore of Tampa Bay proceeded much more slowly than elsewhere in the bay for the remainder of the 20th century. Rapid development and loss of habitat in much of Florida and around the rest of Tampa Bay, however, led concerned citizens to encourage lawmakers to enact protections for the remaining habitat. In 1967, passage of the Randall Act by the Florida Legislature began to establish rules for the previously uncontrolled practice of dredging and filling land. Also in 1967, the Governor and Cabinet were given authority over the use of the state's submerged lands in their role as the Board of Trustees of the Internal Improvement Trust Fund (Trustees). Tampa Bay's first aquatic preserve was established in 1969 as the Boca Ciega Bay Aquatic Preserve (Florida Department of Natural Resources, 1987).

The emphasis on the conservation of important ecosystem habitat eventually led to the designation of the Cockroach Bay Aquatic Preserve on July 1, 1976. Although the submerged lands of the aquatic preserve were and are today owned by the Tampa Port Authority, the state entered into a 40-year lease with the Authority to conserve the first 3,600 acres of the aquatic preserve (Florida Department of Natural Resources, 1987). In the 1990s, a modification of that lease expanded the offshore boundary of the aquatic preserve and added the Little Manatee River, up to U.S. Highway 301, for a total of nearly 5,000 acres of aquatic resources that are protected today.

3.2 / General Description

International/National/State/Regional Significance

The location of Cockroach Bay Aquatic Preserve in Florida's densely developed Tampa Bay watershed makes it especially important from both a natural resource and a human use perspective. Large areas of seagrass and mangrove within the aquatic preserve provide habitat, feeding grounds and nurseries for listed species and many commercial and recreational fish species. The seagrasses and mangroves also help remove nutrients from bay water in the absence of similar resources lost in the more urban areas of the bay.

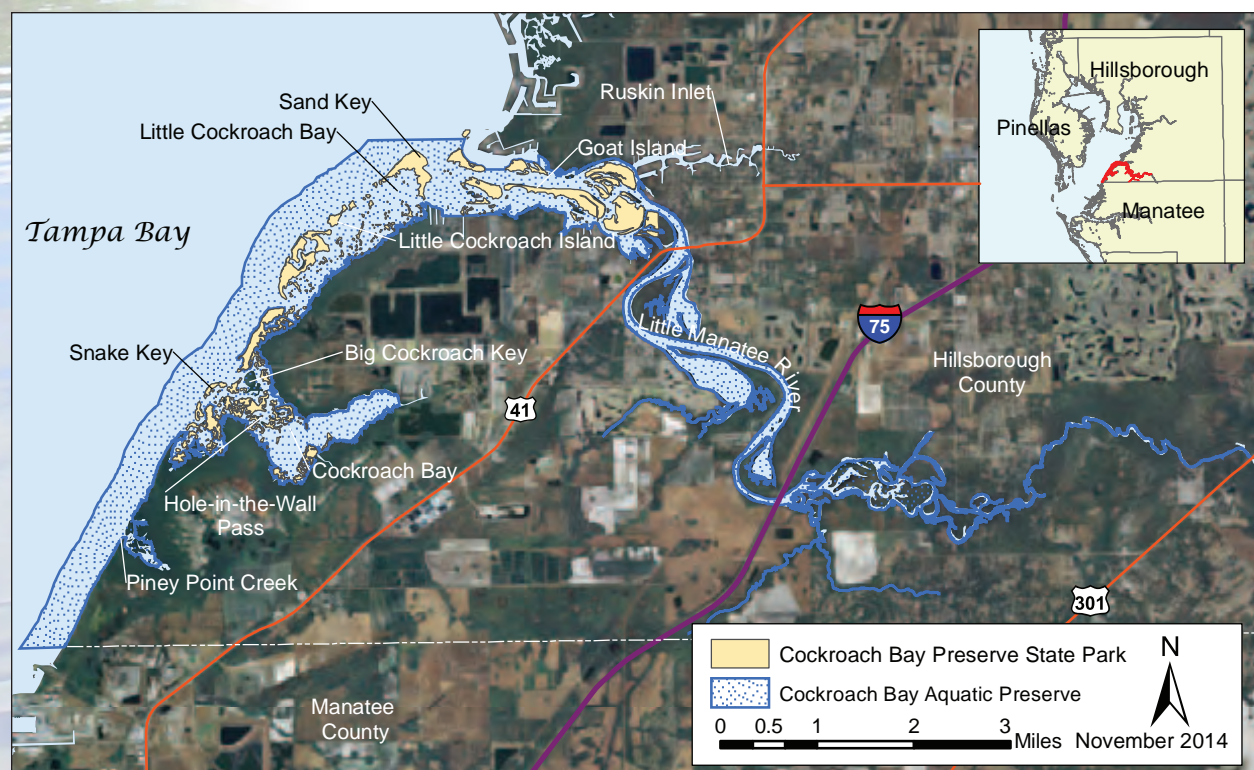
For local residents caught-up in the busy urban lifestyle of nearby Tampa and St. Petersburg – both of which can be seen from the aquatic preserve – a trip to Cockroach Bay Aquatic Preserve is a welcome change of pace. It is also an opportunity to reconnect with natural Florida and to understand how important their day-to-day actions are to the health of these ecosystems just “downstream.”

While there are many opportunities for habitat restoration in the Tampa Bay area, the habitats within Cockroach Bay Aquatic Preserve are largely intact. Because of expected development in this area of the bay, however, the importance of the aquatic preserve's management and protection of its remarkable estuarine ecosystem cannot be overstated.

Location/Boundaries

The boundary of Cockroach Bay Aquatic Preserve is described in Section 258.391, F.S. The southern boundary of the aquatic preserve lies along the Hillsborough/Manatee County line (Map 2). The offshore boundary extends 2,000 feet into Tampa Bay from the shoreline, and the landward boundary includes Piney Point Creek, Cockroach Bay, and Little Cockroach Bay. The northern boundary trends eastward into the mouth of the Little Manatee River just south of Shell Point. The aquatic preserve extends upstream in the Little Manatee River to U.S. Highway 301, but does not encompass Ruskin Inlet. All islands within the aquatic preserve boundary are owned by the state of Florida, with the exception of Big Cockroach Key which is owned by Hillsborough County and Patrick's Island, a privately-owned small island at the mouth of the Little Manatee River.

The aquatic preserve is easily accessible by road at several points. The primary access point is the boat ramp at the end of Cockroach Bay Road off U.S. Highway 41. This ramp is situated near the mouth of Cockroach Bay. Northern reaches of the aquatic preserve, in and near the Little Manatee River, can be accessed at the Domino Park Boat Ramp near Ruskin. Visitors often reach the aquatic preserve by boat from more distant launch sites, like E.G. Simmons Park to the north.



3.3 / Resource Description

Surrounding Population Data and Future Projected Changes

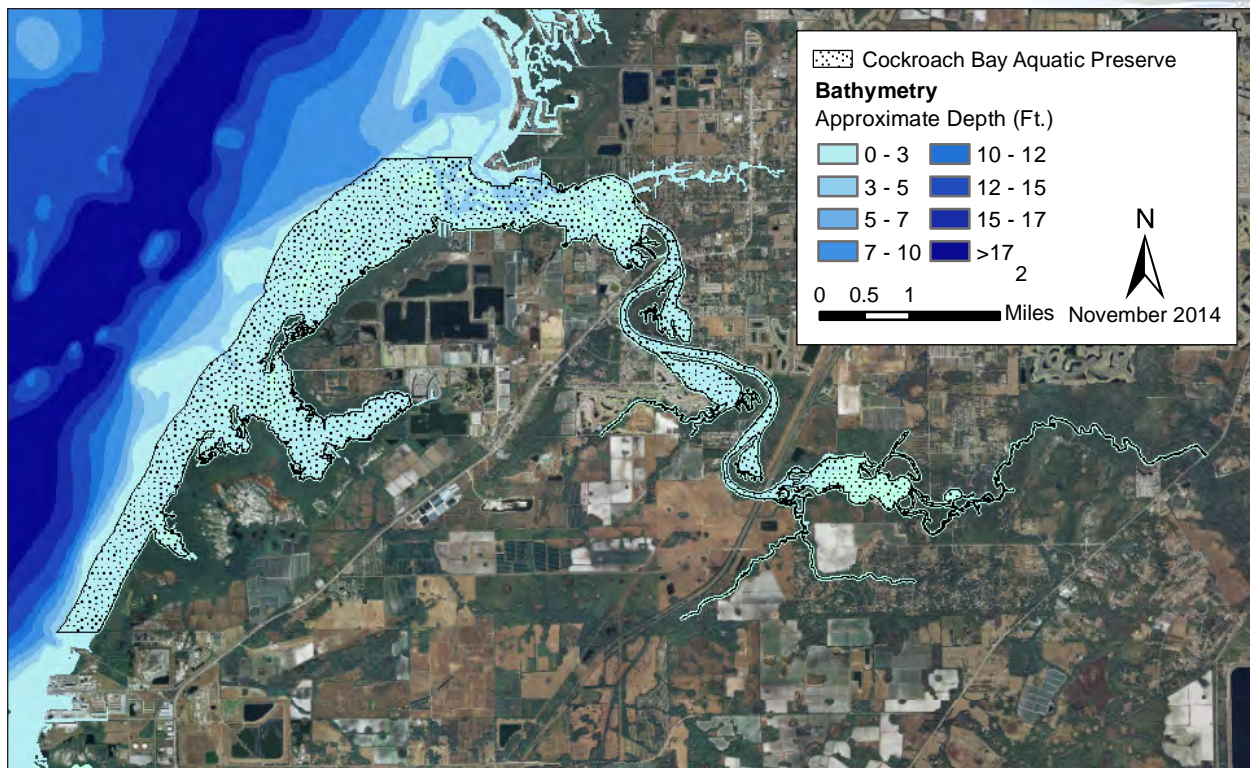
The majority of Cockroach Bay Aquatic Preserve is adjacent to uplands within unincorporated Hillsborough County. In 2000, the U.S. Census Bureau estimated the county's population at 998,948. By 2013, it had grown to 1,291,578 – a 29 percent increase (U.S. Census Bureau, 2014). Like most of central Florida, Hillsborough County is expected to continue its current population growth. A study by the University of Florida projected that the county will double in population by 2060, with the coastal counties becoming almost entirely built-out (Zwick & Carr, 2006). As a result, watershed pollution, impermeable surface human demand for water and recreational activities are expected to increase in the watershed of the aquatic preserve.

Topography and Geomorphology

The predominant topography of the aquatic preserve is the low-relief submerged land and island uplands typical of the southwest Florida coastline (Map 3). The areas of the aquatic preserve bordering Tampa Bay are characterized by a very shallow slope into the bay. Longshore bars and troughs parallel to shore produce alternating depth fluctuations of approximately one meter that provide a diversity of depths for the area's seagrass species. Occasional swash channels are naturally maintained at slightly deeper depths by tidal flow between islands. Toward the shore, island berms formed by storm and wave activity rarely rise more than 1.5 meters above mean high water (MHW). The islands are occasionally punctuated by manmade pre-Columbian shell mounds that offer higher, well-drained substrates for unique plant colonies. The bayward margins of the islands in high energy areas may have narrow sandy beaches. On the backside of the island berms, elevations quickly drop to levels regularly inundated by tides and dominated by black and red mangroves. Landward of the barrier islands lie several very shallow (< one meter below MHW)



St. Petersburg's urban area is easily visible from the aquatic preserve on a clear day.



Map 3 / Bathymetry of Cockroach Bay Aquatic Preserve.

embayments like Cockroach Bay and Little Cockroach Bay. The Little Manatee River is also relatively shallow, with deeper channels of up to several meters where scouring currents flow faster through narrow areas around islands. River mouth islands, like Snake Key, often have areas with slightly higher elevations than the bay margin berms. Elevations of most of the islands inside the river mouth appear to be natural, with the exception of Goat Island, on which spoil was deposited and a channel dredged in anticipation of island development many years ago.

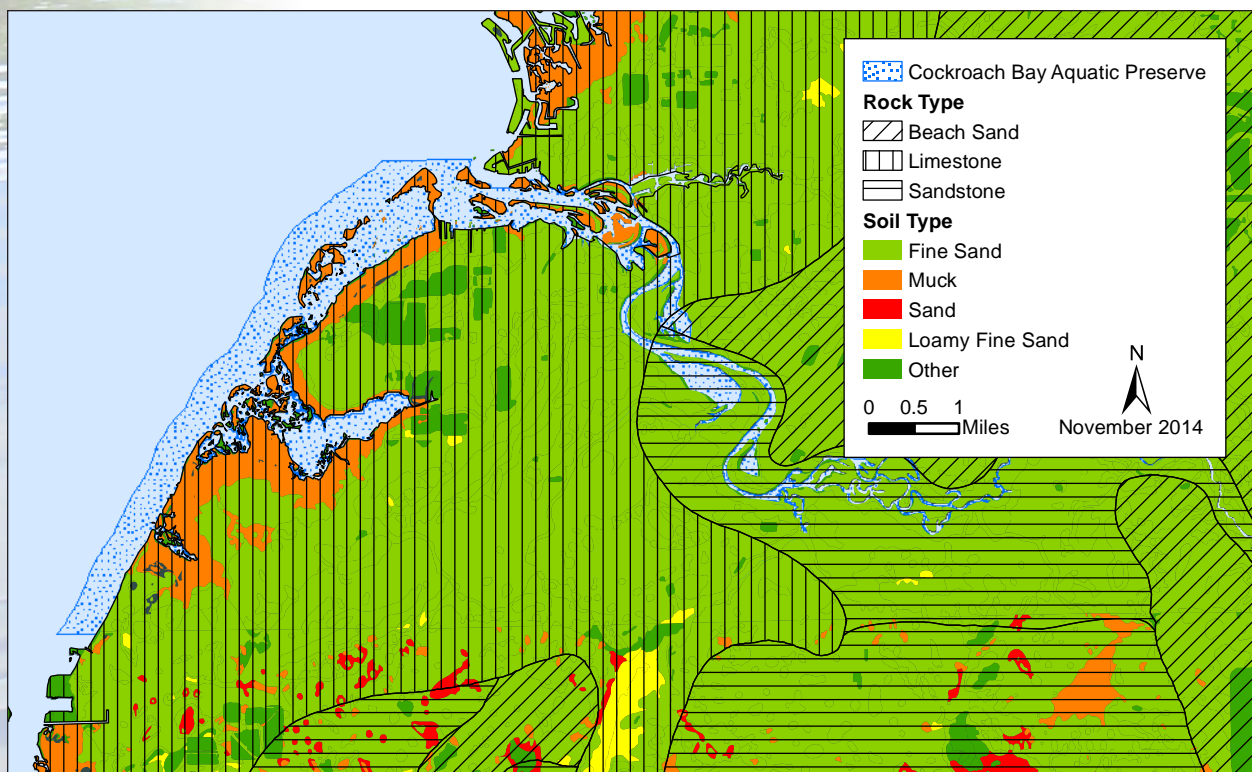
Geology

Tampa Bay is a “drowned shoreline” product of the fluctuations in sea level caused by glaciation. During times of lowered sea level, the river valley of Tampa Bay was cut into underlying limestone by its tributary rivers. As sea level rose during glacial retreat, the area was flooded, becoming Tampa Bay. Limestone and dolomite underlie Tampa Bay. The surficial geological layer of Cockroach Bay is undifferentiated shelly sediments from the Pleistocene (Map 4). The limestone that underlies, and, in some cases is exposed, in and around Tampa Bay has not been definitively identified (Scott, 1988).

Straddling part of the offshore boundary of the aquatic preserve, areas of exposed limestone provide attachment areas for hard substrate species. From aerial photographs and groundtruthing, it appears that unconsolidated ebb tide sediments from the Little Manatee River likely cover the nearshore margin of the limestone. Clastic unconsolidated sediments cover most of the aquatic preserve’s submerged land, and where depths and light penetration are appropriate, they support large seagrass and algal beds. Surface sediments are composed of fine to very fine quartz sand with varying amounts of organic muds and some coarse carbonates, mostly in the form of mollusk shells. The sand-size sediments in Tampa Bay were probably derived from the major river tributaries during the last rise in sea level. At the present time, essentially no sand-size material is being added to the system from the rivers, but input from the Gulf of Mexico may occur in the Terra Ceia area. Streams carry only small loads of fine sediments, but it may be that considerable amounts of fine materials are added through surface runoff (Map 4). As development in the area increases, the contribution of fine sediments into Cockroach Bay Aquatic Preserve may also increase.

Hydrology and Watershed

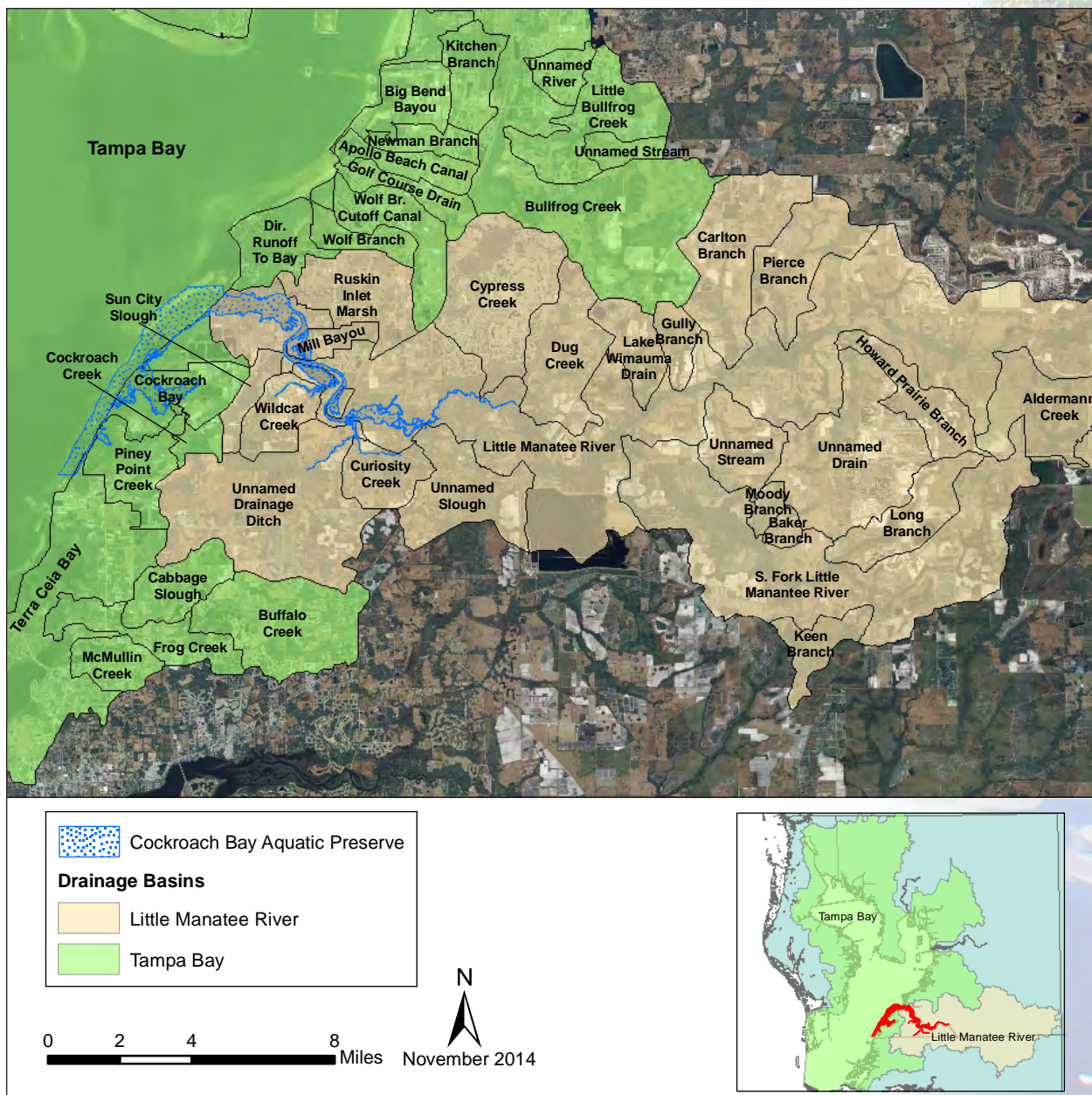
The drowned shoreline geomorphology of southeast Tampa Bay has led to the formation of low-energy bayous and barrier island-bound lagoons, as well as localized riverine inputs. Tidal connections to karst features, as well as man-made mosquito ditching and connections to wetland creation projects provide additional complexity to the shoreline. The drainage basins for Cockroach Bay Aquatic Preserve are Little Manatee River and Tampa Bay, along with their associated sub-basins (Map 5). To the immediate north of



Cockroach Bay, Little Cockroach Bay is a distinct shallow basin delineated by a series of barrier islands. The most prominent feature south of Cockroach Bay is Piney Point Creek, but the water depths make it navigable only by shallow draft vessels on high tides.

As with most of Tampa Bay, the waters of Cockroach Bay Aquatic Preserve are influenced largely by tidal oscillations, with freshwater runoff being limited. During the rainy season, considerable runoff may enter the northern extent of the aquatic preserve through the Little Manatee River. Tidal flux along the coast draws river water entering Tampa Bay southward along the shoreline. Farther south, runoff also enters the aquatic preserve through ditches serving Cockroach Bay and Piney Point Creek. Incoming tides bring Gulf of Mexico water into the bay and into the aquatic preserve from the south. In recent years, wetland habitat creation projects on Hillsborough County's Environmental Lands Acquisition and Protection Program (ELAPP) property have diverted some of the water from ditches away from Cockroach Bay into Little Cockroach Bay. Along those courses, planted manmade wetlands constructed in abandoned shell pits serve to remove sediment and nutrients before the water enters Little Cockroach Bay. Despite these improvements in typical runoff conditions, major storm events still could overwhelm water treatment facilities in local mobile home parks. Attention should be given to the capacity of local systems to handle such episodic events.

Hydrological processes in the aquatic preserve itself are largely unaltered from their historic natural state. The bay margin areas presently experience unnatural wave activity from ship wakes, as



Map 5 / Drainage basins of Cockroach Bay Aquatic Preserve.

increasingly large ships traverse the channel (to the Port of Tampa) that runs roughly parallel to the shoreline. Other manmade alterations to hydrology may be found in the Little Manatee River. Upstream freshwater withdrawal and runoff from impermeable surfaces in developed areas has likely changed the salinity range of the river to some extent, but that change has not been documented. Remnants of the old Goat Island Bridge and the bridge approach on the island continue to influence flow at least in the vicinity of the alterations, and the bridge approach – which continues to block approximately one third

of the width of the channel between Goat Island and the mainland – causes turbulent eddies and fast currents in the area of the constricted channel.

The large embayment areas behind the coastal berm islands typically experience modest tidal flows, with the exception of areas like the mouth of Cockroach Bay, where tides flow rapidly through naturally narrow channels. Natural modifications to flow patterns in these areas have changed over time with gradual accretion and erosion of sediments and with less gradual changes brought by storms. The best-known of the storm-induced changes is Hole-in-the-Wall Pass in Cockroach Bay (Map 2).

Hillsborough County's Environmental Protection Commission operates an ongoing sampling program in the aquatic preserve as part of a larger baywide program. Water parameters are sampled in conjunction with benthic biota samples.

Climate

With regard to climate, Cockroach Bay Aquatic Preserve is in an important location. The aquatic preserve is at a latitude of climatic transition from temperate to subtropical conditions. A number of plant and animal species in the aquatic preserve are at or near the extent of their geographic range. With a mean annual temperature of 72.9° Fahrenheit (F.) at Ruskin, FL, the area's temperature is relatively mild. January typically is the coldest month, with an average daily minimum temperature of 50.0° F. July and August typically are the hottest months, with an average daily maximum temperature of 91.0° F. "Hard freezes" are possible, but they do not occur every year. As a result, cold-sensitive species like gumbo limbo (*Bursera simaruba*) and strangler fig (*Ficus aurea*) may persist on islands and other coastal areas where temperature is adequately buffered by nearby waterbodies. Rainfall varies seasonally with an average minimum of 2.1 inches in November and an average maximum of 8.4 inches in August. (World Media Group, LLC., n.d.) Because

residual tidal flushing is limited, this seasonality of rainy conditions causes considerable changes in salinity in Tampa Bay and its smaller embayments.

Tropical cyclonic weather systems affect the Cockroach Bay area occasionally. Remarkably, Tampa Bay has not experienced a direct hit by a major hurricane since 1921, but tropical storms and lesser systems



Open sand bottom is a great place for birds and fishes to forage, but large snails like this whelk also roam the area looking for a meal.



Despite proximity to the Little Manatee River, salinities in the bay margin stay high enough for echinoderms.

occasionally impact the aquatic preserve, as evidenced by uprooted mangroves and heavy rains. Hurricanes Donna (1960) and Charley (2004) approached the Tampa Bay area, but turned eastward to pass south and east of the area (McClure, 2010). In 2001, Tropical Storm Gabrielle, the remnants of an offshore hurricane, passed to the south of Tampa Bay and caused considerable flooding in the area (Pittman & Gilmer, 2001).

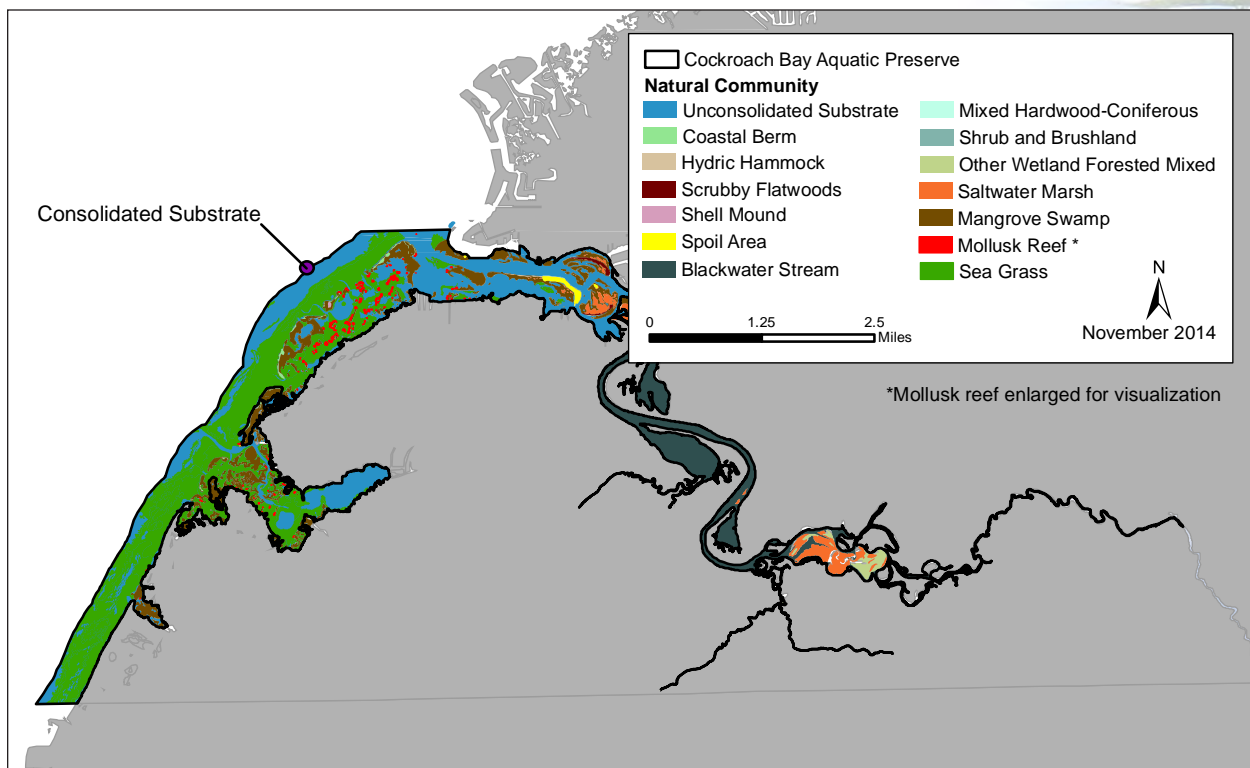
Natural Communities

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 the Florida Department of Environmental Protection (DEP)) in 1990 and 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 and S1 represents the most imperiled natural communities in Florida). The natural communities within Cockroach Bay Aquatic Preserve are listed in Table 1 and can be found in Map 6.

Unconsolidated Substrate (G5/S5)

Unconsolidated “soft” sediments are the predominant substrate of the aquatic preserve. Most of the invertebrates in the species list for the aquatic preserve are found in or on this substrate. Because of the diversity and biomass of unconsolidated substrate infauna and epifauna, the aquatic preserve is a high-quality foraging area for the abundant and diverse local bird and fish fauna. In high-energy areas, sand is the predominant sediment size class, but finer sediments and organic material may make up a considerable fraction of the sediment in low-energy, vegetated areas.

Infauna of the aquatic preserve’s unconsolidated sediments include a rich variety and considerable biomass of burrowing and tube-dwelling polychaete worms. Clams, ranging from smaller species like constricted macoma (*Macoma constricta*) to the much larger southern quahog (*Mercenaria campechiensis*), also are abundant, and they serve as important food for foraging epifaunal species like whelks. Relatively sessile species often make up much of the epifaunal and infaunal biomass of soft substrates. Abundance of the sand dollar (*Mellita tenuis*) on, or just beneath the sediment surface often is impressive. More motile epifauna, like horseshoe crabs, are seasonally abundant on the sediment surface.



Map 6 | Florida Natural Areas Inventory natural communities within Cockroach Bay Aquatic Preserve.

FNAI Natural Community Type	# Acres	% Area	Federal Rank	State Rank
Consolidated Substrate	Unknown	Unknown	G3	S5
Unconsolidated Substrate	Unknown	Unknown	G3	S3
Mollusk Reef	11	.02	G2	S4
Seagrass Bed	1,775	36	G4	S4
Blackwater Stream	734	15	G4	S2
Salt Marsh	150	3	G3	S3
Mangrove Swamp	640	13	G3	S3
Upland Communities	697	14	NA	NA

Table 1 | Summary of natural communities in Cockroach Bay Aquatic Preserve.

Because many of the species associated with unconsolidated sediments are sensitive to the bulk properties (e.g., grain size, permeability, and porosity) of the substrate, factors that affect these properties pose the biggest threat to this community. Input of different sediments from shoreline development and dredging activities should be avoided through the use of appropriate sediment best management practices. The overall condition of this natural community in Cockroach Bay Aquatic Preserve is good, but propeller scarring may destabilize sediments, and this can increase local turbidity and displace burrowers.

Consolidated Substrate (G3/S3)

Consolidated substrate, also known as hardbottom, is present in Tampa Bay in the vicinity of the offshore boundary of the aquatic preserve. This low-relief substrate is in the form of relic limestone located in depths of more than two meters, and is of very low relief. Limited field observations indicate that the majority of hardbottom acreage is located outside the aquatic preserve boundary, but is likely to also

exist within the aquatic preserve. This substrate varies from large tabular limestone slabs to patchy smaller rocks. The condition of the hardbottom community appears to be good, but tannins and other natural factors influencing light penetration likely appear to limit the hardbottom species that can persist in this area of the bay.

While some algae are attached to the limestone substrate, algal beds of the type seen in Terra Ceia Aquatic Preserve to the south do not appear to be present in the hardbottom community of Cockroach Bay Aquatic Preserve. This is likely because of the combination of greater depth and reduced water clarity at the aquatic preserve. Much of the epifaunal biomass is in the form of sponges, sea squirts (ascidians), and soft corals (*Leptogorgia*). Interestingly, the uncommon orange and yellow color variants of the purple sea whip (*Leptogorgia virgulata*) are more common in this hardbottom area than they are in other areas outside the Skyway Bridge.



Sea whips are a notable part of the hardbottom community on limestone outcrops.

While Hillsborough County has put considerable effort into characterizing the hardbottom community of an artificial reef north of the aquatic preserve, a rigorous census of the biota of this natural hardbottom has not been done. Ash and Runnels (2005) pointed out that relatively little is known about the exact location, extent, and biotic composition of Tampa Bay's hardbottom communities. This natural community is in much need of study.

Mollusk Reef (G3/S3)

Oyster reefs are relatively abundant in Cockroach Bay Aquatic Preserve, but they are primarily located toward the northern end of Little Cockroach Bay. The American oyster (*Crassostrea virginica*) thrives in

the correct estuarine balance of saltwater and freshwater, with prolonged freshwater pulses causing them to stay closed too long and high salinities making them more susceptible to disease. This part of Tampa Bay is not approved for shellfish harvesting, and the most likely threat to oysters in the aquatic preserve is diversion of freshwater. While quantitative studies of live oysters, faunal associates and other factors are not available for these reefs, they appear to be in good condition. While submerged cultural resources have not been identified in the aquatic preserve, it would not be surprising to discover that the foundations of some oyster reefs in the aquatic preserve are pre-Columbian shell mounds.

Seagrass Bed (G3/S2)

Because of their multiple roles in stabilizing sediments, removing nutrients, producing oxygen and feeding and sheltering fisheries resources, seagrass beds are one of the most important communities of the aquatic preserve (Map 7). Common seagrasses include shoal grass (*Halodule wrightii*), turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*). Widgeon grass (*Ruppia maritima*) may be found in areas of the aquatic preserve with more freshwater inflow.

Seagrass in the aquatic preserve is susceptible to several threats. Because the bottom of the bay margin slopes very gradually, any long-term decrease in water clarity could cause retreat of considerable acreage of seagrass along the offshore deep edge of the beds. The most direct, immediate, and chronic impact to the aquatic preserve's seagrass beds is prop-dredging by boats. Rather than improving avoidance of the beds, the evolution of shallow-draft boats in recent years has increased boat traffic and associated prop-dredging in shallower areas of the aquatic preserve, like Little Cockroach Bay. High-resolution aerial photographs of the aquatic preserve show thousands of propeller scars. Attempts to fill-in seagrass between beds should be discouraged within the aquatic preserve, because a healthy seagrass bed community includes numerous species of animals that are found mostly in the ecotones, or transition zones, at the edges of the beds. While the aquatic preserve has considerable acreage of healthy seagrass, a reduction in chronic propeller scarring could further improve the condition of this community and the valuable roles it serves in the overall health of the aquatic preserve.

Salt Marsh (G5/S4)

Stands of smooth cordgrass (*Spartina alterniflora*) are rare in the aquatic preserve, because mangroves typically outcompete cordgrass in areas this far south. Most salt marsh in the aquatic preserve is found along Little Manatee River, which is vegetated largely by black needlerush (*Juncus*



The extensive oyster reefs of Little Cockroach Bay provide habitat for many organisms.



Needlerush marshes are abundant in the upstream river area of the aquatic preserve.

roemerianus). These areas are instrumental in removing nutrients and sediment from the river water before it reaches downstream organisms like filter feeders and seagrass. The intact marshes that have not been outcompeted by mangroves appear to be in good condition.

As the climate of the Tampa Bay area has warmed over the past century or more, many areas that were historically vegetated with marsh grasses have transitioned to mangrove forests (Rabbe, Roy, & McIvor, 2012). Marshes likely persist in the Little Manatee River as a result of limited mangrove seedling dispersal upstream. Perhaps the biggest threat to the future persistence of these marshes is maintaining flow in the river.

Mangrove Swamp (G3/S3)

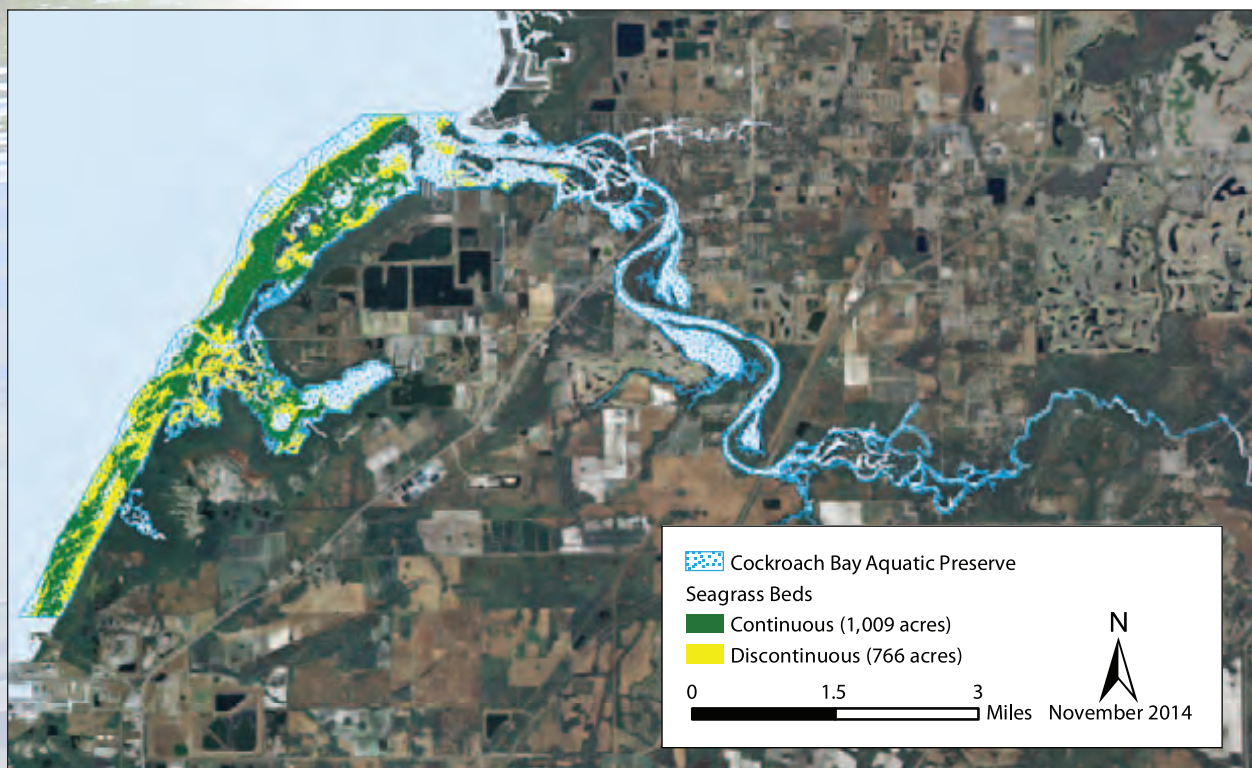
Mangrove forests in the Cockroach Bay Aquatic Preserve are relatively intact. All three true mangrove species of Florida are present – red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*), as well as buttonwood (*Conocarpus erectus*). While occasional freezes may not favor mangroves, such events are not seen on an annual basis, and even occasional freeze damage has not prevented mangroves from dominating the shorelines of the aquatic preserve. Mangroves almost completely exclude cordgrass in the embayments of the aquatic preserve, but marsh grasses like needlerush persist farther up the Little Manatee River.

Blackwater Stream (G4/S2)

Heading upstream on the Little Manatee River, the various estuarine natural communities gradually grade into a blackwater stream community. Submerged vegetation is sparse and the bottom is sandy. The river meanders among shoreline and island marshes which help sequester sediments and provide refuges for juvenile animals. Overall condition of this habitat is good, but impacts from shoreline erosion, boat propeller scarring and runoff of debris and other pollution may increase with anticipated development along the river.

Native Species

Perhaps because of the subtropical climatic influence and location along major bird migratory routes, Cockroach Bay Aquatic Preserve boasts a surprising species richness. The individual species listed in Appendix B.3 include more than 70 species of vascular plants, nearly 200 species of birds, 15 species of mammals, 10 species of reptiles and more than 160 species of fishes. The diamondback terrapin (*Malaclemys terrapin*) is present in the preserve, and it likely nests on the islands, but it is not well-studied in the area. The importance of the aquatic preserve's benthic infaunal and epifaunal communities is reflected with more than 550 species of invertebrates having been identified within the aquatic preserve



boundaries. The largest assemblage of species may be the hardbottom community associated with the limestone outcrops at the offshore boundary of the aquatic preserve. While Hillsborough County's Environmental Protection Commission has surveyed invertebrate epifauna on artificial reefs north of the aquatic preserve, only anecdotal visual observations have been made on the natural hardbottom within the aquatic preserve, and numerous cryptic species likely exist in the cavities of the bioeroded limestone.

Listed Species

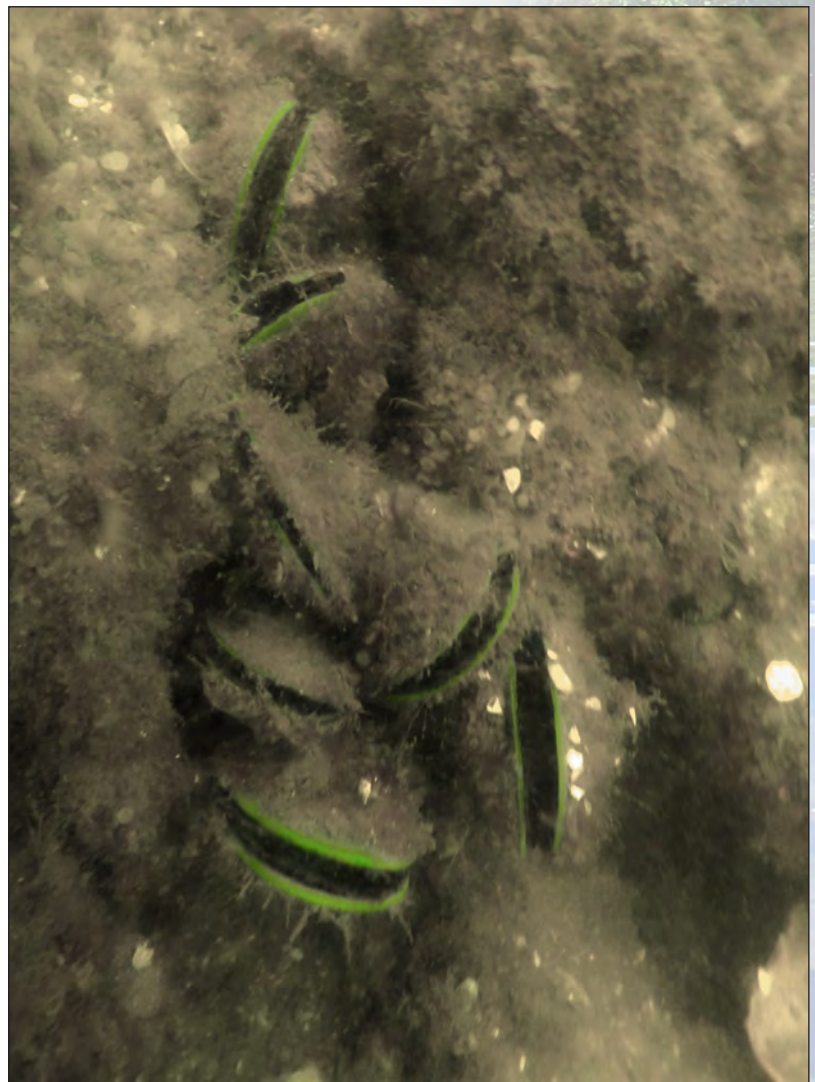
Cockroach Bay Aquatic Preserve waters, adjacent uplands and dredge spoil islands contain twenty species protected at the state or federal level. Endangered species found in the aquatic preserve include Florida manatee (*Trichechus manatus latirostris*) and green sea turtle (*Chelonia mydas*). Many shorebirds, the American alligator (*Alligator mississippiensis*) and the wood stork (*Mycteria americana*) are listed as threatened. A complete list of imperiled species found within and adjacent to aquatic preserve boundaries and their state and federal status is located in Appendix B.

The threatened wood stork, like many shorebirds, lives in marshes, swamps, and coastal mangroves. Wood storks nest in rookeries in mangrove and cypress trees, and the aquatic preserve contains 597 acres of mangroves. Because the species is very sensitive to wetland habitat loss, the protection of aquatic preserve habitat is very important for the wood stork's recovery and viability (LaPlante, 1999).

Five locations on the west coast of Florida regularly attract Florida manatee groups of more than 100 during the cold winter months (Edwards, Pollock, Ackerman, Reynolds, & James, 2007). One of the hotspots – the Tampa Electric Company power plant in Apollo Beach – is approximately three miles from the aquatic preserve boundary. Boating accidents account for approximately 84 percent of human-related manatee deaths (Florida Fish and Wildlife Conservation Commission [FWC] 2011; U.S. Fish and Wildlife Service, 2011). USFWS identified a large portion of the Little Manatee River as critical habitat for the West Indian manatee (*Trichechus manatus*) (Map 8). Hillsborough County posts Manatee Area Minimum Wake signs throughout and adjacent to the aquatic preserve (Map 8) in an effort to alert boaters and minimize manatee injuries.



Waters of the aquatic preserve are tea-colored from abundant mangrove tannins.



The Asian green mussel is an unwelcome addition to the aquatic preserve.

The endangered Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtles nest on the nearby beaches of Pinellas and Manatee counties. Carcasses of both of these species have been found within the aquatic preserve, but live sightings have not been documented ([http://geodata.myfwc.com/datasets?q=sea+turtle+stranding&sort by=relevance](http://geodata.myfwc.com/datasets?q=sea+turtle+stranding&sort%20by=relevance)). Green turtles feed on the sea grass that accounts for more than 30 percent of the aquatic preserve habitat. Sea turtle hazards due to trawling and longline fishing have been reduced by the addition of turtle excluder devices and longline fishery efforts focused at preserving the sea turtle populations (FWC, 2006).

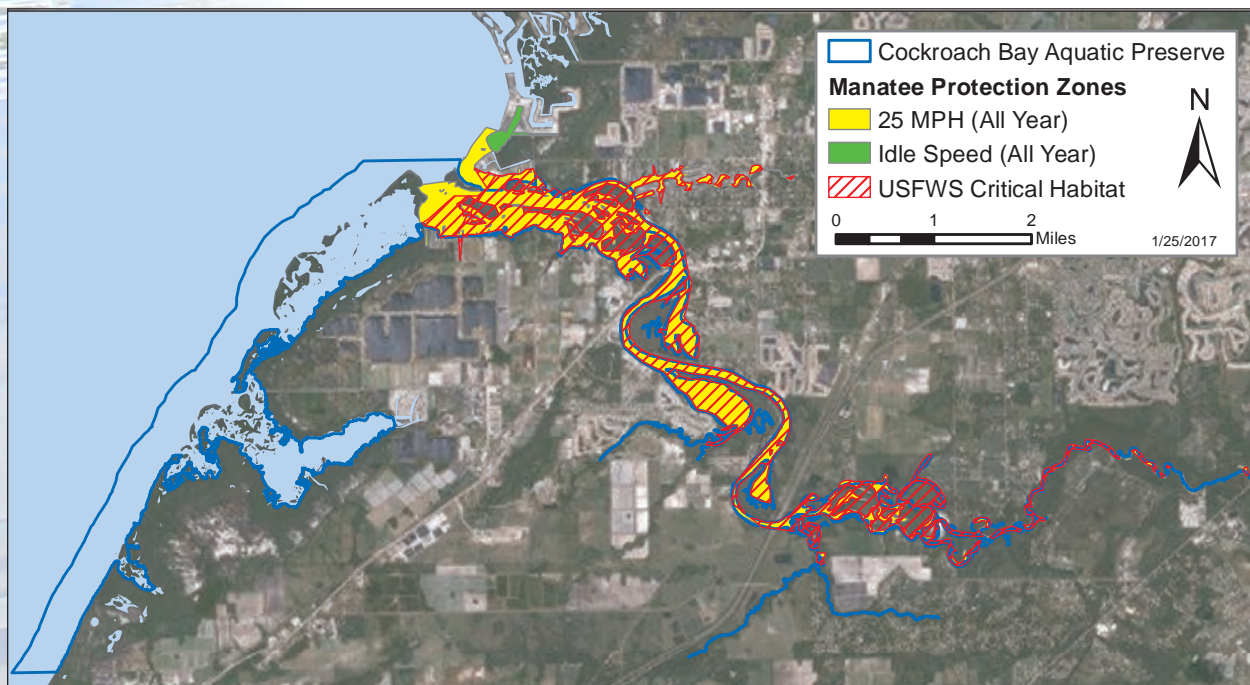
Cockroach Bay Aquatic Preserve staff and volunteers help protect listed species habitat with educational signs and presentations, volunteer programs, invasive species removal and cleanup events.

Invasive, Non-Native and Problem Species

The proximity of Cockroach Bay Aquatic Preserve to Port Manatee is good reason to monitor aquatic preserve resources for invasive exotic species, which often arrive in ship ballasts or attached to hulls. A University of Florida study identified approximately 50 species of exotic plant and animal species that have reached the greater Tampa Bay area waters (Baker, Baker, & Fajans, 2004). The most apparent invasive species on submerged lands is the Asian green mussel (*Perna viridis*). Introduced to Tampa Bay over a decade ago, the species has the ability to colonize hard substrates in thick mats. The densest colonies of green mussels in the area appear to be on manmade substrates like buoys and pilings. While the green mussel does colonize natural rock, thus far it has not dominated hardbottom communities. Given the scarcity of hardbottom in the Cockroach Bay Aquatic Preserve, Florida Coastal Office (FCO) staff, volunteers, and marine researchers should monitor the submerged lands of the aquatic preserve for any indication that the community dynamics of green mussels might be changing to favor expansion on natural hardbottom.

Several species of invasive exotic plants on adjacent island uplands threaten to overgrow native plants that stabilize the shorelines of the aquatic preserve. Brazilian pepper (*Schinus terebinthifolius*) is the most pervasive of these exotics. While it does not root at lower elevations, Brazilian pepper can still overgrow mangroves – through shading and crowding – from its position up-grade on coastal berms and other uplands. A few Australian pines (*Casuarina equisetifolia*) can be found on the coastal berms. Unlike true pines, these hardwoods have shallow roots and the trees tend to fall during storms, which destabilizes the shoreline. A very limited number of melaleuca (*Melaleuca quinquenervia*) are found on Snake Key, and it is hoped they will soon cease to re-sprout if treated vigilantly. Carrotwood (*Cupaniopsis anacardioides*) and lead tree (*Leucaena leucocephala*) also occur sporadically.

Occasionally, new species of insects, some of which pose threats to native trees and other plants, arrive through the bay area ports. Identification and control of these are beyond the expertise of aquatic preserve staff, but the U.S. Department of Agriculture actively monitors traps in the area for new arrivals.





The scenic vista from the shore invites visitors to explore the aquatic preserve's beauty.

Archaeological and Historical Resources

Prehistoric habitation of the area of the aquatic preserve is evident from the pre-Columbian sites present in and near the aquatic preserve boundaries. Spatial data files provided by the Department of State's Division of Historical Resources indicate several sites within 164 feet (50 meters) of Cockroach Bay Aquatic Preserve's boundary (Table 2). One site (Master Site File ID HI10237) is an historical railroad which ran across the aquatic preserve. Two upland archaeological sites are located on land presently managed by DEP'S Division of Recreation and Parks and by Hillsborough County. The one island site in the state's master site file that is managed by the state park is the mound on Little Cockroach Key (Master Site File ID HI00038). It is mentioned here, because the statutory description of Cockroach Bay Aquatic Preserve includes state-owned islands. The second site, Cockroach Key (also known locally as Big Cockroach Mound, Master Site File ID HI00002) is located on a county

Site ID	Site Name	Site Type
HI00001	Thomas (Hoey Farm Hill)	Building Remains
HI00002	Cockroach Key (Indian Key)	Prehistoric burial mound(s)
HI00030	Selner Mound	Prehistoric shell midden
HI00038	Little Cockroach Key	Prehistoric mound(s)
HI00093	Cedar Point	Campsite (prehistoric)
HI00094	Ruskin Shell Mound	Historic burial(s)
HI00414	Osteen	Lithic scatter/quarry
HI00415	Beaver	Prehistoric shell midden
HI03015	Goat Bayou East	Building remains
HI03016	Goat Bayou West	Campsite (prehistoric)
HI04598	Little Manatee River State Park 2	Artifact scatter-low density
HI06822	Hayes Bayou 1	Lithic scatter/quarry
HI06893	Wildcat Creek 1	Single artifact or isolated find
HI09650	River Bend Scatter A	Land-terrestrial
HI10237	CSX Railroad	Linear Resource

Table 2 | Archaeological and historic sites adjacent to Cockroach Bay Aquatic Preserve.

owned island, surrounded by the aquatic preserve. Observations by aquatic preserve staff, as well as discussions with an archaeologist familiar with the area (Dr. Brent Weisman, personal communication) indicate that additional sites remain to be identified. 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 Resources.

While submerged archaeological resources are likely present within the aquatic preserve, only upland sites have been identified. While the Tampa Bay Aquatic Preserves (TBAP) program does not have capacity to search for submerged historical and cultural resources, they should encourage academic institutions to do so through probability models and direct observation. TBAP will contact Department of State's Division of Historical Resources to partner with their submerged archaeological program.

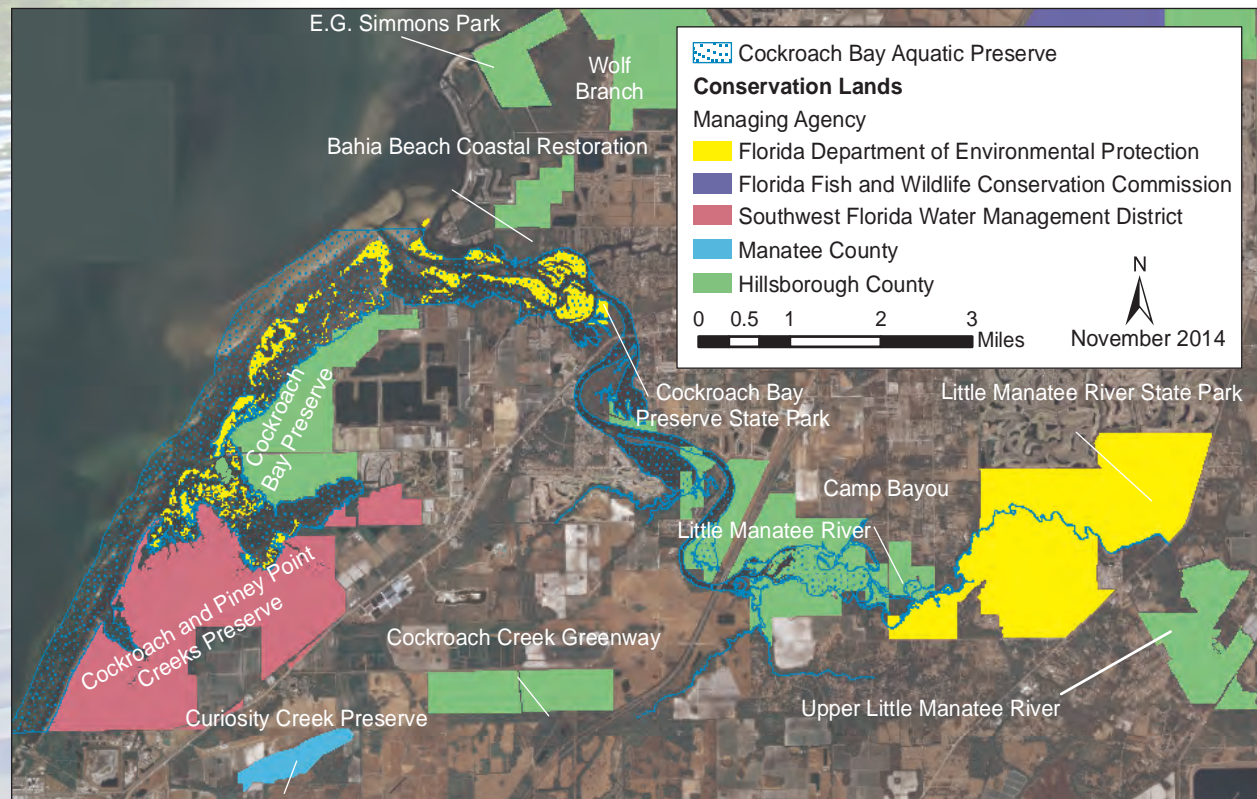
Other Associated Resources

The natural communities that attract visitors to Cockroach Bay Aquatic Preserve go beyond what can be conveyed in the list of species. Throughout the yearly cycle of change, each season presents interesting new dynamics and events. Whether visitors experience the bay "boiling" with a mullet run or islands blooming with butterfly orchids (*Encyclia tampensis*), lupines and (underwater) turtlegrass, is dependent on when and where they go and how observant they are. The first thing visitors see at the end of Cockroach Bay Road is an always-spectacular vista looking out through the mouth of Cockroach Bay to Tampa Bay. Somehow, this view always implies that there is much more to see just around the corner.

3.4 / Values

The Cockroach Bay/Little Manatee River ecosystem is a major driver for the economy and quality of life in the Tampa Bay area. Statewide, boating contributed \$10.4 billion and 109,341 jobs; saltwater fishing, \$7.6 billion and 109,341 jobs; wildlife viewing, \$4.9 billion and 44,623 jobs; commercial fishing, \$396 million and 6,028 jobs; and seafood processing, \$776 million and 4,819 jobs (FWC, 2014). These figures do not include the economic contributions from the many restaurants, hotels and other businesses that benefit from related tourism.

The Tampa Bay area alone contributes more than \$5 billion annually from trade, tourism, development and fishing, and boasts three of Florida's 16 seaports – Port Tampa Bay, Port Manatee and the Port of St. Petersburg. More than 100,000 boats are registered to fishermen and sailing enthusiasts in Pinellas, Hillsborough and Manatee counties (U.S. Environmental Protection Agency, 2007). The emergent



and submerged habitats of the aquatic preserve are critical to many commercial and recreational fish species, as well as many bird species.

Humans are an integral part of the coastal ecosystem. While human activities in the aquatic preserve may bring considerable impacts, humans also have the unique capacity to understand those impacts and to consciously take actions to minimize them. Thereby, the Tampa Bay Aquatic Preserves program views education and awareness as a key component of any conservation strategy.

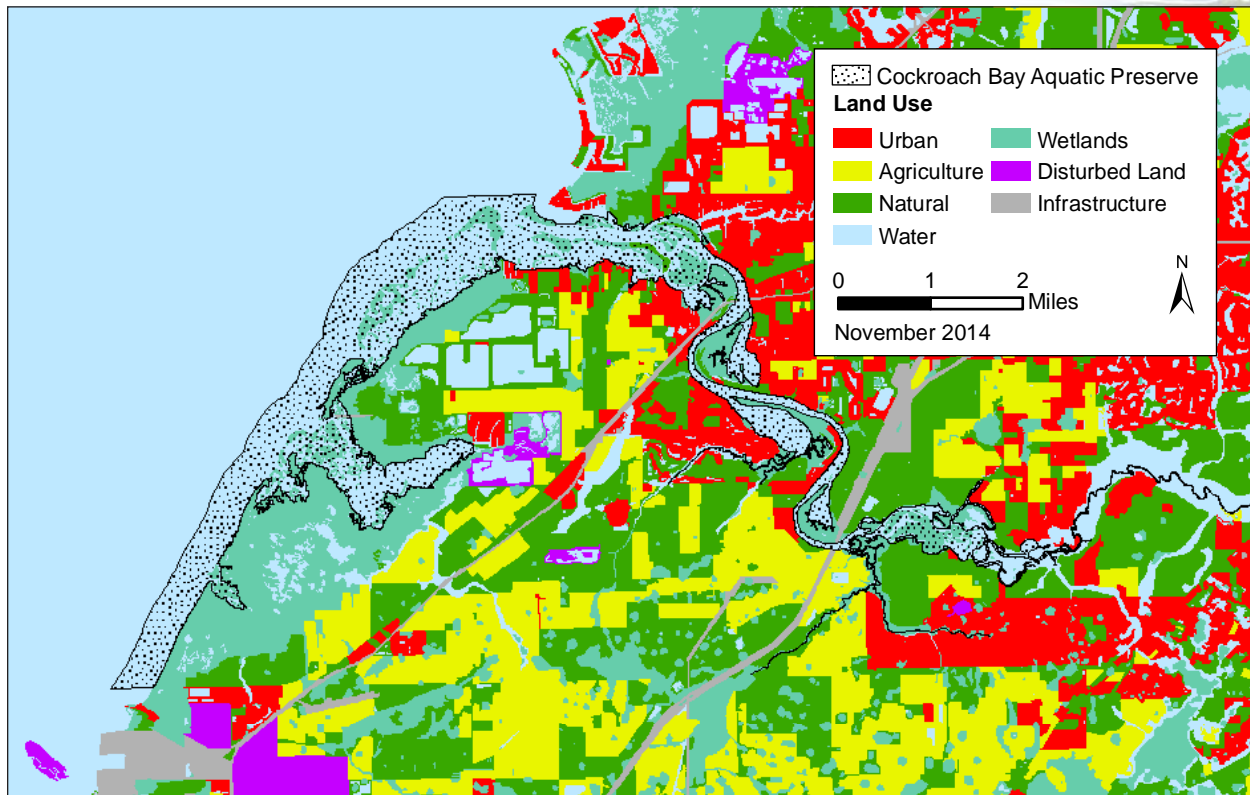
3.5 / Citizen Support Organization

Because the Tampa Bay Aquatic Preserves program manages resources across three counties and several communities around the Tampa Bay area, past considerations of a “friends group” led to the conclusion that such a group would not be sustainable with the modest staffing levels available. However, a statewide friends group for all aquatic preserves was recently created, and Cockroach Bay Aquatic Preserve may participate and or receive support from this larger group.

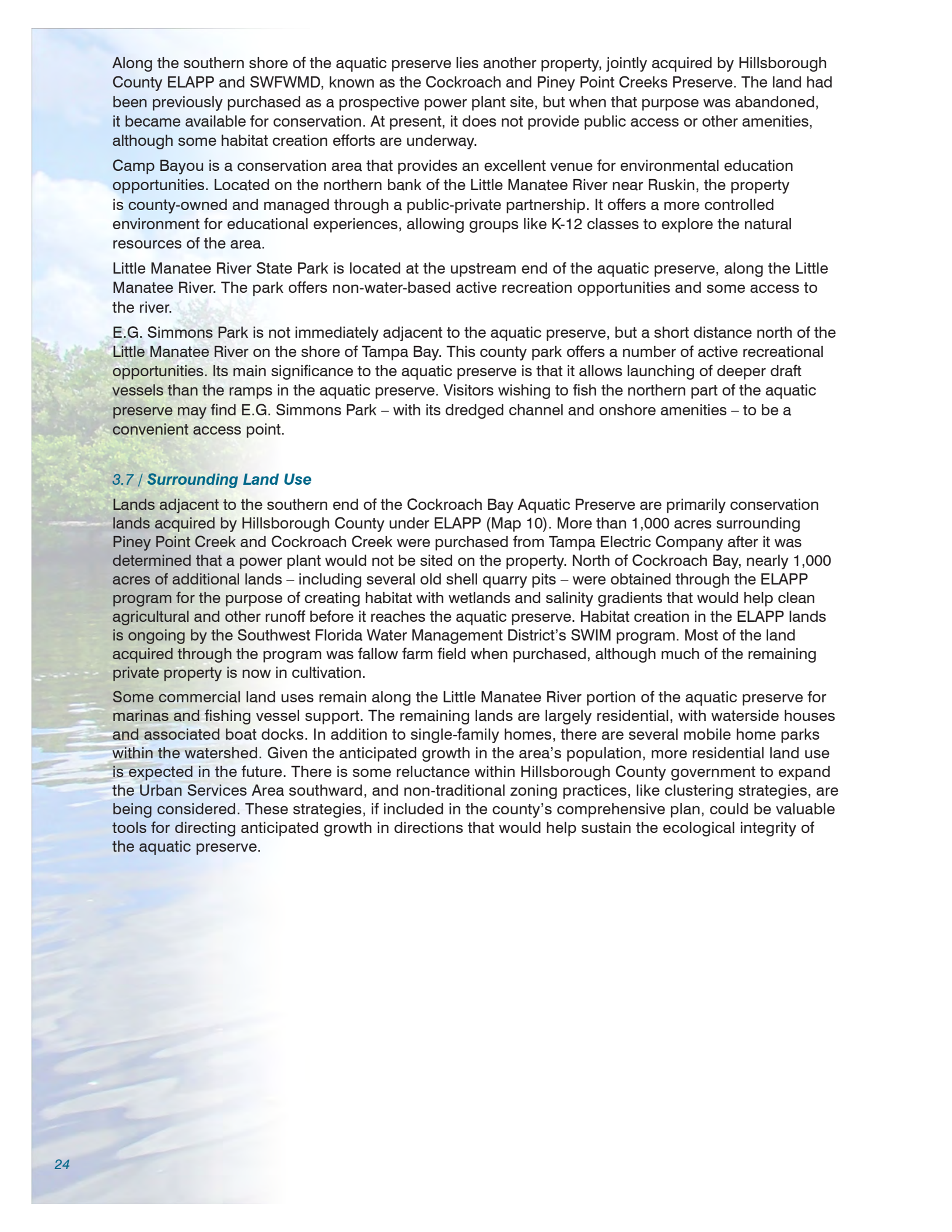
3.6 / Adjacent Public Lands and Designated Resources

The publicly-owned islands scattered throughout the aquatic preserve are collectively known as Cockroach Bay Preserve State Park (Map 9). Labeled as the “Ruskin Keys” on old surveys, the islands were acquired by Hillsborough County in 1988 as its first conservation lands acquisition project under ELAPP. The islands were subsequently sold to the state for management as a buffer preserve. Although the islands’ resources were managed for a number of years by FCO’s organizational predecessor, the Office of Coastal and Aquatic Managed Areas, they are currently managed as a state park by DEP’s Division of Recreation and Parks. No mainland uplands exist within the aquatic preserve boundary.

Access to the aquatic preserve is primarily provided through Hillsborough County-owned land designated as Cockroach Bay Preserve. Also acquired under ELAPP, the property surrounds Cockroach Bay Road and contains several abandoned shell pits, which are in various stages of conversion to wetlands under the Southwest Florida Water Management District’s Surface Water Improvement and Management (SWIM) program. While these “created” wetlands are not within the statutory boundary of the aquatic preserve, they contribute to its health by filtering runoff from nearby agricultural lands before it reaches aquatic preserve waters.



Map 10 | Land use surrounding Cockroach Bay Aquatic Preserve.



Along the southern shore of the aquatic preserve lies another property, jointly acquired by Hillsborough County ELAPP and SWFWMD, known as the Cockroach and Piney Point Creeks Preserve. The land had been previously purchased as a prospective power plant site, but when that purpose was abandoned, it became available for conservation. At present, it does not provide public access or other amenities, although some habitat creation efforts are underway.

Camp Bayou is a conservation area that provides an excellent venue for environmental education opportunities. Located on the northern bank of the Little Manatee River near Ruskin, the property is county-owned and managed through a public-private partnership. It offers a more controlled environment for educational experiences, allowing groups like K-12 classes to explore the natural resources of the area.

Little Manatee River State Park is located at the upstream end of the aquatic preserve, along the Little Manatee River. The park offers non-water-based active recreation opportunities and some access to the river.

E.G. Simmons Park is not immediately adjacent to the aquatic preserve, but a short distance north of the Little Manatee River on the shore of Tampa Bay. This county park offers a number of active recreational opportunities. Its main significance to the aquatic preserve is that it allows launching of deeper draft vessels than the ramps in the aquatic preserve. Visitors wishing to fish the northern part of the aquatic preserve may find E.G. Simmons Park – with its dredged channel and onshore amenities – to be a convenient access point.

3.7 / Surrounding Land Use

Lands adjacent to the southern end of the Cockroach Bay Aquatic Preserve are primarily conservation lands acquired by Hillsborough County under ELAPP (Map 10). More than 1,000 acres surrounding Piney Point Creek and Cockroach Creek were purchased from Tampa Electric Company after it was determined that a power plant would not be sited on the property. North of Cockroach Bay, nearly 1,000 acres of additional lands – including several old shell quarry pits – were obtained through the ELAPP program for the purpose of creating habitat with wetlands and salinity gradients that would help clean agricultural and other runoff before it reaches the aquatic preserve. Habitat creation in the ELAPP lands is ongoing by the Southwest Florida Water Management District's SWIM program. Most of the land acquired through the program was fallow farm field when purchased, although much of the remaining private property is now in cultivation.

Some commercial land uses remain along the Little Manatee River portion of the aquatic preserve for marinas and fishing vessel support. The remaining lands are largely residential, with waterside houses and associated boat docks. In addition to single-family homes, there are several mobile home parks within the watershed. Given the anticipated growth in the area's population, more residential land use is expected in the future. There is some reluctance within Hillsborough County government to expand the Urban Services Area southward, and non-traditional zoning practices, like clustering strategies, are being considered. These strategies, if included in the county's comprehensive plan, could be valuable tools for directing anticipated growth in directions that would help sustain the ecological integrity of the aquatic preserve.



GPS technology is used to ensure highly accurate trail mapping.

Part II

Management Programs and Issues

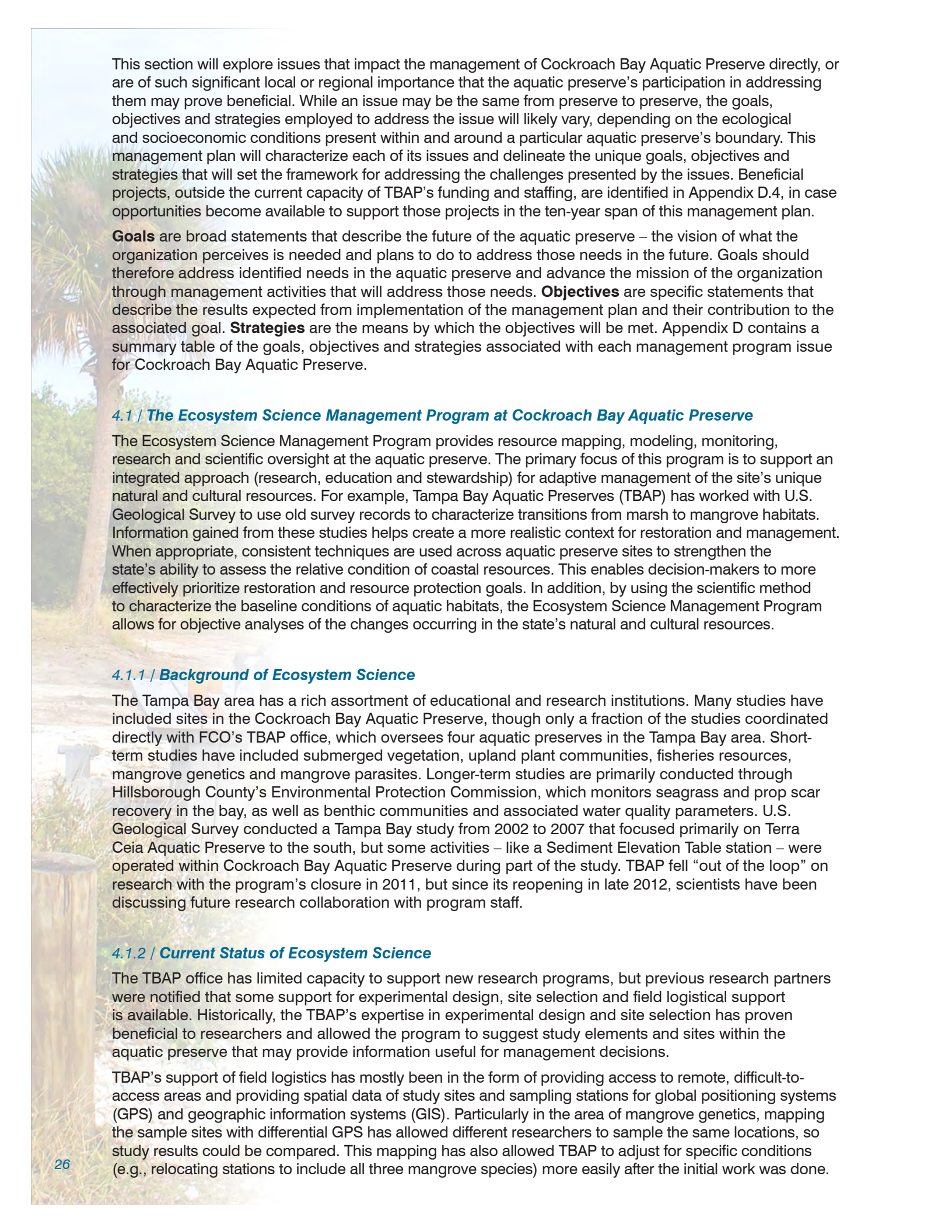
Chapter Four

The Cockroach Bay Aquatic Preserve's Management Programs and Issues

The work performed by the Florida Coastal Office (FCO) is divided into components called management programs. This aquatic preserve management plan explains onsite operational activities 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 designed in direct response to unique local and regional issues. Addressing those issues within the context of FCO's four management programs allows staff to integrate site management needs with the overarching principles of Ecosystem Science, Resource Management, Education and Outreach, and Public Use Programs. This holistic approach provides a stronger, more cohesive mechanism through which the goals, objectives and strategies associated with an issue can be addressed. For example, if an aquatic preserve needs to address declines in water clarity, it could monitor levels of turbidity and chlorophyll (Ecosystem Science research), plant eroded shorelines with marsh vegetation (Resource Management habitat restoration), create a display or program on preventing water quality degradation (Education and Outreach), and offer training to municipal officials on retrofitting stormwater facilities to improve levels of treatment (Education and Outreach).

Issue-based management is a means through which any number of partners can become involved in protecting and conserving important resources. Because most aquatic preserves are endowed with very few staff and limited funds, partnering is a necessity. Involving partners in issue-based management ensures that a particular issue receives attention from perspectives that the aquatic preserve may not otherwise be able to address.



This section will explore issues that impact the management of Cockroach Bay Aquatic Preserve directly, or are of such significant local or regional importance that the aquatic preserve's participation in addressing 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. This management plan will characterize each of its issues and delineate the unique goals, objectives and strategies that will set the framework for addressing the challenges presented by the issues. Beneficial projects, outside the current capacity of TBAP'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 are broad statements that describe the future of the aquatic preserve – the vision of what the organization perceives is needed and plans to do to address those needs in the future. Goals should therefore address identified needs in the aquatic preserve and advance the mission of the organization through management activities that will address those needs. **Objectives** are specific statements that describe the results expected from implementation of the management plan and their contribution to the associated goal. **Strategies** are the means by which the objectives will be met. Appendix D contains a summary table of the goals, objectives and strategies associated with each management program issue for Cockroach Bay Aquatic Preserve.

4.1 / The Ecosystem Science Management Program at Cockroach Bay Aquatic Preserve

The Ecosystem Science Management Program provides resource mapping, modeling, monitoring, research and scientific oversight at the aquatic preserve. The primary focus of this program is to support an integrated approach (research, education and stewardship) for adaptive management of the site's unique natural and cultural resources. For example, Tampa Bay Aquatic Preserves (TBAP) has worked with U.S. Geological Survey to use old survey records to characterize transitions from marsh to mangrove habitats. Information gained from these studies helps create a more realistic context for restoration and management. When appropriate, consistent techniques are used across aquatic preserve sites to strengthen the state'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 characterize the 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.

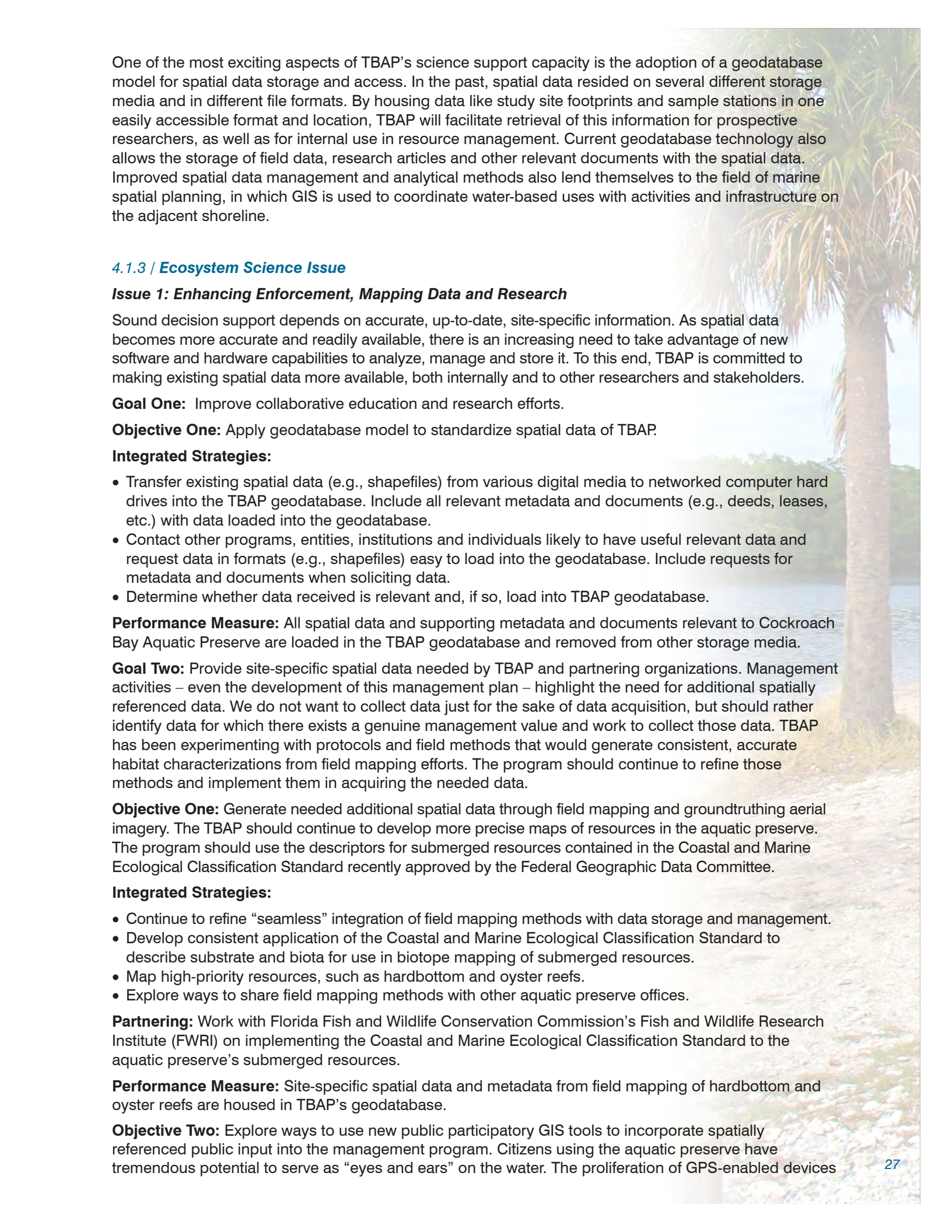
4.1.1 / Background of Ecosystem Science

The Tampa Bay area has a rich assortment of educational and research institutions. Many studies have included sites in the Cockroach Bay Aquatic Preserve, though only a fraction of the studies coordinated directly with FCO's TBAP office, which oversees four aquatic preserves in the Tampa Bay area. Short-term studies have included submerged vegetation, upland plant communities, fisheries resources, mangrove genetics and mangrove parasites. Longer-term studies are primarily conducted through Hillsborough County's Environmental Protection Commission, which monitors seagrass and prop scar recovery in the bay, as well as benthic communities and associated water quality parameters. U.S. Geological Survey conducted a Tampa Bay study from 2002 to 2007 that focused primarily on Terra Ceia Aquatic Preserve to the south, but some activities – like a Sediment Elevation Table station – were operated within Cockroach Bay Aquatic Preserve during part of the study. TBAP fell “out of the loop” on research with the program's closure in 2011, but since its reopening in late 2012, scientists have been discussing future research collaboration with program staff.

4.1.2 / Current Status of Ecosystem Science

The TBAP office has limited capacity to support new research programs, but previous research partners were notified that some support for experimental design, site selection and field logistical support is available. Historically, the TBAP's expertise in experimental design and site selection has proven beneficial to researchers and allowed the program to suggest study elements and sites within the aquatic preserve that may provide information useful for management decisions.

TBAP's support of field logistics has mostly been in the form of providing access to remote, difficult-to-access areas and providing spatial data of study sites and sampling stations for global positioning systems (GPS) and geographic information systems (GIS). Particularly in the area of mangrove genetics, mapping the sample sites with differential GPS has allowed different researchers to sample the same locations, so study results could be compared. This mapping has also allowed TBAP to adjust for specific conditions (e.g., relocating stations to include all three mangrove species) more easily after the initial work was done.



One of the most exciting aspects of TBAP's science support capacity is the adoption of a geodatabase model for spatial data storage and access. In the past, spatial data resided on several different storage media and in different file formats. By housing data like study site footprints and sample stations in one easily accessible format and location, TBAP will facilitate retrieval of this information for prospective researchers, as well as for internal use in resource management. Current geodatabase technology also allows the storage of field data, research articles and other relevant documents with the spatial data. Improved spatial data management and analytical methods also lend themselves to the field of marine spatial planning, in which GIS is used to coordinate water-based uses with activities and infrastructure on the adjacent shoreline.

4.1.3 / *Ecosystem Science Issue*

Issue 1: Enhancing Enforcement, Mapping Data and Research

Sound decision support depends on accurate, up-to-date, site-specific information. As spatial data becomes more accurate and readily available, there is an increasing need to take advantage of new software and hardware capabilities to analyze, manage and store it. To this end, TBAP is committed to making existing spatial data more available, both internally and to other researchers and stakeholders.

Goal One: Improve collaborative education and research efforts.

Objective One: Apply geodatabase model to standardize spatial data of TBAP.

Integrated Strategies:

- Transfer existing spatial data (e.g., shapefiles) from various digital media to networked computer hard drives into the TBAP geodatabase. Include all relevant metadata and documents (e.g., deeds, leases, etc.) with data loaded into the geodatabase.
- Contact other programs, entities, institutions and individuals likely to have useful relevant data and request data in formats (e.g., shapefiles) easy to load into the geodatabase. Include requests for metadata and documents when soliciting data.
- Determine whether data received is relevant and, if so, load into TBAP geodatabase.

Performance Measure: All spatial data and supporting metadata and documents relevant to Cockroach Bay Aquatic Preserve are loaded in the TBAP geodatabase and removed from other storage media.

Goal Two: Provide site-specific spatial data needed by TBAP and partnering organizations. Management activities – even the development of this management plan – highlight the need for additional spatially referenced data. We do not want to collect data just for the sake of data acquisition, but should rather identify data for which there exists a genuine management value and work to collect those data. TBAP has been experimenting with protocols and field methods that would generate consistent, accurate habitat characterizations from field mapping efforts. The program should continue to refine those methods and implement them in acquiring the needed data.

Objective One: Generate needed additional spatial data through field mapping and groundtruthing aerial imagery. The TBAP should continue to develop more precise maps of resources in the aquatic preserve. The program should use the descriptors for submerged resources contained in the Coastal and Marine Ecological Classification Standard recently approved by the Federal Geographic Data Committee.

Integrated Strategies:

- Continue to refine “seamless” integration of field mapping methods with data storage and management.
- Develop consistent application of the Coastal and Marine Ecological Classification Standard to describe substrate and biota for use in biotope mapping of submerged resources.
- Map high-priority resources, such as hardbottom and oyster reefs.
- Explore ways to share field mapping methods with other aquatic preserve offices.

Partnering: Work with Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute (FWRI) on implementing the Coastal and Marine Ecological Classification Standard to the aquatic preserve's submerged resources.

Performance Measure: Site-specific spatial data and metadata from field mapping of hardbottom and oyster reefs are housed in TBAP's geodatabase.

Objective Two: Explore ways to use new public participatory GIS tools to incorporate spatially referenced public input into the management program. Citizens using the aquatic preserve have tremendous potential to serve as “eyes and ears” on the water. The proliferation of GPS-enabled devices

– like smartphones – offers a new opportunity to solicit real-time information from observations within the aquatic preserve, such as sightings of derelict vessels, abandoned fishing gear or invasive species.

Integrated Strategies:

- Develop a prototype smartphone interface for field trials of citizen reporting.
- Select a pilot group of local resource users for implementation.
- Collect data from pilot group reports and experiment with processing for duplicate reports, accuracy, etc.
- Broaden the scope and participation of citizen reporting after the trial period, if appropriate.

Partnering: Local boaters and fishing guides can help with the initial field testing of this technology.

Performance Measures:

- Smartphone interface prototype is developed and tested with pilot group.
- Data is collected and processed.
- A plan is developed for broader implementation.

4.2 / The Resource Management Program at Cockroach Bay Aquatic Preserve

The Resource Management Program describes how FCO manages the Cockroach Bay Aquatic Preserve and its resources. The primary concept of resource management projects and activities is guided by FCO's mission statement: To conserve and restore Florida's coastal and aquatic resources. FCO accomplishes its resource management mission 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 the managed areas and their watersheds. In turn, activities on adjacent areas or within the watersheds can affect the environmental conditions of, and management activities in, the aquatic preserve. FCO-managed areas are especially sensitive to upstream activities affecting water quality and quantity. FCO staff 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. The programs work together to provide direction to the various agencies that manage adjacent properties, as well as our partners and stakeholders. Cockroach Bay Aquatic Preserve 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 Cockroach Bay Aquatic Preserve are diverse. This section explains the history and current status of the Resource Management efforts.

4.2.1 / Background of Resource Management

Cockroach Bay Aquatic Preserve is unique among aquatic preserves, because its submerged lands are not owned by the state, but by Tampa Port Authority (TPA). Hillsborough County's considerable investment in conservation land ownership and management near the aquatic preserve has engendered a highly engaged partner in managing the area's resources. Hillsborough County's Parks, Recreation and Conservation program has an on-site office near the aquatic preserve that not only serves as a valuable staging site for TBAP's work, but also engages in conservation activities that would otherwise fall to TBAP, with its limited capacity, or would not be accomplished at all. As the on-site management entity, Hillsborough County is often the first to become aware of management issues, and they are often proactive in addressing issues with or without the help of TBAP. Hillsborough County's presence has provided for a level of resource protection that would not be possible with thinly distributed state resources. TBAP genuinely appreciates the work of Hillsborough County's resource management staff, as well as the contributions of numerous individuals and organizations that operate in the area.

4.2.2 / Current Status of Resource Management

Resource management at Cockroach Bay Aquatic Preserve is at a crossroads. Hopefully, the state's continuing economic recovery and the reestablishment of the TBAP program will provide more staff and budget resources for management activities. Recently, however, the county's long-time site manager for the area retired and an invaluable source of site knowledge is lost with his absence. It will be up to TBAP and the remaining county staff to provide site knowledge, historical perspective, and collaborative partnerships as new management comes on board.

4.2.3 / Resource Management Issues

Issue 2: Marine Debris

Marine debris is both ecologically and aesthetically undesirable in the aquatic preserve. In addition to posing a public safety hazard for visitors, debris may entangle or be ingested by wildlife. Pelicans and other species can be attached to monofilament line and hooks, and have great difficulty in disentangling themselves.

While much of the debris found in the aquatic preserve can originate many miles away, debris can also be generated locally due to carelessness or lack of awareness. Any effective effort to reduce debris in the aquatic preserve must combine active removal and prevention/awareness components. Several organizations and individuals have helped with the marine debris issue in Cockroach Bay Aquatic Preserve, and these groups should be encouraged to continue their efforts. As a management entity, TBAP should fill gaps in management activities rather than duplicate the worthwhile efforts of others. TBAP should engage park managers and local landowners to ensure they are doing everything possible to reduce the contribution of debris from their sites.

Goal One: Remove marine debris already in the aquatic preserve.

Objective One: TBAP will identify debris “hot spots,” where marine debris accumulates as a result of carelessness or lack of attention, or where physical attributes of the surrounding area concentrate debris in particular locations. If local entities are not able to target those areas, TBAP will mobilize volunteers to help with removal of the debris.

Integrated Strategies:

- Survey debris in areas of the aquatic preserve where features like shorelines tend to concentrate it and establish protocols that make removal easier.
- Engage groups that either have removed debris from the aquatic preserve in the past or would likely do so.
- Assemble volunteer events to target any remaining areas for debris removal.

Partnering: Much of this area is along shorelines managed as Cockroach Bay Preserve State Park. TBAP will assist with debris removal because of the direct impact on the aquatic preserve, and we encourage the Division of Recreation and Parks to continue with and/or expand their efforts. We also can involve local and visiting student groups with which we have ongoing partnerships.

Performance Measure: TBAP coordinates at least two volunteer marine debris cleanup efforts each year focusing on remote areas that otherwise might not be cleaned.

Issue 3: Shoreline Alterations

Goal One: Prevent, slow or otherwise address shoreline erosion in the aquatic preserve. The shorelines of conservation lands in the aquatic preserve are susceptible to erosion for several reasons. The northeast shoreline of Goat Island, for example, has been a site of considerable erosion for decades. Spoil material for a proposed development was deposited on the island in the 1950s, and a nearby boat channel produces wakes that erode the spoil from the island onto the submerged land. The constriction of a parallel channel by the old approach to the Goat Island Bridge on the island’s south shore also may contribute to increased scouring of the island’s north shore. Cordgrass planted by volunteers several years ago has reduced the erosion along part of the shore, but additional plantings are needed to complete the project. The marsh grass spreads fairly rapidly to stabilize the shoreline which, in turn, traps mangrove seedlings that root and grow to further protect the shore.



Plastics in the aquatic preserve pose a danger to wildlife and distract visitors from the natural beauty around them.



Ongoing erosion on Goat Island's north shore affects both upland and submerged habitats.

Other shorelines in the aquatic preserve are under threat of increased erosion as invasive plants compete with mangroves. FCO and Hillsborough County had an effective partnership that nearly eliminated Brazilian pepper and other invasives in the buffer preserve. It is very important that TBAP continue to work with the county to remove resprouting plants while invasive populations are still manageable.

Objective One: Use emergent vegetation plantings to stabilize eroding shorelines.

Integrated Strategies:

- Estimate amount of cordgrass needed to fill gaps in eroding Goat Island shoreline.
- Procure cordgrass plants. [Note: cordgrass should be available at no cost from the nursery near Port Manatee.]
- Organize volunteer planting events.

Partnering: Since this submerged area is adjacent to park uplands, we would coordinate with Cockroach Bay Preserve State Park.

Performance Measure: Cordgrass is planted in gaps on the northern eroding shoreline of Goat Island.

Objective Two: Help maintain existing native stabilizing vegetation.

Integrated Strategies:

- Visit coastal berms and other shorelines under public ownership, in collaboration with management entities, to treat invasive plants. (Herbicides may be available through the herbicide bank.)
- Contact local landowners whose shorelines host invasives to determine possible solutions for removing the invasive plants.
- Map treated areas with GPS and use GIS to prescribe and track timely retreatment of invasives.

Partnering: While the management of the park is primarily responsible for exotic control, the importance of this goal to the aquatic environment makes it important for TBAP to support their efforts...especially where shoreline stability is at stake.

Performance Measure: Support invasive exotic species removal efforts by the park, as program resources allow.

Goal Two: Restore hydrological regime near Goat Island Bridge. More than a half century ago, a bridge was built from the end of Neptune Road to Goat Island as part of the proposed development of the island. An approach to the bridge was bulkheaded and filled on the island end of the bridge. The approach still blocks about one-third the width of the channel between Goat Island and the mainland. In addition to producing hazardous currents and eddies, this blockage may contribute to the erosion of the mainland,

especially during high-flow periods in the river following storms. Nearly 15 years ago, TBAP secured funds to remove the dangerous concrete decking of the bridge to eliminate the imminent danger of a collapse. Although that hazard has been eliminated, upright structures and the filled island bridge approach remain.

Objective One: Work with the Division of Recreation and Parks to remove concrete structures of Goat Island Bridge.

Integrated Strategies:

- Document existing conditions in detail using GIS and photographs.
- Consult with permitting agencies and the land manager about the removal.
- Consult with contractors on-site about logistics and potential cost of removing the concrete structures.
- Seek outside funding for removal of structures.
- Facilitate structure removal.

Partnering: TBAP will collaborate with Division of Recreation and Parks because this issue is directly connected to Goat Island. TBAP will also coordinate with TPA because operations would occur on submerged lands owned by TPA.

Performance Measure: All manmade structures from Goat Island Bridge are removed within 10 years.

Objective Two: Work with the Division of Recreation and Parks to remove and stabilize the old bridge approach on Goat Island.

Integrated Strategies:

- Document existing conditions in detail using GIS and photographs.
- Consult with hydrologist(s) about the likely effects of removing the filled area.
- Consult with contractors about the logistics and potential cost of removing and stabilizing the filled area.
- Seek outside funding to remove the bulkheaded, filled bridge approach.
- Facilitate the bridge approach removal and shoreline stabilization.

Partnering: TBAP will collaborate with Division of Recreation and Parks because this issue is directly connected with Goat Island. TBAP will also coordinate with TPA because operations would occur on submerged lands owned by TPA.

Performance Measure: Channel blocked by bridge approach is reopened.



Remnants of the old Goat Island bridge detract from the aquatic preserve's natural beauty, and are a hazard to boaters.

4.3 / *The Education and Outreach Management Program at Cockroach Bay Aquatic Preserve*

The Education and Outreach Management Program components are essential tools used to increase public awareness of aquatic preserves and promote informed stewardship of their resources by local communities. Education programs include on- and off-site education and training activities, such as field studies for students and teachers; development and distribution of media; distribution of information at local events; recruitment and management of volunteers; and training workshops for local citizens and decision-makers. The design and implementation of educational programs incorporates the strategic targeting of select audiences. While these audiences include all ages and walks of life, each also represents key stakeholders and decision-makers. Efforts by the Education and Outreach Program allow the aquatic preserve to build and maintain relationships and convey knowledge to the community, both invaluable components to successful resource management.

4.3.1 / *Background of Education and Outreach*

Cockroach Bay Aquatic Preserve is one of Tampa Bay's most important educational sites on a variety of levels. The aquatic preserve is well-known among generations of school children who have visited with classes during their K-12 years. Many college courses from the University of South Florida, Hillsborough Community College and Eckerd College have included field trips to the aquatic preserve to study wetlands, restoration ecology, coastal geology, archaeology and other advanced topics. Events such as "Day on the Bay" for elected officials have explained important perspectives for decision-making. While the aquatic preserve does not have an education/outreach coordinator, TBAP has been involved in many of these efforts over the years.

4.3.2 / *Current Status of Education and Outreach*

Cockroach Bay Aquatic Preserve serves an important role in education for both children and adults. Classes for K-12 students are usually conducted at locations with relatively controlled conditions, like Camp Bayou. College-level education is provided through established programs like Hillsborough Community College's Institute of Florida Studies, as well as class-specific field trips from institutions like Eckerd College. There are ongoing and prospective opportunities for TBAP to work with these programs to help present information and craft messages that encourage understanding and protection of the aquatic preserve's resources. Also, TBAP can continue to expand its collaboration with local colleges and universities by sponsoring internships, facilitating student volunteerism to meet service requirements of degree programs, and participating in undergraduate and graduate thesis projects.

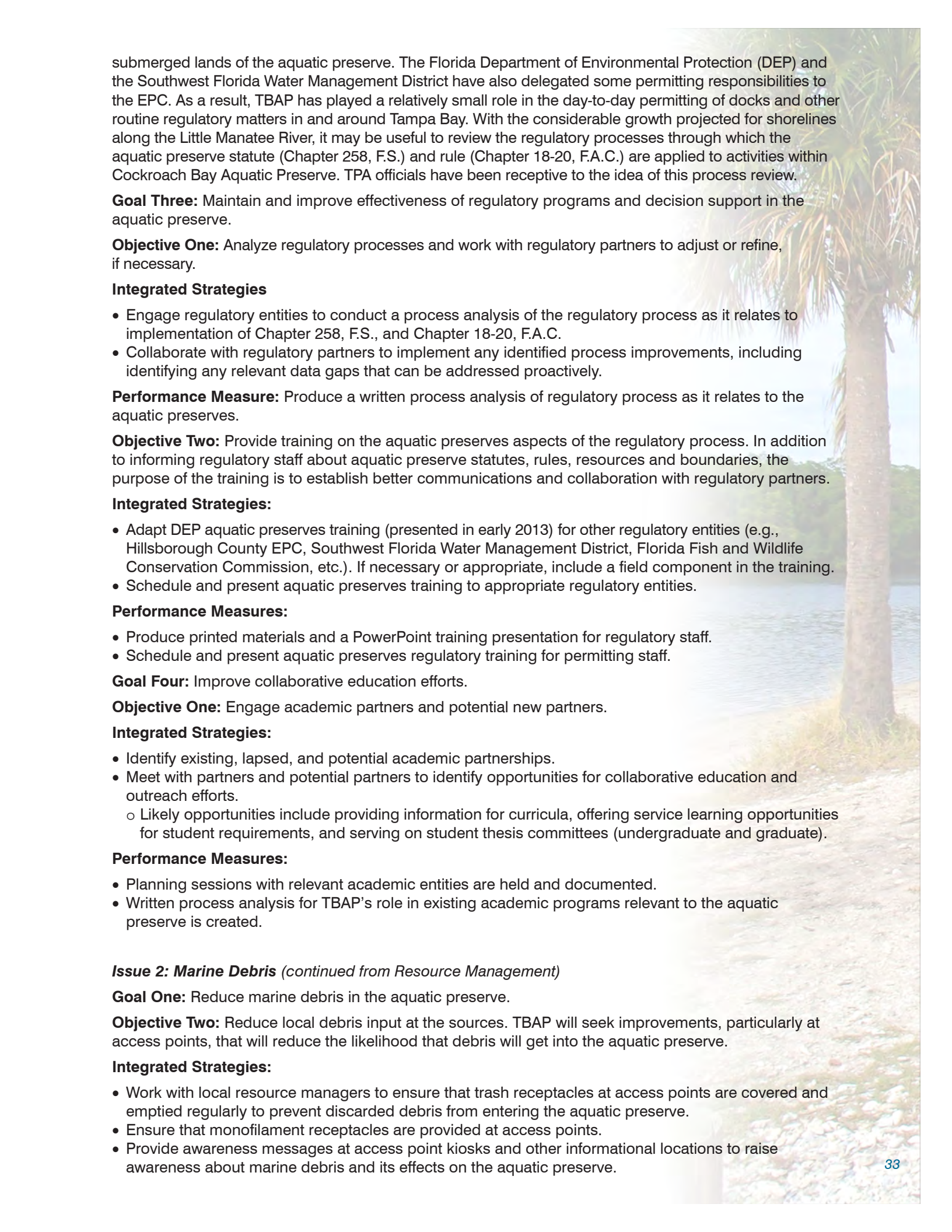
The area that requires the most work is in education and public awareness of the appropriate use of the aquatic preserve's resources. While most people visiting the aquatic preserve want to play a role in protecting the resources, their primary reason for visiting is resource-based recreation, with little time for observation and learning. For this reason, education and outreach initiatives aimed at visitors must be concise, targeted and engaging.

4.3.3 / *Education and Outreach Issues*

Issue 1: *Enhancing Enforcement, Mapping Data and Research* (continued from *Ecosystem Science*)

While the capacity of TBAP to directly engage large numbers of stakeholders in education and awareness programs is limited, TBAP has a long history of engaging educational institutions and programs that provide larger-scale educational opportunities for aquatic preserve stakeholders. Even though it was reopened in December 2012, closure of the TBAP program in 2011 reduced its capacity to provide educational and outreach activities, and some partnerships have not been pursued since the reopening. As program staffing and budget resources improve, a carefully planned strategy to convey conservation messages to stakeholders should include improved academic partnerships as a cornerstone.

These education and outreach activities can also extend to regulatory agencies. While much of the shoreline of the Cockroach Bay Aquatic Preserve is unaltered, it is nevertheless important for TBAP staff to monitor events occurring in and around the land-water interface of the aquatic preserve. Because the state does not own the submerged lands of the aquatic preserve, it has no proprietary control over the uses and activities permitted over or within the submerged lands of the aquatic preserve – i.e., no authorization, lease, easement or letter of consent is required from the Trustees before an activity can take place there. At present, the TPA – as the owner of the submerged lands – has delegated to the Hillsborough County Environmental Protection Commission (EPC) the authority to approve projects impacting the waters and



submerged lands of the aquatic preserve. The Florida Department of Environmental Protection (DEP) and the Southwest Florida Water Management District have also delegated some permitting responsibilities to the EPC. As a result, TBAP has played a relatively small role in the day-to-day permitting of docks and other routine regulatory matters in and around Tampa Bay. With the considerable growth projected for shorelines along the Little Manatee River, it may be useful to review the regulatory processes through which the aquatic preserve statute (Chapter 258, F.S.) and rule (Chapter 18-20, F.A.C.) are applied to activities within Cockroach Bay Aquatic Preserve. TPA officials have been receptive to the idea of this process review.

Goal Three: Maintain and improve effectiveness of regulatory programs and decision support in the aquatic preserve.

Objective One: Analyze regulatory processes and work with regulatory partners to adjust or refine, if necessary.

Integrated Strategies

- Engage regulatory entities to conduct a process analysis of the regulatory process as it relates to implementation of Chapter 258, F.S., and Chapter 18-20, F.A.C.
- Collaborate with regulatory partners to implement any identified process improvements, including identifying any relevant data gaps that can be addressed proactively.

Performance Measure: Produce a written process analysis of regulatory process as it relates to the aquatic preserves.

Objective Two: Provide training on the aquatic preserves aspects of the regulatory process. In addition to informing regulatory staff about aquatic preserve statutes, rules, resources and boundaries, the purpose of the training is to establish better communications and collaboration with regulatory partners.

Integrated Strategies:

- Adapt DEP aquatic preserves training (presented in early 2013) for other regulatory entities (e.g., Hillsborough County EPC, Southwest Florida Water Management District, Florida Fish and Wildlife Conservation Commission, etc.). If necessary or appropriate, include a field component in the training.
- Schedule and present aquatic preserves training to appropriate regulatory entities.

Performance Measures:

- Produce printed materials and a PowerPoint training presentation for regulatory staff.
- Schedule and present aquatic preserves regulatory training for permitting staff.

Goal Four: Improve collaborative education efforts.

Objective One: Engage academic partners and potential new partners.

Integrated Strategies:

- Identify existing, lapsed, and potential academic partnerships.
- Meet with partners and potential partners to identify opportunities for collaborative education and outreach efforts.
 - Likely opportunities include providing information for curricula, offering service learning opportunities for student requirements, and serving on student thesis committees (undergraduate and graduate).

Performance Measures:

- Planning sessions with relevant academic entities are held and documented.
- Written process analysis for TBAP's role in existing academic programs relevant to the aquatic preserve is created.

Issue 2: Marine Debris (continued from Resource Management)

Goal One: Reduce marine debris in the aquatic preserve.

Objective Two: Reduce local debris input at the sources. TBAP will seek improvements, particularly at access points, that will reduce the likelihood that debris will get into the aquatic preserve.

Integrated Strategies:

- Work with local resource managers to ensure that trash receptacles at access points are covered and emptied regularly to prevent discarded debris from entering the aquatic preserve.
- Ensure that monofilament receptacles are provided at access points.
- Provide awareness messages at access point kiosks and other informational locations to raise awareness about marine debris and its effects on the aquatic preserve.



Because of the likelihood of vandalism, this kiosk was moved away from the boat ramp access point.

Performance Measures:

- Covered trash receptacles and monofilament line receptacles are provided at all public access points.
- Marine debris awareness information is posted at all public access points.

Issue 4: Reducing Per-Capita Impacts by Users

The two primary mechanisms for raising public awareness about the aquatic preserve's resources are placing informational signage at access points and providing resource displays at public events. In addition to the information provided directly, these two mechanisms also provide opportunities for linking resource interests to other on-site and online information.

The difficulty of maintaining kiosks and other informational structures at access points, particularly at the Cockroach Bay Road boat ramp, makes on-site education a challenge. To avoid damage from carelessness and vandalism, TBAP moved a large wooden kiosk – which had been located near the boat ramp for a number of years – to a site approximately one mile away, where it is more secure, but its information does not reach as much of the target audience.

Goal One: Raise awareness of aquatic preserve resources and encourage individual responsibility to protect them.

Objective One: Make more information about the aquatic preserve available at access points.

Integrated Strategies:

- Construct new kiosk at Cockroach Bay Road ramp, using reinforced concrete and other vandal-resistant materials and design features.
 - The kiosk should have modular, easily replaceable panels.
- Design displays with information that is concise and targeted, but with links (e.g., website links and quick response [QR] codes) for those seeking additional information

Partnering: This issue has been discussed with county staff, and TBAP plans to continue involving them. The Division of Recreation and Parks also has indicated an interest in placing information at access points. Partnering with them and the county, would be cost effective and eliminate redundant structures.

Performance Measure: A kiosk with resource information is placed at Cockroach Bay Road boat ramp within three years.

Objective Two: Increase the program's presence at events attended by relevant user target groups. If TBAP staff and program resources increase, a priority activity should be to reengage local citizens and others who use the aquatic preserve's resources. This not only allows for direct education of the public on conservation issues and needs, but it also provides for direct feedback from the community of resource users.

Integrated Strategies:

- Update portable display.
- Integrate display with additional online resources through website addresses, QR codes, etc.
- Schedule display at local events (e.g., Ruskin Seafood Festival).
- Schedule display at regional events (e.g., Marine Quest).

Performance Measure: The display is present at a minimum of one local and one regional public event each year.

Objective Three: Raise the aquatic preserve's management program profile among local officials and decision-makers. With the cessation of the "Day on the Bay" event for elected officials a number of years ago, few opportunities exist for providing local and elected officials direct exposure to the aquatic preserve's resources and management needs. That event was primarily facilitated by the Cockroach Bay Aquatic Preserve Management Advisory Team (CAPMAT), which has been inactive in recent years. CAPMAT is still mandated in Hillsborough County's comprehensive plan, however, and its presence would be beneficial with the prospects for increased development in the watershed.

Integrated Strategies:

- Engage county and elected officials to encourage the reactivation of CAPMAT.
- Find mechanisms to engage local officials on a regular basis, preferably through a "Day on the Bay" type event.

Partnering: TBAP will work with Hillsborough County staff to develop these outreach strategies.

Performance Measure: Local and elected officials each year are contacted and documented (through either events or meetings).

4.4 / The Public Use Management Program at Cockroach Bay Aquatic Preserve

The Public Use Management Program addresses the delivery and management of public use opportunities at the aquatic preserve. The components of the program focus on providing the public with recreational opportunities within the site's boundaries that 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 aquatic preserves and reserves that supports the research, education, and stewardship mission of FCO.

While access by the general public has always been a priority, conservation of the aquatic preserve site is the primary management concern for FCO. It is essential for staff to analyze existing public uses and define management strategies that balance compatible activities with the protection of natural, cultural and aesthetic resources. This requires gathering current information on use, needs, and opportunities in the aquatic preserve, as well as a thorough consideration of existing and potential impacts to critical upland and wetland resources. FCO's critical management challenges during the next ten years will be balancing anticipated increases in public use with the need to ensure preservation of site resources. This section explains the history and current status of FCO's public use efforts in the aquatic preserve.



A single-lane ramp is the primary access to the aquatic preserve.



Most paddlers launch their canoes and kayaks in this area.

4.4.1 / Background of Public Use

Abundant fisheries resources have made Cockroach Bay Aquatic Preserve a regionally important destination for fishing and nature appreciation. For decades, this has been demonstrated by the long line of cars with boat trailers parked alongside Cockroach Bay Road and stretching a considerable distance inland from the boat ramp on any given weekend. In recent years, a variety of kayaks, canoes and other watercraft have become increasingly popular means of access to the aquatic preserve. While some of these represent lower-impact access than motorboats, motorized watercraft have also evolved to include shallower draft vessels that may access, and impact, additional areas. Nearly 25 years ago, paddling trails were added to encourage non-motorized appreciation of the aquatic preserve's embayments, flats and mangrove tunnels (Map 11).

The boat ramp at the end of Cockroach Bay Road is on county-owned property, but it serves as the primary access point for most water-related activities in the aquatic preserve.

4.4.2 / Current Status of Public Use

The same isolation that makes Cockroach Bay Aquatic Preserve so unique in the urbanized Tampa Bay area also makes it especially vulnerable to undetected inappropriate uses. While the vast majority of visitors to the aquatic preserve want to protect the resources, the remote areas attract users who conduct activities that would not be acceptable if detected. Even well-intentioned visitors may not have all of the local resource knowledge they need to protect the resources they appreciate.

An important aspect of public use at Cockroach Bay Aquatic Preserve is the ongoing shift in demographics. In the past, the resources were accessed mostly by local residents or repeat out-of-town users, and these groups had relatively good local knowledge. Currently, however, the entire area in general and the Little Manatee River in particular, are in the midst of a development boom that was only delayed by the economic downturn of the past few years. With the influx of new residents and their visitors comes a new group of users who will not likely be familiar with the aquatic preserve's resources and how to operate around them in a low-impact manner.

4.4.3 / Public Use Issue

Issue 4: Reducing Per-Capita Impacts by Users (continued from Education and Outreach)

While the present level of seagrass scarring and other impacts is not acceptable, the community has made it clear that management strategies that affect the nature of public access will bear close scrutiny. With that in mind, TBAP staff should seek solutions in partnership with stakeholders from various interest groups.

Goal Two: Facilitate low-impact use of the aquatic preserve's resources.

Objective One: Facilitate access to the resources by kayakers, canoeists, and operators of other non-motorized vessels. Because Hillsborough County owns the land where most launching occurs, any initiatives to address this objective should be pursued in partnership with the appropriate county programs.

Integrated Strategies:

- Identify amenities that would make launching and loading of non-motorized vessels more convenient.
- Identify additional potential launch sites that would make paddling routes more user-friendly.
- Work with county staff to maintain existing markers on the Snook and Horseshoe Crab paddling trails.
- Post coordinates for online "virtual trails" for the Snook and Horseshoe Crab paddling trails.
- Map a good paddling route from Highway 301 to a point near the mouth of the Little Manatee River and post the coordinates online. This trail would not be marked with physical markers, as the program does not have the resources to maintain the markers.

Partnering: TBAP will continue to work with county staff on improving and maintaining existing trails, and will seek to work with park management and local rental concessions on the proposed river trail.

Performance Measures:

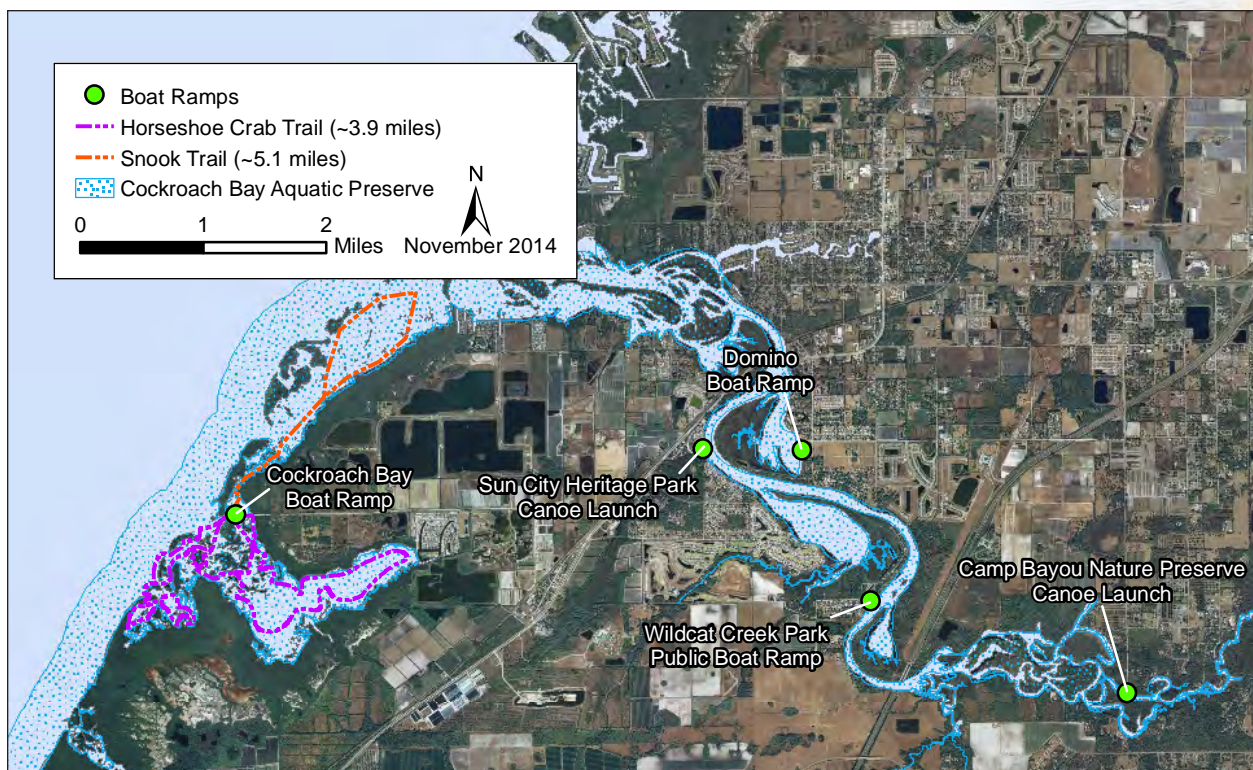
- Marked trails are maintained in a useable state.
- A written analysis is conducted of existing and potential launch sites.
- A "virtual trail" is mapped along the Little Manatee River portion of the aquatic preserve.

Goal Three: Reduce resource impacts caused by boating.

Objective One: Reduce the amount of seagrass scarring through improved education and awareness.

Integrated Strategies:

- Post resource information at access points, including aerial photos of local seagrass scarring intensity.
- Post information about seagrass protection rules at aquatic preserve access points.



Map 11 / Public access at Cockroach Bay Aquatic Preserve.



Paddling trail markers follow international conventions.

Performance Measure: Information on seagrass scarring, avoidance and regulations is posted at each public access point.

Objective Two: Reduce the amount of seagrass scarring at “hot spots” by identifying them and posting appropriate signage.

Integrated Strategies:

- In collaboration with county officials, identify the most intensive scarring in areas of boating shortcuts, rapid depth changes, etc.
- Open a more intense public discussion regarding the protection of these areas through voluntary informational marking and/or enforcement zones.
- Seek funding and/or authority to establish either voluntary or enforced zones at locations of most intense scarring.

(By its nature, this objective is more “open-ended” than others in this management plan, because the implementation of any conservation measures requires additional research and public input before the acceptable nature and scale of any measures can be determined.)

Partnering: County staff have studied this issue considerably. TBAP will work with them to establish a framework for public discussions of strategies. Public involvement and buy-in is key to finding solutions to this issue.

Performance Measures:

- A detailed analysis of seagrass scarring in the aquatic preserve is conducted. This will enable future assessment of the effectiveness of seagrass scarring strategies.
- Facilitated public meetings are conducted to seek public consensus on a strategy to reduce present scarring levels.



Mangrove islands are important resting areas for brown pelicans and other waterbirds.

Part III


Additional Plans

Chapter Five

Administrative Plan for Cockroach Bay Aquatic Preserve

Tampa Bay Aquatic Preserves (TBAP) is the Florida Coastal Office program responsible for the management of four aquatic preserves in the Tampa Bay area: Cockroach Bay Aquatic Preserve, Terra Ceia Aquatic Preserve, Boca Ciega Bay Aquatic Preserve, and Pinellas County Aquatic Preserve, covering nearly 400,000 acres in three counties. Although legislative budget cuts resulted in the temporary closure of TBAP in July 2011, the office reopened in December 2012, albeit with reduced staffing and funding. TBAP presently has a staff of two full-time equivalent positions to manage the four aquatic preserves. Two of the aquatic preserves (the Pinellas County Aquatic Preserve and the Boca Ciega Bay Aquatic Preserve) are located within one of Florida's most densely urbanized counties. The Cockroach Bay Aquatic Preserve and the nearby Terra Ceia Aquatic Preserve require different management approaches from their more urbanized counterparts.

Management goals for the aquatic preserves must be balanced with the program's other responsibilities and accomplished with new issues emerging frequently. To that end, an effective and efficient planning cycle has evolved. Each aquatic preserve maintains a program-wide strategic plan with a planning horizon of five to ten years. This timeframe accommodates the anticipation of vehicle replacements, facilities needs and changing staffing needs. Revisited early each calendar year, the strategic plan lists "big picture" goals for the direction of the program. By reviewing whether the goals of the strategic plan are still valid, the staff sets the stage for developing individual staff action plans for the next fiscal year. Each staff action plan includes a summary of workload duties, descriptions of projects for the upcoming



fiscal year, training and equipment needs, and project timelines. The aquatic preserve manager reviews the individual plans and timelines together to detect likely equipment and staffing gaps or bottlenecks for the upcoming fiscal year. This annual planning cycle is timed to generate realistic budgetary needs before the annual budget request is submitted through the Florida Coastal Office.

To implement planned activities, limited staff resources are supplemented by active intern and volunteer programs. A computer-based volunteer coordination system is used to track interested volunteers and their volunteer hours. Colleges, grade schools, nonprofit organizations, corporate groups and other agencies have been valuable sources of volunteer staffing supplements.

At present, the program is functioning near capacity, with regard to existing staffing and equipment. The highest priority for increasing program capacity is to seek additional field staff. A valuable second priority is to reestablish in-house maintenance support. Replacing aging vessels and adding a second tow vehicle would ensure that additional staff could expand program capacity



On a busy weekend, more than 50 vehicles and trailers may be parked along the road near the boat ramp.


Chapter Six

Facilities and Equipment Plan for Cockroach Bay Aquatic Preserve

Buildings – Prior to the 2004 transfer of state buffer preserves and related properties to the Department of Environmental Protection’s (DEP’s) Division of Recreation and Parks, the Tampa Bay Aquatic Preserves (TBAP) office managed the historic 1909 Haley House at Terra Ceia as its program-wide headquarters and operational base. After the transfer, the facility was managed by DEP’s Division of Recreation and Parks, but TBAP retained office space and workshop/storage space at the site. During the 2011 closure of the TBAP office, the program’s equipment was transferred to other offices and the workspace reverted to the Division of Recreation and Parks. Since its reopening in December 2012, TBAP has returned to the Haley House site, albeit with reduced office, workshop and storage space. The reduced facilities and assets were not initially problematic, but space limitations have since begun to limit the program’s return to full operational strength. The TBAP program will need to acquire more operational space to regain needed functionality.

Vehicles and Vessels – Most of the major vehicles and vessels necessary for the effective operation of the TBAP have been regained since the TBAP program’s reopening in December 2012. As part of the program’s strategic planning cycle, the suitability and condition of all vehicles and vessels in the program are reevaluated annually. Vessels and vehicles and the functional niches they fill include the following:

- **19’ 1998 shallow-draft Carolina Skiff** – used for transporting equipment into shallow areas. The motor has 395 hours as of March 2015.
- **21’ 1990 Mako Cuddy Cabin** – used for transporting more equipment and people and for negotiating choppy water in open bay and offshore areas. The motor has 170 hours as of May 2015.
- **Zodiac** – used to support the Mako in shallow areas.
- **2001 Ford F-350** - heavy duty pickup truck for towing. Vehicle has 73,120 miles as of March 2015.
- **2002 Toyota Prius** for staff attendance at meetings and office support errands. Vehicle has 67,457 miles as of March 2015.
- **Two single-seat kayaks.**
- **Additional canoes and kayaks** are available for use through the Hillsborough County program.



The program has identified the following strategic goals with regard to replacing and enhancing present equipment:

- Replace the aging 19' skiff with a 21' skiff.
- Repower or replace a 25.5' Mako currently in storage.
- Add a small barge to carry chipper.
- Add at least one two-seat kayak.
- Add a second tow vehicle (F250, 4wd or equivalent) if more staff are added.

List of Appendices

Appendix A / Legal Documents	44
A.1 / Aquatic Preserve Resolution	44
A.2 / Florida Statutes	45
A.3 / Florida Administrative Code	45
A.4 / Management Agreements.....	46
A.4.1 / Lease Agreement.....	46
Appendix B / Resource Data	59
B.1 / Glossary of Terms	59
B.2 / References	60
B.3 / Species Lists	61
B.3.1 / Native Species	61
B.3.2 / Listed Species.....	84
B.3.3 / Invasive, Non-Native and/or Problem Species.....	85
B.4 / Arthropod Control Plan.....	85
Appendix C / Public Involvement	86
C.1 / Advisory Committee	86
C.1.1 / List of Members and Affiliations	86
C.1.2 / Florida Administrative Register Posting.....	87
C.1.3 / Summary of the Advisory Committee Meeting	88
C.2 / Formal Public Meeting	93
C.2.1 / Florida Administrative Register Posting.....	93
C.2.2 / Advertisement Flyer.....	95
C.2.3 / Newspaper Advertisement.....	96
C.2.4 / Summary of the Formal Public Meeting.....	97
Appendix D / Goals, Objectives and Strategies	100
D.1 / Current Goals, Objectives and Strategies Budget Table	100
D.2 / Budget Summary Table.....	105
D.3 / Major Accomplishments Since the Approval of the Previous Plan.....	105
D.4 / Gulf Restoration Priority Projects	105
Appendix E / Other Requirements	107
E.1 / Acquisition and Restoration Council Management Plan Compliance Checklist	107
E.2 / Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands.....	113
E.3 / Letters of Compliance with County Comprehensive Plans	114
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

Florida Statutes (Statutes referenced in this plan can be found according to number in Florida Statutes (2013).

Chapter 253, F.S. (State Lands)

Chapter 258, F.S. (State Parks and Preserves)

Chapter 258, Part II (Aquatic Preserves)

Chapter 267 (Historical Resources)

Chapter 379, Part II, F.S. (Marine Life)

Chapter 403, F.S. (Environmental Control)

(See § 403.061(27), F.S. (Authority to establish Outstanding Florida Waters)

Chapter 597, F.S. (Aquaculture)

A.3 / Florida Administrative Codes

Florida Administrative Code (Rules referenced in this plan can be found according to number in the Florida Administrative Code).

Chapter 18-18, F.A.C. (Biscayne Bay Aquatic Preserve)

Chapter 18-20, F.A.C. (Florida Aquatic Preserves)

Chapter 18-21, F.A.C. (Sovereignty Submerged Lands Management)

Chapter 62-302, F.A.C. (Surface Water Quality Standards)

(See § 62-302.700, F.A.C. (Special Protection, Outstanding Florida Waters, Outstanding National Resource Waters).

**LEASE AGREEMENT
BETWEEN
THE TAMPA PORT AUTHORITY
AND
THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE OF FLORIDA**

This Lease Agreement (“Lease”) effective July 1, 2016, is made and entered into by and between the **TAMPA PORT AUTHORITY, d/b/a PORT TAMPA BAY** (the “Authority”), a body politic and corporate under and by virtue of the laws of the State of Florida, and the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA** (the “Trustees”), acting pursuant to its authority set forth in Section 258.40(1), Florida Statutes, Tallahassee, Florida.

WITNESSETH

WHEREAS, the Authority is the governing body and port authority of the Hillsborough County Port District, as provided in Chapter 95-488, *Laws of Florida*, as amended (“**Enabling Act**”); and

WHEREAS, the Authority is the owner in fee simple of all that certain parcel or parcels of land, the same being situated in Hillsborough County, Florida, and commonly referred to as Cockroach Bay; and

WHEREAS, certain lands owned by the Authority within Cockroach Bay were designated by the Florida Legislature to be included in the aquatic preserve system under the Florida Aquatic Preserve Act of 1975, and were specifically documented at Section 258.391, *Florida Statutes*, to be known as the **Cockroach Bay Aquatic Preserve** (the “**Preserve**”); and

WHEREAS, the Authority has also designated the submerged lands within the Cockroach Bay Aquatic Preserve as an “Aquatic Resource Protection Area” due to their ecological and environmental significance and supports the management of these lands under the State Aquatic Preserve Act and adopted management plan; and

199418V3

1

PTB
TIITF

WHEREAS, the Authority and Trustees previously entered into a Lease Agreement for a portion of Cockroach Bay for a term of forty (40) years, beginning July 1, 1976 through June 30, 2016, and recorded at OR Book 3278, Pages 1031 to 1032, in the public records of Hillsborough County, Florida; and

WHEREAS, the Authority and Trustees previously amended that Lease Agreement, executed February 24, 2011, for the purposes of redefining the boundaries of the Lease Area, and recorded at OR Book 20391, Pages 1386 to 1401, in the public records of Hillsborough County, Florida; and

WHEREAS, the parties wish to execute this Lease Agreement to continue the relationship that has been forged over the past 40 years; and

WHEREAS, a lease agreement is consistent with Sections 258.41(5) and 258.391, *Florida Statutes*, the latter of which states in part, "Those portions of the Cockroach Bay Aquatic Preserve owned by the Tampa Port Authority shall be included in the aquatic preserve system for the period of a lease and future lease extensions of such area from the Tampa Port Authority"; and

WHEREAS, a lease agreement is consistent with section 7(b) of the Enabling Act, which states in part, "Notwithstanding the provisions of this section or of section 6, fee simple title to spoil islands and submerged lands owned by the Port Authority or Port District may be granted and conveyed by the Port Authority to ... the State of Florida or its agencies ... for public purposes under such terms and conditions as may be negotiated by the Port Authority with the appropriate governmental body, but without approval of electors; and

WHEREAS, the Division of State Lands is authorized to sign this lease by delegation from the Trustees pursuant to DSL-27, last verified by the Trustees on September 29, 2015, which reads:

- DSL-27 Regarding aquatic preserves other than Biscayne Bay Aquatic Preserve:
- (a) Approve inclusion of other public lands in aquatic preserves and negotiate and accept the written instrument providing for inclusion.
 - (b) Approve and execute leases for 10 years or longer for private lands and water bottoms in aquatic preserves.
 - (c) Review and accept a perpetual dedication of private lands in aquatic preserves.

199418V3

PTB
THTF 

NOW THEREFORE, for and in consideration as set forth above, the Authority has let, demised, and leased, and by these presents does lease, demise and let unto the Trustees all that certain lot or lots, and parcel or parcels, as more particularly described in Exhibit A and depicted on Exhibit B (the "**Leased Premises**"), attached hereto and made a part hereof, in accordance with Section 258.391, *Florida Statutes*, TO HAVE AND TO HOLD the said Leased Premises with the appurtenances, privileges, rights and claims thereunder pertaining or belonging unto the Trustees for the rent, terms, covenants and conditions set forth as follows:

1. The term of this Lease is hereby agreed to for a period of forty (40) years commencing on July 1, 2016, and ending on June 30, 2056 ("**Term**"). This Lease may be extended by the Trustees for an additional period of forty (40) years at the option of the Trustees, so long as Trustees are not in default of any material term herein, no dispute between the parties as to any material term has occurred, and no change in the Enabling Act or other law restricting or limiting the Authority's ability to lease the Leased Premises to the Trustees. Trustees shall deliver notice of its intent to renew to the Authority no more than one hundred twenty (120) days prior, and no less than thirty (30) days prior, to the expiration of the initial Term.

2. The Authority does reserve the rights hereinafter set forth to control the Preserve area submerged lands herein leased to the Trustees to the extent necessary to carry out the rights and reservations hereinafter set forth:

Rights and Reservations The Authority specifically reserves the right to:

(a) Set aside areas determined by the Authority to be preempted areas for the purpose of leasing the same to riparian owners for exclusive navigation and for the erection of docks and other structures to the same extent that any owner in any other similar resource protection area would have; provided, however, that the Trustees may impose restrictions and limits over and above those imposed by the Authority pursuant to Chapter 258, *Florida Statutes*, as amended ("**Preserve Rules**"). (Where the Preserve Rules are more restrictive than those of the Authority, the Authority shall not lease said lands except in accordance with the limitations of said additional restrictions. This provision shall relate both to residential and commercial activity);

(b) Control boat traffic in the lease area so long as the Authority's restrictions on said boat traffic are more restrictive and more limiting than the Preserve Rules as may be passed and enforced by the Trustees;

(c) Limit and control discharge of all types from the upland into the waters of the Preserve in the same manner as any other riparian owner in the aquatic resource protection area so long as the restrictions on said discharges by the Authority are more restrictive than the Preserve Rules placed in effect by Trustees and Authority;

(d) Control and regulate all marine construction and submerged lands use authorizations other than the aforementioned to the extent that said limitations or regulations are more restrictive than the Preserve Rules of the Trustees;

(e) Perform restoration and mitigation activities within the Preserve;

(f) Exclude areas from the Preserve which are necessary for Authority projects in accordance with the Authority's adopted master plan.

3. Whenever Trustees plan to undertake any new major construction or submerged lands use within the Leased Premises, Trustees shall seek the Authority's approval by delivering written notice of such plan or activity to the Authority by certified mail not less than ninety (90) days prior to the date that Trustees intend to undertake the activity in question. The notice shall describe the nature, scope, design, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit the Authority to make an informed judgment as to its consistency with the terms of this Lease. If Authority's objections or requests for additional information are not communicated in writing to Trustees within such 90 day period, then any such objection is deemed waived and Authority's approval deemed granted.

4. The Trustees shall have the authority to terminate this Lease upon 30 days written notice to the Authority if the Trustees determine in its sole discretion that the termination would be in the best interest of the aquatic preserve system.

5. In case of a material default by the Trustees, under the terms of this Lease, the Authority may proceed as follows:

(a) The Authority shall submit to the Trustees a written notice, setting forth specific acts of default or unsatisfactory performance and the measures necessary, and a reasonable period within which the Trustees shall correct same, which period shall not be less than ninety (90)

199418V3

Areas, or any other state agency whose mission is the management of public lands; provided, however, that the Trustees shall give not less than sixty (60) days' prior written notice thereof to the Authority setting forth the name and address of the proposed subtenant and the term, subtenant premises and other particulars of the sublease. In such event, the subtenant shall execute an assumption agreement, in a form and substance acceptable to the Authority, agreeing to be bound by and be liable for the performance of all provisions of this Lease to be performed by the Trustees from and after the effective date of such or sublease.

9. All notices required to be given to the Authority and Trustees hereunder shall be sent by (a) registered or certified mail, whereupon notice shall be deemed to have been given on the third day after deposit for mailing; or (b) delivery (i.e., courier or other hand delivery), overnight delivery, whereupon notice shall be deemed to have been given on the day of delivery. If the day of notice is Saturday, Sunday, or legal holiday, notice shall be deemed to have been given on the first calendar day thereafter which is not a Saturday, Sunday, or legal holiday.

All notices required to be given to the Authority and all payments due hereunder, if any, shall be made to the Authority at:

Port Tampa Bay
1101 Channelside Drive
Tampa, Florida 33602
Attention: Vice President of Real Estate

or to such other address as the Authority may direct from time to time by written notice forwarded to the Trustees as provided above.

All notices required to be given to the Trustees hereunder shall be sent to the Trustees at:

Board of Trustees of the Internal Improvement
Trust Fund of the State of Florida
State of Florida Department of
Environmental Protection
Division of State Lands
Bureau of Public Land Administration, MS 130
3800 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

or to such other address as the Trustees may direct from time to time by written notice forwarded to the Authority as provided above.

199418V3

10. General Provisions:

(a) Radon Gas. Radon is a naturally occurring radioactive gas that, when it has accumulated in a building in sufficient quantities, may present health risks to people who are exposed to it over time. Levels of radon that exceed Federal and State guidelines have been found in buildings in Florida. Additional information regarding radon and radon testing may be obtained from your County Public Health Unit. Each party hereto disclaims any liability for any health risks incurred by the other, its employees, and/or its invitees as a result of, or claimed to be a result of radon at the Leased Premises.

(b) Conditions and Covenants. All of the provisions of this Lease shall be deemed covenants running with the land, and construed to be “conditions” as well as “covenants” as though the words specifically expressing or imparting covenants and conditions were used in each separate provision.

(c) Time of Essence. Time is of the essence of this Lease and of each provision.

(d) Headings and Captions. Headings and captions used herein are for convenience only and are not to be deemed part of this Lease and shall not be held to limit the substantive terms and provisions of this Lease.

(e) Computation of Time. Subject to the provisions below regarding the effective date of notices, demands and requests, the time in which any act provided by this Lease is to be done is computed by excluding the first day and including the last, unless the last day is Saturday, Sunday or a legal holiday, and then it is also extended to the next business day.

(f) Unavoidable Delay-Force Majeure. If either party shall be delayed or prevented from the performance of any act required by this Lease (other than payment of Rent, Additional Rent, and other sums due) by reason of acts of God, strikes, lockouts, labor troubles, restrictive governmental laws, or regulations or other cause, without fault and beyond the reasonable control of the party obligated (financial inability excepted), performance of such act shall be excused for the period of the delay; and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay.

(g) Partial Invalidity. If any term, covenant, condition, or provision of this Lease is held by a court of competent jurisdiction to be invalid, void or unenforceable, the

remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

(h) Relationship of Parties. Nothing contained in this Lease shall be deemed or construed by the parties or by any third person to create the relationship of principal and agent or of partnership or of joint venture or of any association between the Authority and the Trustees, other than the relationship of landlord and tenant.

(i) Interpretation and Definitions. The language in all parts of this Lease shall in all cases be simply construed according to its fair meaning and not strictly for or against the Authority or the Trustees. The words "herein," "hereof," "hereunder," and other similar compounds of the word "here," when used in this Lease shall refer to the entire Lease and not to any particular provision or section.

(j) Parties. The neuter gender includes the feminine and masculine, and the singular number includes the plural, and the word "person" includes a corporation, partnership, firm or association wherever the context so requires.

(k) Modifications. This Lease is not subject to modification except in writing signed by the Authority and the Trustees.

(l) Approval. The obligations of the Authority under this Lease are subject to and contingent upon (a) approval of the terms of this Lease by the Tampa Port Authority Board of Commissioners as evidenced by a resolution adopted at a duly called meeting of the Board and (b) the Authority giving twenty (20) days' notice of a public hearing in a newspaper of general circulation published in Hillsborough County, Florida, and holding a public hearing on the Lease terms.

(m) Binding Effect. This Lease shall bind and inure to the benefit of the Authority and the Trustees, and any such successors or assigns of the Authority and the Trustees (including, as to the Authority, such third parties) as may succeed by law to the rights, powers and duties of the Authority, or become in any manner vested with the administration of affairs of the Authority.

(n) Governing Law and Jurisdiction. This Lease shall be construed according to the laws of the State of Florida. Venue for all disputes hereunder lies exclusively in the federal and state courts with jurisdiction in Hillsborough County, Florida, and the Trustees hereby

199418V3

expressly waives any right it has to object to the venue of any action commenced in any courts in Hillsborough County, Florida.

(o) Consent. The parties intend that whenever the Authority's consent or approval is expressly or impliedly required by any provisions of this Lease, the consent or approval may be granted or withheld arbitrarily in the Authority's sole discretion unless otherwise specifically stated in such provision. Notwithstanding anything to the contrary contained in this Lease, if any provision of this Lease expressly or impliedly obligates the Authority not to unreasonably withhold its consent or approval, an action for declaratory judgment or specific performance will be the Trustees' sole right and remedy in any dispute as to whether the Authority has breached such obligation.

(p) Discrimination Prohibited. The Trustees shall not, because of the race, color, sex, religious creed, or national origin of any individual, refuse to hire or employ such individual, bar or discharge from employment such individual, or otherwise discriminate against such individual, with respect to compensation, tenure, terms, conditions, or privileges of employment. No person, on the ground of race, color, sex, religious creed, or national origin, shall be excluded from participation in or denied the benefits of, or otherwise be subjected to discrimination in, the use of the Leased Premises. In addition, no person shall be excluded from participation in, or denied the benefits of, furnishing services or materials or constructing improvements to the Leased Premises, or otherwise be subjected to discrimination in such endeavors.

(q) Complete Agreement. This Lease and other documents referenced herein, contain the complete agreement of the parties with reference to the leasing of the Leased Premises. No waiver of any breach of covenants herein shall be construed as a waiver of the covenant itself or any subsequent breach thereof.

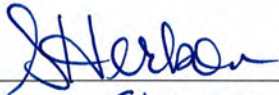
[SIGNATURES FOLLOW ON THE NEXT PAGE]


IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the date and year indicated below.

Executed by the Tampa Port Authority this 21st day of June, 2016.

WITNESSES:

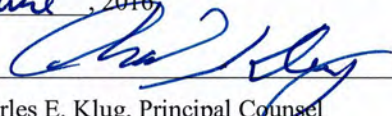
TAMPA PORT AUTHORITY


Printed Name: Shannon Herbon


A. Paul Anderson
CEO and Port President


Printed Name: LANE RAMSFIELD

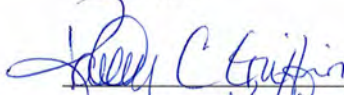
Approved as to Form and Content this 21st day of
June, 2016



Charles E. Klug, Principal Counsel

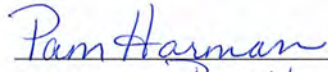
Executed this 19th day of May, 2016, by the Director of the Division of State Lands of the State of Florida Department of Environmental Protection, on behalf of and by delegation of the Trustees of the Internal Improvement Trust Fund of the State of Florida.

BOARD OF TRUSTEES OF THE INTERNAL
IMPROVEMENT TRUST FUND OF THE STATE
OF FLORIDA

WITNESSES:


Printed Name: Kathy C Griffin


David Clark, Division Director,
Division of State Lands, Florida Department of
Environmental Protection, as agent for and on
behalf of the Board of Trustees of the Internal
Improvement Trust Fund of the State of Florida


Printed Name: Pam Harman

Approved as to Form and Content this 19th day of
May, 2016.


DEP Attorney, Office of General Counsel

199418V3

11

PTB
TIITF 

EXHIBIT A

Legal Description
COCKROACH BAY AQUATIC PRESERVE LEASE AREA

Begin at the northeast corner of Section 1, Township 33 South, Range 17 East, Manatee County, thence west along the north line of said Section 1 to its intersection with the mean high-water line of Tampa Bay, said point being the point of beginning; from said point of beginning continue west 2,000 feet into the waters of Tampa Bay, thence northeasterly along a line 2,000 feet westerly of the mean high-water line of Tampa Bay, said line also being 2,000 feet westerly of the mean high-water line on Beacon Key, Snake Key, Camp Key, Big Pass Key, Little Cockroach Island, and Sand Key, to a point due west from the southwesterly point of Bird Key, thence east to the most southwesterly point of Bird Key, thence southeasterly, southerly, and easterly along the southerly edge of a channel along the northerly side of Tropical Island to the easterly point of Tropical Island, thence in an easterly direction to the westerly point of Negro Island, thence in an easterly direction along the southerly edge of a channel along the northerly side of Negro Island and Chicken Island, to a point due south of the southeast corner of Collura Subdivision as shown in Plat Book 34, page 2 of the Public Records of Hillsborough County, Florida, said corner being located along the east boundary of government lot 2, thence due north to the northerly shore of the Little Manatee River, thence easterly and southeasterly along the mean high-water line of the northerly shore of the Little Manatee River, including all of the channels, tributaries, bayous, and sloughs of the river, with the exception of Ruskin Inlet, to the intersection of the Little Manatee River and U.S. 301, thence westerly and northwesterly along the mean high-water line of the southerly shore of the Little Manatee River, including all of the channels, tributaries, bayous, and sloughs of the river, to the mouth of the Little Manatee River, thence in a westerly and southwesterly direction along the mean high-water line of Tampa Bay, Little Cockroach Bay, and Cockroach Bay to the point of beginning. Less any islands, submerged lands, or uplands not owned by the Tampa Port Authority or the State of Florida.

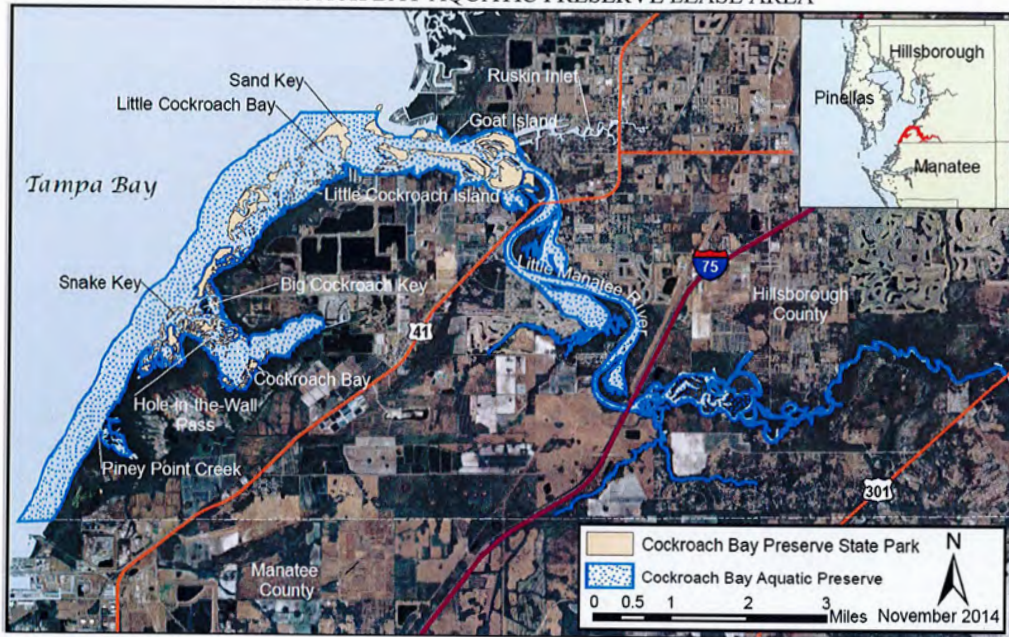
199418V3

12

PTB
THTF 

EXHIBIT B

Sketch of
COCKROACH BAY AQUATIC PRESERVE LEASE AREA



199418V3

PTB
THTF

days from the Trustees' receipt of the written notice; provided, however, that such period may be extended by the Authority, in its reasonable discretion which will not be unreasonably withheld, conditioned or delayed, if (i) the default is of a nature that it cannot reasonably be cured within such period, (ii) the Trustees diligently and continuously works to cure the default, and (iii) reasonable progress is being made to cure the default.

(b) Should the Trustees neglect to remedy the default or unsatisfactory performance within such designated period after receipt of written notice of such default from the Authority and an opportunity to cure pursuant to subparagraph (a), above, then the parties agree that prior to pursuing its available remedies, they will meet at the senior management level in an attempt to resolve the default or unsatisfactory performance. If such informal efforts are unsuccessful, then the Authority may bring an action for declaratory judgment or specific performance, which shall be the Authority's sole right and remedy in any dispute as to whether the Trustees have defaulted on this lease.

6. Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents thereof. Nothing herein shall be construed as an indemnity or a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, *Florida Statutes*, as amended from time to time, or any other law providing limitations on claims.

7. In the event Trustees utilize a non-governmental contractor or subcontractor for work performed within the Leased Premises, each and every non-governmental contractor or subcontractor shall identify the Authority as an additional insured on all insurance policies required by the Trustees and the Authority, and shall indemnify, defend, pay on behalf, and hold the Authority harmless for all injuries and damages arising in connection with the non-governmental contractor's or subcontractor's negligent acts or omissions. Provided, however, this paragraph shall not in any way be construed as an indemnity from Trustees or in any way enlarge Trustees' liability provided for under Section 768.28, *Florida Statutes*, as amended from time to time, or any other law providing limitations on claims, and this paragraph shall not be construed as creating a right for a claim for damages by Authority against Trustees for a violation of this paragraph.

8. Trustees shall have the right to sublease all or any portion of the Leased Premises to the Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed

199418V3

Resource Data

B.1 / Glossary of Terms

- aboriginal** - the original biota of a geographical region. (Lincoln, Boxshall & Clark, 2003)
- anaerobic** - growing or occurring in the absence of molecular oxygen. (Lincoln et al., 2003)
- 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 [FWS], 2015)
- endemic** - native to, and restricted to, a particular geographical region. (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)
- geodatabase** – a collection of spatial datasets placed in a database management system for the purpose of consistency and convenience in storing, accessing and working with the data. A geodatabase accommodates spatial data from a variety of sources and formats, as well as metadata describing the origin and nature of the spatial data.
- 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)
- hydric** - pertaining to water; wet. (Lincoln et al., 2003)
- infauna** - the animal life within a sediment; epifauna. (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. (FWS, 2015)
- mandate** - an order or command; the will of constituents expressed to their representative, legislature, etc. (Neufeldt & Sparks, 1990)
- mesic** - pertaining to conditions of moderate moisture or water supply; used of organisms occupying moist habitats. (Lincoln et al., 2003)
- midden** - a refuse heap; used especially in archaeology. (Lincoln et al., 2003)
- mosaic** - an organism comprising tissues of two or more genetic types; usually used with reference to plants. (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)
- QR code (quick response code)** – a type of 2D bar code that is used to provide easy access to information through a smartphone. (QR code, 2013)
- ruderal** - pertaining to or living amongst rubbish or debris, or inhabiting disturbed sites. (Lincoln et al., 2003) (FNAI describes ruderal as areas impacted by development measures such as roadways, drainage ditches, navigational channels or are considered hydrological alterations.)
- 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. "Imperiled species" is another general term for listed as well as unlisted species that are declining. (FWS, 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. (FWS, 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. (FWS, 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)

xeric - having very little moisture; tolerating or adapted to dry conditions. (Lincoln et al., 2003)

B.2 / References

- Allaby, M. (Ed.). (2005). *Oxford dictionary of ecology* (3rd ed.). Oxford, UK: Oxford University Press.
- Ash, T., & Runnels, R.J. (2005). Hard bottom habitats: An overview of mapping and monitoring needs on epibenthic communities in Tampa Bay, Florida. In S.F. Treat (Ed.), *Tampa Bay Area Scientific Symposium 4*. Tampa Bay Estuary Program.
- Baker, P., Baker, S. & Fajans, J. (2004). *Nonindigenous Marine Species in the Greater Tampa Bay Ecosystem*. Gainesville, FL: University of Florida, Department of Fisheries and Aquatic Sciences.
- Edwards, H.H., Pollock, K.H., Ackerman, B.B., Reynolds III, J. E., & Powell, J. (2007). Estimation of detection probability in manatee aerial surveys at a winter aggregation site *A. Journal of Wildlife Management*. 71, 6; pg. 2052.
- Florida Department of Natural Resources. (1987) *Cockroach Bay Aquatic Preserve Management Plan*. Bureau of Land and Aquatic Resource Management, Division of Recreation and Parks, Tallahassee, FL.
- Florida Fish and Wildlife Conservation Commission. (2006). *Sea Turtles: Nomads of the Deep*. Florida Fish and Wildlife Conservation Commission: Tallahassee, FL. Retrieved August 12, 2015 from <http://myfwc.com/education/wildlife/sea-turtle/>.
- Florida Fish and Wildlife Conservation Commission. (2011). *Manatee Mortality Statistics [Data Set]*. Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, Tallahassee, FL.
- Florida Fish and Wildlife Conservation Commission. (2014). *2014-2015 Programs of the FWC*. Retrieved August 19, 2015 from http://www.myfwc.com/media/2919387/ProgramsOfTheFWC_2014_2015.pdf
- Florida Natural Areas Inventory. (2010). *Guide to the natural communities of Florida: 2010 edition*. Florida Natural Areas Inventory, Tallahassee, FL.
- LaPlante, S. (1999). *Wood stork*. Hernando Chapter of the Florida Native Plant Society. Retrieved August 12, 2015 from <https://sites.google.com/site/hernandochapter/>.
- Lincoln, R.J., Boxshall, G.A., & Clark, P.F. (2003). *A dictionary of ecology, evolution and systematics*. New York: Cambridge University Press.
- McClure, B. (2010, May 21). The Tampa Bay area has been lucky. *Tampa Bay Times*. Retrieved on August 19, 2015 from <http://www.tampabay.com/news/weather/hurricanes/the-tampa-bay-area-has-been-lucky/1096585>
- Neufeldt, V., & Sparks, A.N. (1990). *Webster's new world dictionary* (3rd Ed.). Cleveland, OH: Webster's New World Dictionaries.
- Pittman, C. & Gilmer, B. (2001, September 15). Gabrielle pelts rain, belts utility lines. *Tampa Bay Times*. Retrieved on August 19, 2015 from http://www.sptimes.com/News/091501/Weather/Gabrielle_pelts_rain_.shtml

- QR code. (2013). In *WhatIs.com*. Retrieved on August 18, 2015 from <http://whatis.techtarget.com/definition/QR-code-quick-response-code>
- Rabbe, E.A., Roy, L.C. & McIvor, C.C. (2012). Tampa Bay coastal wetlands: nineteenth to twentieth century tidal marsh-to-mangrove conversion. *Estuaries and Coasts*. 35: 1145-1162.
- Ruskin Historical Society. (2005). *A Brief History of Ruskin, Florida* (2nd Ed.). Ruskin, FL: Ruskin Community Development Foundation, Inc.
- Scott, T.M. (1988). The lithostratigraphy of the Hawthorn Group (Miocene) of Florida. *Bulletin 59 of the Florida Geological Survey*. 148 pp.
- U.S. Census Bureau. (December 4, 2014). Quickfacts: Hillsborough County, Florida. Retrieved January 30, 2015 from <http://quickfacts.census.gov/qfd/states/12/12057.html>.
- U.S. Environmental Protection Agency. (2007). National Estuary Program Coastal Condition Report (Chapter 5: Gulf of Mexico National Estuary Program Coastal Condition, Tampa Bay Estuary Program) Retrieved February 2015 from http://water.epa.gov/type/oceb/nep/upload/2007_05_09_oceans_nepccr_pdf_nepccr_nepccr_gom_partd.pdf.
- U.S. Fish and Wildlife Service. (2011). Manatee Rescue, Rehabilitation, and Release Program: 2011 Annual report for calendar year 2010. U.S. Fish and Wildlife Service, Manatee Rescue, Rehabilitation, and Release Program, Jacksonville, FL.
- U.S. Fish and Wildlife Service. (2015). Endangered species glossary. U.S. Fish and Wildlife Service, Endangered Species Program. Retrieved May 26, 2015 from <http://www.fws.gov/endangered/about/glossary.html>.
- World Media Group, LLC. (n.d.). Ruskin, FL Weather. Retrieved August 19, 2015, from <http://www.usa.com/ruskin-fl-weather.htm>.
- Zwick, P.D., & Carr, M.H. (2006). Florida 2060: A population distribution scenario for the State of Florida. Gainesville, FL: University of Florida.

B.3 / Species Lists

B.3.1 / Native Species

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
Kingdom Plantae (plants)		
Division Coniferophyta		
red cedar	<i>Juniperus virginiana</i>	
slash pine	<i>Pinus elliotii</i>	
Division Magnoliophyta		
Class Liliopsida		
fragrant flatsedge	<i>Cyperus odoratus</i>	
fourangle flatsedge	<i>Cyperus tetragonus</i>	
hemlock witchgrass	<i>Dichantherium portoricense</i>	
butterfly orchid	<i>Encyclia tampensis</i>	CE
shoal grass	<i>Halodule wrightii</i>	
widgeon grass	<i>Ruppia maritima</i>	
greenbrier	<i>Smilax auriculata</i>	
greenbrier	<i>Smilax bona-nox</i>	
smooth cordgrass	<i>Spartina alterniflora</i>	
saltmeadow cordgrass	<i>Spartina patens</i>	
manatee grass	<i>Syringodium filiforme</i>	
turtle grass	<i>Thalassia testudinum</i>	
air plant	<i>Tillandsia sp.</i>	
Spanish bayonet	<i>Yucca aloifolia</i>	
Class Magnoliopsida		
black mangrove	<i>Avicennia germinans</i>	
saltwater false willow	<i>Baccharis angustifolia</i>	
saltbush	<i>Baccharis halimifolia</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
saltwort	<i>Batis maritima</i>	
sea-marigold	<i>Borrichia frutescens</i>	
gumbo limbo	<i>Bursera simaruba</i>	
grey nicker	<i>Caesalpinia bonduc</i>	
American beautyberry	<i>Callicarpa americana</i>	
bay bean	<i>Canavalia rosea</i>	
pineland butterfly pea	<i>Centrosema arenicola</i>	
partridge pea	<i>Chamaecrista fasciculata</i>	
Mexican tea	<i>Chenopodium ambrosioides</i>	
milkberry	<i>Chiococca alba</i>	
seagrape	<i>Coccoloba uvifera</i>	
buttonwood	<i>Conocarpus erectus</i>	
Brazilian red propolis	<i>Dalbergia ecastaphyllum</i>	
hopbush	<i>Dodonea viscosa</i>	
white stopper	<i>Eugenia axillaris</i>	
Florida strangler fig	<i>Ficus aurea</i>	
Florida privet	<i>Forestiera segregata</i>	
milkpea	<i>Galactia elliottii</i>	
downy milkpea	<i>Galactia regularis</i>	
firebush	<i>Hamelia patens</i>	
Florida scrub frostweed	<i>Helianthemum nashii</i>	
scorpion's tail	<i>Heliotropium angiospermum</i>	
camphorweed	<i>Heterotheca subaxillaris</i>	
moonflower	<i>Ipomoea alba</i>	
bayhops	<i>Ipomoea pes-caprae</i>	
bigleaf marsh-elder	<i>Iva frutescens</i>	
black needlerush	<i>Juncus roemerianus</i>	
white mangrove	<i>Laguncularia racemosa</i>	
lantana	<i>Lantana camara</i>	
sky-blue lupine	<i>Lupinus diffusus</i>	
Walter-Carolina desert-thorn	<i>Lycium carolinianum</i>	
balsampear	<i>Momordica charantia</i>	
mangroveberry	<i>Mosiera longipes</i>	
paddle cactus	<i>Opuntia</i> sp.	
Virginia creeper	<i>Parthenocissus quinquefolia</i>	
corky-stemmed passion flower	<i>Passiflora suberosa</i>	
swampbay	<i>Persea borbonia</i>	
American nightshade	<i>Phytolacca americana</i>	
sand live oak	<i>Quercus geminata</i>	
laurel oak	<i>Quercus hemisphaerica</i>	
myrtle oak	<i>Quercus myrtifolia</i>	
live oak	<i>Quercus virginiana</i>	
white indigo berry	<i>Randia aculeata</i>	
mysine	<i>Rapanea punctata</i>	
red mangrove	<i>Rhizophora mangle</i>	
dwarf sumac	<i>Rhus copallinum</i>	
sabal palm	<i>Sabal palmetto</i>	
saw palmetto	<i>Serenoa repens</i>	
sea purslane	<i>Sesuvium portulacastrum</i>	
saffron plum	<i>Sideroxylon celastrinum</i>	
seaside goldenrod	<i>Solidago sempervirens</i>	
necklacepod	<i>Sophora tomentosa</i>	
annual seepweed	<i>Suaeda linearis</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
sea hibiscus	<i>Talipariti tiliaceum</i>	
poison ivy	<i>Toxicodendron radicans</i>	
sparkleberry	<i>Vaccinium arboreum</i>	
muscadine grape	<i>Vitis rotundifolia</i>	
tallow wood	<i>Ximenia americana</i>	
wild lime	<i>Zanthoxylum fagara</i>	
Division Polypodiophia		
hard fern	<i>Blechnum serrulatum</i>	
braken	<i>Pteridium aquilinum</i>	
leatherleaf fern	<i>Rumohra adiantiformis</i>	
Kingdom Protista		
Phylum Chlorophyta (green algae)		
algae	<i>Caulerpa prolifera</i>	
sea lettuce	<i>Ulva fasciata</i>	
sea lettuce	<i>Ulva lactuca</i>	
Phylum Ochrophyta (golden-brown algae)		
algae	<i>Padina</i> sp.	
Phylum Rhodophyta (red algae)		
algae	<i>Acanthophora spicifera</i>	
Kingdom Animalia		
Invertebrates		
Phylum Cnidaria		
anthozoan	<i>Actinaria</i> sp. B of EPC	
anthozoan	<i>Anthozoa</i> sp. A of EPC	
hydrozoans	<i>Campanulariidae</i> sp. A of EPC	
snail fur	<i>Hydractinia</i> cf. <i>americana</i>	
hydrozoans	<i>Lovenella gracilis</i>	
anthozoan	<i>Thenaria</i> sp. A of EPC	
anthozoan	<i>Thenaria</i> sp. C of EPC	
anthozoan	<i>Thenaria</i> sp. E of EPC	
anthozoan	<i>Thenaria</i> sp. G of EPC	
Phylum Platyhelminthes (flatworms)		
flat worm	<i>Anthopleura</i> sp.	
flat worm	<i>Euplana gracilis</i>	
flat worm	<i>Latocestus whartoni</i>	
flat worm	<i>Stylochidae</i> sp. A of EPC	
flat worm	<i>Stylochus ellipticus</i>	
Phylum Annelida (segmented worms)		
Class Hirudinea		
leech	<i>Erpobdella punctata</i>	
Class Oligochaeta		
oligochaete worm	<i>Aulodrilus pigueti</i>	
oligochaete worm	<i>Bratislavia unidentata</i>	
oligochaete worm	<i>Dero (Aulophorus) flabelliger</i>	
oligochaete worm	<i>Dero (Aulophorus) vaga</i>	

Common Name	Scientific Name	Status
-------------	-----------------	--------

Legend: **FT** = Federally- and State-Designated Threatened • **FE** = Federally-and State-Designated Endangered
ST = State-Designated Threatened • **SE** = State-Designated Endangered • **(S/A)** = listed due to similarity of appearance • **CE** = commercially exploited

oligochaete worm	<i>Dero (Dero) obtusa</i>	
oligochaete worm	<i>Grania cf. monochaeta</i>	
oligochaete worm	<i>Grania monospermatheca</i>	
oligochaete worm	<i>Heterodrilus bulbiporus</i>	
oligochaete worm	<i>Heterodrilus pentcheffi</i>	
oligochaete worm	<i>Inanidrilus sp.</i>	
oligochaete worm	<i>Limnodriloides anxius</i>	
oligochaete worm	<i>Limnodriloides baculatus</i>	
oligochaete worm	<i>Limnodriloides hastatus</i>	
oligochaete worm	<i>Limnodrilus hoffmeisteri</i>	
oligochaete worm	<i>Nais communis sp. complex</i>	
oligochaete worm	<i>Nais simplex</i>	
oligochaete worm	<i>Nais variabilis</i>	
oligochaete worm	<i>Pectinodrilus molestus</i>	
oligochaete worm	PHALLODRILINAE	
oligochaete worm	<i>Pristinella cf. osborni</i>	
oligochaete worm	<i>Pristinella jenkiniae</i>	
oligochaete worm	<i>Stephensonia cf. trivandran</i>	
oligochaete worm	<i>Tectidrilus squalidus</i>	
oligochaete worm	<i>Thalassodrilides gurwitschi</i>	
oligochaete worm	<i>Thalassodrilides ineri</i>	
oligochaete worm	<i>Tubificoides brownae</i>	
oligochaete worm	<i>Tubificoides motei</i>	
oligochaete worm	<i>Tubificoides wasselli</i>	

Class Polychaeta

polychaete worm	<i>Aglaophamus verrilli</i>	
polychaete worm	<i>Alitta succinea</i>	
polychaete worm	<i>Aonides mayaguezensis</i>	
polychaete worm	<i>Aphelochaeta sp.</i>	
polychaete worm	<i>Apoprionospio pygmaea</i>	
polychaete worm	<i>Arabella multidentata</i>	
polychaete worm	<i>Aricidea (Acmira) taylori</i>	
polychaete worm	<i>Aricidea cerrutii</i>	
polychaete worm	<i>Aricidea fragilis</i>	
polychaete worm	<i>Aricidea philbinae</i>	
polychaete worm	<i>Aricidea suecica</i>	
polychaete worm	<i>Armandia agilis</i>	
polychaete worm	<i>Armandia maculata</i>	
polychaete worm	<i>Bhawania heteroseta</i>	
polychaete worm	<i>Bispira melanostigma</i>	
polychaete worm	<i>Boccardiella cf. ligerica</i>	
polychaete worm	<i>Branchiomma sp.</i>	
polychaete worm	<i>Brania nitidula</i>	
polychaete worm	<i>Brania rugulosa</i>	
polychaete worm	<i>Brania wellfleetensis</i>	
polychaete worm	<i>Cabira incerta</i>	
polychaete worm	<i>Capitella capitata complex</i>	
polychaete worm	<i>Capitella jonesi</i>	
polychaete worm	<i>Capitomastus aciculatus</i>	
polychaete worm	<i>Carazziella hobsonae</i>	
polychaete worm	<i>Caulleriella cf. alata</i>	
polychaete worm	<i>Caulleriella sp. B of Wolf, 1984</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
polychaete worm	<i>Caulleriella sp. D of EPC</i>	
polychaete worm	<i>Caulleriella zetlandica</i>	
polychaete worm	<i>Chaetozone sp. A of Wolf, 1984</i>	
polychaete worm	<i>Chone cf. americana</i>	
polychaete worm	<i>CIRRATULIDAE sp. A of EPC</i>	
polychaete worm	<i>Cirratulus grandis</i>	
polychaete worm	<i>Cirriformia sp. 1 of EPC</i>	
polychaete worm	<i>Cirriformia sp. B of Wolf, 1984</i>	
polychaete worm	<i>Cirriformia sp. C of Wolf, 1984</i>	
polychaete worm	<i>Cirrophorus sp.</i>	
polychaete worm	<i>Clymenella mucosa</i>	
polychaete worm	<i>Dasybranchus lumbricoides</i>	
polychaete worm	<i>Dentatisyllis carolinae</i>	
polychaete worm	<i>Diopatra cuprea</i>	
polychaete worm	<i>Dipolydora socialis</i>	
polychaete worm	<i>Drilonereis longa</i>	
polychaete worm	<i>Exogone (Exogone) breviantennata</i>	
polychaete worm	<i>Exogone (Exogone) dispar</i>	
polychaete worm	<i>Exogone (Exogone) lourei</i>	
polychaete worm	<i>Exogone arenosa</i>	
polychaete worm	<i>Fabricioloa trilobata</i>	
polychaete worm	<i>Glycera americana</i>	
polychaete worm	<i>Glycinde solitaria</i>	
polychaete worm	<i>Eteone heteropoda</i>	
polychaete worm	<i>Eteone lactea</i>	
polychaete worm	<i>Eunice sp.</i>	
polychaete worm	<i>Goniadides carolinae</i>	
scale worm	<i>Grubeulepis sp.</i>	
polychaete worm	<i>Gyptis crypta</i>	
polychaete worm	<i>Hemipodus roseus</i>	
polychaete worm	<i>Heteromastus filiformis</i>	
polychaete worm	<i>Hobsonia florida</i>	
polychaete worm	<i>Isolda pulchella</i>	
polychaete worm	<i>Janua (Dexiospira) cf. corrugata</i>	
polychaete worm	<i>Janua steueri</i>	
polychaete worm	<i>Kinbergonuphis simoni</i>	
polychaete worm	<i>Labrostratus sp.</i>	
polychaete worm	<i>Laeonereis culveri</i>	
polychaete worm	<i>Laonice cirrata</i>	
polychaete worm	<i>Leitoscoloplos foliosus</i>	
polychaete worm	<i>Leitoscoloplos fragilis</i>	
polychaete worm	<i>Leitoscoloplos robustus</i>	
polychaete worm	<i>Litocorsa antennata</i>	
polychaete worm	<i>Loimia medusa</i>	
polychaete worm	<i>Lumbrineris nonatoi</i>	
polychaete worm	<i>Lysidice ninetta</i>	
polychaete worm	<i>Lysilla cf. alba</i>	
polychaete worm	<i>Magelona pettiboneae</i>	
polychaete worm	<i>Magelona riojai</i>	
polychaete worm	<i>Magelona sp. H of Uebelacker & Jones, 1984</i>	
polychaete worm	<i>Magelona sp. I of Uebelacker & Jones, 1984</i>	
scale worm	<i>Malmgreniella maccroryae</i>	
scale worm	<i>Malmgreniella taylori</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
polychaete worm	<i>Marphysa cf. sanguinea</i>	
polychaete worm	<i>Marphysa nr. belli</i>	
polychaete worm	<i>Mediomastus ambiseta</i>	
polychaete worm	<i>Mediomastus californiensis</i>	
polychaete worm	<i>Megalomma pigmentum</i>	
polychaete worm	<i>Melinna maculata</i>	
polychaete worm	<i>Mesochaetopterus capensis</i>	
polychaete worm	<i>Microphthalmus sp. A of EPC</i>	
polychaete worm	<i>Monticellina cf. dorsobranchialis</i>	
polychaete worm	<i>Myrianida sp. [formerly Autolytus sp.]</i>	
polychaete worm	<i>Neanthes acuminata</i>	
polychaete worm	<i>Nematonereis hebes</i>	
polychaete worm	<i>Nephtys cryptomma</i>	
polychaete worm	<i>Nephtys incisa</i>	
polychaete worm	<i>Nephtys picta</i>	
polychaete worm	<i>Nereiphylla castanea</i>	
polychaete worm	<i>Nereiphylla fragilis</i>	
polychaete worm	<i>Nereis falsa</i>	
polychaete worm	<i>Nereis lamellosa</i>	
polychaete worm	<i>Notomastus americanus</i>	
polychaete worm	<i>Notomastus cf. tenuis</i>	
polychaete worm	<i>Notomastus hemipodus</i>	
polychaete worm	<i>Notomastus n. sp? of EPC</i>	
polychaete worm	<i>Odontosyllis enopla</i>	
polychaete worm	<i>Ophelina cf. acuminata</i>	
polychaete worm	<i>Ophelina cylindricaudata</i>	
polychaete worm	<i>Opisthosyllis longidentata</i>	
polychaete worm	<i>Orbinia riseri</i>	
polychaete worm	<i>Owenia fusiformis</i>	
polychaete worm	<i>Oxydromus obscurus</i>	
polychaete worm	<i>Paradoneis cf. lyra</i>	
polychaete worm	<i>Parahesion luteola</i>	
polychaete worm	<i>Paramphinome sp. B of Gathof, 1984</i>	
polychaete worm	<i>Paranaitis gardineri</i>	
polychaete worm	<i>Paraonis fulgens</i>	
polychaete worm	<i>Parapionosyllis longicirrata</i>	
polychaete worm	<i>Parapionosyllis uebelackerae</i>	
polychaete worm	<i>Paraprionospio pinnata</i>	
polychaete worm	<i>Parasabella microphthalma</i>	
ice cream cone worm	<i>Pectinaria gouldii</i>	
polychaete worm	<i>Phyllodoce arenae</i>	
polychaete worm	<i>Phyllodoce mucosa</i>	
polychaete worm	<i>Phyllodoce sp.</i>	
polychaete worm	<i>Pilargis pacifica</i>	
polychaete worm	<i>Podarkeopsis levifuscina</i>	
polychaete worm	<i>Poecilochaetus johnsoni</i>	
polychaete worm	<i>Polycirrus cf. haematodes</i>	
polychaete worm	<i>Polycirrus plumosus</i>	
polychaete worm	<i>Polycirrus sp. D of EPC</i>	
polychaete worm	<i>Polydora cornuta</i>	
polychaete worm	<i>Polydora sp. B of EPC</i>	
polychaete worm	<i>Polygordius sp.</i>	
polychaete worm	<i>Pomatoceros americanus</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
polychaete worm	<i>Prionospio (Minuspio) multibranchiata</i>	
polychaete worm	<i>Prionospio (Minuspio) perkinsi</i>	
polychaete worm	<i>Prionospio (Prionospio) steenstrupi</i>	
polychaete worm	<i>Prionospio cristata</i>	
polychaete worm	<i>Prionospio heterobranchia</i>	
polychaete worm	<i>Prionospio sp.</i>	
polychaete worm	<i>Sabaco elongata</i>	
polychaete worm	<i>Salvatoria cf. mediodentata</i>	
polychaete worm	<i>Salvatoria clavata</i>	
polychaete worm	<i>Schistomeringos cf. rudolphii</i>	
polychaete worm	<i>Scolelepis (Scolelepis) squamata</i>	
polychaete worm	<i>Scolelepis (Scolelepis) texana</i>	
polychaete worm	<i>Scolelepis sp.</i>	
polychaete worm	<i>Scoletoma ernesti</i>	
polychaete worm	<i>Scoletoma tenuis</i>	
polychaete worm	<i>Scoletoma verrilli</i>	
polychaete worm	<i>Scoloplos (Scoloplos) rubra</i>	
polychaete worm	<i>Scoloplos (Scoloplos) texana</i>	
polychaete worm	<i>Sigalion sp. A of Wolf, 1984</i>	
polychaete worm	<i>Sigalion sp. B of Wolf, 1984 as "Thalanessa sp. A of Wolf, 1984"</i>	
polychaete worm	<i>Sigambra bassi</i>	
polychaete worm	<i>Sigambra tentaculata</i>	
polychaete worm	<i>Sphaerosyllis aciculata</i>	
polychaete worm	<i>Sphaerosyllis glandulata</i>	
polychaete worm	<i>Sphaerosyllis labyrinthophila</i>	
polychaete worm	<i>Sphaerosyllis perkinsi</i>	
polychaete worm	<i>Sphaerosyllis piriferopsis</i>	
polychaete worm	<i>Sphaerosyllis taylori</i>	
polychaete worm	<i>Spio pettiboneae</i>	
polychaete worm	<i>Spiochaetopterus costarum</i>	
polychaete worm	<i>Spiophanes bombyx</i>	
polychaete worm	<i>Stenoninereis martini</i>	
polychaete worm	<i>Sthenelais sp. A of Wolf, 1984</i>	
polychaete worm	<i>Streblosoma hartmanae</i>	
polychaete worm	<i>Streblospio spp.</i>	
polychaete worm	<i>Streptosyllis websteri</i>	
polychaete worm	<i>Syllis alosae</i>	
polychaete worm	<i>Syllis armillaris</i>	
polychaete worm	<i>Syllis cf. alternata</i>	
polychaete worm	<i>Syllis corallicola</i>	
polychaete worm	<i>Syllis cornuta</i>	
polychaete worm	<i>Syllis gracilis</i>	
polychaete worm	<i>Syllis prolifera</i>	
polychaete worm	<i>Synelmis ewingi</i>	
polychaete worm	<i>Thalanessa sp.</i>	
polychaete worm	<i>Tharyx acutus</i>	
polychaete worm	<i>Travisia hobsonae</i>	
Phylum Sipuncula		
peanut worm	<i>Golfingia sp. A of EPC</i>	
peanut worm	<i>Phascolion cf. caupo</i>	
peanut worm	<i>Phascolion cryptum</i>	

Common Name	Scientific Name	Status
-------------	-----------------	--------

Legend: **FT** = Federally- and State-Designated Threatened • **FE** = Federally-and State-Designated Endangered
ST = State-Designated Threatened • **SE** = State-Designated Endangered • **(S/A)** = listed due to similarity of appearance • **CE** = commercially exploited

Phylum Mollusca

Class Aplacophora

aplacophoran *Solenogaster* spp.

Class Bivalvia (clams)

common Atlantic abra	<i>Abra aequalis</i>
Atlantic paper mussel	<i>Amygdalum papyrium</i>
transverse ark clam	<i>Anadara transversa</i>
tellin	<i>Angulus cf. sybariticus</i>
tellin	<i>Angulus cf. tampaensis</i>
tellin	<i>Angulus cf. versicolor</i>
tenella tellin	<i>Angulus tenellus</i>
Say's tellin	<i>Angulus texanus</i>
pointed venus	<i>Anomalocardia cuneimeris</i>
Hemphill's thracia	<i>Asthenothaerus hemphilli</i>
thracia	<i>Asthenothaerus sp. A of EPC</i>
thracia	<i>Asthenothaerus sp. B of EPC</i>
scorched mussel	<i>Brachidontes exustus</i>
Broad-ribbed carditid	<i>Carditamera floridana</i>
Caribbean corbula	<i>Caryocorbula caribaea</i>
contracted corbula	<i>Caryocorbula cf. contracta</i>
venus	<i>Chione elevata</i>
Asian clam	<i>Corbicula fluminea</i>
lunate crassinella	<i>Crassinella lunulata</i>
Atlantic oyster	<i>Crassostrea virginica</i>
striated crenella	<i>Crenella decussata</i>
cumingia	<i>Cumingia vanhyningi</i>
Florida marsh clam	<i>Cyrenoida floridana</i>
angel wing clam	<i>Cyrtopleura costata</i>
disk dosinia	<i>Dosinia discus</i>
jackknife clam	<i>Ensis minor</i>
Florida erycina	<i>Erycina floridana</i>
amethyst gem clam	<i>Gemma gemma</i>
radial purse oyster	<i>Isognomon radiatus</i>
Morton's egg cockle	<i>Laevicardium mortoni</i>
woven lucine	<i>Lucinisca nassula</i>
Florida lyonsia	<i>Lyonsia floridana</i>
cheating macoma	<i>Macoma cf. phenax</i>
constricted macoma	<i>Macoma constricta</i>
macoma	<i>Macoma sp. A of EPC</i>
elongate macoma	<i>Macoma tenta</i>
clam	<i>Marshallora nigrocincta</i>
Southern quahog	<i>Mercenaria campechiensis</i>
dwarf surf clam	<i>Mulinia lateralis</i>
lateral mussel	<i>Musculus lateralis</i>
Atlantic flat lepton	<i>Mysella planulata</i>
Conrad's false mussel	<i>Mytilopsis leucophaeata</i>
Atlantic nut clam	<i>Nucula proxima</i>
giant montacuta	<i>Oorbitella floridana</i>
brown gem clam	<i>Parastarte triquetra</i>
many-line lucine	<i>Parvilucina crenella</i>
unequal spoonclam	<i>Periploma margaritaceum</i>
clam	<i>Phlyctiderma semiaspera</i>

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
striate peaclam	<i>Pisidium punctiferum</i>	
three-toothed cardita	<i>Pleuromeris tridentata</i>	
Carolina marsh clam	<i>Polymesoda caroliniana</i>	
Florida marsh clam	<i>Polymesoda cf. floridana</i>	
flat cardita	<i>Pteromeris perplana</i>	
common rangia	<i>Rangia cuneata</i>	
consobrine tellin	<i>Scissula consobrina</i>	
cancellate semele	<i>Semele bellastrata</i>	
West Indian awning clam	<i>Solemya occidentalis</i>	
fragile sphenia	<i>Sphenia fragilis</i>	
purplish tagelus	<i>Tagelus divisus</i>	
stout tagelus	<i>Tagelus plebeius</i>	
Conrad's transennella	<i>Transennella conradina</i>	

Class Gastropoda

bubble snail	<i>Acteocina canaliculata</i>
bubble snail	<i>Acteocina nr. atriata</i>
dove snail	<i>Aesopus stearnsii</i>
sea slug	<i>Aplysia sp.</i>
lunar dovesnail	<i>Astyris lunata</i>
grass cerith	<i>Bittium varium</i>
impressed odostome	<i>Boonea impressa</i>
snail	<i>Boonea seminuda</i>
bubble snails	<i>Bulla striata</i>
pear whelk	<i>Busycotypus spiratus</i>
caecum	<i>Caecum cf. bipartitum</i>
Florida caecum	<i>Caecum floridanum</i>
caecum	<i>Caecum imbricatum</i>
beautiful little caecum	<i>Caecum pulchellum</i>
caecum	<i>Caecum strigosum</i>
slipper snail	<i>Calyptrea centralis</i>
snail	<i>Cerithiopsis fusiformis</i>
dwarf cerith	<i>Cerithium lutosum</i>
fly-speckled cerith	<i>Cerithium muscarum</i>
sea slug	<i>Chelidonura sp.</i>
greedy dove shell	<i>Costoanachis avara</i>
dove snail	<i>Costoanachis semiplicata</i>
slipper snails	<i>Crepidula depressa</i>
slipper snails	<i>Crepidula maculosa</i>
slipper snails	<i>Crepidula nr. ustulatulina</i>
slipper snails	<i>Crepidula ustulatulina</i>
trilix vitrinella	<i>Cyclostremiscus pentagonus</i>
margin snails	<i>Dentimargo aureocinctus</i>
sea slug	ELYSIIDAE
wentletrap	<i>Epitonium angulatum</i>
two-band eulima	<i>Eulima bifasciata</i>
eulima	<i>Eulima sp.</i>
needle odostome	<i>Eulimastoma engonium</i>
pyrams	<i>Eulimastoma sp.</i>
pyrams	<i>Fargoa cf. gibbosa</i>
blackwater ancyliid	<i>Ferrissia cf. hendersoni</i>
marginella	<i>Granulina hadria</i>
snail	<i>Graphis underwoodae</i>

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
bubble snails	<i>Haminoea antillarum</i>	
bubble snails	<i>Haminoea elegans</i>	
bubble snails	<i>Haminoea succinea</i>	
incised turbonilla	<i>Houbricka cf. incisa</i>	
pitted baby-bubble	<i>Japonactaeon punctostriatus</i>	
Blane's dwarf olive shell	<i>Jaspidella blanesi</i>	
brown-tipped mangelia	<i>Kurtziella atrostyla</i>	
punctate mangelia	<i>Kurtziella limonitella</i>	
periwinkle	<i>Littoridinops monroensis</i>	
periwinkle	<i>Littoridinops palustris</i>	
crenulated pyram	<i>Longchaeus suturalis</i>	
Floridian Vitrinella	<i>Macromphalina floridanus</i>	
little-horned caecum	<i>Meioceras nitidum</i>	
conoidal melanella	<i>Melanella conoidea</i>	
melanella	<i>Melanella sp. B of EPC</i>	
snail	<i>Melanooides tuberculatus</i>	
Florida crown conch	<i>Melongena corona</i>	
snail	<i>Microeulima hemphilli</i>	
bruised nassa	<i>Nassarius vibex</i>	
shark eye	<i>Neverita duplicata</i>	
snail	<i>Oceanidainglei</i>	
ovoid odostome	<i>Odostomia laevigata</i>	
odostome	<i>Odostomia sp. C of EPC</i>	
odostome	<i>Odostomia sp. D of EPC</i>	
odostome	<i>Odostomia sp. E of EPC</i>	
olive shell	<i>Oliva sayana</i>	
tiny dwarf olive	<i>Olivella pusilla</i>	
olive shell	<i>Olivella sp. B of EPC</i>	
fine-lined hydrobe	<i>Onobops jacksoni</i>	
pyrams	<i>Petitilla crosseana</i>	
snail	<i>Polygireulima sp. B of Lyons, 1989</i>	
margin snails	<i>Prunum apicinum</i>	
plicate mangelia	<i>Pyrgocythara plicosa</i>	
snail	<i>Pyrgophorus platyrachis</i>	
snail	<i>RISSOOIDEA sp. B of EPC</i>	
sayella	<i>Sayella hemphilli</i>	
Catesby's risso	<i>Schwartziella catesbyana</i>	
white baby ear	<i>Sinum perspectivum</i>	
snail	<i>Solariorbis infracarinata</i>	
moon snails	<i>Tectonatica pusilla</i>	
snail	<i>Teinostoma biscaynense</i>	
eastern auger	<i>Terebra dislocata</i>	
slender barrel bubble shell	<i>Tornatina inconspicua</i>	
smooth-rib hydrobe	<i>Tryonia aequicostata</i>	
turbonille	<i>Turbonilla (Pyrgiscus) sp. B of EPC</i>	
turbonille	<i>Turbonilla (Pyrgiscus) sp. D of EPC</i>	
turbonille	<i>Turbonilla (Strioturbonilla) sp.</i>	
turbonille	<i>Turbonilla cf. arnoldoi</i>	
turbonille	<i>Turbonilla cf. conradi</i>	
Dall's turbonille	<i>Turbonilla cf. dalli</i>	
Hemphill's turbonille	<i>Turbonilla hemphilli</i>	
interrupted turbonille	<i>Turbonilla interrupta</i>	
turbonille	<i>Turbonilla toyatani</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
Florida Vitrinella	<i>Vitrinella floridana</i>	
Phylum Nemertea		
ribbon worm	<i>Amphiporus cf. caecus</i>	
ribbon worm	<i>Carinoma cf. tremaphoros</i>	
ribbon worm	<i>Cerebratulus lacteus</i>	
ribbon worm	<i>Fragilonemertes rosea</i>	
ribbon worm	<i>Hoplonemertea sp. A of EPC</i>	
ribbon worm	<i>Palaeonemertea sp. A of EPC</i>	
ribbon worm	<i>Palaeonemertea sp. B of EPC</i>	
ribbon worm	<i>Paranemertes cf. biocellatus</i>	
ribbon worm	<i>Prostoma sp.</i>	
ribbon worm	<i>Ramphogordius sanguineus</i>	
ribbon worm	<i>Tetrastemma candidum</i>	
ribbon worm	<i>Tubulanus pellucidus</i>	
ribbon worm	<i>Tubulanus sp. A of EPC</i>	
ribbon worm	<i>Tubulanus sp. B of EPC</i>	
ribbon worm	<i>Zygeupolia cf. rubens</i>	
ribbon worm	<i>Zygonemertes virescens</i>	
Phylum Phoronida		
Horseshoe worm	<i>Phoronis sp.</i>	
Phylum Bryozoa		
moss animal	<i>Akatopora leucocypha</i>	
moss animal	<i>Alcyonidium cf. polypylum</i>	
moss animal	<i>Beania klugei</i>	
moss animal	<i>Biflustra denticulata</i>	
moss animal	<i>Conopeum cf. seurati</i>	
moss animal	<i>Discoporella depressa</i>	
moss animal	<i>Membranipora sp.</i>	
Class Brachiopoda		
brachiopod	<i>Glottidia pyramidata</i>	
Phylum Arthropoda		
Subphylum Chelicerata		
mite	<i>Acarina:Hydracarina</i>	
orb weaver	<i>Argiope sp.</i>	
sea spider	<i>Callipallene phantoma</i>	
crab spider	<i>Gastrocanthus cancriformis</i>	
marine mites	HALACARIDAE	
marine mites	HYDRACHNELLAE	
Subphylum Hexapoda		
chironomids	<i>Ablabesmyia (Ablabesmyia) sp.</i>	
chironomids	<i>Ablabesmyia rhamphe grp.</i>	
dragon fly	ANISOPTERA	
chironomids	<i>Asheum beckae</i>	
mayfly	<i>Caenis sp.</i>	
phantom midges	<i>Chaoborus sp.</i>	
chironomids	<i>Chironomini sp.</i>	
chironomids	<i>Chironomus sp.</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
chironomids	<i>Cladopelma</i> sp.	
chironomids	<i>Cladotanytarsus</i> cf. <i>daviesi</i>	
chironomids	<i>Cladotanytarsus daviesi</i>	
chironomids	<i>Cladotanytarsus</i> sp. A of Epler, 2001	
chironomids	<i>Cladotanytarsus</i> sp. F of Epler, 2001	
chironomids	<i>Coelotanypus scapularis</i>	
chironomids	<i>Cryptochironomus</i> sp.	
chironomids	<i>Cryptotendipes</i> sp.	
chironomids	<i>Dicrotendipes lobus</i>	
chironomids	<i>Dicrotendipes modestus</i>	
chironomids	<i>Dicrotendipes neomodestus</i>	
chironomids	<i>Djalmabatista pulchra</i> variant	
chironomids	<i>Einfeldia natchitochaeae</i>	
chironomids	<i>Einfeldia</i> sp. A of Epler, 2001	
riffle beetle	ELMIDAE	
slender springtails	ENTOMOBRYIDAE A562:B599	
mayfly	EPHEMEROPTERA	
chironomids	<i>Glyptotendipes paripes</i>	
chironomids	<i>Goeldichironomus</i> sp.	
micro caddisflies	HYDROPTILIDAE	
dragon fly	LIBELLULIDAE	
dragon fly	LIBELLULINAE	
chironomids	<i>Nilothauma</i> sp.	
long-horned caddisflies	<i>Oecetis</i> sp.	
chironomids	<i>Parachironomus directus</i>	
chironomids	<i>Paracladopelma</i> cf. <i>doris</i>	
chironomids	<i>Parakiefferiella</i> sp. F of Epler, 2001	
chironomids	<i>Polypedilum halterale</i> grp.	
chironomids	<i>Polypedilum scalaenum</i> group	
chironomids	<i>Polypedilum simulans</i>	
no-see-ums	<i>Probezzia</i> sp.	
chironomids	<i>Procladius</i> (<i>Holotanypus</i>) sp.	
chironomids	<i>Pseudochironomus</i> sp.	
chironomids	<i>Rheosmittia</i> cf. <i>arcuata</i>	
chironomids	<i>Rheotanytarsus</i> sp.	
chironomids	<i>Tanypus stellatus</i>	
chironomids	<i>Tanytarsus</i> sp. G of Epler, 2001	
chironomids	<i>Tanytarsus</i> sp. H of Epler, 2001	
chironomids	<i>Xestochironomus</i> sp.	
Subphylum Crustacea		
Class Maxillopoda		
Subclass Thecostraca		
barnacle	<i>Amphibalanus improvisus</i>	
Subclass Copepoda		
copepod	<i>Sinelobus stanfordi</i>	
Class Malacostraca		
Subclass Phyllocarida		
sea flea	<i>Nebalia</i> sp.	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
Class Eumalacostraca		
Superorder Peracarida		
Order Mysida		
mysid shrimp	<i>Americamysis almyra</i>	
mysid shrimp	<i>Americamysis bahia</i>	
mysid shrimp	<i>Americamysis stucki</i>	
mysid shrimp	<i>Chlamydopleon dissimile</i>	
mysid shrimp	<i>Gastrosaccinae</i>	
mysid shrimp	<i>Mysidopsis sp. B of Price,</i>	
mysid shrimp	<i>Taphromysis bowmani</i>	
Order Amphipoda		
amphipod	<i>Acanthohaustorius uncinus</i>	
amphipod	<i>Acuminodeutopus naglei</i>	
amphipod	<i>Americhelidium americanum</i>	
amphipod	<i>Americhelidium sp. A of LeCroy, 2000</i>	
amphipod	<i>Amerocolodes sp. A of LeCroy,2000</i>	
amphipod	<i>Ampelisca abdita</i>	
amphipod	<i>Ampelisca agassizi</i>	
amphipod	<i>Ampelisca bicarinata</i>	
amphipod	<i>Ampelisca holmesi</i>	
amphipod	<i>Ampelisca sp. A of LeCroy, 2002</i>	
amphipod	<i>Ampelisca sp. C of LeCroy, 2002</i>	
amphipod	<i>Ampelisca vadorum</i>	
amphipod	<i>Ampelisca verrilli</i>	
amphipod	<i>Ampithoe cf. longimana</i>	
amphipod	<i>Ampithoe cf. ramondi</i>	
amphipod	<i>Apocorophium lacustre</i>	
amphipod	<i>Apocorophium louisianum</i>	
amphipod	<i>Apolochus sp. A of LeCroy, 2002</i>	
amphipod	<i>Batea catharinensis</i>	
amphipod	<i>Bemlos brunneomaculatus</i>	
amphipod	<i>Cerapus benthophilus</i>	
amphipod	<i>Cerapus cudjoe</i>	
amphipod	<i>Cerapus sp. C of LeCroy, 2007</i>	
amphipod	<i>Cerapus sp. E of EPC</i>	
amphipod	<i>Dulichieilla appendiculata</i>	
amphipod	<i>Dulichieilla sp. A of LeCroy, 2000</i>	
amphipod	<i>Cymadusa compta</i>	
amphipod	<i>Elasmopus cf. rapax</i>	
amphipod	<i>Elasmopus levis</i>	
amphipod	<i>Eobrolgus spinosus</i>	
amphipod	<i>Erichthonius brasiliensis</i>	
amphipod	<i>Gammarus cf. tigrinus</i>	
amphipod	<i>Gammarus mucronatus</i>	
amphipod	<i>Globosolembos smithi</i>	
amphipod	<i>Grandidierella bonnieroides</i>	
amphipod	<i>Eudevenopus honduranus</i>	
amphipod	<i>Hourstonius laguna</i>	
amphipod	<i>Lembos unifasciatus</i>	
amphipod	<i>Hartmanodes nyei</i>	
amphipod	<i>Leucothoe spinicarpa</i>	
amphipod	<i>Listriella barnardi</i>	

Common Name	Scientific Name	Status
-------------	-----------------	--------

Legend: **FT** = Federally- and State-Designated Threatened • **FE** = Federally-and State-Designated Endangered
ST = State-Designated Threatened • **SE** = State-Designated Endangered • **(S/A)** = listed due to similarity of appearance • **CE** = commercially exploited

amphipod	<i>Lysianopsis alba</i>	
amphipod	<i>Melita elongata</i>	
amphipod	<i>Melita longisetosa</i>	
amphipod	<i>Metatiron tropakis</i>	
amphipod	<i>Metharpinia floridana</i>	
amphipod	<i>Microprotopus raneyi</i>	
amphipod	<i>Monocorophium sp.</i>	
amphipod	<i>Monocorophium sp. A of LeCroy, 2004</i>	
amphipod	<i>Monocorophium tuberculatum</i>	
amphipod	<i>Photis cf. longicaudata</i>	
amphipod	<i>Photis sp. F of LeCroy, 2000</i>	
amphipod	<i>Shoemakerella cubensis</i>	
amphipod	<i>Stenothoe sp.</i>	
skeleton shrimp	<i>Hemiaegina minuta</i>	
skeleton shrimp	<i>Paracaprella pusilla</i>	
skeleton shrimp	<i>Paracaprella tenuis</i>	
skeleton shrimp	<i>Deutella incerta</i>	

Order Isopoda

isopod	<i>Amakusanthura magnifica</i>	
isopod	<i>Cassidinidea ovalis</i>	
isopod	<i>Cyathura polita</i>	
isopod	<i>Edotia triloba</i>	
isopod	<i>Erichsonella attenuata</i>	
isopod	<i>Eurydice personata</i>	
isopod	<i>Harrieta faxoni</i>	
isopod	<i>Kupellonura formosa</i>	
isopod	<i>Paracerceis caudata</i>	
isopod	<i>Uromunna reynoldsi</i>	
isopod	<i>Xenanthura brevitelson</i>	

Order Tanaidacea

tanaid	<i>Alokalliapseudes macsweenyi</i>	
tanaid	<i>Halmyrapseudes bahamensis</i>	
tanaid	<i>Hargeria rapax</i>	
tanaid	<i>Leptocheilia/Hargeria sp.</i>	

Order Cumacea

cumacean	<i>Almyracuma bacescui</i>	
cumacean	<i>Cyclaspis pustulata</i>	
cumacean	<i>Cyclaspis sp. B of Heard et al, 2007</i>	
cumacean	<i>Cyclaspis sp. C of Heard et al, 2007</i>	
cumacean	<i>Cyclaspis varians</i>	
cumacean	<i>Oxyurostylis lecroyae</i>	
cumacean	<i>Oxyurostylis smithi</i>	
cumacean	<i>Spilocuma sp.</i>	

Superorder Eucarida

Order Decapoda

shrimp	<i>Solenocera atlantis</i>	
shrimp	<i>Ambidexter symmetricus</i>	
shrimp	<i>Latreutes parvulus</i>	
shrimp	<i>Periclimenes longicaudatus</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
shrimp	<i>Processa hemphilli</i>	
shrimp	<i>Hippolyte sp.</i>	
shrimp	<i>Hippolyte zostericola</i>	
pink shrimp	<i>Farfantepenaeus duorarum</i>	
penaeid shrimps	<i>Farfantepenaeus spp.</i>	
penaeid shrimp	<i>Penaeidae spp.</i>	
snapping shrimp	<i>Alpheidae spp.</i>	
snapping shrimp	<i>Alpheus cf. angulosus</i>	
snapping shrimp	<i>Alpheus estuariensis</i>	
snapping shrimp	<i>Alpheus normanni</i>	
snapping shrimp	<i>Automate evermanni</i>	
snapping shrimp	<i>Synalpheus sp.</i>	
arrow shrimp	<i>Tozeuma carolinense</i>	
mud shrimp	<i>Upogebia affinis</i>	
roughneck shrimp	<i>Rimapenaeus constrictus</i>	
ghost shrimp	<i>Lepidophthalmus louisianensis</i>	
false zostera shrimp	<i>Hippolyte pleuracanthus</i>	
blue crab	<i>Callinectes sapidus</i>	
sand dollar crab	<i>Dissodactylus mellitae</i>	
gulf grassflat crab	<i>Dyspanopeus texanus</i>	
porcelain crab	<i>Euceramus praelongus</i>	
crab	<i>Eurypanopeus depressus</i>	
crab	<i>Heterocrypta granulata</i>	
crab	<i>Hexapanopeus angustifrons</i>	
crab	<i>Iliacantha liodactylus</i>	
crab	<i>Menippe mercenaria</i>	
crab	<i>Panopeus herbstii</i>	
crab	<i>Persephona mediterranea</i>	
crab	<i>Pinnixa cf. floridana</i>	
crab	<i>Pinnixa cf. pearsei</i>	
crab	<i>Pinnixa chaetoptera</i>	
crab	<i>Pinnixa sp. A of LeCroy, unpublished key, Perdido, FL</i>	
crab	<i>Pinnixa sp. D of LeCroy, unpublished key, Perdido, FL</i>	
crab	<i>Rhithropanopeus harrisi</i>	
urn crab	<i>Pitho anisodon</i>	
porcelain crab	<i>Polyonyx gibbesi</i>	
burrowing sand crab	<i>Albunea paretii</i>	
horseshoe shrimp	<i>Hutchinsoniella sp.</i>	
decorator crab	<i>Libinia dubia</i>	
horseshoe crab	<i>Limulus polyphemus</i>	
stone crab	<i>Menippe spp.</i>	
hermit crab	<i>Pagurus gymnodactylus</i>	
hermit crab	<i>Pagurus impressus</i>	
hermit crab	<i>Pagurus longicarpus</i>	
hermit crab	<i>Pagurus macLaughlinae</i>	
hermit crab	<i>Pagurus stimpsoni</i>	
Phylum Echinodermata		
ophiodermatidae	<i>Ophioderma brevispina</i>	
ophiactidae	<i>Hemipholis elongata</i>	
amphiuridae	<i>Amphiodia atra</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
amphiuridae	<i>Amphipholis squamata</i>	
amphiuridae	<i>Amphipholis gracillima</i>	
amphiuridae	<i>Ophiophragmus wurdemani</i>	
amphiuridae	<i>Ophiophragmus filograneus</i>	
amphiuridae	<i>Amphioplus thrombodes</i>	
amphiuridae	<i>Amphioplus (Amphioplus) sepultus</i>	
sand dollar	<i>Mellita tenuis</i>	
cucumariidae	<i>Pentamera cf. pulcherrima</i>	
synaptidae	<i>SYNAPTIDAE sp. A of EPC</i>	
synaptidae	<i>Epitomapta cf. roseola</i>	

Phylum Hemichordata

acorn worm	<i>Enteropneusta sp.</i>
harrimaniidae	<i>Stereobalanus canadensis</i>

Phylum Chordata

mogulidae	<i>Molgula sp.</i>
branchiostomatidae	<i>Branchiostoma floridae</i>

Fishes

Class Actinopterygii (ray finned fishes)

scrawled cowfish	<i>Acanthostracion quadricornis</i>
lined sole	<i>Achirus lineatus</i>
diamond killifish	<i>Adinia xenica</i>
bonefish	<i>Albula vulpes</i>
white catfish	<i>Ameiurus catus</i>
yellow bullhead	<i>Ameiurus natalis</i>
brown bullhead	<i>Ameiurus nebulosus</i>
bowfin	<i>Amia calva</i>
Cuban anchovy	<i>Anchoa cubana</i>
striped anchovy	<i>Anchoa hepsetus</i>
bay anchovy	<i>Anchoa mitchilli</i>
anchovies	<i>Anchoa spp.</i>
sheepshead	<i>Archosargus probatocephalus</i>
hardhead catfish	<i>Ariopsis felis</i>
new world silversides	<i>Atherinopsidae spp.</i>
gafftopsail catfish	<i>Bagre marinus</i>
silver perch	<i>Bairdiella chrysoura</i>
frillfin goby	<i>Bathygobius soporator</i>
combtooth blennies	<i>Blenniidae spp.</i>
sand flounders	<i>Bothidae spp.</i>
menhaden	<i>Brevoortia spp.</i>
jacks	<i>Carangidae spp.</i>
crevalle jack	<i>Caranx hippos</i>
common snook	<i>Centropomus undecimalis</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>
Jack Dempsey	<i>Cichlasoma octofasciatum</i>
cichlids	<i>Cichlidae spp.</i>
herrings	<i>Clupeidae spp.</i>

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
darer goby	<i>Ctenogobius boleosoma</i>	
emerald goby	<i>Ctenogobius smaragdus</i>	
sand seatrout	<i>Cynoscion arenarius</i>	
spotted seatrout	<i>Cynoscion nebulosus</i>	
sheepshead minnow	<i>Cyprinodon variegatus</i>	
pupfishes	<i>Cyprinodontidae</i> spp.	
Irish pompano	<i>Diapterus auratus</i>	
threadfin shad	<i>Dorosoma petenense</i>	
tiger goby	<i>Elacatinus macrodon</i>	
sleepers	<i>Eleotridae</i> spp.	
elopiform larvae	<i>Elopiformes</i> spp.	
ladyfish	<i>Elops saurus</i>	
bluespotted sunfish	<i>Enneacanthus gloriosus</i>	
lake chubsucker	<i>Erimyzon sucetta</i>	
swamp darer	<i>Etheostoma fusiforme</i>	
spotfin mojarra	<i>Eucinostomus argenteus</i>	
silver jenny	<i>Eucinostomus gula</i>	
tidewater mojarra	<i>Eucinostomus harengulus</i>	
eucinostomus mojarra	<i>Eucinostomus</i> spp.	
striped mojarra	<i>Eugerres plumieri</i>	
goldspotted killifish	<i>Floridichthys carpio</i>	
marsh killifish	<i>Fundulus confluentus</i>	
gulf killifish	<i>Fundulus grandis</i>	
seminole killifish	<i>Fundulus seminolis</i>	
longnose killifish	<i>Fundulus similis</i>	
fundulus killifishes	<i>Fundulus</i> spp.	
Eastern mosquitofish	<i>Gambusia holbrooki</i>	
mojarra	<i>Gerreidae</i> spp.	
skilletfish	<i>Gobiesox strumosus</i>	
gobies	<i>Gobiidae</i> spp.	
highfin goby	<i>Gobionellus oceanicus</i>	
naked goby	<i>Gobiosoma bosc</i>	
code goby	<i>Gobiosoma robustum</i>	
gobiosoma gobies	<i>Gobiosoma</i> spp.	
white grunt	<i>Haemulon plumieri</i>	
scaled sardine	<i>Harengula jaguana</i>	
bluntnose jack	<i>Hemicaranx amblyrhynchus</i>	
least killifish	<i>Heterandria formosa</i>	
lined seahorse	<i>Hippocampus erectus</i>	
dwarf seahorse	<i>Hippocampus zosterae</i>	
halfbeak	<i>Hyporhamphus</i> spp.	
feather blenny	<i>Hypsoblennius hentzi</i>	
bullhead catfishes	<i>Ictaluridae</i> spp.	
channel catfish	<i>Ictalurus punctatus</i>	
flagfish	<i>Jordanella floridae</i>	
brook silverside	<i>Labidesthes sicculus</i>	
trunkfish	<i>Lactophrys trigonus</i>	
pinfish	<i>Lagodon rhomboides</i>	
spot	<i>Leiostomus xanthurus</i>	
longnose gar	<i>Lepisosteus osseus</i>	
Florida gar	<i>Lepisosteus platyrhincus</i>	
gars	<i>Lepisosteus</i> spp.	
redbreast sunfish	<i>Lepomis auritus</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
warmouth	<i>Lepomis gulosus</i>	
bluegill	<i>Lepomis macrochirus</i>	
redeer sunfish	<i>Lepomis microlophus</i>	
spotted sunfish	<i>Lepomis punctatus</i>	
sunfishes	<i>Lepomis</i> spp.	
suckermouth catfish	Loricariidae spp.	
bluefin killifish	<i>Lucania goodei</i>	
rainwater killifish	<i>Lucania parva</i>	
highfin blenny	<i>Lupinoblennius nicholsi</i>	
gray snapper	<i>Lutjanus griseus</i>	
rough silverside	<i>Membras martinica</i>	
silverside	<i>Menidia</i> spp.	
Southern kingfish	<i>Menticirrhus americanus</i>	
Northern kingfish	<i>Menticirrhus saxatilis</i>	
kingfishes	<i>Menticirrhus</i> spp.	
clown goby	<i>Microgobius gulosus</i>	
green goby	<i>Microgobius thalassinus</i>	
Atlantic croaker	<i>Micropogonias undulatus</i>	
largemouth bass	<i>Micropterus salmoides</i>	
filefishes	Monacanthidae spp.	
striped mullet	<i>Mugil cephalus</i>	
white mullet	<i>Mugil curema</i>	
whirligig mullet	<i>Mugil gyrans</i>	
mulletts	<i>Mugil</i> spp.	
speckled worm eel	<i>Myrophis punctatus</i>	
golden shiner	<i>Notemigonus crysoleucas</i>	
taillight shiner	<i>Notropis maculatus</i>	
coastal shiner	<i>Notropis petersoni</i>	
shiners	<i>Notropis</i> spp.	
leatherjack	<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>	
sailfin molly	<i>Poecilia latipinna</i>	
mollies	<i>Poecilia</i> spp.	
black drum	<i>Pogonias cromis</i>	
black crappie	<i>Pomoxis nigromaculatus</i>	
leopard searobin	<i>Prionotus scitulus</i>	
searobins	<i>Prionotus</i> spp.	
bighead searobin	<i>Prionotus tribulus</i>	
cobia	<i>Rachycentron canadum</i>	
Atlantic guitarfish	<i>Rhinobatos lentiginosus</i>	
Spanish sardine	<i>Sardinella aurita</i>	
drums	Sciaenidae spp.	
red drum	<i>Sciaenops ocellatus</i>	
southern puffer	<i>Sphoeroides nephelus</i>	
planehead filefish	<i>Stephanolepis hispidus</i>	
Atlantic needlefish	<i>Strongylura marina</i>	
redfin needlefish	<i>Strongylura notata</i>	
needlefish	<i>Strongylura</i> spp.	
timucu	<i>Strongylura timucu</i>	
blackcheek tonguefish	<i>Symphurus plagiusa</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
dusky pipefish	<i>Syngnathus floridae</i>	
chain pipefish	<i>Syngnathus louisianae</i>	
gulf pipefish	<i>Syngnathus scovelli</i>	
pipefishes	<i>Syngnathus</i> spp.	
inshore lizardfish	<i>Synodus foetens</i>	
permit	<i>Trachinotus falcatus</i>	
hogchoker	<i>Trinectes maculatus</i>	
Southern hake	<i>Urophycis floridana</i>	

Class Chondrichthyes (sharks, skates, & rays)

Southern stingray	<i>Dasyatis americana</i>	
Atlantic stingray	<i>Dasyatis sabina</i>	
bluntnose stingray	<i>Dasyatis say</i>	
whiptail stingrays	<i>Dasyatis</i> spp.	
smooth butterfly ray	<i>Gymnura micrura</i>	
cownose ray	<i>Rhinoptera bonasus</i>	

Class Reptilia (reptile)

cottonmouth	<i>Agkistrodon piscivorus</i>	
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
eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	
leatherback sea turtle	<i>Dermochelys coriacea</i>	FE
Eastern indigo snake	<i>Drymarchon corais couperi</i>	FT
red rat snake	<i>Elaphe obsoleta</i>	
yellow rat snake	<i>Elaphe obsoleta quadrivittata</i>	
Atlantic hawksbill turtle	<i>Eretmochelys imbricata</i>	FE
gopher tortoise	<i>Gopherus polyphemus</i>	ST
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	FE
diamondback terrapin	<i>Malaclemys terrapin</i>	
water snake	<i>Nerodia</i> sp.	

Class Aves (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>	
Northern pintail	<i>Anas acuta</i>	
American wigeon	<i>Anas americana</i>	
green-winged teal	<i>Anas carolinensis</i>	
northern shoveler	<i>Anas clypeata</i>	
blue-winged teal	<i>Anas discors</i>	
mottled duck	<i>Anas fulvigula</i>	
gadwall	<i>Anas strepera</i>	
anhinga	<i>Anhinga anhinga</i>	
American pipit	<i>Anthus rubescens</i>	
Chuck-will's-widow	<i>Antrostomus carolinensis</i>	
limpkin	<i>Aramus guarauna</i>	
great blue heron	<i>Ardea Herodias</i>	
lesser scaup	<i>Aythya affinis</i>	
redhead	<i>Aythya americana</i>	
ring-necked duck	<i>Aythya collaris</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
canvasback	<i>Aythya valisineria</i>	
tufted titmouse	<i>Baeolophus bicolor</i>	
cedar waxwing	<i>Bombycilla cedrorum</i>	
American bittern	<i>Botaurus lentiginosus</i>	
great horned owl	<i>Bubo virginianus</i>	
red tail hawk	<i>Buteo jamaicensis</i>	
red-shouldered hawk	<i>Buteo lineatus</i>	
green heron	<i>Butorides virescens</i>	
sanderling	<i>Calidris alba</i>	
dunlin	<i>Calidris alpina</i>	
rufa red knot	<i>Calidris canutus rufa</i>	FT
white-rumped sandpiper	<i>Calidris fuscicollis</i>	
stilt sandpiper	<i>Calidris himantopus</i>	
western sandpiper	<i>Calidris mauri</i>	
pectoral sandpiper	<i>Calidris melanotos</i>	
least sandpiper	<i>Calidris minutilla</i>	
semipalmated sandpiper	<i>Calidris pusilla</i>	
Northern cardinal	<i>Cardinalis cardinalis</i>	
great egret	<i>Casmerodius albus</i>	
turkey vulture	<i>Cathartes aura</i>	
willet	<i>Catoptrophorus semipalmatus</i>	
chimney swift	<i>Chaetura pelagica</i>	
semipalmated plover	<i>Charadrius semipalmatus</i>	
killdeer	<i>Charadrius vociferous</i>	
Wilson's plover	<i>Charadrius wilsonia</i>	
black tern	<i>Chlidonias niger</i>	
lark sparrow	<i>Chondestes grammacus</i>	
common nighthawk	<i>Chordeiles minor</i>	
Bonaparte's gull	<i>Chroicocephalus philadelphia</i>	
Northern harrier	<i>Circus cyaneus</i>	
marsh wren	<i>Cistothorus palustris</i>	
sedge wren	<i>Cistothorus platensis</i>	
yellow-billed cuckoo	<i>Coccyzus americanus</i>	
black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	
mangrove cuckoo	<i>Coccyzus minor</i>	
Northern flicker	<i>Colaptes auratus</i>	
Northern bobwhite	<i>Colinus virginianus</i>	
rock dove	<i>Columba livia</i>	
common ground dove	<i>Columbina passerina</i>	
Eastern wood pewee	<i>Contopus virens</i>	
black vulture	<i>Coragyps atratus</i>	
American crow	<i>Corvus brachyrhynchos</i>	
fish crow	<i>Corvus ossifragus</i>	
blue jay	<i>Cyanocitta cristata</i>	
black-bellied whistling duck	<i>Dendrocygna autumnalis</i>	
pileated woodpecker	<i>Dryocopus pileatus</i>	
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
swallow-tailed kite	<i>Elanoides forficatus</i>	
Acadian flycatcher	<i>Empidonax virescens</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
white ibis	<i>Eudocimus albus</i>	
merlin	<i>Falco columbarius</i>	
peregrine falcon	<i>Falco peregrinus</i>	
Southeastern American kestrel	<i>Falco sparverius paulus</i>	ST
magnificent frigatebird	<i>Fregata magnificens</i>	
American coot	<i>Fulica americana</i>	
Wilson's phalarope	<i>Gallinago delicata</i>	
common snipe	<i>Gallinago gallinago</i>	
common gallinule	<i>Gallinula galeata</i>	
gull-billed tern	<i>Gelochelidon nilotica</i>	
common yellowthroat	<i>Geothlypis trichas</i>	
Florida sandhill crane	<i>Grus canadensis pratensis</i>	ST
American oystercatcher	<i>Haematopus palliatus</i>	ST
house finch	<i>Haemorhous mexicanus</i>	
bald eagle	<i>Haliaeetus leucocephalus</i>	
worm-eating warbler	<i>Helmitheros vermivorus</i>	
black-necked stilt	<i>Himantopus mexicanus</i>	
barn swallow	<i>Hirundo rustica</i>	
Caspian tern	<i>Hydroprogne caspia</i>	
wood thrush	<i>Hylocichla mustelina</i>	
yellow-breasted chat	<i>Icteria virens</i>	
orchard oriole	<i>Icterus spurius</i>	
least bittern	<i>Ixobrychus exilis</i>	
loggerhead shrike	<i>Lanius ludovicianus</i>	
herring gull	<i>Larus argentatus</i>	
laughing gull	<i>Larus atricilla</i>	
ring-billed gull	<i>Larus delawarensis</i>	
black rail	<i>Laterallus jamaicensis</i>	
short-billed dowitcher	<i>Limnodromus griseus</i>	
long-billed dowitcher	<i>Limnodromus scolopaceus</i>	
Marbled gotwit	<i>Limosa fedoa</i>	
hooded merganser	<i>Lophodytes cucullatus</i>	
belted kingfisher	<i>Megaceryle alcyon</i>	
red-bellied woodpecker	<i>Melanerpes carolinus</i>	
swamp sparrow	<i>Melospiza georgiana</i>	
red-breasted merganser	<i>Mergus serrator</i>	
Northern mockingbird	<i>Mimus polyglottos</i>	
black and white warbler	<i>Mniotilta varia</i>	
brown-headed cowbird	<i>Molothrus ater</i>	
wood stork	<i>Mycteria americana</i>	FT
great-crested flycatcher	<i>Myiarchus crinitus</i>	
yellow-crowned night-heron	<i>Nyctanassa violacea</i>	
black-crowned night-heron	<i>Nycticorax nycticorax</i>	
orange-crowned warbler	<i>Oreothlypis celata</i>	
Tennessee warbler	<i>Oreothlypis peregrina</i>	
eastern screech-owl	<i>Otus asio</i>	
ruddy duck	<i>Oxyura jamaicensis</i>	
osprey	<i>Pandion haliaetus</i>	
Northern waterthrush	<i>Parkesia noveboracensis</i>	
house sparrow	<i>Passer domesticus</i>	
Savannah sparrow	<i>Passerculus sandwichensis</i>	
blue grosbeak	<i>Passerina caerulea</i>	
indigo bunting	<i>Passerina cyanea</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
white pelican	<i>Pelecanus erythrorhynchos</i>	
brown pelican	<i>Pelecanus occidentalis</i>	
cliff swallow	<i>Petrochelidon pyrrhonota</i>	
double-crested cormorant	<i>Phalacrocorax auritus</i>	
downy woodpecker	<i>Picoides pubescens</i>	
Eastern towhee	<i>Pipilo erythrophthalmus</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>	
eared grebe	<i>Podiceps nigricollis</i>	
pied-billed grebe	<i>Podilymbus podiceps</i>	
blue-grey gnatcatcher	<i>Poliophtila caerulea</i>	
sora	<i>Porzana carolina</i>	
purple martin	<i>Progne subis</i>	
prothonotary warbler	<i>Protonotaria citrea</i>	
boat-tailed grackle	<i>Quiscalus major</i>	
common grackle	<i>Quiscalus quiscula</i>	
king rail	<i>Rallus elegans</i>	
clapper rail	<i>Rallus longirostris</i>	
American avocet	<i>Recurvirostra Americana</i>	
ruby-crowned kinglet	<i>Regulus calendula</i>	
bank swallow	<i>Riparia riparia</i>	
black skimmer	<i>Rynchops niger</i>	ST
Eastern phoebe	<i>Sayornis phoebe</i>	
ovenbird	<i>Seiurus aurocapilla</i>	
Northern parula	<i>Setophaga americana</i>	
black-throated blue warbler	<i>Setophaga caerulescens</i>	
hooded warbler	<i>Setophaga citrina</i>	
yellow-rumped warbler	<i>Setophaga coronata</i>	
prairie warbler	<i>Setophaga discolor</i>	
yellow-throated warbler	<i>Setophaga dominica</i>	
magnolia warbler	<i>Setophaga magnolia</i>	
palm warbler	<i>Setophaga palmarum</i>	
chestnut-sided warbler	<i>Setophaga pensylvanica</i>	
yellow warbler	<i>Setophaga petechia</i>	
pine warbler	<i>Setophaga pinus</i>	
American redstart	<i>Setophaga ruticilla</i>	
blackpoll warbler	<i>Setophaga striata</i>	
Cape May warbler	<i>Setophaga tigrina</i>	
Eastern bluebird	<i>Sialia sialis</i>	
red-breasted nuthatch	<i>Sitta canadensis</i>	
chipping sparrow	<i>Spizella passerina</i>	
North rough-winged swallow	<i>Stelgidopteryx serripennis</i>	
Forster's tern	<i>Sterna forsteri</i>	
common tern	<i>Sterna hirundo</i>	
least tern	<i>Sternula antillarum</i>	ST
Eurasian collared dove	<i>Streptopelia decaocto</i>	
barred owl	<i>Strix varia</i>	
eastern meadowlark	<i>Sturnella magna</i>	
tree swallow	<i>Tachycineta bicolor</i>	

Common Name	Scientific Name	Status
<i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE = commercially exploited</i>		
royal tern	<i>Thalasseus maximus</i>	
sandwich tern	<i>Thalasseus sandvicensis</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>	
Western willet	<i>Tringa semipalmata</i>	
solitary sandpiper	<i>Tringa solitaria</i>	
house wren	<i>Troglodytes aedon</i>	
American robin	<i>Turdus migratorius</i>	
gray kingbird	<i>Tyrannus dominicensis</i>	
scissor-tailed flycatcher	<i>Tyrannus forficatus</i>	
Eastern kingbird	<i>Tyrannus tyrannus</i>	
Western kingbird	<i>Tyrannus verticalis</i>	
white-eyed vireo	<i>Vireo griseus</i>	
red-eyed vireo	<i>Vireo olivaceus</i>	
blue-headed vireo	<i>Vireo solitarius</i>	
white-winged dove	<i>Zenaida asiatica</i>	
mourning dove	<i>Zenaida macroura</i>	
Class Mammalia (mammals)		
opossum	<i>Didelphis marsupialis</i>	
big brown bat	<i>Eptesicus fuscus</i>	
yellow bat	<i>Lasiurus intermedius</i>	
Seminole bat	<i>Lasiurus seminolus</i>	
river otter	<i>Lutra canadensis</i>	
evening bat	<i>Nycticeius humeralis</i>	
raccoon	<i>Procyon lotor</i>	
black rat	<i>Rattus rattus</i>	
cotton rat	<i>Sigmodon hispidus</i>	
marsh rabbit	<i>Sylvilagus palustris</i>	
freetail bat	<i>Tadarida brasiliensis</i>	
West Indian manatee (Florida manatee)	<i>Trichechus manatus (Trichechus manatus latirostris)</i>	FE
Atlantic bottlenose dolphin	<i>Tursiops truncatus</i>	

B.3.2 / Listed Species

Common Name	Scientific Name	Status
<p><i>Legend: FT = Federally- and State-Designated Threatened • FE = Federally-and State-Designated Endangered ST = State-Designated Threatened • SE = State-Designated Endangered • (S/A) = listed due to similarity of appearance • CE= commercially exploited</i></p>		
Plants		
butterfly orchid	<i>Enyclcia tampensis</i>	CE
Birds		
rufa red knot	<i>Calidris canutus rufa</i>	FT
little blue heron	<i>Egretta caerulea</i>	ST
reddish egret	<i>Egretta rufescens</i>	ST
tricolored heron	<i>Egretta tricolor</i>	ST
Southeastern American kestrel	<i>Falco sparverius paulus</i>	ST
Florida sandhill crane	<i>Grus canadensis pratensis</i>	ST
American oystercatcher	<i>Haematopus palliates</i>	ST
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		
West Indian manatee (Florida manatee)	<i>Trichechus manatus (Trichechus manatus latirostris)</i>	FE
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
Atlantic hawksbill turtle	<i>Eretmochelys imbricata</i>	FE
gopher tortoise	<i>Gopherus polyphemus</i>	ST
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	ST

B.3.3 / Invasive, Non-Native and/or Problem Species

Species Name	Common Name	Plants (FLEPPC* Category) Others (Invasive Status)
Plants		
Australian pine	<i>Cassurina equisetifolia</i>	Category I
carrotwood	<i>Cupaniopsis anacardioides</i>	Category I
Brazilian pepper	<i>Schinus terebinthifolius</i>	Category I
melaleuca	<i>Melaleuca quinquenervia</i>	Category I
Birds		
cattle egret	<i>Bubulcus ibis</i>	non-native
European starling	<i>Sturnus vulgaris</i>	non-native
Mammals		
nine-banded armadillo	<i>Dasyus novemcinctus</i>	non-native
raccoon	<i>Procyon lotor</i>	native problem species
Fishes		
bloodfin tetra	<i>Aphyocharax anasitsi</i>	non-native
pike killifish	<i>Belonesox belizanus</i>	non-native
oriental weatherfish	<i>Misgurnus anguillicaudatus</i>	non-native
blue tilapia	<i>Oreochromis aureus</i>	non-native
vermiculated sailfin catfish	<i>Pterygoplichthys disjunctivus</i>	non-native
sailfin catfish	<i>Pterygoplichthys</i> spp.	non-native
blackchin tilapia	<i>Sarotherodon melanotheron</i>	non-native
spotted tilapia	<i>Tilapia mariae</i>	non-native
Mollusks and Crustaceans		
green mussel	<i>Perna viridis</i>	non-native

*Florida Exotic Pest Plant Council (FLEPPC) categorizes invasive exotic plants as Category I (plants that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives) or Category II (plants that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species).

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.

Public Involvement

C.1 / Advisory Committee

The following appendices contain information about the advisory committee meeting conducted to obtain input from the Cockroach Bay Aquatic Preserve Management Plan Advisory Committee regarding the draft management plan.

C.1.1 / List of members and their affiliations

Cockroach Bay Aquatic Preserve Management Plan Advisory Committee		
Name	Title	Interest Represented
Sandy Murman	Hillsborough County Commissioner	elected official
Stacy White	Hillsborough County Commissioner	elected official
Ross Dickerson	Hillsborough County	comanaging agency
Mary Barnwell	Hillsborough County	comanaging agency
Mariella Smith	Citizen	local landowner
Jeanette Seachrist	SWFWMD SWIM Manager	comanaging agency
Randy Smith	SWFWMD SWIM Program Manager	comanaging agency
Ann Paul	Audubon Coastal Islands & Sanctuaries	conservation organization
Jackie Julien	Port of Tampa	Owner/Lessor of the preserve lands
Valinda Subic	State Park Regional Administrator	comanaging agency
Tracy Muzycka	State Park Regional Biologist	comanaging agency
Nancy Douglass	FWC non-game biologist	comanaging agency
Amy Clifton	FWC staff	comanaging agency
Erin Rasnake	DEP, DEAR Program Administrator	comanaging agency
Betty Jo Tompkins	Soil Conservation Admin. Hillsborough Cty.	Soil and Water Conservation District
Mark Proctor	Chairman	Hillsborough County Soil and Water District
Hans Wilson	President	SWFL Marine Industry
Chris Ahern	Delegate	SWFL Marine Industry

DATE AND TIME: Monday, June 20, 2016, 6:00 p.m. – 7:30 p.m.

PLACE: South Shore Regional Library, 15816 Beth Shields Way, Ruskin, FL 33573

GENERAL SUBJECT MATTER TO BE CONSIDERED: A draft Cockroach Bay Aquatic Preserve Management Plan has been prepared by the Florida Coastal Office. The draft plan is available for viewing or download at www.dep.state.fl.us/coastal/sites/cockroach/plan.htm. The Florida Coastal Office seeks public comment on the draft. Members of the Cockroach Bay Aquatic Preserve Management Plan Advisory Committee have also been invited to attend, listen to comments, and may provide or respond to comments.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Randy Runnels at Randy.Runnels@dep.state.fl.us or (239)530-1011.

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: Randy Runnels at (239)530-1011. 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, June 22, 2016, 9:00 a.m.

PLACE: Tampa Bay Aquatic Preserves Office, 130 Terra Ceia Road, Terra Ceia, FL 34250

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Cockroach Bay Aquatic Preserve Management Plan Advisory Committee will meet to discuss comments at the public meeting - scheduled for May 20 and separately noticed - and possible revisions to the draft Cockroach Bay Aquatic Preserve Management Plan. The draft plan is available for viewing or download at www.dep.state.fl.us/coastal/sites/cockroach/plan.htm.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Randy Runnels at Randy.Runnels@dep.state.fl.us or (239)530-1011.

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: Randy Runnels at (239)530-1011. 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

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

DATE AND TIME: Tuesday June 14, 2016, 10:00 a.m.

PLACE: Phone number: 1(888)670-3525, participant code: 990 808 6106

GENERAL SUBJECT MATTER TO BE CONSIDERED: To consider cases where Probable Cause has previously been found.

A copy of the agenda may be obtained by contacting: MQA.Nursing@flhealth.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 48 hours before the workshop/meeting by contacting: MQA.Nursing@flhealth.gov. 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.

DEPARTMENT OF HEALTH

Board of Respiratory Care

The Board of Respiratory Care announces a public meeting to which all persons are invited.

DATE AND TIME: October 14, 2016, 8:30 a.m., ET

PLACE: Safety Harbor Resort, 105 N. Bayshore Drive, Safety Harbor, Florida 34695

GENERAL SUBJECT MATTER TO BE CONSIDERED: General Business Meeting

A copy of the agenda may be obtained by contacting: The Board of Respiratory Care, 4052 Bald Cypress Way, Bin #C05, Tallahassee, Florida 32399-3255, by calling the board office at (850)245-4373, ext. 3476 or by visiting the website at www.floridasrespiratorycare.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 48 hours before the workshop/meeting by contacting: The Department of Health at (850)245-4444, ext. 3418. 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

Tampa Bay Aquatic Preserves
130 Terra Ceia Road
Terra Ceia, Florida 34250

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

Cockroach Bay Aquatic Preserve
Draft Management Plan Advisory Committee Meeting Summary
June 22, 2016, 9:00 a.m.

Tampa Bay Aquatic Preserves Office, 130 Terra Ceia Road, Terra Ceia, Florida

Advisory Committee Member Attendees (9): Mary Barnwell (Hillsborough County EPC), Judy Ashton (DEP DEAR), Amy Clifton (FWC), Stacy White (Hillsborough County Commissioners), Tracy Muzyczka (DEP FPS), Ann Paul (Audubon), Mariella Smith (local landowner), Randy Runnels (DEP FCO), Randy Smith (SWFWMD)

Staff Attendees: Earl Pearson, Heather Stafford, Penny Isom, Julie Christian

Penny welcomed everyone and introductions were done around the room. A brief recap of Monday night's public meeting was given with the public meeting summary handed out to all advisory committee members present. The written comment received to date was included in the summary.

The floor was open to discussion regarding the identified issues and other areas of the management plan. Where applicable, the discussions have been summarized and categorized below under the three issues. When the discussion overlapped categories, it was placed where it seemed to fit best.

Comments not associated with the Issues section:

- Page 13 (or thereabouts) – Major storm events can overwhelm the mobile home parks sewage treatment, such as Hawaiian Isles; could be an impact on water quality.
- Page 14 – Monitor for the effect on saltwater intrusion on springs that feed Cockroach Bay.
 - Hillsborough County water utilities is working on it.
- Climate section – haven't had any significant freezes in this part of the state since the late 1990s. This has had an impact on the mangroves taking over salt marsh communities.
- Page 20 – Add carrotwood and lead tree under invasives.
- Also on page 20 – Parks has been working on melaleuca and has it under control on Goat Island.
- Elimination isn't a realistic goal for invasives (page 30). Get it to maintenance condition.

- Are lionfish an issue? Haven't really been reported. One at Apollo Beach (outside the aquatic preserve) made news, but not otherwise. FWC has them listed for the area.
 - Add monitoring lionfish?
- Page 23 – Add wetland mitigation bank managed by Birkitt Environmental Services, Inc.
- Page 23 – Cockroach and Piney Point is managed by SWFWMD (co-owned by county).
- Lost River is in the SWIM Ecosphere.
- Reference parcel in CRPSP optimal boundary as desired conservation pickup. Forms a north-south corridor with Wolf Creek and others. This parcel may already be part of a new mitigation bank.
- Page 24 – Discuss surrounding land uses such as the trailer parks.
- There is some reluctance within Hillsborough County to expand the urban services area south (Little Manatee South); instead of just leaving it rural, have transitional zoning – clustered houses and green spaces.
- Listed Species – Hawksbills are mentioned in the plan, but should they be? Should mention loggerheads and ridleys; double-check nesting data. Kemp's ridleys are nesting at Anclote. Also recheck leatherbacks in species list.
- Add more info about listed species in that section to make it more interesting and appealing.
- Add info about diamondback terrapins in Native Species section.
- Add a column about proposed status to the listed species chart.
 - Or a date on the bottom. But that might have just been Earl.
- Check FWRI for nesting info.

Issue 1- Enhancing Enforcement, Mapping Data and Research

- Using smaller and cheaper kiosks makes them easier to replace, and they can be much cheaper.
- Parks would also like to be involved with developing the kiosk with Hillsborough County and CBAP. (Hillsborough County wouldn't be supplying content, just space.)
- Judy offered up a big display from the clean boater program.
- Include QR codes on trail signs?
 - May be an issue on getting the language approved for the signs.
- Fees for the boat ramps?
 - The county is looking at it, but it's tough to justify for the Cockroach Bay Road boat ramp which is not in good condition and can't really be improved.
- Simmons is a good boat ramp for the open water, but not the river; there's a large shoal.
- The old ferry site in Port Manatee might be a possibility.
- Skyway Bridge has been proposed for a new boat launch area, but it wasn't approved by DOT who were concerned about slow-moving vehicles hauling trailers merging onto the interstate.

- Need more education about the value of submerged habitat.
- Add the paddling trail coordinates to the website for GPS devices to download.
- Post links to boater's guides on website (but not one for Cockroach Bay yet).
- For the proposed paddling trail, the county is working on possible pull-out points, but they're concerned about the major tire dumping in the river which is a navigational hazard. Randy will be GPSing the trail in winter when the water levels are lowest.
- The old boat ramp on the proposed boundary expansion parcel may be a possibility for adding a new boat ramp.
- The man-made rock ponds need to have the mangroves regularly trimmed so that they don't form a bridge for raccoons.

Issue 2- Marine Debris

- The new design for the Skyway garbage cans are great at keeping trash from blowing out, and they're heavy so they don't blow over easily either.
 - Mary, Tracy, and Randy will check them out together and consider feasibility of using at the Cockroach Bay Road boat launch.
- Put contact info on the cans so that people can call when they're full.
- Separate volunteers between uplands and submerged; not all are interested in doing aquatic and those can be directed towards the county.
- Have a volunteer be an educational spokesman for (additional?) events; they will need to be well-trained and properly informed so that they can answer questions and know when to pass them along rather than give their best and possibly incorrect effort. Coordinate with FPS and the county on training.
- Tampa Bay Watch has a grant for removing monofilament and may be able to help with new or additional containers.
- Use zip-ties to make it harder to put beer cans into the monofilament disposal tubes.
- Cooperate with FPS which has already identified some locations on Goat Island that currently need attention; use GPS to determine hot-spots and scheduling.
- Oil spill contingency plan (from public comments) is time-consuming; may not be worth the time to partner.
- Add info on the geodatabase for booming strategy, such as whether electrical hookups are available on boat ramps which will make it easier in a response.

Issue 3- Shoreline Alterations

- Have further public meetings on Goat Island bridge in recognition of the historical interest on the structure, and the value to the fishing community.
 - Bruce Marsh, a talented local artist, painted it.
- Shoreline stabilization around there without removing it will be much cheaper.
- WMD may already have models and can be a partner in studying the hydrology.
- Parts of Hillsborough County are stabilized with tractors and old cars. Removing these and replacing them with more natural shorelines is a shoreline stabilization project opportunity.

- Work with WMD? Is conducting a study on hydrologic restoration – mostly uplands, but could expand to the shore.
- Riprap is not a good (environmentally-friendly) method of stabilization, but sometimes it's the only option.
- Be sure to consider sea level rise with shoreline restoration projects.
- Can't establish a "no-wake zone" except for manatees and for safety reasons, maybe for structures like docks.
 - It can't just be complaints about an area; there need to be documented accidents.
 - Otherwise it needs a rule change through regulatory.
 - Maybe non-enforceable signs?
- Send a mailing to all homeowners on the river to educate them about more natural alternatives to hardened shorelines. EPC and Port Authority may help out.
- Put information on the website as well.
- Can also educate about the link between fertilizer use, algae blooms, and the algae that washes up on the shoreline.
- Site-by-site assessment for mitigation or habitat modification.
 - Pre-fabricated reef modules aren't appropriate in all (most?) sites.
 - Pre-fabricated reef modules can be good when adjacent bird nesting islands.

Issue 4- Reducing Per-Capita Impacts by Users

- Some discussion on why CAPMAT disbanded, but it was agreed that it'd be beneficial to pursue starting it up again.
 - CAPMAT has mandated requirements on membership – including specific representatives of stakeholder groups
- If setting up a high speed corridor, consult with manatee groups as manatees may be stressed by nearby boats if they feel trapped.
- Make guides more noticeable so that people don't think that anyone is allowed to speed, maybe those allowed should display a flag?
- Revisit manatee zonings and who gets waivers.
- How much seagrass is lost? Is it quantified?
 - Hillsborough County has regular studies. (Include this info in the plan? – Earl)
- Use an aerial illustrating the propscars in kiosks and presentations to the public. The damage isn't obvious from a boat.
- Need more enforcement.
- Voluntary compliance isn't enough.
- Page 38 – Mention partnering with enforcement.
- Seagrasses are specifically protected in aquatic preserves.
- Provide laminated cards to law enforcement (not just FWC, but county) so that they can easily refer to applicable statutes.
- Remind public that destruction of natural resources is vandalism and theft of public resources.
- Judges are not supporting officers by simply throwing out cases.

- Judges may not have the background to understand the impacts; they should not need the background if the charges and applicable laws are recited.
- Need to have law enforcement better informed.
 - Audubon can help conduct training along with some of those other trainings.
- How can law enforcement know which boaters are guides?
 - Guides should need a special license so that their passengers don't need fishing licenses.
- Show that special stuff (soft corals, sea horses, etc.) is there in kiosks, presentations, web, etc., but not specific locations.

Committee Recommendation: More staff are needed.

Penny explained the next steps in the management plan process: revisions will be made to the plan before it goes to the Acquisition and Restoration Council for a public meeting in Tallahassee. The plan will go to the Governor and Cabinet for final approval. Comments can still be submitted on or before July 5. The advisory committee members were thanked for their time and input.

Meeting was adjourned.

C.2 / Formal Public Meeting

The following appendices contain information about the Formal Public Meeting held to receive input from the public about the Cockroach Bay Aquatic Preserve Draft Management Plan.

C.2.1 / Florida Administrative Register Posting

Florida Administrative Register

Volume 42, Number 100, May 23, 2016

Manager, at (863)534-7130 or at msoderstrom@cfrpc.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).

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.

COMMISSION ON ETHICS

The Commission on Ethics announces a public meeting to which all persons are invited.

DATE AND TIME: Friday, June 3, 2016, 8:30 a.m.

PLACE: First District Court of Appeal, 3rd Floor Courtroom, 2000 Drayton Drive, Tallahassee, Florida

GENERAL SUBJECT MATTER TO BE CONSIDERED: Regular Commission Meeting.

A copy of the agenda may be obtained by contacting: www.ethics.state.fl.us or (850)488-7864.

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: (850)488-7864. 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.

DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

Florida Building Commission

The Department of Business and Professional Regulation, the Florida Building Commission announces a public meeting to which all persons are invited.

DATE AND TIME: June 8, 2016, 8:30 a.m.

PLACE: Hilton University of Florida Conference Center, 714 SW 34th Street, Gainesville, Florida

GENERAL SUBJECT MATTER TO BE CONSIDERED:

The Florida Building Commission will review and decide on Accessibility Waiver Applications, review and decide on requests for Declaratory Statements; and take up and consider other matters that appear on the Commission's agenda. Specifically, the Commission will address:

Accessibility Waiver Applications:

1. The Magell Inn #148 - 1410 Magellan Drive, Sarasota, FL 34243

2. Kaioen Coffee #150 - 254 North Division Street, Oviedo, FL 32765

3. Vystar ATM - 767 S. Nova Road - Tomoka Plaza #156 - 767 S. Nova Road, Ormond Beach, FL 32174

4. City of Miami Police Department Marine Patrol #158 - 1001 MacArthur Causeway, Miami, FL 33132

5. McHardy Renovation #134 - 432 MLK Blvd., Stuart, FL 34994

6. The Marlin Hotel #126 - 1200 Collins Avenue, Miami Beach, FL 33139

7. Young Life Southwind Dorm #130 - 18115 SE 95th Street, Ocklawaha, FL 32179

Petitions for Declaratory Statement:

1. DS 2016 - 033 Initial Engineering, P.A.

2. DS 2016-032 City of Tarpon Springs Florida Rule Development Workshop; Rules 61G20-1.001 and 61G20-3.008.

A copy of the agenda may be obtained by contacting: Mr. Jim Richmond, Building Codes and Standards Office, Department of Business and Professional Regulation, 1940 North Monroe Street, Tallahassee, Florida 32399-0772, calling (850)487-1824 or referring to

http://www.floridabuilding.org/fbc/meetings/1_meetings.htm.

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: Ms. Barbara Bryant, Building Codes and Standards Office, Department of Business and Professional Regulation, 1940 North Monroe Street, Tallahassee, Florida 32399-0772, (850)487-1824 or faxing (850)414-8436. 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: Mr. Jim Richmond, Building Codes and Standards Office, Department of Business and Professional Regulation, 1940 North Monroe Street, Tallahassee, Florida 32399-0772, call (850)487-1824 or refer to

http://www.floridabuilding.org/fbc/meetings/1_meetings.htm.

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: Monday, June 20, 2016, 6:00 p.m. – 7:30 p.m.

PLACE: South Shore Regional Library, 15816 Beth Shields Way, Ruskin, FL 33573

GENERAL SUBJECT MATTER TO BE CONSIDERED: A draft Cockroach Bay Aquatic Preserve Management Plan has been prepared by the Florida Coastal Office. The draft plan is available for viewing or download at www.dep.state.fl.us/coastal/sites/cockroach/plan.htm. The Florida Coastal Office seeks public comment on the draft. Members of the Cockroach Bay Aquatic Preserve Management Plan Advisory Committee have also been invited to attend, listen to comments, and may provide or respond to comments.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Randy Runnels at Randy.Runnels@dep.state.fl.us or (239)530-1011.

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: Randy Runnels at (239)530-1011. 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, June 22, 2016, 9:00 a.m.

PLACE: Tampa Bay Aquatic Preserves Office, 130 Terra Ceia Road, Terra Ceia, FL 34250

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Cockroach Bay Aquatic Preserve Management Plan Advisory Committee will meet to discuss comments at the public meeting - scheduled for May 20 and separately noticed - and possible revisions to the draft Cockroach Bay Aquatic Preserve Management Plan. The draft plan is available for viewing or download at www.dep.state.fl.us/coastal/sites/cockroach/plan.htm.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager Randy Runnels at Randy.Runnels@dep.state.fl.us or (239)530-1011.

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: Randy Runnels at (239)530-1011. 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

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

DATE AND TIME: Tuesday June 14, 2016, 10:00 a.m.

PLACE: Phone number: 1(888)670-3525, participant code: 990 808 6106

GENERAL SUBJECT MATTER TO BE CONSIDERED: To consider cases where Probable Cause has previously been found.

A copy of the agenda may be obtained by contacting: MQA.Nursing@flhealth.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 48 hours before the workshop/meeting by contacting: MQA.Nursing@flhealth.gov. 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.

DEPARTMENT OF HEALTH

Board of Respiratory Care

The Board of Respiratory Care announces a public meeting to which all persons are invited.

DATE AND TIME: October 14, 2016, 8:30 a.m., ET

PLACE: Safety Harbor Resort, 105 N. Bayshore Drive, Safety Harbor, Florida 34695

GENERAL SUBJECT MATTER TO BE CONSIDERED: General Business Meeting

A copy of the agenda may be obtained by contacting: The Board of Respiratory Care, 4052 Bald Cypress Way, Bin #C05, Tallahassee, Florida 32399-3255, by calling the board office at (850)245-4373, ext. 3476 or by visiting the website at www.floridasrespiratorycare.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 48 hours before the workshop/meeting by contacting: The Department of Health at (850)245-4444, ext. 3418. 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 • Florida Coastal Office




Cockroach Bay Aquatic Preserve Public Meeting

**Monday, June 20, 2016
6:00 pm - 7:30 pm**

South Shore Regional Library
15816 Beth Shields Way
Ruskin, FL 33573

To view the draft plan, please visit:
www.dep.state.fl.us/coastal/sites/cockroach/plan.htm

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 Cockroach Bay Aquatic Preserve management plan.

Meeting objectives:

1. Review purpose and process for revising the Cockroach Bay 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 Randy Runnels (239)530-1011, Randy.Runnels@dep.state.fl.us or visit our website at www.dep.state.fl.us/coastal/sites/cockroach/plan.htm for more information or to request a written copy of the plan. Written comments are welcome and can be submitted by mail or email FloridaCoasts@dep.state.fl.us on or before **July 5, 2016**.

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 Randy Runnels at (239)530-1011 or Randy.Runnels@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 (NOAA) Award No. NA11NOS4190073-CM227 and NA14NOS4190053-CM504. 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, NOAA, or any of its subagencies. May 2016.



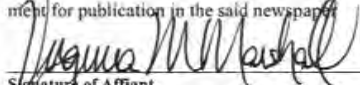
314671

Tampa Bay Times
Published Daily

STATE OF FLORIDA)
) ss
COUNTY OF Hillsborough County

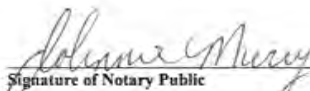
Before the undersigned authority personally appeared Virginia Marshall who on oath says that he/she is Legal Clerk of the Tampa Bay Times a daily newspaper printed in St. Petersburg, in Pinellas County, Florida; that the attached copy of advertisement, being a Legal Notice in the matter RE: Cockroach Bay was published in Tampa Bay Times: 6/16/16. in said newspaper in the issues of Baylink Hillsborough

Affiant further says the said Tampa Bay Times is a newspaper published in Hillsborough County, Florida and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as a second class mail matter at the post office in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement, and affiant further says that he/she neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper



Signature of Affiant

Sworn to and subscribed before me this 06/16/2016.



Signature of Notary Public

Personally known _____ or produced identification

Type of identification produced _____



PUBLIC NOTICE

The Florida Department of Environmental Protection, Florida Coastal Office announces a public meeting to receive comments on the Cockroach Bay Aquatic Preserve draft management plan. The meeting will be held in Hillsborough County on Monday, June 20, 2016 6:00-7:30 p.m. at South Shore Regional Library, 15816 Beth Shields Way, Ruskin, Florida. A copy of the draft plan is posted at www.dep.state.fl.us/coastal/sites/cockroach/plan.htm. For the agenda, contact the aquatic preserve manager, Randy Runnels, by email: randy.runnels@dep.state.fl.us, or by phone: (339)530-1011. 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, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice). (314671) 06/16/2016



Florida Department of Environmental Protection

Tampa Bay Aquatic Preserves
130 Terra Ceia Road
Terra Ceia, Florida 34250

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

Cockroach Bay Aquatic Preserve
Draft Management Plan Public Meeting Summary
June 20, 2016, 6:00 – 7:30 p.m.
South Shore Regional Library, 15816 Beth Shields Way, Ruskin, Florida

Attendees (13): Kevin Kiser, Randy Smith, Sue Fleming, Christine Deno, Don Deno, Stacy White, Robin Kerns, Donnie Kerns, Tracy Muzyczka, Mary Barnwell, Judy Ashton, Ed Sherwood, Mariella Smith.
Staff: Randy Runnels, Earl Pearson, Penny Isom.

Penny welcomed everyone, gave a brief introduction about the purpose of the meeting, introduced aquatic preserve and Tallahassee staff, recognized the management plan advisory committee, and explained the advisory committee's task to the audience.

Randy gave a PowerPoint presentation about Cockroach Bay Aquatic Preserve, the work being conducted, and gave some background on the issues identified in the management plan.

After the presentation, Penny explained the commenting process. The room was set up so there were four stations, one for each of the four issues identified in the management plan. Attendees were split into two groups. The two groups started at different issues stations. Staff read the issue and recorded comments the public had pertinent to each issue (listed below). The two groups rotated to each of the issues, giving an opportunity to comment at each station.

The comments received are listed under each issue below:

Issue One: Enhancing Enforcement, Mapping Data and Research

- Communication isn't enough
- Be on site more often (at the boat ramp on Saturday when the boaters are there)
- More education, not just enforcement
- Need another boat ramp (comment was reiterated with second group)
- Erosion on the side of the road; road is getting bad
- Pylons make it difficult to get close to the water
- Contact locals (paddling groups)
- Mangroves overgrowing
- Get rid of Brazilian peppers near ramp
- Need more up-to-date charts. Google Earth is only one that's useful.

- Chart between 24th Street and Wildcat Boat Ramp
- Wildcat Boat Ramp needs to be fixed
- Stickers for kayakers, like licenses
- Need more rookeries, not just birds. Build more, like by developers.
- Goal 2, Objective 2: make accessible by other agencies

Issue Two: Marine Debris

- Trash lids aren't enough, need new barrels at launch
- With better cans that don't leak, more groups would be willing to pick up around there
- Don't just rely on Sierra Club or clubs for volunteers; better communication
- Collaborate with Keep Tampa Bay Beautiful, Tampa Bay Watch, estuary program
- Monofilament tubes are often overflowing (if it's there)
- Hawaiian Isles Paddling Group has regular clean-ups; contact them
- Organize paddling trip to remote areas as clean-up event and to appreciate
- ADA facilities are more difficult to use for handicapped (natural slope easier than metal)
- Pack in, pack out (don't have barrels available)
- Have oil spill contingency/action plan, to enact before Coast Guard arrives
- Work with partners on geodatabase with information pertinent to oil spills (where boom is located, where power sources are located, etc.)

Issue Three: Shoreline Alterations

- Find funding for Goat Island Bridge approach removal
- Fishing community may oppose removing structure
- Possibly move to establish no wake zone near Goat Island (to reduce erosion)
- Concerned about using proper methodology for shoreline protection, taking sea level rise into consideration
- Work with DEP's Division of Recreation and Parks on optimum boundary to include river front parcel between north shore of river mouth and Shell Point Road
- Removing the bridge may fix current problems and erosion
- Use jetties to divert current, instead of removing the bridge
- Educate local homeowners about alternatives to bulkheads and hardened shorelines, especially with repairs or redeveloping
- Remove mangroves to create beaches

Issue Four: Reducing Per-Capita Impacts by Users

- Look into re-initiating Cockroach Bay Aquatic Preserve Management Action Team (CAPMAT)
- Mark path on flats for boats to run on plane (high speed corridor), to reduce total impacts to seagrasses
- Include special wildlife (soft corals, seahorses, etc.) in informational signage and on Facebook
- Include Facebook page in signage

- Add QR codes to signage
- Consider size and placement of the kiosk
- Don't block the view
- South side of road in a grassy spot
- Talk to Billy Wheat, the FWC biologist, about this and other stuff
- Attend birding festival at Hillsborough Community College on 3rd weekend of October
- Islands are beautiful and Little Manatee River State Park and Cockroach Bay State Park both complement the aquatic preserve

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 by July 5. They were thanked for taking time out of their busy schedules to attend and provide valuable feedback.

Meeting was adjourned.

Written comments received at public meeting:

Chris and Don Deno- Hawaiian Isles Kayak-Canoe Club is a significant organization in the center of the preserve. More rookeries are needed. Money could be more effectively spent.

Goals, Objectives, and Strategies

D.1 / Current Goals, Objectives and Strategies Budget 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. 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 TBAP’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	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26
Issue 1: Enhancing Enforcement, Mapping Data and Research															
Goal 1: Improve collaborative education and research efforts.															
Objective 1: Apply geodatabase model to standardize spatial data of TBAP.															
Strategy 1: Transfer existing spatial data from various digital media to networked computer hard drives into the TBAP geodatabase.	Ecosystem Science	Underway	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 2: Contact other programs, entities, institutions and individuals likely to have useful relevant data and request data in formats easy to load into the geodatabase.	Ecosystem Science	Underway	ongoing	\$50	S	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Strategy 3: Determine whether data received is relevant and, if so, load into TBAP geodatabase.	Ecosystem Science	Underway	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Goal 2: Provide site-specific spatial data needed by TBAP and partnering organizations.															
Objective 1: Generate needed additional spatial data through field mapping and groundtruthing aerial imagery.															
Strategy 1: Continue to refine “seamless” integration of field mapping methods with data storage and management.	Ecosystem Science	Underway	2-3 years	\$200	S	\$200	\$200	\$200							
Strategy 2: Develop consistent application of the Coastal and Marine Ecological Classification Standard to describe substrate and biota for use in biotope mapping of submerged resources.	Ecosystem Science	Underway	2-3 years	\$200	S	\$200	\$200	\$200							
Strategy 3: Map high-priority resources, such as hardbottom and oyster reefs.	Ecosystem Science	Underway	3-5 years	\$500	S	\$500	\$500	\$500	\$500	\$500					
Strategy 4: Explore ways to share field mapping methods with other aquatic preserve offices.	Ecosystem Science	2016	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Objective 2: Explore ways to use new public participatory GIS tools to incorporate spatially referenced public input into the management program.															
Strategy 1: Develop a prototype smartphone interface for field trials of citizen reporting.	Ecosystem Science	2016	1 year	\$200	S		\$200								

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26
Strategy 2: Select a pilot group of local resource users for implementation.	Ecosystem Science	2016	<1 year	\$200	S		\$200								
Strategy 3: Collect data from pilot group reports and experiment with processing for duplicate reports, accuracy, etc.	Ecosystem Science	2016	2 years	\$200	S		\$200								
Strategy 4: Broaden the scope and participation of citizen reporting after the trial period, if appropriate.	Ecosystem Science	2017-2018	ongoing	\$50	S			\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Goal 3: Maintain and improve effectiveness of regulatory programs and decision support in the aquatic preserve.															
Objective 1: Analyze regulatory processes and work with regulatory partners to adjust or refine, if necessary.															
Strategy 1: Engage regulatory entities to conduct a process analysis of the regulatory process as it relates to implementation of Chapter 258, F.S., and Chapter 18-20, F.A.C.	Education/ Outreach	2016	1 year	\$100	S		\$100								
Strategy 2: Collaborate with regulatory partners to implement any identified process improvements, including identifying any relevant data gaps that can be addressed proactively.	Education/ Outreach	2016-2017	1 year	\$100	S		\$100								
Objective 2: Provide training on the aquatic preserves aspects of the regulatory process.															
Strategy 1: Adapt DEP aquatic preserves training for other regulatory entities.	Education/ Outreach	2017-2018	ongoing	\$188	S				\$250	\$250	\$50	\$50	\$50	\$50	\$50
Strategy 2: Schedule and present aquatic preserves training to appropriate regulatory entities.	Education/ Outreach	2017-2018	ongoing	\$300	S			\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300
Goal 4: Improve collaborative education efforts.															
Objective 1: Engage academic partners and potential new partners.															
Strategy 1: Identify existing, lapsed, and potential academic partnerships.	Education/ Outreach	2016	ongoing	\$50	S		\$50								
Strategy 2: Meet with partners and potential partners to identify opportunities for collaborative education and outreach efforts.	Education/ Outreach	2016	ongoing	\$50	S		\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Issue 2: Marine Debris															
Goal 1: Remove marine debris already in the aquatic preserve.															
Objective 1: Identify debris "hot spots." If local entities are not able to target those areas, TBAP will mobilize volunteers to help with removal of the debris.															
Strategy 1: Survey debris in areas of the aquatic preserve where features like shorelines tend to concentrate it and establish protocols that make removal easier.	Resource Mgmt.	2016	1 year	\$500	S	\$500									
Strategy 2: Engage groups that either have removed debris from the aquatic preserve in the past or would likely do so.	Resource Mgmt.	2016	ongoing	\$50	S	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Strategy 3: Assemble volunteer events to target any remaining areas for debris removal.	Resource Mgmt.	2016	ongoing	\$250	S	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26
Objective 2: Work with local resource managers to ensure that trash receptacles at access points are covered and emptied regularly to prevent discarded debris from entering the aquatic preserve.															
Strategy 1: Work with local resource managers to ensure that trash receptacles at access points are covered and emptied regularly.	Education/ Outreach	2016	<1 year	\$100	O	\$100									
Strategy 2: Ensure that monofilament receptacles are provided at access points.	Education/ Outreach	2016	<1 year	\$100	S	\$100									
Strategy 3: Provide awareness messages at access point kiosks and other informational locations to raise awareness about marine debris and its effects on the aquatic preserve.	Education/ Outreach	2016-2017	1 year	\$500	S		\$500								

Issue 3: Shoreline Alteration

Goal 1: Prevent, slow or otherwise address shoreline erosion in the aquatic preserve.

Objective 1: Use emergent vegetation plantings to stabilize eroding shorelines.

Strategy 1: Estimate amount of cordgrass needed to fill gaps in eroding Goat Island shoreline.	Resource Mgmt.	underway	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 2: Procure cordgrass plants.	Resource Mgmt.	as needed	ongoing	\$50	S	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Strategy 3: Organize volunteer planting events.	Resource Mgmt.	as needed	ongoing	\$50	S	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50

Objective 2: Help maintain existing native stabilizing vegetation.

Strategy 1: Visit coastal berms and other shorelines under public ownership, in collaboration with management entities, to treat invasive plants.	Resource Mgmt.	underway	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 2: Contact local landowners whose shorelines host invasives to determine possible solutions for removing the invasive plants.	Resource Mgmt.	2016	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 3: Map treated areas with GPS and use GIS to prescribe and track timely retreatment of invasives.	Resource Mgmt.	as needed	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Goal 2: Restore hydrological regime near Goat Island Bridge.

Objective 1: Work with the Division of Recreation and Parks to remove concrete structures of Goat Island Bridge.

Strategy 1: Document existing conditions in detail using GIS and photographs.	Resource Mgmt.	underway	2 years	\$100	S	\$100	\$100								
Strategy 2: Consult with permitting agencies and the land manager about the removal.	Resource Mgmt.	2016	1 year	\$100	S	\$100									
Strategy 3: Consult with contractors on-site about logistics and potential cost of removing the concrete structures.	Resource Mgmt.	2016	1 year	\$100	S	\$100									

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26
Strategy 4: Seek outside funding for removal of structures.	Resource Mgmt.	2017	1-2 years	\$100	S	\$100									
Strategy 5: Facilitate structure removal.	Resource Mgmt.	2017-2018	2 years	\$100	S	\$100	\$100								
Objective 2: Work with the Division of Recreation and Parks to remove and stabilize the old bridge approach on Goat Island.															
Strategy 1: Document existing conditions in detail using GIS and photographs.	Resource Mgmt.	underway	2 years	\$50	S	\$50	\$50								
Strategy 2: Consult with hydrologist(s) about the likely effects of removing the filled area.	Resource Mgmt.	2016	1 year	\$50	S	\$50									
Strategy 3: Consult with contractors about the logistics and potential cost of removing and stabilizing the filled area.	Resource Mgmt.	2016	1 year	\$50	S	\$50									
Strategy 4: Seek outside funding to remove the bulkheaded, filled bridge approach.	Resource Mgmt.	2017	1-2 years	\$50	S	\$50									
Strategy 5: Facilitate the bridge approach removal and shoreline stabilization.	Resource Mgmt.	2017-2018	2 years	\$100	S	\$100	\$100								
Issue 4: Reducing Per-Capita Impacts by Public															
Goal 1: Raise awareness of aquatic preserve resources and encourage individual responsibility to protect them.															
Objective 1: Make more information about the aquatic preserve available at access points.															
Strategy 1: Construct new kiosk at Cockroach Bay Road ramp, using reinforced concrete and other vandal-resistant materials and design features.	Education/ Outreach	2017	1 year	\$1,000	S		\$1,000								
Strategy 2: Design displays with information that is concise and targeted.	Education/ Outreach	2018	1 year	\$400	S			\$400							
Objective 2: Increase the program's presence at events attended by relevant user target groups.															
Strategy 1: Update portable display.	Education/ Outreach	underway	ongoing	\$50	S	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Strategy 2: Integrate display with additional online resources through website addresses, Quick Response (QR) codes, etc.	Education/ Outreach	underway	ongoing	\$0	S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategy 3: Schedule display at local events (e.g., Ruskin Seafood Festival).	Education/ Outreach	underway	ongoing	\$50	S	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Strategy 4: Schedule display at regional events (e.g., Marine Quest).	Education/ Outreach	underway	ongoing	\$100	S	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
Objective 3: Raise the aquatic preserve's management program profile among local officials and decision-makers.															
Strategy 1: Engage county and elected officials to encourage the reactivation of CAPMAT.	Education/ Outreach	2016	1 year	\$0	S	\$0									
Strategy 2: Find mechanisms to engage local officials on a regular basis, preferably through a "Day on the Bay" type event.	Education/ Outreach	2016-2017	2 years	un-known	S	un-known	un-known								

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26
Goal 2: Facilitate low-impact use of the aquatic preserve's resources.															
Objective 1: Facilitate access to the resources by kayakers, canoeists, and operators of other non-motorized vessels.															
Strategy 1: Identify amenities that would make launching and loading of non-motorized vessels more convenient.	Public Use	2016-2017	1 year	\$0	S	\$0									
Strategy 2: Identify additional potential launch sites that would make paddling routes more user-friendly.	Public Use	2016-2017	1 year	\$0	S	\$0									
Strategy 3: Work with county staff to maintain existing markers on the Snook and Horseshoe Crab paddling trails.	Public Use	underway	ongoing	\$250	S	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
Strategy 4: Post coordinates for online virtual trails for the Snook and Horseshoe Crab paddling trails.	Public Use	2016-2017	1 year	\$0	S	\$0									
Strategy 5: Map a good paddling route from Highway 301 to a point near the mouth of the Little Manatee River and post the coordinates online.	Public Use	2017-2018	1 year	\$200	S		\$200								
Goal 3: Reduce resource impacts caused by boating.															
Objective 1: Reduce the amount of seagrass scarring through improved education and awareness.															
Strategy 1: Post resource information at access points, including aerial photos of local seagrass scarring intensity.	Public Use	2016-2017	1 year	\$200	S		\$200								
Strategy 2: Post information about seagrass protection rules at aquatic preserve access points.	Public Use	2016-2017	1 year	\$200	S		\$200								
Objective 2: Reduce the amount of seagrass scarring at "hot spots" by identifying them and posting appropriate signage.															
Strategy 1: In collaboration with county officials, identify the most intensive scarring in areas of boating shortcuts, rapid depth changes, etc.	Public Use	2016-2017	1 year	\$0	S	\$0									
Strategy 2: Open a more intense public discussion regarding the protection of these areas through voluntary informational marking and/or enforcement zones.	Public Use	2017-2018	1 year	\$250	S			\$250							
Strategy 3: Seek funding and/or authority to establish either voluntary or enforced zones at locations of most intense scarring.	Public Use	2017-2019	2 years	\$0	S		\$0	\$0							

D.2 / Budget Summary Table

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

	Ecosystem Science	Resource Management	Education & Outreach	Public Use	Annual Total
2016-2017	\$950	\$1,700	\$400	\$250	\$3,300
2017-2018	\$1,550	\$750	\$2,000	\$850	\$5,150
2018-2019	\$1,000	\$400	\$550	\$500	\$2,450
2019-2020	\$600	\$400	\$800	\$250	\$2,050
2020-2021	\$600	\$400	\$800	\$250	\$2,050
2021-2022	\$100	\$400	\$600	\$250	\$1,350
2022-2023	\$100	\$400	\$600	\$250	\$1,350
2023-2024	\$100	\$400	\$600	\$250	\$1,350
2024-2025	\$100	\$400	\$600	\$250	\$1,350
2025-2026	\$100	\$400	\$600	\$250	\$1,350
Ten Year Totals	\$5,200	\$5,650	\$7,550	\$3,350	\$21,750

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

- Worked with county staff to maintain the Horseshoe Crab and Snook paddling trails in the aquatic preserve.
- Secured funding and removed the most hazardous overhead concrete structures of the old Goat Island Bridge.
- Removed most of the invasive exotic plants on island shorelines prior to transfer of management responsibilities.
- Conducted a pilot submerged resource mapping project to establish resource inventory protocols for broader application.

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 Goat Island Bridge Debris Removal project is proposed by the Florida Coastal Office as a top priority for the Cockroach Bay Aquatic Preserve in regards to creating and maintaining healthy ecosystems and economies. The project aligns with the issues, goals, objectives, and strategies in the Cockroach Bay Aquatic Preserve's management plan. For project details go to www.dep.state.fl.us/deepwaterhorizon/default.htm.

Project Name	Amount	Partners	Location in CBAP mgmt plan
Goat Island Bridge Debris Removal	\$400,000	Tampa Port Authority, and Hillsborough County	Issue 3, Goal 1, Objective 1, Strategies 1-3, AND, Issue 3, Goal 2, Objective 1, Strategies 1-5, AND, Issue 3, Goal 2, Objective 2, Strategies 1-5.



TBAP PRIORITY RESTORATION PROJECTS

Goat Island Bridge Debris Removal

Partners:

Tampa Port Authority,
Hillsborough County

Funding Required:
\$400,000

Location:
Hillsborough County
27.7133° N, 82.4667° W

Project Timeline:

Project Objectives:

This project will remove concrete from the old Goat Island Bridge from the Little Manatee River, and remove part of the old bridge approach from the island to restore flow capacity in the river. This will be done with public input.



Project Outcomes:

Removal of the bridge debris and approach will considerably restore the original cross sectional area of the river for water flow, and it is expected to reduce erosion of the bank opposite the island.

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. 1-2
3.	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	p. 1-2, 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. 10
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. 24
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. 12-15, 22-23
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. 10
12.	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	p. 9, 24
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, 25-38
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	p. 25-38
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. 35-38
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
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, 25-38

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

Item #	Requirement	Statute/Rule	Pg#/App
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). *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.	253.034(10)	p. 36-38
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
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
33.	Insert FNAI based natural community maps when available.	ARC consensus	p. 15

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

Item #	Requirement	Statute/Rule	Pg#/App
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. 15-19
36.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	N/A
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
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.4
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.4
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. 15-19
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. 20-21, 25-38, 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. 15-19, 20-21, 25-38
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
44.	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10)	N/A
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

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

Item #	Requirement	Statute/Rule	Pg#/App
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. 19, 25-38
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).		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)	p. 20, 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 re- quirement 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. 20, 28-31
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
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, 12-15
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

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

Item #	Requirement	Statute/Rule	Pg#/App
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, Archeological 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. 20-21
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. 20-21
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. 41-42
59.	Capital Facilities and Infrastructure	259.032(10) & 253.034(5)	
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	p. 39-42, 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. 39-42, App. D.1
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

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

Item #	Requirement	Statute/Rule	Pg#/App
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 con- sensus	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. 25-38
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.

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
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

Hillsborough County
Department of Development Services
County Center
601 East Kennedy Boulevard
Tampa, Florida 33602

Dear Development Services:

Attached is a copy of the draft Cockroach Bay Aquatic Preserve Management Plan. (The plan can also be found at <http://dep.state.fl.us/coastal/sites/cockroach/>.) The plan was developed with input from the public and the Cockroach Bay Aquatic Preserve Management Plan Advisory Group. It is anticipated to be reviewed and approved by the Acquisition and Restoration Council at their February 2017 meeting in Tallahassee. We respectfully request, within 30 days of receipt of this letter, your review of the Aquatic Preserve plan for its compliance with the Hillsborough County Comprehensive Plan. Please reply to the physical address (or e-mail address) regarding whether the 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 black ink, appearing to read "Penny Isom".

Penny Isom
Planning Manager
Florida Coastal Office

www.dep.state.fl.us



**Hillsborough County
City-County
Planning Commission**

Resolution

Item: Cockroach Bay Aquatic Preserve Management Plan

	AYE	NAY	ABSENT	DATE: January 23, 2017
Mitch Thrower, Chair	X			<i>Mitch Thrower</i>
Bowen A Arnold, Vice-Chair			X	
Gary Pike, Member-at-Large	X			
Stephanie A Agliano			X	Mitch Thrower Chair
Matthew D Buzza	X			
Derek L Doughty, PE	X			
Theodore Trent Green, RA	X			<i>Melissa E Zornitta</i>
Nigel M Joseph	X			
Jacqueline S Wilds	X			
Melissa E Zornitta, AICP Executive Director				Melissa E. Zornitta, AICP Executive Director
On motion of Commissioner Doughty. Seconded by Commissioner Green				
The following resolution was adopted:				

WHEREAS, the Hillsborough County City-County Planning Commission developed a Comprehensive Plan for Hillsborough County, pursuant to the provisions of Chapter 163, Florida Statutes; and

WHEREAS, the Hillsborough County City-County Planning Commission is the Local Planning Agency responsible for long range comprehensive planning in Hillsborough County; and

WHEREAS, Hillsborough County City-County Planning Commission staff reviewed the Cockroach Bay Aquatic Preserve Management Plan; and

WHEREAS, the Cockroach Bay Aquatic Preserve Management Plan is comprised of 4,871 acres of intact coastal habitats in an otherwise urban watershed; and

WHEREAS, the upland area of Southern Hillsborough County surrounding the Aquatic Preserve is experiencing rapid population growth and development; and



Plan Hillsborough
planhillsborough.org
planner@plancom.org
 813-272-5940
 601 E Kennedy Blvd
 18th Floor
 Tampa, FL, 33602

Resolution

Hillsborough County Consistency Determination:
Cockroach Bay Aquatic Preserve Management Plan
January 23, 2017

WHEREAS, the Cockroach Bay Aquatic Preserve Management Plan details management needs including: improved public awareness of the natural resources; prevention and mitigation of shoreline alterations; facilitation of low-impact public access; and reduction of boating impacts; and

WHEREAS, goals of the plan include better resource inventories and spatial data management/analysis techniques to increase efficiency and effectiveness of management activities in the aquatic preserve; and

WHEREAS, the Hillsborough County City-County Planning Commission reviewed the draft management plan, has considered the adopted goals, objectives and policies of the Future of Hillsborough Comprehensive Plan as follows:

Conservation and Aquifer Recharge Element

GOAL 7: *To protect the natural resources of the Cockroach Bay Aquatic Preserve from environmental degradation and manage the Preserve's resources for the benefit and enjoyment of the citizens of Hillsborough County.*

Policy 50.1: *The County shall participate with the Florida Department of Environmental Protection, the Cockroach Bay Aquatic Preserve Management Advisory Team and other applicable organizations to revise and implement the "Cockroach Bay Aquatic Preserve Management Plan."*

Policy 50.5: *The Board of County Commissioners shall continue to support preservation, restoration and monitoring goals in the Cockroach Bay Aquatic Preserve with those responsible agencies and stakeholders represented by the County, the Planning Commission, the Environmental Protection Commission, Hillsborough Community College, state and regional agency staff, concerned citizens and area landowners.*

Policy 50.9: *The County will work with the appropriate authorities, including the Environmental Protection Commission and the Florida Department of Environmental Protection, to implement means of protecting seagrasses from propeller dredging throughout the Cockroach Bay Aquatic Preserve.*

WHEREAS, Planning Commission staff determined that the Cockroach Bay Aquatic Preserve Management Plan is consistent with the goals, objectives and policies of the Future of Hillsborough Comprehensive Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Hillsborough County City-County Planning Commission finds the Cockroach Bay Aquatic Preserve Management Plan **CONSISTENT** with the Future of Hillsborough Comprehensive Plan.



Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

February 17, 2017

Ms. Penny Isom
Planning Manager
Florida Coastal Office
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 235
Tallahassee, Florida 32399-3000

RE: Cockroach Bay Aquatic Preserve Management Plan

Dear Ms. Isom:

On **February 17, 2017**, the Acquisition and Restoration Council recommended approval of the **Cockroach Bay 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 "R. Spaulding", is written over the word "Sincerely,".

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



Cockroach Bay Aquatic Preserve Management Plan

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