

2022 Weedon Island Preserve Management Plan Update



Prepared by
Pinellas County Parks and Conservation Resources

January 26, 2022

**Weedon Island Preserve Management Plan
Executive Summary
State of Florida Form**

Lead Agency: Pinellas County (Florida) Department of Parks and Conservation Resources, Resource and Asset Management

Common Name of Property: Weedon Island Preserve

Location: Pinellas County, Florida

Acreage Breakdown:

<i>Land Cover Classification</i>	<i>Acres (ac.)</i>
Mangrove Swamp	2193.2
Estuary	364.5
Seagrass	214.0
Scrubby Flatwoods	94.6
Xeric Hammock	93.5
Salt Marsh	69.5
Maritime Hammock	61.7
Developed	51.3
Impoundment	14.9
Coastal Berm	10.4
Saltern	9.8
Shell Mound	5.5
Marine Unconsolidated Substrate	4.9
Freshwater Pond	4.1
Mollusk Reef	1.9
Ruderal	1.5
TOTAL	3195.3

Leases: No. 3985 Board of Trustees of the Internal Improvement Trust of Florida (1190.9 ac.), No. 3376 Board of Trustees of the Internal Improvement Trust of Florida (1425.6 ac.)

Use: Single use for conservation and protection of natural resources and for resource-based public outdoor activities and education that are compatible with the conservation and protection of this public land

Management Responsibilities: Pinellas County Parks and Conservation Resources; law enforcement by Pinellas County Sheriff's Office, facility management of the Weedon Island Preserve Cultural and Natural History Center by Pinellas County Department of Administrative Services

Designated Use: Preserve

Sublease(s): None

Contract(s): Duke Energy

Encumbrances: None

Type of Acquisition: Fee Simple for County-owned properties

Unique Features: Weedon Island Preserve is a dominant natural feature covering five mi. along the western shoreline of Tampa Bay. This Preserve provides for over 3000 ac. of natural and cultural resources while also supporting compatible public use.

The three-story Weedon Island Preserve Cultural and Natural History Center built in 2002, was designed with the help of Native Americans and keeps with their traditions. For example, the orientation is along the cardinal points of the compass (north, south, east, and west) with the entrance facing east. The Weedon Island Preserve Cultural and Natural History Center supports educational programming and volunteerism. The University of Florida Institute of Food and Agricultural Sciences education program interprets the natural, cultural and archaeological history of the Preserve through interpretive tours and hikes, education programs, exhibits and public outreach activities, presentations and workshops, and other events.

Archaeological/Historical: The islands, adjacent shoreline and uplands that comprise the Preserve are dotted with an impressive array of cultural features, including artifacts, which illustrate the land's significant role in virtually all historical cultures that define Florida's anthropological history. Some of these cultural features include a Native American burial mound and shell middens. Historic sites on Weedon Island are prevalent with remains of buildings remains and imprints from past activities such as an airport runway and tower. Early settlers once occupied several of the islands, and pilings from buildings constructed during the 1920's, are intact.

Management Needs: Restoration needed to improve hydrology in mosquito ditched mangrove swamps. Continued control of exotic species and completion of prescribed burns needed to support resource management. Boundary posting in the northern Preserve needed to support enforcement of rules.

Acquisition Needs/Acreage: Pinellas County is interested in acquiring in-holdings that are in private ownership should they become available.

Surplus Lands/Acreage: Assessing the maps, communities and cultural resources, there is no opportunity to surplus any portion of the Preserve

Public Involvement: Public comments were received in conjunction with the Weedon Island Preserve Advisory Group meeting, Pinellas County Department of Parks and Conservation Resources Advisory Board meeting, and Pinellas County Board of County Commissioners meeting.

Noted Accomplishments:

- Restoration of 94 ac. of mosquito ditches, exotic vegetation removal and installation of 11,000 native plants in the northern portion of the Preserve.
- Restored the prehistoric dugout canoe excavated in the northern portion of the Preserve.
- Completed the exhibit in the Weedon Island Preserve Cultural and Natural History Center featuring the prehistoric canoe.

GOALS AND OBJECTIVES FOR WEEDON ISLAND PRESERVE

SECTION 3. RESOURCE MANAGEMENT

Page

A. Habitat Restoration and Improvement

Objective: Provide resource management to restore and improve the natural communities of Weedon Island Preserve.

Restoration Projects	<p>Goal A1: Monitor and evaluate effectiveness of the Salt Marsh Restoration Pilot Project by post-construction vegetation transects and photo points.</p> <p>Goal A2: Continue to implement restoration projects identified in the Feasibility study to improve hydrology of the mosquito ditches and remove exotic vegetation.</p> <p>Goal A3: Provide outreach to the public regarding ongoing restoration projects at the Preserve.</p>	34
Prescribed Fire	<p>Goal A4: Increase the frequency of burning in the Preserve to restore the natural communities.</p> <p>Goal A5: Coordinate with the Florida Forest Service Regional Forest Area Supervisor for assistance when necessary.</p>	36
Exotic Vegetation and Nuisance Wildlife Control	<p>Goal A6: Continue chemical treatment in established exotic control maintenance areas to keep invasive exotic vegetation from re-infestation.</p> <p>Goal A7: Continue to identify and treat new areas of infestation as observed.</p> <p>Goal A8: Continue trapping and removal efforts of nuisance wildlife from the Preserve.</p>	38
Mechanical Thinning	<p>Goal A9: Evaluate and conduct mechanical thinning of natural communities as necessary.</p>	38
Reestablish Native Species	<p>Goal A10: Complete restoration projects with reestablishment of vegetation through natural recruitment or by replanting as necessary.</p>	38
B. Natural Communities		
Objective: Minimize impacts to protect and maintain natural communities.		
	<p>Goal B1: Continue to maintain and minimize impacts to the natural areas by providing public access via trails and boardwalks by protecting established aquatic use zones.</p>	39
C. Imperiled Species Protection		
Objective: Minimize impacts to protect those imperiled species utilizing the Weedon Island Preserve.		

Gopher Tortoise	Goal C1: Minimize loss of gopher tortoises through protection and education.	39
Roseate Spoonbill	Goal C2: Continue to provide protection and education regarding the Roseate Spoonbill.	39
Manatee Protection	Goal C3: Annually, minimize impacts to manatees and other aquatic species through posting and enforcement of established aquatic use zones.	39
Florida Goldenaster	Goal C4: Continue to protect and manage the Florida goldenaster site through exotic vegetation control and prescribed fire.	41
D. Forest Management		
Objective: Utilize forest management techniques, specifically prescribed fire, to maintain natural communities at Weedon Island Preserve.		
	Goal D1: PCR will increase the frequency of prescribed fire in the scrubby flatwoods communities and utilize mechanical reduction where necessary.	41
E. Monitoring		
Objective: Conduct surveys and support the work of others to monitor the natural resources of Weedon Island Preserve.		
Species Inventories	Goal E1: As needed, update lists of species utilizing the Preserve.	42
Fisheries Independent Monitoring	Goal E2: Annually support monitoring of fisheries by FWRI fisheries and review data summary report.	44
Water Quality	Goal E3: Annually support monitoring of water quality by Pinellas County’s Department of Public Works Environmental Management Division and review data summary report.	45
Seagrasses	Goal E4: Continue to support analyses of seagrass distribution by Pinellas County’s Department of Public Works Environmental Management Division and review data summary report.	47
F. Research		
Objective: Coordinate and support scientific studies conducted at the Preserve by researchers from partnering agencies and other institutions, and use information provided to support management decisions.		
Site Use Applications	Goal F1: As needed, review Site Use applications submitted by researchers interested in conducting studies at the Preserve.	48
G. Cultural Management		
Objective: In collaboration with AWIARE, map locations of mound sites and other significant features and integrate this information into existing archaeological databases.		

	<p>Goal G1: Continue to support educational programs that promote the important cultural resources throughout the Preserve.</p> <p>Goal G2: Continue to support research opportunities that identify and protect archaeological sites at the Preserve.</p> <p>Goal G3: Maintain strong partnerships with AWIARE and other agencies and organizations to provide sound stewardship of cultural resources.</p>	50
<p>H. Security Objective: Enforce rules and regulations as detailed in Pinellas County Code of Ordinances Chapter 90 to protect the natural and cultural resources supported by the Preserve.</p>		
	<p>Goal H1: As funding allows, increase the number of patrols completed by rangers to provide coverage from opening to closing of the Preserve seven days per week.</p> <p>Goal H2: As funding allows, contract PCSO for law enforcement officers dedicated to patrolling Weedon Island Preserve and other environmental lands.</p>	51
<p>SECTION 4. PUBLIC RECREATION</p>		
<p>A. Public Access Objective: Provide 363 days of public access for resource-based outdoor recreation which is compatible with the conservation and protection of the natural and cultural resources.</p>		
Public Recreation Facilities	<p>Goal A1: Patrol the Preserve from 7:00 a.m. to the posted closing time for visitor services.</p> <p>Goal A2: Continue to offer kayak, canoe and paddle board rentals through a contracted vendor.</p> <p>Goal A3: Investigate the feasibility of upgrading the floating dock to meet American Disabilities Act (ADA) requirements.</p>	57
Maintenance	<p>Goal A4: Conduct routine inspections of boardwalks, hiking trails, observation tower and, fishing pier daily.</p> <p>Goal A5: Conduct inspections of the Paddling Trail each month.</p>	58
Carrying Capacity	<p>Goal A6: Continue to provide 363 days of public access from 7:00 a.m. to posted closing time.</p> <p>Goal A7: Enforce the carrying capacity of the Preserve to protect the natural and cultural resources.</p>	59

SECTION 5. OUTREACH AND EDUCATION		
A. Objective: Provide education and outreach programs describing the cultural and natural resources of coastal ecosystems and the benefits of preserving and enhancing these resources.		
Weedon Island Preserve Cultural and Natural History Center	<p>Goal A1: The County Extension UF/IFAS will continue to provide outreach and educational programs addressing the cultural and natural resources of the Preserve.</p> <p>Goal A2: Continue to provide programs through virtual programming and social media to expand audience within and outside of Pinellas County.</p> <p>Goal A3: Continue to evaluate funding opportunities to increase the staffing and hours of operation of the WIPCNHC.</p>	62
Weedon Preserve Visitors Guide	Goal B1: As needed, update Weedon Island Preserve brochure and make available online; as resources allow, provide hardcopy brochures for distribution to visitors at County offices.	63

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LIST OF ABBREVIATIONS

AWIARE	Alliance for Weedon Island Archaeological Research and Education
BCE	Before Common Era
TIITF	Board of Trustees of the Internal Improvement Trust of Florida
CIP	Capital Improvement Program
ELD	Department of Environmental Management's Environmental Lands Program
FWRI	Fish and Wildlife Research Institute
FIM	Fisheries Independent Monitoring
FAC	Florida Administrative Code
DEP	Florida Department of Environmental Protection
FWC	Florida Fish and Wildlife Conservation Commission
FISC	Florida Invasive Species Council
FNAI	Florida Natural Areas Inventory
FPAN	Florida Public Archaeology Network
F.S.	Florida Statutes
FYCCN	Florida Youth Conservation Centers Network
FOWI	Friends of Weedon Island
MSL	mean sea level
BCC	Pinellas County Board of County Commissioners
PCR	Pinellas County Department of Parks and Conservation Resources
PCSO	Pinellas County Sheriff's Office
SWFWMD	Southwest Florida Water Management District
CARL	State's Conservation and Recreational Lands Program
TBEP	Tampa Bay Estuary Program
USFWS	United States Fish and Wildlife Service
UF/IFAS	University of Florida Institute of Food and Agricultural Sciences
WIDO	Walk In, Dig Out
WIPAG	Weedon Island Preserve Advisory Group
WIPCNHC	Weedon Island Preserve Cultural and Natural History Center

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INTRODUCTION

Weedon Island Preserve is a 3195-ac. preserve that extends along Tampa Bay in central Pinellas County (Figure 1). It is the second largest preserve in Pinellas County and a dominant natural feature along the western shoreline of Tampa Bay (Figure 2). The Preserve extends in a northerly direction approximately five mi. to the north of the Howard Frankland Bridge. The island, adjacent shoreline and uplands that comprise the Preserve are dotted with an impressive array of cultural features, which illustrate the land's significant role in the historical cultures that define Florida's anthropological history. Some of these cultural features include a Native American burial mound and shell middens.

All of the Preserve is located within Pinellas County, the State's most densely populated county. Its northern boundary is from Gandy Blvd. to just south of the Clearwater/St. Petersburg International Airport. The southern boundary is from Gandy Blvd. to Bayou Grande. The eastern shoreline of the Preserve is in Tampa Bay.

The Preserve is managed by the Pinellas County Board of County Commissioners (BCC) through Pinellas County Department of Parks and Conservation Resources (PCR). Pinellas County entered into two lease agreements with the Board of Trustees of the Florida Internal Improvement Trust Fund (FIITF) of the State of Florida. It is most efficient to manage all adjacent preserved lands comprehensively. Therefore, this management plan recognizes Weedon Island Preserve as consisting of lands leased by the State, Lease No. 3985 and No. 3376 (Appendix 1), parcels owned by Pinellas County, and parcels licensed by agreement with Duke Energy (Appendix 2) to provide for the management of the natural and cultural resources (Figure 3).

The southern part of the Preserve, at approximately 1678 ac., is comprised of land owned by the State (Lease No. 3985), the County, and Duke Energy. This portion of the Preserve offers recreational opportunities compatible with the conservation of the natural and cultural resources. The northern part of the Preserve, at approximately 1517 ac., is comprised of land owned by the State (Lease No. 3376) and the County. This portion of the Preserve is predominantly mangrove forest that has been altered with a network of mosquito ditches.

The initial Weedon Island Preserve Management Plan was written by the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks and was approved in March 1990. The first update was written by the Pinellas County Park Department and was approved in February 1993. The second update was written by the Pinellas County Department of Environmental Management, Environmental Lands Division and was approved in April 2002. The third update was written by PCR's Natural and Historical Resource Management program and was approved in June 2012. As part of the current update, the Weedon Island Preserve Advisory Group (WIPAG) was established in accordance with 259.032(8)(b), Florida Statutes (F.S.) to provide final public input for the Plan. The Plan was made available to the WIPAG and the public 30 days prior to the public hearing. Appendix 3 lists all participants and provides minutes from the public hearing. This update to the Plan serves as the basic statement of policy and direction in the management of the Weedon Island Preserve by PCR.



Figure 1. Location of Weedon Island Preserve, Pinellas County, Florida



Figure 2. Weedon Island Preserve Boundary Map

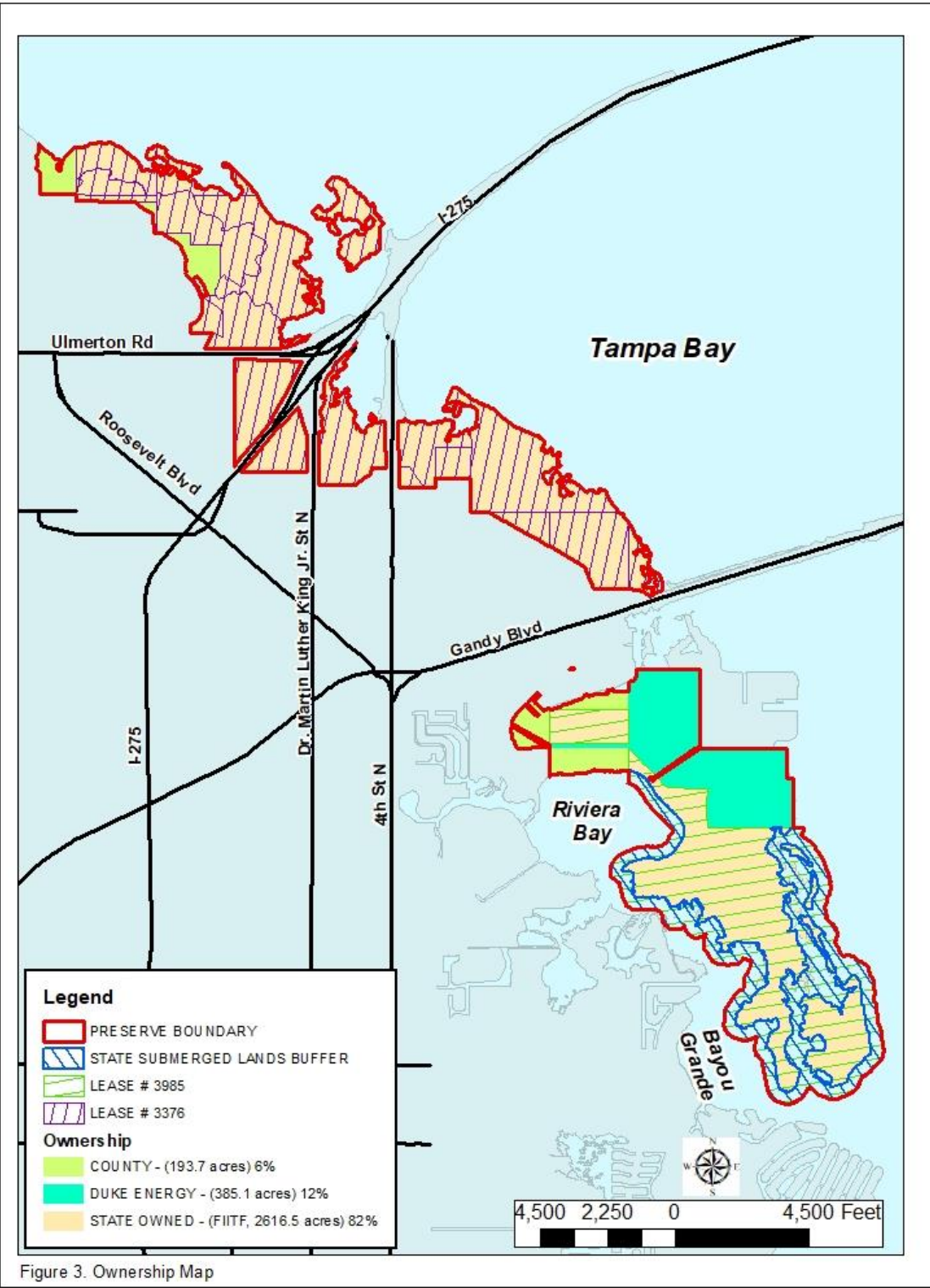


Figure 3. Ownership Map

SECTION 1. GENERAL INFORMATION

Weedon Island Preserve was established originally as a State Preserve in 1974 and was the first purchase under the Environmentally Endangered Lands Act. The Florida Park Service opened the Preserve to the public in December 1980. Weedon Island Preserve State Lease No. 3985 was purchased through the State's Conservation and Recreational Lands Program (CARL) in 1984. In 1991, using funds from its Environmental Lands program, Pinellas County purchased an additional 47 ac. along Riviera Bay. Management of the State-owned parcels was designated to the BCC through Lease No. 3985 in October 1993 and Lease No. 3376 in September 1995 (Appendix 1).

A. HISTORY

Weedon Island's rich cultural history dates back to the Middle Archaic Period, 5,000-3,000 BCE. The prehistoric culture and recent history are documented in *The Weedon Island Story* (Pinellas County, 2005).

Duke Energy, formerly Progress Energy Florida, entered into four agreements with the BCC (Appendix 2). Details of this partnership are provided below in OWNERSHIP.

In October 2001, the DEP office of Greenways and Trails entered into an agreement, Sublease 43.6, with the BCC for an additional 43.6 ac. (Appendix 1). In May 2010 this was transferred to be included in State Lease #3985 to simplify management of the leases.

The Weedon Island Preserve Cultural and Natural History Center (WIPCNHC) opened to the public in December 2002. The WIPCNHC was built to educate visitors on the significance of the Preserve and the importance of preserving Florida's important natural and cultural resources. The interactive exhibit gallery opened in October 2007.

B. OWNERSHIP

The Preserve is owned by the FIITF (2616.5 ac. or 82%), Duke Energy (385.1 ac. or 12%), and Pinellas County (193.7 ac. or 6%). Most of the land within the Preserve is in public ownership (Figure 3). The State-owned areas of the Preserve are managed by the County under lease agreements. The public use areas are under State Lease # 3376, which includes the submerged lands extending 400 ft. from the Mean High Water Line.

Duke Energy owns approximately 385.1 ac. within the Preserve. The County and Duke Energy have four license agreements for the privilege of access, management, and security of said parcels (Appendix 2). In the 1994 agreement, Duke Energy provided staff for the entry station constructed and maintained by the County for security of the Preserve. Duke Energy no longer provides staff for the entry station but monitors access remotely. The 1999 agreement granted the county access to Duke Energy property for the protection and management of natural and cultural resources. In 2001, Duke Energy granted the County access for the sole purpose of installing and maintaining pilings and signs regulating boating activities on Duke Energy property. Under the terms of the 2002 agreement, the County installed a boat lift at the Duke

Energy intake channel and dock to provide space for a Pinellas County Sheriff's Office (PCSO) boat. Of the Duke Energy-owned areas managed by the County under a license agreement, 21.7 ac. are accessible to the public and the remaining 319.5 ac. are restricted from public access. Properties along San Martin Blvd. and adjacent to the Preserve will continue to be evaluated for acquisition as they become available.

C. EASEMENTS

A lease agreement with Duke Energy and the DEP outlined access agreements and management responsibilities (Appendix 2). This agreement, titled the "Weedon Island Use Agreement and License among the Florida Department of Natural Resources, Pinellas County, Florida and the Florida Power Corporation," identifies each party's access and management responsibility.

A natural gas pipeline easement was granted to Florida Gas Transmission Company by Pinellas County in November 2015. (Appendix 4). This agreement identifies the location of the easement and the management responsibilities of both parties.

D. ADJACENT LAND USE

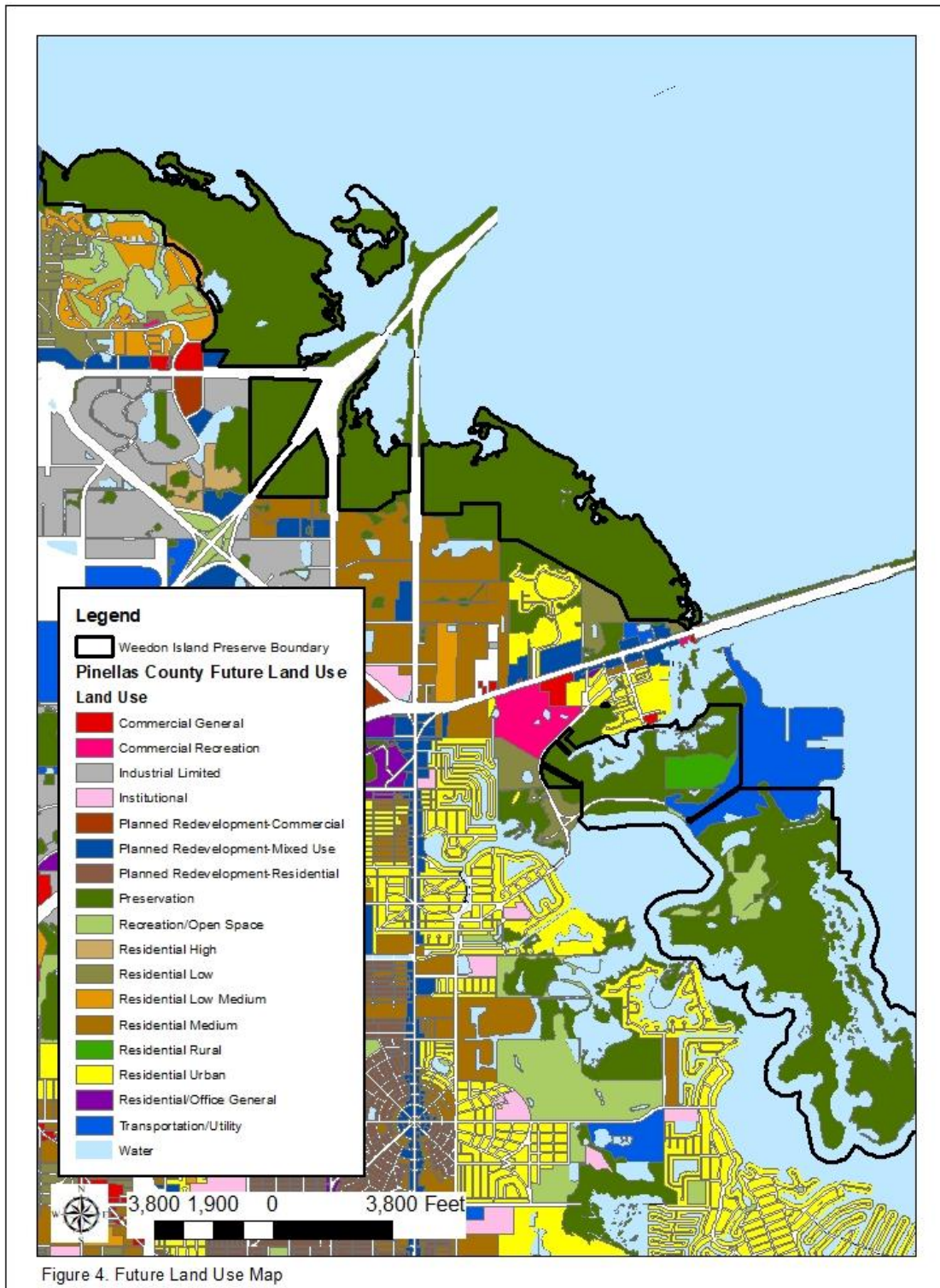
Duke Energy operates a power plant and owns a considerable portion of land that is managed as Preserve. The adjacent land uses are predominantly classified as developed single-family residential as well as commercial (Figure 4). None of the adjacent land uses conflict with the planned use of the Preserve.

E. POLICY COMPLIANCE

This plan serves as a fundamental statement of policy and direction for the management of The Preserve. It identifies the objectives, criteria, and standards that guide each aspect of the management of the Preserve's natural and cultural resources and sets forth specific management actions that will be implemented to meet management goals as defined throughout the Plan. Approval of the Plan by Pinellas County and the State of Florida does not supersede any prevailing statutes, rules, regulations, and ordinances of appropriate local, state or federal agencies.

F. STATE POLICIES

No legislative or executive directives constrain the use of this property other than the official lease agreements with the State of Florida (Appendix 1). The lease agreements require, in part, that the properties be managed "... only for the conservation and protection of natural and historical resources and for resource-based public outdoor recreation which is compatible with the conservation and protection of these public lands." In addition to the lease requirements, the Preserve is subject to appropriate state and federal laws as well as the policies of the TIITF regarding state-owned lands. The Plan shall meet requirements of Section 253.034, F.S., and Chapter 18-2, Florida Administrative Code (FAC) and is intended to be consistent with the State Lands Management Plan. In accordance with Section 253.034, F.S., this Plan will be reviewed



and updated again in 10 yrs. Should this plan require significant changes prior to 2032, the WIPAG will be convened and to provide guidance and comments on proposed changes.

In accordance with Chapter 259.036, F.S. a land management review team selected by DEP evaluated the 2012 Management Plan and the management of the Preserve in 2016 and in 2020. The team evaluated the extent to which current management actions are sufficient, whether the land is being managed for the purpose for which it was acquired, and whether actual management practices, including public access, are in compliance with the Plan. The evaluations and Land Manager's responses are included in Appendix 5.

The submerged portions of the Preserve lie in the Pinellas County Aquatic Preserves (Figure 5). All permanent water bodies within the Preserve have been designated as "Outstanding Florida Waters" pursuant to Chapter 62-302, FAC. Administered by the DEP, this program was created by Section 403.061 F.S., to address water bodies that are "worthy of special protection because of their natural attributes."

G. COUNTY POLICIES

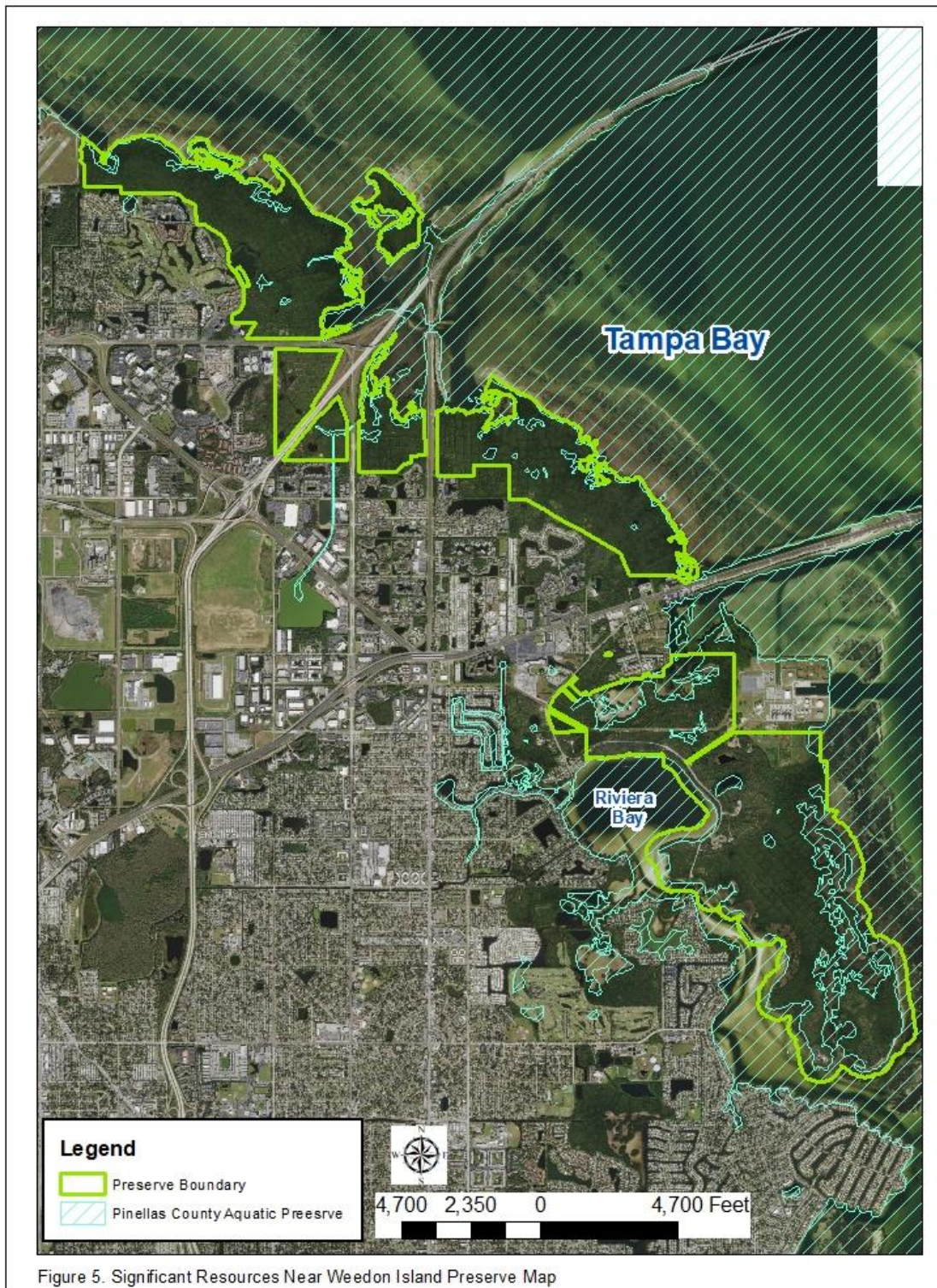
Code of Ordinances Chapter 90

Pinellas County Code of Ordinances Chapter 90 provides rules and regulations that control the public's use and for the protection of the resources of Pinellas County parks, preserves and management Areas (Appendix 6). It includes detailed information concerning: the Parks and Conservation Resources Advisory Board; vessels and live-aboard; protection of property, facilities, flora and fauna; permits; enforcement and penalties; and the identification of county-owned environmental lands subject to Charter restrictions.

Pinellas County's designated environmental lands, including County-owned property within the Preserve, are protected under the Pinellas County Charter, Article II, Section 2.08 (Appendix 6). Under this Charter the County may not remove the environmental lands designation or sell, convey, or transfer any fee simple interest, lease or license for a period longer than 10 years unless authorized by a majority vote of the electorate of Pinellas County in a referendum held at a general or special election called by the BCC. This ordinance, enforced by PCR and PCSO, was most recently updated in August, 2016.

Board of County Commissioners' Strategic Plan

The BCC Strategic Plan was adopted in March 2015 (Appendix 7). This document describes the BCC direction on five goals. The goal of "Practice Superior Environmental Stewardship" and associated strategies to achieve this goal indicate unequivocally that the County remains committed to the protection of natural resources and preserves.



Pinellas County Comprehensive Plan

The implementation of this Plan will assist with fulfilling the goals, objectives, and policies of the 2008 Pinellas County Comprehensive Plan and is in compliance with this document (Appendix 8). As detailed below, the relevant elements of the Comprehensive Plan are the Natural Resource Conservation & Management Element; Recreation, Open Space & Culture Element; Coastal Management Element; Capital Improvement Element; and the Future Land Use & Quality Communities Element.

Goal 2 of the Natural Resource Conservation & Management Element states, “Pinellas County will conserve protect, restore and appropriately manage its natural systems and living resources ensure the highest environmental quality possible.” This element provides the assurance the County will protect, enhance and conserve all resources of the property. All work within the Preserve will require erosion control methods and monitored at all times in accordance with all state and local codes.

Goal 3 of the Natural Resource Conservation & Management Element states, “Pinellas County’s environmental lands and resource-based parks are the hallmark of this County’s environmental commitment, and these lands are to be protected and managed in perpetuity for their contribution to the biodiversity and biological sustainability of the region, as a means of providing respite from urban life and because they instill future generations with a sense of appreciation for Florida’s natural heritage.” This element further affirms the County’s commitment to providing educational, and recreational opportunities that enhance appreciation for, and encourage the stewardship of, natural systems and their dependent living resources.

The goals, objectives and policies of the Recreation, Open Space & Culture Element focus on the need to conserve, protect, and appropriately manage natural and cultural resources and continue the acquisition of open space and environmentally sensitive areas. Goal 5 states “...to promote the arts, culture, and historic and archaeological resources within Pinellas County, and their preservation, through public and private investment and by raising awareness of existing facilities and programs.” The objectives and policies further recognize the need to identify, inventory and provide protection of archaeological sites in the County.

Protection and management of coastal and marine resources, including boater education, seagrass protection, and effective marine speed zones, are among the goals, objectives, and policies of the Coastal Management Element.

The Capital Improvements Element states, “Pinellas County shall undertake actions necessary to provide adequate, needed public facilities in a manner which protects investments in existing facilities, maximizes the use of existing facilities and promotes orderly growth.” This includes projects identified to protect the natural and cultural resources in the County.

Goal 1 of the Future Land Use & Quality Communities Element states, “The pattern of the land use in Pinellas County shall provide a variety of urban environments to meet the needs of a diverse population and the local economy, conserve and limit demands on natural and economic resources to ensure sustainable built and natural environments, be in overall public interest, and

effectively serve the community and environmental needs of the population.” Goal 3 of this Element states “Pinellas County shall promote a balanced relationship between the natural environment and development.”

Arthropod Management Plan

Mosquito control throughout the County is the responsibility of the Department of Public Works, Mosquito Control and Vegetation Management Unit program. The Weedon Island Preserve Arthropod Management Plan is included in Appendix 9.

H. NON-RECREATION INFRASTRUCTURE

Non-recreational infrastructure within the Preserve is primarily located in the maintenance area (Figure 6). Structures include a research station, three bay-workshop (which includes two offices and a restroom), and a pole barn for storage of boats, canoes, kayaks and other equipment.

I. STAFFING

From January 1997 through September 2010, the Preserve was managed by the Department of Environmental Management’s Environmental Lands Division (ELD). Pinellas County budget reductions from 2008 through 2010 resulted in a reduction of ELD staff. On October 1, 2010, management responsibilities were transferred to PCR and a subset of ELD staff was incorporated within this newly-formed department. This resulted in a number of staffing changes. From October 2010 to September 2012, with the exception of those assigned to WIPCNHC, staff no longer had offices located at the Preserve. Staff servicing the Preserve, from October 2010 through August 2021 rotated among the Preserve and three regional parks located in the south part of the County.

The Parks South District Operations Group 5 is responsible for the public use components of the Preserve. In September 2021, PCR added two rangers to the Preserve. One ranger is scheduled Sunday through Wednesday and the other is scheduled Wednesday through Saturday. Both work from 6:30 am to 3:00 pm. Staff responsibilities include maintenance, safety and security of the trails, boardwalks, and facilities. This includes regular trash removal and shelter cleaning. The staff currently spends approximately 320 hours per month working in the Preserve.

The Resource and Asset Management program of PCR is responsible for resource management of the Preserve. The Land Manager is responsible for resource management of the Preserve as well as all other PCR properties in the south half of Pinellas County. In February 2018, PCR added an Environmental Specialist I position to support land management of the Preserve and other PCR properties. Staff time for ecological monitoring, species inventories, restoration project management, prescribed fire, GIS support and coordination with outside researchers in the Preserve is approximately 90 hours per month. Exotic and nuisance flora and fauna work in the Preserve accounts for approximately 50 hours per month of staff time.

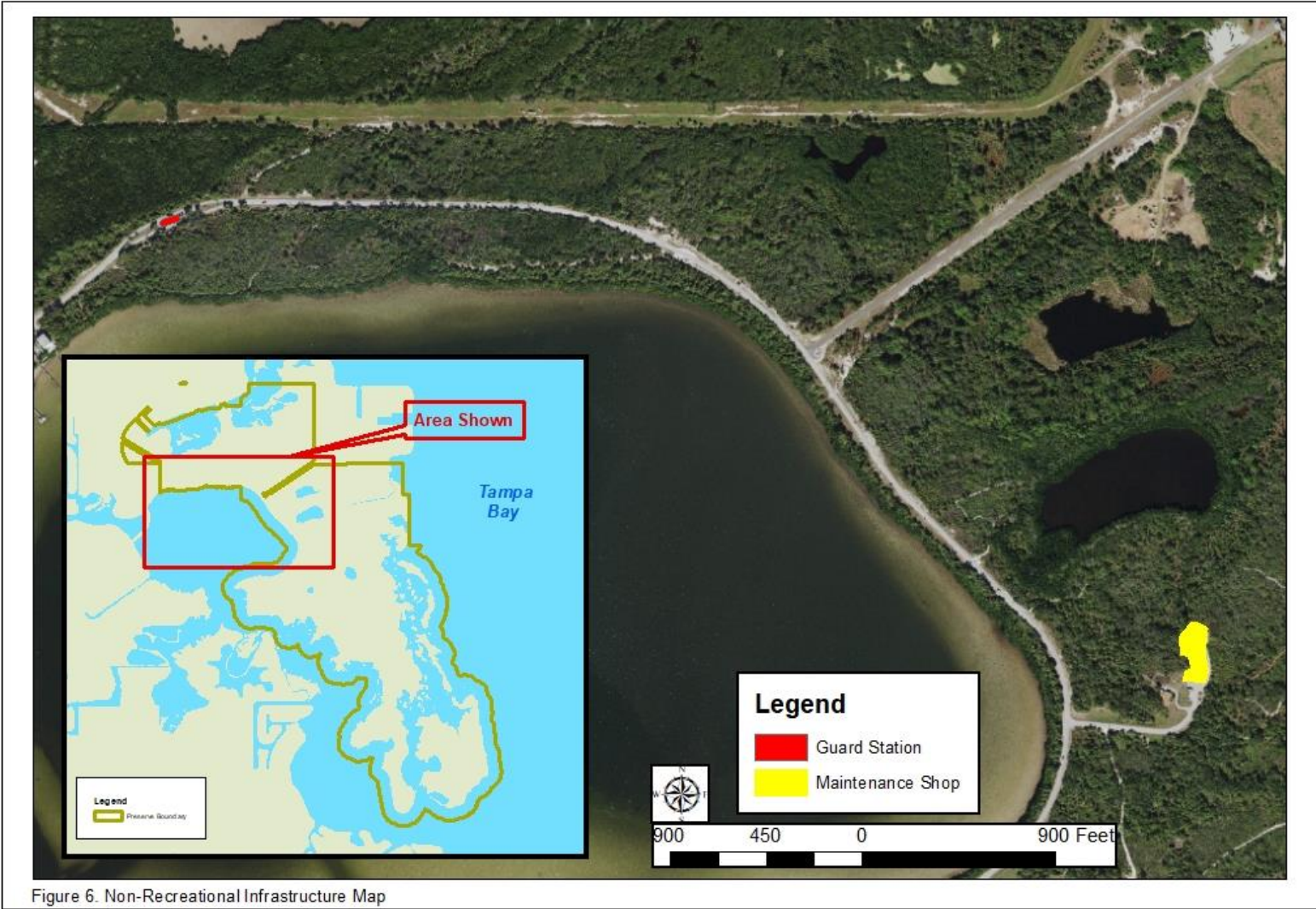


Figure 6. Non-Recreational Infrastructure Map

Mowing and fire break maintenance is completed by staff of the Parks South District Operations Horticulture Group. Crews mow approximately every 21 days during peak growing season. Staff currently spends approximately 15 hours per month on mowing and fire break maintenance.

The County Extension staff supports various educational programs at WIPCNHC, including permanent exhibit, nature walks, and education activities with school groups, public workshops, and environmental presentations. A classroom laboratory provides additional opportunities to groups. The WIPCNHC is staffed with one full-time and three part-time employees. Additional information is provided in SECTION 5. OUTREACH AND EDUCATION.

J. VOLUNTEER SUPPORT SERVICES

A large team of volunteers assist staff with a wide variety of Preserve tasks. At WIPCNHC, volunteers often are visitors’ first contact. Volunteers answer questions, perform general office work, lead guided hikes, and provide interpretation and general support. Trail maintenance, exotic vegetation maintenance, trash removal, and landscaping are some of the tasks volunteers complete in support of land management and general preserve work. Monitoring projects supported by volunteers include butterfly and bird counts, floristic surveys and archaeological surveys and mapping. Volunteers have an important role in supporting the management of the Preserve now, and in the future, due to financial limitations. Volunteers have provided 54,461 hours of support to the Preserve since 2012 (Table 1). Volunteer hours were greatly diminished in 2020 and 2021, as Pinellas County decided for the safety of the volunteers and staff that WIPCNHC would be closed to the public during the COVID-19 pandemic.

Table 1. Volunteer hours From 2012 – 2021. (July 1 st – June 30 th of indicated year.)									
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
5855	5566	6014	6570	5420	6607	6391	6518	2670	2850

PCR works to increase volunteer activity and support to WIPCNHC through increased numbers and volunteer hours. Staff is committed to growing the volunteers’ knowledge and expertise through training and seminars. Volunteers are encouraged to attend various educational opportunities presented at the Preserve. PCR also works with area universities to attract interns. Volunteer groups, especially those who have a sustained interest in the environment are, encouraged for special events and clean ups.

Additionally, a Lead Volunteer program is used to designate volunteers able to mentor volunteers under their area of expertise. The Lead Volunteers must be certified to offer training to other volunteers on any equipment needed for a particular task.

K. COLLABORATION

The Preserve is managed by Pinellas County in accordance with this Plan. The County emphasized involvement of numerous stakeholder groups when drafting the 2022 Plan. WIPAG members were selected to represent various agency partners and a number of user groups to

review the draft Plan. A stakeholder meeting was held January 14, 2022, to introduce the draft Plan to the public and gather comments from WIPAG members and the public (Appendix 3).

Extensive partnerships have been established with researchers from other agencies, universities and volunteers. Site use permits are required for scientific research and other activities that require access to non-public areas in the Preserve. Research partners bring expertise and resources that allow for detailed investigations beyond the scope of local government. This is described in more detail in SECTION 3. NATURAL AND CULTURAL RESOURCE MANAGEMENT.

Pinellas County receives support from two Friends groups at Weedon Island Preserve.

Friends of Weedon Island

The Friends of Weedon Island, Inc. (FOWI), a 501(c)(3) nonprofit corporation, supports efforts to advance environmental preservation and education at the Preserve (Appendix 10). Their mission is to promote the public's understanding of maintaining the Preserve as an important ecological and cultural resource. Members are volunteers who provide ongoing support by raising funds, participating in volunteer efforts, providing scholarships for summer camps, supporting special projects, and hosting and publicizing events. More information can be obtained at <http://www.fowi.org>.

Alliance for Weedon Island Archaeological Research and Education

The Alliance for Weedon Island Archaeological Research and Education (AWIARE) entered into a formal agreement with the County in July 2010 for support of archaeological and interdisciplinary scientific research on the Preserve and related public education programs (Appendix 11). AWIARE, a 501(c)(3) nonprofit organization has as its goals and purposes to provide opportunities for public involvement in archaeological and environmental research projects, and to promote and facilitate long-term archaeological research at the Preserve and the adjacent Gulf Coast region. More information can be obtained at <http://www.awiare.org>.

On May 10, 2011, AWIARE signed a license agreement with the County for the establishment and use of an archaeological field station and housing space, and other improvements to the former residence located at 1500 Weedon Drive N.E., St. Petersburg, FL 33702 (Appendix 11). This research field station provides a base for AWIARE's projects and operations. In response to the 2016 Land Management Review, AWIARE developed an Emergency Hurricane Preparedness Plan on the protection of the cultural resources, which is included in Appendix 11.

SECTION 2. NATURAL AND CULTURAL RESOURCES

Weedon Island is no longer an island as it is connected to the mainland by a land bridge north of Riviera Bay. The Preserve supports diverse natural communities, from scrubby flatwoods to seagrasses. These diverse communities provide habitat for an abundance of both upland and coastal wildlife species. There are no known unique natural features such as virgin timber, natural rivers or streams or coral reefs located in the Preserve. The future land use map in the Pinellas County Comprehensive Plan identifies Weedon Island as a preservation area that is to remain essentially in a natural state (Figure 4). The Florida Natural Areas Inventory (FNAI) report (Appendix 12) includes listed species documented in the Preserve or with the potential to occur in the Preserve.

A. TOPOGRAPHY

The Preserve ranges in elevation from in elevation from 12 ft. below mean sea level (MSL) to 26 ft. above MSL (Figure 7). Located in the Gulf Coastal Lagoons of the Gulf Coastal Lowlands, the Preserve is relatively flat. American Indian mound sites are located on and contribute to the higher elevations. Slopes of 0-5% are common. There are a few exceptions along the northwest shoreline of Riviera Bay which exhibit slopes of 5 – 12% (Vanatta, Jr. et. al., 1972).

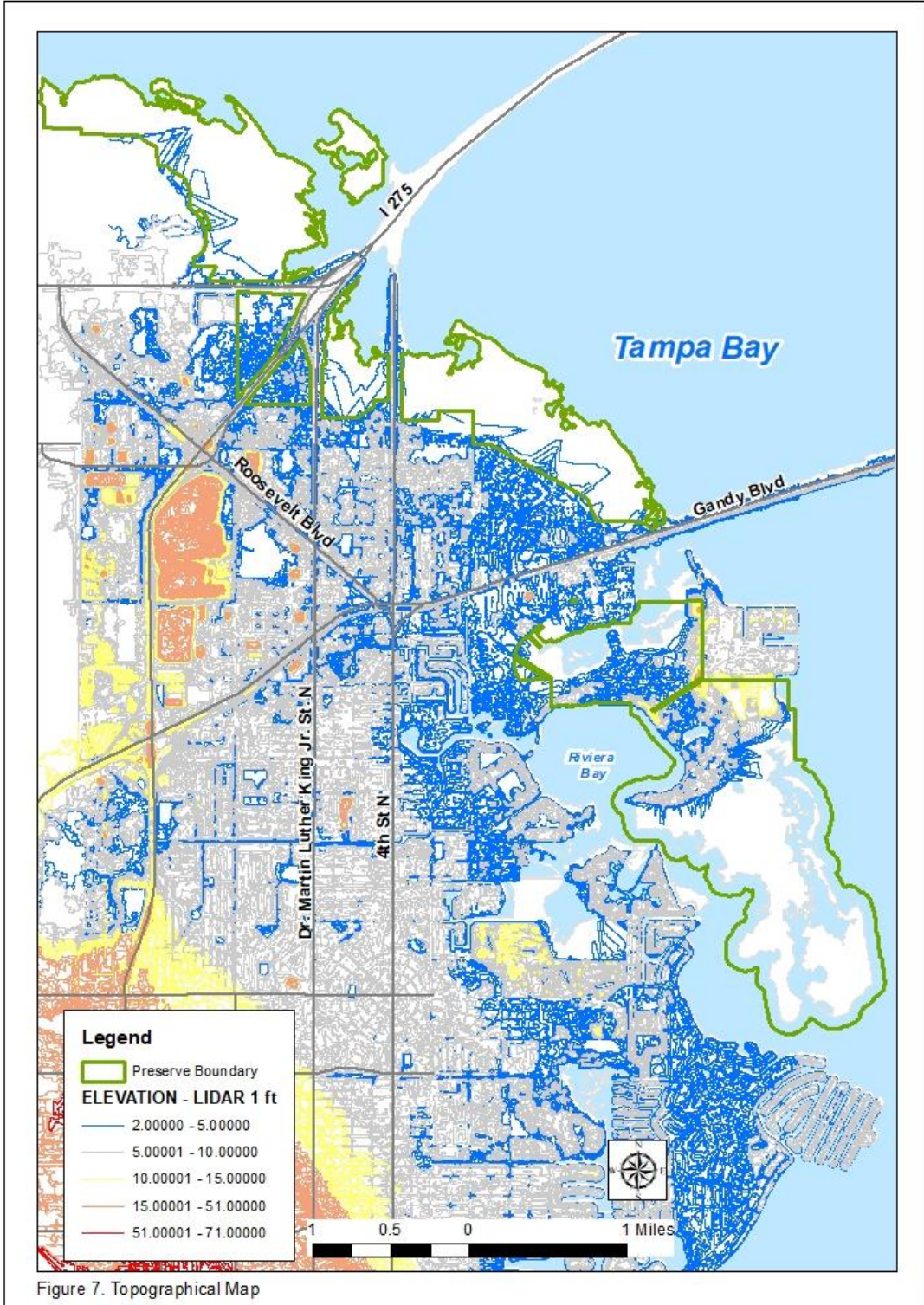
B. SOILS

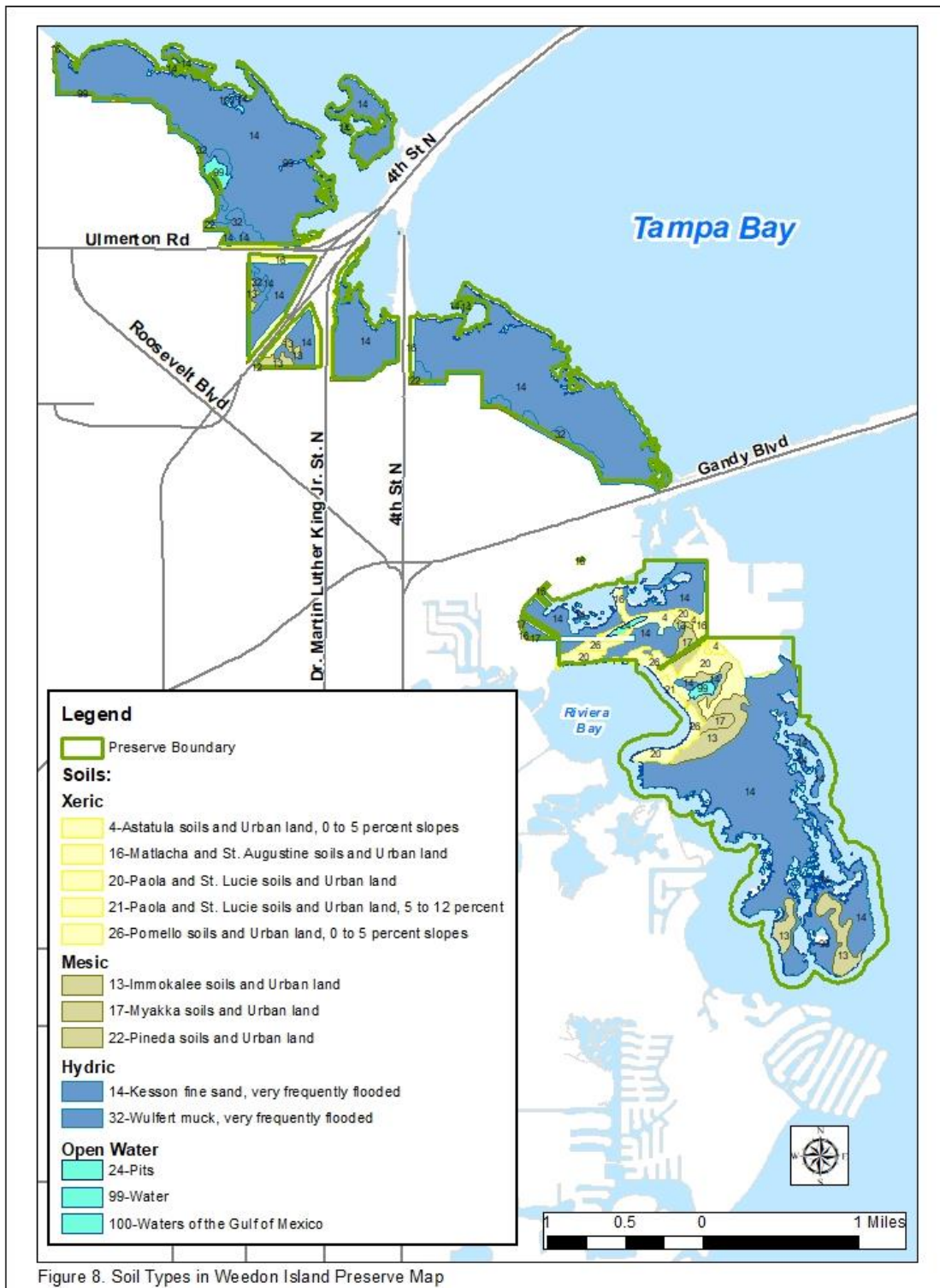
Soil data were obtained from the 2006 Soil Survey of Pinellas County, Florida (United States Department of Agriculture, 2006), and then grouped into three categories: xeric, mesic, and hydric (Figure 8). The most common soils are hydric and support mangrove swamps that dominate the Preserve.

Xeric Soils

Astatula soils and Urban land, 0 to 5 percent slopes are excessively drained and nearly level to gently sloping. The water table is usually below 60 in. throughout the year. The surface layer is about 3 in. of dark-gray fine sand. The subsurface layers are yellowish-brown and yellow sand approximately 80 in. deep. This soil type supports longleaf pine. At the Preserve, xeric and maritime hammock communities are supported by Astatula fine sands.

Paola and St. Lucie soils and Urban land 0 to 5 percent slopes are excessively drained, fine sandy soil formed from thick beds of marine sand and is nearly level to gently sloping. The water table is below 60 in. throughout the year. The surface layer is about 3 in. gray fine sand. A 19-in. layer of loose white sand sits beneath the top layer. Below is a one-inch discontinuous layer of brown weakly cemented fine sand. Twenty-eight inches of yellow fine sand with dark reddish round pebbles and root channels coated with dark brown fine sand and filled with fine white sand sits beneath the third layer. The fourth layer consists of very pale brown loose fine sand that extends





to a depth of 80 in. On site, habitats found on this soil type include xeric and maritime hammocks, pine/scrubby flatwoods, coastal berm, and developed areas.

Paola and St. Lucie soils and Urban land 5 to 12 percent slopes are excessively drained, acidic sandy soils. The surface layer consists of about 3 in. of gray fine sand. Beneath this sits 55 in. of white loose fine sand. The third layer extends to a depth of 80 in. and consists of yellow loose fine sand. At the Preserve, a xeric hammock and coastal berm are found on this type of soil.

Pomello soils and Urban land 0 to 5 percent slopes are moderately well drained, acidic, sandy soils. The slope is nearly level to gently sloping. The water table is usually at a depth of 30 to 42 in. during wet periods. Fine sands are layered from the surface layer to a depth of up to 80 in. At the Preserve, xeric hammocks with a small area of pine/scrubby flatwoods are found on this soil type.

Mesic Soils

Immokalee soils and Urban land are very poorly drained and have a high density of fine sand that allows this soil to have a moderately rapid to rapid permeability. The high water table averages approximately 12 in. below the surface from June through November. Ross and Googe Islands are dominated by this soil type. The landform on this type of soil is flatwoods. Other habitats within this soil type are maritime hammock, pine/scrubby flatwoods, small areas of salt marsh, and ruderal areas.

Pineda soils and Urban land are poorly drained sandy marine sediments over loamy marine sediments. Small patches of this soil are found on the west edge of the northern area of the Preserve, which support wetland forested mixed communities.

Matlacha and St. Augustine soils and Urban land are somewhat poorly drained material derived from dredge and fill projects. The majority of this soil type is found along roadsides. On the south side of Snug Harbor, the dredge materials now support a hammock community.

Myakka soils and Urban land are poorly drained, acidic sandy soil and nearly level. The water table is usually at a depth between 6 to 30 in. from June through November. Fine sands are layered from the surface layer to a depth of up to 80 in. On site these areas support pine/scrubby flatwoods, xeric and maritime hammocks, and a small-developed area.

Hydric Soils

Kesson fine sand, very frequently flooded, is very poorly drained with a surface layer of black fine sand and shell fragments. The sub surface layers consist of light brownish gray fine sand, and shell fragments low in organic matter. This soil type supports growth of salt marsh and mangrove swamp communities. The majority of this soil supports mangrove swamps with some small areas of salt marsh in the Preserve. Most of the mangrove swamps are crisscrossed with mosquito ditches.

Myakka Fine Sand (tidal) is very poorly drained, acidic sandy soil and nearly level. The water table is usually near the surface and inundated at times due to tidal action. The surface is usually about 4 in. of black fine sand. This surface covers a 12-in. layer of loose gray fine sand. This layer is black on top, dark reddish brown in the middle and dark yellowish brown on the bottom. The next layer extends to a depth of about 84 in. and is comprised of lighter colored fine sand. This soil supports salt marsh communities. Within the Preserve, this soil is found only along the western edges of the norther area of the Preserve. The communities growing there are salt marshes and swamps.

Pits are areas where soils have been excavated for use of fill materials. The only area in the Preserve that fits this description is located just north of the Duke Energy transmission line.

Wulfert muck, very frequently flooded is very poorly drained and has a high density of muck covering fine sand that allows for rapid permeability. The high water table inundates the surface throughout the year. This soil type supports salt marshes in the Preserve.

C. GEOLOGY

The Preserve consists of two zones, an upper zone of unconsolidated deposits and a lower zone of consolidated rock. The upper zone, commonly referred to as the surficial deposits, consists chiefly of beds and lenses of fine sand, gravel, sandy clay and clay, ranging in total thickness from <10 ft. to as much as 200 ft. The geologic units comprising the surficial deposits are the Hawthorne formation of Miocene age and the overlying differentiated deposits of the Holocene age. The consolidate rocks consist mostly of beds of hard and soft limestone ranging in texture from densely crystalline to granular; gypsum and dolomite are commonly interbedded with limestone in the deeper zones. These rocks extend vertically to a depth of 10,000 ft. or more (Florida parks Service, 1990).

D. MINERALS

There are no known mineral resources within the Preserve.

E. HYDROLOGIC CONDITIONS

There are three hydrological influences on the Preserve, namely semi-diurnal tides, the surficial aquifer and the Floridan aquifer. Tidal waters and the Floridan aquifer flow are the predominant forces. The presence of the surficial aquifer is limited because of the peninsular geological features discussed above.

Mosquito ditching in the 1950's resulted in a loss of wetland area and altered the local hydrology in the Preserve. Tidal waters flood and ebb from and to Old Tampa Bay through Papy's Bayou and Riviera Bay; therefore, water quality of Tampa Bay is of great significance to the Preserve. Tidal height is greatest during severe weather associated with hurricanes and tropical storms. Since 1842, 26 hurricanes and 37 tropical storms have passed within 50 mi. of St. Petersburg, Florida.

The Floridan aquifer flows west and south from Hillsborough and Pasco Counties, south through Pinellas County then under Weedon Island. The aquifer is located at a depth of approximately 20 ft. and extends to a depth of approximately 80 ft. Being located at the discharge area of the aquifer, any pollutants and/or reductions of volume would be evident and influence the Preserve. Very little of the surface water is retained long enough to percolate through the confining layers and thus to recharge the Floridan aquifer.

The surficial aquifer can be found at depths of five ft. or less throughout the Preserve. Since Weedon Island is located at the southern end of a narrow peninsula, the surficial aquifer is recharged primarily by rainfall. Due to shallow soils, the surficial aquifer is depleted quickly by drainage, plant evapotranspiration and evaporation.

Low elevations and shallow soils make Weedon Island subject to frequent flooding, with higher elevations (>4 ft. MSL) subject to flooding following tropical storms and hurricanes. The lower elevations frequently flood following thunderstorms during the rainy season. These frequent floods drain off quickly from most areas of the uplands.

Dredge and fill developments of the land to the south, west and north of the Preserve have increased the tidal flow into and out of Riviera Bay. This has, in turn increased the shifting of sands along Papy's Bayou. The abundance of grass beds, salt marsh and mangrove swamp have minimized the detrimental effects of tidal flow; however, additional increases of flow, stormwater drainage and/or contamination with pollutants could alter natural communities. Relatively recent suburban development has claimed the uplands west of Weedon Island. This development is subject to local and state permits that require avoidance, minimization and migration of all wetland and, consequently, surface flow and stormwater impacts.

F. WATER RESOURCES

The Department of Public Works, Environmental Management Division staff monitor water quality and seagrasses within the the Preserve. Water quality sites are located in Old Tampa Bay, Papy's Bayou, Riviera Bay and Snug Harbor. Results of these data are discussed in E. MONITORING of SECTION 3. NATURAL AND CULTURAL RESOURCE MANGEMENT.

There are two freshwater resources in the Preserve, a natural spring and a lake, both of which are located on Duke Energy property (Figure 9). There have been no known studies conducted on either of these freshwater resources.

G. PLANT COMMUNITIES AND COVER TYPES

The natural communities that comprise the Preserve are predominantly estuarine, mangrove forest, and seagrass (Figure 10). The north part of the Preserve is entirely comprised of intertidal zones of seagrass and mangrove islands. The larger islands within the Preserve complex, Googe Island and Ross Island, contain 19 and 30 ac. of uplands, respectively. These upland areas are comprised of scrubby flatwoods and xeric hammock. There are no known beaches or dunes at the Preserve.

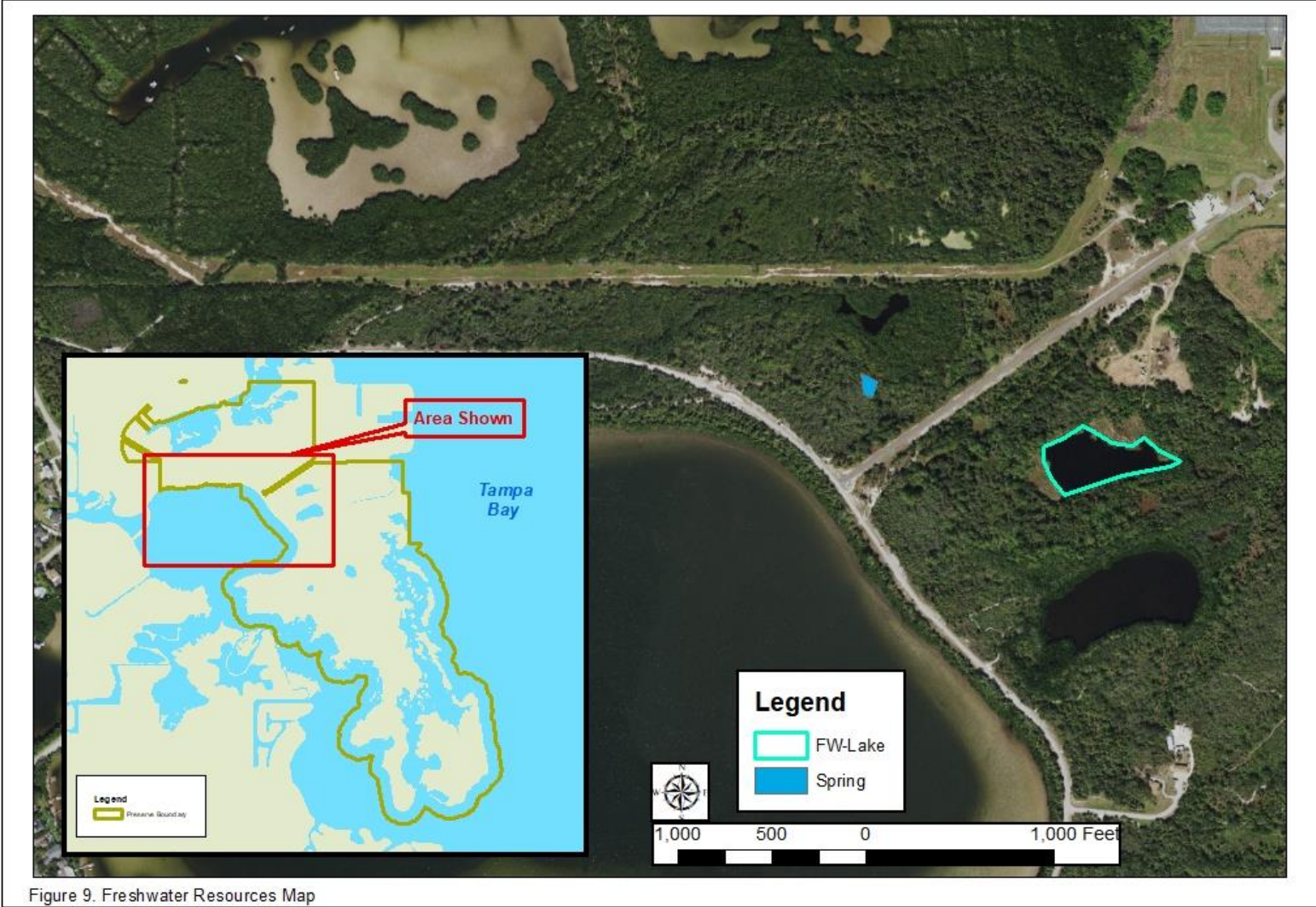
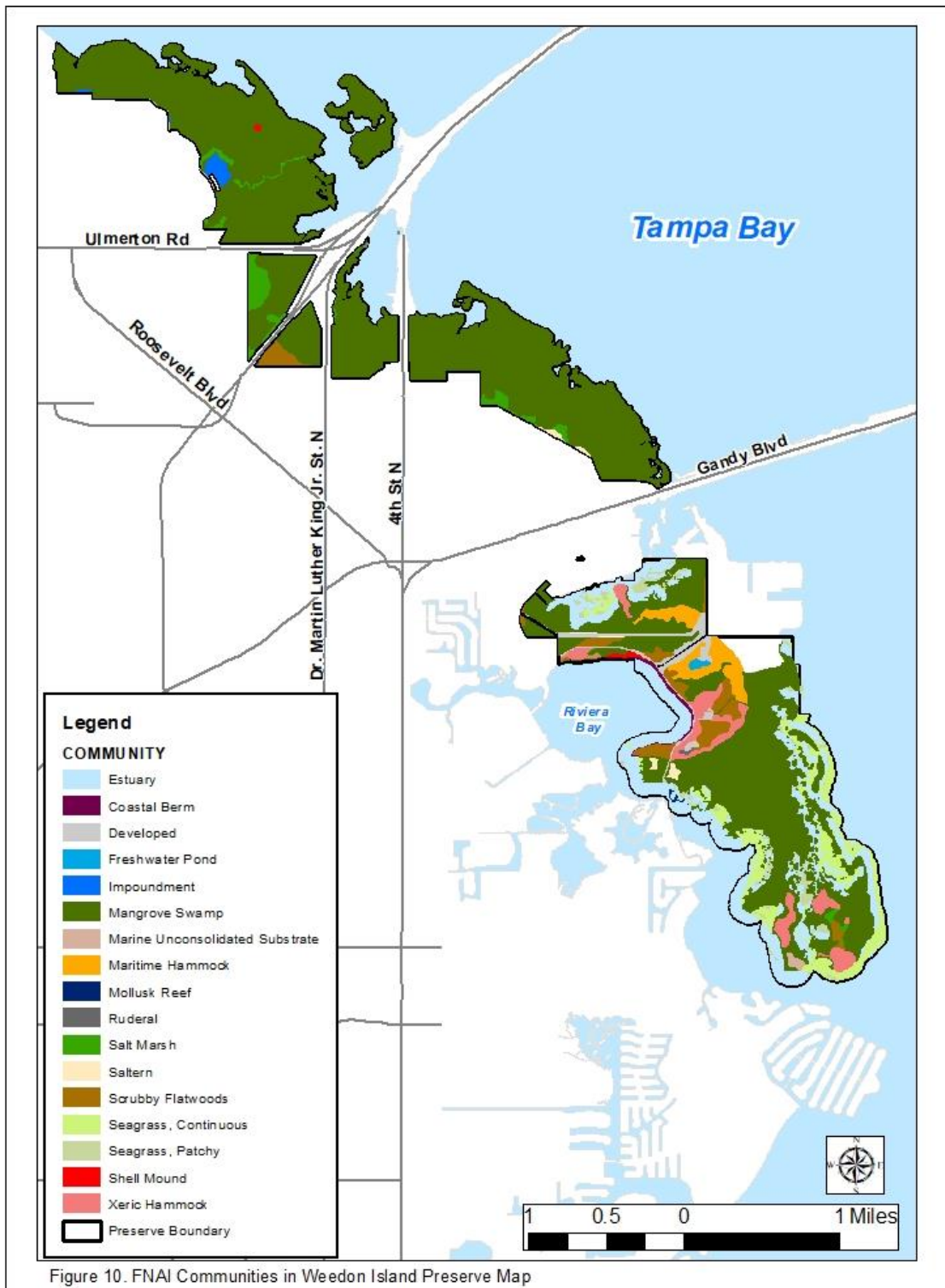


Figure 9. Freshwater Resources Map



All communities were classified using the system described by FNAI, (2010). Listed below are the general descriptions of natural communities found in the Preserve (Pinellas County, 2010). To date, there have been 289 plant species identified in the Preserve (Appendix 12).

Xeric Hammock (93.5 ac)

This community is an advanced successional stage of scrub or sandhill. The soils found in these areas (Astatula fine sand, Paola fine sand, Pomello fine sand, and St. Lucie fine sand) suggest that both sandhill and scrub could be supported. However, since fire has been excluded for many years, the areas are now dominated by xeric hammocks. Xeric areas where fire exclusion is approaching 30 years begin to take on hammock-like conditions. Hammock canopies are dense and thus reduce understory growth. Consequently, fuel loads are gradually reduced, and fire is less likely to occur. These areas are predominantly associated with some of the Preserve's shell middens and burial mounds. The canopy plants include live oak (*Quercus virginiana*), sand live oak (*Quercus geminate*), and cabbage palm (*Sabal palmetto*). Understories differ somewhat in each of the xeric hammocks found on the Preserve, but common plants include saw palmetto (*Serenoa repens*), beautyberry (*Callicarpa americana*), and hog plum (*Ximenia americana*).

Maritime Hammock (69.5 ac.)

This community occurs on old coastal dunes that have been stabilized long enough for the growth of a forest. The generally mesic conditions of well-developed and maritime hammock communities inhibit natural fire. Fire introduction may alter the appearance. This community includes the final stage of succession in coastal areas. The flora in this community includes cabbage palm, red bay (*Persea borbonia*), laurel oak (*Quercus laurifolia*), live oak, marlberry (*Ardisia escallonioides*), and snowberry (*Chiococca alba*).

Shell Mound (5.5 ac.)

This anthropogenic community is composed mainly of shells discarded by generations of Native Americans. As the name suggests, shell and shell fragments are found mixed within the soil. Shell mounds are predominantly restricted to the hammocks, both maritime (north of Duke Energy access road) and xeric (Ross Island). There is one exception, a narrow, exposed shell midden located along the north shore of Riviera Bay. This area is comprised of a relatively impenetrable layer of shell and sand, scattered cabbage palm, sand live oak, muscadine (*Vitis rotundifolia*), and smooth rattlebox (*Crotalaria pallid* var. *obovate*). Most of the shell middens on the Preserve are closely associated with hammock communities and therefore contain similar vegetative qualities. The common flora in this community is red bay, laurel oak, red cedar (*Juniperus virginiana*), hog plum, gray nicker (*Guilandina bonduc*), coinvine (*Dalbergia ecastaphyllum*), and smooth rattlebox.

Scrubby Flatwoods (94.6 ac.)

This community has an open canopy of widely-spaced pine trees with low, shrubby understory dominated by scrub oaks and saw palmetto. These areas dominate the uplands, particularly adjacent to the maintenance area and along the upland trail. This community can be difficult to distinguish in the field as a result of alterations to fire frequency and drainage. The mesic pine

flatwoods that occur onsite are approaching a more dry, xeric condition – characteristics indicative of scrubby flatwoods. Topographically, these areas occur on high ridges in the pine flatwoods. A natural fire regime for scrubby flatwoods is 5 to 15 yr. Dominant flora found is laurel oak, live oak, sand live oak, cabbage palm, red bay, longleaf pine (*Pinus palustris*), slash pine (*Pinus elliotti*), saltbush (*Baccharis halimifolia*), rusty staggerbush (*Lyonia ferruginea*), pinewoods fingergrass (*Eustachys petraea*), and switch grass (*Panicum virgatum*).

Marine Unconsolidated Substrate (4.9 ac.)

The southern tip of Googe Island supports this community type. This beach area is characterized as relatively open areas of subtidal, intertidal and supratidal zones which lack dense vegetation. The most common flora found in this community is cabbage palm, capillary hairsedge (*Bulbostylis ciliatifolia*), swamp flatsedge (*Cyperus ligularis*), coastalplain honeycombhead (*Balduina angustifolia*), and partridge pea (*Chamaecrista fasciculata*).

Coastal Berm (10.4 ac.)

This community is found on the west side of Weedon Island boarding Riviera Bay. Coastal berms are ridges formed from storm deposited sand, shells and debris. Typical vegetation includes cabbage palms, seagrape (*Coccoloba uvifera*), live oak, and marsh elder. The berm grades into a narrow band of mangrove swamp. Cabbage palm gray nicker, coinvine, seashore dropseed (*Sporobolus virginicus*), and spotted beebalm (*Monarda punctata*) are commonly found on the Weedon Island coastal berm.

Mangrove Swamp (2193.2 ac.)

This community dominates the Preserve, comprising over 60% by area. This community is characterized by dense mangrove forests. These areas contain extensive areas of dredged mosquito ditches. The vegetation contains red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), buttonwood (*Conocarpus erectus*), saltbush, and marsh elder (*Iva frutescens*).

Salt Marsh (61.7 ac.)

This tidal community is largely herbaceous in the portion of the coastal zone protected from large waves by the gentle sloping topography of the shoreline as found in Tampa Bay. The salt marsh is found on Ross Island, the mainland of the Preserve, and along the northern portions of the Preserve. The typical flora found in this community is black needle rush (*Juncus roemerianus*), smooth cord grass (*Spartina alterniflora*), saltwort (*Batis maritima*), herb-o-grace (*Bacopa monnieri*), and shoreline seapurslane (*Sesuvium portulacastrum*).

Saltern (Salt Flat; 9.8 ac.)

There are three small patches of this community nestled in the mangrove swamps. Salterns develop at an elevation just high enough to receive fewer tidal inundations than adjacent seaward zones. Long periods between flooding prevent dilution and favor water loss by percolation and

evaporation. The flatness across tidelands is formed by the daily ebb flow of tides, which act as a leveling agent. Erosion of adjacent uplands during storm tides contributes sand to the bordering saltern area. The common flora in this community include dwarfed black mangrove, saltwart, shoreline seapurslane, perennial glasswort (*Salicornia ambigua*), and seaside heliotrope (*Heliotropium curassavicum*).

Seagrass (214.0 ac.)

This community occurs in subtidal zones in clear coastal waters where wave energy is moderate. Seagrass beds most frequently occur on unconsolidated substrate of marl, muck, or sand. The other factors that affect the establishment and growth of seagrass beds include water temperature, salinity, tidal activity, and available light. Species documented in the Preserve include turtle grass (*Thalassia testudinum*), shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), and widgeon grass (*Ruppia maritima*).

Mollusk Reef (1.9 ac.)

Marine and estuarine mollusk reefs are faunal-based natural communities typically characterized as expansive concentrations of sessile mollusks occurring in intertidal and subtidal zones to a depth of several ft. In Florida, the most developed mollusk reefs are generally restricted to estuarine areas. In the Preserve, these are located just south of the fishing pier.

H. ALTERED AND UNCLASSIFIED LANDCOVER TYPES

Estuary (364.5 ac)

Weedon Island Preserve is located in the Old Tampa Bay portion of Tampa Bay. The 400 sq. mi. estuary is a diverse ecosystem that supports a variety of flora and fauna.

Developed (51.3 ac.)

The developed areas are comprised of roads, parking areas, buildings, and maintained lawns as part of recreational, business, or residential area. Vegetation in this community includes Bahiagrass (*Paspalum notatum*), live oak, cabbage palm and longleaf pine.

Impoundment (14.9 ac.)

The impoundment, located in the northern Preserve, is a borrow pit dug in 1975. Soils were taken and used for fill in local development projects, creating the impoundment with a maximum depth of 33 ft.. The water in the impoundment is brackish with a salinity of 2.0 ppt.

Ruderal (1.5 ac.)

One small area on Weedon Island contains this highly disturbed community type that is not recognized by FNAI. Vegetation such as Bahiagrass, lantana (*Lantana camara*), muscadine, and sensitive plant (*Mimosa strigillosa*) dominate.

Freshwater Pond (4.1 ac.)

One freshwater pond is located within the Preserve on Duke Energy property. The vegetation includes Carolina willow (*Salix caroliniana*) and cat-tails (*Typha spp.*).

I. WILDLIFE

The Preserve supports diverse wildlife species: documented species include 176 birds, 43 butterflies, 27 reptiles, 15 mammals, 8 amphibians, and 126 fishes. The species lists (Appendix 12) represent a compilation of results from surveys that County staff and volunteers have conducted since 2000.

Birds

The Preserve provides critical habitat required by resident and migratory birds to feed, rest and reproduce. Mangrove swamps, salt marsh, salterns, marine unconsolidated substrate and seagrass beds are important feeding areas for wading birds. Scrubby flatwoods, maritime hammock, xeric hammock and coastal berm provide resting and nesting areas for many species listed in Appendix 12.

Mammals

The Preserve supports a variety of small mammals. The most common are the northern raccoon (*Procyon lotor*), evening bat (*Nycticeius humeralis*), eastern gray squirrel (*Sciurus carolinensis*) and the nine-banded armadillo (*Dasypus novemcinctus*). Coyotes (*Canis latrans*) have been living in the Preserve for the past decade. Coyotes are known predators of bird and tortoise eggs.

The protection of seagrasses is important to the sustainability of a wide variety of marine mammal species in the Preserve. The west Indian manatee (*Trichechus manatus*) and the bottlenose dolphin (*Tursiops truncatus*) utilize the expansive seagrass beds.

Fishes

The Fisheries Independent Monitoring (FIM) program at Florida Fish and Wildlife Conservation Commission's (FWC) Fish and Wildlife Research Institute (FWRI) has sampled both juvenile and adult fishes for over two decades. From 2012 through 2020, 126 species were identified within the Preserve (Appendix 12). The protection of seagrasses is important to the sustainability of both juvenile and adult fishes found in the Preserve. The summary of these data is discussed in more detail in E. MONITORING of SECTION 3. NATURAL AND CULTURAL RESOURCE MANAGEMENT.

Reptiles

Several species of reptiles have been documented through surveys at the Preserve (Appendix 12). The most common species seen are the Cuban brown anole (*Anolis sagrei sagrei*), gopher

tortoise (*Gopherus polyphemus*), southern black racer (*Coluber constrictor priapus*) and eastern diamondback rattlesnake (*Crotalus adamanteus*).

Amphibians

The amphibian species found in the Preserve include two toads and six frogs. The most common are the eastern narrow-mouthed toad (*Gastrophryne carolinensis*) and the greenhouse frog (*Eleutherodactylus planirostris*).

Butterflies

County staff and volunteers have observed 43 species of butterflies through spring and fall surveys in the Preserve. None of these is listed as a species of conservation concern.

Three formal surveys and studies that included documentation of wildlife have been conducted over the past 10 yrs. and recorded on the wildlife species lists (Appendix 12). In addition to these studies, the FWRI has sampled both juvenile and adult fishes for over a decade. These studies are discussed in more detail in F. RESEARCH of SECTION 3. NATURAL AND CULTURAL RESOURCE MANAGEMENT.

J. LISTED SPECIES

Imperiled species are those that are listed by FNAI, United States Fish and Wildlife Service (USFWS, FWC), and the Florida Department of Agriculture and Consumer Services as endangered and threatened or of special concern. Several imperiled floral and faunal species have been documented in the Preserve (Appendix 12) and are presented in Table 2.

K. EXOTIC SPECIES

Exotic species are non-indigenous species introduced into an area either purposefully or accidentally. Exotic flora in natural areas can have detrimental effects to the native flora and fauna (Burks and Langland, 2008). The Florida Invasive Species Council (FISC), a non-regulatory organization of professional botanists and other, compiles lists of invasive exotic plants (Appendix 13). Category I species are defined by FISC as species that are invading and disrupting native plant communities. Category II species are defined by FISC as species that have shown invasive properties and the potential to disrupt native plant communities.

The plant list identifies 50 exotic species, 14 of which are Category I and 10 of which are Category II species. The mosquito-ditched areas in the Preserve have the highest densities of invasive exotics. Propagules of exotic flora are widely dispersed through a variety of mechanisms, including by wind, birds consuming fruit and seeds, and inflow of surface water.

Table 2. Listed Species Recorded in the Preserve					
Scientific Name	Common Name	FNAI State Rank¹	Federal Rank²	State Status³	Global Rank⁴
Plants					
<i>Chrysopsis floridana</i>	Florida goldenaster	S3	E, PDL	E	G2
Birds					
<i>Platalea ajaja</i>	Roseate Spoonbill	S2		ST	G5
Reptiles					
<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	S3			G3
<i>Drymarchon couperi</i>	Eastern Indigo Snake	S2	T	FT	G3
<i>Gopherus polyphemus</i>	Gopher Tortoise	S3	C	ST	G3

1- FNAI State Element Rank

Florida Natural Areas Inventory - <http://www.fnai.org/trackinglist.cfm> (July 2021)

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

S2 = Imperiled in Florida because of rarity (6 to 30 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

S4 = Apparently secure in Florida (may be rare in parts of range).

2-Federal Legal Status

United States Fish and Wildlife Service, <http://www.fws.gov/Endangered>

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

E, PDL = Species currently listed endangered but has been proposed for delisting

T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

N = Not a listed species.

3-State Rank

Florida Fish and Wildlife Conservation Commission

E=Endangered

ST – State population listed as Threatened by the FFWCC.

FT= Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service

4 – FNAI Global Element Rank

G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

G3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

G5 = Demonstrably secure globally.

Brazilian pepper (*Schinus terebinthifolia*), Australian pine (*Casuarina equisetifolia*), Guinea grass (*Panicum maximum*), cogon grass (*Imperata cylindrica*), lantana, and rosary pea (*Abrus precatorius*) are the most prevalent exotic floral species that have been observed in the Preserve.

Exotic fauna in natural areas can prey on or displace native species or negatively impact native plants and natural plant communities. Exotic faunal species that have been documented on the Preserve include greenhouse frog (*Eleutherodactylus planirostris*), Cuban treefrog (*Osteopilus septentrionalis*), Cuban brown anole (*Anolis sagrei*), Indo-Pacific gecko (*Hemidactylus garnotii*), Argentine black and white tegu (*Salvator merianae*), and European starling (*Sturnus vulgaris*).

L. CULTURAL RESOURCES

Weedon Island has a cluster of shell middens and sand mounds, including a burial mound partially excavated by a team from the Smithsonian Institution in 1923-24. Fewkes published a report on the findings entitled "Preliminary Archaeological Explorations at Weedon Island, Florida," in 1924. Fewkes surveyed the mound sites and produced an accurate map of the sites in the publication. The report noted several types of mounds at Weedon Island, namely middens, domiciliary mounds, and the sand burial mound. Recent research has confirmed the locations of some of these mounds (Weisman et al., 2008).

Shell middens overlay most of two major relic sand dune ridges located at the southern part of the Preserve. The geomorphology of these mound sites elevates in ranges from 6 to 26 ft. above MSL, and form two semi-circular radii on the island. Other midden sites are located on Gooze and Ross Islands. The aboriginal shell deposits are comprised mostly of shell, with some bone, lithic, and pottery sherd artifacts in a layered stratigraphy.

Domiciliary mounds comprised of sand, shell and some middens were reported by Fewkes, who noted that they probably were used for house structures.

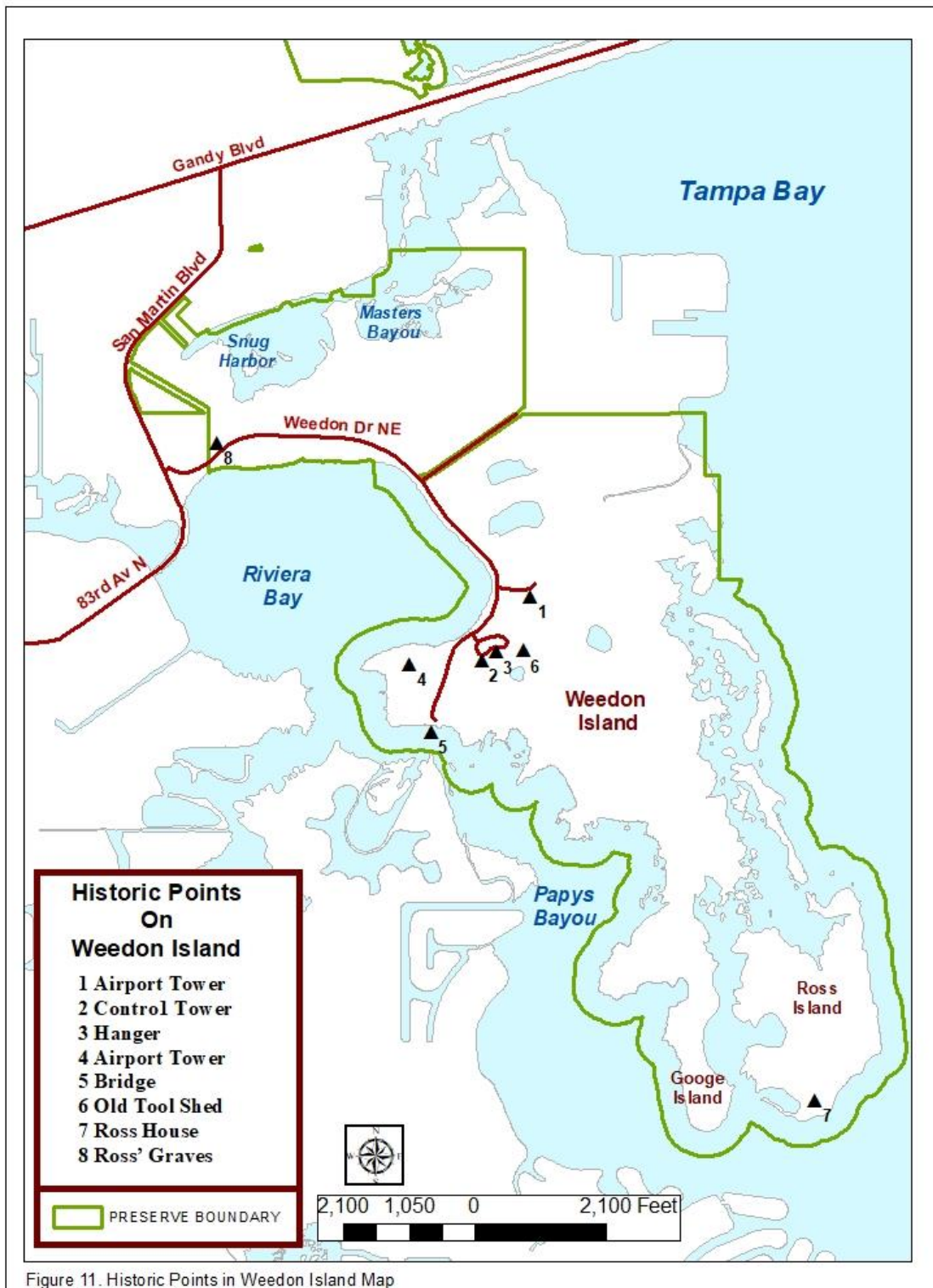
The sand burial mound viewed by Fewkes was approximately 4 ft. in height and circular. Although Fewkes thought the mound a natural "eminence" used by the Indians, it most likely was artificially constructed. According to the report, there were three layers of internment and about one-third of the mound was excavated.

Recent human impacts in the past 100 yrs. to the sites have affected the prehistoric mounds resulting in a loss of archaeological site integrity. Much of the land was impacted by the harvest of pine trees, construction of runway airfields, citrus groves, various roads, houses, and businesses. More serious modifications include the dredging of mosquito ditches, installation of a gas and oil pipeline corridor, construction of the power plant, and construction of Weedon Drive. In addition to these impacts, the sites have been affected directly by intensive looting, especially in the cemetery area. The impacts to soils and sediments have contributed to the invasion of pioneer plants and invasive exotics resulting in increased bioturbation and further cultural feature degradation (Weisman et al., 2008)

Historic sites on Weedon Island are prevalent with many buildings remains and imprints from past activities such as an airport runway and towers (Figure 11). Early settlers once occupied several of the islands, and pilings from the buildings constructed during the 1920's are still intact. Weedon Island's varied history is captured in *The Weedon Island Story* (Pinellas County, 2005).

The northern area of the Preserve is a low-lying mangrove swamp area with shell mounds providing the only significant topographic variation. One significant shell mound with a maximum elevation of 3.3 ft. follows the contours of the coast of Old Tampa Bay. Another major shell mound with human remains rises to the height of 8.2 ft. and is located west of the shoreline and is surrounded by mangrove swamp. Both of these shell mound/middens have been impacted by heavy looting and consequently have been degraded. Despite the extensive looting activity, looter holes do not extend beyond three ft., allowing a substantial amount of midden to remain intact.

Adjacent to these sites, a prehistoric pine dugout canoe was discovered and eventually excavated in 2011. The dugout was over 40 ft. long and radiocarbon dated to 2 Sigma calibrated results of Cal A D 690 to 1010. The canoe is 39.9 ft. from bow to broken stern and is longer than any other dugout found in Florida. It is also the only one directly associated with a saltwater environment. The canoe is on display in the WIPCNHC.



SECTION 3: NATURAL AND CULTURAL RESOURCE MANAGEMENT

Resource management is focused on the natural community or ecosystem level, a holistic approach that provides benefits beyond those afforded by single-species management. Based on available staff, the long-range goal is to maintain the current activities and level of service, including those restoration projects identified in the existing Capital Improvement Program (CIP).

A. HABITAT RESTORATION AND IMPROVEMENT

Ecological restoration in the Preserve provides protection and enhancement of the natural communities. Restoration includes re-introduction of fire, establishment of regular burn regimes, mechanical vegetation reduction, and exotic vegetation control to improve and maintain natural habitats. A series of projects to restore hydrology by selectively filling the man-made mosquito ditches have been completed. Future planned hydrologic restoration projects are included in the existing CIP. Private contractors are hired to complete restoration projects as this is beyond the capability of County staff and equipment.

Developed by the Pinellas County Public Works Department, the Sea Level Rise Tool for Capital Planning provides a framework for evaluating sea-level rise within the capital improvement program process, as well as in maintenance projects. It provides a vulnerability and risk assessment for various assets by using the latest climate science and then supports creating adaptation measures to improve the assets' resiliency to impacts from sea-level rise and. In accordance with County Administrative Directive 2-12, PCR will use and adopt mitigation and/or adaption measures for CIP's that meet any of the following criteria: total cost over one million dollars, located in the flood vulnerability zone, or creates or impacts critical infrastructure.

Objective: Provide resource management to restore and improve the natural communities of Weedon Island Preserve.

Restoration Projects

Feather Sound Tidal Wetland Restoration Project

A cooperative effort of the Tampa Bay Estuary Program (TBEP), Southwest Florida Water Management District (SWFWMD), Tampa Bay Watch, FWC-FWRI, and Pinellas County, this project addressed poor seagrass recovery in Tampa Bay and was completed in 2016 (Figure 12.). This project restored a number of mosquito ditches to saltern, re-routed a number of mosquito ditches to reduce nutrient loading to Tampa Bay in the Feather Sound area, removed exotic vegetation and installed native vegetation, resulting in restoration and enhancement of 96.4 ac. (Appendix 14). Approximately 99 spoil mounds were removed, 12 ditch blocks were added to redirect flow, and a partially filled pond was excavated and graded to improve surrounding habitat. A contractor installed over 9,000 native plants and volunteers planted over 11,000 native plants.



Figure 12. Restoration Projects Map

Weedon Island Preserve Salt Marsh Restoration Project

The Weedon Island Salt Marsh Restoration Project is a cooperatively-funded initiative with SWFWMD and the County to evaluate, design, and construct future projects to enhance/remove the mosquito ditches in the Preserve. Faller, Davis & Associates was hired to conduct a feasibility study for the natural systems and restoration projects within 1,100 ac. of the Preserve. The Weedon Island Tidal Wetland Restoration Feasibility Study (Appendix 15) was completed in September 2018. The first phase identified potential projects for habitat restoration focused on spoil mound removal, nuisance species removal and hydrologic improvements in the mosquito ditches. A variety of techniques were evaluated to identify the most effective approaches for all three restoration focus areas. The technique of “Walk In, Dig Out” (WIDO) was determined to be the most effective restoration approach for most of the Preserve. A 42-ac. pilot project (Figure 12) was proposed to evaluate the WIDO technique.

This restoration project is currently in Phase Two, Design and Permitting and was completed in January 2022. Phase Three, Construction will begin in mid-2022 and should be completed by September, 2023. Public will be provided information through workshops and social media to update the public on details this and future projects within the Preserve.

Goal A1: Monitor and evaluate effectiveness of the Salt Marsh Restoration Pilot Project by post-construction vegetation transects and photo points.

Goal A2: Continue to implement restoration projects identified in the Feasibility study to improve hydrology of the mosquito ditches and remove exotic vegetation.

Goal A3: Provide outreach to the public regarding ongoing restoration projects at the Preserve.

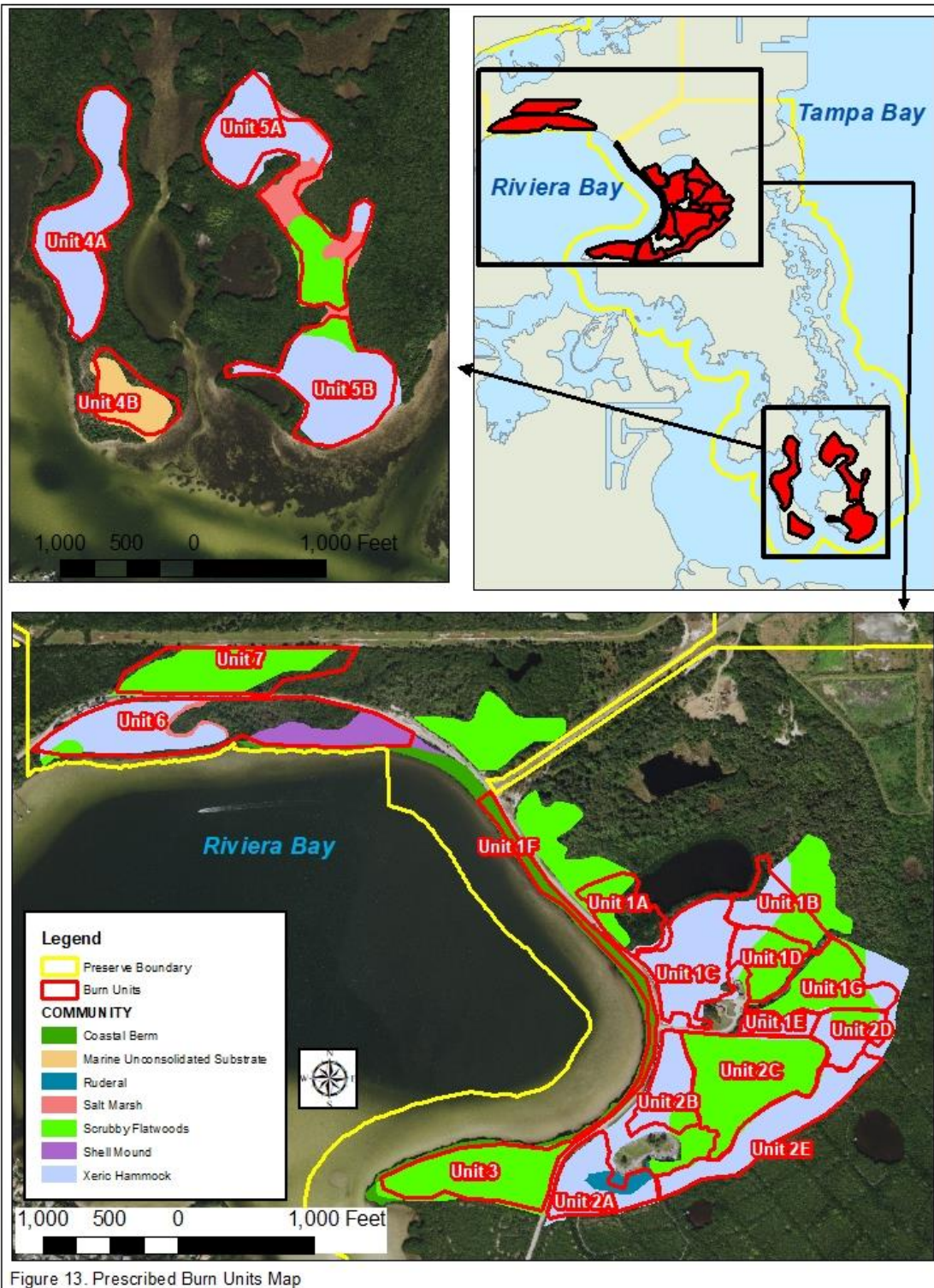
Prescribed Fire

Fire is extremely important in the maintenance of upland Florida ecosystems. These natural communities have evolved to depend on fire. Each type of community type burns at a specific frequency due to characteristics of various plant species and hydrologic conditions. Higher and drier communities with light, herbaceous fuels generally burn more frequently than do hydric areas with larger, heavier fuels.

The challenge of prescribed fire in the Preserve is addressing the smoke management concerns. Pinellas County is densely populated, and prescribed fire must not impact major roads, schools, and local residents. Smoke management is critical when planning any prescribed fire in the Preserve.

The objectives of the burn program at the Preserve are to re-introduce fire and maintain a fire-frequency regime typical for the fire-adapted communities. These objectives are accomplished through partitioning the Preserve into burn units and implementing burns as appropriate for each unit.

The Preserve has 19 burn units labeled W-1 through W-7 (Figure 13). Units are delineated using existing roads, firebreaks and ecotones between communities. Firebreaks are maintained by PCR staff by disking periodically each year. Prescribed burns conducted in the Preserve are permitted through the Department of Agriculture and Consumer Services, Florida Forest Service



(FFS). Since 2012, one of the 19 burn units has been burned (10 ac.) (Table 3). In 2017, a wildfire in Unit 4B burned over 9 ac. PCSO investigated and found the individuals responsible for starting the wildfire.

To support the prescribed burn program, PCR is equipped with three 300-gallon slide-on units, small Honda pumps for drafting out of surface water, drip torches, backpack sprayers, and miscellaneous hand tools.

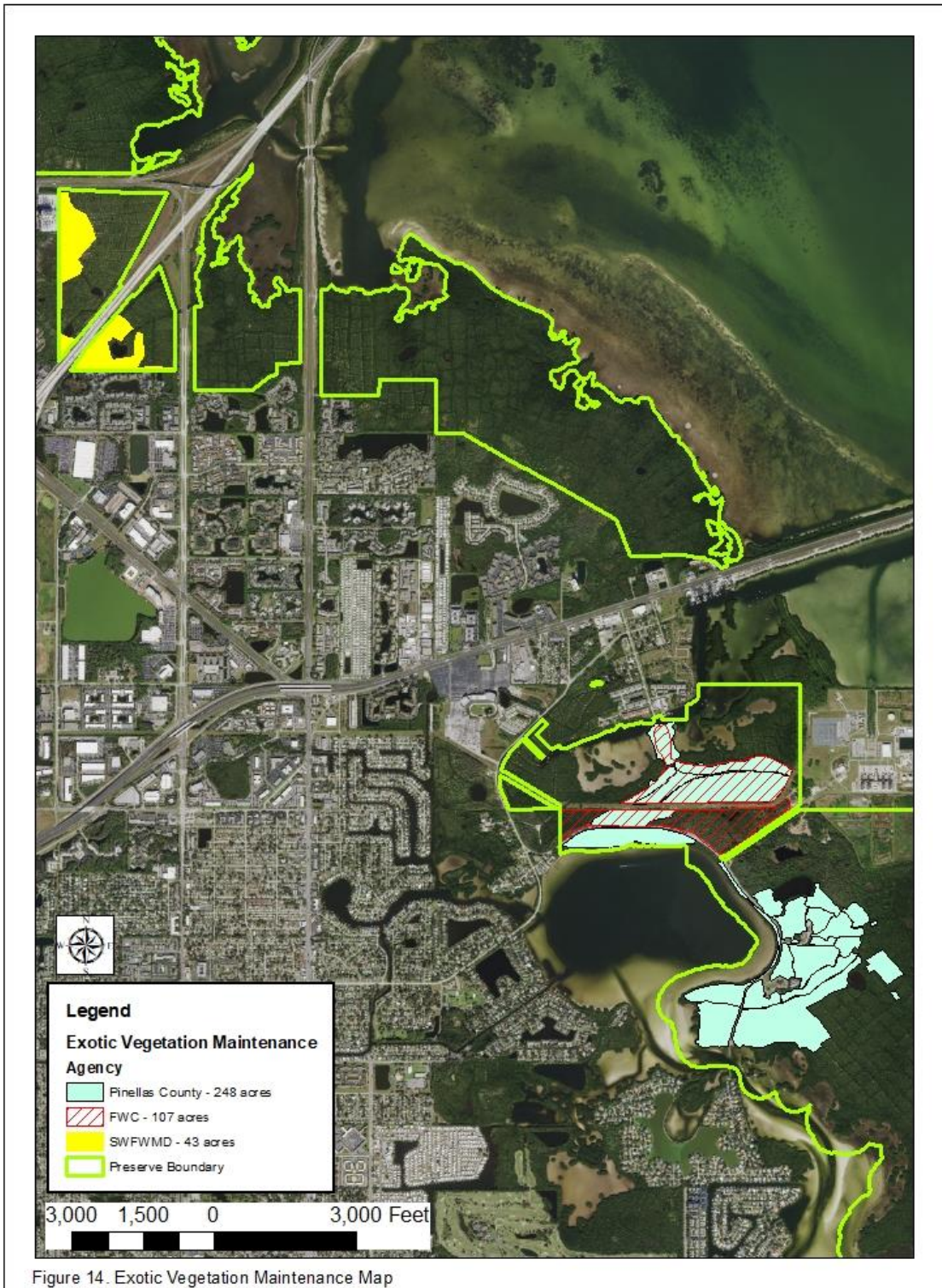
Goal A4: Increase the frequency of burning in the Preserve to restore the natural communities.

Goal A5: Coordinate with the Florida Forest Service Regional Forest Area Supervisor for assistance when necessary.

Unit Name	Unit Acreage	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Unit 1A	5											
Unit 1B	5											
Unit 1C	10											
Unit 1D	5											
Unit 1E	2											
Unit 1F	4											
Unit 1G	7											
Unit 2A	7											
Unit 2B	4											
Unit 2C	14											
Unit 2D	4											
Unit 2E	8											
Unit 3	10											
Unit 4A	15											
Unit 4B	6											
Unit 5A	18											
Unit 5B	14											
Unit 6	20											
Unit 7	11											
Total Acreage	169											

Exotic Vegetation and Nuisance Wildlife Control

Exotic vegetation removal is an important and continuing process at the Preserve. The highest priority is placed on control of FISC, Category I and II species (Appendix 13). Exotic vegetation treatment is conducted by PCR staff and volunteers. Annually, approximately 300 ac. are chemically treated for re-growth of invasive exotic vegetation (Figure 14). Species of highest infestations were Australian-pine, Brazilian pepper, punktree (*Melaleuca quinquenervia*), rosary pea, and lantana.



In 2015, the FWC's Upland Exotic Plant Management Program funded exotic control on 107 ac. in the preserve. Mechanical removal was completed on seven ac. and chemical treatment on the remaining 100 ac. These 107 ac. are now included in the exotic maintenance program.

Since 2017, SWFWMD treats approximately 43 ac. quarterly at two locations on the Preserve (Figure 14). Both SWFWMD locations (highlighted in yellow on the upper left of the map) are Florida Department of Transportation mitigation restoration projects.

Occasionally domestic cats, non-native rabbits (pets), chickens and roosters have been abandoned in the Preserve. Staff coordinates trapping and removal efforts of these abandoned wildlife.

The first reported sighting of tegus in the Preserve was 2019. Staff coordinated trapping and removal of one tegu. In 2019, volunteers also captured and removed a small tegu in the maintenance area. Another sighting was reported in 2021. Trapping efforts were not successful. Staff will continue to monitor the presence of exotic and nuisance animals and will coordinate trapping and removal efforts.

Goal A6: Continue chemical treatment in established exotic control maintenance areas to keep invasive exotic vegetation from re-infestation.

Goal A7: Continue to identify and treat new areas of infestation as observed.

Goal A8: Continue trapping and removal efforts of nuisance wildlife.

Mechanical Thinning

Mechanical thinning, a standard land management technique, reduces fuel loads and ladder fuels found in overgrown natural areas, helping to reduce the risk of catastrophic wildfire. This technique has been used in the past at the Preserve in areas of fire exclusion for fuel reduction and in areas that did not burn effectively, especially in xeric hammocks.

Goal A9: Evaluate and conduct mechanical thinning of natural communities as necessary.

Reestablish Native Species

Restoration projects that have a re-vegetation component will require that only species documented in the Preserve be planted. Native species were planted in the salt marsh areas for the Feather Sound Tidal Restoration Project. Mangrove swamp areas are sufficient seed sources for mangroves, therefore allowing natural recruitment to be used as an alternative to replanting.

Goal A10: Complete restoration projects with reestablishment of vegetation through natural recruitment or by replanting as necessary.

B. NATURAL COMMUNITIES

The Preserve supports seven FNAI natural communities. To allow the public to appreciate these natural areas, the County offers recreational opportunities compatible with the conservation and protection of the natural and cultural resources.

Objective: Minimize impacts to protect and maintain natural communities.

In areas such as xeric hammock, shell mound, scrubby flatwoods, coastal berm and maritime hammock, public access in the natural areas is restricted to trails and boardwalks to protect the natural areas.

Areas such as seagrass, salt marsh, marine unconsolidated substrate and mollusk reef are all open to the public. The County's aquatic use zones within the Preserve's boundary provides protection of these natural communities (Figure 15).

Goal B1: Continue to maintain and minimize impacts to the natural areas by providing public access via boardwalks and trails by protecting established aquatic use zones.

C. IMPERILED SPECIES PROTECTION

Protection and management of imperiled species will follow the guidelines of Florida's Wildlife Legacy Initiative: Florida's State Wildlife Action Plan (Florida Fish and Wildlife Conservation Commission, 2019). Exotic and nuisance wildlife are threats to the native wildlife. Threats include consuming eggs of ground-nesting birds and gopher tortoises and smaller wildlife.

Objective: Minimize impacts to protect those imperiled species utilizing the Weedon Island Preserve.

Gopher Tortoise

The gopher tortoise is listed as a threatened species by FWC. Under state law, both the tortoise and its burrow are protected. Signage has been installed along the trails to educate visitors on this protected species. The gopher tortoise is often a topic in the classroom at the WIPCNHC to both adults and children. The addition of rangers provides on-site protection.

Goal C1: Minimize loss of gopher tortoises through protection and education.

Roseate Spoonbill

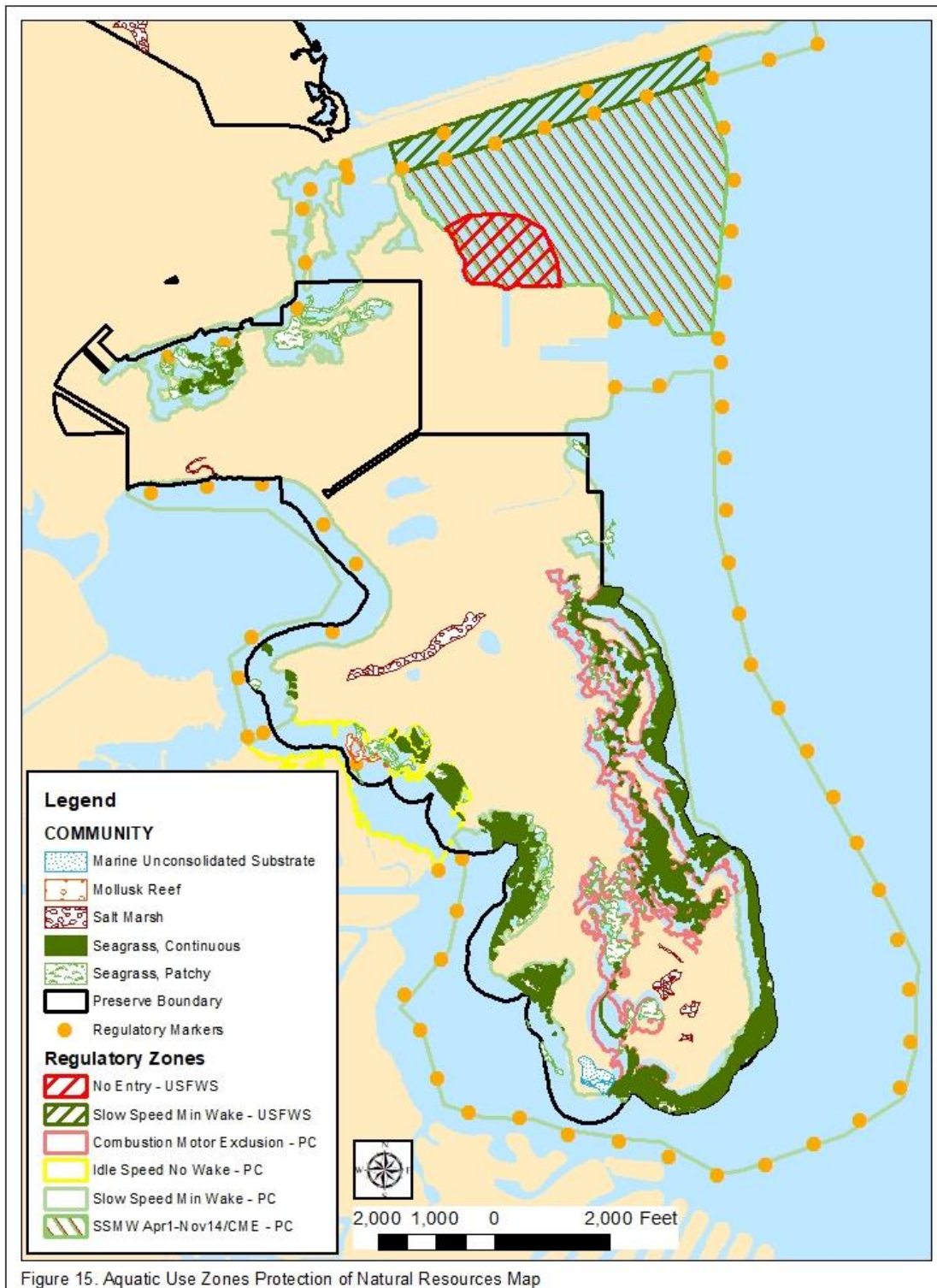
The Roseate Spoonbill (*Platalea ajaja*) is listed as a threatened species by FWC. The spoonbill is frequently seen feeding in the mosquito ditches throughout the Preserve and along the shallow shoreline in the mudflats. There are no known nesting areas in the Preserve.

Goal C2: Continue to provide protection and education regarding the Roseate Spoonbill.

Manatee

Manatees are often seen in the waters of the Preserve. The 214 ac. of seagrasses provide feeding areas in the shallow waters of the Preserve. The slow moving manatees often cannot avoid speeding watercraft. Collisions with vessel hulls or propellers can inflict serious or mortal wounds. While not currently considered an imperiled species, PCR provides manatee protection through the Preserve's aquatic use zones (Figure 15). Boaters are required to use caution and slower speeds in the Preserve. PCR will continue to protect manatees and their habitat through the aquatic use zones.

Goal C3: Annually, minimize impacts to manatees and other aquatic species through posting and enforcement of established aquatic use zones.



Florida Goldenaster

The Florida goldenaster was planted in the Preserve in 2010, as a joint project between Bok Tower Gardens, USFWS, and the County. Management and protection of this endangered species includes exotic species control, prescribed fire and seed dispersal in similar soils and habitat.

The Bok Tower Gardens continues to monitor the area initially planted in 2010. A recent report was provided by Costner and Ward (Appendix 16).

Goal C4: Continue to protect and manage the Florida goldenaster site through exotic vegetation control and prescribed fire.

D. FOREST MANAGEMENT

There is no timbering activity within the Preserve. A timber assessment of the Preserve was completed by the FFS in 2017 (Appendix 17). The assessment concluded “it is not feasible to manage the timber resources through commercial timber harvesting” in the Preserve.

Objective: Utilize forest management techniques, specifically prescribed fire, to maintain natural communities at Weedon Island Preserve.

The timber assessment recommended PCR increase the frequency of prescribed fire in the scrubby flatwoods communities. In addition, in units where prescribed fire did not meet the desired outcome, PCR will mechanically further reduce vegetation in the unit. The combined methods will help facilitate a more complete prescribed fire in the future.

Goal D1: PCR will increase the frequency of prescribed fire in the scrubby flatwoods communities and utilize mechanical reduction where necessary.

E. MONITORING

A number of monitoring programs are conducted in the Preserve, typically completed with County staff, other agencies and volunteers. These monitoring programs provide PCR valuable expertise and resources that PCR staff can't provide. PCR utilizes the data collected to make informed decisions regarding management of the Preserve.

Objective: Conduct surveys and support the work of others to monitor the natural resources of Weedon Island Preserve.

Species Inventories

County staff, FWC, FWRI, consultants, and volunteers have recorded detailed flora and fauna inventories in the Preserve. The most comprehensive inventories were completed between 2002 and 2005. These lists are kept up-to-date as Preserve staff identifies new species (Appendix 12). Currently, there are 289 verified floral species, of which 242 are native to the area, and 395 verified faunal species. Each list clearly indicates species that are imperiled and species that are exotic. Imperiled species, as well as all flora and fauna, are protected in the Preserve under Pinellas County Code of Ordinances Chapter 90.

PCR staff will continue to identify new species as observed and update species lists. Taxon-specific inventories may also be conducted with volunteers and experienced partnering agencies and organizations. If additional resources become available, it would be beneficial to conduct regular biological monitoring surveys; this approach would provide additional insight into patterns of abundance as well as long-term trends regarding the presence/absence of species.

Goal E1: As needed, update lists of species utilizing the Preserve.

Fisheries Independent Monitoring

The FIM program at FWRI has conducted monthly stratified-random sampling in Tampa Bay since 1996. Sampling sites are randomly selected from all areas where a specific gear type can be set. The FIM program uses a multi-gear sampling approach which collects many different species of fish and selected macro-invertebrates and a wide size range of animals. Most of the animals collected by the FIM program have been caught in the 21-m center bag seine (offshore and shoreline sets) samples. These animals tend to be species that attain small maximum sizes (<100 mm) or juvenile stages of larger-sized adult animals. Otter trawls collect animals that are similar in size to those collected by the 21-m seines. The 183-m haul seine tends to collect larger juvenile, subadult, and adult animals than any of the other gear types. In each sample, all fish and recreationally/commercially important invertebrates (including Pink Shrimp, Blue Crabs, Stone Crabs, and scallops) are identified to the lowest practical taxonomic level, enumerated, and a random subsample of each species is measured.

In addition to stratified-random sampling, a grant-funded project was conducted around Weedon Island Preserve during 2007–2014. A 9.1-m seine was used to sample Grassy Creek and some of the associated outflows. All samples were processed following the same standardized protocols used in the FIM stratified-random sampling efforts.

Consistent with the report provided for sampling that occurred in 2000–2010, the study area for this document was defined as all one sq. nautical mi. grids that contained a portion of the Weedon Island Preserve (Figure 16). This summary includes monthly stratified-random sampling data collected during 2012–2020 and data from the Grassy Creek grant funded study collected during 2012–2014.

Five hundred and ninety-nine samples were collected around the Preserve from 2012 to 2020 (Appendix 12). One hundred and twenty-six species and species groups, for which identification to species is not practical (*Brevoortia* spp., small *Eucinostomus* spp., *Menidia* spp., *Oreochromis*/*Sarotherodon* species, etc.), were collected in the study area. Several of these species are of direct recreational and/or commercial importance, including *Callinectes sapidus* (Blue Crabs), *Centropomus undecimalis* (Common Snook), *Cynoscion nebulosus* (Spotted Seatrout), *Farfantepenaeus duorarum* (Pink Shrimp), *Lutjanus griseus* (Gray Snapper), *Mycteroperca microlepis* (Gag), and *Sciaenops ocellatus* (Red Drum).

Weedon Island Preserve Sites 2012-2020

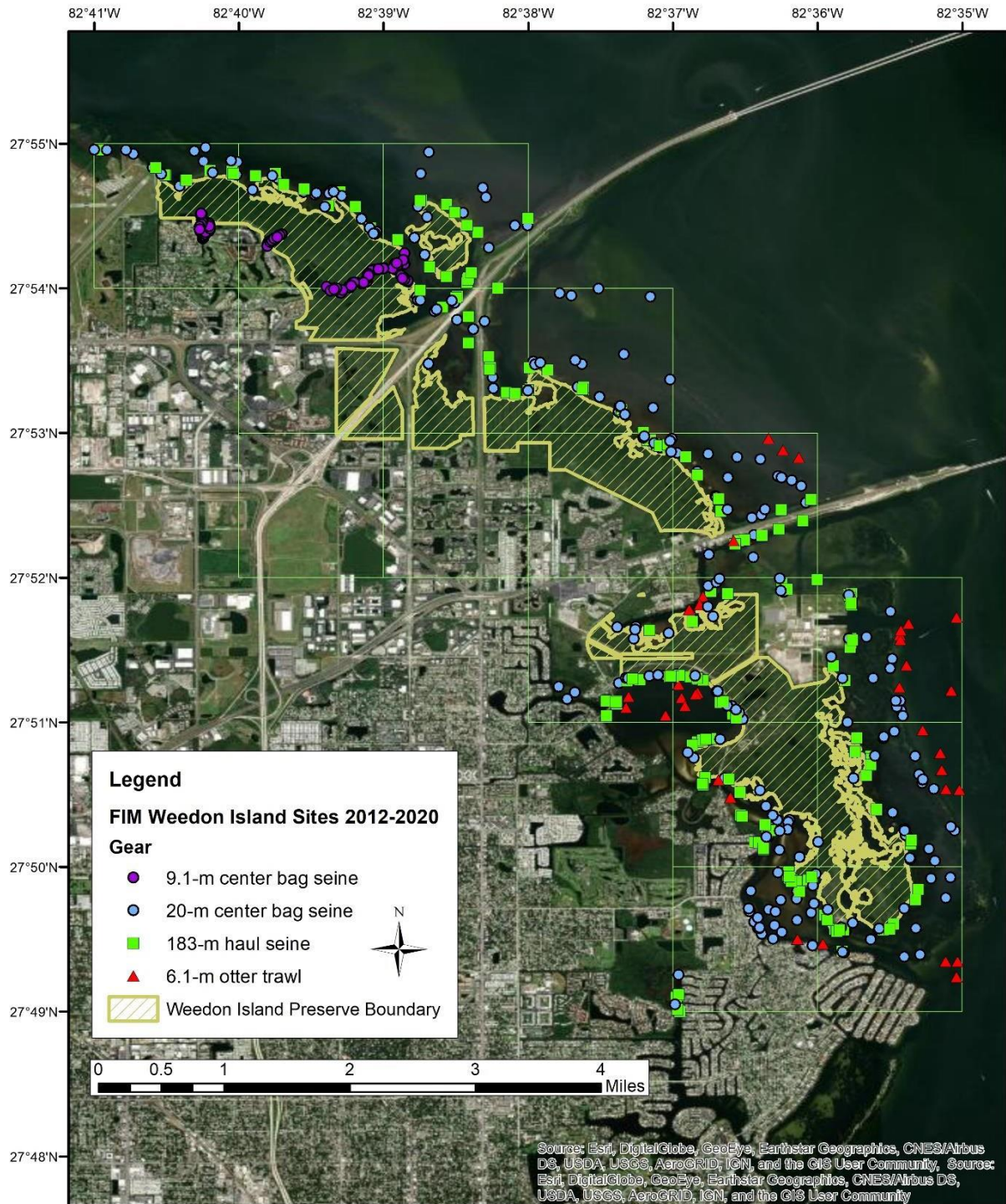


Figure 16. FWRI Fisheries Sampling Sites From 2012-2020.

The most abundant fish species collected were *Anchoa mitchilli* (Bay Anchovy; n = 31,095 individuals), *Lagodon rhomboides* (Pinfish; n = 18,035), and *Lucania parva* (Rainwater Killifish; n = 16,780). Many of the numerically abundant species (e.g., *Anchoa mitchilli*, *Lagodon rhomboides*, and *Lucania parva*) are part of the forage base upon which the recreationally/commercially important species feed. The most abundant species of direct commercial and recreational importance were *Archosargus probatocephalus* (Sheepshead; n = 809), *Elops saurus* (Ladyfish; n = 800), and *Centropomus undecimalis* (Common Snook; n = 796). Twelve species were observed in 2012–2020 that were not encountered in 2000–2012 including, but not limited to: *Lophogobius cyprinoides* (Crested Goby), *Diapterus auratus* (Irish Pompano), *Elacatinus macrodon* (Tiger Goby), *Carcharhinus leucas* (Bull Shark), and *Cichlasoma urophthalmus* (Mayan Cichlid). The most abundant invertebrates collected were *Palaemonetes pugio* (Daggerblade Grass Shrimp; 2,497), *Farfantepenaeus duorarum* (Pink Shrimp; n = 688) and *Palaemonetes intermedius* (Brackish Grass Shrimp; n=405).

Goal E2: Annually support monitoring of fisheries by FWRI fisheries and review data summary report.

Water Quality

Since 2003, the Pinellas County Public Works Division of Environmental Management has collected water quality data in the waters surrounding the Preserve. This includes Riviera Bay and portions of Tampa Bay, as shown in the map below. As part of the monitoring program design, the waters are divided into geographic areas, also known as “sampling strata.” The strata adjacent to the Preserve are RB (Riviera Bay), E3, E4, and E5 (Figure 17). The City of St. Petersburg monitors the waters south of E5.

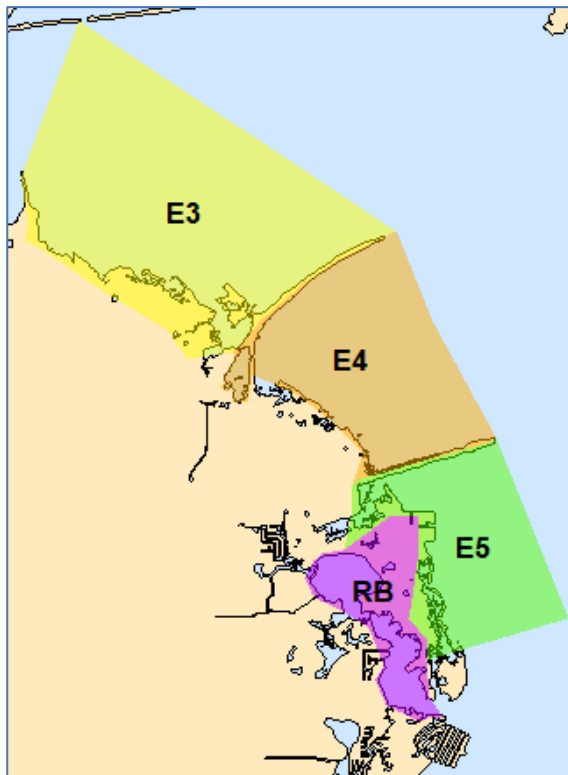


Figure 17. Pinellas County Water Quality Sampling Locations Map.

Sampling occurs eight times per yr., with four dry season (October through early June) sampling periods and four wet season (June through September) sampling periods. Four sites are selected randomly each monitoring period within each of the strata for a total of 32 samples per stratum per yr.

For all sites, *in-situ* physical parameters are measured using Hydrolab or YSI DSS multiprobe units, including temperature, pH, dissolved oxygen, conductivity, salinity, and depth. Surface readings are taken at a depth of 0.2 m from the surface. If the total water column depth is >0.5 m but <1.0 m, data are recorded at the surface and 0.2 m from the bottom. For depths greater than 1.0 m, data are also recorded at mid-depth.

Water samples are collected via bottle immersion (“grabs”) at 0.2 m from the surface and are analyzed by the Pinellas County Utilities Department Laboratory. Parameters assessed include chlorophyll-a, total phosphorus (TP), total nitrogen (TN), nitrate-nitrite, total Kjeldahl nitrogen (TKN), ammonia, orthophosphate (OP), total suspended solids (TSS), transmissivity, and turbidity. A Secchi disk is used to measure water clarity to the nearest tenth of a meter.

The waters adjacent to the Preserve have exhibited improving long-term trends in several water quality parameters, as shown in Table 4. Decreasing TSS, increasing transmissivity, and increasing Secchi readings all indicate improved water clarity. Decreasing TP is a sign of lessening nutrient pollution. Additionally, all of the strata adjacent to Weedon are passing the water quality criteria for TN, TP, dissolved oxygen, and chlorophyll-a set by the DEP.

Goal E3: Annually support monitoring of water quality by Pinellas County’s Department of Public Works Environmental Management Division and review data summary report.

Stratum	TN	TP	DO (%Sat)	Chl-a	TSS	Transmiss.	Secchi	Turbidity
E3	No Trend	No Trend	No Trend	No Trend	Decreasing	Increasing	Increasing	No Trend
E4	No Trend	No Trend	No Trend	No Trend	Decreasing	Increasing	No Trend	No Trend
E5	No Trend	No Trend	No Trend	No Trend	Decreasing	Increasing	Increasing	No Trend
RB	No Trend	Decreasing	No Trend	No Trend	Decreasing	Increasing	No Trend	No Trend

Table 4. Long-term Water Quality Parameter Trends 2003-2019

Seagrasses

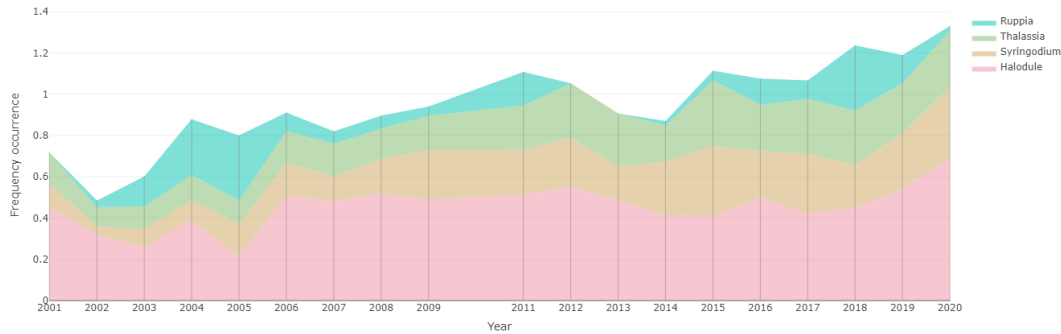
Pinellas County partners with the TBEP and the Environmental Protection Commission of Hillsborough County (EPCHC) to monitor seagrass in the area. Three fixed transects (S1T16, S1T14, and S1T9) adjacent to the Preserve are assessed every year, as shown in Figure 18.



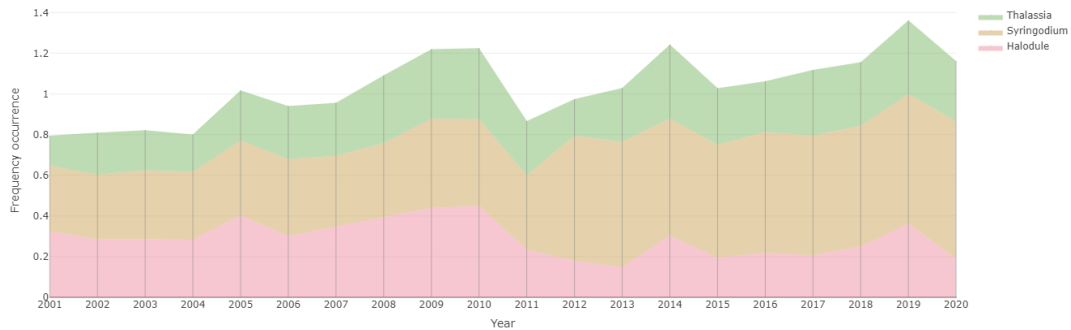
Figure 18. Seagrass Sampling Locations Map

Seagrass has increased in general in Tampa Bay over the past 20 years. The graphs in Figure 19, produced by TBEP and are available online, show the abundances of each species of seagrass observed at each of the three fixed transects adjacent to the Preserve annually since 2001. There have been declines in seagrass at many sites in the most recent two years, and this is seen at two of the three sites shown in Figure 19.

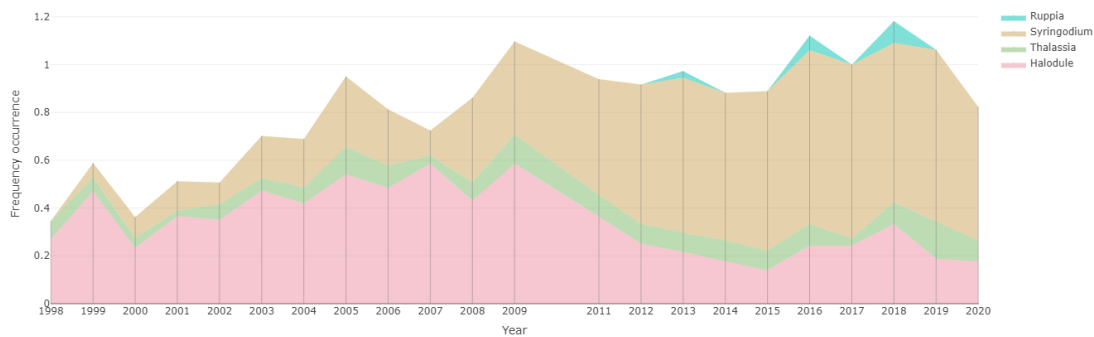
Goal E4: Continue to support continued collection and analyses of seagrass distribution by Pinellas County’s Department of Public Works Environmental Management Division and Tampa Bay agency partners and review data summary report.



Transect S1T16



Transect S1T14



Transect S1T9

Figure 19. Annual Abundance of Seagrass Graphs

F. RESEARCH

Research projects support informed management decisions. Such studies will be encouraged and supported to the fullest extent possible through partnerships with scientists from external agencies and institutions. Research partners provide expertise and resources that allow for detailed investigations beyond the scope of local government. Authorized research projects conducted to date have investigated a wide variety of topics. Given the solid foundation provided by ecological and hydrological studies conducted to date, numerous opportunities exist for future research at the Preserve.

Objective: Coordinate and support scientific studies conducted at the Preserve by researchers from partnering agencies and other institutions, and use information provided to support management decisions.

Site Use Applications

Site use permits (Appendix 18) are required for scientific research and other activities that require access to non-public use areas in the Preserve. Since 2012, 55 research projects have been conducted in partnership with a variety of agencies and institutions to study natural and cultural resources. Opportunities exist for additional research at the Preserve, and basic and applied studies will be encouraged through partnering with scientists from external agencies and institutions.

Goal F1: As needed, review Site Use applications submitted by researchers interested in conducting studies at the Preserve.

G. CULTURAL RESOURCE MANAGEMENT

Since 2012, numerous archaeological surveys and related studies have been conducted at the Preserve. These were coordinated through AWIARE and the Bureau of Archaeological Research, Division of Historical Resources (DHR) when required. A number of surveys were initiated by the University of South Florida (USF), University of Florida (UF) and a number of visiting students from other universities. The Research Station located at the Preserve provides housing for researchers as administered by AWIARE.

Objective: In collaboration with AWIARE, map locations of mound sites and other significant features and integrate this information into existing archaeological databases.

Between 2013 and 2020, seven cultural resource management surveys were conducted in or near the boundaries of the Weedon Island site, 8PII, in compliance with Chapter 267, F.S. These included surveys and monitoring of a proposed natural gas pipeline relocation project and remediation of an environmental cleanup area. The surveys were conducted by a private consulting firm, SEARCH. The consulting firm's proposed scopes of work were reviewed by AWIARE to ensure that no intact cultural resources would be adversely impacted by these projects.

Since 2012 the Preserve has been the focus of a long-term, multi-institutional research program conducted through the auspices of AWIARE, a non-profit organization that facilitates research at the Preserve and provides assistance to the County in managing its cultural resources. This

program has included on-going field schools and research by USF, excavation by the University of Michigan, and research by AWIARE.

Most research projects are being conducted on property owned by Duke Energy and managed by the County. Projects that include state-owned land and those required to comply with Chapter 267, FS have been coordinated with the DHR when required. Archaeological Research (1A-32) permits were issued for graduate student research on the Weedon Island site (8PI1) and Ross Island (8PI56, 8PI11491). Funding for research has come from various sources, including a grants program for graduate students administered by AWIARE and underwritten by the Levett Foundation and FOWI.

Archaeological research at the Preserve has focused on better defining the physical layout of the Weedon Island site, developing a radiocarbon chronology for the site, and intensively investigating domestic areas. Associated research on the paleoenvironment of Tampa Bay also is underway to provide baseline data for studying climate change and sea-level rise. These data provide an environmental context for Indigenous cultural development on the Preserve as well as baseline data for understanding and potentially mitigating adverse effects on sites due to coastal erosion and storm surge events.

A number of the cultural resource management and research projects have been conducted on the Preserve between 2012 and 2022. Artifacts resulting from these projects, excepting those recovered from state land, are curated at the AWIARE Research Station at the Preserve. AWIARE has an Emergency Hurricane Preparedness Plan that outlines the steps that will be taken to protect the documents, equipment and cultural resource collections stored at the Research Station (Appendix 11).

In 2018, AWIARE representatives were included as members of a stakeholder's committee to review the Weedon Island Tidal Restoration feasibility study. Comments regarding potential impacts to cultural resources and recommendations for avoiding such impacts were incorporated into the final document.

In October 2019 and January 2020, PCSO investigated reported looting on an archaeological site located within the the Preserve (8PI1700, Feather Sound Mound). AWIARE assisted the PCSO when a drone flight was conducted in October and accompanied deputies on a field visit in January. No evidence of recent looting was observed.

The prehistoric dugout canoe excavated in 2011 from intertidal waters in the northern portion of the Preserve completed its conservation process in 2015 and was put on display at the WIPCNHC in October of that year. The exhibit featuring the canoe describes the recovery process, its age and cultural associations, and the importance of canoe travel for coastal Indigenous people. The \$70,000 exhibit was funded by grants from FOWI, the Florida Endowment for the Humanities, the Hough Family Foundation, and individual donations.

Other educational programs highlighting the Preserve's cultural resources include an Archaeology Lecture Series, volunteer opportunities at the AWIARE Research Station, Junior and Adult Archaeology Camps, and site tours. The programs are co-sponsored by AWIARE and

its partners, the Central Gulf Coast Archaeological Society and the Florida Public Archaeology Network (FPAN).

Goal G1: Continue to support educational programs that promote the important cultural resources throughout the Preserve.

Opportunities for research at the Preserve and the greater Tampa Bay region by AWIARE and outside professional groups and universities will continue. AWIARE also will continue to assist the County in reviewing and providing professional input on any federal, state, or county mandated projects conducted on the Preserve. All permitting will be handled through PCR and in coordination with DHR.

Goal G2: Continue to support research opportunities that identify and protect archaeological sites at the Preserve.

The Florida Master Site File (Appendix 19) lists the number of cultural resource locations in the the Preserve. Projects AWIARE is interested in pursuing include updating the National Register of Historic Places listing for the Weedon Island site (8PI1) to incorporate areas outside of the arbitrary boundary established in 1972; continuing to conduct and document, in coordination with Pinellas County, a yearly program of site monitoring, continuing to support and fund long-term research at sites on the Preserve, and continuing to educate the public about the Preserve's unique history.

Goal G3: Maintain strong partnerships with AWIARE and other agencies and organizations to provide sound stewardship of cultural resources.

H. SECURITY

The Preserve is protected by a multi-faceted security program. First, land access to the Preserve is possible only by one road, which is equipped with a gate. Cameras located at the gated entrance near the power plant are monitored by Duke Energy. Duke Energy has the ability to grant or deny access through remote control. This arrangement effectively restricts public use of the Preserve to regular hours of operation.

A second level of security is accomplished through a contract with the PCSO to provide deputies assigned specifically to the County's environmental lands to enforce ordinances and laws. The contract provides two deputies to patrol the preserve both by land and water. This contract is renewed annually and is funded through part of PCR's annual operating budget.

A third level of security is proved by the PCR South District program. Until August 2021, a ranger, not stationed all day at the Preserve, patrolled the Preserve a minimum of once per day to provide safety and security of the trails, boardwalks, and facilities. The addition of rangers onsite daily since September 2021 provided enhanced security of the natural and cultural resources. PCR is expected to add two more rangers in 2023 to provide full time coverage of the Preserve. Rangers can provide assistance to visitors as needed and ensure compliance of Preserve rules and ordinances.

Objective: Enforce rules and regulations as detailed in Pinellas County Code of Ordinances Chapter 90 to protect the natural and cultural resources supported by the Preserve.

All structures, office and research station, are equipped with smoke detectors and 10-lb. ABC type fire extinguishers. The facilities are inspected annually by the Pinellas County Fire Marshall and any deficiencies are corrected. Vehicles with keyed ignition systems are locked and the keys secured inside the maintenance shop building.

Fencing and signage also serve a vital role in resource protection. The landward portions of the Preserve are fenced and posted to enforce trespassing laws and to protect against illegal activities such as dumping and looting. The waterward extent of the southern portion of the Preserve is posted with signage that identifies regulatory zones for boaters (Figure 20). This was done to protect valuable seagrass beds and other aquatic natural resources.

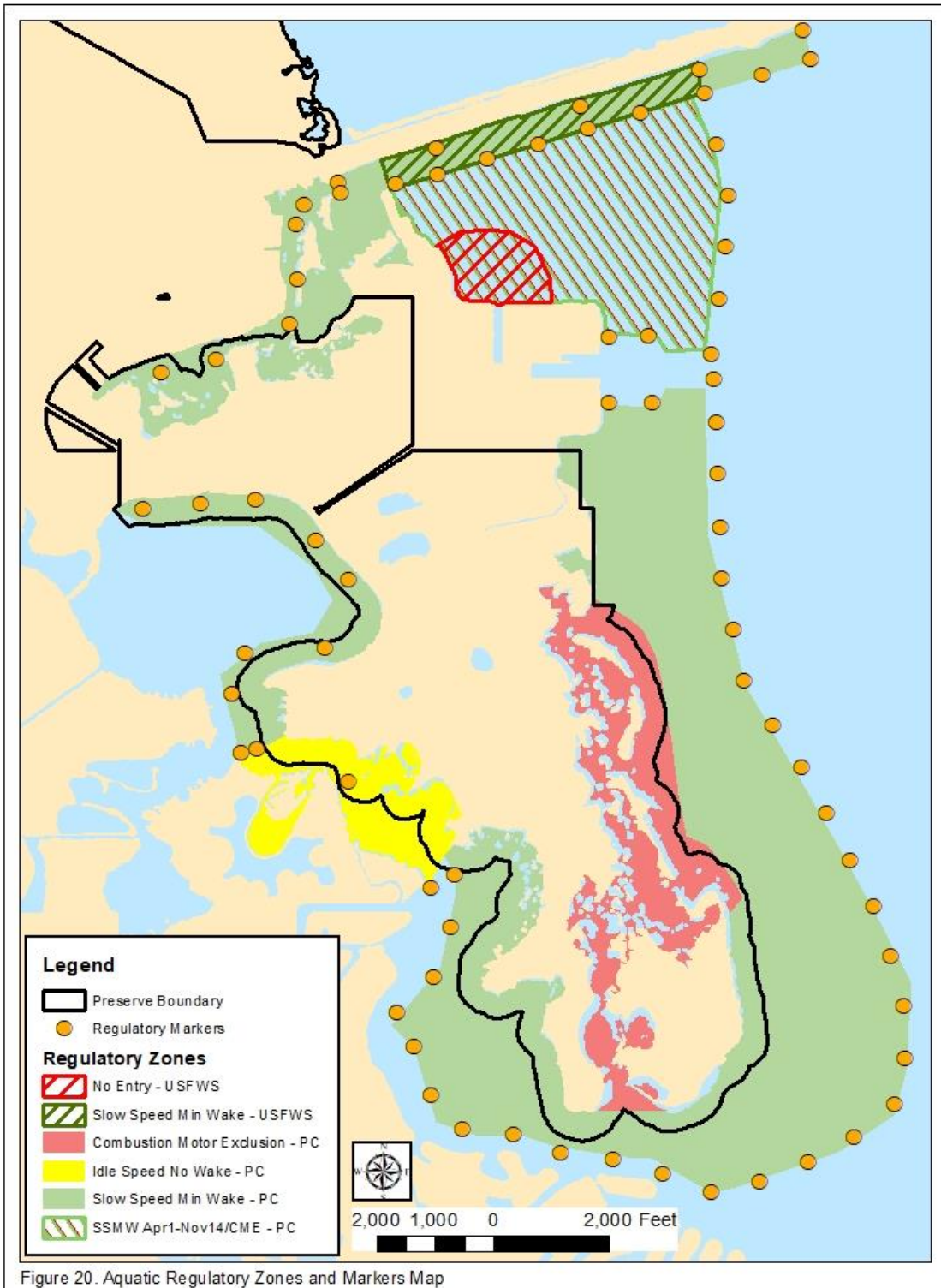
The north part of the Preserve has approximately three mi. of fencing maintained by the Florida Department of Transportation along Interstate 275, Ulmerton Road, and Dr. Martin Luther King Jr. Street North.

PCR will continue to provide for security of the Preserve. Rangers will patrol the Preserve to provide safety and security of the trails, boardwalks, and facilities. Rangers will also provide assistance to visitors as needed. Volunteers will continue to provide assistance to staff by reporting safety and security concerns.

PCSO will continue to be contracted, as funding allows, to provide security in the Preserve and to enforce rules, ordinances, and laws. This will include enforcement of the existing regulatory zones (Figure 20) to protect the seagrass beds and other aquatic resources. PCSO will continue to notify PCR staff of missing or damaged signs. Inspection of the signs will continue approximately twice a year by PCR staff. Replacement of damaged or missing signs will continue to be completed by Pinellas County Department of Public Works Water and Navigation.

Goal H1: As funding allows, increase the number of patrols completed by rangers to provide coverage from opening to closing of the Preserve seven days per week.

Goal H2: As funding allows, contract PCSO for law enforcement officers dedicated to patrolling Weedon Island Preserve and other environmental lands.



SECTION 4. PUBLIC RECREATION

The Preserve is located along the eastern shoreline in central Pinellas County and has become a popular destination for ecological, cultural and recreational users from both Pinellas and Hillsborough Counties. Conservation strategies for long-term balance between human and nonhuman needs are necessary for sustainability of the ecological, cultural and recreational resources.

Because the Preserve is relatively undeveloped, it retains a high scenic and recreational value as well as ecological and cultural significance. Resource-based recreational activities at the Preserve are compatible with the conservation and protection of the natural and cultural resources of the Preserve. No alternative or multiple uses of the property were considered for this Plan.

A. PUBLIC ACCESS

Public access into the Preserve is through the one entrance road, Weedon Drive NE, and from the waters surrounding the island. Public access from the water is typically at the canoe launch and fishing pier.

The only paved roads at the Preserve are Weedon Drive NE, which enters the Preserve and terminates at the pier, the maintenance area access road, which terminates at the maintenance shop and the road to the WIPCNHC. Speed limits are posted and enforced to protect wildlife and visitors.

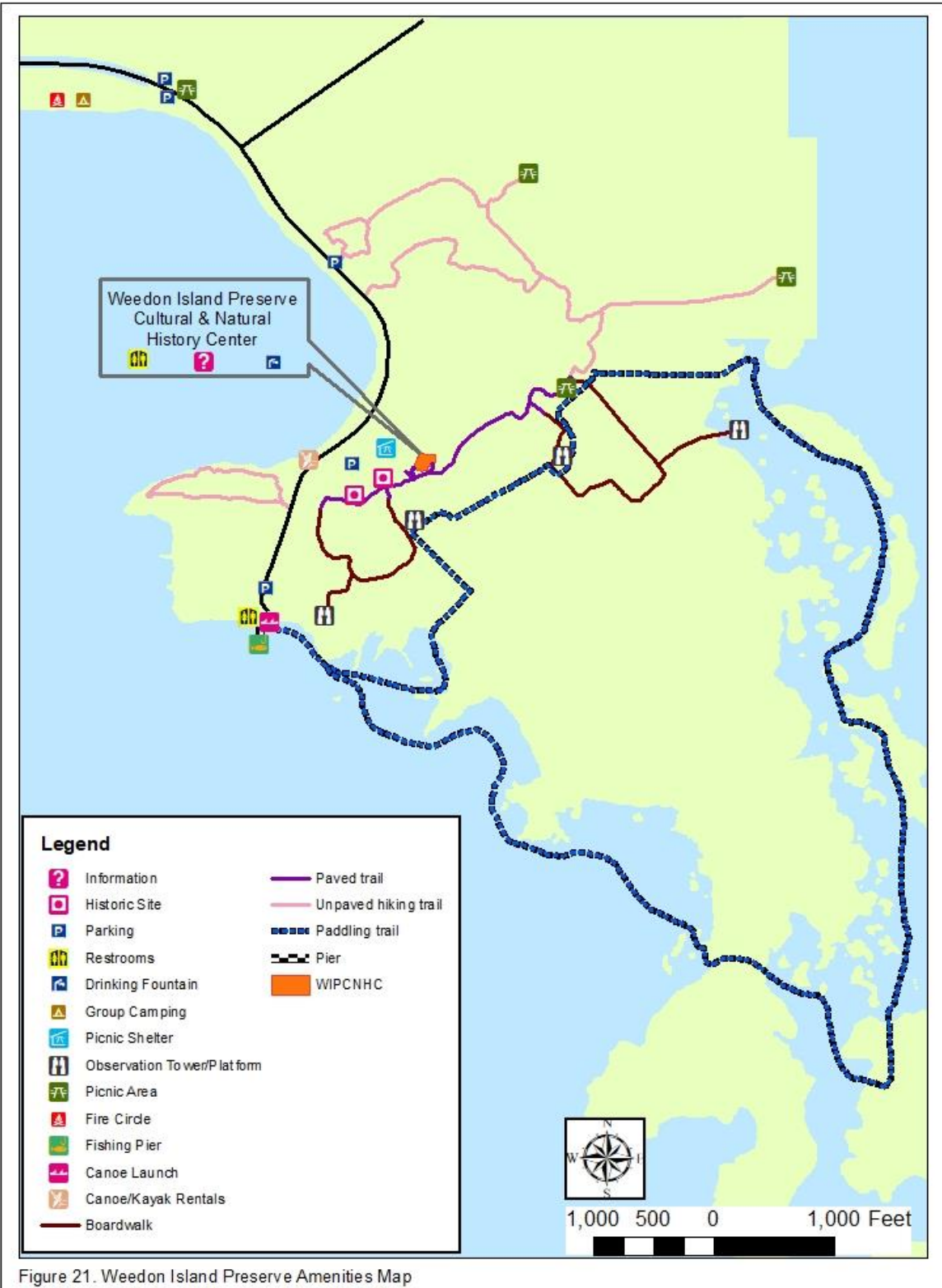
The northern portion of the Preserve has no paved roads or designated public access. While it is not designated public access, the waters along the shoreline are often used by boaters in Tampa Bay.

The Preserve hours of operation are 7:00 a.m. to the time posted at the entrance, typically 15 min. before sunset. The Preserve is open 363 days per year and closed to the public the day after Thanksgiving and on December 25th. There are currently no fees collected for accessing the Preserve.

Objective: Provide 363 days of public access for resource-based outdoor recreation which is compatible with the conservation and protection of the natural and cultural resources.

Public Recreation Infrastructure

The Preserve is managed for the conservation and protection of natural and historical resources and for resource-based public outdoor recreation which is compatible with the conservation and protection of the Preserve. There are boardwalks, hiking trails, a canoe trail, an observation tower and a fishing pier in the Preserve which provide for hiking, nature viewing, and fishing opportunities (Figure 21). New directional trail signs, funded by FOWI, will be installed on the hiking trails by April 2022. To protect the natural and cultural resources and for visitor safety, all off-trail activity is prohibited unless authorized by PCR.



All vehicles (except baby carriages and wheelchairs) are prohibited on all trails. Vehicles, including bicycles, are restricted to Weedon Island Drive NE and the parking lot of the WIPCNHC. Bicycle racks are located at the trailheads with appropriate signage. To protect the natural resources and for visitor safety, some of the general rules for the Preserve prohibit the following:

- dogs and other pets
- alcoholic beverages
- fireworks
- release of any wildlife or domesticated animals

To minimize impacts to the Preserve, some parts of the trails also function as firebreaks. All trails are subject to closure due to wildfires, prescribed burns, downed trees, and routine and emergency maintenance. Individual trail brochures, fliers and/or signs contain pertinent information, including rules, for each of the recreational areas.

Boardwalk and Tower

A 2-mi. handicap-accessible boardwalk meanders through the mosquito-ditched mangrove swamp (Figure 21). There are three observation decks on the boardwalk, two of which overlook tidal ponds and the other the tidal flats in Tampa Bay. A 45-ft. observation tower, also overlooking Tampa Bay, provides visitors a panoramic view of Tampa Bay, St. Petersburg and Tampa areas.

Along the boardwalks and trails are 20 interpretive educational signs. The signs illustrate how various components of an ecosystem are interrelated and detail the importance of many of the natural resources.

Hiking Trails

The Preserve supports multiple hiking trails (Figure 21). Boy Scout Loop was developed with the assistance a local Boy Scouts of America troop. This 1-mi. unpaved trail loops through scrubby flatwoods, mosquito-ditched mangrove swamps and maritime and xeric hammocks.

Another 1.7-mi. of trails is accessible from the main loop or from the WIPCNHC parking lot. Three picnic areas are located throughout the trails.

A 0.5-mi. trail provides access to the shoreline of Riviera Bay. This trail demonstrates the cultural and natural significance of the Preserve, and transverses an ecologically diverse area. It also passes a shell mound located on the point with visible shell scatter. Also, on the mound top are four concrete mixed shell pilings from a 1940's airplane tracking tower. These cultural artifacts create the opportunity to convey information to visitors about early inhabitants.

Paddling Trail

The canoe trail is a 4-mi. loop that starts at the pier canoe launch. Thirty-six numbered markers are strategically located along the trail to help paddlers orient themselves (Figure 22). This trail

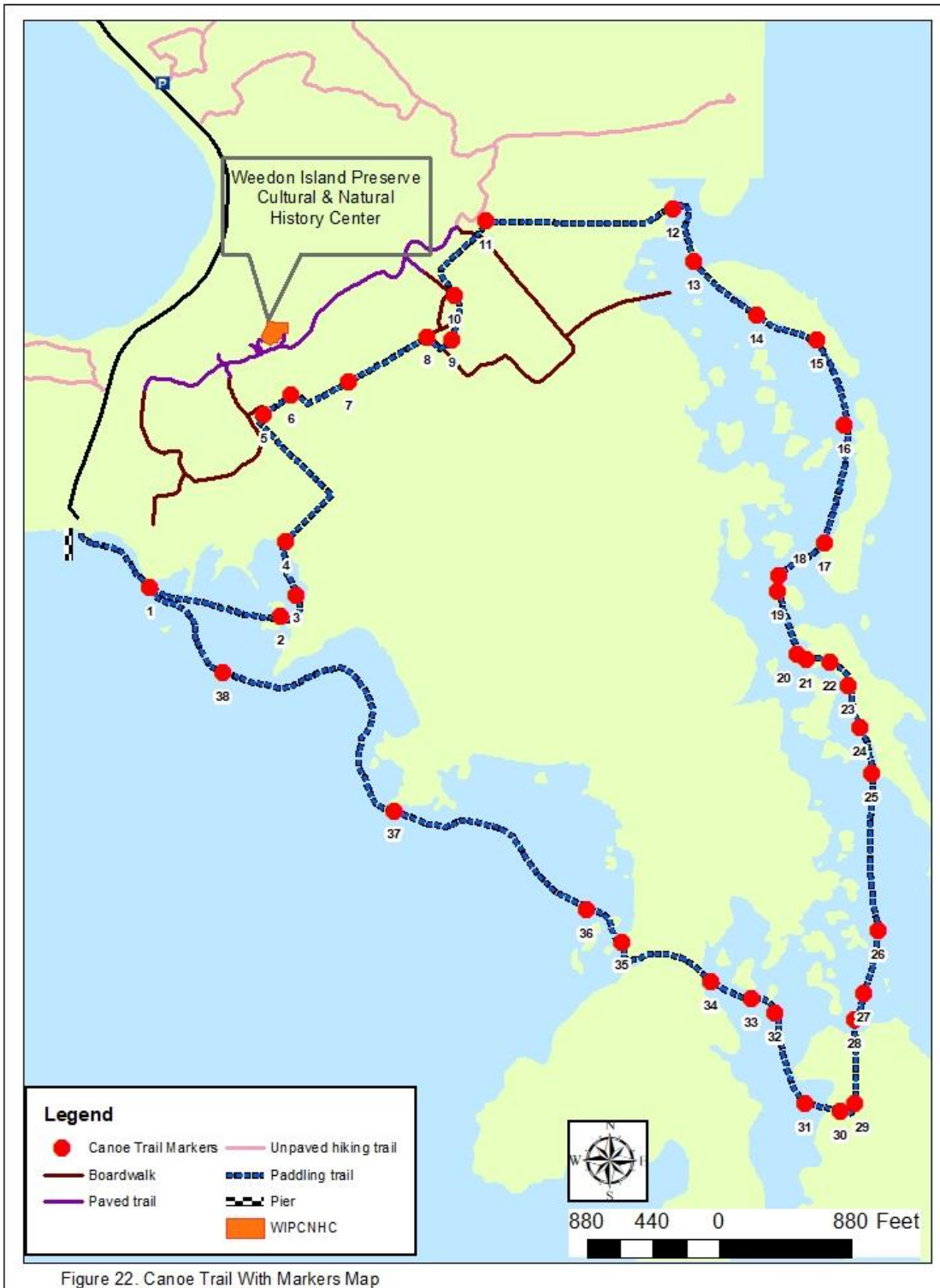


Figure 22. Canoe Trail With Markers Map

is best accessed at mid to high tide, and meanders through the mosquito ditches, small mangrove islands, and along the edge of Tampa Bay.

Rentals

PCR has a contract vendor that provides rental of canoes and kayaks (Appendix 20). Sweetwater Kayak Outfitters, Inc. was the vendor from 2006 through 2021. EComersion, has been the contracted vendor s started in January 2022. With limited space at the canoe/kayak launch, a reserved launch site is provided to the vendor during established Preserve hours.

The vendor is open 363 day per year from 9:00 a.m. to 5:00 p.m. (last rental at 3:30 p.m.) weather permitting. Visitors can rent kayaks, canoes, or paddle boards and paddle the canoe trail (Figure 22) though the mangrove tunnels.

Fishing Pier and Canoe Launch

A 220-ft. pier, located at the southern end of Weedon Island Drive NE, provides a platform for saltwater fishing at the Preserve. In 2021, the decking of the pier was replaced. Also provided at this location is a restroom facility, parking spaces, and a canoe washing station.

Located adjacent to the fishing pier is a canoe/kayak launch and floating dock. The paddling trail and other destinations are accessible from this launch site. The floating dock provides short-term dockage for small boats.

Camping

Limited group camping is available along the shoreline of Riviera Bay and west of Weedon Drive on County-owned property in the Preserve (Figure 21). Groups are required to complete a service project to obtain permission to use this primitive camp site. A fire circle has been installed for the convenience and safety of campers.

Parking

Parking is permitted only in designated spaces. There are 15 parking spaces (1 handicapped) along the road that leads to the canoe launch and pier. WIPCNHC has 105 (6 handicapped) parking spaces. There are seven spaces at picnic area #1 and 4 spaces at the trailhead for the Boy Scout Trail. An additional nine spaces are at the maintenance area. All parking spaces are paved.

Goal A1: Patrol the Preserve from 7:00 a.m. to the posted closing time for visitor services.

Goal A2: Continue to offer kayak, canoe and paddle board rentals through a contracted vendor.

Goal A3: Investigate the feasibility of upgrading the floating dock to meet American Disabilities Act (ADA) requirements.

Maintenance

Maintenance of the trails, boardwalks and public use areas is the responsibility of PCR staff. The PCR South Horticulture Operations is responsible for maintaining mowed areas and firebreaks in the Preserve. Volunteers support maintenance of trails and boardwalks by trimming overgrown vegetation.

From 2012 to August 2021, off-site rangers patrolled the Preserve a minimum of once per day and provided daily garbage removal and cleaning of the restroom facilities and picnic shelter. Since August 2021, at least one ranger has been seen onsite for 10 hours per day to provide these services. Visitors can report maintenance issues directly to staff, through the County’s “SeeClickFix” program, Live Chat, and Parks Public Email. Maintenance needed to infrastructure is reported to PCR South Trades by volunteers and staff. The South Trades crew completes repairs of the boardwalks, fishing pier, restroom facilities and picnic shelter.

The Facility Operations Division of the County’s Department of Administrative Services is responsible for maintenance of WIPCNHC.

Goal A4: Conduct routine inspections of boardwalks, hiking trails, observation tower, and fishing pier daily.

Goal A5: Conduct inspections of the Paddling Trail each month.

Carrying Capacity

Carrying capacity of the Preserve is determined by the number of available parking spaces. Visitation numbers for the Preserve are derived from a car counter located on the inbound lane east of the emergency gate on Weedon Drive NE. PCR visitation is estimated separately for weekdays (number of cars x 2.5 people/car) and for weekends and Holidays (number of cars x 3.0 people/car). These estimates do not account for the number of bicyclists entering the Preserve. While the WIPCNHC was closed due to COVID-19 from March 19, 2020 until June, 2021, the Preserve remained opened. The Preserve experienced an increase in visitation of 35% during the pandemic. Visitation into the Preserve is presented in Table 5.

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
239,211	247,895	261,138	285,481	270,228	252,358	217,697	457,963	620,901	861,841

Over the past 10 years, the Preserve has become a popular destination for hiking and quiet water access. The number of vehicles at the Preserve exceeds the number of parking spaces available on most weekends and holidays. This has led to vehicles parking in the grass throughout the Preserve, despite numerous “No Parking” signs and attempts to block access to the grass.

Until August 2021, rangers patrolled the Preserve once per day. Tickets were issued to vehicles found parked in non-designated parking areas. PCR hopes to alleviate this parking problem with enhanced enforcement of the established parking rule covered in Pinellas County Code of Ordinances Chapter 90. Internal discussions to accommodate all users and not exceed parking and carrying capacity will continue.

Goal A6: Continue to provide 363 days of public access from 7:00 a.m. to posted closing time.

Goal A7: Enforce the carrying capacity of the Preserve to protect the natural and cultural resources.

SECTION 5. OUTREACH AND EDUCATION

A. WEEDON ISLAND PRESERVE CULTURAL AND NATURAL HISTORY CENTER

The WIPCNHC, located at 1800 Weedon Dr. NE, Saint Petersburg, FL, opened in December 2002. The purpose of WIPCNHC is to increase the public's appreciation of the value of Pinellas County environmental lands, and cultural and natural resources in general. Through exhibits, educational programs, and guided hikes, visitors can experience, discover, and better understand the connections between people and the land. The three-story WIPCNHC was designed with the help of the Seminole Tribe of Florida. With their input, the orientation of the WIPCNHC was constructed along the cardinal points of the compass (north, south, east, and west) with the entrance facing east. The WIPCNHC houses office space for staff, an auditorium with seating capacity of 106, a well- equipped classroom with seating for 30, and a large exhibit gallery. The exhibits in the WIPCNHC are scheduled to be updated in 2022 and 2023. The cost is expected to be \$1M, funded by the County's CIP. The WIPCNHC is open to the public Thursday, Friday and Saturday from 9:00 a.m. until 4:00 p.m. and Sunday from 11:00 a.m. until 4:00 p.m. and closed on all County recognized holidays.

Objective: Provide education and outreach programs describing the cultural and natural resources of coastal ecosystems and the benefits of preserving and enhancing these cultural and natural resources.

Management of WIPCNHC is supported through the UF/ IFAS Extension, Pinellas County Extension Department, which is a partnership between Pinellas County and the University of Florida. Staffing for the WIPCNHC consists of one 0.5 fulltime equivalent (FTE) Extension Specialist and two 0.5 FTE Education Support Specialists. One (FTE) UF/IFAS Extension Pinellas County Faculty also maintains an office at the WIPCNHC and provides educational activities and coastal and marine specific subject matter expertise. Staff manage volunteers, coordinate educational programs and activities, and build and maintain community partnerships.

Additionally, a partnership has been established with the FWC statewide Florida Youth Conservation Centers Network program (FYCCN; Appendix 21). FYCCN is designed to encourage and empower children to participate in traditional outdoor recreation. The FYCCN contract has expired and is in process of being renewed. The previous contract enabled FYCCN to utilize ed center property to host educational outdoor programs. Sensing Nature was the partner that did the actual programs. Programs are ongoing while the new contract, which will provide additional criteria and guidelines on how the relationship works, is being developed currently.

The FPAN is a state agency whose mission is to promote and facilitate the conservation, study and public understanding of Florida's archaeological heritage through regional centers throughout the state. The West Central Region is located in Tampa, hosted by the USF and serves Desoto, Hardee, Highlands, Hillsborough, Manatee, Pasco, Pinellas, Polk and Sarasota counties. In 2012, FPAN West Central Region entered a partnership with Pinellas County to open a satellite office at WIPCNHC (Appendix 22). FPAN, along with AWIARE, serve as the Archaeology "arm" of the Weedon Island Partnership Team. They provide monthly public archaeological seminars and workshops for the public at the WIPCNHC auditorium and

classroom. FPAN also has been consulted on archaeological matters such as the canoe excavation, preservation and construction of the display.

WIPCNHC exhibit hall and additional displays help visitors understand natural Florida, the cultural history of the Preserve, and how people and the environment shaped each other over time. The exhibit gallery, "Weedon Island Preserve: Connecting People and Place," with 6,000 sq. ft. of interactive exhibits, appeals to all ages. The interactive exhibits highlight many aspects of the history, ecology, and archaeology of the Preserve. Visitors are invited to explore the exhibits, which allow opportunities to travel underwater, through mangrove swamps, and even back in time. The gallery is free and open to the public Thursday, Friday, and Saturday from 9:00 a.m. until 4:00 p.m. and Sunday from 11:00 a.m. until 4:00 p.m. WIPCNHC visitation from 2012 through 2021 (Table 6) includes visitors viewing the exhibit hall and attending programs and events.

Table 6. WIPCNHC Visitation October 2012 – September 2021. The WIPNHC was open 3 days per week in 2012 through 2013, and 4 days per week in 2017 – 2021. WIPNHC was closed from March 19, 2020 until June, 2021 due to COVID-19.									
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
18806	17939	18409	16711	19762	18759	20176	22649	14998	4526

Programming offered at the WIPCNHC include events, educational workshops for families, guided, hikes and canoe trips, book times for preschoolers, summer camps, and general public presentations on topics such as ecology, sustainability, history, art, archaeology, and Native American culture.

The UF/IFAS Extension Pinellas County Sea Grant Agent hosts the “Going Coastal” program for families and interested public on topics such as manatees, sea turtles, sharks, marine debris, coral reefs, mangrove ecology. The “Salty Topics” program is a marine-research series bringing local scientists and researchers in front of an interested adult audience. The agent also coordinates with the Land Manager to plan volunteer environmental restoration projects and coastal clean-ups on the Preserve. Coastal clean-up programs teach people about marine debris and associated issues such as microplastics. Environmental restoration projects remove invasive tree species such as Brazilian pepper and Australian pine from mangrove forests and adjacent islands.

Special programs are held for targeted audiences such as teachers, home school educators, youth groups, government decision-makers, business professionals, and area neighborhood residents. Private and public pre-school and elementary school groups regularly visit the exhibit gallery and Preserve trails.

Partnerships and expanded support through FOWI, AWIARE, FPAN, and FYCCN have increased educational opportunities, supported school field trips and increased volunteer participation. Developing impactful and informative educational programs that support local issues tied to preservation of natural and cultural resources will continue to be a focus in future years for the WIPCNHC.

In early 2020, Pinellas County decided for the safety of the public and staff the WIPCNHC would be closed to the public due to the COVID-19 pandemic. This included the suspension of all in-person educational programs and events. This closure began in March 2020 and ended in June 2021. Although in-person educational programs were not permitted, staff amended their approach and began virtual programming, utilizing Zoom, Microsoft Teams and other digital media to provide environmental and archeological education to the public. Staff utilized software and purchased camera equipment to develop, produce and post educational films, used social media to provide information on timely topics and embraced an overall transition to digital media to continue the mission of the WIPCNHC. In June of 2021, the WIPCNHC was reopened to the public. Guided tours have recommenced along with limited (small class sizes) in-person educational programs. Virtual programming and social media will continue in an effort to meet the demands of the public. Table 7 shows the numbers of programs and participants each year from 2012 through 2021.

Table 7. WIPCNHC Programs and Participants October 2012 – September 2021.										
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Programs	60	126	158	231	195	207	204	141	133	116
Participants	2644	4455	4048	5184	5871	5492	5114	4620	4254	3401

As resources allow, PCR will continue to provide access to WIPCNHC during established hours of operation from 9:00 a.m. to 4:00 p.m. and one day per week from 11:00 a.m. to 4:00 p.m. Access for additional days will be provided if additional resources can be secured.

PCR will continue to provide for public understanding and appreciation of natural and cultural resources through exhibits, educational programs, and interpretive hikes. Monthly programs related to ecology, sustainability, history, art, archaeology, Native American culture, and other relevant topics will be provided. Additional programs and events will be provided in collaboration with FOWI, AWIARE, FPAN, FYCCN, and other partners.

Goal A1: Continue to provide outreach and educational programs addressing the cultural and natural resources of the Preserve.

Goal A2: Continue to provide programs through virtual programming and social media to expand audience within and outside of Pinellas County.

Goal A3: Continue to evaluate funding opportunities to increase the staffing and hours of operation of the WIPCNHC.

B. WEEDON ISLAND PRESERVE VISITOR GUIDE

The *Weedon Island Preserve Visitor Guide* is a brochure that is distributed to visitors via the WIPCNHC, PCR Administration office, and the Pinellas County Clearwater Courthouse Information Desk (Appendix 23). The brochure provides information about the rules of the Preserve, information about the cultural and natural resources, the WIPCNHC, and pertinent contact information. It also provides a map showing all trails, recreational amenities and historic sites throughout the Preserve.

PCR will continue to print the *Weedon Island Preserve Visitor Guide* as resources allow. The brochure will be made available online and for distribution to visitors.

Goal B1: As needed, update Weedon Island Preserve brochure and make available online; as resources allow, provide hardcopy brochures for distribution to visitors at County offices.

SECTION 6. BUDGET

Funding support for management of the Preserve is provided through PCR’s general operating budget. Restoration efforts are provided through the County’s CIP funds and grants. Facility improvements are provided through the County’s CIP funds.

A. FUNDING SOURCES

The PCR operating budget covers salaries and all equipment for prescribed burning, exotic vegetation management, education, safety and security, and maintenance to existing facilities including recreational facilities and trails. PCR receives herbicides upon request from the FWC Upland Invasive Plant Management Program Herbicide Bank to help facilitate exotic vegetation management.

Restoration projects are funded through the County’s CIP funds (Penny for Pinellas) and grants (e.g., SWFWMD and TBEP). Tree Bank Fund, a special fund that receives revenue from assessed environmental penalties, is also used to help fund restoration projects.

B. REVENUE SOURCES

Sweetwater Kayaks, a contract vendor, has generated revenue for canoe and kayak rentals in the Preserve from 2006 through 2021. The money generated from canoe and kayak rentals goes into the County general operating fund and is not used directly to facilitate the restoration or management of these lands. The canoe and kayak rental revenue is presented in Table 8. ECOMersion has been the contracted vendor since 2022, with revenue estimated to be \$60,000 per year through 2031.

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
\$26,410	\$30,623	\$46,925	\$59,546	\$65,533	\$60,806	\$10,844	\$59,557	\$85,544	\$132,924

C. ANNUAL BUDGET

This budget represents an estimate of staff time, administrative costs, equipment costs, and general operating costs. Though not currently budgeted, additional CIP funds will be requested for restoration projects in future years. The proposed budget for WIP from 2022 through 2031 is presented in Table 9. For simplicity, adjustments for inflation are not incorporated over time. It is assumed that regular operating budgets will increase commensurate with inflation.

Table 9. Estimated Annual Budget for Operation and Management of Weedon Island Preserve (Amount in thousands of dollars; includes staff time.) FY22-31										
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	South Operations									
Safety & Security, Public Use, Repairs & Maintenance	168	316	316	316	316	316	316	316	316	316
	Natural and Cultural Resources									
Natural and Cultural Resource Management	85	85	85	85	85	85	85	85	85	85
	County Wide Horticulture									
Mowing and Fire Break Maintenance	6	6	6	6	6	6	6	6	6	6
	Weedon Island Preserve and Natural History Center									
Outreach and Education	101	101	101	101	101	101	101	101	101	101
Exhibit Maintenance	18	18	18	18	18	18	18	18	18	18
Facility Costs-Real Estate Management Operations Division	157	157	157	157	157	157	157	157	157	157
	Law Enforcement									
Contract with PCSO	62	62	62	62	62	62	62	62	62	62
	CIP (Penny for Pinellas)									
Restoration Projects	525	289	0	0	0	0	0	0	0	0
WIPCNHC Exhibit Updates	500	500	0	0	0	0	0	0	0	0
TOTALS	1.6M	1.5M	745K	745K	745K	745K	745K	745K	745K	745K

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