Fort Pickens Aquatic Preserve

Management Plan

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

The wall of Fort Pickens approaches the shoreline near Pensacola Pass.

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 for Coastal Management under the Coastal Zone Management Act of 1972, as amended, National Oceanic and Atmospheric Administration Award No. NA17NOS4190059. 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.

June 2020

Fort Pickens Aquatic Preserve

Management Plan

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

Seagrass provides shelter and food for many species of fish and other wildlife.

Mission Statement

The Office of Resilience and Coastal Protection's mission statement is: Conserving, protecting, and restoring and improving the resilience of Florida's coastal, and aquatic and ocean resources for the benefit of people and the environment.

The four long-term goals of the Office of Resilience and Coastal Protection'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

Fort Pickens Aquatic Preserve Management Plan	
Lead Agency	Florida Department of Environmental Protection's (DEP) Office of Resilience and Coastal Protection (RCP
Common Name of Property	Fort Pickens Aquatic Preserve
Location	Escambia and Santa Rosa counties, Florida
Acreage Total	30,048 acres
Acreage Breakdown According to Florida Natural Areas Inventory (FNAI) Natural Community Type	
FNAI Natural Communities	*Acreage according to GIS*
Beach Dune	355
Seagrass Beds	561
Salt Marsh	53
Unconsolidated Substrate	911
Unmapped Estuarine	5,441
Unmapped Marine	24,301

Management Agency:	DEP's RCP
Designation:	Aquatic Preserve
Unique Features:	Fort Pickens Aquatic Preserve is co-managed with the Florida portion of the Gulf Islands National Seashore. The aquatic preserve contains many marine and estuarine species including Kemp's ridley (*Lepidochelys kempii*), hawksbill (*Eretmochelys imbricata*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and green (*Chelonia mydas*) sea turtles. The endangered Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and the threatened West Indian manatee (*Trichechus manatus*) also inhabit these waters. In addition to its designation as an aquatic preserve, it is also considered to be an Outstanding Florida Water (OFW).
Archaeological/Historical Sites:	Fort Pickens Aquatic Preserve has several submerged sites that are popular tourist destinations. Many sites lie just outside of its boundaries as well and lie within Fort McRee and Fort Pickens.

Management Needs

Resource management goals are attainable through collaboration between state and federal agencies which would provide better guidelines for safe boating and protection of habitat and designated species, water quality analysis and management, public environmental education, and resource protection .

Ecosystem Science	Fort Pickens Aquatic Preserve's coastlines serve as essential nesting habitat for sea turtles and shorebirds, while submerged seagrasses and salt marshes provide nursery and foraging habitat for roughly 70 percent of estuarine/marine species.
Resource Management	Fort Pickens Aquatic Preserve provides not only essential aquatic habitat for the Pensacola Bay Watershed, but the Florida's Gulf waters. Resource inventories, environmental assessments and restoration and enhancement projects will continue to provide management needs.
Education and Outreach	Education and outreach efforts for Fort Pickens Aquatic Preserve include workshops, conferences, symposiums and research throughout the region. Public talks at school groups, garden clubs, nonprofit organizations as well as facility tours are often given to educate the community about the program and ongoing management, education and restoration efforts. Through formal programs with other locals, like Bay Days, coastal cleanups and project tours, we can raise citizen awareness on water quality, invasive/exotic species control, habitat concerns and restoration, as well as many other topics of interest to the community.

Public Use	Public use and access are limited to Gulf Islands National Seashore points of entry – Perdido Key and Fort Pickens - and via the water. There is open access for recreational boating, fishing, swimming and diving. The Intracoastal Waterway runs along the northern boundary and Pensacola Pass runs through the center. The access and recreation that Fort Pickens Aquatic Preserve provides is directly linked to local tourism dollars as well. Public paved boat ramps can be located just outside of the aquatic preserve – to the west at Big Lagoon State Park, to the north at Sunset Boat Launch and Mahogany Mill, and to the east at Shoreline Park.
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. Fort Pickens Aquatic Preserve staff held public and advisory committee meetings on August 29 and 30, 2019 in Pensacola, Florida to receive input on the draft management plan. An additional public meeting was held in Tallahassee on June 12, 2020 when the Acquisition and Restoration Council reviewed the management plan.

RCP/Trustees Approval

RCP Approval: Jan. 9, 2020 **ARC approval:** June 12, 2020 **Trustees approval:** Sep. 22, 2020

Comments:

Coastal Zone Management Issues

Fort Pickens Aquatic Preserve (FPAP) is protected by public lands along approximately 50 percent of its shoreline. Gulf Islands National Seashore runs through FPAP. The northern areas of FPAP do not border land, however the Intracoastal Waterway runs along the northern edge of FPAP, with private and federally owned lands past that to the north. The only developed residential areas are the northern boundary on the western half of FPAP and to the northeastern area of FPAP. Naval Air Station Pensacola lies central to FPAP, just past the northern edge and is owned and managed by the Department of the Interior. Because tourists and new residents may not be familiar with the intrinsic value of the aquatic preserve's resources, and the need for low-impact use in certain locations, education and awareness will be especially important. Coordination with local, state and federal managing agencies will provide the largest impact to FPAP to protect the existing resources that make this such a favorable place to reside and recreate.

As tourism in Florida continues to increase along with the residential population, the demands on natural resources in Florida are increasing. FPAP is affected by activities from both Pensacola and Perdido Bay watersheds, in both Alabama and Florida, as streams and tributaries feed this estuary. The diverse land use, increased development and agriculture throughout both states affect this watershed. Coastal and watershed activities have the ability to affect water quality and submerged resources in both positive and negative ways. Aquatic preserve staff work to encourage positive change and limit any activities that would be detrimental to the aquatic preserve. Long-term monitoring of water quality, species, and habitat provides the data necessary for staff to evaluate the status and trends in the system. Public involvement in aquatic preserve management is encouraged through the Citizen Support Organization - Ecosystem Restoration Support Organization and public presentations and events, and volunteer programs. The public are encouraged to enjoy the natural resources that the aquatic preserve has to offer, while maintaining its condition for the benefit of future generations.

Goals

Improved resource inventories and spatial data management/analysis techniques will increase efficiency and effectiveness of management activities in the aquatic preserve. Active removal of non-native invasive 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.

The management goals and associated strategies outlined in this document provide an action plan over the course of the next decade that will be used to address the challenges mentioned above. Due to limited resources and the overlap of jurisdictional boundaries, success will depend on partnerships formed with private, local, regional, state, and federal organizations and agencies. Partnerships will be formed to promote the maintenance or improvement of the quality of water reaching the aquatic preserve to meet

the needs of the natural resources. Routine assessment of habitats and water quality status is required to document change over time. Resource management goals that will improve water quality include hydrologic restoration, shoreline buffer implementation and protection and restoration of submerged aquatic vegetation. Documentation of natural resource location and extent will allow managers to evaluate the success of large-scale watershed restoration projects. Maintenance of a safe environment for fish, wildlife, and user groups, and the promotion of low-impact recreational opportunities and good stewardship are also important goals that will be addressed by aquatic preserve staff. Prioritizing issues, objectives and strategies will lead to a cohesive management program and the long-term conservation of the natural system.

Acronym List

Abbreviation	Meaning
DEP	Florida Department of Environmental Protection
DNR	Florida Department of Natural Resources
F.A.C.	Florida Administrative Code
FNAI	Florida Natural Areas Inventory
FPAP	Fort Pickens Aquatic Preserve
F.S.	Florida Statutes
FTE	Full Time Equivalent
FWC	Florida Fish and Wildlife Conservation Commission
G	Global
GIS	Geographic information science
GUIS	Gulf Islands National Seashore
ICW	Intracoastal Waterway
MHWL	Mean High Water Line
NERR	National Estuarine Research Reserve
NOAA	National Oceanic and Atmospheric Administration
NASP	Naval Air Station Pensacola
NWFLAP	Northwest Florida Aquatic Preserves
OFW	Outstanding Florida Water
OPS	Other Personal Services
PBW	Pensacola Bay Watershed
RCP	Office of Resilience and Coastal Protection
S	State
SAV	Submerged Aquatic Vegetation
Trustees	Board of Trustees of the Internal Improvement Trust Fund
UF/IFAS	University of Florida, Institute of Food and Agricultural Sciences
USFWS	U.S. Fish and Wildlife Service
UWF	University of West Florida

Table of Contents

List of Maps

List of Tables

List of Figures

List of Appendices

Fort Pickens protected Pensacola Pass and Pensacola Bay for more than a century.

Part One

Basis for Management

Chapter One

Introduction

The Florida aquatic preserves are administered on behalf of the state by the Florida Department of Environmental Protection's (DEP) Office of Resilience and Coastal Protection (RCP) as part of a network that includes 41 aquatic preserves, three National Estuarine Research Reserves (NERRs), a National Marine Sanctuary, Coral Reef Conservation Program, and the Southeast Florida Coral Reef Ecosystem Conservation Area (Map 1). This provides for a system of significant protections to ensure that our most popular and ecologically important aquatic ecosystems are cared for in perpetuity. Each of these special places is managed with 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 support rapid growth without science-based resource protection and management. To this end, state legislators provided extra protection for certain exceptional aquatic areas by designating them as aquatic preserves.

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

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

Map 1 / Areas managed by DEP's Office of Resilience and Coastal Protection.

*1.1 / **Management Plan Purpose and Scope***

Florida's aquatic resources are at risk for both direct and indirect impacts of increasing development and recreational use, as well as resulting economic pressures, such as energy generation and increased fish and shellfish harvesting to serve and support the growing population. These potential impacts to resources can reduce the health and viability of the ecosystems that contain them, requiring active management to ensure the long-term health of the entire network. Effective management plans for the aquatic preserves are essential to address this goal and each site's own set of unique challenges. The purpose of these plans is to incorporate, evaluate, and prioritize all relevant information about the site into a cohesive management strategy, allowing for appropriate access to the managed areas while protecting the long-term health of the ecosystems and their resources.

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

To aid in the analysis and development of the management strategies for the site plans, the RCP 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.

The previous management plan for Fort Pickens State Park Aquatic Preserve, hereafter referred to as Fort Pickens Aquatic Preserve, was approved in 1992.

*1.2 / **Public Involvement***

RCP recognizes the importance of stakeholder participation and encourages their involvement in the management plan development process. RCP 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.

In addition to permanent residents, many species, including this tricolor heron, use frontal dune systems for loafing or feeding.

Chapter Two

The Florida Department of Environmental Protection's Office of Resilience and Coastal Protection

2.1 / ***Introduction***

The Florida Department of Environmental Protection (DEP) protects, conserves and manages Florida's natural resources and enforces the state's environmental laws. DEP is the lead agency in state government for environmental management and stewardship and commands one of the broadest charges of all the state agencies, protecting Florida's air, water and land. DEP is divided into three primary areas: Regulatory Programs, Land and Recreation, 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 Office of Resilience and Coastal Protection (RCP) is the unit within the DEP that manages more than five million acres of submerged lands and select coastal uplands. This includes 41 aquatic preserves, three National Estuarine Research Reserves (NERRs), the Florida Keys National Marine Sanctuary as well as providing management support through the Florida Coastal Management Program, the Outer Continental Shelf Program, the Coral Reef Conservation Program, the Clean Boating Program, the Florida Resilient Coastlines Program, and the Beach and Inlet Management 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).

RCP 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. RCP is

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

The Florida Keys National Marine Sanctuary, established in 1990 by Congress, and confirmed by the Board of Trustees of the Internal Improvement Trust Fund, covers 2.3 million acres of state and federal submerged lands. The Florida Keys National Marine Sanctuary contains unique and nationally significant marine resources, including the southern portion of the Florida Reef Tract (the world's third largest barrier coral reef), extensive sea grass beds, mangrove-fringed islands and more than 6,000 species of marine life. RCP leads state co-management efforts in the Sanctuary in partnership with the Florida Fish and Wildlife Conservation Commission and NOAA.

The Coral Reef Conservation Program coordinates research and monitoring, develops management strategies and promotes partnerships to protect the northern portion of the Florida Reef Tract along the southeast Florida coast, pursuant to the U.S. Coral Reef Task Force's National Action Plan. The Coral Reef Conservation Program also implements Florida's Local Action Strategy, the Southeast Florida Coral Reef Initiative. The program leads response, assessment and restoration efforts and jointly oversees enforcement efforts for non-permitted reef resource injuries (vessel groundings, anchor and cable drags, etc.) in southeast Florida pursuant to the Florida Coral Reef Protection Act (Section 403.93345, F.S.).

The Florida Coastal Management Program is based on a network of agencies implementing 24 statutes that protect and enhance the state's natural, cultural and economic coastal resources. The goal of the program is to coordinate local, state and federal government activities using existing laws to ensure that Florida's coast is as valuable to future generations as it is today. RCP is responsible for directing the implementation of the statewide coastal management program. The Florida Coastal Management Program provides funding to promote the protection and effective management of Florida's coastal resources at the local level through the Coastal Partnership Initiative grant program.

The Outer Continental Shelf Program is responsible for coordinating the state's review, oversight, monitoring and response efforts related to activities that occur in federal waters on the Outer Continental Shelf to ensure consistency with state laws and policies and that these activities do not adversely affect state resources. Reviews are conducted under federal laws, including the Outer Continental Shelf Lands Act, Coastal Zone Management Act, National Environmental Policy Act, Deepwater Ports Act, Marine Protection, Research and Sanctuaries Act, Rivers and Harbors Act, Clean Air and Water Acts and the regulations that implement them.

The Clean Boating Program includes Clean Marina designations to bring awareness to marine facilities and boaters regarding environmentally friendly practices intended to protect and preserve Florida's natural environment. Marinas, boatyards and marine retailers receive clean designations by demonstrating a commitment to implementing and maintaining a host of best management practices. Via the Clean Boating Program, the Clean Vessel Act provides grants, with funding provided by the U.S. Fish and Wildlife Service, for construction and installation of sewage pumpout facilities and purchase of pumpout boats and educational programs for boaters.

The Florida Resilient Coastlines Program's mission is synergizing community resilience planning and natural resource protection tools and funding to prepare Florida's coastline for the effects of climate change, especially rising sea levels. This program is working to ensure Florida's coastal communities are resilient and prepared for the effects of rising sea levels, including coastal flooding, erosion, and ecosystem changes. The program is synergizing community resilience planning and natural resource protection tools; providing funding and technical assistance to prepare Florida's coastal communities for sea level rise; and continuing to promote and ensure a coordinated approach to sea level rise planning among state, regional, and local agencies.

A healthy beach and dune system provides protection for upland development and critical infrastructure, preservation of critical wildlife habitat for threatened and endangered species, and a recreational space that drives the state's tourism industry and economy. In order to protect, preserve and manage Florida's valuable sandy beaches and adjacent coastal systems, the Legislature adopted the Florida Beach

and Shore Preservation Act, Chapter 161, Florida Statutes, in 1986. The Act provides for the creation of a statewide, comprehensive beach management program that integrates coastal data acquisition, coastal engineering and geology, biological resource protection and analyses, funding initiatives and regulatory programs designed to protect Florida's coastal system both above and below the water line. This comprehensive approach allows DEP's Beach and Inlet Management Program to collaborate with coastal communities to address erosion caused by managed inlets, imprudent construction, rising seas and storm impacts.

2.2 / ***Management Authority***

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

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

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

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

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

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

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

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

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

2.3 / *Statutory Authority*

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

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

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

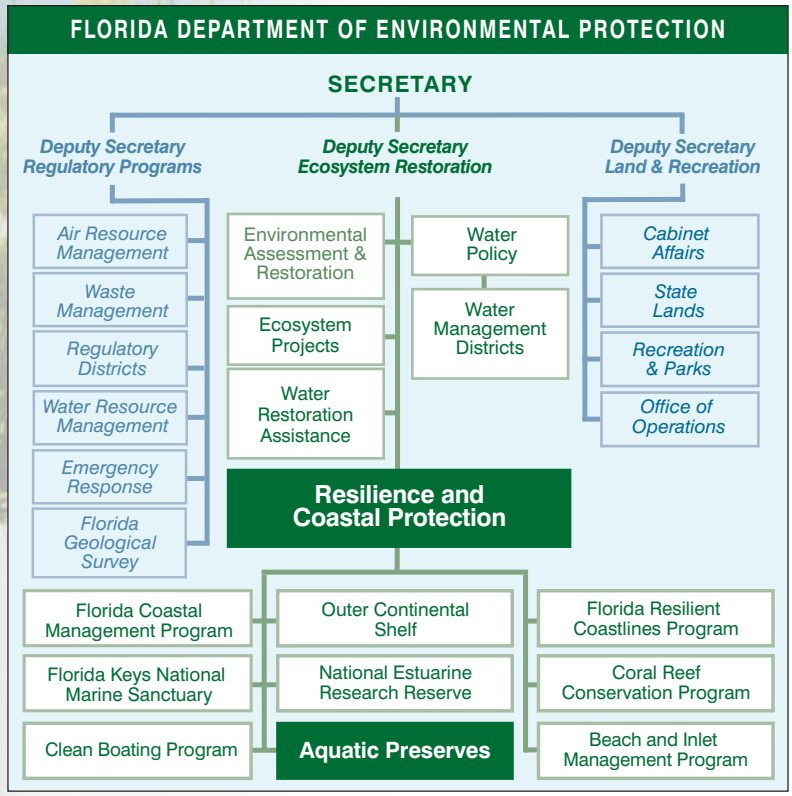


Figure 1 / State management structure.

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

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

2.4 / ***Administrative Rules***

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

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

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

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

Chapter 18-20, F.A.C., expands on the definition of "public interest" by outlining a balancing test that is to be used to determine whether benefits exceed costs in the evaluation of requests for sale, lease, or transfer of interest of sovereignty lands within an aquatic preserve. The rule also provides for the analysis of the cumulative impacts of a request in the context of prior, existing, and pending uses within the aquatic preserve, including both direct and indirect effects. The rule directs management plans and resource inventories to be developed for every aquatic preserve. Further, the rule provides provisions specific to certain aquatic preserves and indicates the means by which the Trustees can establish new or expand existing aquatic preserves.

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

The battlements of Fort Pickens have a commanding view of the aquatic preserve.

Chapter Three

Fort Pickens Aquatic Preserve

3.1 / ***Historical Background***

The earliest settlers of northwest Florida arrived around 14,500 years ago to a Florida that was much different than today (Donoghue, 2011; Halligan et al., 2016). These setters, known as Paleoindians, inhabited a Gulf Coast with a sea level that was roughly 330 feet lower than the current level (Donoghue, 2011; Balsillie & Donoghue, 2004). Being that the shoreline was further south, it is believed that many artifacts from Paleoindian cultures are buried beneath bays, floodplains, and other water features. The earliest recorded evidence of human settlements within the Pensacola Bay Watershed (PBW) has been linked to the Dalton culture. Artifacts from the Late Paleoindian period were identified during exploratory studies of Santa Rosa and Escambia counties and are representative of a culture that engaged in a hunting and gathering economy. From the Paleoindian period through the Archaic, early settlers of the watershed slowly transitioned from a nomadic culture to a more and Gulf Formational periods were able to improve their hunting and gathering technology as well as establish political and economic systems that fostered inter-tribal trade. Long distance trade was bolstered by stationary settlement systems that were comprised of a larger base camp and many smaller satellite camps (Phillips & McKenzie, 1993).

The base-satellite settlement system became more sophisticated during the Woodland and Mississippian periods. The Woodland period is marked by a coastal subsistence base, and as such, the base camps from this time are primarily located along the coast; smaller satellite camps were often located along upland stream valleys. The Woodland presence in northwest Florida is represented by the Deptford, Santa Rosa, and Swift Creek cultures. Northwest Florida's ecotonal coast allowed members of the Deptford culture to have access to a varied supply base that included marine and terrestrial resources (Bense, 1992). Distinguishing between the Woodland and Mississippian periods in coastal northwest Florida is challenging because, due to the nature of the soils, coastal groups were not able to adopt agricultural adaptations. In the uplands, the adoption of agriculture provides a clear marker for the Woodland-Mississippian transition. Native American presence within the watershed was dramatically changed after

Dune systems protect the shifting sands of the barrier island as well as prevent sedimentation in nearby seagrass beds.

European contact and by the mid-18th century, local indigenous populations had been decimated by disease, war, and out-migration (Phillips & McKenzie, 1993).

The earliest European influence on the PBW began with the Panfilo de Narvaez expedition in 1528. This Spanish exploration was documented in the narrative of Cabeca de Vaca. De Vaca's account provides the first historical description of northwest Florida natives. Nineteen years later, in an effort to secure a position in the New World, Spain sent Tristan de Luna to establish a permanent colony. Shortly after landing, half of Luna's fleet was destroyed by a hurricane and many of Luna's colonists fell prey to disease. The colony was abandoned by 1561 (Worth, n.d.). Artifacts from Luna's settlement has been identified near Emmanuel Point in Pensacola Bay, not far from where submerged sites have also been identified. Terrestrial and aquatic sites are being excavated under the guidance of John Worth and Gregory Cook at the University of West Florida.

*3.2 / **General Description***

International/National/State/Regional Significance

Fort Pickens Aquatic Preserve (FPAP) was established on November 2nd, 1970 by the Florida Board of Trustees for the primary purpose of protecting the areas biological resources and for maintaining these resources in an essentially natural condition (Florida Department of Natural Resources [DNR], 1992). The aquatic preserve was included in the Aquatic Preserves Act of 1975 passed by the Florida Legislature and designated as Outstanding Florida Water (OFW) in 1979 (Rule 62-302.700 (9), Florida Administrative Code). The Florida Department of Environmental Protection (DEP) affords the highest level of protection to these waters—activities or discharges proposed within an OFW must not lower ambient water quality and must be "clearly in the public interest" before the DEP issues a permit (37.414(1)(a), Florida Statutes). The protection afforded to the aquatic preserve also benefits the local economy and residents; the aquatic preserve is enjoyed by both fishing and recreational enthusiasts.

FPAP shares resources and some of the management with The National Park Service's Gulf Islands National Seashore (GUIS). GUIS has received national and state recognition for its sugar white sand and crystal-clear waters making it a favorable location for beachgoers from all over. The sandy

shores, seagrass beds and estuaries in these waters are home to many species, several of which are endangered or threatened. All five of Florida's sea turtles utilize FPAP - Kemp's ridley (*Lepidochelys kempii*), hawksbill (*Eretmochelys imbricata*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and green (*Chelonia mydas*). These sea turtles make their nests on the same beaches adjacent to FPAP that the threatened snowy plover (*Charadrius nivosus*) uses. The endangered Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and the threatened West Indian manatee (*Trichechus manatus*) have also been known to use FPAP.

This coastal area of Pensacola is the main source of entry into the bay, besides the Intracoastal Waterway (ICW) that runs along the northern boundary of the aquatic preserve. The Pensacola Pass splits FPAP and provides passage for commercial and recreational activities to the Gulf of Mexico. Due to its proximity to the ICW and the Pensacola Pass and Ship Channel, the aquatic preserve experiences some of the heaviest boat traffic (industrial, military, and recreational) in northern Florida (DNR, 1992).

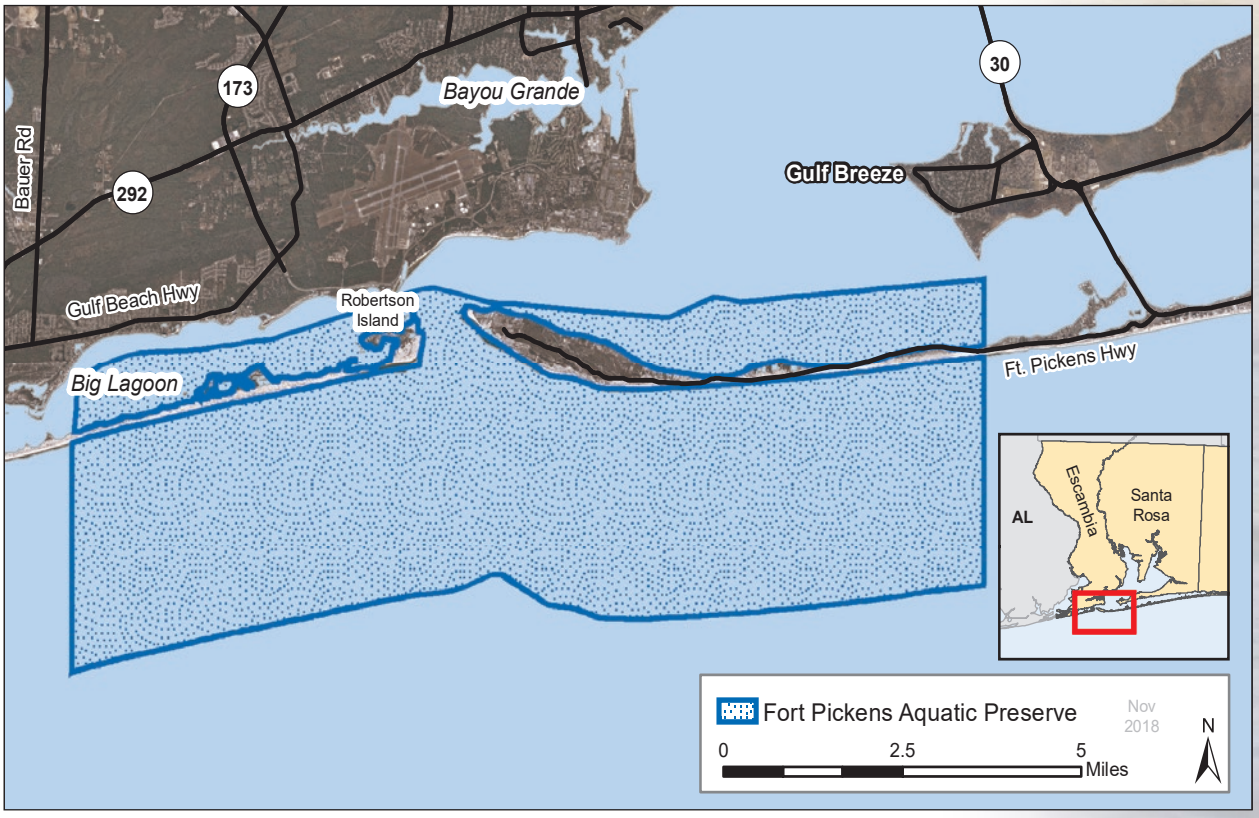
In 1825, establishment of a navy yard was voted upon by Congress to recognize the value of Pensacola, in turn prompting the construction of Forts Barrancas, McRee and Pickens to ensure the defense of the harbor. This Naval Complex has been named "The Cradle of Naval Aviation" since 1914 and in 1971 became the headquarters for the Chief of Naval Education and Training (Coleman & Coleman, 1982).

Location/Boundaries

FPAP lies in Escambia County with a very small portion on the northeast corner in Santa Rosa County (Map 2). FPAP encompasses components of what is referred to Big Lagoon, GUIS-Perdido Key, GUIS-Fort Pickens, the ICW, and Santa Rosa Sound. The remaining two thirds of the acreage is located to the south of GUIS-Perdido Key/GUIS-Fort Pickens in the Gulf of Mexico.

The northwest corner extends from just south of Grande Lagoon and extends east past the north side of Robertson Island, through Pensacola Pass and along the channel for the Intracoastal Waterway. FPAP boundaries go to the mean high water line (MHWL) around GUIS. The distance from MHWL to this northern edge, vary greatly in distance but is less than a mile. FPAP's southern boundary extends into the Gulf of Mexico for three miles from MHWL from the southern boundary of GUIS, and extends approximately twelve miles east to west.

Southwest Pensacola and Pensacola Naval Air Station are directly to the north. Perdido Key is to the west and Pensacola Beach is to the east. Gulf Breeze is at the northeast corner of FPAP. In Perdido Key,



Map 2 / Fort Pickens Aquatic Preserve

Stormy skies over the western area of Fort Pickens Aquatic Preserve.

Johnson Beach Road at GUIS-Perdido Key connects to Highway 292 and runs through West Pensacola. Highway 292 connects to Highway 98, which runs through downtown Pensacola and into Gulf Breeze. Via De Luna Drive connects to Highway 98 in Gulf Breeze, which connects to Fort Pickens Road in Pensacola Beach and leads into GUIS-Fort Pickens. Based upon annual average daily traffic surveys, more than 54,000 vehicles pass over the bridge in Gulf Breeze on Highway 98 (Florida Department of Transportation, n.d.). GUIS reports more than 600,000 visitors at Fort Pickens and more than 350,000 visitors at Perdido Key entrances, for a total of just under one million visitors for 2017 (U.S. Department of the Interior, n.d.-c). Adjacent to the GUIS Fort Pickens Area, the GUIS boundary, jurisdiction, and ownership extend north from Santa Rosa Island to the southern boundary of the Intracoastal Waterway, and south from mean low tide for one mile into the Gulf of Mexico. The GUIS boundary excludes Pensacola Pass. The same boundary and jurisdiction apply to the seven easternmost miles of Perdido Key; but the National Park Service does not own the submerged lands adjacent to the Perdido Key area.

3.3 / ***Resource Description***

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

Surrounding Population Data and Future Projected Changes

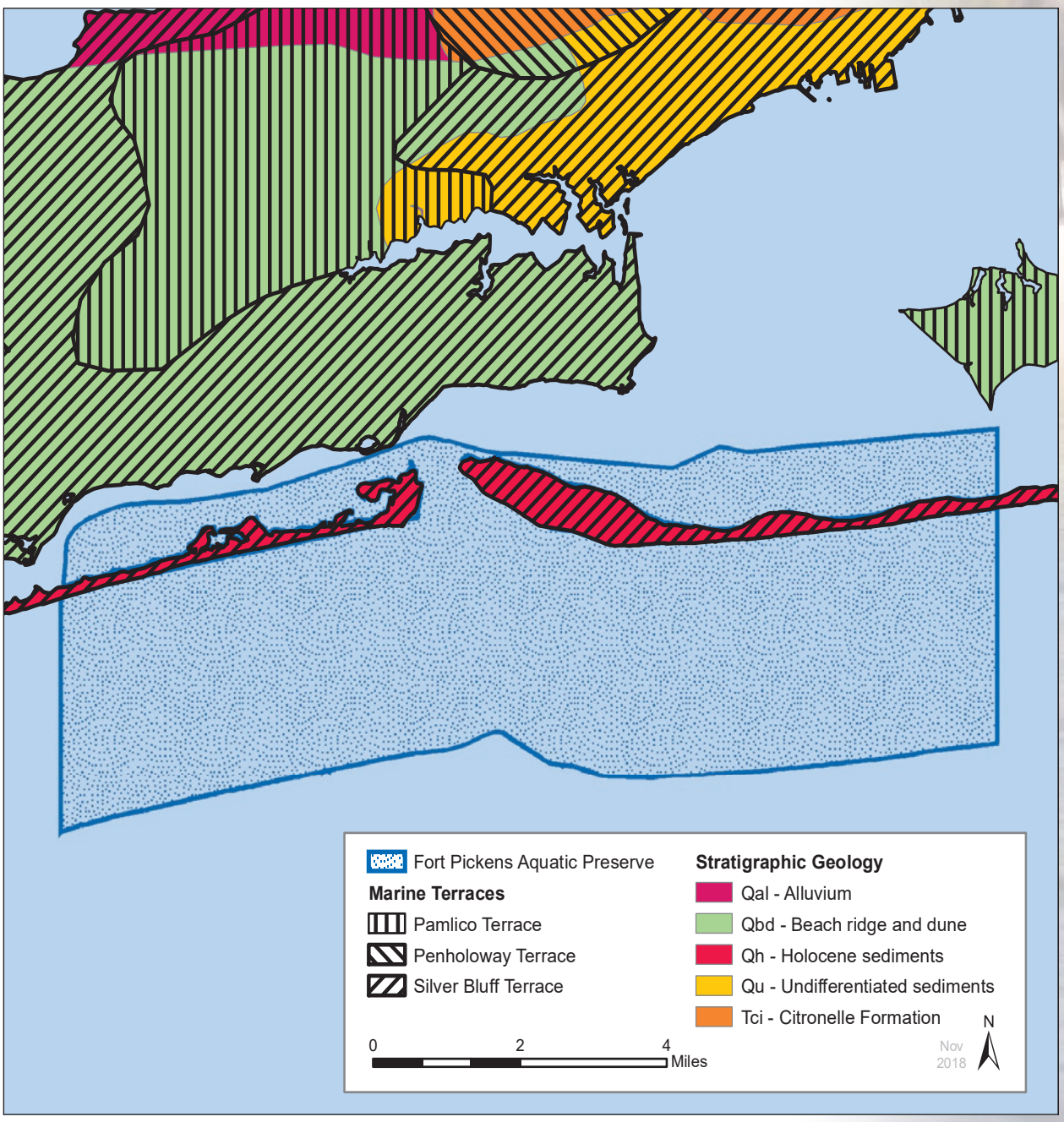
Escambia County had a population of 297,619 in 2010 (U.S. Census Bureau, 2010). Escambia County and its neighboring counties have experienced significant growth during the past few decades, seeing a 63 percent increase in population since 1980. This is not uncommon for Florida's coastal counties; it is estimated that more than 75 percent of the state's population resides in coastal communities. The city of Pensacola, Escambia's county seat and largest incorporated city, had a 2010 population of 51,923 people, while other areas of the county had a population of 245,696 (U.S. Census Bureau, 2010). The projected 2025 population for Escambia County, based upon a 2018 estimate, is 337,325 (Office of Economic and Demographic Research, 2019). Pensacola Beach is part of Santa Rosa Island Authority and governed under Escambia County. Neighboring Baldwin County, Alabama has seen an estimated 51 percent increase in population since 2000 and is projected to continue along those trends (Baldwin County Economic Development Alliance, 2018). Gulf Breeze is a city in Santa Rosa County with a 2010 population of 5,763 (U.S. Census Bureau, 2010).

In 2017, an estimated 15.2 percent of Escambia County's residents were employed in local, state, or federal government positions, which would include employment in the nearby military installations. Other major employment sectors include jobs within the leisure and hospitality field, the trade, transportation, and utilities field, and education and health services (Office of Economic and Demographic Research, 2019).

Current and future development patterns within Escambia County could impact the health of the aquatic preserve. The Florida Natural Areas Inventory (FNAI) reported in 2017 that more than 100,000 acres were conserved by way of public and private land management agencies. Land use in vicinity to FPAP, though, includes commercial, single family residential, rural single family residential, and military in addition to conservation land use zoning. Rapid population growth and increasing development near the aquatic preserve could result in increased stormwater runoff, sedimentation and nutrient discharge, which would diminish the aquatic preserve's water quality (Escambia County, 2018).

Topography and Geomorphology

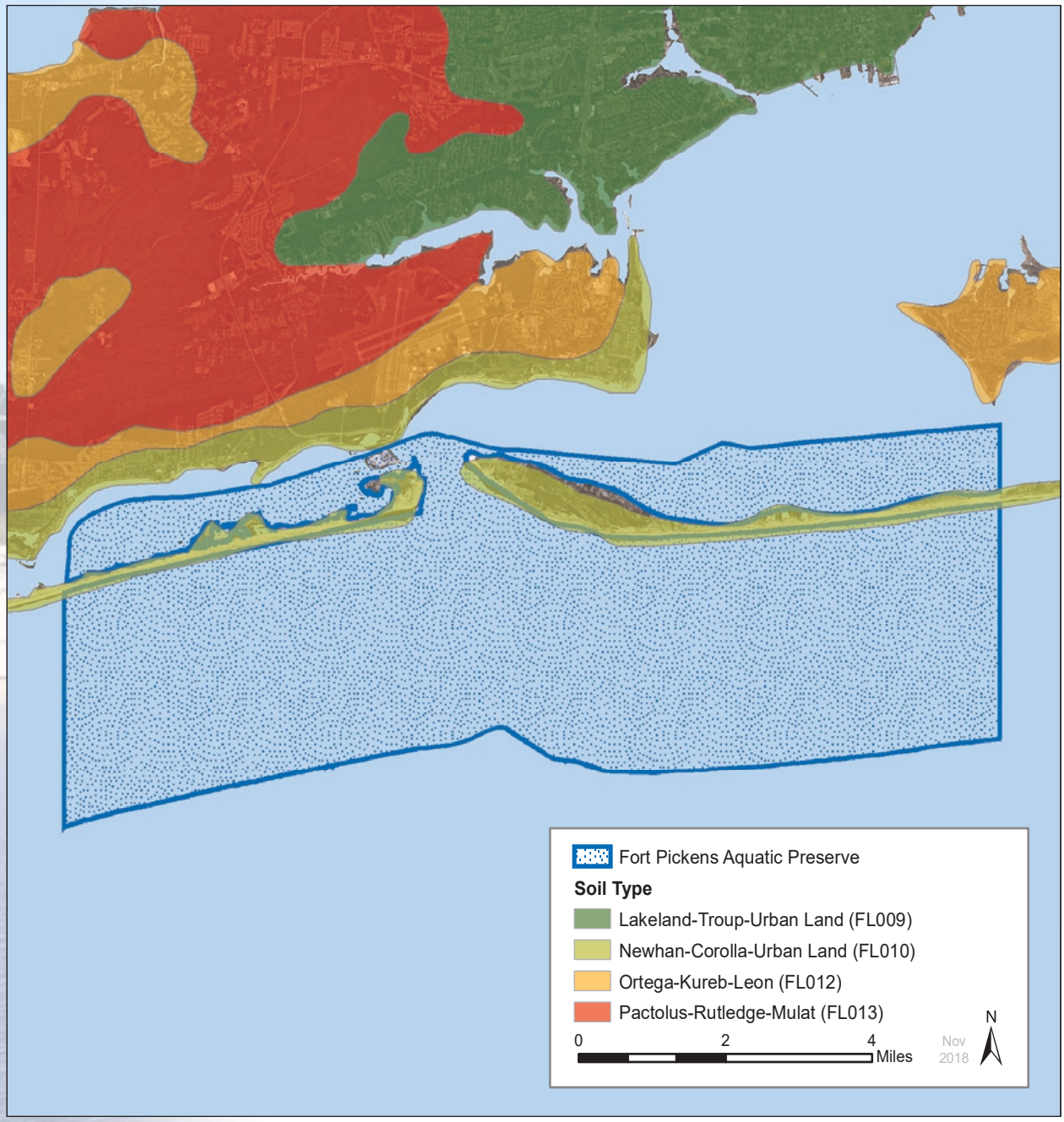
Topography is the study of Earth's man-made and natural surface features, specifically relief, landforms, and the three-dimensional aspects of terrain. Escambia County and Santa Rosa County are situated in the Northern Geomorphic Zone and is contained within the Coastal Plain Province, a major



Map 3 / Geomorphology of Fort Pickens Aquatic Preserve.

physiographic region of the United States that extends eastward from Texas and northward as far as New York. The coastal plain is underlain primarily by beds of sand, silt, limestone and clay that slope slightly seaward (Marsh, 1966). The Northern Geomorphic Zone is divided into two topographical subdivisions: the Western Highlands, which are found in the northern regions of the counties and are characterized by rolling hills with sand and clay soils (White, 1970), and the Gulf Coastal Lowlands, which are found in the southern regions of the counties and are characterized by relatively undissected and nearly level plains (Marsh, 1966). As part of the PBW, FPAP is located within the Gulf Coastal Lowlands (Map 3) and has topographical features characterized by limited relief and very little slope (Phillips & McKenzie, 1993).

The most distinctive features of the topography of Escambia and Santa Rosa counties are the Pleistocene marine terraces along the Gulf Coast (Marsh, 1966). Geomorphologic processes have a significant influence on the formation of these step-like surfaces. Sea level changes associated with the repeated retreat and growth of continental glaciers characteristic of the Pleistocene Epoch shaped both the Gulf Coastal Lowlands and five ascending marine terraces found in the region (Healy, 1975; Rupert, 1994). Marine terraces run roughly parallel and are divided by wave-cut scarps. The marine terraces found in and around FPAP are Silver Bluff (eight feet above sea level or less) and Pamlico (8-25 feet above sea level); Penholoway (42-70 feet above sea level). Wicomico (70-100 feet above sea level) and



Map 4 | Soils of Fort Pickens Aquatic Preserve.

Sunderland/Okefenokee (100-170 feet above sea level) are also present in the surrounding counties (Healy, 1975). Remnants of these terraces are preserved as upland plateaus, flat-topped hills, and low coastal plains (Marsh, 1966).

The natural communities found around FPAP are a function of slight elevation changes around the barrier islands. The substrate comprised of quartz sand, shell and minimal silt, and dune vegetation along the barrier island helps dictate the natural communities along the northern waters edge, migrating between salt marsh, seagrass beds and estuarine unconsolidated substrate in given areas over time. These natural communities and adjacent lands have also been highly sculpted and ever changing over their lifetime due to tropical systems.

Geology

FPAP lies in the physiographic region known as the Gulf Coastal Lowlands, the low-lying area including the southern portions of Escambia and Santa Rosa counties (U.S. Department of Agriculture, 1960, 1980). This region consists of sedimentary rocks from the Mesozoic Era (250-66 million years ago) and Cenozoic Era (65 million years ago-present) (Scott et al., 2001).

These counties contain two surface geologic formations: the Pleistocene/Holocene Formation and the Pliocene Citronelle Formation. The most recent are Pleistocene Epoch (three million to 10,000 years ago) and Holocene Epoch (10,000 years ago to present) undifferentiated sediments. During these epochs, high energy streams deposited upland sediments of sand, clays, and gravel in alluvial fans which have coalesced on the coastal plain (U.S. Department of Agriculture, 1960).

Underlying the Pleistocene/Holocene Formation is the Citronelle Formation, which was deposited approximately five to three million years ago during the Pliocene Epoch and is found from about 50 feet below sea level to 100 feet above sea level (Puri & Vernon, 1964). The Citronelle Formation is widespread in the Gulf Coastal Plain and consists primarily of sands and significant amounts of clay, silt, and gravel. Much of this formation is highly permeable and forms the sand and gravel aquifer, the primary aquifer used for human consumption in the region (Scott et al., 2001). Major tributaries of the Pensacola Bay watershed are incised into the sand and gravel aquifer and ground water flow from the aquifer discharges to these tributaries and to the bay (Thorpe, et al.,1997).

All of the soils which make up FPAP consist of Newhan-Corolla-Urban Land (FL010), which is characterized by a combination of excessively drained Newhan soil and somewhat poorly drained Corolla soil on sand dunes on barrier islands, as well as coastal beaches. (U.S. Department of Agriculture, 1960, 1980).

Hydrology and Watershed

FPAP lies within PBW, at the southern end where Perdido Bay, Pensacola Bay and Santa Rosa Sound all connect as well as a portion into the Gulf of Mexico. This area encompasses the majority of Big Lagoon, Pensacola Pass, Lower PBW and a portion of Santa Rosa Sound. This watershed system discharges directly into the Gulf of Mexico, The Perdido River and Bay watershed covers more than 1,100 square miles of northwest Florida and southern Alabama, with only about 350 square miles of that in Florida (Thorpe, et. al., 2017b). The Pensacola Bay system covers more than 6,800 square miles of northwest Florida and southern Alabama, which includes three major rivers (Thorpe, et. al., 2017a). Estuarine waters of PBW encompass approximately 187 square miles and exhibit limited flushing and circulation (Thorpe, et al., 2017a). Both of the bay systems that feed FPAP are also characterized by numerous bayous on their fringes. Both the Pensacola Bay and Perdido Bay systems influence FPAP due to flow from the rivers that feed these systems. The western portion of FPAP is part of the Perdido Bay drainage basin and the eastern portion of FPAP is part of the Pensacola Bay drainage basin. The dividing line between these two basins meets near Robertson's Island and Pensacola Pass, where both these systems meet and flow into the Gulf of Mexico (Map 5).

Historical point source and nonpoint source pollution have degraded benthic conditions and resulted in a substantial loss of seagrasses within the estuaries of both bay systems (Thorpe et.al., 2017a, 2017b). The challenges of changes in land use and demands on wastewater and storm water requires a range of strategies including the implementation of best management practices for agriculture, silviculture, and construction activities, improvements that address storm water runoff; and continued advances in wastewater treatment and management that include long-term protection, monitoring and education of critical habitats and associated buffer areas (Thorpe, et.al., 2017b).

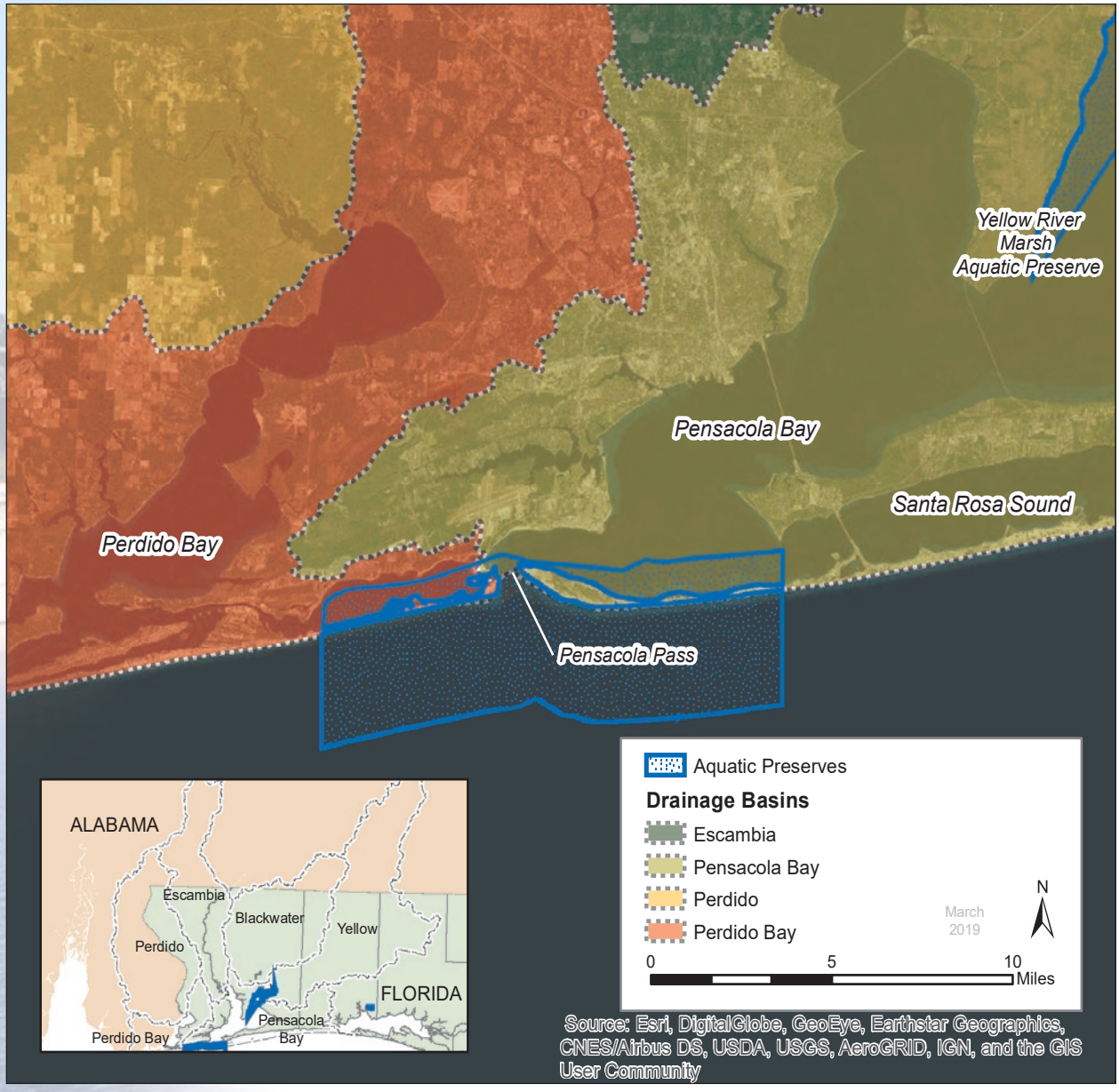
Climate

The year-round climate of northwest Florida and FPAP is typical of the Northern Hemisphere's humid subtropical climate zone, with long, hot, humid summers, and relatively mild, short, wet winters. Humidity

is relatively high (averaging 60 percent in the mornings and 85 percent in the afternoons), and winds are normally from the north/northwest in fall and winter and the south/southwest in spring and summer (DEP, 2016; National Oceanic and Atmospheric Administration [NOAA], 2014). The average maximum temperature is 76.6°F and the average minimum temperature is 59.2°F. On average, the hottest months are June, July and August and the coolest months are December, January and February (DEP, 2016; NOAA, 2014).

Typically, there are two wet seasons in northwest Florida in which summer precipitation is driven by convection and winter precipitation is driven by fronts (DEP, 2016; Winsberg, 2003). Average annual total precipitation is 65.27 inches and is comprised almost entirely of rainfall. Snow is uncommon, with an average annual rate of 0.1 inches (DEP, 2016; NOAA, 2014). The months with the highest average precipitation are June, July, August and September. The occurrence of an El Niño Southern Oscillation or La Niña event may have a significant impact on precipitation and temperature in northwest Florida: El Niño may result in 30-40 percent more precipitation and relatively cooler temperatures than the annual average for the winter season, and La Niña may result in a much drier spring and winter than the average. Additionally, the occurrence of an El Niño event suppresses damaging winter freezes and lessens the severity of the hurricane season (DEP, 2016: Winsberg, 2003).

Tropical storms and hurricanes are both tropical low-pressure systems and are a constant threat and reality in northwest Florida. When the sustained wind velocity in a tropical system rises above 73 miles per hour, it is reclassified from a tropical storm to a hurricane (Winsberg, 2003). The hurricane season



Map 5 / Drainage basins of Fort Pickens Aquatic Preserve.

runs from May to November and is associated with the warming of Atlantic and Gulf of Mexico surface waters and warm, humid air masses. The impacts of tropical storm systems on the biological and physical processes of an inland water body can be significant. Sensitive natural communities within FPAP such as seagrass beds, can be considerably altered by physical disturbance and changes in hydrology caused by tropical storm events. Short-term impacts include water level increases from ocean surge and upstream flooding, both of which result in significant changes in salinity (Dix, Phlips, & Gleeson, 2008; Edmiston et al., 2008; Paerl et al., 2001), temperature, dissolved oxygen, turbidity (Edmiston et al., 2008) and nitrogen levels (Dix et al., 2008; Paerl et al., 2001). Mid-term impacts may include algal blooms spurned by the increase of nitrogen (Mallin & Corbett, 2006; Paerl et al., 2001). Long term impacts may include loss of submerged, emergent and terrestrial vegetation and loss of oyster beds (Edmiston et al., 2008). The impact of tropical systems on estuarine systems, which are disturbance regime systems in general, is highly variable depending on the characteristics of the storm and the site (DEP, 2016; Edmiston et al., 2008; Mallin & Corbett, 2006) and may be quite similar to the impacts of normally occurring storm events, especially for short-term impacts (Edmiston et al., 2008; Hagy, Lehrter, & Murrell, 2006). This variability was apparent after Hurricane Ivan, the most recent significant storm in the region that hit the Gulf Coast centered around Gulf Shores, Alabama on September 16, 2004. This Category Three storm caused significant tree blow-downs and physical damage to human-built structures, ultimately resulting in nearly 9.5 billion dollars of insurance claims in Florida (Pensacola News Journal, 2005). While the physical disturbance caused by Hurricane Ivan within the Pensacola Bay system was large, the documented effects on freshwater inflow, phytoplankton biomass and hypoxia were within the range of normal variability (Hagy et al., 2006). Seagrass beds in FPAP suffered significant smothering from shifting sands after Hurricane Ivan. Hurricane Michael, which hit the Panhandle as a Category Five storm near Mexico Beach on October 10, 2018, impacted FPAP. While the results to the Pensacola area were minor, increased wave energy affected the aquatic preserve's shorelines and seagrass beds. The aquatic preserve manager assessed impacts via satellite imagery days after landfall and identified approximately 30 areas where storm surge washed over the frontal dune system and breached the barrier island. Some of these breaches potentially affected submerged aquatic vegetation (SAV), but post-hurricane limitations in access to the areas prevented site monitoring

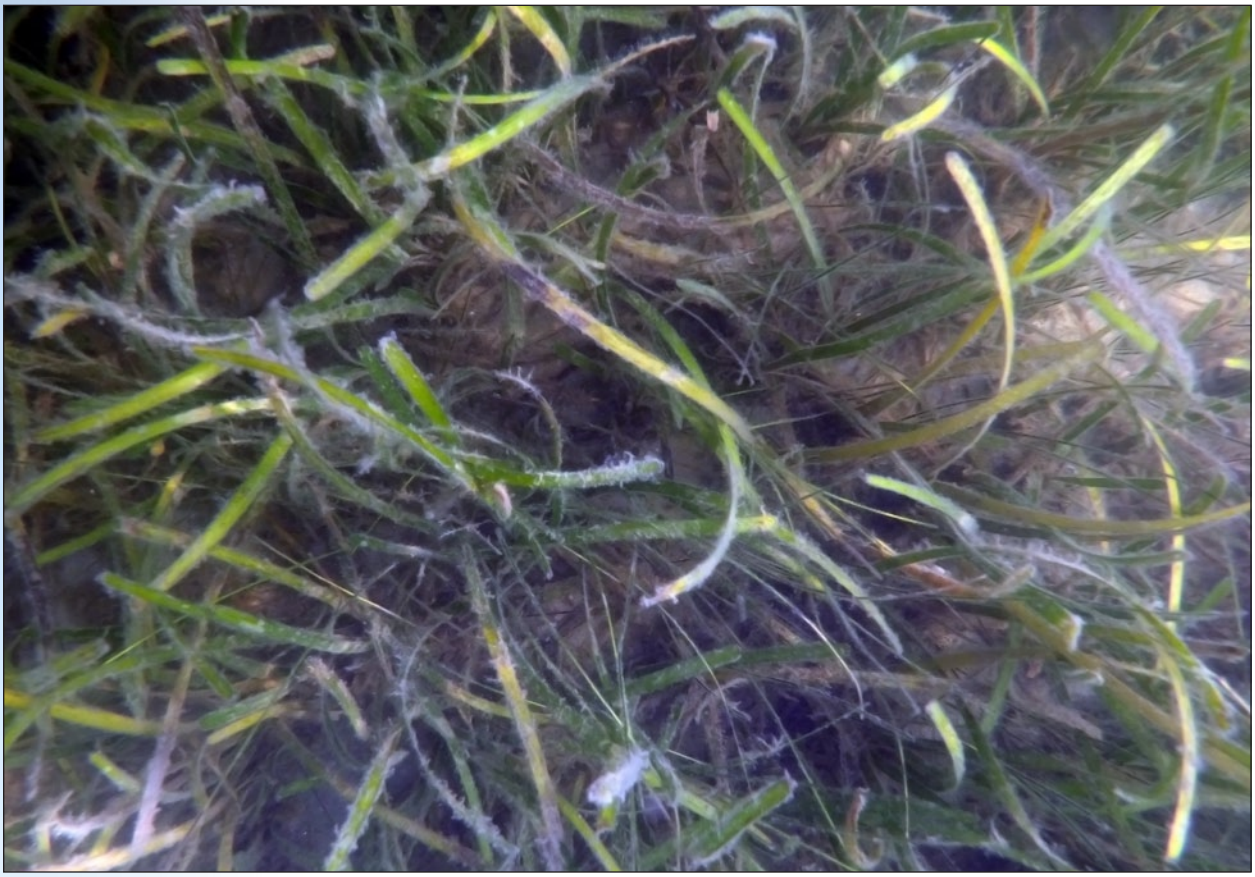
Natural Communities

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

Data used to produce a map delineating the major natural community types found on Fort Pickens Aquatic Preserve were developed by the FNAI using multiple sources. These data are not always based on comprehensive or site-specific field surveys, and no additional fieldwork was conducted for purposes of producing this map. The descriptions of the natural community types found on Fort Pickens Aquatic Preserve have been adapted from the Guide to the Natural Communities of Florida (FNAI, 2010).

Salt Marsh (synonyms: coastal wetlands, coastal marsh, tidal marsh, saltern, tidal marsh, tidal wetlands) - Salt marsh is a largely herbaceous coastal ecosystem that occurs at the interface of land and marine waters, wherever wave energy is low and mangrove density does not inhibit the growth of characteristic vegetation. Salt marsh communities are characterized by very gentle seaward slopes and are protected from large waves, either by the sloping topography of the shore, by a barrier island, or by location along a bay or estuary (FNAI, 2010). This community is at least occasionally inundated with salt water and consists of non-woody, salt-tolerant plants, which may exist in distinct zones dominated by a single species of grass or rush. In Florida, the extent and range of salt marsh is determined by the width of the intertidal zone, which depends on the slope of the shore and the tidal range (FNAI, 2010).

Two principal marsh plants, salt marsh cordgrass (*Spartina alterniflora*) and black needlerush (*Juncus roemerianus*), range throughout Florida and are found in FPAP. Cordgrass is found where marsh is flooded almost daily and needlerush is found where the marsh is flooded less frequently. The transition to upland is often colonized with salt-tolerant shrubs, such as salt bush (*Baccharis halimifolia*) and marsh elder (*Iva frutescens*). Bird species that frequent FPAP salt marsh habitat include the black rail (*Laterallus*



In moderate quantities, the epiphytes on turtle grass provide valuable food sources for additional animals.

jamaicensis), tricolor heron (*Egretta tricolor*), white ibis (*Eudocimus albus*) and little blue heron (*Egretta caerulea*). Soil compositions range from mucky to sandy depending upon organic mixtures, salinity, precipitation and other factors.

Salt marsh is a small yet crucial, natural community in FPAP, and faces decline due to natural and anthropogenic activities, including tropical storms, boat wake, and shoreline hardening. It can be found more abundantly on the western half of FPAP along the back of GUIS-Perdido Key, mainly along Redfish Cove and Spanish Cove areas. This natural community has one of the highest rates of net primary production of the world's ecosystems, resulting in services valued by humans, such as sediment stabilization, storm protection, beauty, and wildlife (FNAI, 2010). The high production gives rise to terrestrial and marine food webs that support many fascinating animals, including some of commercial and recreational value (Myers & Ewel, 1990).

Seagrass Beds (synonyms: seagrass meadows, grass beds, grass flats) - Estuarine seagrass beds are floral based natural communities typically characterized as extensive stands of vascular plants. This community occurs mostly in subtidal zones, in clear, coastal waters where wave energy is moderate. Seagrasses are not considered true grasses (FNAI, 2010). The species of seagrasses that occur in FPAP are shoal grass (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*). Shoal grass typically grows in shallower coastal waters and is considered an early colonizer of SAV. Turtle grass is characterized by a long, ribbon-like blade, which grows on deeper submerged bottom than that of shoal grass. Shoal grass has a shorter and narrower blade and is often a brighter shade of green. The areas in and around Redfish Cove and Spanish Cove are two areas in FPAP that provide essential habitat to a variety of ecologically, recreationally, and commercially-important species.

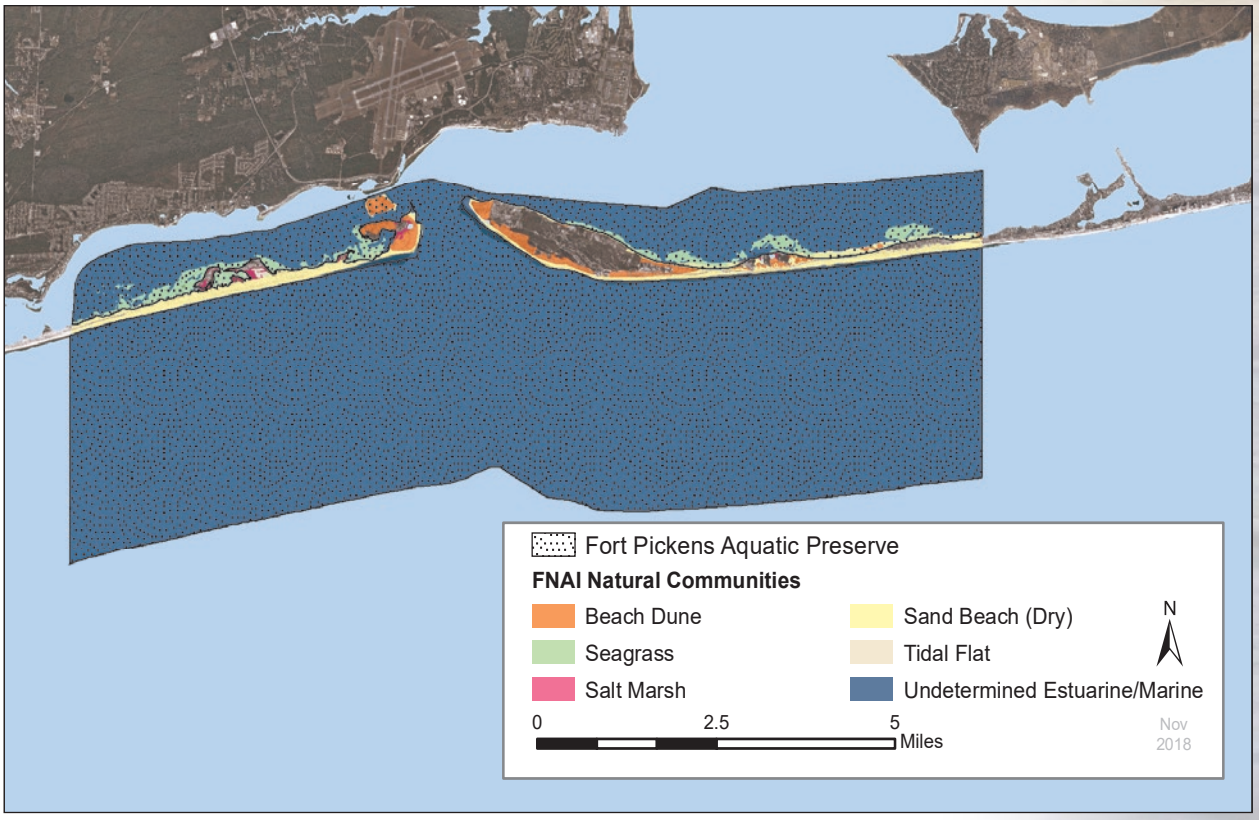
Attached to the seagrass leaf blades are numerous species of epiphytic algae and invertebrates. Together, seagrass and their epiphytes serve as important food sources for turtles and many fish (FNAI, 2010). The dense seagrass also serves as shelter or nursery grounds for many invertebrates and fish, including polychaete worms, blue crab (*Callinectes sapidus*), and mullet (*Mugil* spp.). Estuarine and marine seagrass beds most frequently occur on unconsolidated substrates of marl, muck or sand, although they may also occur on other unconsolidated substrates. The dense blanket of leaf blades reduces the wave-energy on the bottom and promotes settling of suspended particulates. The settled

FNAI Natural Communities	Acreage	% of Acreage	Federal Rank	State Rank	Comments
Beach Dune	355	1.1%	G3	S2	Includes some lands immediately adjacent to FPAP.
Seagrass Beds	561	1.8%	G2	S2	
Salt Marsh	53	0.2%	G4	S4	Includes some lands immediately adjacent to FPAP.
Unconsolidated Substrate	911	2.9%	G5	S5	Mostly unmapped. This acreage includes only tidal flats and sand beach (dry) which may be adjacent to FPAP.
Marine	5441	17.2%	NA	NA	
Estuarine	24301	76.8%	NA	NA	

Table 1 / Summary of Florida Natural Areas Inventory natural communities in Fort Pickens Aquatic Preserve.

particles become stabilized by the dense roots and rhizomes of the seagrasses. Thus, estuarine and marine seagrass beds are generally areas of soil accumulation (FNAI, 2010).

Water temperature, salinity, wave-energy, tidal activity, available light and light penetration are all factors that influence establishment and growth in seagrass beds. This community is also extremely vulnerable to human impacts, with many being destroyed from dredging and filling activities, sewage outfalls and industrial waste. Additionally, seagrass beds are susceptible to damage from anchors, trawling and prop scarring from boat propellers (FNAI, 2010). Areas within the seagrass natural community in FPAP have undergone restoration and the current health and coverage will continue to be monitored and assessed. Future restoration projects will be implemented based upon areas of concern. Currently the western half of FPAP is the primary focus as this is where most of the existing prop scarring and recreation seems to be occurring. GUIS has proposed flat wake zones around all their properties and adjacent managed areas within 150 yards of MHWL for personal watercrafts to limit degradation of SAV (U.S. Department of the Interior, 2018).



Map 6 / Florida Natural Areas Inventory natural communities of Fort Pickens Aquatic Preserve.

Sea stars such as this are among the numerous invertebrates that can be found in seagrass beds.

Marine and Estuarine Unconsolidated Substrate (synonyms: beach, shore, mud flat, tidal flat, soft bottom, sand bar) - FPAP is composed largely of unconsolidated substrate, some of the most widespread natural communities in the world (FNAI, 2010). Throughout Florida, marine and estuarine unconsolidated substrate communities can vary in origin based on the surrounding plant material. Four kinds of unconsolidated substrate - mud, mud/sand, sand and shell - are found throughout the coastal regions of Florida and are present in FPAP mainly in the composition of sand and mud/sand. The unconsolidated substrate, classified as sand, is considered to be approximately two thirds of FPAP's acreage in the Gulf of Mexico. The areas where unconsolidated substrate is considered mud/sand is located around Redfish and Spanish coves.

Biological characteristics of estuarine communities include high productivity, high dominance, and low species diversity (Myers & Ewel, 1990). Estuarine subtidal zones are important feeding grounds for many bottom-feeding fish in the aquatic preserve, such as spot (*Leiostomus xanthurus*), catfish, the federally threatened Gulf sturgeon; and intertidal and supratidal estuarine zones are important feeding grounds for many shore birds and invertebrates. Dry sand areas are present throughout FPAP along Gulf islands and account for the remaining acreage under unconsolidated substrate that is not sand or mud/sand. This dry sand is an ecotone between the surf zone that is inundated on a daily basis and the beach dunes. This zone is valuable habitat for nesting sea turtles and shorebirds. The condition of this natural community is good, but the sedimentation to other natural communities such as seagrass beds continues to be an issue.

Beach Dune (synonyms: upper beach, foredune) - Along the boundaries of FPAP lie beach dunes. This natural community consists of a predominant community of costal vegetation often consolidated by seaoats (*Uniola paniculata*) and bitter panicgrass (*Panicum amarum*). These grasses trap shifting sands and help build up the dune systems. Many other species can be found within this system including searocket (*Cakile* spp.) along high tide lines, Beach morning glory (*Ipomoea imperati*) trailing between the upper beach to foredune, and salt bush, Camphorweed (*Heterotheca subaxillaris*), Gulf bluestem (*Schizachyrium matitimum*) often found intermixed within the foredunes. The vegetation found in this natural community is tolerant of salt or salt-spray and often going for extended periods of dry conditions.

The tricolor heron is an avid fisher in FPAP.

These beach dunes are very important to GUIS as they provide habitat to several listed species, including the Perdido Key beach mouse (*Peromyscus polionotus trissyllepsis*), Godfrey's goldenaster (*Chrysopsis godfreyi*), large-leaved jointweed (*Polygonella macrophylla*), as well as others. Beach dune systems also hold sediment which is crucial to FPAP in the protection of SAV. Currently, some beach dunes adjacent to FPAP are in need of restoration or enhancement to stabilize many stretches to protect GUIS and FPAP lands. From 2009 to 2014, DEP restored, enhanced and diversified more than 11 acres within GUIS-Perdido Key for dune diversity, stabilization, beach mouse habitat and research. Dunes impacted by natural processes are not restored as per National Park Service policy..

Native Species

The diverse habitats found within FPAP serve as a refuge for a wide variety of fauna and flora. Seagrass beds provide food, shelter and nursery grounds for numerous species including pinfish (*Lagodon rhomboides*), blue crabs and manatees. Many commercial and recreational fish species utilize FPAP during some part of their life cycle including Florida pompano (*Trachinotus carlinus*) and mullet (*Mugil cephalus*). Fish in the aquatic preserve are diadromous species covering both marine and estuarine habitats. Since most of these fish species rely on submerged aquatic vegetation, this valuable resource is not only essential to FPAP but the entire Gulf Coast. More than one hundred different families of fish utilize the natural communities of FPAP. These fish also provide food for the numerous bird species that habitat the area and use the adjacent barrier island as a resting stop along their way. There are more than three hundred avian species that have been identified within FPAP and adjacent GUIS.

The aquatic preserve is along the path of a major migratory bird flyway and includes 23 species of wood-warblers, numerous gulls and terns, and sandpipers and plovers (DEP, 2018; Great Florida Birding and Wildlife Trail, n.d.-a, n.d.-b; U.S. Department of the Interior, 2012). The tidal marshes that fringe much of the shoreline not only provide valuable habitat for the mollusks and fish, but the wading birds that patiently stalk them. The tricolor heron and little blue heron are two of the listed species that rely on these tidal marshes.

Several mollusks also use the salt marsh for their food source. Several mussel species within the salt marsh habitat bury themselves in the sediment and filter water while the marsh periwinkle (*Littoraria*

irrorata) eats the detritus and algae found on the marsh grasses. The mollusks found within FPAP provide a valuable food source for crabs, birds, and other animals that live in and around FPAP, like the raccoon (*Procyon lotor*).

While documented cases of all the native sea turtles have occurred in FPAP, leatherback and Kemp's ridley sea turtle sightings are rare. Green and loggerhead sea turtles have the highest frequency of sighting and nesting activity in FPAP, with almost 7,000 hatchlings released into the gulf in 2016 (U.S. Department of the Interior, n.d.-b). Several snake species also live within these habitats, one of which is a listed species, the Eastern indigo snake (*Drymarchon couperi*).

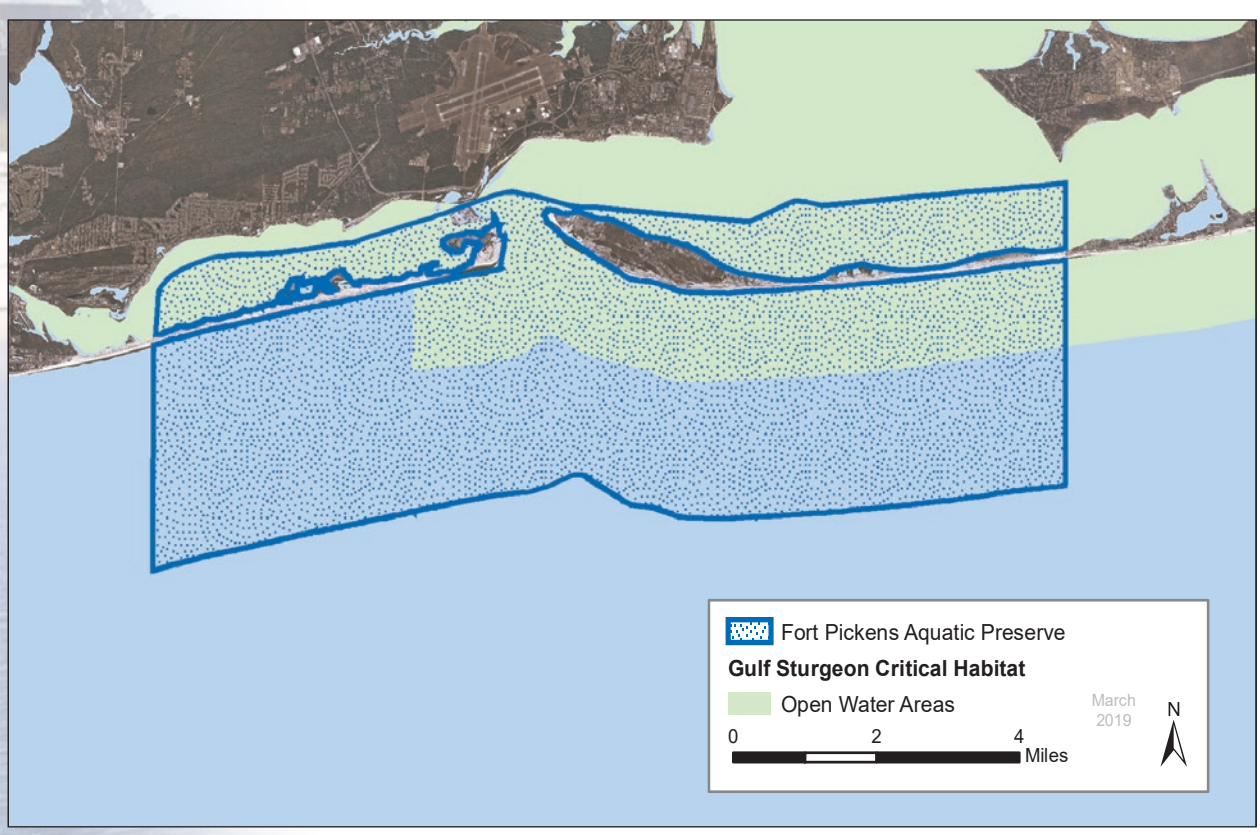
Most of the native mammals that are observed inhabiting FPAP typically live within the dune system or forested areas of GUIS, but use the marsh, sand or estuarine habitats for foraging. The species that solely utilize FPAP waters are the West Indian manatee and the bottlenose dolphin (*Tursiops truncatus*).

The species list includes species found in and around much of the aquatic preserve. While many of these species utilize several different natural communities, it is important to note that the list includes adjacent lands. A complete survey of habitats and species within the aquatic preserve has not been completed; however, this plan addresses the need within the next ten years. For a complete list of documented native species, see Appendix B.3 - Species Lists.

Listed Species

A variety of species listed by U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act and species listed as threatened, endangered or of special concern in the state of Florida, are found or are likely to be found in FPAP. Documented and potential species listed as endangered under the Endangered Species Act include the leatherback, Kemp's ridley, and hawksbill sea turtles. Species listed as threatened under the Endangered Species Act include Gulf sturgeon, West Indian manatee, and the loggerhead and green sea turtle. There are several species that are listed by Florida as well. For a complete list of listed species, please see Appendix B.3 - Species Lists.

Gulf sturgeon is a subspecies of Atlantic sturgeon (*Acipenser oxyrinchus*). USFWS listed the subspecies as threatened on September 30, 1991. Gulf sturgeon's range is limited to the eastern Gulf of Mexico from Lake Pontchartrain/Pearl River in Louisiana to the Suwannee River in Florida. Food sources for



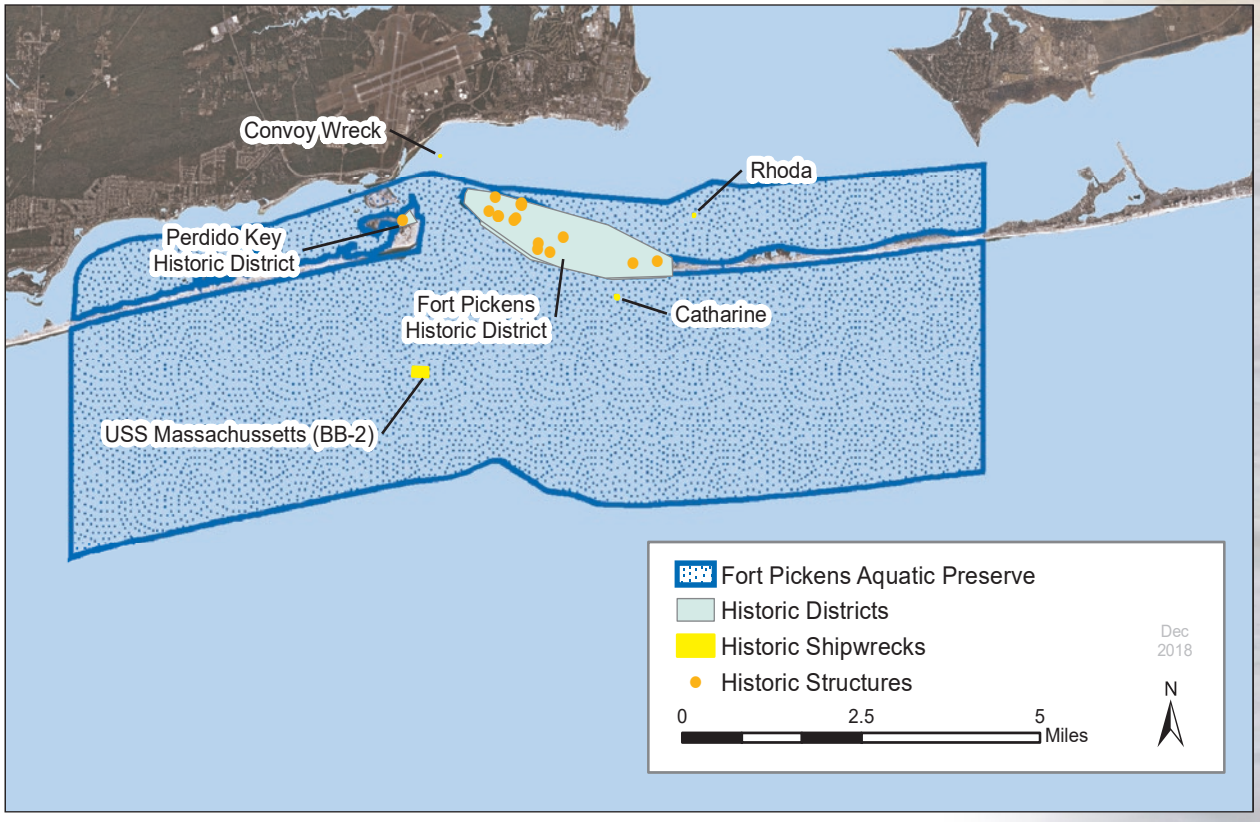
Map 7 | Critical Habitat Area for Gulf sturgeon.

the anadromous subspecies include amphipods, lancelets, polychaetes, gastropods, shrimp, isopods, mollusks, and crustaceans (DEP, 2016). In Florida, seven rivers have been documented as spawning grounds for Gulf sturgeon (DEP, 2016). In 2000 and 2001, the Northwest Florida Aquatic Preserves (NWFLAP) office documented Gulf sturgeon in the Yellow River (Craft, Russell, & Travis, 2001), and USFWS continues to monitor the species in the PBW (Personal communication, J. Knight with FWC, May, 2017). In addition to riverine systems, Gulf sturgeon rely on seagrass beds and unconsolidated substrate natural communities (USFWS & Gulf States Marine Fisheries Commission, 1995). Other threats include over-exploitation, incidental catch, dredging, removal of snags and lost habitat due to dredged material placement (USFWS & Gulf States Marine Fisheries Commission, 1995; USFWS & National Marine Fisheries Service, 2009). USFWS designated areas in and around the aquatic preserve as critical habitat for Gulf sturgeon (USFWS, 2003) (Map 7).

The West Indian manatee (*Trichechus manatus*) has a wide range throughout Florida and recent populations have increased, resulting in a down listing from endangered to threatened in 2017 (USFWS, 2017). The species is still federally protected under the Marine Mammal Protection Act and many precautions have been implemented within known areas of inhabitance to keep them from harm. The West Indian manatee requires warm-water habitat when water temperatures fall below 68° F for extended periods of time during the winter months. Manatees in northwest Florida typically migrate to warm-water areas (like Florida's springs and power plant outfalls) when coastal waters cool. However, individuals have been observed in all seasons.

Invasive Non-native and/or Problem Species

Invasive non-native species are species that have been introduced to an area, naturalized, and are spreading on their own. Not all introduced species become invasive and the ones that do are generally opportunistic, aggressive, and early colonizing species in their native range. If left unchecked, invasive non-native plants and animals alter the character, productivity and conservation values of the natural areas they invade (FWC, n.d.-c). In some cases, native wildlife may also pose management problems or nuisances. A nuisance animal is an individual native animal whose presence or activities create special management problems (FWC, n.d.-c). Florida is second only to Hawaii in the number of established invasive species (Simberloff, 1994). The recent threats from non-native species has critically affected native species and altered habitats (Ecological Society of America, 2004). Introductions of non-native marine invertebrates and seaweeds to coastal habitats in the United States have increased one hundred-fold in the last 200 years (Jacoby, Walters, Baker, & Blyler, 2003).



Map 8 | Archaeological and historical sites associated with Fort Pickens Aquatic Preserve.

Fort Pickens' Battery Langdon was constructed in 1923 and fortified in 1943. It now watches over a swimming beach.

Lionfish (*Pterois volitans*) have negative impacts to marine and estuarine ecosystems. These invasive and predatory fish have been seen several times in the vicinity of FPAP and sightings are being reported to FWC. The removal of these via netting or spearing is encouraged by FWC by proper state permitting and safety guidelines (FWC, n.d.-d) Lionfish reach maturity in less than a year and can release thousands of eggs every four days (FWC, n.d.-d). These fish have venomous spines which make them difficult to handle and catch. One of the most alarming facts is that they can consume prey that are greater than half their length and on more than 70 different species of marine fish and invertebrates, while also adapting to take on fresher water habitats for short periods of time (FWC, n.d.-d).

Asian tiger shrimp (*Penaeus monodon*) have been caught in local area by commercial shrimpers. The invasive Asian tiger shrimp can grow to be quite large and occupy a range of habitats as juveniles, then move offshore as adults (U.S. Geological Survey, n.d.). These shrimp are aggressive predators potentially on many invertebrate organisms such as shrimp, crabs, bivalves and others, prey on and outcompeting local native species food sources (U.S. Geological Survey, n.d.)

Florida Exotic Pest Plant Council tracks and categorizes invasive non-native plants. Category I species are the most invasive and have been documented altering native plant communities, changing community structure, disturbing ecological functions or hybridizing with native species (Florida Exotic Pest Plant Council, 2019). Category I species documented in the aquatic preserve or close to the boundaries include mimosa tree (*Albizia julibrissin*), cogongrass (*Imperata cylindrica*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), Peruvian primrosewillow (*Ludwigia peruviana*), Japanese climbing fern (*Lygodium japonicum*), torpedo grass (*Panicum repens*), and Chinese tallow-tree (*Triadica sebifera*). Florida Exotic Pest Plant Council Category II species are those that are increasing in number but have not yet altered native plant communities to the extent of Category I species. However, no Category II species have been documented within or adjacent to FPAP. All plant management is handled by National Park Service Staff. Assistance regarding any control near aquatic boundaries is available by NWFLAP staff when requested.

FPAP has seen an increase in common reed (*Phragmites australis*) with one location on GUIS-Perdido Key side increasing in square footage over the years and several larger patches lie within GUIS-Ft. Pickens. DEP staff has offered input on appropriate control measures. While the common reed is not considered an invasive species, it is categorized as a nuisance species (Gucker, 2008). It does often outcompete other native species and the shores will continue to be monitored.

The National Park Service has a ferry system to improve access to Gulf Islands National Seashore.

Beach vitex (*Vitex rotundifolia*) has been identified along the shore in various locations at GUIS-Perdido Key. It is a woody stemmed shrub that grows low to the ground with arms that sprawl out around the stem (University of Georgia, n.d.) The plant grows purple flowers and has oval silvery-gray leaves and tends to grow in sandy soil. Florida Sea Grant agents in Escambia and Santa Rosa counties have been eradicating vitex outside of GUIS boundaries and educating homeowners on local native plant species for landscaping.

Archaeological and Historical Resources

Archaeological sites and historical resources are protected under Florida Statutes Chapter 267 and are not to be disturbed unless prior permission is granted from the Division of Historical Resources. The Florida Division of Historical Resources has documented evidence of prehistoric cultures from Deptford (700-300 B.C.) to Twentieth Century American (1900 A.D. to present) in 68 sites encompassing 1,276 acres within or adjacent to the aquatic preserve boundaries, 21 of which are within the aquatic preserve (Appendix B.5).

Many of these archaeological and historical resources lie within GUIS-Fort Pickens actively managed areas. Much of the historical sites encompass the Fort Pickens and associated batteries. GUIS actively uses historical resources for education/outreach and tourism.

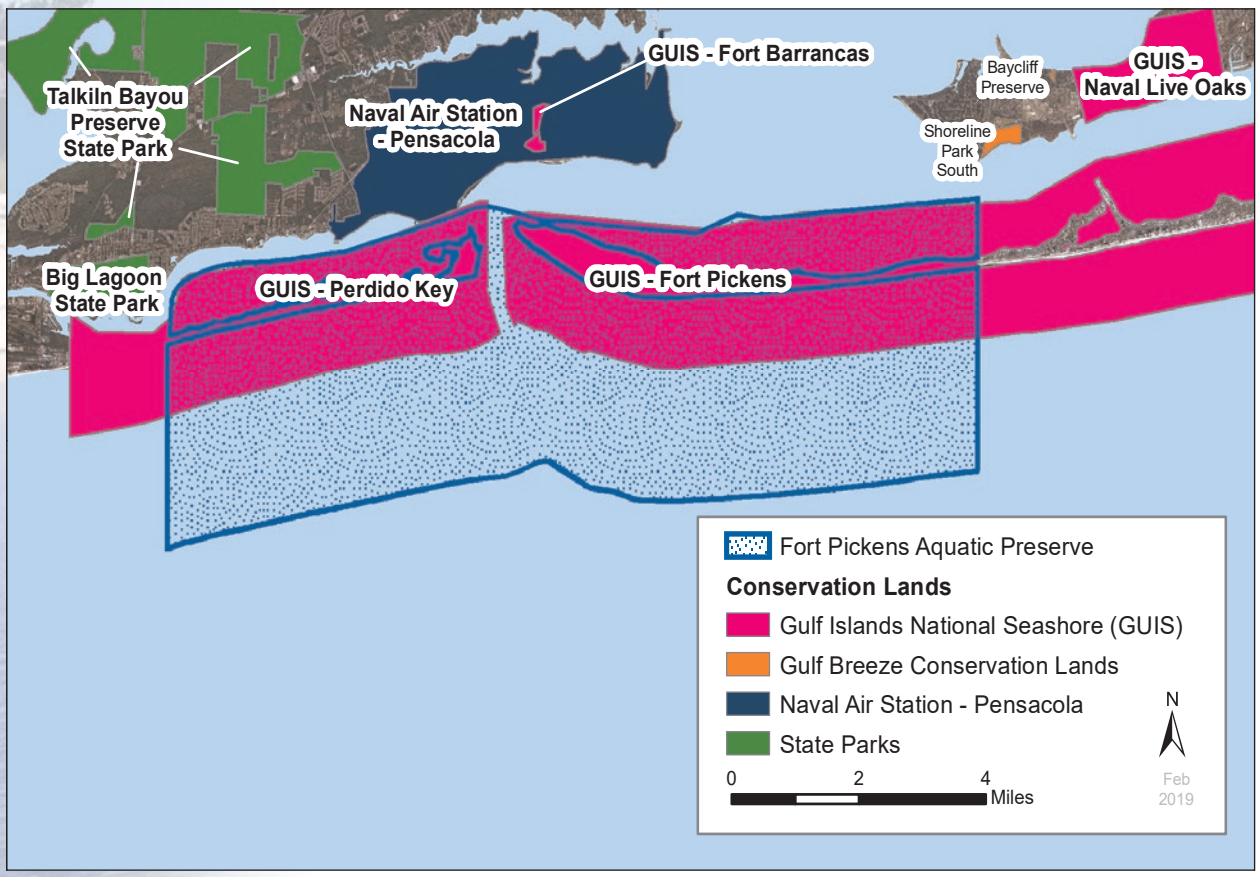
In total, 13 of the cultural resources within FPAP are underwater and 11 of these are historic shipwrecks. USS Massachusetts is the oldest existing American battleship and was towed just outside of Pensacola Pass in 1921 where it was scuttled after being used as a target for artillery experiment (Florida Department of State, n.d.). Two of the battleship's cannons are visible and marked on navigational charts as well as a buoy. The USS Massachusetts is also part of the Florida Maritime Heritage Trail, as well as part of the Florida Underwater Archaeological Preserve which was dedicated in 1993 (Florida Department of State, n.d.). Several wrecks, such as Catharine and Rhoda, are within tidal range and become visible at various times, especially during the winter. They become reburied during sediment accumulation.

Other Associated Resources

The scene from atop the numerous military batteries that dot the barrier island and the panorama from the top of Fort Pickens gives the most picturesque views of FPAP. From here one can see both the gulf and the sound side of FPAP. All of GUIS Florida is also part of the Great Florida Birding & Wildlife Trail.

For very secluded experiences, visit the beaches on the western side of FPAP. Most of the area around this locale is accessible only via a boat or by foot. The access road and parking extends only partially near FPAP here at GUIS-Perdido Key.

Pensacola Naval Air Station is visible from the scenic shores of Fort Pickens Aquatic Preserve and Gulf Islands National Seashore.



Map 9 | Conservation lands near Fort Pickens Aquatic Preserve

The Florida Circumnavigational Saltwater Paddling Trail traverses FPAP, beginning at Big Lagoon State Park and ending at Navarre Beach Bridge. This is also the starting (or ending) for the trial, depending on which order you do navigate the trail.

*3.4 / **Values***

GUIS-Fort Pickens hosted more than 600,000 visitors in 2017, with GUIS-Perdido Key bringing the total to more than 965,000 visitors (U.S. Department of the Interior, n.d.-c). During part of this time, the Fort Pickens access was closed due to storm damages to the main road. A ferry system for GUIS began in 2018 adding additional visitor opportunities to the Fort Pickens area (U.S. Department of the Interior, n.d.-a). FPAP, in conjunction with adjacent conservation lands, supports a diverse ecosystem, benefiting both the natural habitat and economy of surrounding populations. FPAP's natural coastal resources and recreational opportunities draw a variety of year-round nature enthusiasts with activities including learning about American history, boating, fishing, kayaking, hiking, and bird watching.

In 2015, Florida's commercial and recreational fisheries generated $28.7 billion in sales and $7.5 billion is income and supported more 176,000 jobs (National Marine Fisheries Service, 2017). This powerful economic benefit derived from sport fishing would not be possible without healthy, suitable habitats including clean rivers, bay, and estuaries to exist as breeding and nursery grounds for fisheries. An estimated 90 to 98 percent of commercially and recreationally important Gulf of Mexico species of fish and shellfish are estuarine dependent at some point in their lives (Thorpe et al., 1997).

Healthy coastal wetlands and barrier islands can also help mitigate the negative impacts of hurricanes, serving as horizontal levees to lessen storm surges. Florida's coastal resources provide an estimated $11 billion a year in storm protection services (The Nature Conservancy, 2009). Additionally, coastal estuaries act as filters for land runoff and help to replenish ground water.

*3.5 / **Citizen Support Organizations***

The NWFLAP office maintains a Citizen Support Organization - the Ecosystem Restoration Support Organization. The Ecosystem Restoration Support Organization is a nonprofit organization, 501(c)(3) which was founded in 1999 by former restoration specialists and DEP employees and helps NWFLAP in grant funding opportunities as well as fund raising, ecotourism events and restoration project implementation. The Aquatic Preserve Society - a statewide friends group for all aquatic preserves was created in 2014, and NWFLAP may also participate or receive support from this group.

*3.6 / **Adjacent Public Lands and Designated Resources***

FPAP is protected by public lands along approximately 50 percent of its shoreline (Map 9). The National Park Service manages GUIS which cuts horizontally through the center of FPAP. GUIS comanages aquatic portions of FPAP as well as adjacent public lands. Just outside the northwest corner of FPAP, lies Big Lagoon State Park. Directly to north of FPAP is Naval Air Station Pensacola (NASP).

Gulf Islands National Seashore is managed under the National Park Service, which is a federal agency managed by the United States Department of the Interior. GUIS encompasses barrier islands and coastal mainland in Mississippi and Florida and consists of contiguous boundaries from Gulfport Ship Channel in Mississippi to the Mississippi/Alabama state line and from the from the easternmost seven miles of Perdido Key to East Pass in Florida, exclusive of Pensacola Pass. The Santa Rosa Island lands are included in this jurisdiction with, exclusive of leased lands within Pensacola Beach and Navarre Beach. The current authorized acreage for GUIS is 139,175 acres, which includes 4,630 acres that are designated wilderness (D. Brown, personal communication, September 6, 2019). In 1986, an act was passed by Florida Legislature, in cooperation with federal government, for concurrent jurisdiction of co-managed submerged lands lying within both FPAP and GUIS (DNR, 1992). Fort Pickens and Fort McRee reside on GUIS managed lands. Fort Barrancas and fort Advanced Redoubt lie on NASP but are owned and managed by the National Park Service. This area also includes Naval Live Oaks. GUIS is home to many rare or listed plant species as well. GUIS-Perdido Key is also home to the endangered Perdido Key beach mouse (*Peromyscus polionotus trissyllepsis*)

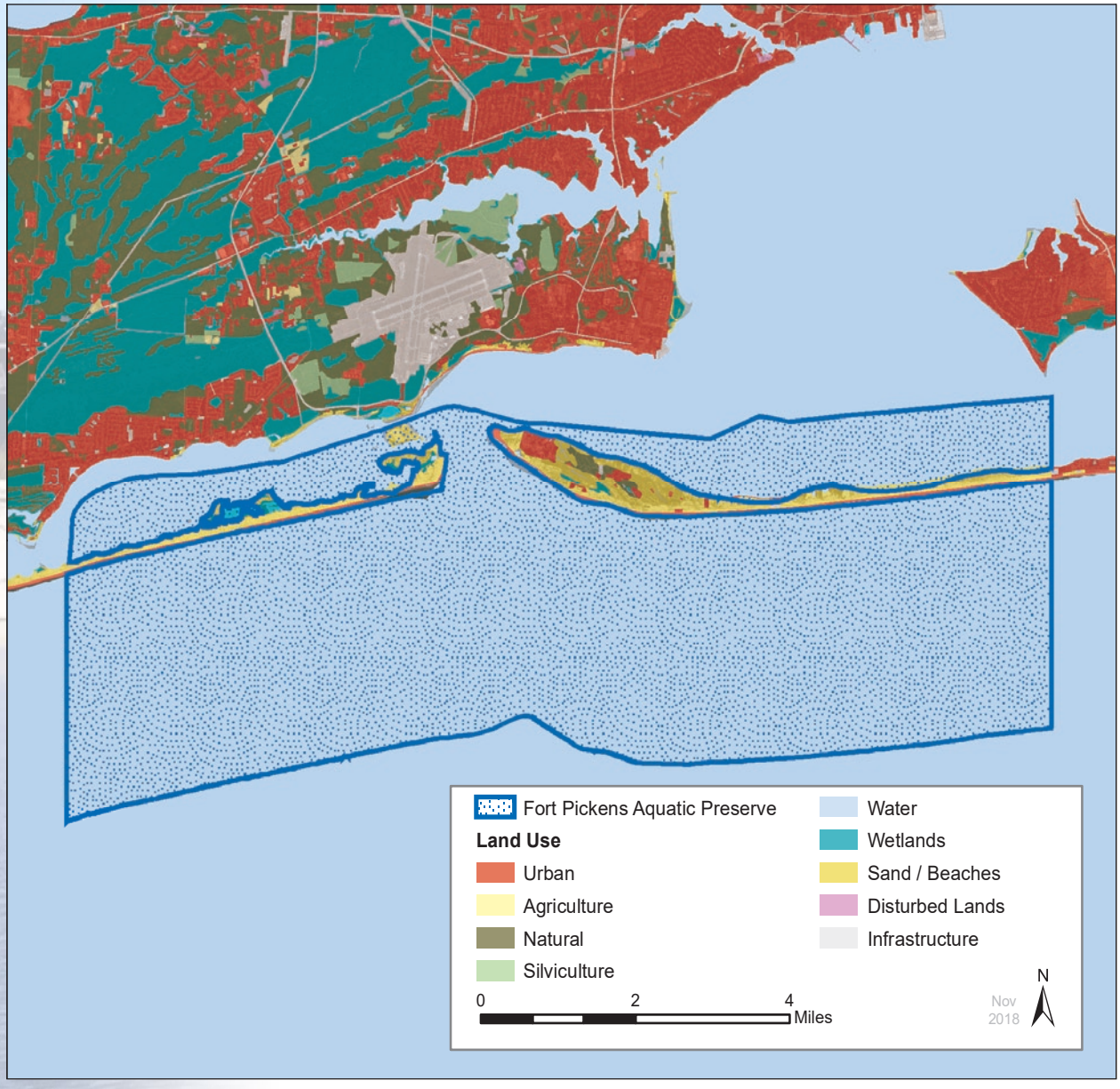
Big Lagoon State Park is managed by DEP – Division of Recreation and Parks. It encompasses 732 acres - 684 upland and 48 submerged (DEP, 2018). Big Lagoon State Park has many natural communities,

including quite a large acreage of salt marsh which acts as a natural filter and buffer for wave energy. Big Lagoon State Park is popular for beach use, swimming, boating, paddling and is also the starting point for the Florida Circumnavigational Saltwater Paddling Trail which takes participants right through FPAP.

Tarkiln Bayou Preserve State Park is managed by DEP – Division of Recreation of Parks. Its 4,470 acres includes nearly 700 acres of wet prairie and approximately 20 acres of seepage stream – both of which are important habitats for pitcher plants. Its primary recreational uses are birding, picnicking, and hiking. Its trails include a short boardwalk to allow visitors access to the pitcher plant habitat (DEP, 2018).

Naval Air Station Pensacola is managed under the United States Department of Defense and is a military installation. NASP consists of 5,800 acres and has roughly 17 miles of shoreline (U.S. Department of the Navy, 2016). One of the focuses of NASP is to restore environmental habitat and promote stewardship. Fort Barrancas and Advanced Redoubt lie within NASP boundaries, but are managed by GUIS. The fort lands have been administratively transferred to U.S. Department of the Navy.

The **Panhandle Shipwreck Trail** is an underwater system of shipwrecks from Pensacola to Mexico Beach consisting of twelve sites. These wrecks serve as dive sites and artificial reefs providing not only essential fish habitat but a unique opportunity for divers. Many dive charters utilize these locations due to the natural beauty they offer as well as their close proximity. Immediately outside of FPAP are five of these sites, one of which is the USS Oriskany, the largest artificial reef in the world and a site that draws divers from all over the United States.



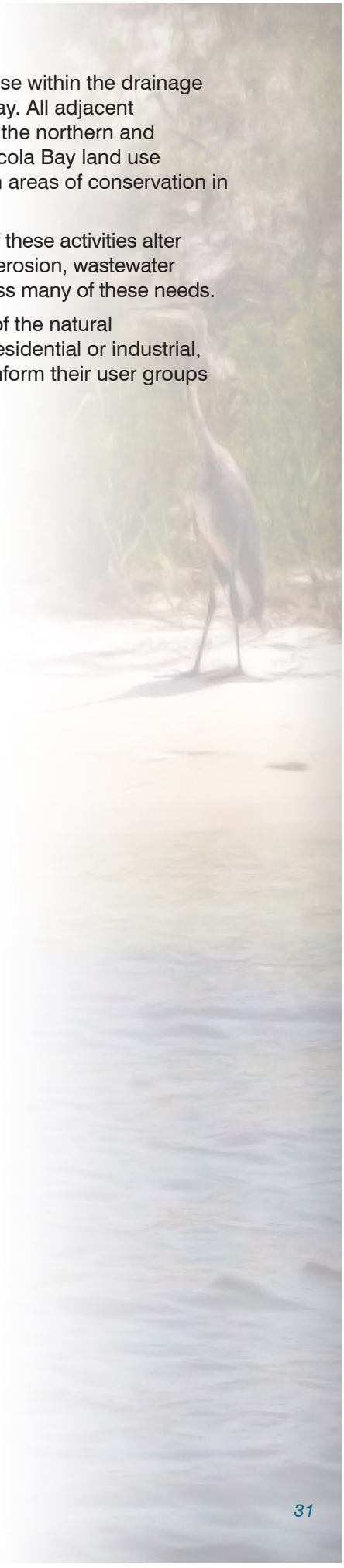
Map 10 | Land Use surrounding Fort Pickens Aquatic Preserve

3.7 / ***Surrounding Land Use***

Water quality and habitat with FPAP are directly related from surrounding land use within the drainage basin for the Florida and Alabama watersheds of Perdido Bay and Pensacola Bay. All adjacent boundaries lie within natural use condition, however the urban waterfront along the northern and northeastern area of FPAP directly affect the aquatic preserve as well. All Pensacola Bay land use ultimately affects FPAP. Most of the urban land has already been developed with areas of conservation in place already by federal and state agencies.

Anthropogenic activities have increased drastically over the past century. Many of these activities alter the quality and quantity of water and habitat in FPAP, including but not limited to, erosion, wastewater discharges, storm water discharges. Past and future projects have and will address many of these needs.

As much of the adjacent land is already in conservation, this aids in protection of the natural communities of FPAP. To the north where much of the surrounding land use is residential or industrial, these operations are regulated. Working with NASP and GUIS to educate and inform their user groups and visitors on how activities affect the managed resources is a priority.



Aquatic preserve staff uses quadrats to monitor seagrass growth annually.

Part Two

Management Programs and Issues

Chapter Four

Fort Pickens Aquatic Preserve Management Programs and Issues

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

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

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

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

Each issue will have associated goals, objectives, and strategies. Goals are broad statements of what the organization plans to do and/or enable in the future. They should address identified needs and advance the mission of the organization. Objectives are a specific statement of expected results that contribute to the associated goal, and strategies are the general means by which the associated objectives will be met. Appendix D contains a summary table of all the goals, objectives and strategies associated with each issue.

4.1 / ***The Ecosystem Science Management Program***

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

4.1.1 / ***Background of Ecosystem Science at Fort Pickens Aquatic Preserve***

This section is composed from site knowledge gathered since the office reopened in 2011 and current management's involvement with other agencies familiar with the area. FPAP has been coordinating with management at Gulf Islands National Seashore (GUIS) to address needs regarding resource management and ecosystem science at FPAP and GUIS.

Continuous water quality sampling was conducted by Northwest Florida Aquatic Preserves (NWFLAP) prior to office closure. The parameters of turbidity, conductivity, salinity, temperature, dissolved oxygen, and pH were collected. This data is not currently being collected, but NWFLAP plans to resume sampling once funding has been obtained for equipment.

In the past decade, seagrass (submerged aquatic vegetation [SAV]) restoration, protection and monitoring has been implemented at various locations in and adjacent to FPAP. This includes the transplanting of shoal grass and turtle grass, porewater sampling within these areas, bird stake SAV restoration and inclusion of no combustible engine zones. The majority of this has been within the GUIS Perdido Key area of FPAP. SAV monitoring has been conducted by NWFLAP, GUIS, Dauphin Island Sea Lab, Florida Fish and Wildlife Conservation Commission (FWC) and the University of West Florida (UWF). FWC's Coastal Habitat Integrated Monitoring and Mapping Program has been conducted with local collaboration and includes salt marsh and SAV within FPAP.

4.1.2 / ***Current Status of Ecosystem Science at Fort Pickens Aquatic Preserve***

Ecosystem science in FPAP is has been a high focus due to concerns of decline in SAV throughout the watershed over the last 60 years. Seagrass habitat declined by 95 percent between 1950 and 1980, and while it has improved, remains far below historic levels. Thus SAV is a visible focus regarding the health of the watershed (Thorpe, et al., 2017a). With support from many state and federal sources, many partners have been able to assess these trends and address local impacts. With continued monitoring, NWFLAP will

be able to provide additional data to encourage land use best management practices, habitat conservation and recreational issues.

Continuous water quality sampling will be started up in the future to begin collection of the following parameters: turbidity, conductivity, salinity, temperature, dissolved oxygen, and pH. This will begin providing a long-term snapshot of the water quality within the aquatic preserve. The collected data will be used to better assess SAV health as well as impacts from local navigation and recreation usage. Due to equipment funding, sites have yet to be determined and implemented.

NWFLAP hosts interns from UWF, giving them on the job experience in habitat restoration, environmental science, environmental management, geographic information science (GIS), and others. These undergraduate, and occasionally graduate, students utilize classroom skillset and learn in the field monitoring protocols with us. These opportunities usually involve habitat restoration, water quality sampling and habitat monitoring. During the summer and fall semesters, interns assist with bay scallop and SAV monitoring.

4.1.3 / ***Ecosystem Science Issues***

Habitat loss and water quality are the biggest ecosystem science issues in FPAP.

Issue I / **Water Quality**

While many homes in bayous within the Pensacola Bay Watershed (PBW) are in the process of connecting to sewer, there are still concerns of the potential impacts to water quality and the health of habitat. Much of the decline in habitat throughout, including seagrass, can be attributed to a reduction in water quality from decreased light penetration. Since 2000, water clarity has improved, but seagrass remains absent in many areas (Yarbro & Carlson, 2018). Researchers have proposed seagrass as an indicator of estuarine change (Biber, Paerl, Gallegos, & Kenworthy, 2004). Storm water runoff is another factor currently being addressed by local agencies, and has recently been elevated to an issue of high importance. Severe flooding events in Escambia, Santa Rosa, and Okaloosa counties on April 29, 2014 overloaded current facilities and infrastructure. All of these practices discharge potential excess nitrogen

Propeller scars such as these can take years to recover or even permanently damage the seagrass beds.

and phosphorus into the estuarine system decreasing primary productivity (Okaloosa County rain event, 2014; Walton Outdoors, 2014). The U.S. Environmental Protection Agency suggests a guideline of 10:1 ratio of concentrations of nitrogen to phosphorus which is often exceeded in the bayous of the PBW (U.S. Environmental Protection Agency, 2005). The physical parameters that NWFLAP monitors in their continuous water quality monitoring program consist of salinity, turbidity, dissolved oxygen, pH, temperature, conductivity, clarity, and the potential to monitor others. These parameters also vary depending upon species monitoring and help guide management tools and restoration implementation. Due to high amounts of rain and stormwater influx, seasonal conditions affect the water quality and clarity in FPAP (Yarbro & Carlson, 2018).

Goal One / **Improve water quality in FPAP as well as the surrounding waterbodies.**

Objective One / Implement research, restoration and enhancement projects throughout FPAP and adjacent bays (where needed and appropriate), that focus on improving water quality.

Integrated Strategy One / Implement a continuous water quality monitoring program within FPAP.

Performance Measures
- Continuous water quality monitoring sites are established.
- Collect additional data for water quality report.

Integrated Strategy Two / Promote research within FPAP with UWF and other institutions of higher education to promote a basin-wide approach on how regional impacts affect these systems.

Performance Measure
- Publish additional articles and publications throughout the region focusing on FPAP and the PBW.

Integrated Strategy Three / Use lessons from successful habitat restoration and enhancement projects to expand on how projects increase beneficial habitat and the anticipated time for improved water quality.

Performance Measure
- Compile annual monitoring data and generate a report on water quality improvements.

Issue II / **Addressing Habitat Loss/Decline**

The degradation of habitats and decline of wildlife populations has been a focus for many regionally. The decline in SAV acreage, density and quality, collapse of scalloping within FPAP waters, and a lower presence of blue crabs and horseshoe crabs (*Limulus polyphemus*) have all been on the forefront of issues and concerns within recent years. The area of the bay covered in seagrass beds has declined dramatically in the last 60 years. Seagrass habitat declined by 95 percent between 1950 and 1980, and while it has begun returning in some areas, it remains far below historic levels (Thorpe, et al, 2017a). This decline in seagrass coverage is thought to be the cause of the decline in shrimp and scallops in the 1960s. The scallop industry peaked during 1968-1969, but is now non-existent (Lewis, Kirschenfeld, & Goodhart, 2016). The Escambia County University of Florida, Institute of Food and Agricultural Sciences (UF/IFAS) Sea Grant Program began an annual scallop survey in 2015, but only one live scallop has been found to date (O'Connor, 2018; Suchcicki, 2017). The commercial catch of blue crabs in Escambia County dropped from more than 400,000 pounds in 2000 to barely 11,000 pounds in 2018 (FWC, n.d.-a). Horseshoe crab populations are in decline throughout the southeast United States and FWC has begun a citizen scientist program, Linked with Limulus, to better assess population information (FWC, n.d.-b)

Goal 1 / **Slow or stop habitat and species loss.**

Objective 1 / Continue the restoration of lost SAV within FPAP.

Integrated Strategy One / Determine ideal locations and implement restoration or enhancement projects to protect SAV.

Performance Measures
- Survey areas of prop scarring within FPAP.
- Map existing SAV acreage and acres enhanced or restored.

Objective 2 / Address species decline for indicator species, such as scallops and horseshoe crab

Integrated Strategy One / Monitor indicator species' populations.

Performance Measures
- Continue to participate in scallop surveys, such as UF/IFAS Escambia County's annual Great Scallop Search.
- Add Escambia and Santa Rosa counties to FWC's Linked with Limulus program.

4.2 / The Resource Management Program

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

4.2.1 / Background of Resource Management at Fort Pickens Aquatic Preserve

This section is composed from site knowledge gathered since the office reopened in 2011 and current management's involvement with other agencies familiar with the area. FPAP has been coordinating with management at GUIS to address needs regarding resource management and ecosystem science at FPAP.

Office reorganization has allowed what was once the Ecosystem Restoration Section of the Florida Department of Environmental Protection's Northwest District, to merge with RCP as NWFLAP. Under this section, several projects and monitoring were being conducted and are still currently under NWFLAP management. Work was being conducted throughout the Panhandle and the restoration ultimately proved very beneficial to all the watersheds as well as the aquatic preserve program.

One project that was implemented was Project GreenShores. This DEP managed project is a highly visible and accessible restoration project along Pensacola's urban shoreline. This project encompasses more than 30 acres of oyster, salt marsh, bird and seagrass habitat along Bayfront Parkway and provides habitat, improves water quality, promotes stewardship and functions as an education and outreach location for local schools and universities. It was conceptualized in 1999 and designed, permitted, funded and installed in less than ten years, with the support of more than 60 project partners. This project lies directly across Pensacola Bay from the northeast boundary of FPAP, to the west of Pensacola Bay Bridge (known locally as Three-Mile Bridge). DEP earned numerous accolades for this project for setting a precedent for habitat restoration and creation in the region. Project GreenShores received recognition and numerous awards across the nation (e.g. U.S. Environmental Protection Agency Gulf Guardian Award, Audubon Conservation Award) and has been visited and used as an education component for international visitors and students by EPA and Gulf Coast Citizen Diplomacy. Since implementation, Project GreenShores has also been designated as a site on FWC's Great Florida Birding Trail (Great Florida Birding and Wildlife Trail, n.d.-c), a geocaching site, and an ecotourism destination featured by Visit Florida and through local tourism council. This project will continue to be managed and monitored by NWFLAP.

4.2.2 / Current Status of Resource Management at Fort Pickens Aquatic Preserve

The resource management of FPAP, and the other two aquatic preserves within this region, is overseen by RCP's NWFLAP office. Through working together with other management agencies and states, the resources within FPAP can be maintained for future generations. Integration between resource management, ecosystem science, education and outreach, as well as collaboration with other organizations, optimizes the management of FPAP. Staff often works with GUIS, UWF, Escambia and Santa Rosa County Sea Grant and Institute of Food and Agricultural Sciences extension agents, Escambia County Marine Resources Division, Big Lagoon State Park, as well as others. Through strong management such as this, research, education and awareness are all top priorities among constituents. Recently a grant was awarded from the U.S. Environmental Protection Agency to Escambia County for the creation of an estuary program, which has representation from all the above partners (Little, 2018). GUIS is currently

The Fort Pickens Area Fishing Pier is a licensed pier and users do not need a license to fish for recreational purposes. (There is a two pole limit.)

working with NWFLAP to restore several areas within their managed areas utilizing native plants. NWFLAP has also been assisting Sea Grant with scallop surveys as well coordination on oyster shell recycling, water quality and habitat restoration. Project GreenShores will also undergo changes by adding increased breakwater acreage and height to existing oyster breakwaters and adding salt marsh acreage. This phase of the project is being funded and implemented under the Deepwater Horizon Natural Resource Damage Assessment Phase III early restoration funding, by the National Oceanic and Atmospheric Administration (NOAA) with DEP. This project will continue to support the existing habitat, ecotourism and recreation by adding approximately 3.5 acres of oyster breakwater and approximately 9.2 acres of salt marsh. The project will be monitored during all phases of implementation, as well as for several years post-monitoring, During the time, NWFLAP will continue to monitor and manage the project and coordinate with NOAA, DEP and contractor for monitoring.

NWFLAP is coordinating with other agencies to address resource management. Current vacancies within GUIS have restrained submerged resource management and NWFLAP is planning with GUIS staff to accommodate these needs.

*4.2.3 / **Resource Management Issue***

Issue III: Improving Information about Submerged Resources

With many different agencies managing shared resources, sometimes communication and collaboration opportunities are missed. Representatives from these agencies have numerous opportunities to share resources and alleviate some duties. Although the work goals may not always completely line up, all parties would benefit from the outcome of increased collaboration.

Some data gaps include the cataloging of submerged resources within FPAP, GUIS and Escambia County. Surveying these resources will be essential in providing a current assessment of the habitat for valuation for tourism, fisheries and baseline assessment in the face of natural disasters. Improved coordination with GUIS, FWC, and Big Lagoon State Park and the local counties will allow for better communication on resources and needs.

Goal 1 / **Maintain resource inventories for FPAP.**

Objective 1 / Conduct and maintain a record of submerged and emergent resources.

Integrated Strategy One / Record and inventory SAV, attached algae, marsh grasses, and other shoreline vegetation to include satellite imagery and aerial photographs.

Performance Measure
- Inventories are updated annually.

Integrated Strategy Two / Map benthic habitats in FPAP.

Performance Measure
- A comprehensive mapping survey is completed for FPAP and updated to assess acreage of key habitats.

Integrated Strategy Three / Collect data from inventories and mapping.

Performance Measure
- Biological resource maps are gathered or created.

Integrated Strategy Four / Identify and locate unknown archaeological and historical resources.

Performance Measures
- Staff will obtain Archaeological Resource Management training when available in the area.
- Staff will monitor for unidentified cultural resources during other activities in the aquatic preserve. Archaeologists from the Division of Historic Resources, Bureau of Archaeological Research or UWF will be invited to join them in the field.

Integrated Strategy Five / Monitor existing archaeological and historical resources.

Performance Measure
- Staff will collaborate with GUIS to regularly assess the known archaeological sites.

The vital seagrasses in Fort Pickens Aquatic Preserve are home to many vertebrates and invertebrates, such as this burrfish.

4.3 / The Education and Outreach Management Program

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

4.3.1 / Background of Education and Outreach at Fort Pickens Aquatic Preserve

This section is composed from, site knowledge gathered since the office reopened in 2011 and current management's involvement with other agencies familiar with the area. NWFLAP previously assisted with seagrass education and outreach with Big Lagoon State Park, as well as providing informational signage

at the boat launch there. Staff often assisted previous state park managers and GUIS with organizing their events and also participated.

4.3.2 / Current Status of Education and Outreach at Fort Pickens Aquatic Preserve

NWFLAP has several formal education and outreach events, as well as numerous events participated in throughout the area. NWFLAP coordinates with local schools to conduct a "Grasses in Classes" program where students are taught about the importance of marshes and their ability to improve water quality, reduce sedimentation, as well as provide habitat benefits for numerous wildlife species. Through the program, local schools take several plant species to tend to over the school year. They produce and divide them to in turn have a field day where they get to install the plants they grew for restoration purposes. In this program, students learn how their projects also protect other habitats through increased water quality and others.

NWFLAP works with local organizations as well to coordinate and participate in outreach events such as Bay Days (Escambia and Santa Rosa counties), the Choctawhatchee Estuary Family Festival, Seagrass Awareness Celebration, and numerous coastal cleanups.

In addition to these events, each semester NWFLAP also hosts several UWF interns. During these internships, NWFLAP provides students with field sampling and monitoring, where throughout the summer they will have the opportunity to assist staff in SAV and scallop monitoring in FPAP.

4.3.3 / Education and Outreach Issues

Issue II / **Addressing Habitat Loss/Decline** (continued from Ecosystem Science)

Goal 2 / **Inform user groups on proper recreation practices to protect the resources.**

Objective 1 / Implement additional signage at all access points to understand importance of the habitat in FPAP.

Integrated Strategy One / Determine which access and boundary locations do not have signage or signage in disrepair.

Performance Measure
- Interpretative signage is installed at available access locations.

Integrated Strategy Two / Inform user groups of significance of habitat and protections within FPAP.

Performance Measure
- Produce signage and/or handouts to place or distribute at access locations.

Goal 3 / **Facilitate education and outreach regarding value of estuarine ecosystems, for environmental and economic importance.**

Objective 1 / Share knowledge and tools with public on habitat preservation and improving water quality.

Integrated Strategy One / Support UF/IFAS's Florida-Friendly Yards (FFY) program.

Performance Measure
- Conduct presentations on FFYs annually.
- Track number of integrated FFYs.
- Track number of information requests about FFYs.

Integrated Strategy Two / Promote FFY recommendation of a minimum 10-foot vegetative buffer along coastal properties.

Performance Measure
- Measure linear feet of proper buffers through shoreline surveys.

Integrated Strategy Three / Promote use of native plants, rain gardens, and lawn control through collaboration with UF/IFAS Extension agents for Escambia County.

Performance Measures
- Track number of inquiries about land use programs.
- Track number of implemented integrated land use strategies
- Track educational materials distributed to coastal property owners.

Integrated Strategy Four / Work with constituents to protect and monitor indicator species.

Performance Measure
- events are tracked, and data is reported.

Snorkeling is one of the many recreational experiences to enjoy in Fort Pickens Aquatic Preserve.

Integrated Strategy Five / Improve awareness of the importance of SAV and how to protect it.

Performance Measures
- Produce aerial maps showing propeller scarring to highlight problem areas.
- Conduct or attend outreach events to provide educational materials on SAV annually.
- Track public attendance in annual SAV related education and outreach events.

Objective 2 / Educate and inform public regarding marine debris impacts and effects to wildlife and environment.

Integrated Strategy One / In collaboration with UF/IFAS Sea Grant and FWC, educate public on marine debris, and its effects on wildlife and the environment.

Performance Measures
- The overall quantity of marine debris declines.
- Track educational materials distributed.

Integrated Strategy Two / Reduce the number of injured animals due to marine debris.

Performance Measure
- The number of injured animals reported by FWC declines.

Goal 4 / **Develop a Disaster Response Plan.**

Objective 1 / Work with stakeholders to address areas of concern, develop proper procedures to protect **species, and to minimize damages to the natural communities.**

Integrated Strategy One / Coordinate with GUIS to create a Disaster Relief Plan which establishes a chain of command.

Performance Measures
- Develop Best Management Practices to protect sensitive natural communities during disaster response.
- FPAP habitat impact during a disaster is minimized.

Integrated Strategy Two / Participate in existing Disaster Response Planning.

Performance Measure
- Track attendance in meetings and communication regarding planning and implementation.

Issue IV / **Public Awareness**

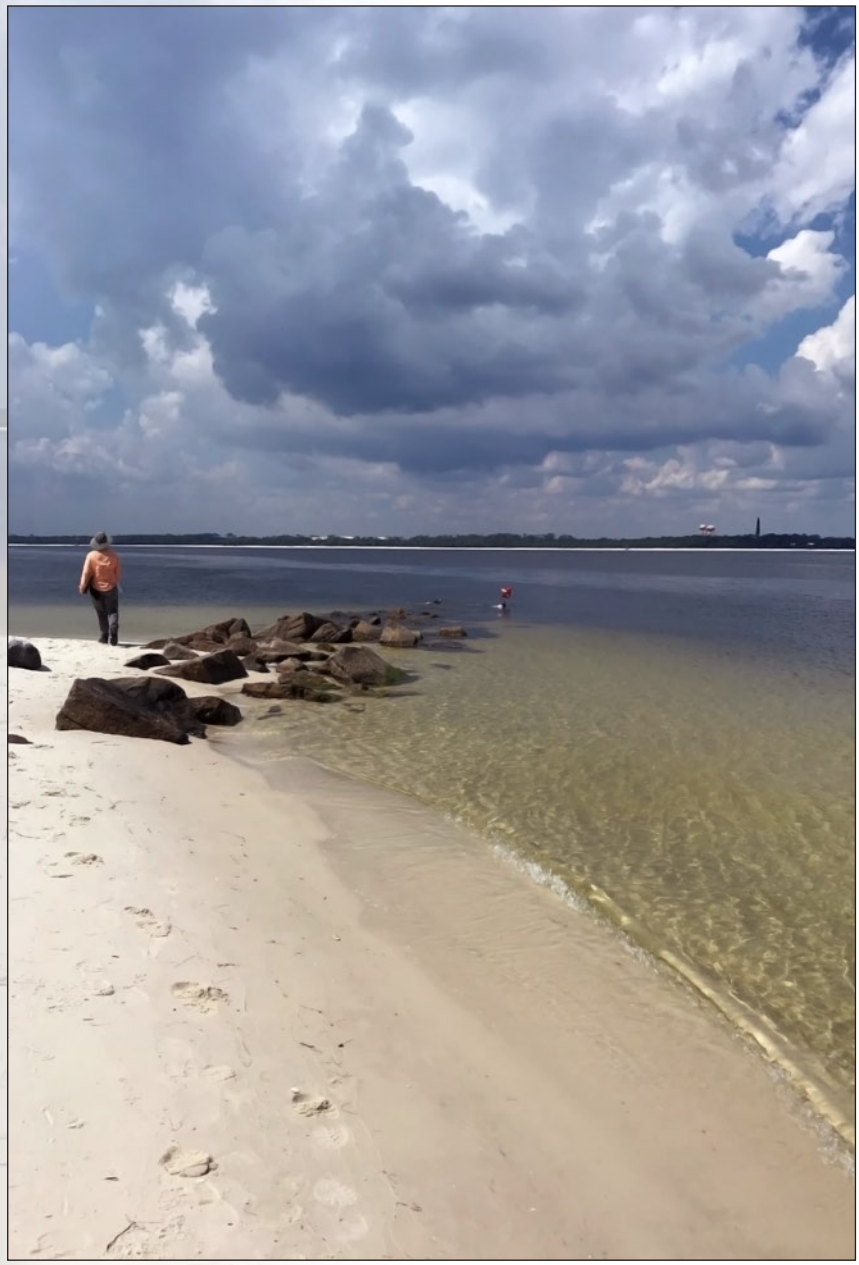
Goal 1 / **Increase public awareness of RCP and NWFLAP.**

Objective 1 / Coordinate with local, state, and federal agencies, as well as community.

Integrated Strategy One / Track number of attendees to NWFLAP events and inquiries from agencies.

Performance Measures

- Track distributed outreach materials to user groups.
- Track number of events or articles mentioning NWFLAP.



The jetties in Fort Pickens Aquatic Preserve are locally known as an exceptional recreational spot due to the shallow, crystal clear waters.

Goal 2 / **Increase public awareness of FPAP and its significance.**

Objective 1 / Coordinate with local, state, and federal agencies, as well as community.

Integrated Strategy One / Implement signage at access points to help user groups understand aquatic preserve rules and boundaries.

Performance Measures

- Interpretative signage is installed at available access locations.
- Track number of inquiries tallied by online resources via access to social media and website by signage prompts.

Integrated Strategy Two / Host and attend public events to educate the public about FPAP.

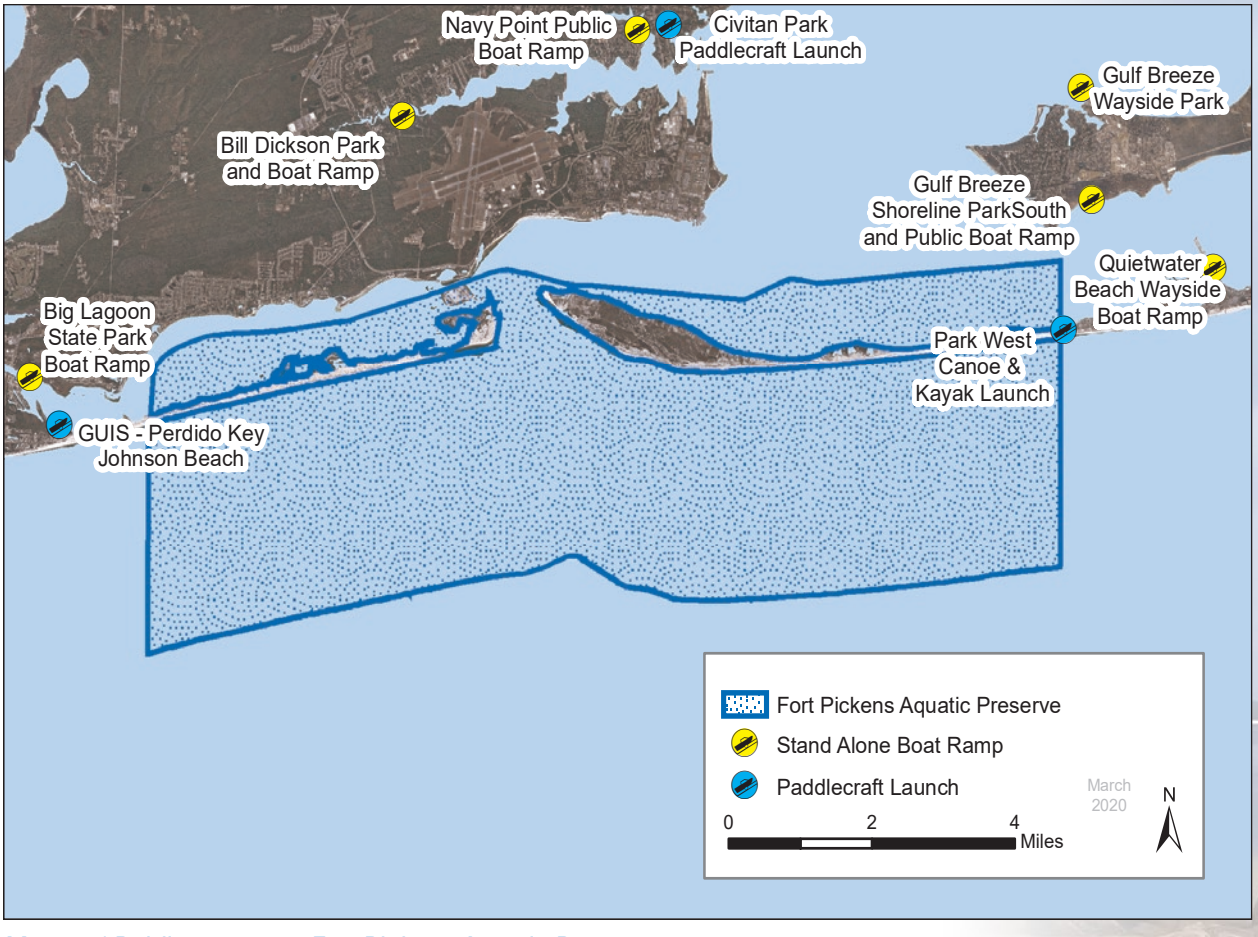
Performance Measures

- Track number of events hosted and attended by NWFLAP staff.
- Track number of people attending events with NWFLAP displays.
- Conduct regular events to inform people of FPAP and its importance.

4.4 / ***The Public Use Management Program***

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

While access by the general public has always been a priority, the conservation of RCP's sites is the primary management concern for RCP. It is essential for staff to analyze existing public uses and define management strategies that balance these activities where compatible in a manner that protects natural, cultural and aesthetic resources. This requires gathering existing information on use, needs, and opportunities, as well as a thorough consideration of the existing and potential impacts to critical



Map 11 | Public access at Fort Pickens Aquatic Preserve

upland, wetland and submerged habitats. This includes the coordination of visitor program planning with social science research. One of RCP's critical management challenges during the next 10 years is balancing anticipated increases in public use with the need to ensure preservation of site resources. This section explains the history and current status of our Public Use efforts.

*4.4.1 | **Background of Public Use at Fort Pickens Aquatic Preserve***

Several locations within the GUIS- Perdido Key area have been buoyed off and access restricted to noncombustible motors for preservation of submerged resources. Additionally, GUIS has proposed "flat wake zones" for personal watercrafts within 150 yards surrounding managed areas based upon findings from recent environmental impact studies. Camping is popular at GUIS-Perdido Key, but has also led to issues with littering and abandoned camping debris. The problems have arisen because visitors used the area for extended car camping, dragging large, heavy gear short distances from the end of the road and abandoning it due to the difficulty of removal. As a result, GUIS-Perdido Key is currently limited to boat-in camping only. Walk-in backcountry camping was suspended in January 2017 pending completion of planning and compliance to implement standard National Park Service backcountry camping management practices. Areas around Fort McRee have historically been publicly used for recreating, including boating, swimming and camping and remain so to this day.

*4.4.2 | **Current Status of Public Use at Fort Pickens Aquatic Preserve***

While FPAP has no public access points within its boundaries, several exist outlying to the north, east and west (Map 11). Additionally, a canoe/kayak launch is located within GUIS-Perdido Key, just to the west of FPAP. While the majority of GUIS-Perdido Key is only accessible via foot, the main access to the area surrounding Fort McRee is typically via boat. With the northern shore being residential, many homes are equipped with docks to provide private access. The aquatic preserve is a regular spot for locals and visitors to boat, jet ski, swim, and fish. The ICW and Pensacola Pass are also major thoroughfares in and around for access to the bays as well as the Gulf of Mexico.

4.4.3 / ***Public Use Issue***

Issue V: Sustainable Public Use

High recreational activity in particular areas, especially during weekends, events and holidays have been seen. In addition, very large vessels navigate to the north through the ICW and through the center at Pensacola Pass. This concentrates the recreational activities to the southern half of Big Lagoon and Santa Rosa Sound where there are sandy shores to beach upon and shallow waters to swim in. These locations are popular with both locals and tourists. Implementing best management practices for recreational activities in these highly utilized areas (e.g. camping, water slides, swimming, fishing, etc.) is essential. Paired with education and outreach about safe boating and the importance of coastal habitats can ensure that future patrons will be able to enjoy the same opportunities.

By further monitoring the existing public use and natural resources, FPAP staff identify concerns and work with stakeholders and other agencies to prioritize resource management concerns and address these issues.

Goal 1 / **Identify locations of concern in FPAP.**

Objective 1 / Address recreational safety for FPAP and GUIS patrons, as well as protect SAV and salt marshes.

Integrated Strategy One / Work with Escambia County Marine Patrol, FWC and GUIS during times of concern to address safety and SAV protection.

Performance Measures

- No incidents reported.
- No additional propeller scarring or groundings reported/observed.
- SAV propeller scarring is reduced or stopped as shown through aerial mapping and habitat rebounding.

Integrated Strategy Two / Work with GUIS staff to include additional protective measures for recreation and habitat conservation.

Performance Measures

- Proper recreational safety protocols are enforced with a reduction in reported incidents.
- Existing restricted areas are enforced reducing negative impacts to wildlife and habitat.

Redfish Cove is one of two areas in Fort Pickens Aquatic Preserve that is closed to combustible engine vessels to protect the shallow seagrass beds.

Part Three

Additional Plans

Chapter Five

Administrative Plan

The management program for the Fort Pickens Aquatic Preserve (FPAP), as well as two other aquatic preserves (Rocky Bayou Aquatic Preserve and Yellow River Marsh Aquatic Preserve), is implemented by the Northwest Florida Aquatic Preserves (NWFLAP) manager and one Full Time Equivalent (FTE; full benefits, salaried) serving as assistant manager. Any restoration projects and nursery facilities are operating under grant funding and Other Personal Services (OPS; partial benefits, hourly) staff. Management and administrative duties are undertaken by the two FTE employees. These tasks include purchasing, budget approval and reconciliation, reporting, grant writing and reporting, staff management and field monitoring, recording and assessment. Oversight for the NWFLAP spans a majority of the Florida Panhandle and is nearly 100 miles from the westernmost to easternmost managed site.

In addition to aquatic preserve management, NWFLAP, through grant awards, implements habitat restoration and enhancement projects in their managed areas as well as areas that will influence the quality of NWFLAP resources. Many management duties are required for these grants in addition to the regular aquatic preserve management responsibilities, such as reporting, budget allocations, and addressing staffing needs.

Staffing Needs

Many of the strategies identified in this plan will be implemented using existing staff and funding. However, several objectives and the strategies necessary to accomplish them cannot be completed during the life of this plan without additional resources. The plan's recommended actions, time frames, and cost estimates will guide the Office of Resilience and Coastal Protection's (RCP) planning and

budgeting activities over the period of this plan. These recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that RCP can adjust to changes in the availability of funds, unexpected events such as hurricanes, and changes in statewide issues, priorities and policies.

Statewide priorities for management and restoration of submerged and coastal resources are evaluated each year as part of the process for planning RCP's annual budget. When preparing RCP's budget, it considers the needs and priorities of the entire aquatic preserve program, other programs within RCP, and the projected availability of funding from all sources during the upcoming fiscal year. RCP pursues supplemental sources of funds and staff resources whenever possible, including grants, volunteers, and partnerships with other entities. RCP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of resources, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Appendix D may need to be adjusted during the ten-year management planning cycle.

Robertson's Island (also known as Sand Island) is a popular recreational spot for boaters and paddlers.

Chapter Six

Facilities Plan

The main office location for Northwest Florida Aquatic Preserves (NWFLAP) office is located in Ellyson Industrial Park in Pensacola where they also occupy a nursery facility. This location consists of a modular office space with three offices and a laboratory, a large warehouse, two full size greenhouses, grow out and aquaculture space, and space for boat, vehicle and trailer storage. This location is also utilized by the Florida Department of Environmental Protection for the Air Quality Monitoring Program. All facilities are compliant with Americans with Disabilities Act (ADA) specifications.

Vehicles

- 2011 Chevy Silverado (60,807 miles as of April 1, 2019): used for towing and hauling equipment, occasional travel for distance and project implementation; grant funded.
- 2019 Chevy Silverado (450 miles as of June 2019)

Vessels

- 15' Boston Whaler with trailer (Johnson 40 horsepower motor)
- 17' Mako with trailer (Mercury four-stroke 90 horsepower motor)
- 20' Scandy White with trailer (Yamaha two-stroke 90 horsepower motor)
- Two additional motors (parts)

Trailers

- Four utility trailers ranging in lengths from 10' to 20' for transport of equipment to various sites.

The NWFLAP office has developed a hurricane preparedness plan to secure and protect all facilities, equipment, and staff should the need arise. This plan is reviewed annually and updated as needed.

Future Needs

The NWFLAP office serves volunteers, interns, and visitors, in addition to staff. Greenhouse infrastructure repairs were conducted in 2018 to repair walls, structural wood components and vinyl strapping to make them more energy efficient. Additional funding will be sought in the upcoming years for more repairs to greenhouses to maintain metal interior structure, roofing and irrigation.

Additional funding for datalogger replacements and to increase monitoring sites has been requested. Current datalogger inventory consists of equipment that will soon no longer have data support and will be phased out. To adequately support the water quality monitoring in all of NWFLAP sites, a minimum of five dataloggers is required. NWFLAP has requested a total of twelve to include additional locations in several of the managed areas and provide a more complete picture.

List of Appendices

Appendix A

Legal Documents

*A.1 / **Aquatic Preserve Resolution***

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

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

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

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

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

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

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

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

(1) An aquatic preserve is intended to set aside an exceptional area of state-owned land and its associated waters for preservation essentially in their natural or existing condition by reasonable regulation of all human activity which might have an effect on the area.

(2) An aquatic preserve shall include only lands or water bottoms owned by the State of Florida, and such private lands or water bottoms as may be specifically authorized for inclusion by appropriate instrument from the owner. Any included lands or water bottoms to which a private ownership claim might subsequently be proved shall upon adjudication of private ownership be automatically excluded from the preserve, although such exclusion shall not preclude the State from attempting to negotiate an arrangement with the owner by which such lands or water bottoms might be again included within the preserve.

(3) No alteration of physical conditions within an aquatic preserve shall be permitted except: (a) minimum dredging and spoiling for authorized public navigation projects, or (b) other approved activity designed to enhance the quality or utility of the preserve itself. It is inherent in the concept of the aquatic preserve that, other than as contemplated above, there be: no dredging and filling to create land, no drilling of oil wells or excavation for shell or minerals, and no erection of structures on stilts or otherwise unless associated with authorized activity, within the confines of a preserve - to the extent these activities can be lawfully prevented.

(4) Specifically, there shall be no bulkhead lines set within an aquatic preserve. When the boundary of a preserve is intended to be the line of mean high water along a particular shoreline, any bulkhead line subsequently set for that shoreline will also be at the line of mean high water.

(5) All human activity within an aquatic preserve shall be subject to reasonable rules and regulations promulgated and enforced by the State of Florida Board of Trustees of the Internal Improvement Trust Fund and/or any other specifically designated managing agency Such rules and regulations shall not interfere unduly with lawful and traditional public uses of the area, such as fishing (both sport and commercial), hunting, boating, swimming and the like.

(6) Neither the establishment nor the management of an aquatic preserve shall infringe upon the lawful and traditional riparian rights of private property owners adjacent to a preserve. In furtherance of these

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

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

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

CLAUDE R. KIRK, JR, Governor

TOM ADAMS, Secretary of State

EARL FAIRCLOTH, Attorney General

FRED O. DICKINSON, JR., Comptroller

BROWARD WILLIAMS, Treasurer

FLOYD T. CHRISTIAN, Commissioner of Education

DOYLE CONNER, Commissioner of Agriculture

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

A.2 / ***Florida Statutes***

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

Florida Statutes, Chapter 253: State Lands

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

Florida Statutes, Chapter 267 (Historical Resources)

Florida Statutes, Chapter 370: Saltwater Fisheries

Florida Statutes, Chapter 372: Wildlife

Florida Statutes, Chapter 403: Environmental Control
(Statute authorizing the Florida Department of Environmental Protection (DEP) to create Outstanding Florida Waters is at 403.061(27))

Florida Statutes, Chapter 597: Aquaculture

A.3 / ***Florida Administrative Codes***

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

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

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

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

MASTER MEMORANDUM OF UNDERSTANDING

FDACS CONTRACT #
003325

MEMORANDUM OF UNDERSTANDING
Among

DEPARTMENT OF DEFENSE,
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION,
FLORIDA DIVISION OF FORESTRY,
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION,
INTERNATIONAL PAPER,
NATIONAL FORESTS IN ALABAMA,
NATIONAL PARK SERVICE,
NOKUSE PLANTATION,
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT, and
THE NATURE CONSERVANCY

THIS MEMORANDUM OF UNDERSTANDING (hereinafter referred to as "MOU" or "Understanding") is made and entered into on the 24th day of September, 2006 among Conecuh National Forest (National Forests in Alabama), Department Of Defense, Florida Department Of Environmental Protection, Florida Division Of Forestry (Florida Department of Agriculture and Consumer Services), Florida Fish and Wildlife Conservation Commission, International Paper, National Park Service, Nokuse Plantation, Northwest Florida Water Management District, and The Nature Conservancy (hereinafter referred to as "parties").

This MOU hereby replaces and supercedes that certain MOU between Eglin Air Force Base (Air Armament Center), Blackwater River State Forest (Florida Department of Agriculture and Consumer Services-Division of Forestry), Northwest Florida Water Management District, Conecuh National Forest (National Forests in Alabama), Florida Department of Environmental Protection, International Paper and The Nature Conservancy (Florida Southeast Division, Alabama Field Office and Alabama Natural Heritage Program), dated April, 4, 2003.

The parties have responsibilities on and collectively own and manage approximately 1,050,000 acres in the ecosystems of the region (see Attachment). These acres comprise the largest remaining nearly contiguous block of longleaf pine uplands in the southeastern United States and include portions of five major watersheds, including the Escambia-Conecuh, Blackwater, Yellow, Choctawhatchee, and Perdido River drainages.

The purpose of this MOU is to develop and implement a voluntary and cooperative stewardship strategy to sustain the long-term viability of native plants and animals, the integrity of ecosystems, the production of commodities and ecosystem services, and the human communities that depend upon all of them.

Page 1 of 6

The general goals of this MOU include the following:

-To assist, share information and coordinate efforts with the other parties in fulfilling the purposes of the MOU.

-To provide a model for local, state, federal, and private entities working together to fulfill the purpose of the MOU.

-To communicate to the public success in meeting both individual and common goals related to the MOU.

-To cooperate with other agencies and organizations including:

- U.S. Fish and Wildlife Service
- Universities and Junior Colleges
- The National Biological Service
- The Florida Department of Transportation
- The Alabama Department of Conservation and Natural Resources
- The Longleaf Alliance
- Southern Group of State Foresters

This MOU recognizes that the individual parties (public and private) have legitimate and varied management goals ranging from military missions, to producing forest commodities, providing recreational opportunities, protecting water quality, and conserving native species and ecosystem integrity. This MOU is in no way intended to limit or constrain the party's individual goals.

This MOU is entered into pursuant and subject to all applicable federal, state, and local laws. This MOU is not entered in the interest of obtaining advise or recommendations for any office or agency of the federal government and nothing herein shall be construed, nor is intended to state or imply, that this MOU establishes a federal advisory committee or that the Federal Advisory Committee Act (5 U.S.C. Appendix 2) shall apply.

IN ORDER TO FULFILL the stated purpose and intent of this MOU, the Parties agree in principle to the following:

1. To develop jointly a voluntary strategy, to be reviewed and updated annually, that will document critical ecosystem elements, processes, and interactions, identify priority ecosystem goals and objectives, both individually and jointly, and measure progress in attaining goals and objectives.

2. To develop jointly a voluntary red-cockaded woodpecker management strategy, and strategies for other listed species as appropriate, to be reviewed and updated annually, that will coordinate objectives and management efforts among the parties toward the mutual goal of recovering the red-cockaded woodpecker and other listed species.

3. To develop jointly a voluntary longleaf pine and other natural communities restoration strategies, to be reviewed and updated annually, that will coordinate objectives, strategies and actions among the parties and other efforts toward the mutual goal of recovering representative and ecologically functional examples of the longleaf pine ecosystem.

4. To share and exchange relevant information and technology as appropriate and need to compile and implement the above strategies.

5. To develop specific agreements and working plans for individual projects considered by all or some of the parties hereto to have mutual interest. Such agreements and working plans will be developed whenever deemed appropriate by the relevant parties.

6. To consider entering into specific agreements among all or some of the parties and/or third parties, as occasion demands, for the use of specialized equipment, transfer of funds, purchasing of supplies, and other matters pertaining to the general purposes of management agreed upon by all or some of the parties hereto. Any allocation of responsibilities and liabilities, including limitation of expenditures under this Understanding, will be as set forth in specific working agreement entered into by the relevant parties.

7. To hold at least one meeting per year and more often as required to discuss management opportunities and coordinate management and monitoring efforts and to keep written records made under this Understanding.

8. To make this Understanding effective as of the date it is executed by the last party and continuing for a term of one year and renewing automatically on an annual basis unless terminated in writing by one or more of the parties hereto pursuant to paragraph 9 below.

9. To terminate this understanding at any time by mutual agreement by all parties with any party having the right to withdraw from this Understanding by giving the other parties 30 days notice.

10. To amend this Understanding as necessary at any time to incorporate new parties, new information or changes in any parties authorities, policies, directives, or goals, subject to concurrence by all parties.

11. Nothing in this Understanding shall be construed to place financial commitment upon any of the parties. Actions taken and funds expended to implement this Understanding are contingent upon appropriations, priorities, and other constraints.

MASTER MEMORANDUM OF UNDERSTANDING

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Understanding as of the date above written.

DEPARTMENT OF DEFENSE, 96th AIR BASE WING

Edmond B Keith — Commander — 30 Sep 05
Signature — Title — Date

DEPARTMENT OF THE NAVY, NAVY REGION GULF COAST

[signature] — COMMANDER — 18 MAY 06
Signature — Title — Date

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

[signature] — Dep Sec — 07/27/06
Signature — Title — Date

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
(Florida Division of Forestry)

[signature] — Director of Administration — 3-23-06
Signature — Title — Date

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

[signature] — Director, Div. of Habitat + Species Cons — 5-09-06
Signature — Title — Date

INTERNATIONAL PAPER

[signature] — Director Sustainable Forestry & Forest Policy — 12/14/05
Signature — Title — Date

MASTER MEMORANDUM OF UNDERSTANDING

NATIONAL FORESTS IN ALABAMA

Signature	Title	Date
Stephen R. Kirk	Forest Supervisor	1/31/06

NATIONAL PARK SERVICE

Signature	Title	Date
[signature]	Superintendent	5/6/06

NOKUSE PLANTATION

Signature	Title	Date
[signature]	OWNER	8-12-06

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Signature	Title	Date
[signature]	Executive Director	08/28/06

THE NATURE CONSERVANCY

Signature	Title	Date
[signature]	Florida State Director	09/24/06

MASTER MEMORANDUM OF UNDERSTANDING

ATTACHMENT
Ownership Included in Memorandum of Understanding

OWNERSHIP/MANAGER	NAME OF PROPERTY	ACREAGE (Approx.)
DEPARTMENT OF DEFENSE	Eglin Air Force Base, Naval Air Station Pensacola, and Naval Air Station Whiting Field	481,241
FLORIDA DIVISION OF FORESTRY	Blackwater River, Pine Log, and Point Washington State Forests	211,752
NW FLORIDA WATER MANAGEMENT DISTRICT	Garcon Point, Escribano Point, Yellow River, Choctawhatchee River, Blackwater River, and Escambia River Water Management Areas	112,963
NATIONAL FORESTS IN ALABAMA	Conecuh National Forest	83,790
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	NW Florida Aquatic and Buffer Preserves, and Blackwater River, Perdido Key, Tarkiln Bayou, and Big Lagoon State Parks	57,270
NOKUSE PLANTATION	Nokuse North and Nokuse South	50,000
NATIONAL PARK SERVICE	Gulf Islands National Seashore and Naval Live Oaks, Florida	24,795
INTERNATIONAL PAPER	International Paper Connector Parcel and Coldwater Creek	24,263
THE NATURE CONSERVANCY	Choctawhatchee River Delta Preserve, and Perdido River Nature Preserve	5,081
FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION	Escribano Point	1,166
TOTAL ACREAGE ENROLLED IN GCPEP (As Of April 2005)		**1,052, 321**

CITIZEN SUPPORT ORGANIZATION AGREEMENT

THIS AGREEMENT is made the 7th day of November, 2019 by the State of Florida Department of Environmental Protection, hereinafter called "DEP," the Office of Resilience and Coastal Protection, hereinafter called the "RCP," and The Ecosystem Restoration Support Organization, hereinafter called the " CSO," as an approved Citizen Support Organization for the Northwest Florida Aquatic Preserves hereinafter called "ERSO", an organizational entity within RCP.

PARTIES

1. DEP is an agency of the state created under Section 20.255, Florida Statutes.

2. The CSO is a not for profit Florida corporation incorporated under the provisions of Chapter 617, F.S., and approved by the Florida Department of State.

PURPOSE

3. ERSO is vested with restoring and enhancing the Northwest Florida Aquatic Preserves for research, resource management, restoration, education, public enjoyment, and recreation.

4. The CSO desires to act as an approved Citizen Support Organization for the Northwest Florida Aquatic Preserves, with all the requirements, rights, and privileges provided in Section 20.2551, Florida Statutes.

5. By this Agreement, the RCP on behalf of the DEP, has determined that the CSO's organization and purpose, as provided in the CSO's Articles of Incorporation, incorporated and made part of this Agreement as Exhibit "A", are consistent with the goals of DEP, RCP and the Northwest Florida Aquatic Preserves, and are in the best interests of the State.

6. The RCP desires to permit the CSO to provide authorized services to the Northwest Florida Aquatic Preserves, provided the CSO's activities are consistent with all statutes, rules, the goals of the RPC, and are in the best interests of the state, all as more particularly set forth in this Agreement.

NOW THEREFORE, it is agreed:

7. This Agreement and the documents or instruments incorporated herein by reference constitute the entire agreement between the parties and supersede all previous agreements or understandings between the parties, whether oral or written, of any kind or nature.
8. The RCP hereby grants to the CSO, and the CSO hereby accepts from RCP, an exclusive Agreement to serve as the Citizen Support Organization for the

Northwest Florida Aquatic Preserves; and the CSO agrees to operate in conformance with all applicable Florida laws, including but not limited to, the standards and reporting requirements of Chapter 119, Florida Statutes and Sections 215.981, 112.3251, 20.2551, and 20.058, Florida Statutes, for the period stated herein, subject to all terms and conditions set forth in this Agreement, and the purposes as set forth in the Articles of Incorporation of the CSO.

9. **Term of Agreement.** This Agreement shall take effect upon execution and shall continue indefinitely or until terminated pursuant to legislative action or paragraph 10 of this Agreement and may be modified pursuant to paragraph 12 of this Agreement.

10. **Termination of Agreement.**

    a. Any violation of, or failure to comply with, the terms of this Agreement shall, at the option of the RCP, constitute cause to terminate this Agreement after 30 days from receipt of written notice to the CSO. The CSO shall further ensure that it meets all not for profit corporate management and tax regulations and, in the event that the CSO ever fails to maintain its nonprofit status, it shall immediately notify DEP.

    b. In the event that this Agreement is terminated with or without cause, the CSO will utilize all donated funds and resources in a manner consistent with the donor's intent and consistent with the CSO's Articles of Incorporation.

    c. In the event that this Agreement is terminated, or the CSO otherwise ceases to exist, any remaining assets of the CSO shall be transferred to another approved Citizen Support Organization, earmarked for that specific preserve/reserve/program.

11. **Activities of the CSO**. The CSO is hereby authorized to conduct the following kinds of activities, projects, and events, and to provide the following kinds of services: fund raising events; official meetings of the CSO membership; volunteer activities and projects; administer grants and donations; public educational and interpretative activities; collect entrance and parking fees; ecotourism including boat and kayak tours; or conduct any other events and activities outlined in the Articles of Incorporation for the CSO.

12. **Modification of Agreement.** This Agreement may be modified in writing by the parties hereto.

13. **Notice.** All notices and orders given to the CSO may be served by mail at the following address: Ecosystem Restoration Support Organization, 411 E. Government St., Pensacola, FL 32502. All notices given to the RCP may be served by mail at the following address: 3900 Commonwealth Blvd., Mail Station 235, Tallahassee, Florida 32399, with a copy to the Northwest Florida Aquatic Preserves Manager at 3000 Environmental Place, Pensacola, Florida 32514.

14. **Fiscal Year.** The CSO's Fiscal Year shall be January 1 to December 31.

15. **CSO Responsibilities.**

a. The CSO agrees to keep records in compliance with Section 20.2551, Florida Statutes and agrees to comply with Chapter 119, Florida Statutes, and allow public access to all documents, papers, letters, or other material subject to provisions of Chapter 119, Florida Statutes. This Agreement may be unilaterally canceled by the RCP for refusal by the CSO to allow public access to all documents, papers, letters, or other material subject to provisions of Chapter 119, Florida Statutes, and made or received by the CSO in conjunction with this Agreement.

b. Pursuant to Section 112.3251, Florida Statutes, the CSO's code of ethics must be posted conspicuously on the CSO's website.

c. In accordance with 20.2551, 20.058, and 215.981 Florida Statutes, the CSO agrees to provide a complete and accurate Annual Report, including the appropriate Internal Revenue Service forms.

d. In accordance with Section 215.981(2), Florida Statutes, should the CSO's annual expenditures exceed $300,000, the CSO shall provide an annual financial audit of its accounts and records to be conducted by an independent certified public accountant in accordance with Rules of the Auditor General pursuant to 11.45(8). The audit report shall be submitted within 9 months after the end of the fiscal year to the Auditor General and to DEP.

e. The CSO is required to collect any sales or other tax required by law and properly remit collected taxes as required by law.

f. The CSO agrees and consents to allow DEP to conduct operational and financial reviews of the CSO's finances and other records with 14 days prior notice, in order to assess compliance with the terms and conditions of this Agreement.

g. The CSO President, elected under the terms and conditions set forth in the CSO's Articles of Incorporation attached as Exhibit "A", shall be responsible for the CSO's compliance with the terms and conditions set forth in this Agreement. Details of the CSO President's responsibilities referenced in this Agreement are included in Exhibit "B", which is attached and incorporated by reference.

h. The CSO agrees that all funds generated by the CSO through the use of Northwest Florida Aquatic Preserves facilities, collection of entrance and parking fees, or funds generated by other events and activities, or use of the RCP's name or identity will be used as agreed upon by the RCP Manager for the direct benefit of the RCP or in support of the CSO's stated purposes.

16. **CSO Use of RCP Property**. Northwest Florida Aquatic Preserves may permit, without charge, appropriate use of RCP property, vehicles, vessels, equipment, staff and facilities by the CSO subject to the conditions of this paragraph. Such use must be directly in keeping with the approved purposes of the CSO and may not be made at times or places that would unreasonably interfere with opportunities for the general public to use the property and facilities, or normal reserve operations. In order to use property or facilities of, Northwest Florida Aquatic Preserves the CSO must:

a. Comply with all DEP, RCP, and Northwest Florida Aquatic Preserves policies, rules, and regulations as they may be amended periodically;

b. Develop and submit to the Northwest Florida Aquatic Preserves Manager, for review and prior written approval, on an annual basis, a program or schedule of all projects, activities and events it plans to carry out on Northwest Florida Aquatic Preserves property, including the designation of a specific location and time for such use;

c. Be responsible for maintaining the property, vehicles, vessels, facilities, or equipment assigned in a clean and orderly state. For vessels, Northwest Florida Aquatic Preserves will be responsible for routine maintenance, including fueling. The CSO shall, at its expense, complete pre-departure safety checks, flush engine following each use with fresh water, rinse canopy, hull, and engine with fresh water following each use, log in each use with captain's name, engine hours, destination, and gas consumption.

17. **RCP Responsibilities.** The Northwest Florida Aquatic Preserves Manager shall be primarily responsible for insuring performance of the terms and conditions of this Agreement. Details of the Manager's responsibilities referenced in this Agreement are included in Exhibit "B", which is attached and incorporated by reference. The Northwest Florida Aquatic Preserves Assistant Manager is hereby designated as liaison to the CSO. Details of the Assistant Manager responsibilities are included in Exhibit "B", which is attached and incorporated by reference.

a. At no time shall less than 85% of all revenue collected by the CSO not be used for the direct benefit of Northwest Florida Aquatic Preserves. For the purposes of this agreement, revenue shall be defined as fees collected by the CSO on behalf of Northwest Florida Aquatic Preserves, to include entrance and parking fees, Northwest Florida Aquatic Preserves staff coordinated programs and facilities rentals. At no time are the CSO's administrative costs expected to exceed 15% of annual expenditures. Any administrative cost which would exceed 15% of total annual expenditures must be approved in advance, in writing, by the preserve/reserve/program manager.

b. The CSO is authorized to accept donations that benefit Northwest Florida Aquatic Preserves. Grant awards must be reviewed and coordinated by the Manager, to ensure that the grant application and work to be funded by such grant is consistent with the RCP's goals and objectives, maintenance or replacement needs of the Northwest Florida Aquatic Preserves, and the Northwest Florida Aquatic Preserves Management Plan. Funds collected by the CSO as mitigation or public interest shall be used for the direct benefit of Northwest Florida Aquatic Preserves, and as required by any applicable permit condition(s).

c. **CSO Trusts or Investment Funds.** If the CSO intends to participate in financial services, a trust or an investment fund, including an endowment fund or non-endowment fund, the proposed agreement must be reviewed and pre-approved in writing by the Director of the RCP. The financial services agreement, trust and or investment fund must not contradict this Agreement. The CSO is not authorized to enter into a financial services agreement, trust or other investment fund that requires forfeiture of the principal.

d. **Volunteer Liability.** It is acknowledged that the CSO is operating as a Citizen Support Organization and volunteer nonprofit organization for the benefit of the DEP. As such, the activities of the CSO, which have been approved by its Board of Directors and officers, and by the RCP pursuant to this Agreement, are volunteers and are immune from tort liability pursuant to Section 617.0834, Florida Statutes. Each CSO officer and member of its Board of

Directors must annually sign the RCPs Volunteer Agreement. This provision does not waive the State of Florida's or its agencies sovereign immunity under Section 768.28, Florida Statutes.

e. **Worker's Compensation**. DEP shall have no legal responsibility for workers' compensation coverage for CSO employees. The CSO is responsible for providing workers' compensation for CSO employees.

f. **Conflicts of Interest.** The CSO agrees that it presently has no interest and shall not acquire any interest that would conflict in any manner or degree with the stated goals of this Agreement or the mission of the CSO or the RCP. The CSO agrees not to conduct any program or activity that would be injurious or cause disrepute to the DEP, the RCP, or Northwest Florida Aquatic Preserves. Additional guidance in state law regarding CSO's employees can be found in Section 112.3251, Florida Statutes, which addresses CSO code of conduct and prevents conflicts of interest. Notably, this law and Fla. Stat. § 112.313(10) prohibits a CSO employee from holding office as a member of the CSO's governing board while at the same time continuing to be an employee of the CSO.

g. **Forum Selection and Choice of Law.** The Agreement has been delivered in the State of Florida and shall be construed in accordance with the laws of Florida. Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable Florida law, but if any provision of this Agreement shall be prohibited or invalid under applicable Florida law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement. Any action hereon or in connection herewith shall be brought in Leon County, Florida, unless prohibited by applicable law.

h. **Third Party Beneficiaries.** This Agreement is not intended nor shall it be construed as granting any rights, privileges or interest to any third party without mutual written agreement of the parties hereto.

i. **Integration.** This Agreement contains all the terms and conditions agreed upon by the parties, which terms and conditions shall govern all transactions between DEP/RCP and the CSO. Any alterations, variations, changes, modifications or waivers of provisions of this Agreement shall only be valid when they have been reduced to writing, duly signed by each of the parties hereto, and attached to the original of this Agreement. No oral agreements or representations shall be valid or binding upon the DEP/RCP or the CSO.

j. **Authority.** Each of the signatories to this Agreement confirms that he/she is duly authorized to execute and deliver this Agreement.

IN WITNESS WHEREOF, based on the foregoing, the State of Florida Department of Environmental Protection, Office of Resilience and Coastal Protection, herein approves The Ecosystem Restoration Support Organization, as a Citizen Support Organization.

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION OFFICE OF
RESILIENCE
AND COASTAL PROTECTION

AND
Approved as to form and legality:
By:_____
Attorney

By: Alex Reed
Alex Reed, Director
OFFICE OF RESILIENCE AND
COASTAL PROTECTION

_____, a Florida
not for profit corporation

ATTTEST:
By: _____

Executive Director

By: J. Taylor Kirschenfeld
J. Taylor Kirschenfeld
President

Appendix B

Resource Data

*B.1 / **Glossary of Terms***

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

aquaculture – the cultivation of aquatic organisms. (Lincoln, Boxshall, & Clark, 2003)

aquifer – a body of porous rock or soil through which water passes and in which water gathers (Collin, 2004).

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

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

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

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

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

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

endemic – native to, and restricted to, a particular geographical region. (Lincoln et al., 2003)

estuary – a part of a river where it meets the sea and is partly composed of salt water (Collin, 2004).

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

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

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

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

habitat – the type of environment in which a specific organism lives (Collin, 2004).

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

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

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

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

monitoring – a process of regular checking on the progress of something (Collin, 2004).

pollution – the presence of unusually high concentrations of harmful substances in the environment, as a result of human activity or a natural process (Collin, 2004).

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)

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)

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

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

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

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

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

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

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

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

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

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

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

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

B.2 / ***References***

Allaby, M. (Ed.). (2005). *Oxford dictionary of ecology* (3rd ed.). Oxford, UK: Oxford University Press.

Baldwin County Economic Development Alliance. (2018). *Baldwin County, AL: Demographic and income profile*. Retrieved from https://baldwineda.com/wp-content/uploads/2018/07/Baldwin-County-Demographic-Profile.pdf

Balsillie, J.H. & Donoghue, J.F. (2004). *High resolution sea-level history for the Gulf of Mexico since the Last Glacial Maximum* (Report of Investigations No. 103). Tallahassee, FL: Florida Geological Survey.

Bearss, E.C. (1983). *Fort Pickens: 1821-1895* (Historic Structure Report). Denver, CO: U.S. Department of the Interior, Historic Preservation Division, Denver Service Center, National Park Service.

Bense, J. (1989). *Pensacola archaeological survey, Vol. 1*. Pensacola, FL: Pensacola Archaeological Society.

Bense, J. (Ed). (1992). *Santa Rosa- Swift Creek in Northwest Florida*. Paper presented at the 49th Annual Meeting of the Southeastern Archaeological Conference, Little Rock, AR. Retrieved from http://uwf.edu/cassh/departments/anthropology-and-archaeology/research/faculty-and-staff-projects/prehistoric/bernath/santa-rosa---swift-creek/

Biber. P.D., Paerl, H.W., Gallegos, C.L., & Kenworthy, W.J. (2004). *Evaluating and defining water-quality criteria for seagrass habitats using a bio-optical indicator*. Abstract retrieved from http://archive.epa.gov/emap/archive-emap/web/html/biber.html

City of Gulf Breeze. (n.d.). Parks and Recreation Department. Retrieved from https://cityofgulfbreeze.us/parks-and-recreation-department/

Clune, J.J., & Stringfield, M.S. (2017). *Historic Pensacola*. Gainesville, FL: University Press of Florida.

Coleman, J.C., & Coleman, I.S. (1982). *Guardians on the Gulf: Pensacola's fortifications, 1698-1980*. Pensacola, FL: Pensacola Historical Society.

Collin, P.H. (2004). *Dictionary of environment and ecology, fifth edition.* Bloomsbury Publishing, London.

Craft, N.M., Russell, B., & Travis, S. (2001). *Identification of Gulf sturgeon spawning habitats and migratory patterns in the Yellow and Escambia River systems*. (Final report to the Florida Marine Research Institute). Tallahassee, FL: Fish and Wildlife Conservation Commission.

Dix, N., Phlips, E., & Gleeson, R. (2008). Water quality changes in the Guana Tolomato Matanzas National Estuarine Research Reserve, Florida associated with four tropical storms. *Journal of Coastal Research,* Special Issue 55), 26-37. http://dx.doi.org/10.2112/SI55-008.1

Donoghue, J.F. (2011). Sea level history of the northern Gulf of Mexico coast and sea level rise scenarios for the near future. *Climatic Change, 107*, 17-33. http://dx.doi.org/10.1007/s10584-011-0077-x

Ecological Society of America. (2004). *Invasion*. Retrieved from https://www.esa.org/esa/wp-content/uploads/2012/12/invasion.pdf

Edmiston, L., Fahrny, S., Lamb, M., Levi, L., Wanat, J., Avant, J., Wren, K., & Selly, N. (2008). Tropical storm and hurricane impacts on a Gulf Coast estuary: Apalachicola Bay, Florida. *Journal of Coastal Research,* (Special Issue 55), 38-49. http://dx.doi.org/10.2112/SI55-009.1

Escambia County. (2018). *Escambia County Land Development Code*. Pensacola, FL: Escambia County, Planning and Zoning Division.

Florida Department of Environmental Protection. (2016). *Yellow River Marsh Aquatic Preserve management plan*. Tallahassee, FL: Florida Department of Environmental Protection.

Florida Department of Environmental Protection. (2018). *Big Lagoon State Park, Tarkiln Bayou Preserve State Park, Perdido Key State Park: Approved multi-unit management plan*. Tallahassee, FL: Florida Department of Environmental Protection, Division of Recreation and Parks.

Florida Department of Natural Resources. (1992). *Ft. Pickens Aquatic Preserve management plan*. Tallahassee, FL: Florida Department of Natural Resources.

Florida Department of State. (n.d.). *USS Massachusetts*. Retrieved from http://www.museumsinthesea.com/massachusetts/

Florida Department of Transportation. (n.d.). Retrieved from http://flto.dot.state.fl.us/website/FloridaTrafficOnline/viewer.html

Florida Exotic Pest Plant Council. (2019). *Florida Exotic Pest Plant Council's 2019 list of invasive plant species*. Retrieved from the Florida Exotic Pest Plant Council website: http://bugwoodcloud.org/CDN/fleppc/plantlists/2019/2019_Plant_List_ABSOLUTE_FINAL.pdf

Florida Fish and Wildlife Conservation Commission. (n.d.-a). *Commercial fisheries landings in Florida*. Retrieved from https://myfwc.com/research/saltwater/fishstats/commercial-fisheries/landings-in-florida/

Florida Fish and Wildlife Conservation Commission. (n.d.-b). Facts about horseshoe crabs and FAQ. Retrieved from https://myfwc.com/research/saltwater/crustaceans/horseshoe-crabs/facts/

Florida Fish and Wildlife Conservation Commission. (n.d.-c). *Florida's exotic fish and wildlife*. Retrieved from http://myfwc.com/wildlifehabitats/nonnatives/

Florida Fish and Wildlife Conservation Commission. (n.d.-d). *Lionfish.* Retrieved from http://myfwc.com/wildlifehabitats/nonnatives/marine-species/lionfish/#

Florida Natural Areas Inventory. (2010). *Guide to the natural communities of Florida: 2010 edition*. Tallahassee, FL: Florida Natural Areas Inventory.

Franklin, M., Morris, J.W.III, & Smith, R.C. (1992). *Submerged historical resources of Pensacola Bay, Florida: The Pensacola Shipwreck Survey Phase I, 1991*. Tallahassee, FL: Florida Department of State, Division of Historical Resources.

Great Florida Birding and Wildlife Trail. (n.d.-a). Big Lagoon State Park (gateway). Retrieved December 18, 2018 from http://floridabirdingtrail.com/trail/trail-sections/panhandle-section/big-lagoon-state-park/

Great Florida Birding and Wildlife Trail. (n.d.-b). Gulf Islands National Seashore: Fort Pickens area. Retrieved December 18, 2018 from http://floridabirdingtrail.com/trail/trail-sections/panhandle-section/fort-pickens/

Great Florida Birding and Wildlife Trail. (n.d.-c). Project GreenShores. Retrieved December 18, 2018 from http://floridabirdingtrail.com/trail/trail-sections/panhandle-section/project-greenshores/

Gucker, C.L. (2008). *Phragmites australis*. Retrieved from U.S. Department of Agriculture, Forest Service website: https://www.fs.fed.us/database/feis/plants/graminoid/phraus/all.html

Hagy, J.D., Lehrter, J.C., & Murrell, M.C. (2006). Effects of Hurricane Ivan on water quality in Pensacola Bay, Florida. *Estuaries and Coasts, 29*(6A), 919-925. http://dx.doi.org/10.1007/BF02798651

Halligan, J.J. Waters, M.R., Perrotti, A., Owens, I.J., Fenberg, J.M., Bourne, M.D.,…Dunbar, J.S. (2016). Pre-Clovis occupation 14,550 years ago at the Page-Ladson site, Florida, and the peopling of the Americas. *Science Advances,* 2(5), e1600375.0 http://dx.doi.org/10.1126/sciadv.1600375

Healy, H. (1975). *Terraces and shorelines of Florida*: *Map Series No. 71*. Tallahassee, FL: United States Geological Survey. Retrieved from http://ufdc.ufl.edu/UF90000326/00001

Jacoby, J., Walters, L., Baker, S., & Blyler, K. (2003). *A primer on invasive species in coastal and marine waters* (SGEB 60). Gainesville, FL: University of Florida, Sea Grant, Florida. Retrieved from http://nsgl.gso.uri.edu/flsgp/flsgpg05001.pdf

Lewis, M.A., Kirschenfeld, J.T., & Goodhart, T. (2016). *Environmental quality of the Pensacola Bay System: Retrospective review for future resource management and rehabilitation*. (EPA/600/R-16/169). Gulf Breeze, FL: U.S. Environmental Protection Agency.

Lincoln, R.J., Boxshall, G.A., & Clark, P.F. (2003). A *dictionary of ecology, evolution and systematics*. New York: Cambridge University Press.

Little, J. (2018, September 6). $2 million EPA grant will create Pensacola and Perdido Bays Estuary Program. Pensacola News Journal. Retrieved from https://www.pnj.com/story/news/2018/09/06/2-million-epa-grant-creates-pensacola-and-perdido-bays-estuary-program/1211213002/

Mallin, M.A., & Corbett, C.A. (2006). How hurricane attributes determine the extent of environmental effects: Multiple hurricanes and different coastal systems. *Estuaries and Coasts,* 29(6A), 1046-1061. https://doi.org/10.1007/BF02798667

Marsh, O.T. (1966). *Geology of Escambia and Santa Rosa counties: Western Florida Panhandle*: *Bulletin No. 46*. Tallahassee, FL: U.S. Geological Survey

Myers, R.L., & Ewel, J.J. (Eds.). (1990). *Ecosystems of Florida*. Orlando, FL: University of Central Florida Press.

National Marine Fisheries Service. (2017). Fisheries Economics of the United States, 2015. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-170, 247p.

National Oceanic and Atmospheric Administration. (2014). *Comparative climate data for the United States through 2014.* Asheville, NC: National Oceanic and Atmospheric Administration, National Climate Data Center. Retrieved from http://www.ncdc.noaa.gov/data-access/quick-links#ccd

The Nature Conservancy. (2009). *Economic benefits of land conservation: A case for Forever Florida*. Retrieved from http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/florida/howwework/economic-benefits-of-land-conservation-2.pdf

Neufeldt, V., & Sparks, A.N. (1990). *Webster's new world dictionary* (3rd Ed.). Cleveland, OH: Webster's New World Dictionaries.

O'Connor, R. (2018). *The 2018 Big Lagoon Great Scallop Search results*. Retrieved from Escambia County UF/IFAS Sea Grant website: http://blogs.ifas.ufl.edu/escambiaco/2018/12/05/the-2018-big-lagoon-great-scallop-search-results/

Office of Economic and Demographic Research. (2019). *Area profiles: Escambia County* [Data file]. Retrieved from http://edr.state.fl.us/Content/area-profiles/county/escambia.pdf.

Okaloosa County rain event update #5: Incudes Health Department advisories. (2014, April 30). *Okaloosa County News Release*. Retrieved http://www.co.okaloosa.fl.us/sites/default/files/doc/news/2014/update5_04-30-14.pdf

Paerl, H., Bales, J., Ausley, L., Buzzelli, C., Crowder, L., Eby, L., Fear, J., Go, M., Peierls, B., Richardson, T., & Ramus, J. (2001). Ecosystem impacts of three sequential hurricanes (Dennis, Floyd and Irene) on the United States' largest lagoonal estuary, Pamlico Sound, NC. *Proceedings of the National Academy of Sciences, 98*(10), 5655-5660. http://dx.doi.org/10.1073/pnas.101097398

Parks, V., & Bense, J.A. (1989). *Underground Pensacola*. Pensacola, FL: Pensacola Archaeological Society.

Pearce, G.F. (2000). *Pensacola during the Civil War: A thorn in the side of the Confederacy*. Tallahassee, FL: University Press of Florida.

Pensacola News Journal. (2005). *Ivan's wake: A photo documentary by the Pensacola News Journal*. Vancouver, Canada: Pediment Group.

Phillips, J.C., & McKenzie, C.L. (1993). *Archaeological assessment of the Yellow River Marsh Aquatic Preserve* (Report of Investigations Number 54). Pensacola, FL: The University of West Florida Archaeology Institute.

Puri, H.S., & Vernon, R.O. (1964). *Summary of the geology of Florida and a guidebook to classic exposures* (Special publication no. 5). Tallahassee, FL: Florida Geological Survey.

Rupert, F. (1994). *A fossil hunter's guide to the geology of Panhandle Florida* (Open File Report 63). Tallahassee, FL: Florida Geological Survey.

Scott, T.M., Campbell, K.M., Rupert, F.R., Arthur, J.D., Missimer, T.M., Lloyd, J.M., Yon, W.J., & Duncan, J.G. (2001). *Geologic map of the state of Florida*. Tallahassee, FL: Florida Geological Survey and Florida Department of Environmental Protection

Simberloff, D. (1994). *Why is Florida being invaded? An assessment of invasive non-indigenous species in Florida's public lands, Florida* (Technical report no. TSS-94-100). Tallahassee, FL: Department of Environmental Protection.

Suchcinki, M. (2017, June 19). Great Scallop Search a modern-day underwater treasure hunt. *Pensacola News Journal*. Retrieved from https://www.pnj.com/story/life/2017/06/19/underwater-treasure-hunt-h/408067001/

Thorpe, P., Bartel, R., Ryan, P., Albertson, K., Pratt, T., & Cairns, D. (1997). *The Pensacola Bay system surface water improvement and management plan: A comprehensive plan for the restoration and preservation of the Pensacola Bay System*. Havana, FL: Northwest Florida Water Management District.

Thorpe. P.; Kebart, K., Coger, C., Gray, J., McKinnon, E., Wood, B., Wooten, N., & Cyphers, B. (2017a.). *Pensacola Bay System Surface Water Improvement and Management Plan: Update III.* Havana, FL: Northwest Florida Water Management District.

Thorpe. P.; Kebart, K., Coger, C., Gray, J., McKinnon, E., Wood, B., Wooten, N., & Cyphers, B. (2017b.). *Perdido River and Bay Surface Water Improvement and Management Plan.* Havana, FL: Northwest Florida Water Management District.

University of Georgia. (n.d.). *Beach vitex*. Center for Invasive Species and Ecosystem Health: Early Detection and Distribution Mapping System. Retrieved from https://www.eddmaps.org/florida/Species/subject.cfm?sub=11609

U.S. Census Bureau. (2010). *2010 Census Interactive Population Search* [Date file]. Retrieved from http://www.census.gov.

U.S. Depart. of Agriculture. (1960). *Soil survey of Escambia County*. Washington, D.C.: U.S. Government Printing Office.

U.S. Depart. of Agriculture. (1980). *Soil survey of Santa Rosa County*. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of the Interior. (2012). *Gulf Islands National Seashore: Bird checklist.*

U.S. Department of the Interior. (2014). *Gulf Islands National Seashore: Final general management plan / Environmental Impact Study.* Denver, CO: U.S. Department of the Interior, Denver Service Center.

U.S. Department of the Interior. (2018). *Draft Personal Watercraft Plan/Environmental Impact Statement*. U.S. Department of the Interior, National Park Service. Gulf Islands National Seashore Florida/Mississippi.

U.S. Department of the Interior. (n.d.-a). *Gulf Islands National Seashore: Pensacola Bay Cruises*. Retrieved from https://www.nps.gov/guis/planyourvisit/pensacolabaycruises.htm

U.S. Department of the Interior. (n.d.-b.) *Gulf Islands National Seashore: Sea turtle reproduction.* Retrieved from https://www.nps.gov/guis/learn/nature/seaturtle-reproduction.htm

U.S. Department of the Interior. (n.d.-c). *National Park Service visitor use statistics: Gulf Island NS (GUIS) reports.* Retrieved from https://irma.nps.gov/Stats/Reports/Park/GUIS

U.S. Department of the Navy. (2016). *Integrated natural resources management plan: Naval Air Station Pensacola Complex: 2014 update.* Pensacola, FL: Naval Air Station Pensacola Complex.

U.S. Environmental Protection Agency. (2005). *The ecological condition of the Pensacola Bay System, Northwest Florida*. (EPA/620/R-05/002). Gulf Breeze, FL: U.S. Environmental Protection Agency, Gulf Ecology Division.

U.S. Fish and Wildlife Service. (2003). *U.S. Fish and Wildlife Service and the National Marine Fisheries Service designate Critical Habitat for the Gulf sturgeon*. Retrieved from http://www.fws.gov/southeast/news/2003/r03-017.html

U.S. Fish and Wildlife Service. (2015). *Endangered species glossary*. Retrieved May 26, 2015, from www.fws.gov/endangered/about/glossary.html

U.S. Fish and Wildlife Service. (2017). *Manatee reclassified from endangered to threatened as habitat improves and population expands - existing federal protections remain in place*. Retrieved from https://www.fws.gov/southeast/news/2017/03/manatee-reclassified-from-endangered-to-threatened-as-habitat-improves-and-population-expands-existing-federal-protections-remain-in-place/

U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission. (1995). *Gulf sturgeon recovery/management plan*. Atlanta, GA: U.S. Fish and Wildlife Service Southeastern Region. Retrieved from http://www.gsmfc.org/publications/WB-Sport%20Fish/Gulf%20Sturgeon%20Plan.PDF

U.S. Fish and Wildlife Service and National Marine Fisheries Service. (2009). *Gulf sturgeon (Acipenser oxyrinchus desotoi): 5-year review: Summary and evaluation*. Retrieved from http://www.fws.gov/southeast/5yearReviews/5yearreviews/GulfSturgeon2009.pdf

U.S. Geological Survey. (n.d.). *NAS: Nonindigenous aquatic species*. Retrieved from https://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=1209

Walton Outdoors. (2014, April 30). *North Central Gulf Coast receives historic flash flood event – April 29-30 2014*. Retrieved from https://www.waltonoutdoors.com/north-central-gulf-coast-receives-historic-flash-flood-event-april-29-30-2014/

White, W.A. (1970). *The geomorphology of the Florida peninsula*. (Geological Bulletin No. 51). Tallahassee, FL: Florida Department of Natural Resources, Bureau of Geology.

Winsberg, M.D. (2003). *Climate of Florida.* Tallahassee, FL: Florida State University Florida Climate Center.

Worth, J. (n.d.). *Spanish Florida: Evolution of a colonial society, 1513-1763*. Pensacola, FL: University of West Florida. Retrieved from http://uwf.edu/jworth/spanfla.htm

Yarbro, L.A., & Carlson, P.R. Jr. (Eds.). (2018). *Seagrass Integrated Mapping and Monitoring Program: Mapping and monitoring report No. 3* (Technical Report TR-17, version 3). St. Petersburg, FL: Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute.

B.3 / ***Species Lists***

B.3.1 / ***Native Species List***

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Plants		
Saltbush	*Baccharis halimifolia*	
Searocket	*Cakile* spp.	
Sawgrass	*Cladium jamaicense*	
Flat sedge	*Cyperus* spp.	
Seashore saltgrass	*Distichlis spicata*	
Spikerush	*Eleocharis* spp.	
Umbrella grass	*Furiena squarrosa*	
Shoal grass	*Halodule wrightii*	
Camphorweed	*Heterotheca subaxilaris*	
Yaupon holly	*Ilex vomitora*	
Beach morning glory	*Ipomoea imperati*	
Marsh elder	*Iva frutescens*	
Black needlerush	*Juncus roemerianus*	
Shoregrass	*Moanathocloe littoralis*	
Wax myrtle	*Myrica cerifera*	
Bitter panicgrass	*Panicum amarum*	
Paspalum	*Paspalum* spp.	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Seashore paspalum	*Paspalum vaginatum*	
Common reed	*Phragmites australis*	
Gulf bluestem	*Schizachyrium maritimum*	
Saltmarsh bullrush	*Scirpus robustus*	
Smooth cordgrass	*Spartina alterniflora*	
Cordgrass	*Spartina patens*	
Gulf cordgrass	*Spartina spartinae*	
Whorled dropseed	*Sporobolus pyramidatus*	
Seashore dropseed	*Sporobolus virginicus*	
Saltmarsh aster	*Symphyotrichum* spp.	
Manatee grass	*Syringodium filiforme*	
Turtle grass	*Thalassia testudinum*	
Seaoats	*Uniola paniculata*	
Brown Algae		
	Dictyota dichotoma	
	Ectocarpus confervoides	
	Ectocarpus mitchellae	
	Padina vickersiae	
	Sargassum filipendula	
	Sargassum linifolium	
	Sporochnus pedunculatus	
Cyanobacteria		
	Calothrix crustacea	
	Dichothrix penicillata	
	Lyngbya confervoides	
	Lyngbya majuscula	
	Lyngbya semiplena	
	Microcoleus tenerrimus	
	Plectonema calothrichoides	
Green Algae		
Mermaid's wineglass	*Acetabularia crenulata*	
Mermaid's wineglass	*Acetabularia farlowii*	
	Caulerpa prolifera	
	Chaetomorpha linum	
	Cladophora fuliginosa	
	Cladophora gracilis	
	Cladophoropsis membranacea	
	Codium decorniratum	
	Enteromorpha clathrata	
	Enteromorpha flexuosa	
	Enteromorpha lingulata	
	Enteromorpha plumosa	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
	Entophysalis deusta	
	Halimeda tridens	
	Monostroma latissimum	
	Penicillus lamourouxii	
	Protoderma marinum	
	Udotea conglutinata	
	Ulva lactuca	
	Ulvella viridis	
Red Algae		
	Bostrychia radicans	
	Bostrychia uvaria	
	Ceramium fastigiatum	
	Chondria cnicophylla	
	Chondria littoralis	
	Chondria sedifolia	
	Eucheuma acanthocladum	
	Fosliella boreale	
	Gelidium comeum	
	Gelidium crinale	
	Halymenia pseudofloresia	
	Jania rubens	
	Laurencia intricata	
	Laurencia obtusa	
	Laurencia poitei	
	Lithothamnion occidentale	
	Polysiphonia echinata	
	Polysiphonia howei	
	Polysiphonia subtilissima	
Birds		
Cooper's hawk	*Accipiter cooperii*	
Sharp-shinned hawk	*Accipiter striatus*	
Spotted sandpiper	*Acititis macularius*	
Red-winged blackbird	*Agelaius phoeniceus*	
Wood duck	*Aix sponsa*	
Grasshopper sparrow	*Ammodramus savannarum*	
Le Conte's sparrow	*Ammospiza leconteii*	
Nelson's sparrow	*Ammospiza nelsoni*	
Northern pintail	*Anas acuta*	
Common teal	*Anas crecca*	
Mottled duck	*Anas fulvigula*	
Mallard	*Anas platyrhynchos*	
American black duck	*Anas rubripes*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Anhinga	*Anhinga anhinga*	
Brown noddy	*Anous stolidus*	
Greater white-fronted goose	*Anser albifrons*	
Snow goose	*Anser caerulescens*	
Sandhill crane	*Antigone canadensis*	
Chuck-will's-widow	*Antrostomus carolinensis*	
Eastern whip-poor-will	*Antrostomus vociferus*	
Ruby-throated hummingbird	*Archilochus colubris*	
Great white egret	*Ardea alba*	
Great blue heron	*Ardea herodias*	
Great shearwater	*Ardenna gravis*	
Sooty shearwater	*Ardenna grisea*	
Ruddy turnstone	*Arenaria interpres*	
Short-eared owl	*Asio flammeus*	
Burrowing owl	*Athene cunicularia*	
Lesser scaup	*Aythya affinis*	
Redhead	*Aythya americana*	
Ring-necked duck	*Aythya collaris*	
Greater scaup	*Aythya marila*	
Canvasback	*Aythya valisineria*	
Tufted titmouse	*Baeolophus biocolor*	
Upland sandpiper	*Bartramia longicauda*	
Cedar waxwing	*Bombycilla cedrorum*	
American bittern	*Botaurus lentiginosus*	
Canada goose	*Branta canadensis*	
Great horned owl	*Bubo virginianus*	
Cattle egret	*Bubulcus ibis*	
Bufflehead	*Bucephala albeola*	
Common goldeneye	*Bucephala clangula*	
Red-tailed hawk	*Buteo jamaicensis*	
Rough-legged hawk	*Buteo lagopus*	
Red-shouldered hawk	*Buteo lineatus*	
Broad-winged hawk	*Buteo platypterus*	
Swainson's hawk	*Buteo swainsoni*	
Green heron	*Butorides virescens*	
Chestnut-collared longspur	*Calcarius ornatus*	
Sanderling	*Calidris alba*	
Dunlin	*Calidris alpina*	
Baird's sandpiper	*Calidris bairdii*	
Rufa red knot	*Calidris canutus rufa*	FT
White-rumped sandpiper	*Calidris fuscicollis*	
Stilt sandpiper	*Calidris himantopus*	
Western sandpiper	*Calidris mauri*	
Pectoral sandpiper	*Calidris melanotos*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Least sandpiper	*Calidris minutilla*	
Semipalmated sandpiper	*Calidris pusilla*	
Buff-breasted sandpiper	*Calidris subruficolis*	
Cory's shearwater	*Calonectris borealis*	
Canada warbler	*Cardellina canadensis*	
Wilson's warbler	*Cardellina pusilla*	
Northern cardinal	*Cardinalis cardinalis*	
Turkey vulture	*Cathartes aura*	
Veery	*Catharus fuscescens*	
Hermit thrush	*Catharus guttatus*	
Grey-cheeked thrush	*Catharus minimus*	
Swainson's thrush	*Catharus swainsoni*	
Chimney swift	*Chaetura pelagica*	
Piping plover	*Charadrius melodus*	FT
Snowy plover	*Charadrius nivosus*	ST
Semipalmated plover	*Charadrius semipalmatus*	
Killdeer	*Charadrius vociferus*	
Wilson's plover	*Charadrius wilsonia*	
Black tern	*Chlidonias niger*	
Lark sparrow	*Chondestes grammacus*	
Lesser nighthawk	*Chordeiles acutipennis*	
Common nighthawk	*Chordeiles minor*	
Northern harrier	*Circus hudsonius*	
Marian's marsh wren	*Cistothorus palustris marianae*	ST
Sedge wren	*Cistothorus stellaris*	
Long-tailed duck	*Clangula hyemalis*	
Yellow-billed cuckoo	*Coccyzus americanus*	
Black-billed cuckoo	*Coccyzus erythropthalmus*	
Yellow-shafted flicker	*Colaptes auratus*	
Common ground-dove	*Columbina passerina*	
Olive-sided flycatcher	*Contopus cooperi*	
Eastern wood-pewee	*Contopus virens*	
American black vulture	*Coragyps atratus*	
Fish crow	*Corvus ossifragus*	
Yellow rail	*Coturnicops noveboracensis*	
Groove-billed ani	*Crotophaga sulcirostris*	
Blue jay	*Cyanocitta cristata*	
Black-bellied whistling-duck	*Dendrocygna autumnalis*	
Bobolink	*Dolichonyx oryzivorus*	
Downy woodpecker	*Dryobates pubescens*	
Grey catbird	*Dumetella carolinensis*	
Little blue heron	*Egretta caerulea*	ST
Reddish egret	*Egretta rufescens*	ST
Snowy egret	*Egretta thula*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Tricolored heron	*Egretta tricolor*	ST
Tyrant flycatchers	*Elaenia* spp.	
Swallow-tailed kite	*Elanoides forficatus*	
Alder flycatcher	*Empidonax alnorum*	
Yellow-bellied flycatcher	*Empidonax flaviventris*	
Least flycatcher	*Empidonax minimus*	
Willow flycatcher	*Empidonax traillii*	
Acadian flycatcher	*Empidonax virescens*	
White ibis	*Eudocimus albus*	
Brewer's blackbird	*Euphagus cyanocephalus*	
Merlin	*Falco columbarius*	
Peregrine falcon	*Falco peregrinus*	
Southeastern American kestrel	*Falco sparverius paulus*	ST
Magnificent frigatebird	*Fregata magnificens*	
American coot	*Fulica americana*	
Wilson's snipe	*Gallinago delicata*	
Common gallinule	*Gallinula galeata*	
Common loon	*Gavia immer*	
Pacific loon	*Gavia pacifica*	
Red-throated loon	*Gavia stellata*	
Common gull-billed tern	*Gelochelidon nilotica*	
Kentucky warbler	*Geothlypis formosa*	
Mourning warbler	*Geothlypis philadelphia*	
Common yellowthroat	*Geothlypis trichas*	
American oystercatcher	*Haematopus palliatus*	ST
House finch	*Haemorhous mexicanus*	
Bald eagle	*Haliaeetus leucocephalus*	BGEPA
Worm-eating warbler	*Helmitheros vermivorum*	
Black-necked stilt	*Himantopus mexicanus*	
Barn swallow	*Hirundo rustica*	
Harlequin duck	*Histrionicus histrionicus*	
Band-rumped storm-petrel	*Hydrobates castro*	
Leach's storm-petrel	*Hydrobates leucorhous*	
Caspian tern	*Hydroprogne caspia*	
Pileated woodpecker	*Hylatomus pileatus*	
Wood thrush	*Hylocichla mustelina*	
Yellow-breasted chat	*Icteria virens*	
Baltimore oriole	*Icterus galbula*	
Orchard oriole	*Icterus spurius*	
Mississippi kite	*Ictinia mississippiensis*	
Least bittern	*Ixobrychus exilis*	
Varied thrush	*Ixoreus naevius*	
Dark-eyed junco	*Junco hyemalis*	
Loggerhead shrike	*Lanius ludovicianus*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Laughing gull	*Larus atricilla*	
Ring-billed gull	*Larus delawarensis*	
Lesser black-backed gull	*Larus fuscus*	
Glaucous gull	*Larus hyperboreus*	
Great black-backed gull	*Larus marinus*	
Bonaparte's gull	*Larus philadelphia*	
Franklin's gull	*Larus pipixcan*	
Arctic herring gull	*Larus smithsonianus*	
Black rail	*Laterallus jamaicensis*	
Hairy woodpecker	*Leuconotpicus villosus*	
Short-billed dowitcher	*Limnodromus griseus*	
Long-billed dowitcher	*Limnodromus scolopaceus*	
Swainson's warbler	*Limnothlypis swainsonii*	
Marbled godwit	*Limosa fedoa*	
Hooded merganser	*Lophodytes cucullatus*	
American wigeon	*Mareca americana*	
Gadwall	*Mareca strepera*	
Belted kingfisher	*Megaceryle alcyon*	
Eastern screech-owl	*Megascops asio*	
Red-bellied woodpecker	*Melanerpes carolinus*	
Red-headed woodpecker	*Melanerpes erythrocephalus*	
Black scoter	*Melanitta americana*	
White-winged scoter	*Melanitta deglandi*	
Swamp sparrow	*Melospiza georgiana*	
Lincoln's sparrow	*Melospiza lincolnii*	
Song sparrow	*Melospiza melodia*	
Common merganser	*Mergus merganser*	
Red-breasted merganser	*Mergus serrator*	
Northern mockingbird	*Mimus polyglottos*	
Black-and-white warbler	*Mniotilta varia*	
Bronzed cowbird	*Molothrus aeneus*	
Brown-headed cowbird	*Molothrus ater*	
Shiny cowbird	*Molothrus bonariensis*	
Northern gannet	*Morus bassanus*	
Wood stork	*Mycteria americana*	FT
Ash-throated flycatcher	*Myiarchus cinerascens*	
Great crested flycatcher	*Myiarchus crinitus*	
Sulphur-bellied flycatcher	*Myiodynastes luteiventris*	
Double-crested cormorant	*Nannopterum auritus*	
Long-billed curlew	*Numenius americanus*	
Whimbrel	*Numenius phaeopus*	
Yellow-crowned night-heron	*Nyctanassa violacea*	
Black-crowned night-heron	*Nycticorax nycticorax*	
Wilson's storm-petrel	*Oceanites oceanicus*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Bridled tern	*Onychoprion anaethetus*	
Sooty tern	*Onychoprion fuscatus*	
Connecticut warbler	*Oporonis agilis*	
Sage thrasher	*Oreoscoptes montanus*	
Orange-crowned warbler	*Oreothlypis celata*	
Tennessee warbler	*Oreothlypis peregrina*	
Nashville warbler	*Oreothlypis ruficapilla*	
Ruddy duck	*Oxyura jamaicensis*	
Osprey	*Pandion haliaetus*	
Louisiana waterthrush	*Parkesia motacilla*	
Northern waterthrush	*Parkesia noveboracensis*	
Savannah sparrow	*Passerculus sandwichensis*	
American tree sparrow	*Passerella arborea*	
Fox sparrow	*Passerella* spp.	
Blue grosbeak	*Passerina caerulea*	
Painted bunting	*Passerina ciris*	
Indigo bunting	*Passerina cyanea*	
American white pelican	*Pelecanus erythrorhynchos*	
Brown pelican	*Pelecanus occidentalis*	
Cave swallow	*Petrochelidon fulva*	
Cliff swallow	*Petrochelidon pyrrhonota*	
Rock pigeon	*Petrophassa* spp.	
Red phalarope	*Phalaropus fulicarius*	
Red-necked phalarope	*Phalaropus lobatus*	
Rose-breasted grosbeak	*Pheucticus ludovicianus*	
Black-headed grosbeak	*Pheucticus melanocephalus*	
American flamingo	*Phoenicopterus ruber*	
Green-tailed towhee	*Pipilo chlorurus*	
Eastern towhee	*Pipilo erythrophthalmus*	
Western tanager	*Piranga ludoviciana*	
Scarlet tanager	*Piranga olivacea*	
Summer tanager	*Piranga rubra*	
Roseate spoonbill	*Platalea ajaja*	ST
Glossy ibis	*Plegadis falcinellus*	
American golden-plover	*Pluvialis dominica*	
Grey plover	*Pluvialis squatarola*	
Horned grebe	*Podiceps auritus*	
Red-necked grebe	*Podiceps grisegena*	
Eared grebe	*Podiceps nigricollis*	
Pied-billed grebe	*Podilymbus podiceps*	
Carolina chickadee	*Poecile carolinensis*	
Blue-grey gnatcatcher	*Polioptila caerulea*	
Vesper sparrow	*Pooecetes gramineus*	
Purple gallinule	*Porphyrio martinicus*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Sora	*Porzana carolina*	
Purple martin	*Progne subis*	
Prothonotary warbler	*Protonotaria citrea*	
Audubon's shearwater	*Puffinus lherminieri*	
Manx shearwater	*Puffinus puffinus*	
Common vermilion flycatcher	*Pyrocephalus rubinus*	
Common grackle	*Quiscalus quiscula*	
Clapper rail	*Rallus crepitans*	
King rail	*Rallus elegans*	
Virginia rail	*Rallus limicola*	
American avocet	*Recurvirostra americana*	
Ruby-crowned kinglet	*Regulus calendula*	
Golden-crowned kinglet	*Regulus satrapa*	
Bank swallow	*Riparia riparia*	
Black-legged kittiwake	*Rissa tridactyla*	
Black skimmer	*Rynchops niger*	ST
Eastern phoebe	*Sayornis phoebe*	
Say's phoebe	*Sayornis saya*	
Ovenbird	*Seiurus aurocapilla*	
Northern parula	*Setophaga americana*	
Black-throated blue warbler	*Setophaga caerulescens*	
Bay-breasted warbler	*Setophaga castanea*	
Cerulean warbler	*Setophaga cerulea*	
Hooded warbler	*Setophaga citrina*	
Yellow-rumped warbler	*Setophaga coronata*	
Prairie warbler	*Setophaga discolor*	
Yellow-throated warbler	*Setophaga dominica*	
Blackburnian warbler	*Setophaga fusca*	
Magnolia warbler	*Setophaga magnolia*	
Chestnut-sided warbler	*Setophaga pensylvanica*	
Yellow warbler	*Setophaga petechia*	
Pine warbler	*Setophaga pinus*	
Palm warbler	*Setophaga plamarum*	
American redstart	*Setophaga ruticilla*	
Blackpoll warbler	*Setophaga striata*	
Cape May warbler	*Setophaga tigrina*	
Townsend's warbler	*Setophaga townsendi*	
Black-throated green warbler	*Setophaga virens*	
Eastern bluebird	*Sialia sialis*	
Red-breasted nuthatch	*Sitta canadensis*	
Brown-headed nuthatch	*Sitta pusilla*	
Northern shoveler	*Spatula clypeata*	
Blue-winged teal	*Spatula discors*	
Yellow-bellied sapsucker	*Sphyrapicus varius*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Pine siskin	*Spinus pinus*	
American goldfinch	*Spinus tristis*	
Dickcissel	*Spiza americana*	
Clay-colored sparrow	*Spizella pallida*	
Chipping sparrow	*Spizella passerina*	
Field sparrow	*Spizella pusilla*	
Wilson's phalarope	*Steganopus tricolor*	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	
Long-tailed jaeger	*Stercorarius longicaudus*	
Parasitic jaeger	*Stercorarius parasiticus*	
Pomarine jaeger	*Stercorarius pomarinus*	
Roseate tern	*Sterna dougallii*	
Forster's tern	*Sterna forsteri*	
Common tern	*Sterna hirundo*	
Arctic tern	*Sterna paradisaea*	
Least tern	*Sternula antillarum*	ST
Barred owl	*Strix varia*	
Eastern meadowlark	*Stunella magna*	
Masked booby	*Sula dactylatra*	
Brown booby	*Sula leucogaster*	
Tree swallow	*Tachycineta bicolor*	
Royal tern	*Thalasseus maximus*	
Sandwich tern	*Thalasseus sandvicensis*	
Bewick's wren	*Thryomanes bewickii*	
Carolina wren	*Thryothorus ludovicianus*	
Brown thrasher	*Toxostoma rufum*	
Lesser yellowlegs	*Tringa flavipes*	
Greater yellowlegs	*Tringa melanoleuca*	
Willet	*Tringa semipalmata*	
Solitary sandpiper	*Tringa solitaria*	
House wren	*Troglodytes aedon*	
Winter wren	*Troglodytes hiemalis*	
American robin	*Turdus migratorius*	
Gray kingbird	*Tyrannus dominicensis*	
Scissor-tailed flycatcher	*Tyrannus forficatus*	
Fork-tailed flycatcher	*Tyrannus savana*	
Eastern kingbird	*Tyrannus tyrannus*	
Western kingbird	*Tyrannus verticalis*	
Common barn owl	*Tyto alba*	
Golden-winged warbler	*Vermivora chrysoptera*	
Blue-winged warbler	*Vermivora cyanoptera*	
Black-whiskered vireo	*Vireo altiloquus*	
Bell's vireo	*Vireo bellii*	
Yellow-throated vireo	*Vireo flavifrons*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Warbling vireo	*Vireo gilvus*	
White-eyed vireo	*Vireo griseus*	
Red-eyed vireo	*Vireo olivaceus*	
Philadelphia vireo	*Vireo philadelphicus*	
Blue-headed vireo	*Vireo solitarius*	
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	
Mourning dove	*Zenaida macroura*	
White-throated sparrow	*Zonotrichia albicollis*	
White-crowned sparrow	*Zonotrichia lecophrys*	
Harris's sparrow	*Zonotrichia querula*	
Fish (including Families)		
Surgeonfishes	*Acanthuridae*	
Sturgeons (includes Gulf sturgeon)	*Acipenseridae* (*Acipenser oxyrinchus desotoi*)	FT
Bonefishes	*Albulidae*	
Ray-finned fishes (includes eels)	*Anguillidae*	
Anglerfishes	*Antennariidae*	
Ariid catfishes	*Ariidae*	
Driftfishes	*Ariommatidae*	
Old World silversides	*Atherinidae*	
Trumpetfishes	*Aulostomidae*	
Ray-finned fishes	*Apogonidae*	
Triggerfishes	*Balistidae*	
Toadfishes	*Batrachoididae*	
Needlefishes	*Belonidae*	
Combtooth blennies	*Blenniidae*	
Flounders	*Bothidae*	
Pomfrets	*Bramidae*	
Codlets	*Bregmacerotidae*	
Pearlfishes	*Carapidae*	
Jacks, pompanos, jack mackerels, etc.	*Carangidae*	
Requiem sharks	*Carcharhinidae*	
Medusafishes	*Centrolophidae*	
Snooks	*Centropomidae*	
Butterflyfishes	*Chaetodontidae*	
Hawkfishes	*Cirrhitidae*	
Herrings, shads, sardines, etc.	*Clupeidae*	
Blennies	*Clinidae*	
Conger and garden eels	*Congridae*	
Dolphinfishes	*Coryphaenidae*	
Tonguefishes	*Cynoglossidae*	
Flying gurnards	*Dactylopteridae*	
Sand stargazers	*Dactyloscopidae*	
Whiptail stingrays	*Dasyatidae*	
Porcupinefishes	*Diodontidae*	
Arrowtooth eels	*Dysommidae*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Remoras	*Echeneidae*	
Ladyfishes	*Elopidae*	
Anchovies	*Engraulidae*	
Spadefishes	*Ephippidae*	
Flying fishes	*Exocoetidae*	
Cornetfishes	*Fistulariidae*	
Codfishes	*Gadidae*	
Mojarras	*Gerreidae*	
Clingfishes	*Gobiesocidae*	
Gobies (true gobies)	*Gobiidae*	
Butterfly rays	*Gymnuridae*	
Grunts	*Haemulidae*	
Squirrelfishes and soldierfishes	*Holocentridae*	
Ictalurid catfishes	*Ictaluridae*	
Marlins and other billfishes	*Istiophoridae*	
Wrasses	*Labridae*	
Mackerel sharks	*Lamnidae*	
Gars	*Lepisosteidae*	
Tripletails	*Lobotidae*	
Snappers	*Lutjanidae*	
Tilefishes	*Malacanthidae*	
Wormfishes and dartfishes	*Microdesmidae*	
Manta rays	*Mobulidae*	
Mullets	*Mugilidae*	
Goatfishes	*Mullidae*	
Pike conger eels	*Muraenesocidae*	
Moray eels	*Muraenidae*	
Eagle rays	*Myliobatidae*	
Driftfishes	*Nomeidae*	
Sand sharks	*Odontaspididae*	
Batfishes	*Ogocephalidae*	
Snake eels	*Ophichthidae*	
Cusk-eels	*Ophidiidae*	
Boxfishes	*Ostraciidae*	
Temperate perches	*Percichthyidae*	
Tooth-carps	*Poeciliidae*	
Threadfins	*Polynemidae*	
Damselfishes and clownfishes	*Pomacentridae*	
Bluefish	*Pomacentridae* (*Pomatomatus saltatrix*)	
Bigeyes	*Priacanthidae*	
Sawfishes	*Pristidae*	
Cobia	*Rachycentridae* (*Rachycentron canadum*)	
Skates	*Rajidae*	
Whale shark	*Rhincodontidae* (*Rhincodon typus*)	
Guitarfishes	*Rhinobatidae*	

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Parrotfishes	*Scaridae*	
Drums	*Sciaenidae*	
Mackerels and tunas	*Scombridae*	
Scorpionfishes	*Scorpaenidae*	
Sea basses, groupers, and more	*Serranidae*	
Flatfishes	*Soleidae*	
Sea breams and porgies	*Sparidae*	
Barracudas	*Sphyraenidae*	
Dogfish sharks	*Squalidae*	
Angelsharks	*Squatinidae*	
Butterfishes	*Stromateidae*	
Seahorses and pipefishes	*Syngnathidae*	
Lizardfishes	*Synodontidae*	
Pufferfishes	*Tetraodontidae*	
Electric rays	*Torpedinidae*	
Cutlassfishes	*Trichiuridae*	
Sea robins / gurnards	*Triglidae*	
Stargazers	*Uranoscopidae*	
Swordfishes	*Xiphiidae*	
Amphibians		
Southern toad	*Bufo terrestris*	
Southern leopard frog	*Rana sphenocephala*	
Reptiles		
Cottonmouth	*Agkistrodon piscivorus*	
American alligator	*Alligator mississippiensis*	FT (S/A)
Loggerhead sea turtle	*Caretta caretta*	FT
Green sea turtle	*Chelonia mydas*	FT
Black racer	*Coluber constrictor*	
Leatherback sea turtle	*Dermochelys coriacea*	FE
Eastern indigo snake	*Dermochelys coriacea*	FT
Hawksbill sea turtle	*Eretmochelys imbricata*	FE
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE
Alligator snapping turtle	*Macrochelys temminckii*	
Diamondback terrapin	*Malaclemys terrapin*	
Coachwhip	*Masticophis flagellum*	
Pygmy rattlesnake	*Sistrurus miliarius*	
Garter snake	*Thamnophis sirtalis*	
Mammals		
Nine-banded armadillo	*Dasyptus novemcintus*	
River otter	*Lontra canadensis*	
Striped skunk	*Mephitis mephitis*	
Long-tailed weasel	*Mustela frenata*	
Marsh rice rat	*Oryzomys palustris*	
Perdido Key beach mouse	*Peromyscus polionotis trissyllepsis*	FE

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Raccoon	*Procyon lotor*	
Eastern grey squirrel	*Sciurus carolinensis*	
Cotton rat	*Sigmodon hispidus*	
Marsh rabbit	*Sylvilagus palustris*	
West Indian manatee	*Trichechus manatus*	T
Bottlenose dolphin	*Tursiops truncatus*	
Gray fox	*Urocyon cinereoargenteus*	
Red fox	*Vulpes fulva*	

*B.3.2 / **Listed Species***

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 • **SSC** = State Species of Special Concern **(S/A)** = listed due to similarity of appearance • **BGEPA** = Bald and Golden Eagle Protection Act		
Birds		
Rufa red knot	*Calidris canutus rufa*	FT
Piping plover	*Charadrius melodus*	FT
Snowy plover	*Charadrius nivosus*	ST
Marian's marsh wren	*Cistothorus palustris marianae*	ST
Little blue heron	*Egretta caerulea*	ST
Reddish egret	*Egretta rufescens*	ST
Tricolored heron	*Egretta tricolor*	ST
Southeastern American kestrel	*Falco sparverius paulus*	ST
American oystercatcher	*Haematopus palliatus*	ST
Bald eagle	*Haliaeetus leucocephalus*	BGEPA
Wood stork	*Mycteria americana*	FT
Roseate spoonbill	*Platalea ajaja*	ST
Black skimmer	*Rynchops niger*	ST
Least tern	*Sternula antillarum*	ST
Fish		
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	FT
Reptiles		
American alligator	*Alligator mississippiensis*	FT (S/A)
Loggerhead sea turtle	*Caretta caretta*	FT
Green sea turtle	*Chelonia mydas*	FT
Leatherback sea turtle	*Dermochelys coriacea*	FE
Eastern indigo snake	*Dermochelys coriacea*	FT
Hawksbill sea turtle	*Eretmochelys imbricata*	FE
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE
Mammals		
Perdido Key beach mouse	*Peromyscus polionotis trissyllepsis*	FE
West Indian manatee	*Trichechus manatus*	FT

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

Common Name	Scientific Name	Plants (FLEPPC* Category) Others (Invasive Status)
Plants		
Mimosa tree	*Albizia julibrissin*	I
Cogongrass	*Imperata cylindrica*	I
Chinese privet	*Ligustrum sinense*	I
Japanese honeysuckle	*Lonicera japonica*	I
Peruvian primrosewillow	*Ludwigia peruviana*	I
Japanese climbing fern	*Lygodium japonicum*	I
Common reed	*Phragmites australis*	
Chinese tallow-tree	*Triadica sebifera*	I
Beach vitex	*Vitex rotundifolia*	I
Fish		
Asian tiger shrimp	*Penaeus monodon*	NN
Birds		
House sparrow	*Passer domesticus*	NN
European collared dove	*Streptopelia decaocto*	NN
European starling	*Stumus vulgaris*	NN
Mammals		
Nine-banded armadillo	*Dasyptus novemcintus*	P
Nutria	*Myocastor coypus bonariensis*	NN
Raccoon	*Procyon lotor*	P
Invertebrates		
Lionfish	*Pterois volitans*	NN

*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).
**Animals are listed as either non-native invasive (NN) or problem native (P) 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.

*B.5 / **Archaeological and Historical Sites Associated with Fort Pickens Aquatic Preserve***

The list below was derived from shapefiles obtained from the Florida Department of State, Division of Historical Resources on November 20, 2018 and includes sites within .25 miles of Fort Pickens Aquatic Preserve.

Site ID	Site Name	Description	Location
ES00020	FORT PICKENS 1	Prehistoric midden(s)	Within 0.25 miles of FPAP
ES00022	THIRD SITE OF PENSACOLA, 1722-1756	Subsurface features are present; Historic refuse / dump	Within 0.25 miles of FPAP
ES00037	PENSACOLA PASS CANNON	Historic shipwreck	Within FPAP
ES00070	FORT PICKENS	FMSF Building Complex, listed 5/31/1972	Within FPAP
ES00071	ASSISTANT ENGINEER'S QUARTERS	Building remains	Within 0.25 miles of FPAP
ES00072	ENGINEER'S QUARTERS	Building remains	Within 0.25 miles of FPAP
ES00073	BATTERY SCOTT/ COLLUM-SEIVER	Historic fort	Within 0.25 miles of FPAP
ES00074	MORTAR BATTERY TOTTEN	Historic fort	Within 0.25 miles of FPAP
ES00075	BATTERY CAMERON	Historic fort	Within 0.25 miles of FPAP
ES00076	BATTERY LINCOLN	Historic fort	Within 0.25 miles of FPAP
ES00077	FEDERAL CAMP BROWN OF THE SIXTH REG NY V	Historic fort	Within 0.25 miles of FPAP
ES00077B	NN	Historic fort	Within 0.25 miles of FPAP
ES00078	1861 HOSPITAL	Historic refuse / dump	Within 0.25 miles of FPAP
ES00079	OLD LIFE SAVING STATION	Historic fort	Within 0.25 miles of FPAP
ES00080	CIVIL WAR PERIOD DUMP	Historic fort	Within 0.25 miles of FPAP
ES00081	CANNON BALL CACHE	Historic fort	Within 0.25 miles of FPAP
ES00082	QUARANTINE QUARTERS (POST 1867)	Historic fort	Within 0.25 miles of FPAP
ES00083	BATTERY VAN SWEARINGEN	WEST OF FT PICKENS, built 1890	Within 0.25 miles of FPAP
ES00084	BATTERY PENSACOLA	IN FT PICKENS BOUNDARY, built 1898	Within 0.25 miles of FPAP
ES00085	BATTERY TRUEMAN	Fort Pickens RD, built c1905	Within 0.25 miles of FPAP
ES00086	BATTERY PAYNE	SW CRNER OF SEAWALL AREA, built c1895	Within 0.25 miles of FPAP
ES00087	BATTERIES SEIVER-COLLUM	Built c1898	Within 0.25 miles of FPAP
ES00088	BATTERY BROWN	FT PICKENS GROUNDS, built c1895	Within 0.25 miles of FPAP
ES00089	BATTERY COOPER	FORT PICKENS RD-S OF, built 1898	Within 0.25 miles of FPAP
ES00090	BATTERY WORTH	FORT PICKENS RD-N OF, built 1898	Within 0.25 miles of FPAP
ES00091	NARROW GAUGE RAILROAD BED	Linear Resource	Within 0.25 miles of FPAP
ES00092	TRAIN REPAIR SHOP	Industrial	Within 0.25 miles of FPAP
ES00093	FORT PICKENS HISTORIC DISTRICT	Historical District	Within FPAP
ES00094	SPANISH-AMERICAN WAR PERIOD SEAWALL	FT PICKENS GROUNDS, built c1904	Within 0.25 miles of FPAP
ES00095	FILLED AREA	Historic refuse / dump	Within 0.25 miles of FPAP
ES00096	BATTERY LANGDON	1400 Fort Pickens RD, built 1923-	Within 0.25 miles of FPAP
ES00097	OLD FERRY SLIP	Wharf midden-underwater	Within FPAP

Site ID	Site Name	Description	Location
ES00098	HOTEL BAR	Historic refuse / dump	Within FPAP
ES00099	TUGBOAT WRECK	Historic shipwreck	Within FPAP
ES00100A	WRECK SCATTER	Prehistoric midden(s); Historic shipwreck	Within FPAP
ES00100B	CATHARINE	Saltworks; historic shipwreck	Within FPAP
ES00101	E W FOWLER WRECK	Historic shipwreck	Within FPAP
ES00102	WWII BATTERIES AND BUNKER COMPLEX	Built c1940	Within 0.25 miles of FPAP
ES00107	FORT MCREE	Historic fort	Within FPAP
ES00109	MISCELLANEOUS WAR STRUCTURES	Historical District	Within 0.25 miles of FPAP
ES00112	REDFISH POINT	Artifact scatter-low density (< 2 per sq meter)	Within 0.25 miles of FPAP
ES00113	WORLD WAR I GUN SITE	Buit c1917	Within 0.25 miles of FPAP
ES00130	PERDIDO KEY HISTORIC DISTRICT	Listed 3/10/1980	Within 0.25 miles of FPAP
ES00231	MISS SUE WRECK	Historic shipwreck	Within FPAP
ES01372	CONVOY WRECK	Historic shipwreck	Within 0.25 miles of FPAP
ES01440	SHERMAN COVE	Artifact scatter-low density (< 2 per sq meter)	Within 0.25 miles of FPAP
ES01898	USS MASSACHUSETTS (BB-2)	Historic shipwreck	Within FPAP
ES01899	RHODA	Historic shipwreck	Within FPAP
ES01901	PICKEN'S WRECK	Historic shipwreck	Within FPAP
ES01904	WILLIAM H. JUDAH (PROBABLE)	Saltworks; historic shipwreck	Within 0.25 miles of FPAP
ES01905	SANTA ROSA ISLAND WRECK	Saltwater-marine-"high energy"-historic shipwreck	Within FPAP
ES02995	CONCRETE BALLAST WRECK	Historic shipwreck	Within FPAP
ES02997	SHEATHING/COAL SITE	Artifact scatter-low density (< 2 per sq meter)	Within FPAP
ES03514	McRee Brick Pits	Artifact scatter-low density (< 2 per sq meter)	Within 0.25 miles of FPAP
ES03515	Perdido Key Dunes	Building remains	Within 0.25 miles of FPAP
ES03517	South Santa Rosa Timbers 1	Other	Within FPAP
ES03544	S-32	Other	Within 0.25 miles of FPAP
ES03549	Santa Rosa Bayshore	Artifact scatter-low density (< 2 per sq meter)	Within FPAP
ES03562	Historic Pier, Fort Pickens	Artifact scatter-low density (< 2 per sq meter)	Within FPAP
ES03755	Confederate Mortar Cache	Building remains	Within 0.25 miles of FPAP
ES04302	Tennis Court Housing Area	Other structure	Within 0.25 miles of FPAP
ES04304	Mosquito Control Canals	Linear Resource	Within 0.25 miles of FPAP
ES04617	Battery 234 CRF/BCS Tower		Within 0.25 miles of FPAP
ES05008	Pensacola Harbor Defense Project	Mixed District, listed 5/5/2017	Within FPAP
ES05014	Mine Storeroom, Bldg.16	1400 Fort Pickens Road, built 1900	Within 0.25 miles of FPAP
ES05015	Mine Loading Room, Bldg.15	1400 Fort Pickens RD, built 1907	Within 0.25 miles of FPAP
ES05016	Engineers' Storeroom, Bldg.17	1400 Fort Pickens RD, built 1907	Within 0.25 miles of FPAP
SR00743	DEER POINT	Homestead	Within 0.25 miles of FPAP

Appendix C

Public Involvement

*C.1 / **Advisory Committee***

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

*C.1.1 / **List of Members and Their Affiliations***

Name	Affiliation
Darryl Boudreau	The Nature Conservancy
Dan Brown	Gulf Islands National Seashore, National Park Service
Beth Fugate	DEP - Fort Pickens Aquatic Preserve
Shane Hayes	US Army Corps of Engineers
Paulo Ghio	Santa Rosa Island Authority
Kelly Irick	Gulf Islands National Seashore, National Park Service
Chips Kirschenfeld	Ecosystem Restoration Support Organization
Katie Konchar	Florida Fish and Wildlife Conservation Commission
Rick O'Connor	Florida Sea Grant
Joelle O'Daniel-Lopez	Naval Air Station Pensacola
Kevin O'Donnell	DEP - Division of Environmental Assessment and Restoration
Josh Poole	Local landowner
Paul Thorpe	Northwest Florida Water Management District
Jim Trifilio	Pensacola Perdido Bay Estuary Program
Robert Turpin	Escambia County, Marine Resources
Doug Underhill	Escambia County Commissioner, District 2
Betty Wilson	Escambia County Soil and Water Conservation District
Kiersten Wilson	DEP - Big Lagoon State Park

Smith, FDOT District Five Title VI Coordinator at jennifer.smith2@dot.state.fl.us.

A copy of the agenda may be obtained by contacting: Eliode Joseph, P.E., by phone at (386)943-5388, or via email at Eliode.Joseph@dot.state.fl.us.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 7 days before the workshop/meeting by contacting: Eliode Joseph, P.E., by phone at (386)943-5388, or via email at Eliode.Joseph@dot.state.fl.us. Persons who require translation services (free of charge) should also contact Eliode Joseph, P.E., by phone at (386)943-5388, or via email at Eliode.Joseph@dot.state.fl.us. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

For more information, you may contact: Eliode Joseph, P.E., FDOT Project Manager, by phone at (386)943-5388, or by email at Eliode.Joseph@dot.state.fl.us. Additional information is available on the project website at www.CFLRoads.com (search for FPID 39864-1).

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

The Florida Department of Environmental Protection's Office of Resilience and Coastal Protection announces a public meeting to which all persons are invited.

DATE AND TIME: Thursday, August 29, 2019, 6:00 p.m. – 7:30 p.m.

PLACE: Pensacola Library, Meeting Room B, 239 N. Spring St., Pensacola, FL 32502

GENERAL SUBJECT MATTER TO BE CONSIDERED: A draft Fort Pickens Aquatic Preserve management plan has been prepared by the Office of Resilience and Coastal Protection. The draft plan is available for viewing or download at http://publicfiles.dep.state.fl.us/CAMA/plans/Fort-Pickens-AP-Management-Plan.pdf. The Office of Resilience and Coastal Protection seeks public comment on the draft. Members of the Fort Pickens Aquatic Preserve Advisory Committee have also been invited to attend and listen to comments, and may also participate in the discussion.

This event is not sponsored or endorsed by the West Florida Public Libraries or Escambia County.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager, Beth Fugate at Beth.L.Fugate@FloridaDEP.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: Beth Fugate at Beth.L.Fugate@FloridaDEP.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).

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

The Florida Department of Environmental Protection's Office of Resilience and Coastal Protection announces a public meeting to which all persons are invited.

DATE AND TIME: Friday, August 30, 2019, 9:00 a.m.

PLACE: Florida Department of Environmental Protection Northwest District, 160 W. Government St., Pensacola, FL 32502

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Fort Pickens Aquatic Preserve Management Plan Advisory Committee will meet to discuss possible revisions to the draft Fort Pickens Aquatic Preserve management plan and review comments received at the public meeting scheduled for August 29, 2019, and separately noticed. The draft plan is available for download or viewing at http://publicfiles.dep.state.fl.us/CAMA/plans/Fort-Pickens-AP-Management-Plan.pdf.

A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager, Beth Fugate at Beth.L.Fugate@FloridaDEP.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: Beth Fugate at Beth.L.Fugate@FloridaDEP.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).

REGIONAL PLANNING COUNCILS

Northeast Florida Regional Planning Council

The Northeast Florida Regional Council announces a public meeting to which all persons are invited.

DATE AND TIME: August 14, 2019, 10:00 a.m.

PLACE: 100 Festival Park Avenue, Jacksonville, FL 32202

GENERAL SUBJECT MATTER TO BE CONSIDERED: Local Emergency Planning Committee (LEPC) Meeting.

A copy of the agenda may be obtained by contacting: (904)279-0880.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 5 days before the workshop/meeting by contacting: (904)279-0880. 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

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, FL 32399, MS 235

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

Fort Pickens Aquatic Preserve
Draft Management Plan
Advisory Committee Meeting

Friday, Aug. 30, 2019
9 a.m.

Florida Department of Environmental Protection
Northwest District Office
160 W. Government Street
Pensacola, FL 32502

Advisory Committee Attendees: Dan Brown (Gulf Islands National Seashore), Kelly Irick (Gulf Islands National Seashore), Robert Turpin (Escambia County, Marine Resources), Rick O'Connor (Florida Sea Grant), Josh Poole (local landowner), Darryl Boudreau (The Nature Conservancy), Joelle O'Daniel-Lopez (Naval Air Station Pensacola), Paolo Ghio (Santa Rosa Island Authority), Jim Trifilio (Pensacola Perdido Bay Estuary Program), Kevin O'Donnell (DEP – Division of Environmental Assessment and Restoration),

Staff: Beth Fugate, Zach Schang, Earl Pearson, Karen Thurston-Chavez, Kim Wren

1. Welcome and Introductions
Earl welcomed the attendees and introductions were done around the room. A brief recap from the public meeting was given and comments from each station were read.

2. Discussion on Revisions to Draft Management Plan
The floor was open for discussion regarding the identified issue and any other issues. Where applicable, the discussions have been summarized and categorized below under the five issues (water quality, addressing habitat loss and decline, improving information about submerged resources, public awareness, and sustainable public use). When discussion overlapped categories, it was placed where it seemed to fit best.

- Issue 1: Water Quality
    - Need to reach more individuals about their personal impact to water quality (pesticides)
    - Could we be involved in restoration of seagrass outside the aquatic preserve?
        - Beth says can do work outside the aquatic preserve as long as it has a positive effect on the aquatic preserve itself.

        - Scout monitoring outside our boundaries because it helps inside the aquatic preserve.
        - From regulatory point, enforcement point – against towing company
        - Fines for outside the aquatic preserve for prop scarring, enforcement is an issue
        - DEP's Environmental Resource Permitting Program pursues prop scarring issues
    - Are we going to coordinate with the health department, reach out to other agencies?
        - Health department has very strong presence on island
        - Common denominator for everything is how will it be funded
    - Consistency among agencies in type of samples run
        - Beth will work on contacting EPA about their sampling data
        - Continuous water-quality monitoring system
    - Have a more regular schedule for regular sampling
    - Knowing where to find the information – Water Quality Dashboard
        - Make sure that the water quality data portal has advisories and closure data readily available.
        - Include information about rain events as a potential driver for water quality
        - Measuring the sinking of the ship; measuring, but what are we doing?
        - Need to find ways to enforce the issues we find through the data
    - Project Greenshores – great model/success stories
    - Optical modeling
    - Coordinating with DEAR
    - More transparency regarding water quality
    - Follow through on enforcement, build the case, prosecute the case, recover the money for damage to the resources
        - Publicize the prosecution of the cases
        - Issue is no money for enforcement
    - Quarterly multi-agency meetings to discuss common issues going on in their areas; adding to technical advisory committee meetings

- Issue 2: Addressing Habitat Loss/Decline
    - People aren't sure what the laws/rules are, especially in areas with shared management
        - Beth said there may be signage with a QR code that would provide the info
    - Mapping trash/marine debris
        - MyCoast application
        - Increased communication with Beth about marine debris
        - Signage to let visitors know they are to dump their trash in the dumpster
        - Less equipment, more staff
    - Reach out to Gulf Intercoastal Waterway regarding coal falling off barges and washing ashore

- Statement of criteria in plan for seagrass restoration
- How do you choose a restoration site?

- Issue 3: Improving Information about Submerged Resources
  - UWF archaeology side
  - FWC has biggest database of seagrass – start with those
  - Coordinate with county – mapping inventories
  - Fishing forums on social media
  - Propscars mapping
  - UWF – historical data
  - SEACAR
  - MapDirect website
  - Partnerships with dive companies
  - Managing species – coordinating monitoring of different wildlife, such as manatees, lionfish
  - Have an integrated map
  - Include dredging of the past in management plan
    - Long discussion on dredging and where dredged sand goes
    -
  - Include something in the plan about disaster response.
    - Add lessons learned from the Deepwater Horizon to the plan, such as booming
    - Identify sensitive areas that should have more careful attention during disaster response
    - Do pre- and post surveys to determine the effects of deep cleaning on beaches.
  - Techniques used to map and monitor seagrass
  - Possible university partnership for mapping (grad students)
  - Mapping extent of brown algae
  - Difference in nutrients in the macroalgae

- Issue 4: Public Awareness
  - Marine Life Inventory app, national seashore working on an app; iNaturalist may also be an option, but include information about seagrass awareness
    - Add aquatic preserve locations in social media; specific hashtag for aquatic preserves
    - Add information to handouts, brochures, staff explain to visitors
    - Add info to the Aquatic Preserve Passport/website
  - Partnerships with visitor info centers, National Park Service, etc., to disseminate
    - Provide brochures
    - Provide link to water quality dashboard
  - Interaction with schools
    - Grasses with Classes
    - Outreach/volunteer opportunities
  - Make public aware of opportunities to subscribe to announcements, press releases, calendar events, etc.

- Partnerships with local events
- Coordinating with the ferry
- Visitor use survey plan
  - Check the formula for the National Park Service visitor impact for the region
- Handouts at Fort Pickens station, campground and other launches about Fort Pickens Aquatic Preserve
- Better education in schools with kids
- Inter-agency coordination for signage and educational material
  - Look into developing a Dawn Wetherington poster for Fort Pickens
  - Use Clyde Butcher posters as giveaway prizes at events
- Use QR codes on signs leading to websites with more info and updates
- Establish state-level regulations on lawn care, fertilizers, pesticides
- Education on monitoring vegetative buffers
- Have living shorelines at boat launches to serve as public examples
- Direct-mail piece to people who live near the aquatic preserve
  - Make an educational piece for homeowners with a subtle mention of the aquatic preserve

- Issue 5: Sustainable Public Use
  - Increase boater awareness of seagrass and seagrass drift washing ashore
  - Making location of the Massachusetts – need something physically marking structure
  - Utilize bridge material as a spot in the bay for fisherman and divers?
  - More artificial reefs in the aquatic preserve
    - The National Park Service would not support an artificial reef within GUIS (no fish aggregation devices)
    - Artificial reefs also attract lionfish
  - Additional boater restrictions
  - Streamline signage process
  - Personal watercraft restrictions/work with marine patrol, FWC – in Florida statutes, it says personal watercraft cannot be regulated any differently than other watercraft
    - Floating restaurants – work cooperatively with other agencies to discourage this
    - Natural setting, dispersed recreation – National Park Service
  - Shallow edge seagrass habitat marked/identified
  - Sensitive areas marked
  - Education – users understand their impact on the ecosystems
  - Work with Parks to renew signage on uplands regarding diving, fishing, etc.
  - Info on lionfish/invasive species – organize regular lionfish events (quarterly?)
  - Organize regular coastal cleanups

3. Next Steps

Earl 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 with a target date of February. The plan will go to the Governor and Cabinet for final approval. Comments can still be submitted on or before Sept. 12, 2019. The advisory committee members were thanked for their time and input.

4. Closing
The committee was disbanded and the meeting adjourned.

C.2 / **Formal Public Meeting**

The following Appendices contain information about the Formal Public Meeting which was held in order to obtain input from the public about the Fort Pickens Aquatic Preserve Draft Management Plan.

C.2.1 / **Florida Administrative Register Posting**

Smith, FDOT District Five Title VI Coordinator at jennifer.smith2@dot.state.fl.us.
A copy of the agenda may be obtained by contacting: Eliode Joseph, P.E., by phone at (386)943-5388, or via email at Eliode.Joseph@dot.state.fl.us.
Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 7 days before the workshop/meeting by contacting: Eliode Joseph, P.E., by phone at (386)943-5388, or via email at Eliode.Joseph@dot.state.fl.us. Persons who require translation services (free of charge) should also contact Eliode Joseph, P.E., by phone at (386)943-5388, or via email at Eliode.Joseph@dot.state.fl.us. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).
For more information, you may contact: Eliode Joseph, P.E., FDOT Project Manager, by phone at (386)943-5388, or by email at Eliode.Joseph@dot.state.fl.us. Additional information is available on the project website at www.CFLRoads.com (search for FPID 39864-1).

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
The Florida Department of Environmental Protection's Office of Resilience and Coastal Protection announces a public meeting to which all persons are invited.
DATE AND TIME: Thursday, August 29, 2019, 6:00 p.m. – 7:30 p.m.
PLACE: Pensacola Library, Meeting Room B, 239 N. Spring St., Pensacola, FL 32502
GENERAL SUBJECT MATTER TO BE CONSIDERED: A draft Fort Pickens Aquatic Preserve management plan has been prepared by the Office of Resilience and Coastal Protection. The draft plan is available for viewing or download at http://publicfiles.dep.state.fl.us/CAMA/plans/Fort-Pickens-AP-Management-Plan.pdf. The Office of Resilience and Coastal Protection seeks public comment on the draft. Members of the Fort Pickens Aquatic Preserve Advisory Committee have also been invited to attend and listen to comments, and may also participate in the discussion.
This event is not sponsored or endorsed by the West Florida Public Libraries or Escambia County.
A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager, Beth Fugate at Beth.L.Fugate@FloridaDEP.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: Beth Fugate at Beth.L.Fugate@FloridaDEP.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).

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
The Florida Department of Environmental Protection's Office of Resilience and Coastal Protection announces a public meeting to which all persons are invited.
DATE AND TIME: Friday, August 30, 2019, 9:00 a.m.
PLACE: Florida Department of Environmental Protection Northwest District, 160 W. Government St., Pensacola, FL 32502
GENERAL SUBJECT MATTER TO BE CONSIDERED: The Fort Pickens Aquatic Preserve Management Plan Advisory Committee will meet to discuss possible revisions to the draft Fort Pickens Aquatic Preserve management plan and review comments received at the public meeting scheduled for August 29, 2019, and separately noticed. The draft plan is available for download or viewing at http://publicfiles.dep.state.fl.us/CAMA/plans/Fort-Pickens-AP-Management-Plan.pdf.
A copy of the agenda may be obtained by contacting: Aquatic Preserve Manager, Beth Fugate at Beth.L.Fugate@FloridaDEP.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: Beth Fugate at Beth.L.Fugate@FloridaDEP.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).

REGIONAL PLANNING COUNCILS
Northeast Florida Regional Planning Council
The Northeast Florida Regional Council announces a public meeting to which all persons are invited.
DATE AND TIME: August 14, 2019, 10:00 a.m.
PLACE: 100 Festival Park Avenue, Jacksonville, FL 32202
GENERAL SUBJECT MATTER TO BE CONSIDERED: Local Emergency Planning Committee (LEPC) Meeting.
A copy of the agenda may be obtained by contacting: (904)279-0880.
Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 5 days before the workshop/meeting by contacting: (904)279-0880. 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).

Fort Pickens Aquatic Preserve Management Plan

Public Meeting

Thursday, Aug. 29, 2019
6 - 7:30 pm

Pensacola Library
239 N. Spring St.
Pensacola, FL 32502

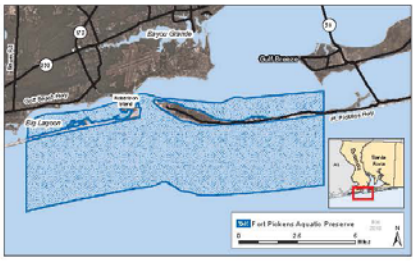
To view the draft plan, please visit:
http://publicfiles.dep.state.fl.us/CAMA/plans/Fort-Pickens-AP-Management-Plan.pdf

The Department of Environmental Protection's Office of Resilience and Coastal Protection (RCP) coordinates the protection of the state's natural, cultural and economic coastal resources. DEP manages more than 4 million acres of submerged lands and coastal uplands. With support from NOAA, RCP manages the Florida Coastal Management Program, 41 aquatic preserves, three National Estuarine Research Reserves, the Florida Coral Reef Conservation Program, Clean Boating Program, the Florida Resilient Coastlines Program and Outer Continental Shelf Program.

Meeting objectives:

1. Review purpose and process for revising the Fort Pickens 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 RCP in the revision of the draft management plan.



Please contact Beth Fugate at Beth.L.Fugate@FloridaDEP.gov or visit our website at floridadep.gov/rcp/aquatic-preserve/locations/fort-pickens-aquatic-preserve for more information. Written comments are welcome and can be submitted by mail or email to FloridaCoasts@FloridaDEP.gov on or before Sept. 12, 2019.

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 Beth Fugate at Beth.L.Fugate@FloridaDEP.gov. 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 event is not sponsored or endorsed by the West Florida Public Libraries or Escambia County.

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 for Coastal Management under the Coastal Zone Management Act of 1972, as amended, National Oceanic and Atmospheric Administration (NOAA) Award No. NA17NOS4190059. 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. July 2019.

CITY OF BONIFAY
Camp Branch –
Hazard Mitigation Project
MM Project No. 353590-4 /
FEMA Project No. 4138-08-A

ADVERTISEMENT FOR BIDS
Sealed Bids for the Camp Branch Hazard Mitigation Project will be received by the City of Bonifay at the office of the City Clerk located at 301 N. Etheridge Street, Bonifay, FL 32425, until 2:00 PM local time September 18, 2019, at which time the Bids received will be publicly opened and read. The Project consists of approximately 550 LF of box culvert (6' x4' and larger) installation / improve

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
The Florida Department of Environmental Protection, Office of Resilience and Coastal Protection announces a public meeting to receive comments on the Fort Pickens Aquatic Preserve draft management plan. The meeting will be held on Thursday, Aug. 29, 2019, 6-7:30 pm at the West Florida Public Library, Meeting Room B, 239 N. Spring St, Pensacola, FL 32502. A copy of the draft plan is posted at www.floridadep.gov/rcp/aquatic-preserve/locations/fort-pickens-aquatic-preserve. For the agenda, contact the aquatic preserve manager, Beth Fugate by email: Beth.L.Fugate@FloridaDEP.gov or by mail: 3000 Environmental Pl, Pensacola, FL 32514. 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 aquatic preserve manager. 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).
Legal No. 3705374 August 25, 2019

FLORIDA DEPARTMENT OF
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, FL 32399, MS 235

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

Fort Pickens Aquatic Preserve Draft Management Plan
Public Meeting

Thursday, Aug. 29, 2019
6 -7:30 p.m.

Pensacola Library
239 N. Spring Street
Pensacola, FL 32502

Attendees: Kevin O'Donnell, Michael Hoyt Williamson, Glenn Conrad, Paul Thorpe, Robert Turpin, Dan Brown, Paolo Ghio, Tiffany Bates, Tyler Ortego, Kristen Bennett, Rick Melton, Carole Tebay, Josh Poole, Kelly Irick, Steve Boyd, Sandy Boyd, Aaron Brown

Staff: Beth Fugate, Earl Pearson, Zachary Schang, Karen Thurston-Chavez, Sarabeth Uriz, Kim Wren

Earl welcomed everyone, gave a brief introduction about the purpose of the meeting, and introduced staff from DEP's Office of Resilience and Coastal Protection.

Beth gave a PowerPoint presentation about Fort Pickens Aquatic Preserve, the management plan structure, and issues identified in the plan.

After the presentation, Earl explained the commenting process. The room was set up so that there were five stations – one for each of the five issues identified in the management plan. The attendees were split into two groups, and staff were stationed with each of the groups to provide background on the issues and record comments from the public. Some comments were moved to an issue that fit better.

Issue 1 – Water Quality

- We need to reach more individuals about their personal impact to water quality (i.e. use of pesticides).
- Could we be involved in restoration of seagrass outside the aquatic preserve?
- Are we going to coordinate with the health department? Reach out to other agencies?
- Consistency between agencies in type of samples run.
- Have a more regular schedule for sampling.
- Knowing where to find the information (water quality dashboard in the works).
- Project Greenshores – great model / success stories

- Optical modeling
- Coordinating with DEAR
- More transparency regarding water quality.

Issue 2 – Addressing Habitat Loss and Decline

- People aren't sure what the law/rules are because areas are shared with the national seashore.
- Coordinate with federal government and FWC for signage.
- Sign at aquatic preserve/Fort Pickens beach access.
- Kids camp? Museum?
- Seagrass Awareness Month – activities at camp to reach kids and parents
- Educational outreach partnership with UWF
- Rack card with summary – working with TDC
- Linking with National Estuary programs
- Coordinating with state parks on coastal cleanups (trash cans taken away).
- Mapping trash and marine debris.
- Reach out to Gulf Intercoastal Waterway regarding coal falling off of barges and washing ashore.
- Statement of criteria in management plan for seagrass restoration.
    - How do you choose a restoration site?

Issue 3 – Improving Information About Submerged Resources

- UWF – archaeological side / EPA
- What's been done / baselines
- FWC has biggest database of seagrass – start with those
- Coordinate with county – resource mapping inventories
- Boat captain's association – communicating/buy-in
- Fishing forums on social media?
- Propscars with mapping
- UWF – historical data
- SEACAR – Statewide Ecosystem Assessment of Coastal and Aquatic Resources
- MapDirect website
- Partnership with dive companies
- Mapping species – coordinating monitoring of different wildlife (i.e. manatees, lionfish).
- Have an integrated map.
- Include dredging of the pass in the management plan.
- Techniques used to map and monitor seagrass.
- Possibly university partnership for mapping (grad students).
- Mapping extent of brown algae.
- Difference in nutrients with macroalgae.

Issue 4 – Public Awareness

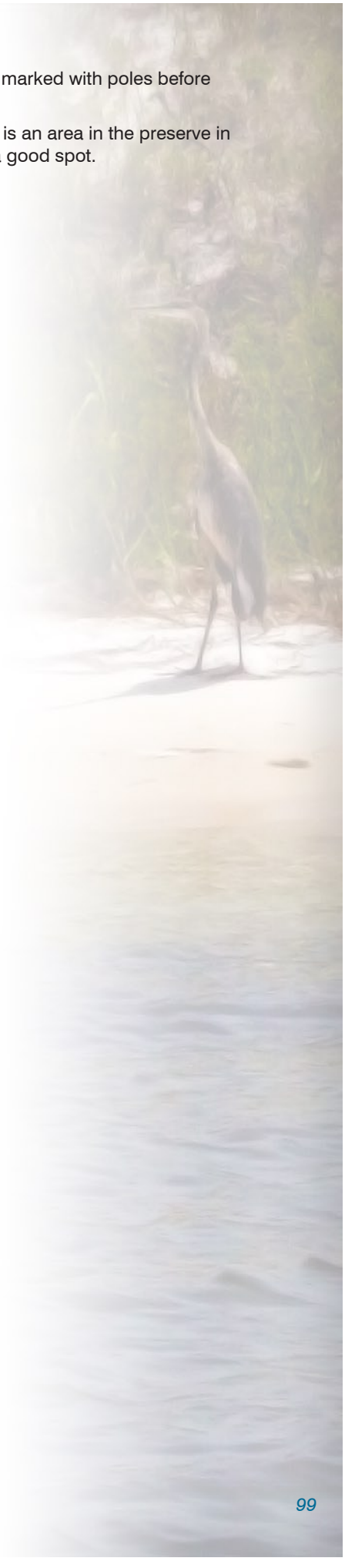
- Add aquatic preserve locations in social media.
- Specific hashtags for aquatic preserves.
- Add information to Aquatic Preserve Passports to website.
- Visitor info center – partnership
- National Park Service – partnership
- Outreach/presentations through Chamber of Commerce, other local groups
- Big Lagoon Boat Ramp – heavily used – staffed
- Coordination with EPA
- Email subscribers, website, press releases
- School interaction/presentations
- Partnering with local events
- Coordinating with ferry
- Visitor use survey plan
- Hand out information at Fort Pickens station about the aquatic preserve.
- Interagency coordination relating to signage and educational materials
- Hand out information at campground and other launches
- Use quick reader codes on signs leading to websites with more information and updates.
- Better education in schools with kids
- Target pollution at its source; reach at to homeowner associations, ECUA
- Establish state and local regulations on lawn care, fertilizers, pesticides
- Education on maintaining vegetative buffers.
- Have living shorelines at boat launches to serve as public examples.

Issue 5 – Sustainable Public Use

- Increase boater awareness to seagrass (creation of prop scars and seagrass drift washing on shore).
- Marking location of the Massachusetts – need something physically marking the structure.
- Utilize bridge materials as a spot in the bay for fishermen and divers?
- More artificial reefs in the aquatic preserve.
- Additional boater restricted areas.
- Streamline signage process.
- Personal watercraft – skidoos, jetskis – unpopular – work with marine patrol, FWC
- Shallow edge seagrass habitat should be marked and identified
- Sensitive areas should be marked.
- Education – users need to understand their impact on the ecosystems
- Work with parks to renew signage on uplands regarding diving, fishing, etc.
- Information on lionfish and invasive species.

C.2.5 / ***Additional Comments***

- The USS Massachusetts is completely submerged and needs to have each gun turret marked with poles before somebody gets killed. This wreck is inside the aquatic preserve.
- We need an artificial reef place in the bay for when its too rough to get offshore. There is an area in the preserve in the bay out by the old Coast Guard station where the water is deep enough to make a good spot.



Goals, Objectives, and Strategies

*D.1 / **Current Goals, Objectives and Strategies Table***

The following table provides a cost estimate for conducting the management activities identified in this plan. The data is organized by year and Management Program with subtotals for each program and year. The following represents the actual budgetary needs for managing the resources of the aquatic preserve. This budget was developed using data from the Office of Resilience and Coastal Protection (RCP) 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 to accomplish these strategies, and includes the costs associated with staffing such as salary or benefits. Budget categories identified correlate with the RCP 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 Northwest Florida Aquatic Preserves office'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	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29
Issue I: Water Quality															
Goal 1: Improve water quality in FPAP as well as the surrounding waterbodies.															
Objective 1: Implement research, restoration and enhancement projects throughout FPAP and adjacent bays (where needed and appropriate), that focus on improving water quality.															
Strategy 1: Implement a continuous water quality monitoring program within FPAP.	Ecosystem Science	2022	recurring	$55,714					$90,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Strategy 2: Promote research within FPAP with UWF and other institutions of higher education to promote a basin-wide approach on how regional impacts affect these systems.	Ecosystem Science	2020	recurring	$1,500	S		$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Strategy 3: Use lessons from successful habitat restoration and enhancement projects to expand on how projects increase beneficial habitat and the anticipated time for improved water quality.	Ecosystem Science	2023	5 years	$6,200						$22,000	$4,500	$1,500	$1,500	$1,500	
Issue II: Addressing Habitat Loss/Decline															
Goal 1: Slow or stop habitat and species loss.															
Objective 1: Continue the restoration of lost SAV within FPAP.															
Strategy 1: Determine ideal locations and implement restoration or enhancement projects to protect SAV.	Ecosystem Science	2020	5 years	$40,000			$40,000	$40,000	$40,000	$40,000	$40,000				

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29
Objective 2: Address species decline for indicator species, such as scallops and horseshoe crabs.															
Strategy 1: Monitor indicator species' populations.	Ecosystem Science	ongoing	recurring	$3,000	S	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Goal 2: Inform user groups on proper recreation practices to protect the resources.															
Objective 1: Implement additional signage at all access points to understand importance of the habitat in FPAP.															
Strategy 1: Determine which access and boundary locations do not have signage or signage in disrepair.	Education & Outreach	2019	2 years	$20,000		$20,000	$20,000								
Strategy 2: Inform user groups of significance of habitat and protections within FPAP.	Education & Outreach	2020	recurring	$2,500	S		$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Goal 3: Facilitate education and outreach regarding value of estuarine ecosystems, for environmental and economic importance.															
Objective 1: Share knowledge and tools with public on habitat preservation and improving water quality.															
Strategy 1: Support UF/IFAS's Florida-Friendly Yards (FFY) program.	Education & Outreach	2019	recurring	$500	S	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Strategy 2: Promote FFY recommendation of a minimum 10-foot vegetative buffer along coastal properties.	Education & Outreach	2019	recurring	$570	S	$1,200	$500	$500	$500	$500	$500	$500	$500	$500	$500
Strategy 3: Promote use of native plants, rain gardens, and lawn control through collaboration with UF/IFAS Extension agents for Escambia County.	Education & Outreach	2019	recurring	$500	S	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Strategy 4: Work with constituents to protect and monitor indicator species.	Education & Outreach	ongoing	recurring	$3,000	S	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Strategy 5: Improve awareness of the importance of SAV and how to protect it.	Education & Outreach	2019	recurring	$1,265	S	$5,000	$850	$850	$850	$850	$850	$850	$850	$850	$850

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29
Objective 2: Educate and inform public regarding marine debris impacts and effects to wildlife and environment.															
Strategy 1: In collaboration with UF/IFAS Sea Grant and FWC, educate public on marine debris, and its effects on wildlife and the environment.	Education & Outreach	2021	2 years	$3,500				$5,000	$2,000						
Strategy 2: Reduce the number of injured animals due to marine debris.	Education & Outreach	2019	recurring	$500		$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Goal 4: Develop a Disaster Response Plan.															
Objective 1: Work with stakeholders to address areas of concern, develop proper procedures to protect species, and to minimize damages to the natural communities.															
Strategy 1: Coordinate with GUIS to create a Disaster Relief Plan which establishes a chain of command.	Education & Outreach	2019	recurring	Included in other Strategies	S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Strategy 2: Participate in existing Disaster Response Planning	Education & Outreach	2019	recurring	Included in other Strategies	S	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Issue III: Improving Information about Submerged Resources															
Goal 1: Maintain resource inventories for FPAP.															
Objective 1: Conduct and maintain a record of submerged and emergent resources.															
Strategy 1: Record and inventory SAV, attached algae, marsh grasses, and other shoreline vegetation to include satellite imagery and aerial photographs	Resource Mgt.	2021	5 years	$8,500	S			$8,500	$8,500	$8,500	$8,500	$8,500			
Strategy 2: Map benthic habitats in FPAP.	Resource Mgt.	2025	3 years	$100,000								$100,000	$100,000	$100,000	
Strategy 3: Collect data from inventories and mapping.	Resource Mgt.	2025	3 years	$60,000								$60,000	$60,000	$60,000	
Strategy 4: Identify and locate unknown archaeological and historical resources.	Resource Mgt.	2024	5 years	$204,000							$150,000	$90,000	$90,000	$90,000	$90,000
Strategy 5: Monitor existing archaeological and historical resources.	Resource Mgt.	2024	5 years	$200,000							$100,000	$100,000	$100,000	$100,000	$100,000

Goals, Objectives & Integrated Strategies	Mgmt. Program	Implement. Date (Planned)	Length of Initiative	Est. Avg. Yearly Cost	Funding	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29
Issue IV: Public Awareness															
Goal 1: Increase public awareness of RCP and NWFLAP.															
Objective 1: Coordinate with local, state, and federal agencies, as well as community.															
Strategy 1: Inform and educate agencies and public about RCP and NWFLAP's mission.	Education & Outreach	ongoing	recurring	$5,000		$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Goal 2: Increase public awareness of FPAP and its significance															
Objective 1: Coordinate with local, state, and federal agencies, as well as community.															
Strategy 1: Implement signage at access points to help user groups understand aquatic preserve rules and boundaries	Education & Outreach	2020	2 years	$100,000			$100,000	$100,000							
Strategy 2: Host and attend public events to educate the public about FPAP.	Education & Outreach	2020	recurring	Included in other Strategies	S		$0	$0	$0	$0	$0	$0	$0	$0	$0
Issue V: Sustainable Public Use															
Goal 1: Identify locations of concern in FPAP.															
Objective 1: Address recreational safety for FPAP and GUIS patrons, as well as protect SAV and salt marshes.															
Strategy 1: Work with Escambia County Marine Patrol, FWC and GUIS during times of concern to address safety and SAV protection.	Public Use	ongoing	recurring	$5,000	S	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Strategy 2: Work with GUIS staff to include additional protective measures for recreation and habitat conservation.	Public Use	ongoing	recurring	$10,000		$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000

*D.2 / **Budget Summary Table***

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

Fiscal Year	Ecosystem Science	Resource Management	Education & Outreach	Public Use	Annual Total
2019-2020	$3,000	$0	$35,700	$15,000	$53,700
2020-2021	$44,500	$0	$133,350	$15,000	$192,850
2021-2022	$44,500	$8,500	$118,350	$15,000	$186,350
2022-2023	$134,500	$8,500	$15,350	$15,000	$173,350
2023-2024	$116,500	$8,500	$13,350	$15,000	$153,350
2024-2025	$99,000	$258,500	$13,350	$15,000	$385,850
2025-2026	$56,000	$358,500	$13,350	$15,000	$442,850
2026-2027	$56,000	$350,000	$13,350	$15,000	$434,350
2027-2028	$56,000	$350,000	$13,350	$15,000	$434,350
2028-2029	$54,500	$190,000	$13,350	$15,000	$272,850
Ten Year Totals	$664,500	$1,532,500	$382,850	$150,000	$2,729,850

*D.3 / **Major Accomplishments since the Approval of the Previous Plan***

- Implemented an annual Seagrass Monitoring Program.
- Provided additional assistance to Florida Sea Grant for monitoring.
- Collaborated with Florida Sea Grant on education and outreach efforts.
- Initiated restoration projects for salt marsh and SAV natural communities providing additional habitat in and adjacent to FPAP.
- Submerged management needs being conceptualized with GUIS.
- Provided input on the ferry system which was implemented from downtown Pensacola to Ft. Pickens.
- Provided assistance to GUIS restoration projects on managed lands to aid in protecting submerged resources.
- Provided data to GUIS to guide decision-making on appropriate areas to restrict combustible engines for seagrass protection.
- GUIS adopted regulations pertaining to jet ski operations
- Continued technical assistance regarding SWIM plan updates

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

NWFLAP Gulf Priority Projects

FCO Seagrass and Propeller Scar Mapping Assessment and Restoration

Partners:

Florida Department of Environmental Protection/SWFWMD

Funding Required:

$4,052,852

Location:

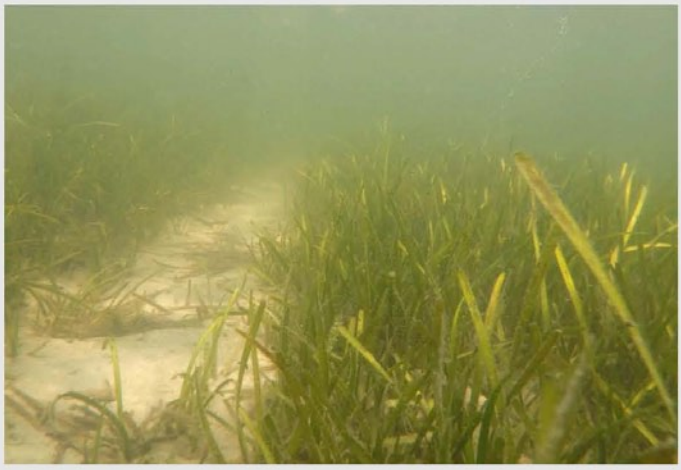
Panhandle

Project Outcomes:

The project will utilize high resolution aerial imagery, integrated mapping techniques and on the ground verification to map the extent and abundance of seagrasses and oysters, the severity and location of propeller scarring within seagrass beds and restore degraded areas which will provide the greatest environmental, economic and/or social benefits. Mapping, restoration and education projects will be focused within the above listed DEP managed areas. Oyster habitat extent data will be analyzed with monitoring and restoration data, compiled through the SEACAR project, to identify areas were restoration efforts will be most successful based on water quality data and the ability for natural recruitment of spat.

Project Objectives:

This project seeks to restore and maintain coastal habitats through the restoration, enhancement and protection of aquatic vegetation and oysters. The project also proposes to maintain seagrass and oyster inventories as well as manage seagrass habitats to reduce human impacts.



Location in FPAP Management Plan:

Issue II, Goal 1, Objective 1

Issue II, Goal 2, Objective 1

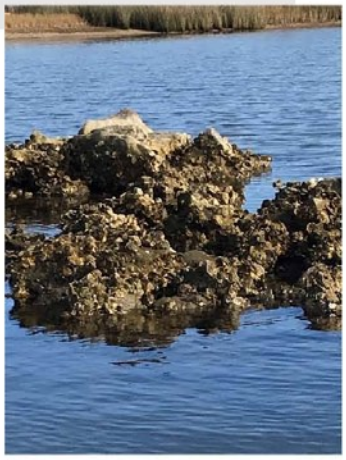
Issue II, Goal 3, Objective 1

Issue III, Goal 1, Objective 1

Issue IV, Goal 1, Objective 1

Issue IV, Goal 2, Objective 1

Issue V, Goal 1, Objective 1



NWFLAP Gulf Priority Projects

Pensacola Bay Watershed Restoration Project

Partners:

Escambia County, Water Quality & Land Management Division

Funding Required:

$250,000,000

Location:

Escambia & Santa Rosa counties

Project Outcomes:

This project implements action plans identified in the Pensacola Bay SWIM Plan by Northwest Florida Water Management District and the Pensacola Bay Ecosystem Management Plan from FDEP.

Environmental benefits of this project include improved water quality, increased aquatic habitat, and increased living coastal and marine resources. Additionally, this project will help restore and revitalize the Gulf economy by improving ecosystem services as well as improved recreational opportunities and fishing.

Project Objectives:

This Pensacola Bay Watershed Restoration Project Plan consists of 115 multifaceted priority watershed restoration projects that address one or more of the identified five restoration strategy goals and the five recommended types of restoration projects for Florida. The list of projects includes 28 estuarine habitat living shoreline projects, 62 water quality/stormwater improvement projects, 14 sewage infrastructure projects, and 11 land management restoration projects.

Location in FPAP Management Plan:

Issue I, Goal 1, Objective 1

Issue II, Goal 1, Objective 1

Issue II, Goal 3, Objective 1

Issue III, Goal 1, Objective 1

Issue V, Goal 1, Objective 1

NWFLAP Gulf Priority Projects

Perdido Bay Watershed Restoration Project

Partners:

Escambia County, Water Quality & Land Management Division

Funding Required:

$150,000,000

Location:

Escambia County

Project Outcomes:

This project implements action plans identified in the Perdido Bay SWIM Plan by Northwest Florida Water Management District, the Perdido Bay Ecosystem Management Plan from FDEP, and the Perdido Bay Cooperative Management Project by US EPA.

Environmental benefits of this project include improved water quality, increased aquatic habitat, and increased living coastal and marine resources. Additionally, this project will help restore and revitalize the Gulf economy by improving ecosystem services as well as improved recreational opportunities and fishing.

Project Objectives:

This Perdido Bay Watershed Restoration Project Plan consists of 63 multifaceted priority watershed restoration projects that address one or more of the identified five restoration strategy goals and the five recommended types of restoration projects for Florida. The list of projects includes 14 estuarine habitat living shoreline projects, 39 water quality/stormwater improvement projects, 3 sewage infrastructure projects, and 7 land management restoration projects.

Photo Credit: FriendsofPerdidoBay.com

Location in FPAP Management Plan:

Issue I, Goal 1, Objective 1

Issue II, Goal 1, Objective 1

Issue II, Goal 3, Objective 1

Issue III, Goal 1, Objective 1

Issue V, Goal 1, Objective 1

The projects listed below have also been reviewed and are supported by Fort Pickens Aquatic Preserve. In addition, the table also crosswalks the Fort Pickens Aquatic Preserve management plan's issues, goals, objectives, and strategies with the projects. For project details go to https://floridadep.gov/wra/deepwater-horizon.

Project Name	Amount	Partners	Location in FPAP mgmt. plan
Navy Point – Sewer Expansion Project, Phases 3 & 4 (ECUA	$5,000,000	Emerald Coast Utilities Authority	Issue I, Goal 1, Objective 1
Innerarity Island Utility System Standards Upgrade (ECUA	$7,500,000	Emerald Coast Utilities Authority	Issue I, Goal 1, Objective 1
GIREC Proposal 2: Facilities Construction and Operations	$13,400,000	Gulf Islands National Seashore, Florida District	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Invasive Lionfish Removal	$300,000	Coastal Hydrology, Inc.	Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Gulfwide/Escambia - Supplying and teaching environmentally-sound system of live bait shrimp that will revitalize the fishing industry in the Florida gulf coast.	$300,000	Florida Aquaculture Foundation	Issue II, Goal 3, Objective 1
An Integrated Water Quality Monitoring Plan for Northwest Florida and Alabama Watersheds	$4,917,103	University of West Florida	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1 Issue IV, Goal 1, Objective 1
M-3 Urban Stormwater Retrofits – Pensacola Bay System	$1,500,000	NWFWMD	Issue I, Goal 1, Objective 1
M-6 Dune Habitat Restoration: Specific sites: St. George Island, Gulf Islands National Seashore, Pensacola Beach, Panama City Beach, Cape San Blas, St. Joe Peninsula	$11,500,000	Florida Department of Environmental Protection	Issue II, Goal 3, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
E-13 Big Lagoon State Park Seagrass Buoy Installation	$25,250	Florida Department of Environmental Protection, Division of Recreation and Parks	Issue II, Goal 3, Objective 1 Issue IV, Goal 2, Objective 1
E-21 Marine Debris Removal within inshore site, offshore and inshore biological and physical monitoring of sand source borrow areas used for beach restoration, Big Lagoon (Perdido Key NS)	$1,088,000	Florida Department of Environmental Protection	Issue II, Goal 3, Objective 1 Issue II, Goal 3, Objective 2
E-29 Perdido Wetlands	$10,000,000	Escambia County	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1
E-36 Perdido Bay Stormwater Restoration for Water Quality Improvement	$10,000,000	Escambia County	Issue I, Goal 1, Objective 1
E-37 Pensacola Bay Stormwater Restoration for Water Quality Improvement	$10,000,000	Escambia County	Issue I, Goal 1, Objective 1
Stormwater Retrofit Projects	$5,000,000	DOD, USFWS	Issue I, Goal 1, Objective 1
Supplemental Landscape Restoration and Enhancement	$500,000	Northwest Florida Water Management District	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Stormwater Retrofit Projects	$5,000,000	Northwest Florida Water Management District	Issue I, Goal 1, Objective 1
Stormwater Retrofit Projects	$13,121,727	Northwest Florida Water Management District	Issue I, Goal 1, Objective 1
Stormwater Retrofit Projects	$15,000,000	Northwest Florida Water Management District	Issue I, Goal 1, Objective 1
Stormwater Retrofit Projects	$2,686,040	Northwest Florida Water Management District	Issue I, Goal 1, Objective 1

Project Name	Amount	Partners	Location in FPAP mgmt. plan
NAS Pensacola and Escambia County Living Shoreline Project	$14,000,000	Escambia County	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Perdido Bay Sunset Islands Seagrass Restoration Project	$840,000	Escambia County	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1
Escambia County Natural Resource Management Plan	$750,000	Escambia County	Issue I, Goal 1, Objective 1 Issue III, Goal 1, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
E-9 Shorebird Program - Escambia County	$500,000	Escambia County Board of Couny Commissioners	Issue V, Goal 1, Objective 1
E-19 Big Lagoon State Park Sewer Connection	$650,000	Florida DEP, Division of Recreation and Parks, District 1	Issue I, Goal 1, Objective 1 Issue II, Goal 2, Objective 1
E-40 Escambia County Gulf Water Quality and Marine Species Monitoring	$2,000,000	Escambia County Board of Couny Commissioners	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1 Isssue III, Goal 1, Objective 1
MSP-16 Response and Recovery of the Periphyton in the Near-Shore Habitats of the Gulf of Mexico	$850,000	United States Geological Survey	Issue I, Goal 1, Objective 1 Issue II, Goal 3, Objective 1 Issue III, Goal 1, Objective 1
Water Quality Targets for Seagrass Restoration in Pensacola and Perdido Bays	$420,000	Escambia County Natural Resources Management Department	Issue I, Goal 1, Objective 1 Issue II, Goal 1, Objective 1 Issue II, Goal 3, Objective 1
Enhancing dune habitats to improve conservation of beach mice and other imperiled coastal wildlife species	$5,300,000	FWC	Issue II, Goal 3, Objective 1
Fisheries-Independent Monitoring in the panhandle region of Florida	$2,496,000	FWC	Issue III, Goal 1, Objective 1
Expand FWC's Fish Biology program to the northern Gulf (Pensacola, FL)	$4,803,134	FWC	Issue II, Goal 3, Objective 1 Issue III, Goal 1, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Escambia County Offer Your Shell To Enhance Restoration (OYSTER) Project	$610,802	Escambia County	Issue IV, Goal 1, Objective 1
Escambia County Large Vessel Reef(s) Project	$1,650,000	Escambia County	Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Lionfish Commercialization & Harvest	$359,128	Escambia County	Issue III, Goal 1, Objective 1
Promoting use of Shoreline Stabilization Techniques	$200,000	FDEP, Florida Coastal Office (Office of Coastal and Aquatic Managed Areas)	Issue I, Goal 1, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Pensacola and Perdido Watersheds Water Quality - Nutrient Reduction Project	$3,000,000	USDA Gulf Coast Ecosystem Restoration Team	Issue I, Goal 1, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
Facilitate Dredge Spoil Placement at Perdido Key from Pensacola Pass	$1,000,000	NPS	Issue III, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1
GUIS - Protect Beach and Dune Habitat for Shorebirds and Other Species	$1,232,493	NPS	Issue II, Goal 3, Objective 1 Isssue III, Goal 1, Objective 1
Gulf Islands National Seashore - Improve Beach Habitat Through Invasive Species Removal	$351,450	NPS	Issue III, Goal 1, Objective 1
Influence of Water Quality on Seagrass Communities	$1,567,615	University of West Florida	Issue I, Goal 1, Objective 1 Issue II, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1

Project Name	Amount	Partners	Location in FPAP mgmt. plan
Turtle connections: Gulf-wide sea turtle nesting beach and foraging area connectivity	$2,068,944	Archie Carr Center for Sea Turtle Research and University of Florida	Issue II, Goal 3, Objective 1 Issue III, Goal 1, Objective 1
A database of seagrass restoration efforts in the State of Florida for management and research	$336,659	University of South Florida	Issue II, Goal 1, Objective 1 Issue II, Goal 2, Objective 1 Issue II, Goal 3, Objective 1
Adaptive management and decision support tools for oyster reefs and seagrass communities in the Gulf of Mexico	$3,155,000	US Geological Survey	Issue I, Goal 1, Objective 1 Issue II, Goal 1, Objective 1 Issue II, Goal 2, Objective 1 Issue II, Goal 3, Objective 1 Issue III, Goal 1, Objective 1 Issue IV, Goal 1, Objective 1 Issue IV, Goal 2, Objective 1 Issue V, Goal 1, Objective 1

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**	
Section A: Acquisition Information Items			
1	The common name of the property.	18-2.018 & 18-2.021	Ex. Sum.
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	p. 1
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	p. 1, 6-8
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	Ex. Sum
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. 13
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. 31
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. 17-19, 29-31
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. 13
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	p. 11-13, 27, 42-44
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, 34-44
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	p. 27, 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. 29-31
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. 42-44
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. 16-18, 34-44

Land Management Plan Compliance Checklist Required for State-owned conservation lands over 160 acres			
Item #	**Requirement**	**Statute/Rule**	
21	*For managed areas larger than 1,000 acres, an analysis of the multiple-use potential of the property which shall include the potential of the property to generate revenues to enhance the management of the property provided that no lease, easement, or license for such revenue-generating use shall be entered into if the granting of such lease, easement or license would adversely affect the tax exemption of the interest on any revenue bonds issued to fund the acquisition of the affected lands from gross income for federal income tax purposes, pursuant to Internal Revenue Service regulations.	18-2.021 & 253.036	N/A
22	If the lead managing agency determines that timber resource management is not in conflict with the primary management objectives of the managed area, a component or section, prepared by a qualified professional forester, that assesses the feasibility of managing timber resources pursuant to section 253.036, F.S.	18-021	N/A
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	p. 42-44
*The following taken from 253.034(10) is not a land management plan requirement; however, it should be considered when developing a land management plan: The following additional uses of conservation lands acquired pursuant to the Florida Forever program and other state-funded conservation land purchase programs shall be authorized, upon a finding by the Board of Trustees, if they meet the criteria specified in paragraphs (a)-(e): water resource development projects, water supply development projects, storm-water management projects, linear facilities and sustainable agriculture and forestry. Such additional uses are authorized where: (a) Not inconsistent with the management plan for such lands; (b) Compatible with the natural ecosystem and resource values of such lands; (c) The proposed use is appropriately located on such lands and where due consideration is given to the use of other available lands; (d) The using entity reasonably compensates the titleholder for such use based upon an appropriate measure of value; and (e) The use is consistent with the public interest.		
Section C: Public Involvement Items			
24	A statement concerning the extent of public involvement and local government participation in the development of the plan, if any.	18-2.021	App. C
25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(10)	N/A
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. *Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.*	259.032(10)	App. C
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	App. C
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.*	253.034(5) & 259.032(10)	App. C
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. *Include manager's replies to the team's findings and recommendations.*	259.036	N/A
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	N/A
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. 16-18

Land Management Plan Compliance Checklist Required for State-owned conservation lands over 160 acres			
Item #	**Requirement**	**Statute/Rule**	
33	Insert FNAI based natural community maps when available.	ARC consensus	p. 22
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. 20-25, 27-28
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	p. 22-23
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. 16-17
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. 20-25, App. B.3.1
39	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	p. 20-25, App. B.3.2
40	The identification or resources on the property that are listed in the Natural Areas Inventory. *Include letter from FNAI or consultant where appropriate.*	18-2.021	p. 20-23
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. 20-23, 27, 36-40, 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. 20-27, 35-44
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)	p. 35-44, 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)	p. 35-44, 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)	
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

Land Management Plan Compliance Checklist Required for State-owned conservation lands over 160 acres			
Item #	**Requirement**	**Statute/Rule**	
44-D.	Related activities (see requirement for #42-D).	18-2.021, 253.034(5) & 259.032(10)	N/A
44-E.	Budgets (see requirement for #42-E).	18-2.021, 253.034(5) & 259.032(10)	N/A
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5)	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	p. 24-25, 36-41, 44
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	p. 36-41, 44, App. D.1
45-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	p. 36-41, 44, App. D.1
45-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	App. D.1, App. D.4
45-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034(5)	p. 25-26, 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 required via lease language	App. B.4
48	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5)	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	259.032(10) & 253.034(5)	p. 25-26, 36-40, App. D.1
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	p. 36-40, App. D.1
48-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	p. 36-40, App. D.1
48-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	p. 36-40, App. D.1, App. D.4
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	Ex. Sum, p. 1-4, 13
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. 20-22
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034(5)	Ex. Sum, p.23
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)	p. 35-44, App. D.1

Land Management Plan Compliance Checklist Required for State-owned conservation lands over 160 acres			
Item #	**Requirement**	**Statute/Rule**	
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	p. 35-44, App. D.1
53-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	p. 35-44, App. D.1
53-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	p. 35-44, App. D.1, App. D.4
53-E.	Budgets (see requirement for #42-E).	259.032(10) & 253.034(5)	App. D.1
Section F: Historical, Archaeological and Cultural Resources			
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. *Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.*	18-2.018, 18-2.021 & per DHR's request	Ex. Sum, p. 27, App. B.5
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. 27, App. B.5
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	p. 39, App. D.1, App. E.2
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)	p. 39, App. D.1, App. E.2
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	259.032(10) & 253.034(5)	p. 39, App. D.1, App. E.2
57-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	p. 39, App. D.1, App. E.2
57-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	p. 39, App. D.1, App. E.2
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. 47-48
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. 47-48, 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. 27-31, 43-44

Land Management Plan Compliance Checklist Required for State-owned conservation lands over 160 acres			
Item #	**Requirement**	**Statute/Rule**	
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)	p. 43-44, 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)	p. 43-44, App. D.1
61-C.	Measurable objectives (see requirement for #42-C).	259.032(10) & 253.034(5)	p. 43-44, App. D.1
61-D.	Related activities (see requirement for #42-D).	259.032(10) & 253.034(5)	p. 43-44, App. D.1, App. D.4
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 & managing agency consensus	Front & App. E.1
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC & 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.35-44
66	Summary budget for the scheduled land management activities of the LMP including any potential fees anticipated from public or private entities for projects to offset adverse impacts to imperiled species or such habitat, which fees shall be used to restore, manage, enhance, repopulate, or acquire imperiled species habitat for lands that have or are anticipated to have imperiled species or such habitat onsite. The summary budget shall be prepared in such a manner that it facilitates computing an aggregate of land management costs for all state-managed lands using the categories described in s. 259.037(3) which are resource management, administration, support, capital improvements, recreation visitor services, law enforcement activities.	253.034(5)	App. D.1
67	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032(10)	App. D.1
68	A statement of gross income generated, net income and expenses.	18-2.018	N/A
*** = The referenced inventories shall be of such detail that objective measures and benchmarks can be established for each tract of land and monitored during the lifetime of the plan. All quantitative data collected shall be aggregated, standardized, collected, and presented in an electronic format to allow for uniform management reporting and analysis. The information collected by the DEP pursuant to s. 253.0325(2) shall be available to the land manager and his or her assignee.			

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

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

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

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

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

E. Minimum Review Documentation Requirements

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

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

Deena S. Woodward
Division of Historical Resources, Bureau of Historic Preservation, Compliance and Review Section
R. A. Gray Building, 500 South Bronough Street
Tallahassee, FL 32399-0250
Phone: (850) 245-6425, Toll Free: (800) 847-7278, Fax: (850) 245-6435

FLORIDA DEPARTMENT OF
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, FL 32399, MS 235

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

November 2019

Horace Jones, Director
Escambia County Development Services Department
3363 West Park Place
Pensacola, FL 32505

Dear Mr. Jones:

Attached is a copy of the draft Fort Pickens Aquatic Preserve Management Plan. (The plan can also be found at https://floridadep.gov/rcp/rcp/content/site-management-plans.) The plan was developed with input from the public and the Fort Pickens Aquatic Preserve Management Plan Advisory Group. We anticipate that the plan will be reviewed by the Acquisition and Restoration Council at their April 2020 meeting in Tallahassee (https://floridadep.gov/lands/environmental-services/content/acquisition-and-restoration-council-arc). We respectfully request, within 30 days of receipt of this letter, your review of this aquatic preserve management plan for its compliance with the Escambia County Comprehensive Plan. Please reply to the physical address at the top of the letter (or e-mail address) regarding whether the Fort Pickens Aquatic Preserve Management Plan is in compliance with the county's comprehensive plan. Thank you in advance for your time and effort in this matter.

If you have any questions, please don't hesitate to contact me at (850)245-2104 or Earl.Pearson@FloridaDEP.gov.

Sincerely,

Earl Pearson
Planning Manager
Florida Department of Environmental Protection
Office of Resilience and Coastal Protection

FLORIDA DEPARTMENT OF
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, FL 32399, MS 235

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

November 2019

Shawn Ward, Director
Santa Rosa County Department of Development Services
6051 Old Badgad Highway
Suite 202
Milton, FL 32583

Dear Mr. Ward:

Attached is a copy of the draft Fort Pickens Aquatic Preserve Management Plan. (The plan can also be found at https://floridadep.gov/rcp/rcp/content/site-management-plans.) The plan was developed with input from the public and the Fort Pickens Aquatic Preserve Management Plan Advisory Group. We anticipate that the plan will be reviewed by the Acquisition and Restoration Council at their April 2020 meeting in Tallahassee (https://floridadep.gov/lands/environmental-services/content/acquisition-and-restoration-council-arc). We respectfully request, within 30 days of receipt of this letter, your review of this aquatic preserve management plan for its compliance with the Santa Rosa County Comprehensive Plan. Please reply to the physical address at the top of the letter (or e-mail address) regarding whether the Fort Pickens Aquatic Preserve Management Plan is in compliance with the county's comprehensive plan. Thank you in advance for your time and effort in this matter.

If you have any questions, please don't hesitate to contact me at (850)245-2104 or Earl.Pearson@FloridaDEP.gov.

Sincerely,

Earl Pearson
Planning Manager
Florida Department of Environmental Protection
Office of Resilience and Coastal Protection

Pearson, Earl

From: Shawn Ward <ShawnW@santarosa.fl.gov>
Sent: Tuesday, February 18, 2020 10:32 AM
To: Pearson, Earl
Subject: Fort Pickens Aquatic Preserve Management Plan

Mr. Pearson,

Santa Rosa County appreciates the opportunity to review and comment on the Draft Fort Pickens Aquatic Preserve Management Plan. The draft plan is consistent with the Santa Rosa County adopted Comprehensive Plan as approved by the Florida Department of Economic Opportunities in 2017.

Can you provide an electronic copy to me so that I can share with the County's Environmental Department and Pensacola-Perdido Bays Estuary Program representatives.

Respectfully,

Shawn Ward, AICP
Planning and Zoning Director
Santa Rosa County Development Services Center
6051 Old Bagdad Hwy, Suite 202 | Milton, Florida 32583
P: 850.981.7082 | C: 850.776.4488 | F: 850.983.9874
Santarosa.fl.gov | Facebook | Twitter | Instagram

Help us improve our customer service with this short survey:

FLORIDA DEPARTMENT OF
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, FL 32399

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

June 15, 2020

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

RE: Fort Pickens Aquatic Preserve Management Plan

Dear Mr. Pearson:

On **June 12, 2020**, the Acquisition and Restoration Council recommended approval of the **Fort Pickens Aquatic Preserve** management plan. Please advise Mr. James Parker of this office when the plan has been approved by the Board of Trustees.

Sincerely,

Deborah Burr Digitally signed by Deborah Burr Date: 2020.06.15 13:40:56 -04'00'

Deborah Burr
Office of Environmental Services
Division of State Lands

Fort Pickens Aquatic Preserve
Management Plan

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