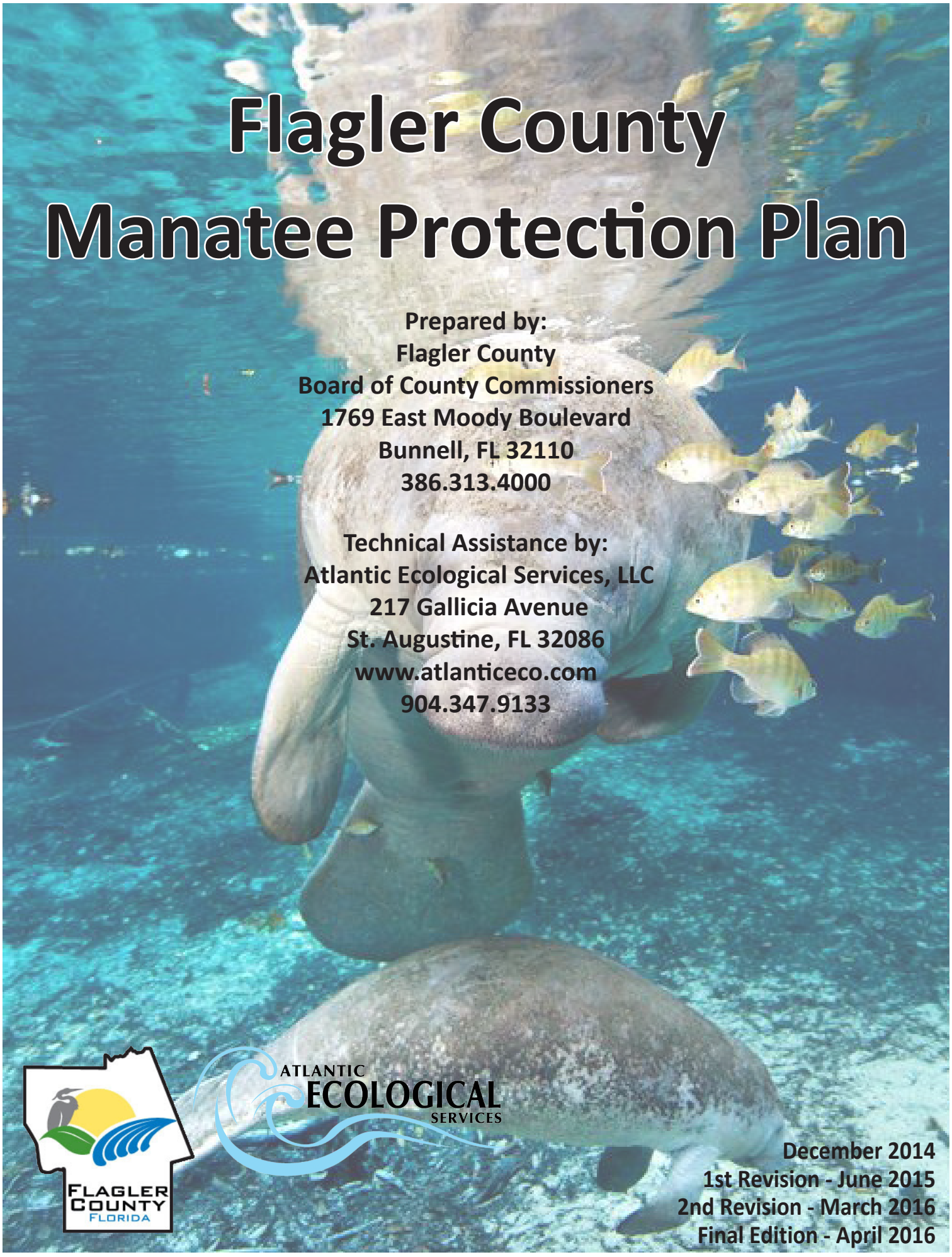

Flagler County Manatee Protection Plan

Prepared by:
Flagler County
Board of County Commissioners
1769 East Moody Boulevard
Bunnell, FL 32110
386.313.4000

Technical Assistance by:
Atlantic Ecological Services, LLC
217 Gallicia Avenue
St. Augustine, FL 32086
www.atlanticeco.com
904.347.9133

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EXECUTIVE SUMMARY

This document represents Flagler County's Manatee Protection Plan (MPP) which is intended to assist in protecting manatees and their habitats to ensure their continued survival. Specific objectives include: reducing the number of boat-related mortalities, creation of a county-wide boat facility siting strategy, protecting manatee habitat, providing appropriate law enforcement strategies, promoting boating safety, and increasing public awareness of the need to protect manatees and their habitat.

Flagler County has been in discussions with the Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service (USFWS) regarding manatee protection since 2006. In September 2006, Flagler County received a copy of a draft Biological Opinion (BO) from the USFWS to the U.S. Army Corps of Engineers (USACE) recommending denial of federal permits for five multi-slip projects proposed within the County. The BO referenced five projects within Flagler County and expressed the USFWS' position regarding Flagler County and the agency's responsibilities under the Endangered Species Act of 1973 and the Marine Mammal Protection Act of 1972. In summary, the BO stated that, due to increasing boat traffic and the potential for increased manatee-boater interactions, "the Service believes that the proposed actions are reasonably certain to result in the take of one or more manatees in the form of additional injury or deaths." During the years of 2003, 2006, and 2007, Flagler County saw an increase in watercraft-related manatee deaths (2 in each of those years). In 2007, the FWC identified Flagler County within the Manatee Management Plan (MMP) as an area with little or no manatee protection regulations and therefore, an area that would require evaluation to determine if Manatee Protection Zones were warranted. Manatee Protection Zones are a management tool that has historically been used in areas where watercraft-related manatee deaths are high. Flagler County is not recognized as an area with high watercraft-related manatee deaths, but the County does recognize that the number of deaths in the early to mid-2000's increased to a number of concern especially with a large number of parcels being proposed for future marina development in the County. Flagler County took its first significant step toward

overall protection of manatees in 2012 by supporting implementation of seasonal FWC manatee protection zones that cover about 20% of the county's coastal inshore waters, including 2.7 miles of shore-to-shore Slow Speed zones on the Intracoastal Waterway (ICW). These zones became enforceable in 2013 when regulatory markers were posted on the water. An approximately 0.5 mile length of the slow speed zone on the ICW adjacent to Lehigh Canal was approved by FWC to become a shore-to-shore zone in 2016.

Flagler County's intent is to use this MPP as a means to provide adaptive management practices in regards to manatee protection. The creation of a Manatee Protection Plan Annual Report updating the number of newly constructed slips and/or ramps, watercraft-related manatee deaths and locations of deaths, law enforcement efforts within the Manatee Protection Zones, land acquisitions along the ICW, and other pertinent manatee related information can be used as a guide to create adaptive management techniques which will contribute to long term, comprehensive protection for manatees. The creation of protocol for interagency coordination between Flagler County, USFWS, FWC, and other stakeholders will provide assurances that all manatee-related issues are openly discussed and the annual reports are reviewed by each entity. Reference to the MPP and its provisions in the county comprehensive plan will help to ensure its implementation at the local level.

Among the components of this MPP are:

- An inventory of boat facilities (marinas, multi-family residential facilities, and boat ramps)
- An assessment of boating activity patterns
- Manatee sighting and mortality information
- Information on habitat resources, Aquatic Preserves and Outstanding Florida Waters, etc.
- Manatee protection measures, such as boating speed zone regulations
- A boat facility siting strategy
- Law enforcement strategy
- An education and awareness program for the public, boaters, and children
- Recommendations and schedule for future MPP review

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

BOCC Board of County Commissioners
BFSP Boat Facility Siting Plan
DLE Division of Law Enforcement
FAC Florida Administrative Code
FDEP Florida Department of Environmental Protection
FDHSMV Florida Department of Highway Safety and Motor Vehicles
FIND Florida Inland Navigation District
FLUM Future Land Use Map
FWRI Fish and Wildlife Research Institute
FS Florida Statute
FWC Florida Fish and Wildlife Conservation Commission

ICW Intracoastal Waterway
ITT International Telephone and Telegraph Corporation
MML Mote Marine Laboratory
MMPA Marine Mammal Protection Act
MPP Manatee Protection Plan
NMFS National Marine Fisheries Service
NOAA National Oceanic and Atmospheric Administration
PWC Personal Watercraft (e.g., Jet Ski, Sea Doo)
SAV Submerged Aquatic Vegetation
SJRWMD St. Johns River Water Management District
USACE U.S. Army Corps of Engineers
USCG U.S. Coast Guard
USFWS U.S. Fish and Wildlife Service

LIST OF DEFINITIONS

Boat – See definition of "Vessel".

Boat Facility - a public or private structure or operation where boats are moored and/or launched from wet or dry boat slips, including commercial, recreational, private, and residential marinas and boat ramps. For the purpose of this plan, facilities and operations with less than five (5) wet slips are not considered boat facilities.

Boat Ramp - a sloped natural surface, or man-made improvement to a shoreline area that facilitates the launching and landing of boats into a water body.

Boat Slip - a boat slip is a space, mooring, or parking space which can accommodate one boat or vessel in the water or on land (examples include, lifts, trailers, anchorage, beached or blocked, hoist, floating platforms, davits). For the purposes of this plan, a boat trailer parking space is a boat slip. Temporary slips that do not contribute to boat traffic, such as courtesy slips for boat ramps and dry storage facilities, are exempt from the Boat Facility Siting Strategy. Structures authorized only for fishing or observation, are not considered slips.

Boat Yard - a boat facility (wet or dry slips) used only for boat repair and/or boat building.

Build-out - a term referring to maximum planned development for a community, in terms of the physical structures, use of land and approximate number of people which can be accommodated within the community.

Channel of the Intracoastal Waterway - all waters within the navigable channel of the Intracoastal Waterway in Flagler County, Florida, and which navigable channel is a part of the inland waterways, and which said navigable channel is located by buoys or other markers placed by the U.S. Coast Guard (USCG).

Comprehensive Plan - an official document in ordinance form adopted by the local government setting forth its goals, objectives and policies regarding the long term development of the area within its jurisdiction.

Conservation Area Category – Development on shoreline color-coded as conservation will be according to the policies of the entity managing the area if those policies have been documented in a management plan that has been reviewed and approved by the wildlife agencies as addressing potential impacts to manatees. If policies specifically addressing potential impacts to manatees have not been documented in the management plans, then development is recommended at a level of one slip for every 100 feet of shoreline. Proposals for watercraft access are not expected in these areas, which are primarily owned by governmental entities for conservation purposes.

Dry Storage Facility - an upland structure, parking lot, or space used specifically for storing watercraft. Such as, but not limited to, in/out boat storage, boat repair, boat sales, or long term dry storage lots or facilities. For the purposes of this plan, a dry storage facility is considered a Boat Facility or part of a Boat Facility if the dry storage facility has the capability of launching vessels into adjacent waters or water access is provided adjacent to, or in close proximity to the facility.

Existing Facility - For the purposes of this plan, the definition of an existing boat facility is 1) a facility that has produced boat traffic at some point within 10 years prior to the submittal date of an active request for authorization to renovate, modify or expand the facility; that has all required authorizations that clearly and accurately specify the number of slips; and has been constructed and operates with the type of use as authorized; or 2) a facility that has not been built but has all active, required authorizations that clearly and accurately specify the number of slips and the time

period has not exceeded 10 years from the date of the original permit/authorization. A request to modify a boat facility that does not meet the above definitions will be evaluated on a case by case basis by the wildlife agencies (FWC and/or USFWS) to assess the number of slips that may be recognized as existing, and whether the boat facility will be considered a new or existing facility for the purposes of the plan.

Florida Manatee Management Plan - The FWC Manatee Management Plan (MMP) is a planning document that provides the framework for conserving and managing manatees in Florida. The plan addresses key tasks for the conservation of the Florida manatee and is complementary with the Federal Florida Manatee Recovery Plan (2001).

Lane - a part of a boat ramp that allows for the launching and landing of one boat at a time. A boat ramp can have more than one lane.

Linear Shoreline or Shoreline - the mean high water line in tidally influenced areas and the ordinary high water line along waterways that are not tidally influenced. Linear shoreline shall be calculated using survey quality aerial photographs or by accurate field survey. The calculation of linear shoreline is based upon contiguous shoreline that is owned or legally controlled by the applicant.

Manatee Protection Plan – a county specific management plan developed, approved and used by federal, state and local governments to ensure the long term protection of manatees and their habitat within what is defined as the County boundaries.

Manatee Protection Zone – An area established by federal, state, or local authority to protect manatees from harmful collisions with motorboats and from harassment; to protect manatee habitat from destruction by boats or other human activity; or to provide limited safe havens where manatees can rest, feed, reproduce, give birth, or nurse undisturbed by human activity.

Marina, Commercial - a commercial watercraft complex on and/or adjacent to a waterway which provides services available to the general public including but not limited to: rental of wet slips or dry storage space and associated boat lifting and/or launching, boat rentals, sale of marine fuel and lubricants, wastewater pump-out facilities, sale of fishing bait and equipment, and/or charter boat operations. Additional services may include the construction, reconstruction, repair, or maintenance of boats, marine engines and/or marine equipment; sale or lease of watercraft and seafood processing.

Marina, Residential - a watercraft complex containing five (5) or more wet slips located on a waterway used primarily for recreational purposes, and where vessel mooring is clustered in a common area, rather than docks located behind individual residences. No sales, fueling or repair facilities shall be associated with these marinas. A private residential marina contains wet slips and/or dry slips used only as accessory to a principal multi-family development use. A public/private residential marina has a portion of its wet slips and/or dry slips designated for rental by the general public, with the remaining wet slips and/or dry slips used accessory to a principal multi-family development use.

Mean High Waterline - the intersection of the tidal plain or mean high water with the shore. Mean high water is the average height of high waters over a nineteen-year period.

Moderate Category - Development on shoreline color-coded as Moderate is recommended at a level of up to five (5) slips for every 100 feet of shoreline owned or controlled by the applicant. For example: A site has 342 feet of shoreline. In order to calculate the allowable number of slips, 342 is rounded up to the next one hundred foot increment (400), then divided by 100 which equals 4. That number is multiplied by the slip to shoreline ratio (5). In this example, 20 would be the allowable number of slips.

Mooring - a location where one vessel is berthed or stored in water when not in use. It can be at anchor, tied off to a buoy in a "mooring field," or tied off to a pier, dock, piling, or other physical structure or on a davit or boatlift.

Non-Preferred Category – Development on shoreline color-coded as non-preferred is recommended at a level of one slip for every 100 feet of shoreline owned or controlled by the applicant. For example: A site has 442 feet of shoreline. In order to calculate the allowable number of slips, 442 is rounded up to the next one hundred foot increment (500), then divided by 100 which equals five (5). That number is multiplied by the slip to shoreline ratio one (1). In this example, five (5) would be the allowable number of slips.

Preferred Category – Color-coded shoreline where development is not restricted for the purpose of manatee protection. Other local, state, or federal restrictions may limit slip numbers for other reasons.

Residential Multi-family Dock - a Boat Facility on a common riparian parcel that is intended to be used for private recreational or leisure purposes by persons or groups of persons with real property interest. Upland developments that may have a residential multi-family dock may include a duplex, a condominium, single-family residences

(attached or detached), or a development such as a single-family or mobile home subdivision.

Riparian Rights - those rights incident to lands bordering upon navigable waters, as recognized by the courts and common law (Ch. 18-21.003(53), FAC).

Single-Family Dock - a Boat Facility used for private recreational or leisure purposes that is located on a single-family riparian parcel or that is shared by two adjacent single-family riparian owners if located on their common riparian property line. The Boat Facility may contain wet slips and/or dry slips, and provide mooring for the sole recreational use of the residents of a detached single-family home, adjacent to a coastal water body. Residential Single-family docks with four (4) or less slips are exempt from the Boat Facility Siting Strategy, but must conform with all applicable federal, state and local regulations in place at the time of permit application.

Temporary slip (or mooring) - Temporary slips that do not contribute to boat traffic, such as courtesy slips for boat ramps and dry storage facilities that are used only to facilitate boat launching and retrieval, are exempt from the Boat Facility Siting Strategy.

Trailer - a trailer-type of mooring refers to a boat with trailer that was visible from a waterway. While this provides an estimate of trailered vessels in Flagler County, it is understood that the term is both subjective and provides only a rough estimate of trailered vessels in the County.

Transient Slips - For the purposes of this plan, a slip that is used generally less than one day (but may include overnight or multiple-day use) and contributes to boat traffic. Examples include, but are not limited to: slips at non-fee public facilities (e.g., public parks, etc.), slips at facilities used for water-dependent public transportation (e.g., water taxis), and slips designated day-use slips at restaurants and hotels. Transient slips are counted when calculating slip densities.

Travel Corridor - a waterway through which manatees travel, either daily or seasonally, between feeding areas and sources of fresh or warm-water, resting or feeding locations, or other habitat areas.

Vessel (or boat or watercraft) - a vehicle designed for operation in the water that is propelled by sails or one or more electric, jet or internal combustion engine(s). These terms may refer to any size vessel including a personal watercraft, airboats, freighters or cruise ships, etc. For purposes of this plan, the word “boat” does not include human-powered vessels, such as canoes or kayaks.

Warm-water Refuge - a natural or manmade warm-water habitat which maintains a temperature equal to or greater than minimum required for manatee survival (approximately 68F or 20C).

Watercraft Access – a location that provides boat access into the waterways of Flagler County such as docks, piers, marinas, boat ramps and associated trailer parking spaces, boat slips, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Waters – navigable waters of the State of Florida.

1.0 INTRODUCTION

Flagler County is located in northeast Florida, south of St. Johns County and north of Volusia County (Figure 1). Flagler County's Intracoastal Waterway (ICW) is characterized by a significant percentage of conservation areas, or other areas currently limited from development of waterfront facilities. The length of the ICW in Flagler County is approximately 18.5 miles of waterway. The setting within Flagler County also includes approximately 19 miles of coastline along the Atlantic Ocean.

The Florida manatee (*Trichechus manatus latirostris*) inhabits the waters of the ICW year round. Manatees are most often observed from late April through early October with highest concentrations occurring during the spring and summer months (May through August). Fewer manatees are observed during the winter months (November through March). Florida manatees exhibit an array of activities in these waters including traveling, resting, foraging and cavorting/mating.

Manatees are protected under Federal law through the Marine Mammal Protection Act of 1972 (as amended in 1996) and the Endangered Species Act (ESA) of 1973, and by State law through the Florida Manatee Sanctuary Act (1978).

In 1989, Florida's Governor and Cabinet identified counties experiencing excessive watercraft-related manatee mortality and mandated that these counties take positive measures to reduce this problem.

Specifically, thirteen key counties - Brevard, Broward, Citrus, Collier, Miami-Dade, Duval, Indian River, Lee, Martin, Palm Beach, St. Lucie, Sarasota, and Volusia - were to develop MPPs, which would address the multitude of threats facing manatees. Presently, all "Key" counties have state-approved MPPs in place. Flagler County was not identified as one of the "Key Counties" requiring a MPP in 1989. In response to concerns over increased watercraft-related manatee mortality in the County, Flagler County first began working on a county-wide MPP in October 2006. In 2007, the FWC identified Flagler County within the State's Manatee Management Plan (MMP) as an area with little or no manatee protection regulations and therefore would require evaluation to determine if manatee protection zones were warranted (FWC Florida Manatee

Management Plan, 2007). In 2012, Manatee Protection Zones were established in the County, and revised in 2016 to include additional areas of protection. As a next step in the protection of manatees, Flagler County, in coordination with FWC and USFWS developed this MPP. These manatee protection measures will help provide long term protection to the species necessary to offset impacts from additional boat traffic and future waterfront development. See Figure 1 for Flagler County's location and the location of counties which have approved MPP's.

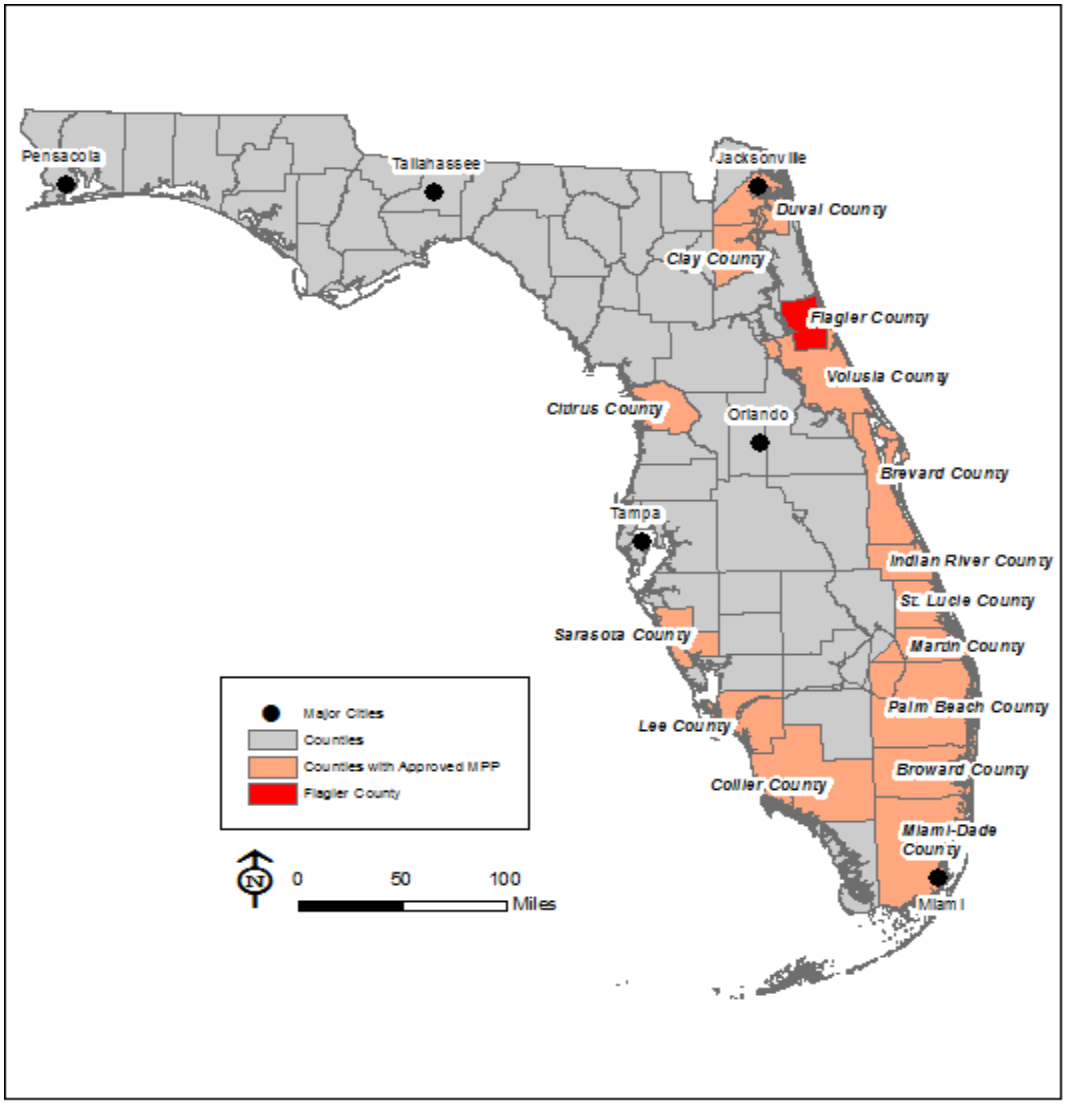
This MPP is intended to assist in protecting manatees and their habitats to ensure their continued survival. These objectives are derived from the USFWS' Florida Manatee Recovery Plan (Third Revision, October 2001), the Governor and Cabinet's 1989 directive to improve boating safety and manatee protection for Florida waterways, and the 2007 State of Florida Manatee Management Plan (MMP). Specific objectives include: reducing boat-related manatee mortality, creating a county-wide boat facility siting strategy, protecting manatee habitat, promoting boating safety, developing coordinated law enforcement efforts, and increasing public awareness of the need to protect manatees and their habitat. Among the components of this MPP are:

- Information on aquatic preserves, Outstanding Florida Waters, etc.
- Manatee protection measures, such as boating speed zone regulations
- Manatee aerial survey sightings, telemetry and mortality data assessment
- An inventory of boat facilities (marinas, docks, boat ramps, etc.)
- An assessment of boating activity patterns
- Future boat facility siting planning
- Law enforcement strategies
- An education and awareness program for the public, boaters, and children
- Recommendations and MPP implementation schedule

The FWC and the USFWS utilize the MPP recommendations in their review of state and federal regulatory permits as commenting agencies. When approved, boat facility siting recommendations contained in this MPP will be used by FWC in their review of state regulatory permits and by USFWS when consulting with the USACE on future waterfront development projects during the federal permit process.

When approved by the resource agencies, this document fulfills the requirements for completion of a comprehensive Manatee Protection Plan in Flagler County.

Figure 1: Location of Flagler County, Florida



1.1 Geographic Setting

Flagler County lies in the northeastern part of Florida, about sixty miles south of Jacksonville and 25 miles north of Daytona Beach. Flagler County is about 23 miles wide at its widest point

east to west, and 29 miles long at its longest point north to south. The Atlantic Ocean beachfront area is approximately 19 miles long and forms the eastern county-boundary, and Crescent Lake forms a significant portion of its western boundary.

In total, Flagler County occupies approximately 571 square miles consisting of approximately 485 square miles of land area and 86 square miles of water area. The County includes the incorporated cities of Beverly Beach, Bunnell, Flagler Beach, Marineland, and Palm Coast. The City of Bunnell, the county seat, is located at the approximate geographic center of the County at the junction of U.S. 1 and SR 100.

Flagler County can be divided into three major geographic areas: the barrier island east of the ICW, the coastal area east of U.S. Highway 1 and the ICW, and western Flagler County west of U.S. Highway 1.

1.2 County Demographics

The 2010 U.S. Census Bureau lists the population of Florida at 18,801,310 (48.9 percent male and 51.1 percent female). Of the 67 counties in Florida, Flagler County ranked 35th with a resident population of 95,996 people (0.5 percent of the state total, 48.0 percent male, 52.0 percent female) as of 2010. Of this 95,996 people, 75,180 live in the City of Palm Coast (78% of the total population). The remaining 22 percent of the residents live in the City of Bunnell, the City of Flagler Beach, the town of Marineland, the town of Beverly Beach, or unincorporated areas of the County. Countywide, 54.1 percent of the population is between the ages of 21 and 64, and 27.4 percent of the population is age 65 or greater.

1.3 Residential and Commercial Development within the County

The coastal area east of U.S. Highway 1 contains portions of the cities of Bunnell and Palm Coast and the cities of Flagler Beach, Beverly Beach, and Marineland are located entirely east of the interstate (I-95). In addition to the incorporated areas, there are five areas of unincorporated Flagler County that include the planned communities of Plantation Bay, Matanzas Shores, Palm Coast Plantation and Hammock Dunes; and unincorporated Painters Hill and Hammock areas along A1A. Presumably, most of the urban development activity in Flagler County has occurred in this area due to the following factors:

- The traditional development pattern of the Florida Atlantic coast

- Flagler County's attractive natural resources and recreation opportunities
- A relatively affordable supply of housing within a reasonable commute to employment opportunities in other counties
- A developed and connected roadway system providing access to SR A1A, Interstate 95, U.S.1, SR 100, and the Palm Coast Parkway

Current land development patterns show that most of the residential development in the coastal area is occurring in the City of Palm Coast and surrounding unincorporated areas where central water and sewer facilities are available. Other residential development occurs in the incorporated areas of Flagler Beach, Beverly Beach or Bunnell, and older, small subdivisions or isolated single-family residences are found along A1A, SR 100, Old Dixie Highway, Old Kings Road and John Anderson Highway. There are many factors that have resulted in the residential development of the coastal area. The primary reason is the aforementioned close proximity to the Atlantic Ocean and the Intracoastal Waterway. Additionally, there are numerous parks and recreational facilities and a growing commercial base in Palm Coast. The coastal area also contains numerous opportunities for business development and excellent schools.

The Flagler coastal area is characterized by an overall low-density residential land use pattern. The eastern seaboard of Florida has traditionally experienced growth because of tourism, retirement, and proximity to the ocean and ICW. Flagler County has traditionally been a tourism and retirement destination. Given the changes in the global economy, Flagler County now has additional attributes (proximity to I-95, Florida East Coast rail line, close proximity to Jacksonville and Orlando) that could be alluring for development of industrial and technological uses.

The region of Flagler County west of US 1 occupies approximately over 60 percent of the total land area. This area is characterized by farming and timber production. Small rural communities that have existed for many years include St. Johns Park, Espanola, Haw Creek and Cody's Corner. Rural subdivisions (one acre minimum) include Flagler Estates, Daytona North and Smokerise.

The ICW in Flagler County begins just north of the Town of Marineland at Mile Marker 796. From Marineland south for about 15 miles, the ICW is a land cut waterway with the first four to five miles presently fairly sparsely developed. About five miles south of Marineland, the ICW

runs through the City of Palm Coast. Palm Coast is known for its extensive canal system allowing residential access to the ICW. Following the ICW southward, it passes through the towns of Beverly Beach and Flagler Beach and then flows into Volusia County. There is no inlet in Flagler County, the closest one being approximately three miles north of Marineland at Matanzas Inlet in St. Johns County. The closest ocean access by water south of Flagler County is at Ponce Inlet in Volusia County, a distance of approximately 26 miles.

1.4 Manatee Relevant Waterways, Water Quality and Recreation

Overall, the ICW is a brackish, estuarine system along the length of Flagler County. The water column is characterized by ocean (salt) water inputs from the inlets north and south of the county and with freshwater inputs from the uplands to the west, from the canal residential areas in Palm Coast and Flagler Beach and from rainwater. Significant sources of natural freshwater from upland drainage to the ICW in Flagler County include Pellicer Creek in the extreme north portion of the county and Long's Creek about five miles to the south of Pellicer Creek. Long's Creek is closely adjacent to major urban areas of Palm Coast.

No freshwater springs or other significant point-sources of freshwater are documented within the ICW in Flagler County. The mouth of Pellicer Creek located adjacent to the Pellicer Creek Aquatic Preserve provides a freshwater input to the Northern portion of the ICW via a large tidal lagoon system, part of which is within the Pellicer Creek Aquatic Preserve. The mouth of Long Creek is similar morphologically although it runs through a residential area of Palm Coast that is considerably more developed than that of Pellicer Creek and its surrounding areas.

The ICW south of Jacksonville and south to Fort Pierce was designed and built to be 12 feet deep by 125 feet wide to allow for safe, protected shipping lanes and recreation. Flagler County's climate and water temperature is favorable for recreational boating, and this activity occurs primarily along the ICW. Recreational opportunities along the ICW in Flagler County include fishing, picnicking, sunbathing, swimming, sightseeing, water skiing or similar recreational activities.

An additional relevant manatee waterway is the portion of Lake Crescent and Dead Lake which are located within the boundaries of Flagler County. Though no manatee surveys have been performed for Lake Crescent, manatees are observed regularly within the lake and Dunns Creek. Dunns Creek flows from the SJR in Putnam County into Lake Crescent and provides a

navigable waterway for manatees to travel into the lake. Dead Lake is attached to Lake Crescent and receives flow from Bull Creek. Haw Creek also drains into Lake Crescent within Flagler County and is designated as an OFW. Lake Crescent is known for its premier largemouth bass and speckled perch fishing. Large beds of tapegrass (*Vallisneria americana*), also known as eelgrass, thrive along the shoreline of Lake Crescent and Dead Lake when water quality conditions are favorable. The beds expand and contract on a regular basis depending on rainfall amounts. Tapegrass is a freshwater submerged aquatic vegetation (SAV) that provides a primary source of forage for manatees in the SJR system.

1.5 Manatee Protection Zones

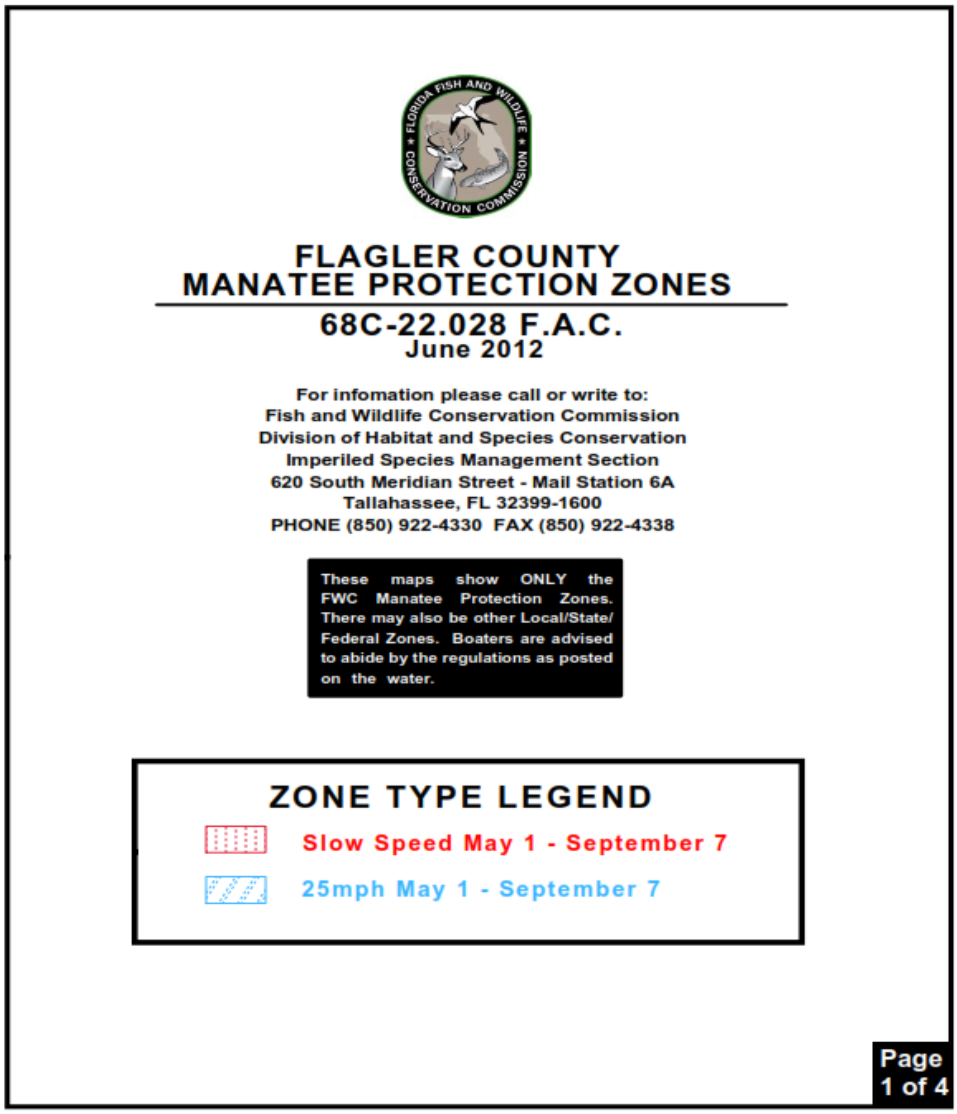
Approximately 5.4 miles of Flagler County's ICW has Manatee Protection Zones established, including approximately 3.2 miles of shore-to-shore, seasonal Slow Speed Zones. In 2012, seasonal FWC manatee protection zones, including 2.7 miles of shore-to-shore Slow Speed zones on the ICW were implemented. These zones became enforceable in 2013 when regulatory markers were posted on the water. In 2016, an approximately 0.5 mile length of the Slow Speed Zone on the ICW adjacent to Lehigh Canal was approved by FWC as a shore-to-shore zone.

The other ICW zones are located in the vicinity of the Hammock Dunes Bridge, the Flagler Beach Bridge, and the southern end of the county near Gamble Rogers State Park. The speed zone that was created in and around the Hammock Dunes/ Palm Coast Parkway Bridge encompasses approximately 0.6 miles of navigable ICW. The speed zones around the Flagler Beach/SR 100 Bridge affect approximately 2.7 miles of navigable ICW. The most southern zones start at the Flagler County border and affect approximately 2.1 miles on the navigable ICW. All manatee speed zones are in effect from May 1 through September 7, when manatees are most likely to be present.

A good resource for information about Manatee Protection Zones in the area is http://myfwc.com/wildlifehabitats/managed/manatee/protection-zones/

The current Manatee Protection Zones are depicted in Figures 2-6.

Figure 2: Manatee Protection Zones. Source: FWC



FLAGLER COUNTY
MANATEE PROTECTION ZONES

68C-22.028 F.A.C.
June 2012

For infomation please call or write to:
Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Imperiled Species Management Section
620 South Meridian Street - Mail Station 6A
Tallahassee, FL 32399-1600
PHONE (850) 922-4330 FAX (850) 922-4338

These maps show ONLY the FWC Manatee Protection Zones. There may also be other Local/State/ Federal Zones. Boaters are advised to abide by the regulations as posted on the water.

ZONE TYPE LEGEND

Slow Speed May 1 - September 7

25mph May 1 - September 7

Page 1 of 4

Figure 3: Manatee Protection Zone Section B & C. Source: FWC

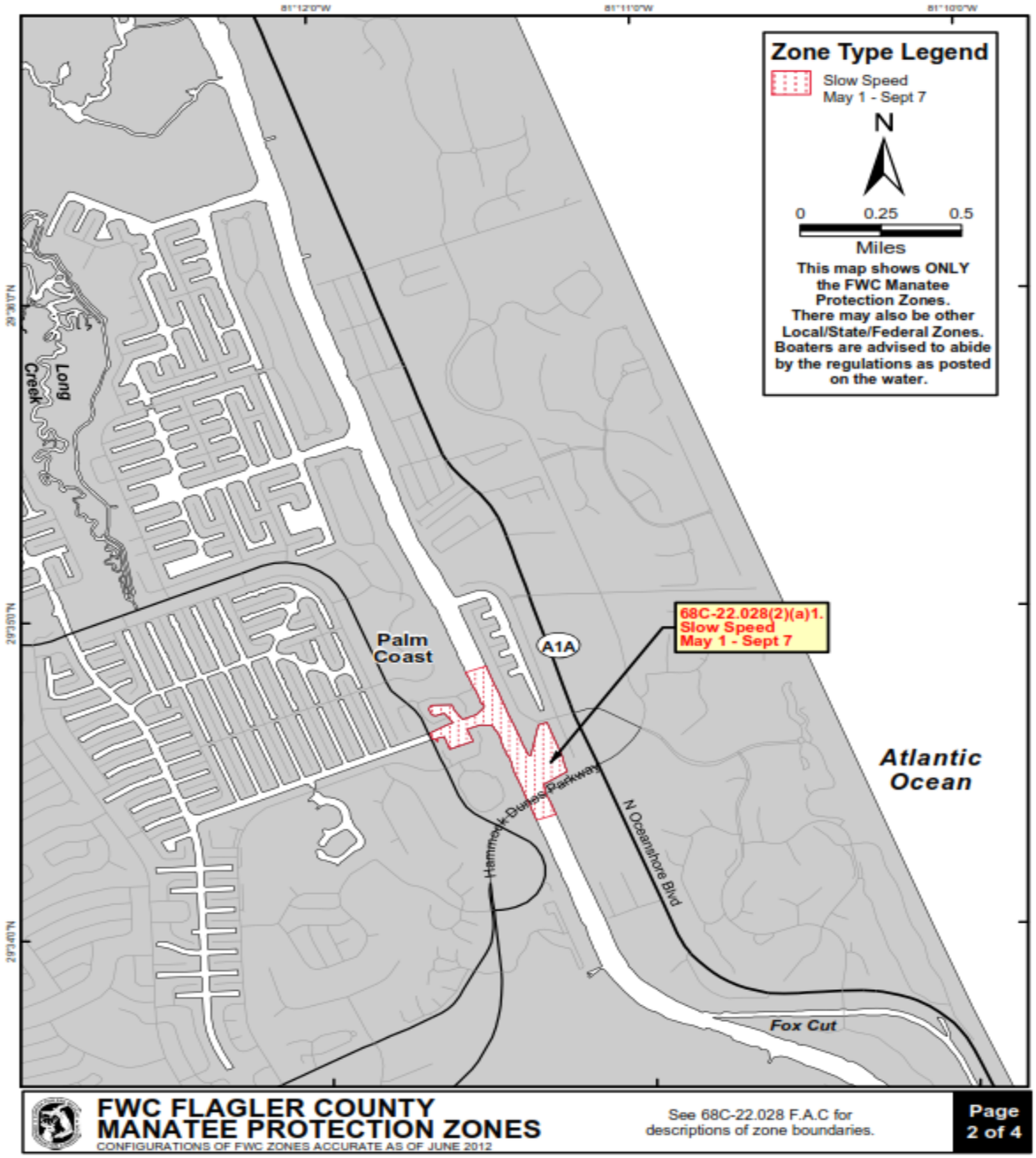


Figure 4: Manatee Protection Zone Section D. Source: FWC

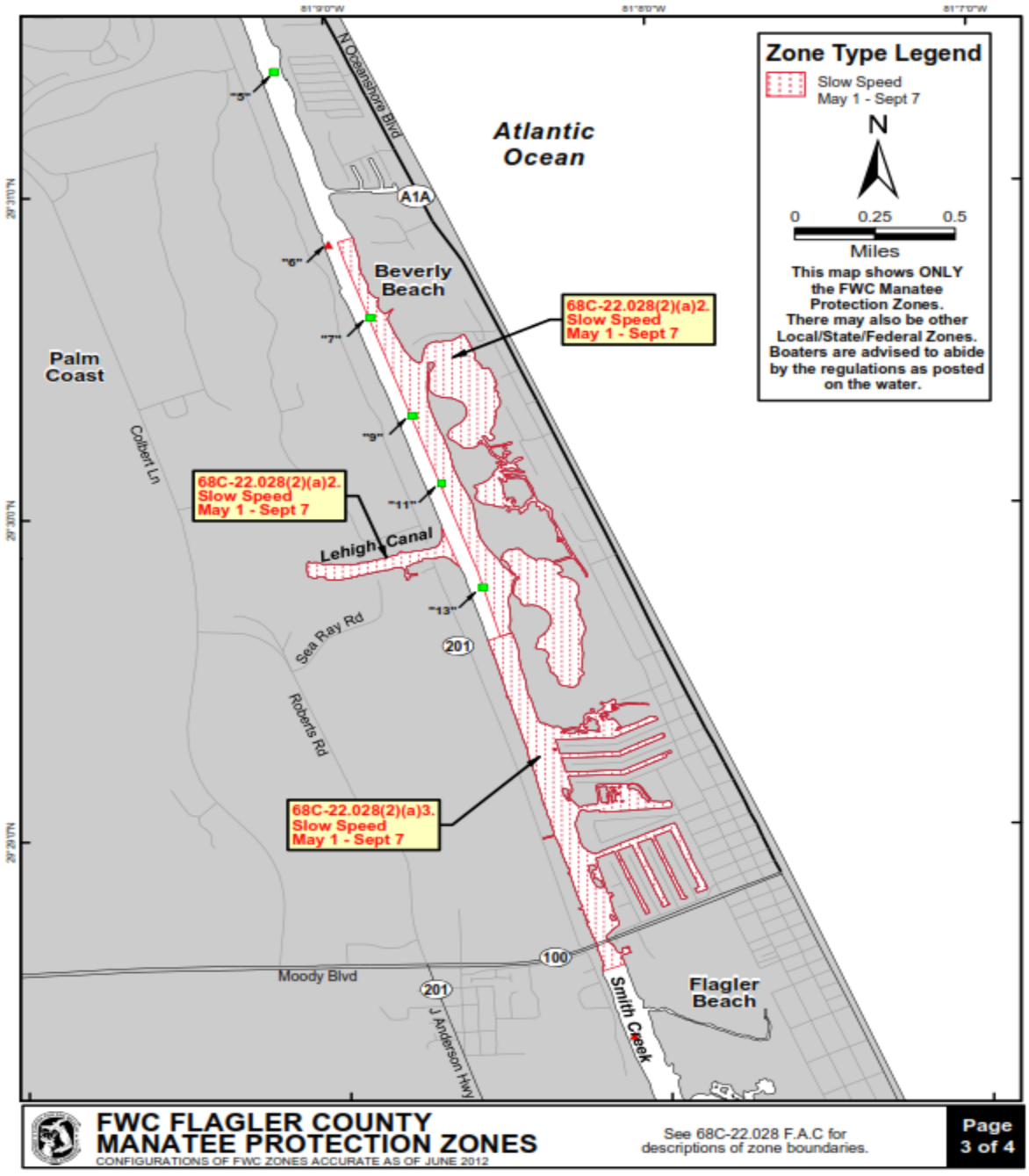


Figure 5: Manatee Protection Zone Section E. Source: FWC

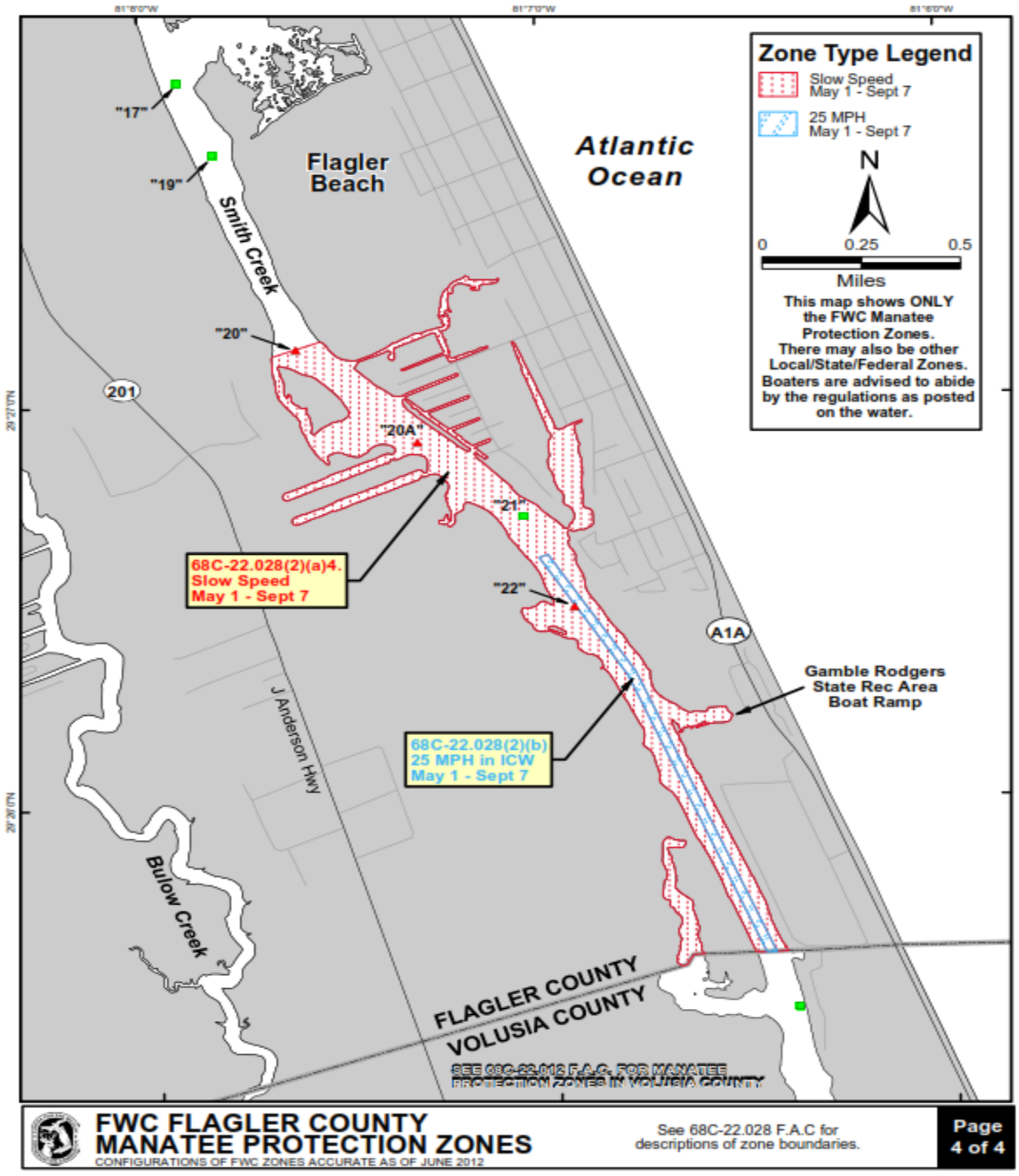
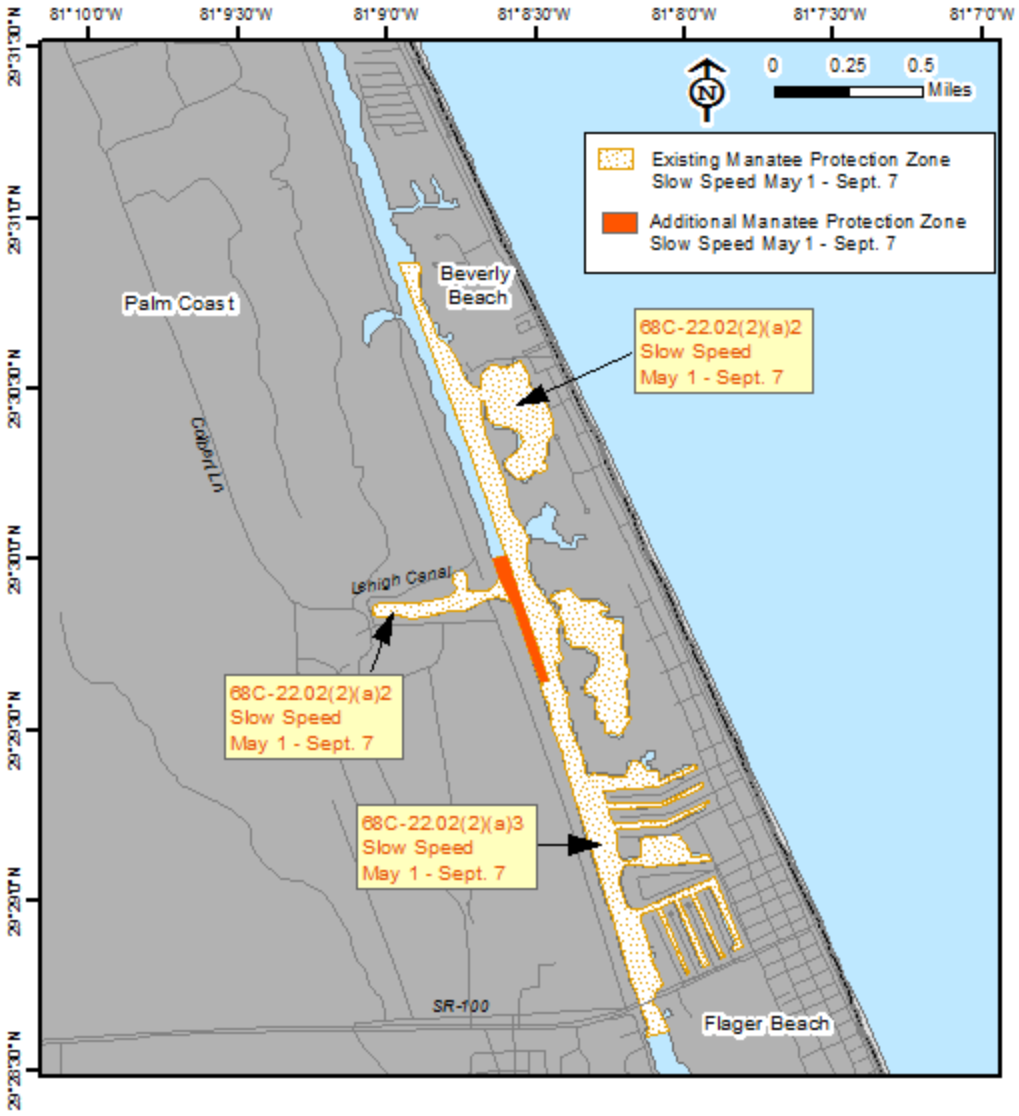


Figure 6: 2016 Addition to Manatee Protection Zones



1.6 Manatee Natural History in Florida

The Florida Manatee is one of two subspecies of the West Indian Manatee that ranges from Brazil to Mexico and the Southeastern United States and Caribbean. The Florida manatee's range for most of the year includes slow-moving waters in coastal estuaries and rivers

throughout the southeast. However, in the colder months manatee survival is dependent on water temperatures that are generally above 68 degrees Fahrenheit, and most manatees aggregate at warm-water refuges once temperatures approach 68 degrees Fahrenheit (Laist DW and Reynolds JE, 2005a). Natural warm-water refuges include springs that have a consistent output of water at a temperature of approximately 72 degrees Fahrenheit and thermal basins which are areas with slow, local cooling processes which temporarily retain warmer water during colder weather. Some researchers believe that the historic winter habitat for the manatee was south of Sebastian Inlet on the east coast and Charlotte Harbor on the west coast (Laist DW and Reynolds JE, 2005a). Anthropogenic warm-water refuge sites, such as effluents produced by power plants, have allowed manatee adaptation into some northern areas of the state. Manatees are well known and documented to having congregated at the warm-water effluent sites of up to 10 power plants throughout the state which is believed to have altered their historic winter range (Laist DW and Reynolds JE, 2005b). Flagler County has no known warm water refuge sites, and water temperatures during the winter months are not adequate to sustain manatees. Warm water springs are found along the SJR (though not in Flagler County), and Lake Crescent is presumably used by manatees passing through the area on the way to and from warm water springs such as Blue Spring in Volusia County.

1.7 Land Development Review

In general, Flagler County and the municipalities in the County rely on state and federal regulations and permitting criteria to protect the natural resources of the shoreline. The County and each municipality have, or share, Land Development Code standards that allow them to regulate activities on planned development sites. State and/or federal regulations provide protection for wetlands, and permits must be obtained for projects that involve water management systems and/or discharges from these systems into jurisdictional waters. Regulations also dictate conditions concerning the construction of vertical bulkheads and other erosion control structures that could affect shoreline vegetation.

The majority of the submerged lands in Flagler County that are accessible to manatees are lands that are owned or controlled by the State of Florida, also known as sovereign submerged lands. Projects on/over submerged lands (sovereign or non-sovereign) are reviewed by the Florida Department of Environmental Protection (FDEP) and the St. Johns River Water Management District (SJRWMD) for compliance with various environmental and public interest

criteria and in many instances must be approved by the Governor and Cabinet, sitting as Trustees of the Internal Improvement Trust Fund. Additionally, projects on/over waters of the state are reviewed by the USACE for consistency with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. During the federal permitting process, the USACE consults with other federal agencies such as the USFWS, NMFS, and USCG. During the state permitting process, FDEP and/or SJRWMD consults with FWC in regards to fish and wildlife. In addition to these state and federal reviews, Flagler County and the City of Palm Coast have developed and implemented an approval process through which proposed projects must be reviewed and approved by the County and/or City prior to construction.

1.8 Manatee Protection Plan Objective

A key component of manatee protection is the protection of habitat; as such, management resources should be focused on identifying and protecting the highest quality habitat that is used by manatees in Flagler County. It is equally important to understand how manatees use the available habitat in Flagler County to implement effective management and protection measures. The objective of this plan is to allow for reasonable recreational and commercial use of Flagler County's Intracoastal Waterway while balancing the protection of manatees.

2.0 FLAGLER COUNTY MANATEE HABITAT

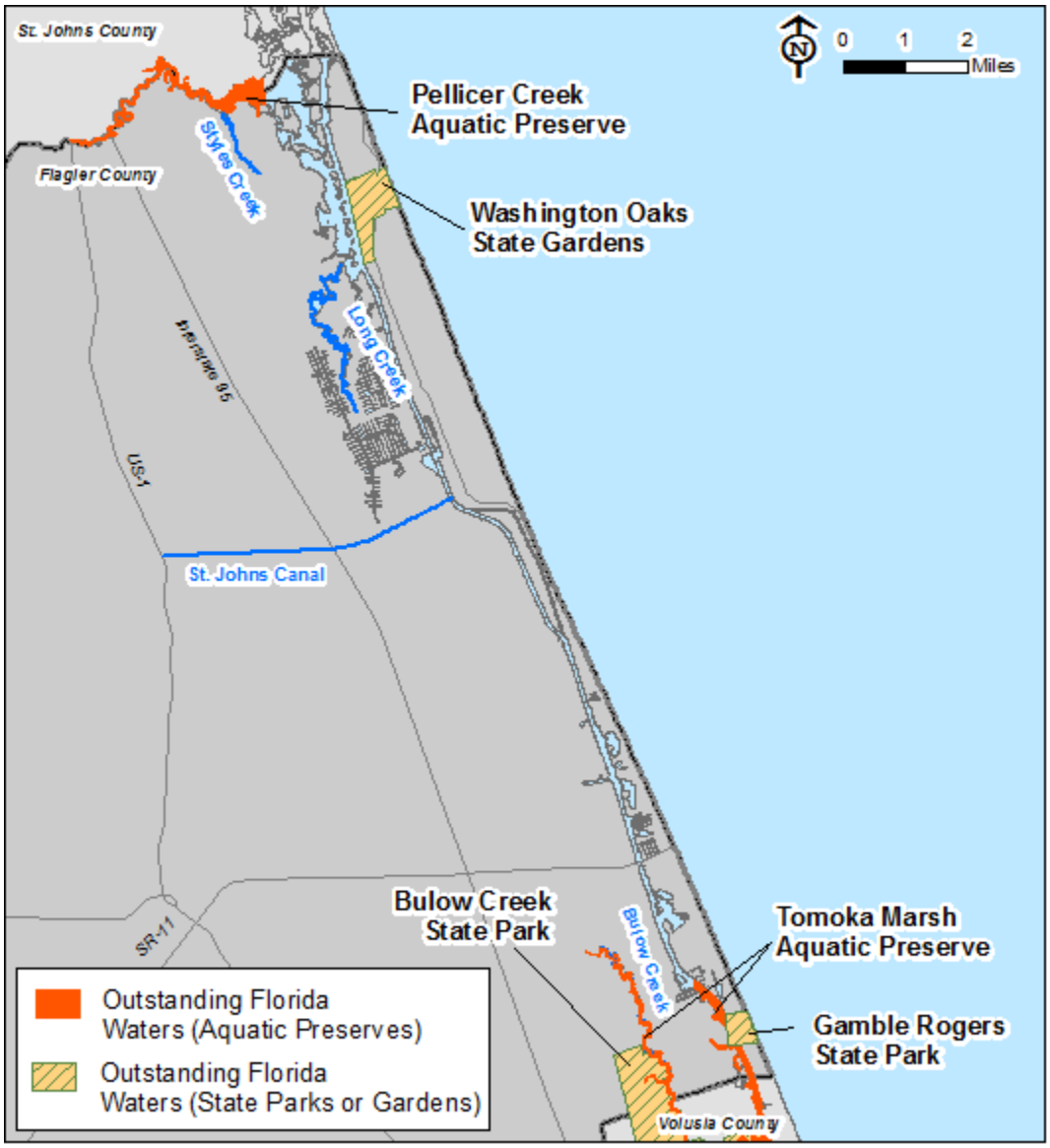
2.1 Aquatic Preserves and Outstanding Florida Waters

Flagler County has two primary estuarine areas. The Matanzas Estuary and the Bulow Creek portion of the Tomoka Marsh Aquatic Preserve receive freshwater from Pellicer Creek and Bulow Creek, respectively (Figure 7). Both Pellicer Creek and Bulow Creek are aquatic preserves. The Florida manatee is a summer resident of the area, traveling in the Matanzas River, Bulow Creek, Halifax and Tomoka Rivers.

Pellicer Creek flows into the Matanzas River, which is part of the Intracoastal Waterway. The Matanzas River provides on-water access to the Atlantic Ocean by way of the Matanzas Inlet, located approximately 2.5 miles north of Pellicer Creek and Flagler County. Human modification of the existing inlets has allowed saline water to mix with fresh water, creating the estuarine environment that now exists. Matanzas Inlet is the only natural, uncontrolled inlet in Florida and one of the few on the east coast of the United States. Pellicer Creek is part of the northern watershed in the Upper East Coastal Basin. The majority of the watershed in this basin is drained by relatively small creeks or branches. From the Matanzas River lagoon area, the flow of water eventually empties into the Atlantic Ocean by way of the Matanzas Inlet. The undisturbed salt marsh portrays one of the most pristine estuarine/riverine systems along Florida's east coast providing exceptional biological and aesthetic value to the state and resulting in its designation as a State Canoe Trail.

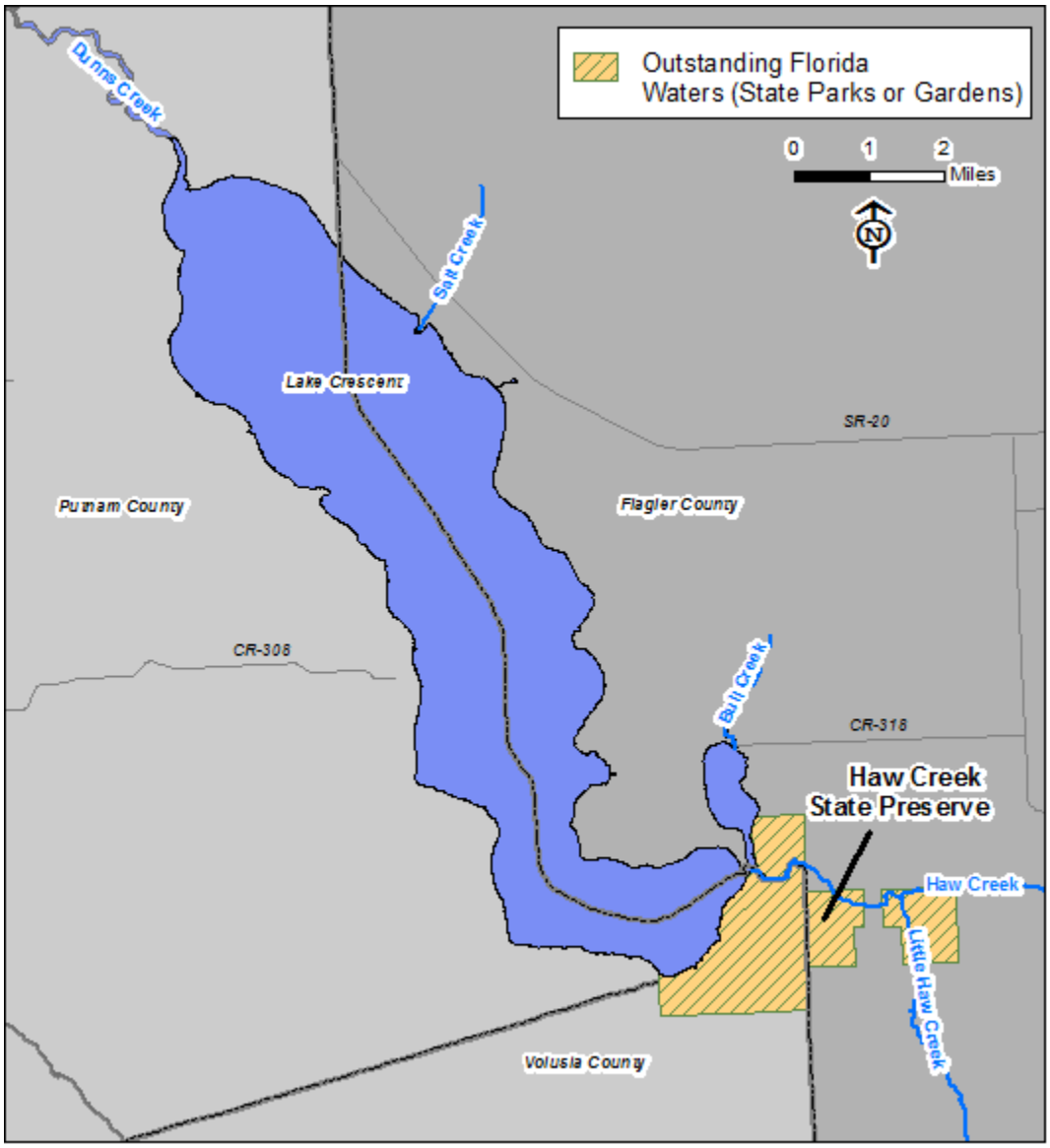
The northern limits of the Tomoka Marsh Aquatic Preserve include portions of Smith Creek and Bulow Creek in Flagler County. Smith Creek is a shallow, estuarine creek with numerous oyster beds. Portions of the natural channel of the creek were dredged to accommodate the ICW. The remaining natural channel is primarily salt marsh, interspersed with small islands, both natural and created. Bulow Creek is a shallow meandering waterway bordered by marsh and floodplain hardwood trees.

Figure 7: ICW Aquatic Preserves and Outstanding Florida Waters



A portion of Lake Crescent is considered an OFW where the Haw Creek flows into the lake (Figure 8). The lake, along with the creeks which flow into it, contain seasonally large beds of tapegrass (also known as eelgrass). Manatees forage on tapegrass throughout the SJR system.

Figure 8: Lake Crescent Outstanding Florida Waters



2.2 Manatee Waterways in Flagler County

The ICW in Flagler County spans approximately 18 miles from the St. Johns/Flagler county line to the Flagler/Volusia county line.

The ICW in Flagler County is comprised of the southern end of the Matanzas River in the northern portion of Flagler County and averages around 400 feet wide from bank to bank. The dredged portion of the ICW beginning just north of Palm Coast averages 300 feet wide bank to bank. In the southern reaches of Flagler County, the ICW returns to a more natural river system as the northern portion of the Halifax River and widens. The channel in the ICW was dredged to 10 feet depth and 125 feet width in the 1960's and has been periodically maintained with dredging in the intervening years. There is no documented presence of significant seagrass beds along the ICW in Flagler County but some manatee forage opportunity does exist in the form of marsh grasses and other vegetation that are accessible during high tides.

Throughout the ICW and the extensive marsh systems and canal systems in Flagler County, there exists potential for manatee habitat, especially as a travel corridor. Much of the high marsh found to the west of the ICW can be considered manatee habitat as manatee access to those areas is dependent on limited-depth feeder channels and extreme high-tide occurrences. The canal systems in Palm Coast and Flagler Beach function as manatee habitat in as much as it serves as a travel corridor and resting area, but consistent fresh, warm water nor a dependable, long-term food source are available in the canal areas. The canals are also utilized by manatees for nursing and calving of young.

Table 1 below documents the amount of linear feet and miles and the total percent of shoreline type found in the county.

Table 1: Manatee Waterway Types in Flagler County. Data Source: Flagler County Property Appraiser

Shoreline Type	Total Linear Ft	Total Miles	Percent of Total
Intracoastal Waterway	191,519	36.3	22%
Marina	15,325	2.9	2%
Canal	336,325	63.7	40%
Natural Waterway	95,672	18.1	11%
Tidal	104,681	19.8	12%
Lake Crescent	106,743	20.2	13%
Total	**850,265**	**161.0**	**100%**

During the FWC speed zone rulemaking process, five waterway regions which segregate areas (sections) were created for mapping and data analysis. For consistency, these areas were also used in the development of this MPP for the purpose of mapping and data analysis, and include: Section A – Marineland and Matanzas River, Section B – Palm Coast, Section C – Fox Cut, Section D – Smith Creek North of SR 100, and Section E – Smith Creek South of SR 100. Lake Crescent was not assessed by the FWC during the rulemaking process, but has been included as Section F – Lake Crescent to assess this area for boat facility siting. An overview of the planning sections is identified in Figure 9, and specific aerials of each section are identified in Figures 10-15. Descriptions of each region can be found in Sections 3.5.4 through 3.5.9.

Figure 9: Overview of MPP Planning Sections

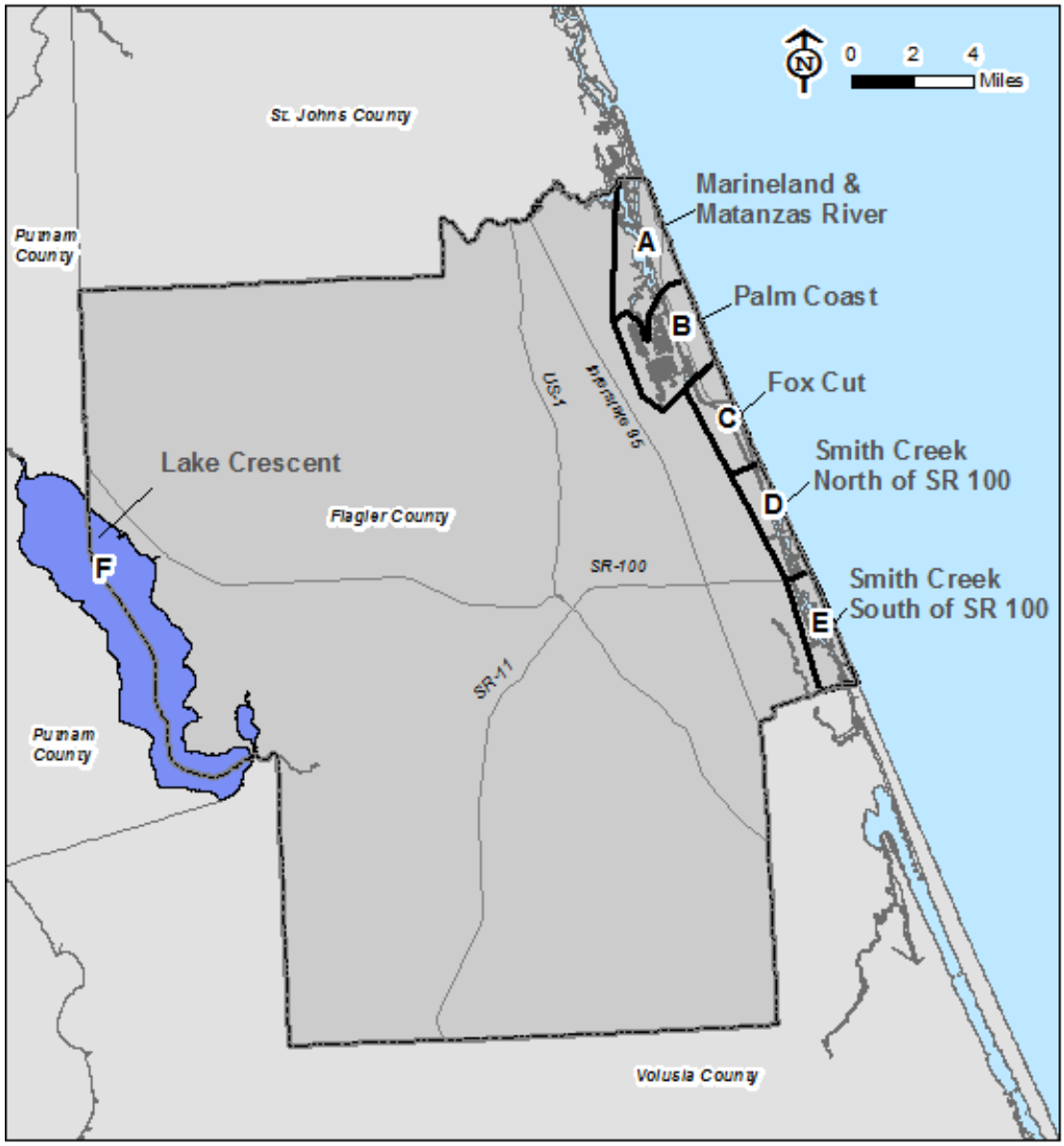


Figure 10: Aerial View of MPP Planning Section A

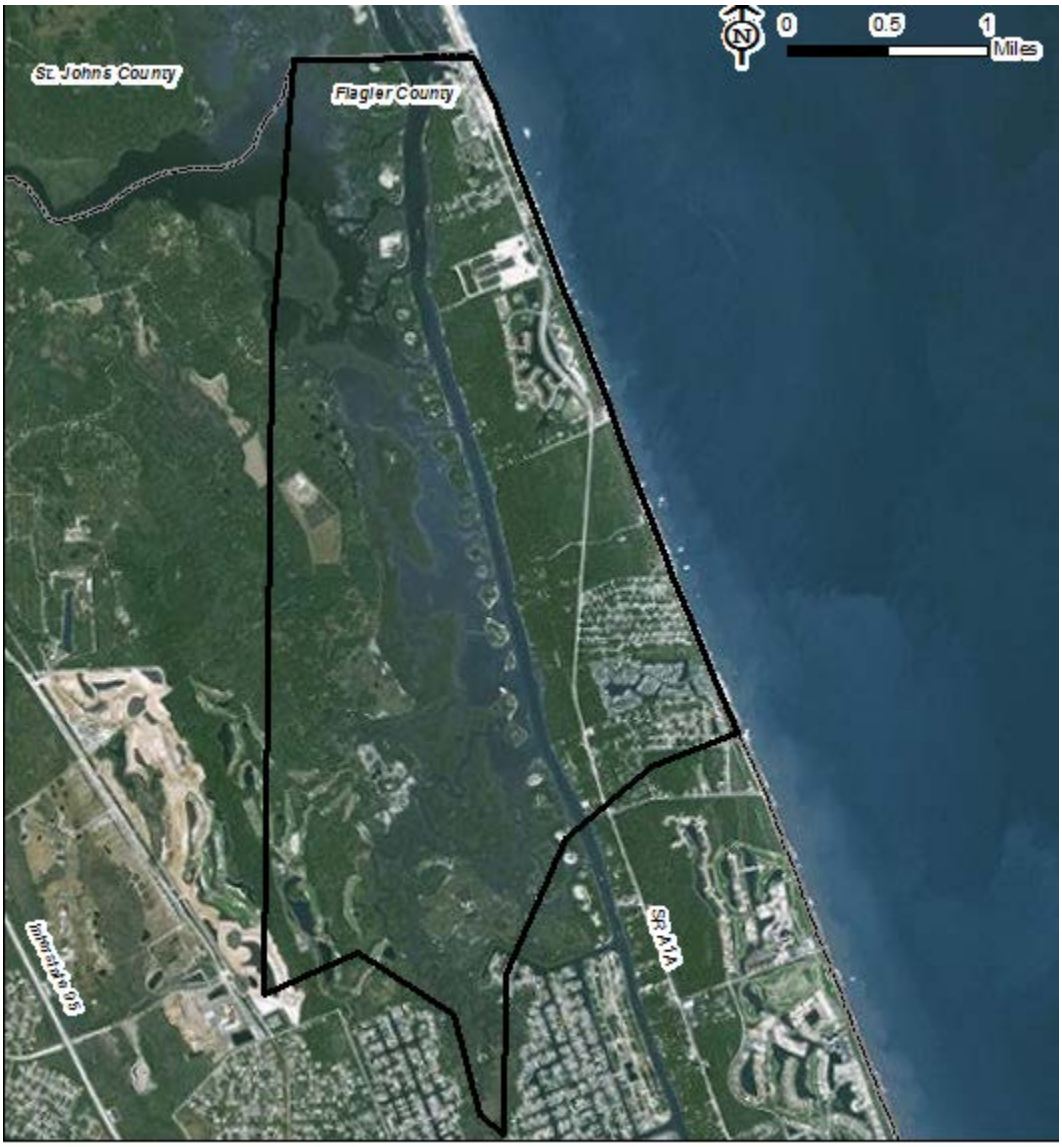


Figure 11: Aerial View of MPP Planning Section B

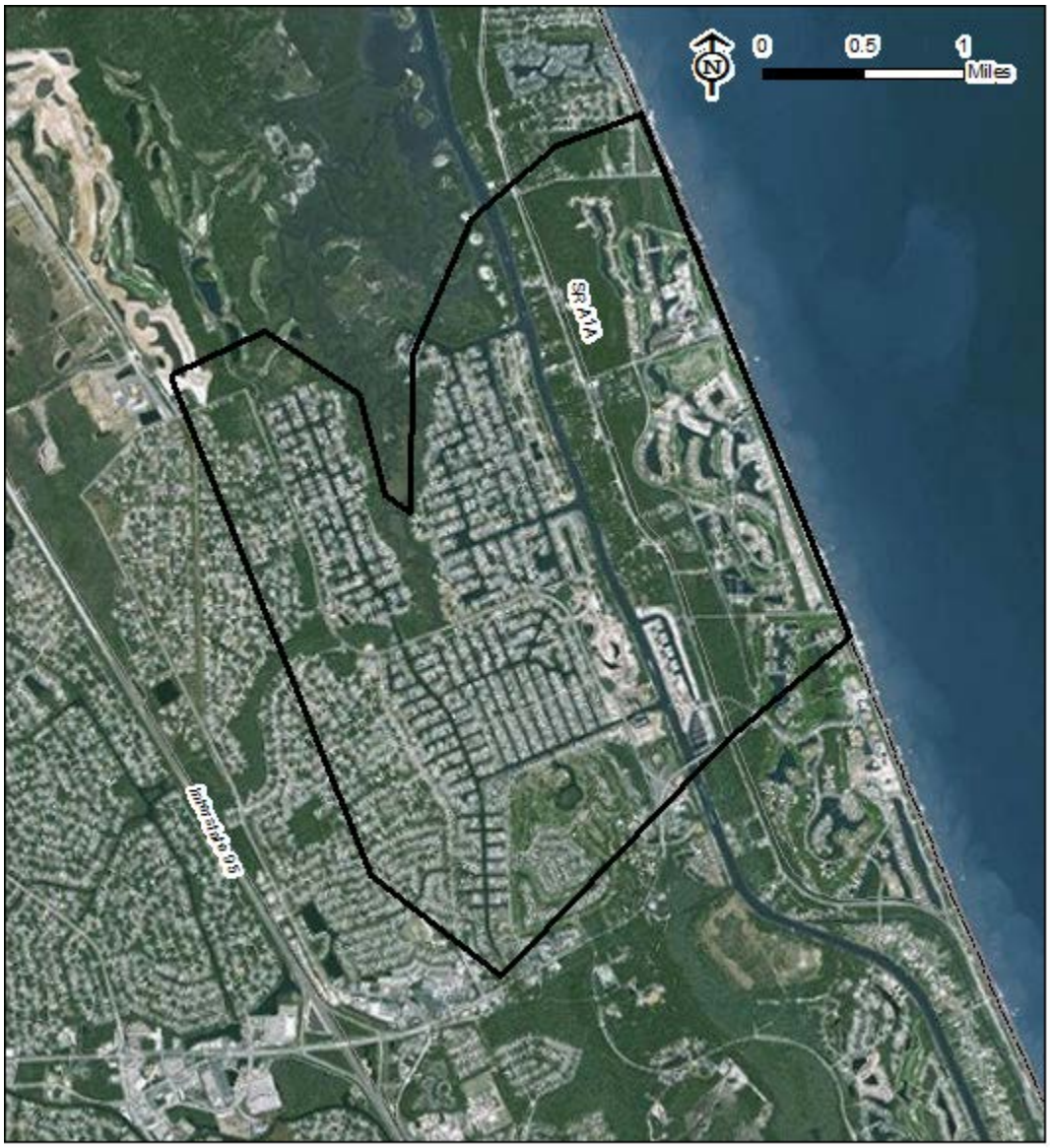


Figure 12: Aerial View of MPP Planning Section C

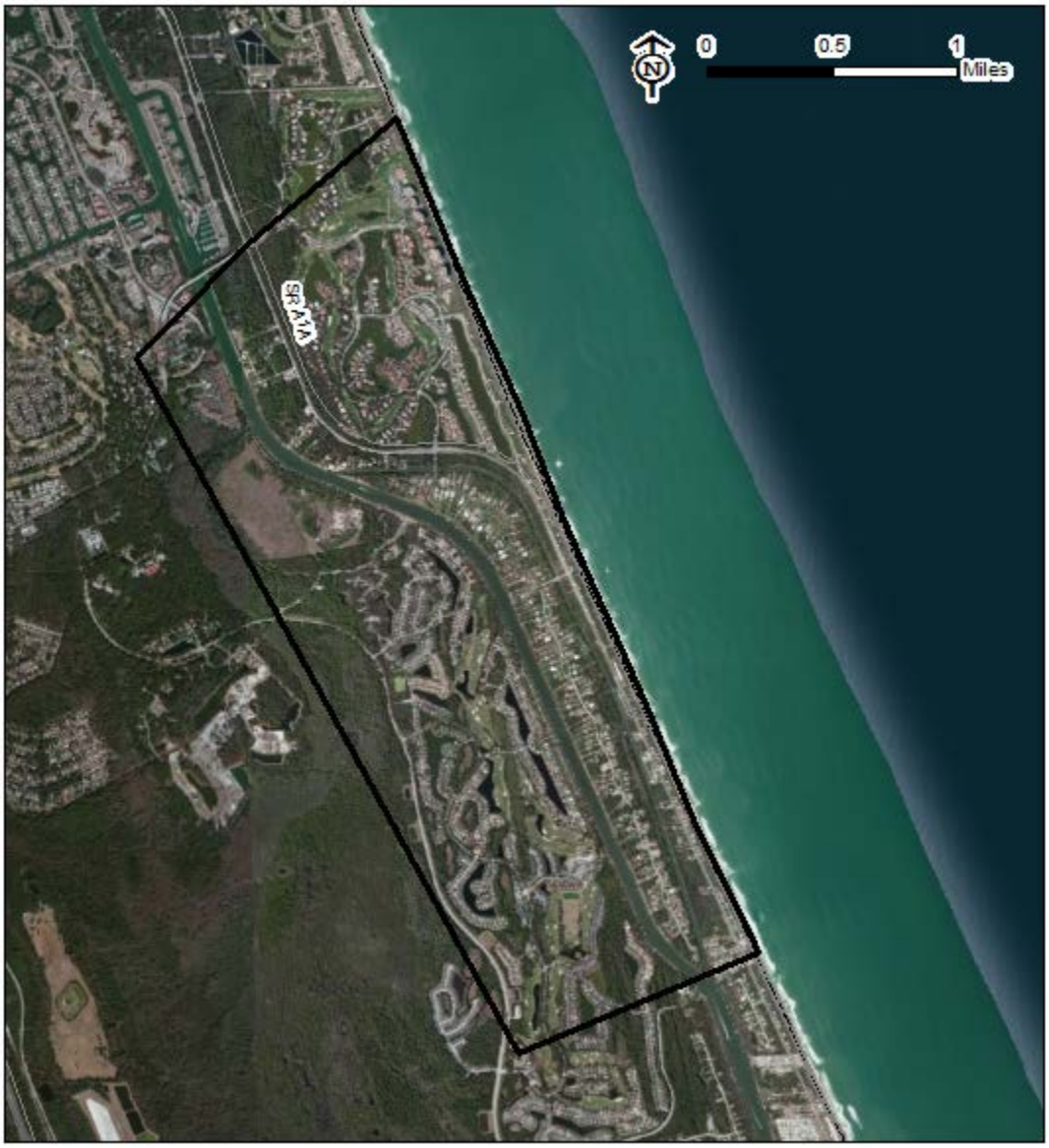


Figure 13: Aerial View of MPP Planning Section D

Figure 14: Aerial View of MPP Planning Section E

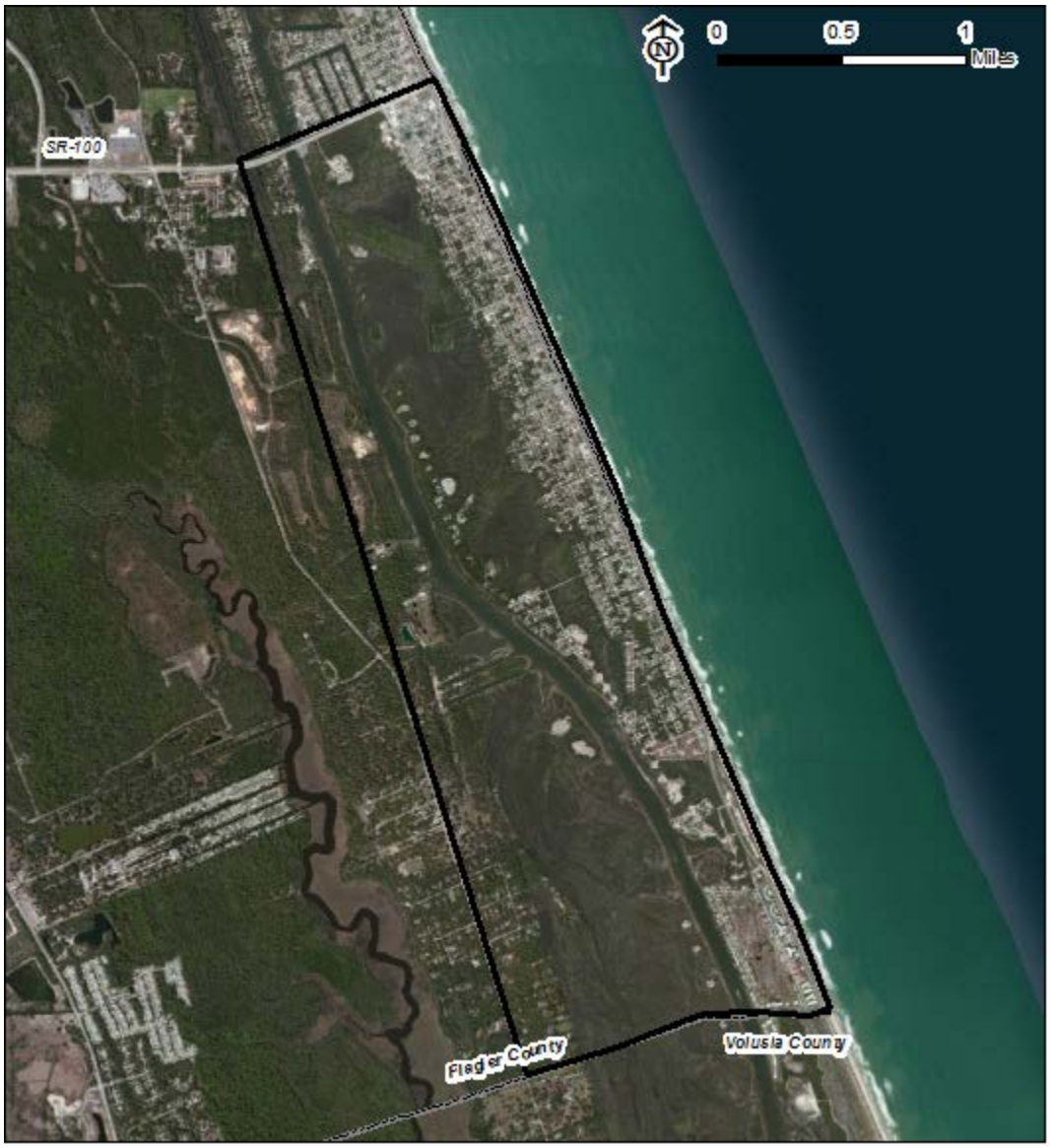


Figure 15: Aerial View of MPP Planning Section F

2.3 Flagler County Preservation Lands

Flagler County's ICW is characterized by a significant percentage of conservation areas, or other areas limited from development of waterfront facilities. The length of waterfront on the ICW in Flagler County is approximately 37 miles when measuring each side of the 18.5 mile length of the waterway. There are 14.9 miles (40%) of waterfront properties facing the ICW that are limited from future waterfront facility development. Factors that drive this analysis include ownership and use as state, county, or city parks, ownership by the Florida Inland Navigation District, and areas controlled that are affected by conservation easement and deed restrictions. Also, the entirety of Bulow Creek from the Volusia/Flagler line through to its navigable northern extent have had private docks banned by County ordinance. Along Lake Crescent, the Dunns Creek State Park provides protection to the connection of Lake Crescent from the SJR, and the Haw Creek Preserve and Lake Crescent Conservation Area protect the major floodplain system of Haw Creek which enters Lake Crescent from the southeast. Figures 16-21 document the Preservation Lands found within Flagler County.

Flagler County currently has management plans in place for many of its preservation lands which are found along its waterways. As part of these management plans the County continues to identify appropriate restoration projects and invasive/exotic plant and wildlife species management opportunities within the preserves. Preservation lands such as Princess Place Preserve, River to Sea Preserve, Betty Steflik Memorial Park, Bulow Creek Park, and Haw Creek Preserve are currently managed by Flagler County. Each preserve provides opportunities to restore native landscapes, including saltmarsh, which will provide a higher quality resource to manatees. Restoration project are currently being categorized by the County and projects will occur as funding becomes available.

Figure 16: Preservation Lands Section A

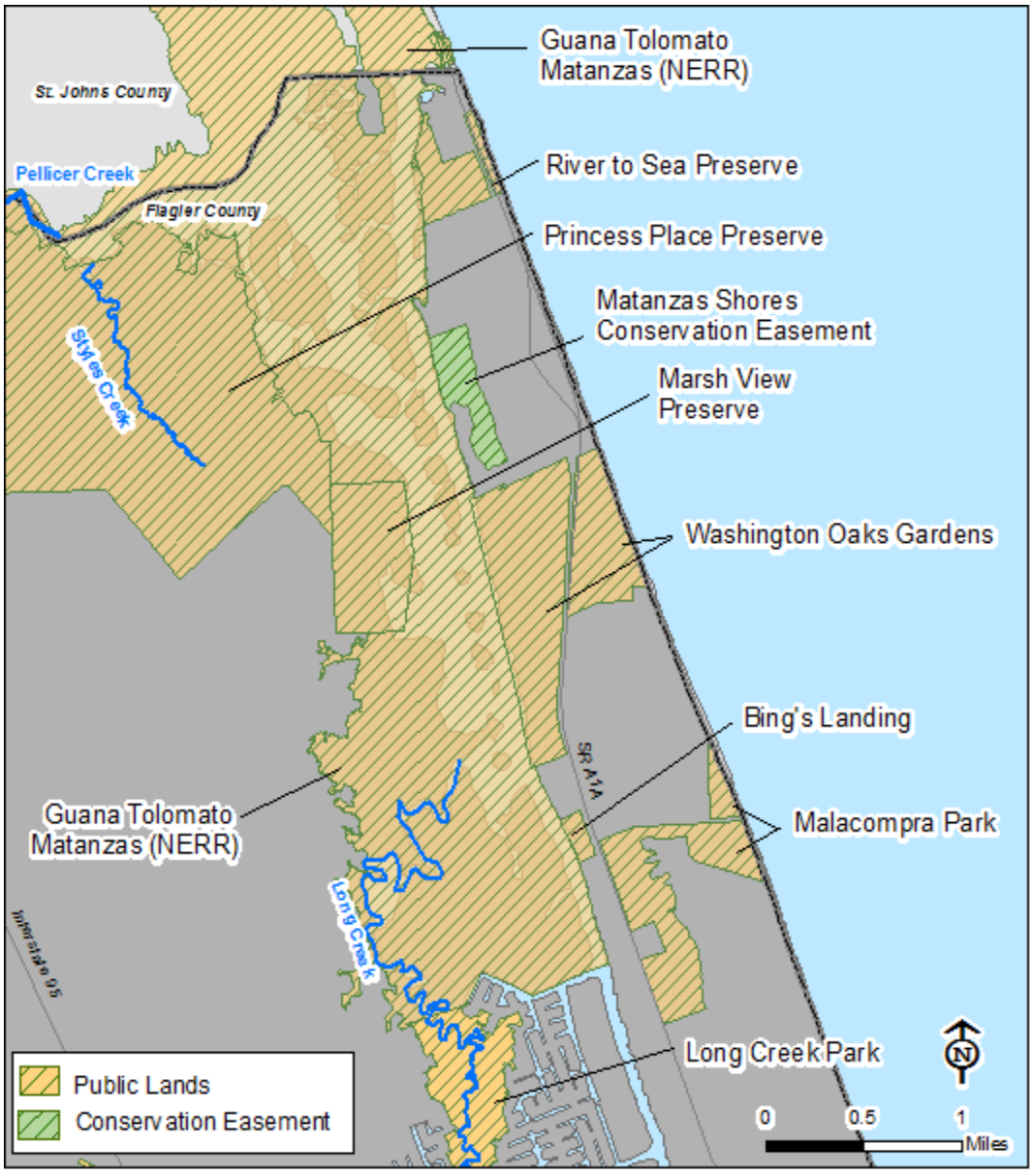


Figure 17: Preservation Lands Section B

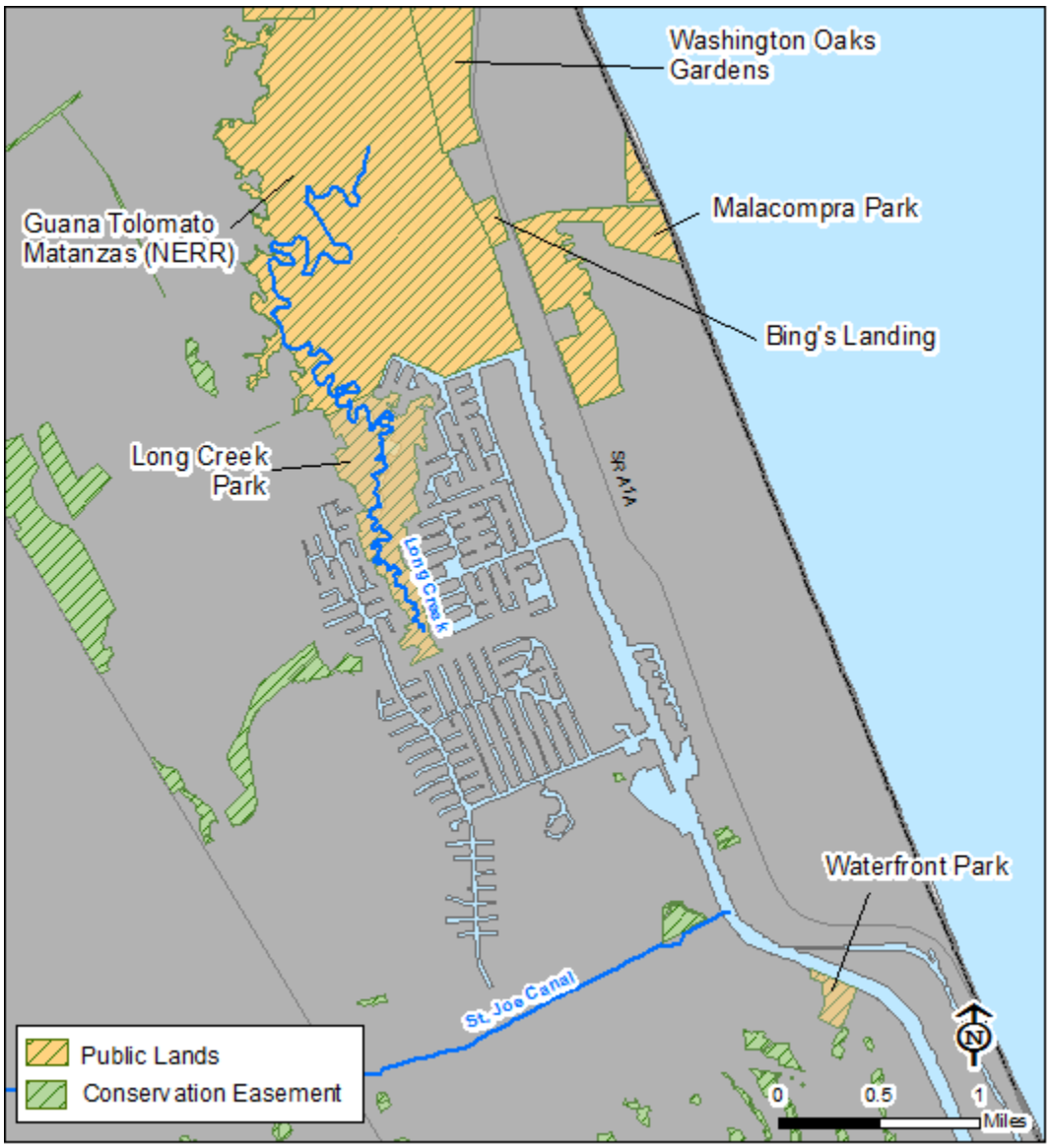


Figure 18: Preservation Lands Section C

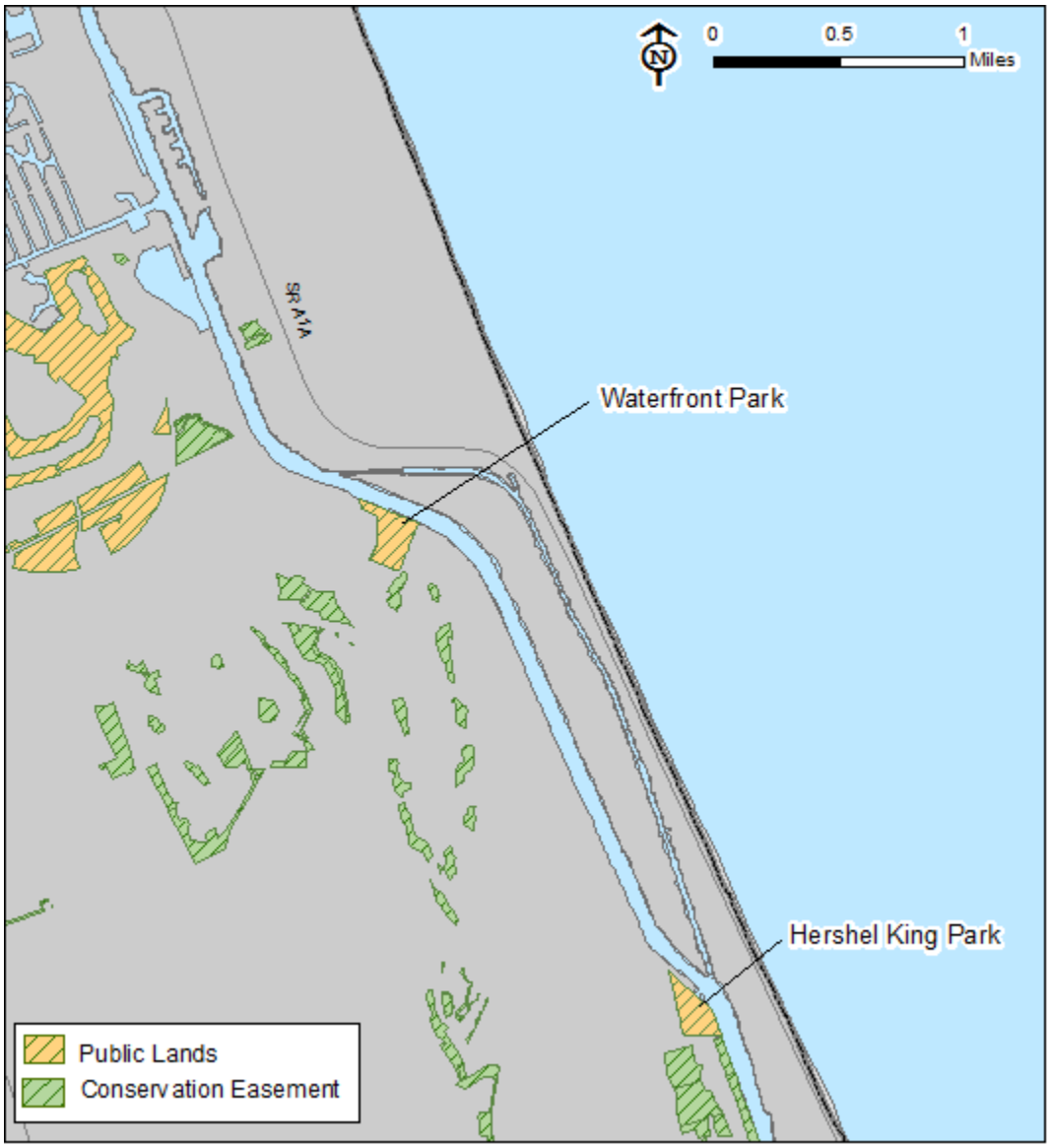


Figure 19: Preservation Lands Section D

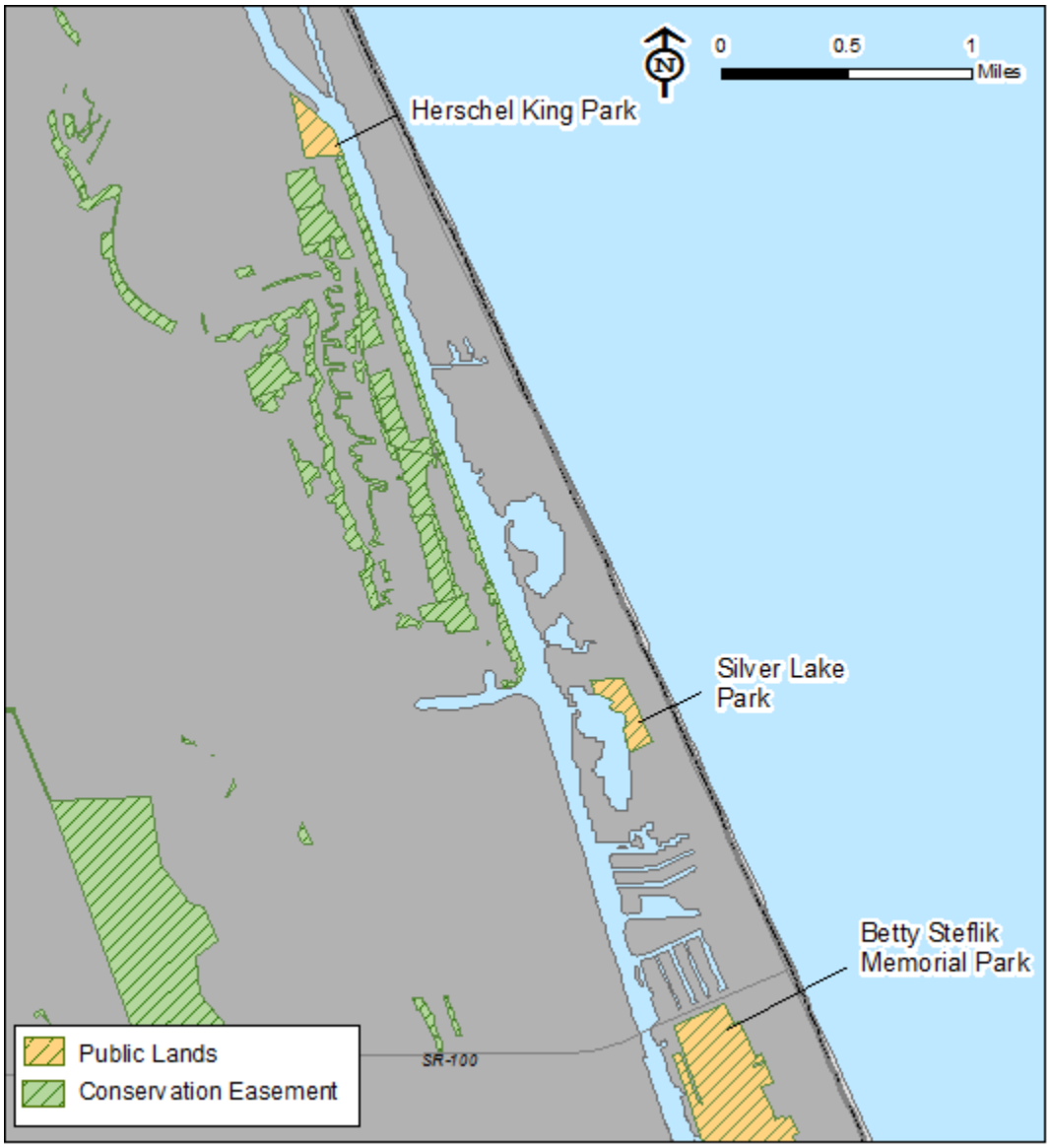


Figure 20: Preservation Lands Section E

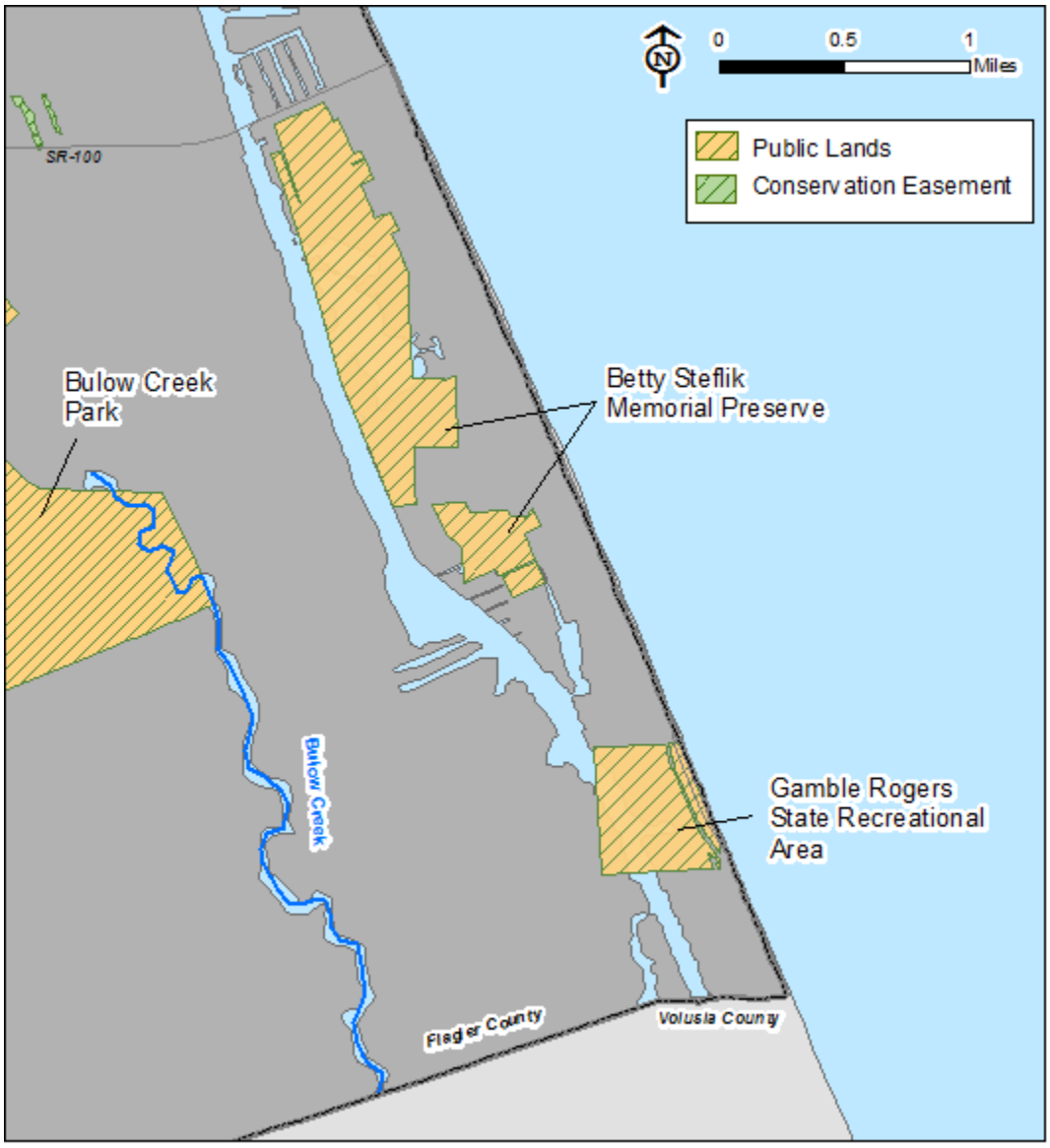
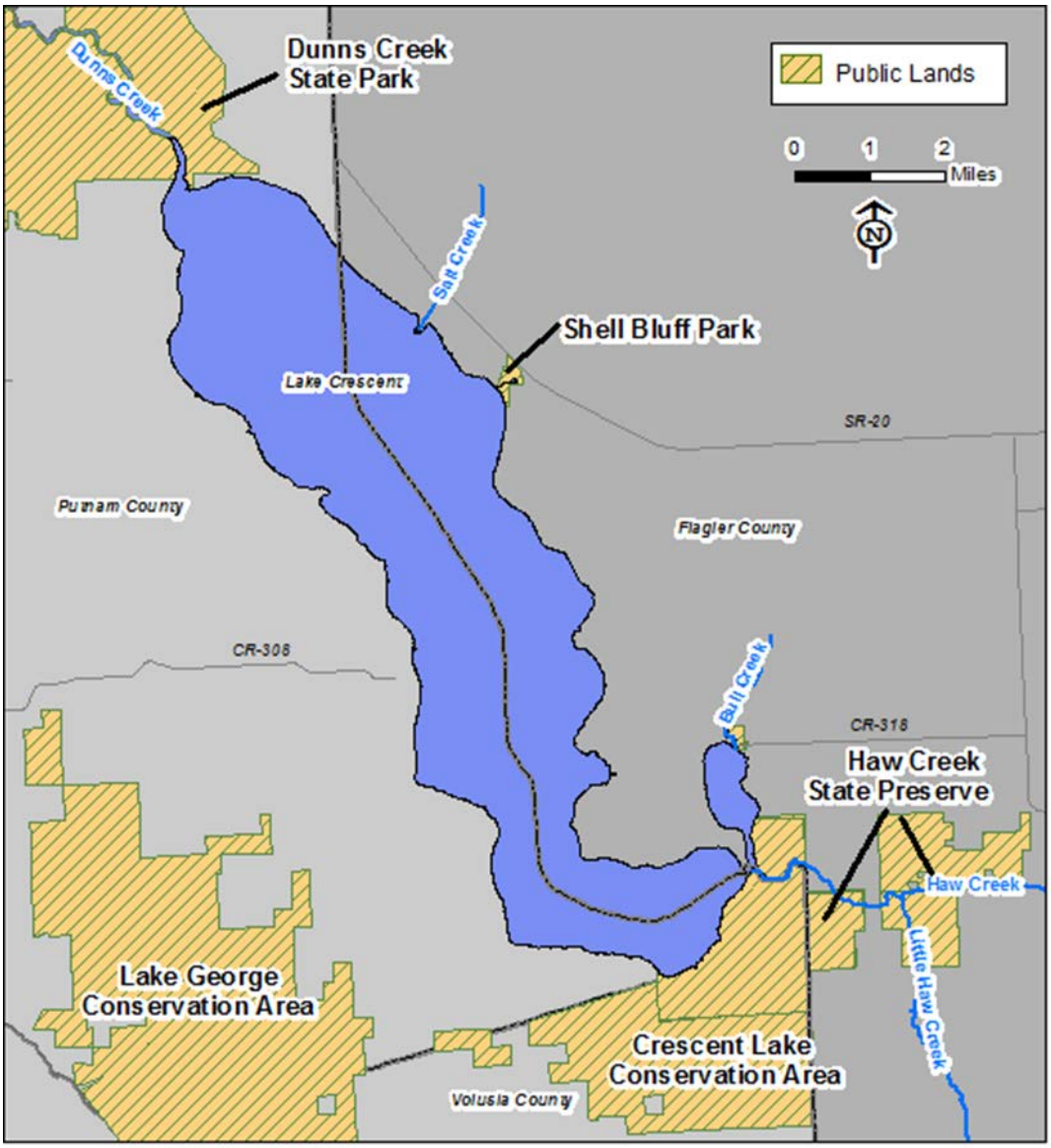


Figure 21: Preservation Lands Section F



2.4 Freshwater Availability along the ICW in Flagler County

Availability of freshwater appears to be an important factor in determining sustainable manatee habitat although it is not clear if the access to freshwater sources is necessary for manatee survival. Manatees appear to be capable of assimilation of sufficient freshwater for survival through diet but manatees are attracted to areas of freshwater (both natural and anthropogenic) and have been observed doing so regularly throughout the state. Manatees in estuarine or marine environments regularly seek freshwater sources to drink, such as creeks or industrial outfalls (Lefebvre et al., 2001).

Significant sources of natural freshwater from upland drainage to the Intracoastal Waterway in Flagler County include Pellicer Creek in the extreme north portion of the county and Long's Creek about 5 miles to the south. Both of these freshwater source areas are found within large conservation areas. It is likely that smaller, insignificant sources from seeps and small drainage creeks exist along the ICW. Also, extensive canal systems and mosquito drainage ditches throughout the City of Palm Coast and Flagler Beach contribute some freshwater drainage to the ICW. There is no documentation of freshwater springs located along the ICW in Flagler County.

The freshwater component of flow from Pellicer and Long's Creek freshwater systems occur as a mixed salt and freshwater inflow (brackish water) to the ICW in habitat that is likely too shallow to provide meaningful manatee occurrence based on the extensive tidal flats and shallow oyster reefs that exist between the larger creeks and the ICW. The urban canals in Palm Coast and Flagler Beach are, for the most part, armored with seawalls and freshwater is from anthropogenic sources like garden hoses, stormwater runoff, and sprinkler systems.

The City of Palm Coast operates three water treatment plants which have the ability to discharge concentrate from the treatment process into the ICW (see Figure 22 for location). This section contains two water treatment discharge locations. There had been concern that these discharges could become a warm water and/or freshwater attractant for manatees. The City of Palm Coast is presently monitoring the outfall near the Hammock Dunes Bridge for ambient water temperature, salinity, and manatee observance at the outfall as part of the FDEP wastewater permit. If manatees are found to be utilizing this outfall then the City will be required to follow up with FWC and FWS to provide additional assurances the outfall will not

negatively affect manatees. Figure 23 demonstrates the location of Palm Coast's two discharge points, both of which are located within the manatee protection speed zones.

Figure 22: Freshwater Sources City of Palm Coast

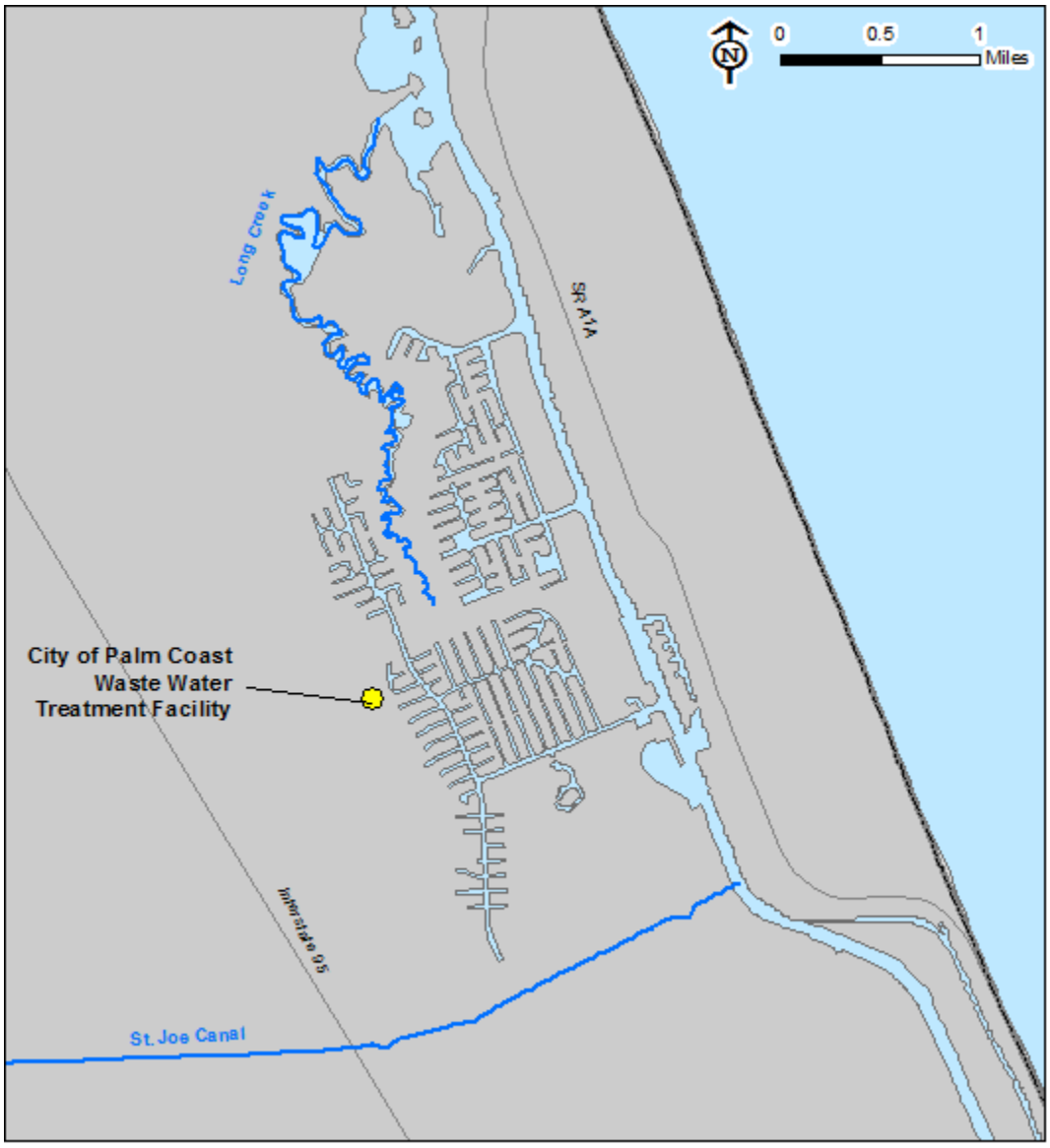


Figure 23: Palm Coast Water Treatment Effluent Discharge Points

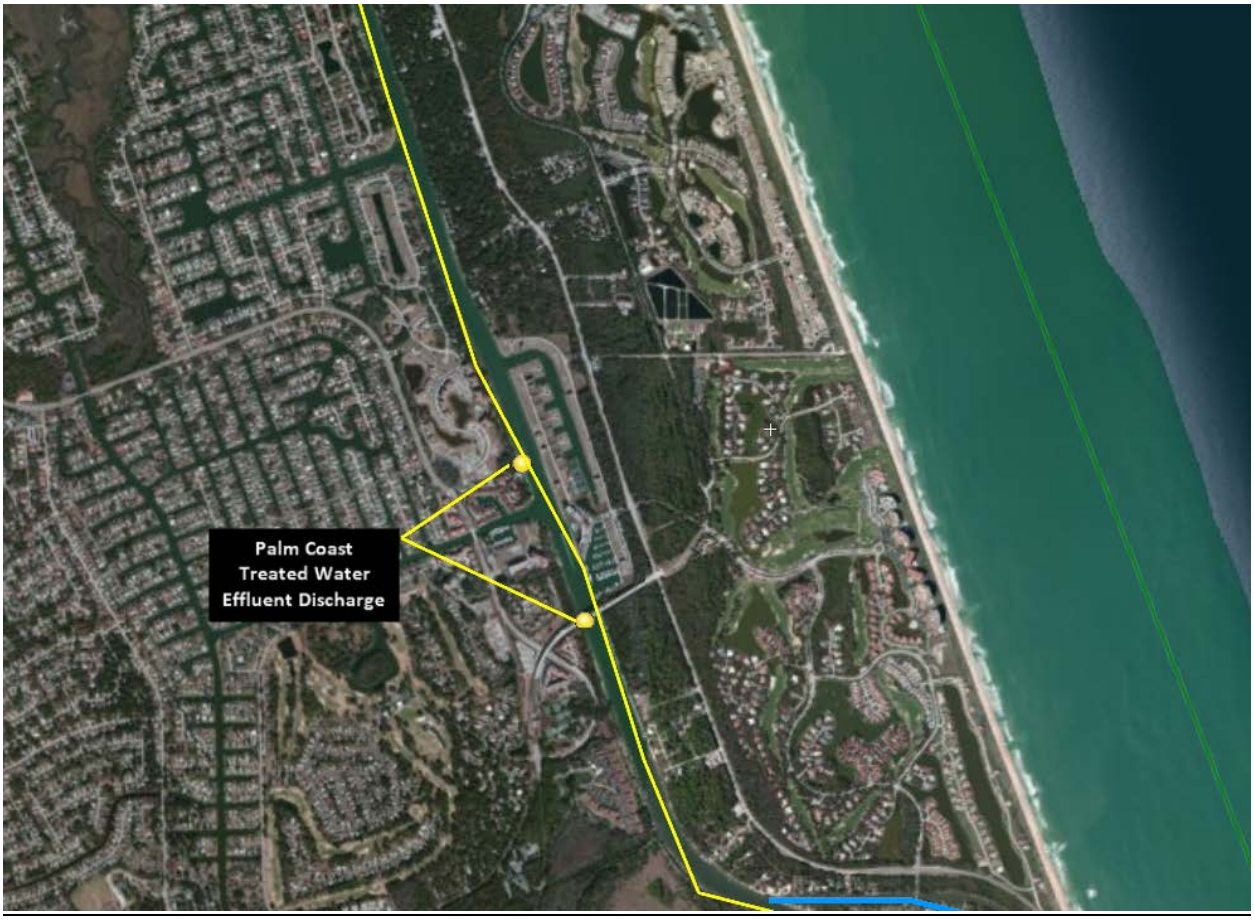
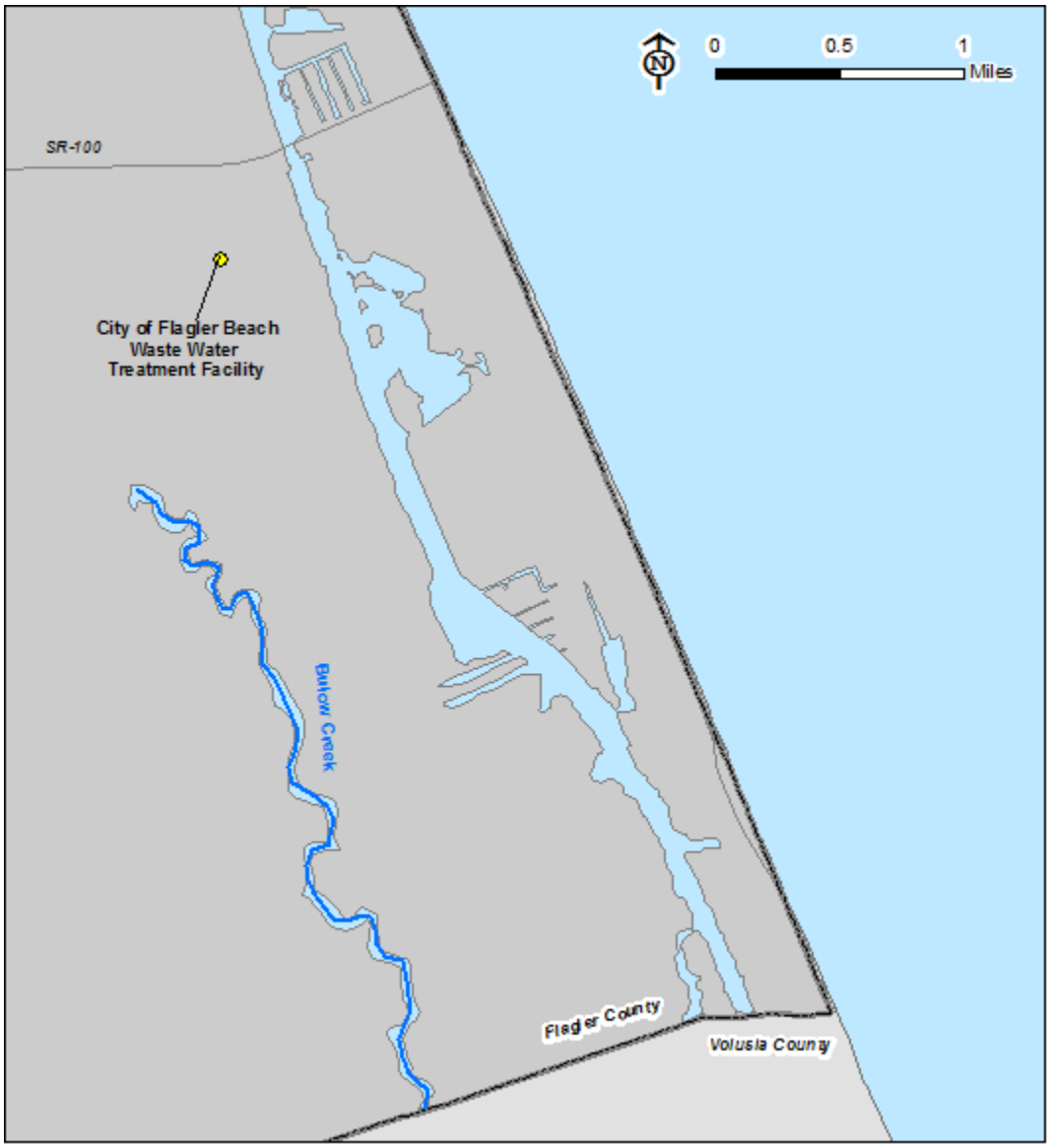


Figure 24: Freshwater Sources Section E



In addition to the freshwater sources found within the ICW, Lake Crescent is a freshwater lake associated with the SJR. Lake Crescent receives water from multiple creeks, canals, wetlands, and sheet flow after rain events. The SAV coverage found within Lake Crescent and associated

water bodies fluctuates in density depending on water quality factors associated with the amount of water entering the system (Sagan, 2007).

2.5 Forage Opportunities for Manatees in Flagler County

Manatees favor calm, shallow, warm near-shore marine, estuarine, and freshwater systems in Florida and forage primarily on submerged aquatic vegetation found throughout (Reid JP, Rathbun GB, and Wilcox JR, 1991). They have demonstrated tendencies to return to the same warm-water sites and forage sites annually and will congregate at these sites for foraging or warm-water refuge (Deutsch CJ, Reid JP, Bonde RK, Easton DE, Kochman HI, and O'Shea TJ, 2003).

The abundance of SAV appears to be a factor in influencing manatee distribution and in general, characterizes preferred manatee habitat and aggregation areas (Hartman, 1974). Similarly, manatees are limited to near-shore marine environments where the presence of aquatic macrophytes are limited by sunlight attenuation at relatively shallow depths in marine environments. Research has shown that manatees demonstrate a preference for shallow seagrass beds adjacent to deep water access and that "disproportionately large numbers" of cow-calf pairs are likely in such habitat (Hartman, 1979). There are no known seagrass beds in Flagler County and as such the lack of a stable food supply contributes to the use of the area by some manatees as a migratory corridor. While the ICW area may not have seagrass, manatees will consume other types of vegetation such as emergent salt marsh cordgrass (*Spartina alterniflora*) and other shoreline vegetation or floating vegetation, where it is accessible to them. Large beds of tapegrass thrive along the shoreline of Lake Crescent and Dead Lake when water quality conditions are favorable (Sagan, 2007). The beds expand and contract on a regular basis. Tapegrass is a freshwater SAV that provides significant forage for manatees along the SJR. A St. Johns River Water Management District (SJRWMD) study of SAV within the Lower SJR and associated waterbodies, including Lake Crescent, documented the extreme variations in SAV within Lake Crescent during the time period of 1996-2007. SAV coverage within the lake is directly correlated to light attenuation. During the study period, SAV bed coverage was less than 10% during the years with droughts (1999-2001 and 2006-2008) and following hurricanes (2004). Then in the years following these events, water quality conditions returned to optimum and SAV bed coverages averaged 74% (Sagan, 2007).

The saltmarsh areas within Flagler County are documented on Figures 25-29. The documented SAV locations within Lake Crescent are found on Figure 30.

Figure 25: Manatee Forage Map Section A. Source: FWC-FWRI

Figure 26: Manatee Forage Map Section B. Source: FWC-FWRI

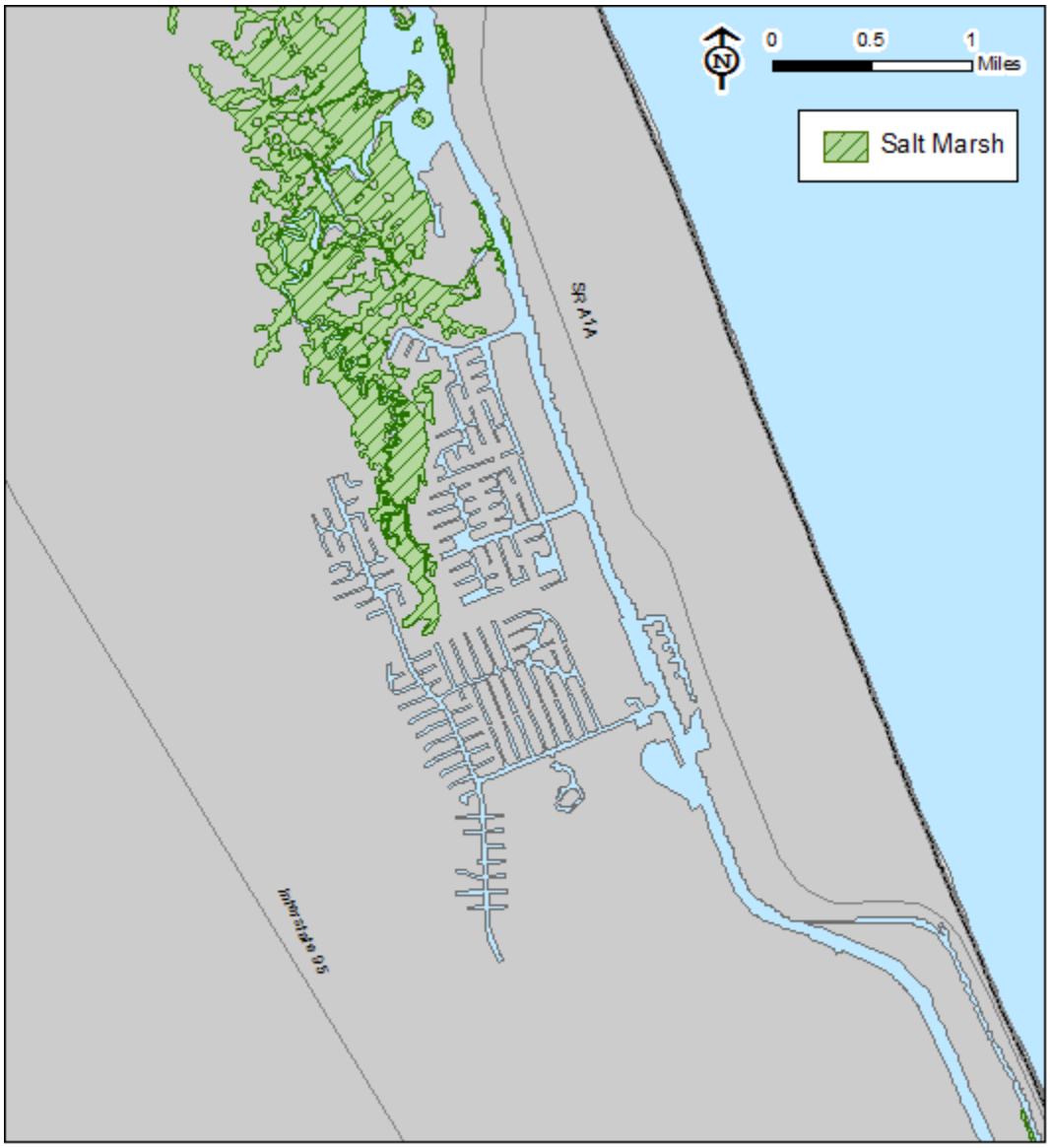


Figure 27: Manatee Forage Map Section C. Source: FWC-FWRI

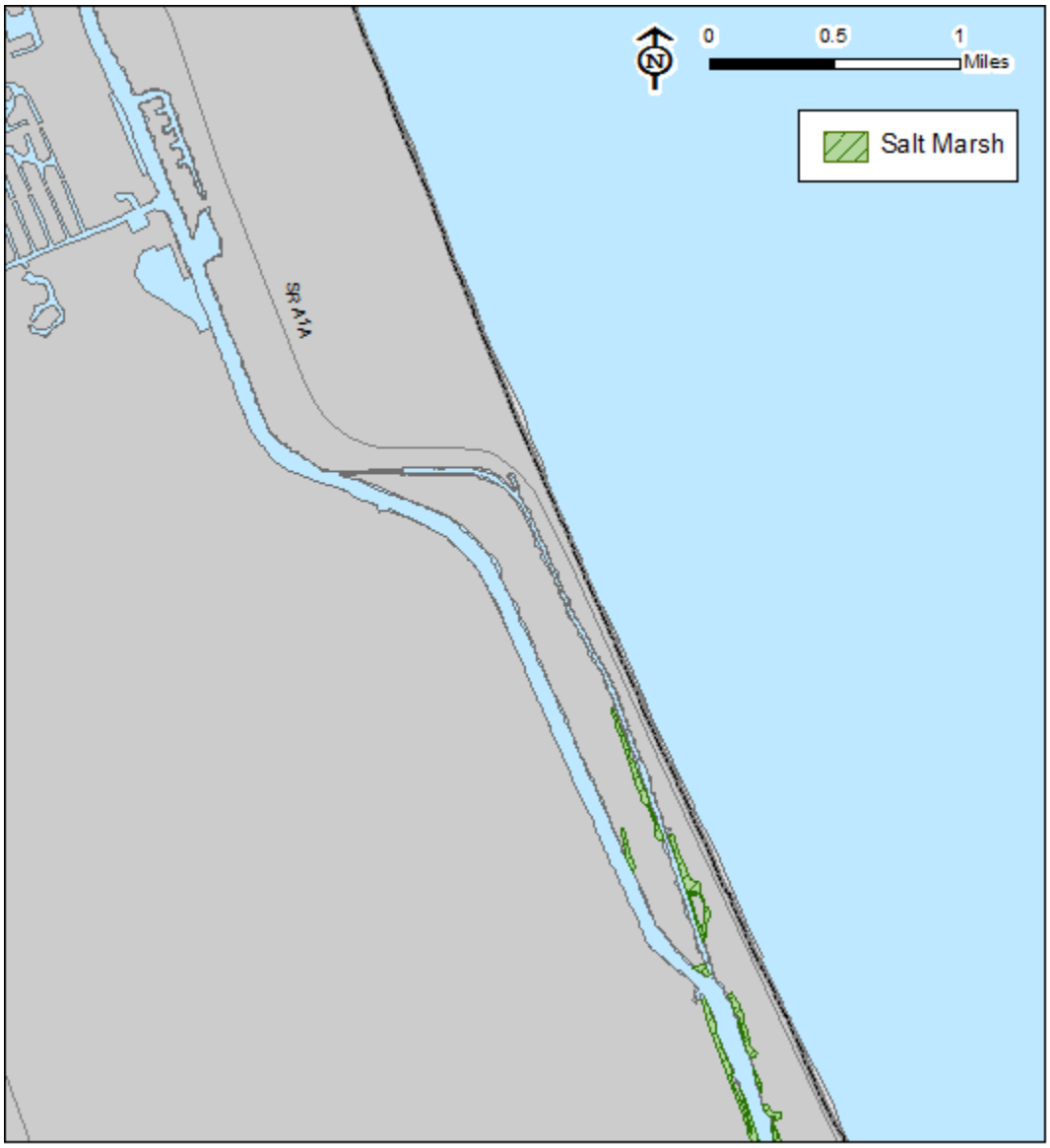


Figure 28: Manatee Forage Map Section D. Source: FWC-FWRI

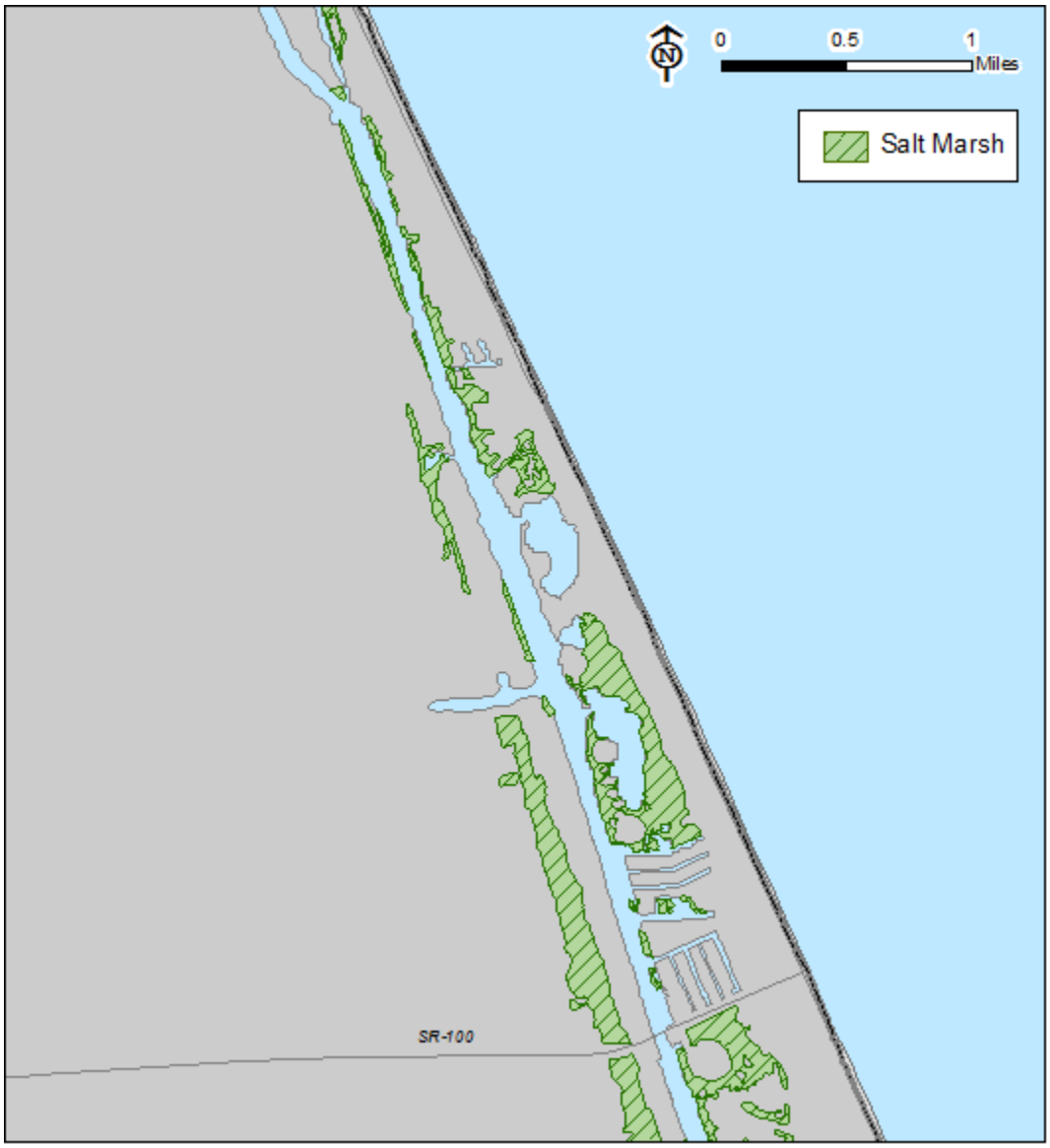


Figure 29: Manatee Forage Map Section E. Source: FWC-FWRI

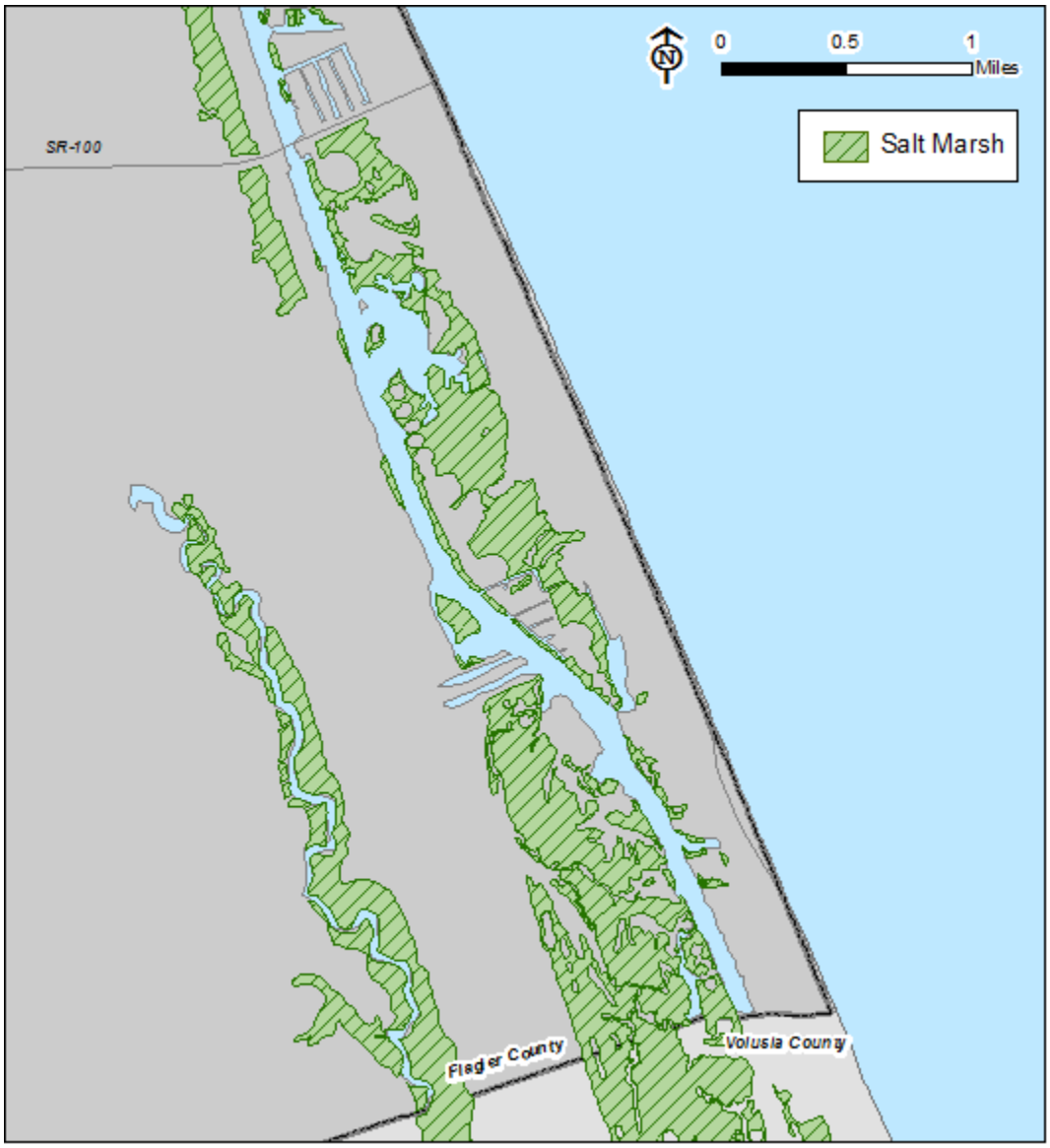
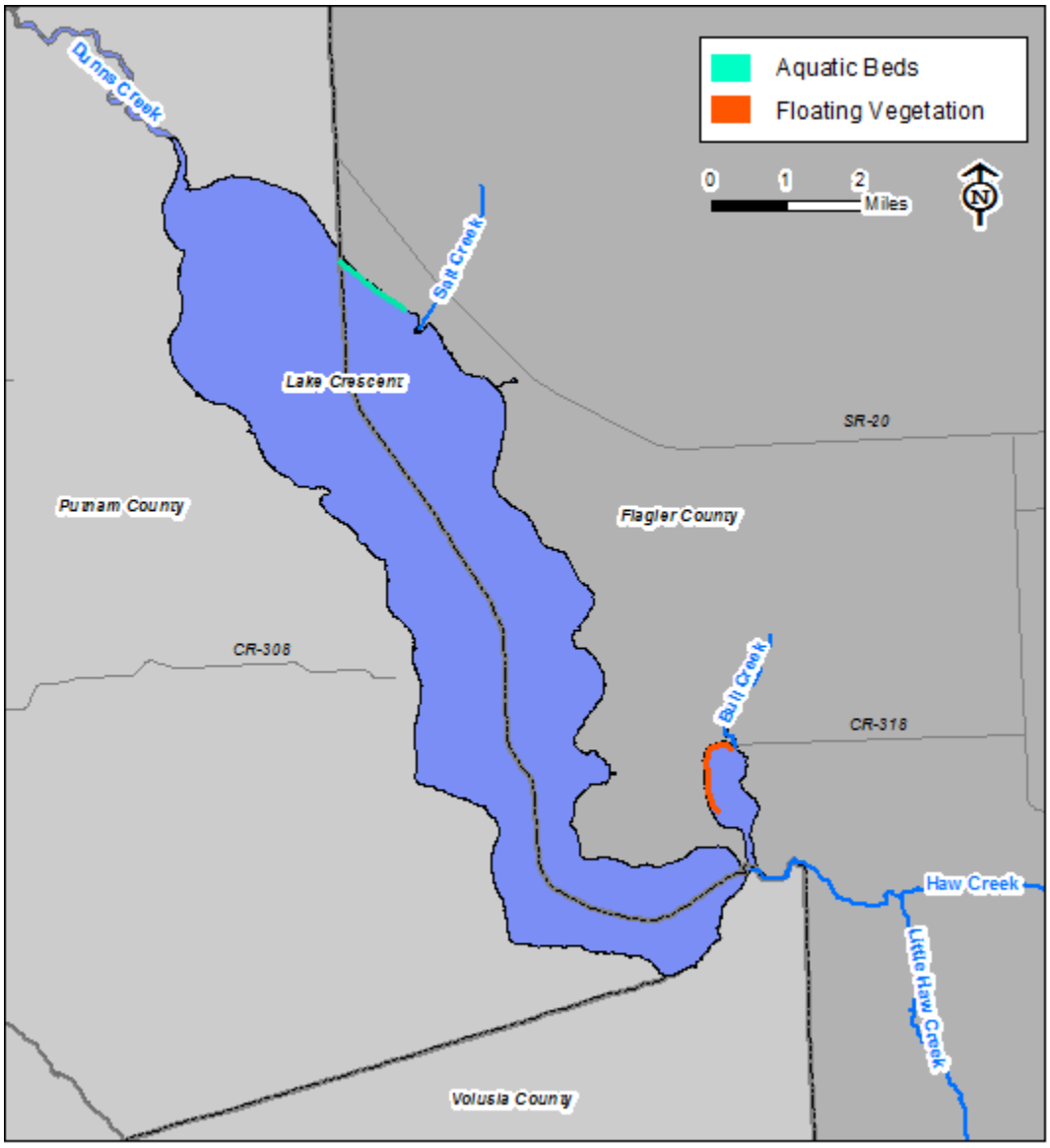


Figure 30: Manatee Forage Map Section F. Source: SJRWMD



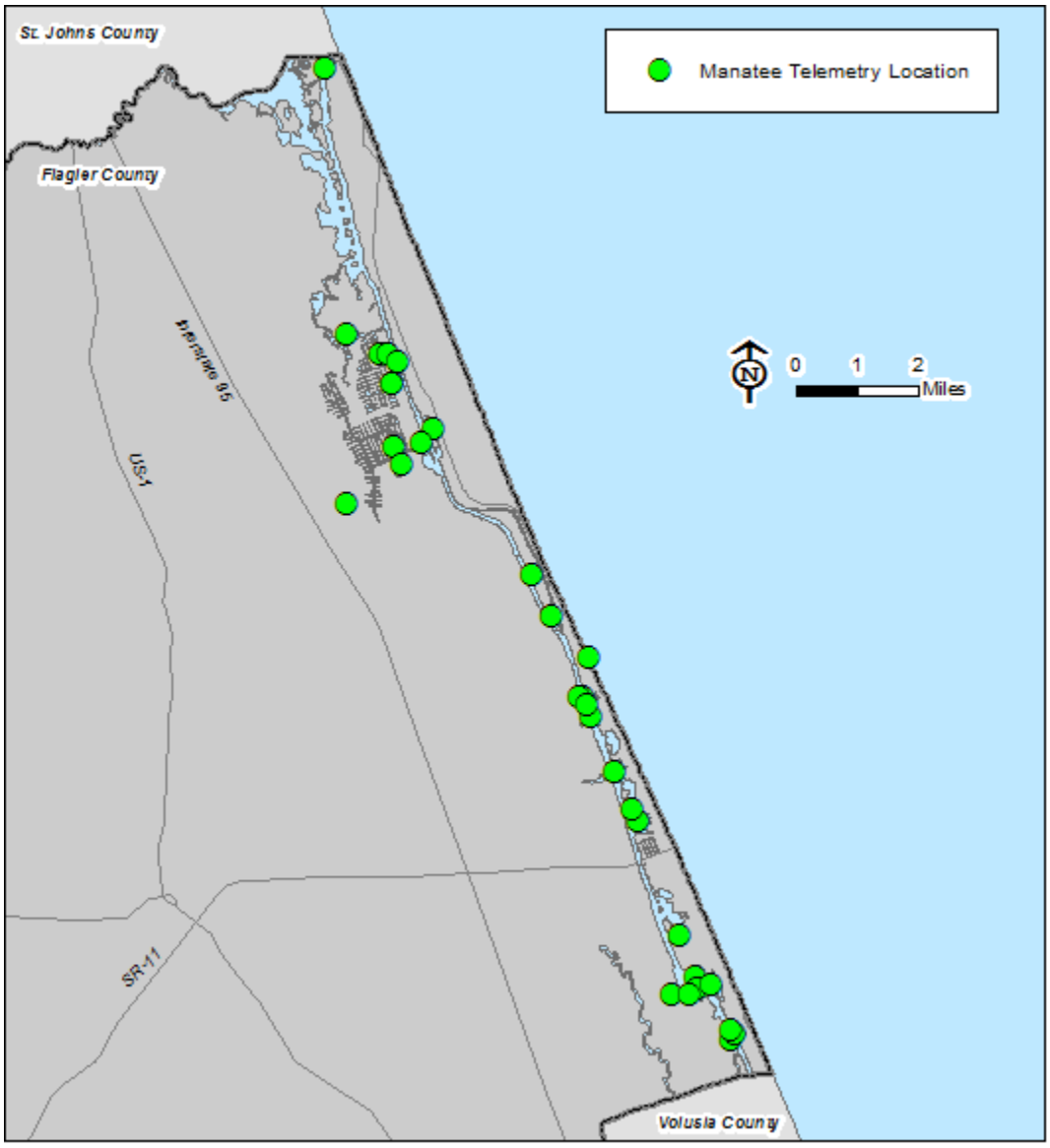
3.0 INFORMATION ASSESSMENT

3.1 Manatee Distribution

The distribution of manatees in Flagler County is generally correlated with water temperatures, which is dependent on the time of year. This is due to water temperatures in the ICW and Lake Crescent only being conducive to manatees during the late spring through early fall time period, and due to the fact that no known warm water sources of refuge are located within the ICW or Lake Crescent in Flagler County. Warm water attractants, such as springs (Welaka, Salt, Silver Glen, Blue, DeLeon, etc.) that attract manatees in large numbers are found both north and south of Flagler County along the SJR. From Coastal Flagler County, the nearest industrial warm water site to the south would be Florida Power and Light's Cape Canaveral Plant in Brevard County. This distance to warm water refugia along with the lack of seagrass, no significant freshwater attractants, and findings of the aerial and telemetry surveys leads to the assumption that manatee presence in Flagler County is mostly transient (migratory).

The canal systems of the cities of Palm Coast and Flagler Beach are known to be utilized by manatees for nursing and calving. This use is supported by the high numbers of perinatal deaths documented within the canal systems of the cities of Palm Coast and Flagler Beach, along with the findings of the aerial surveys and telemetry data. No technical literature or specific surveys have been completed, but the compiled data, and found within this document, suggests this use by manatees in Flagler County. Two sources of information were used for documenting manatee distribution, telemetry and aerial surveys. The telemetry reviewed was based on the Manatee East Coast Telemetry Dataset. This telemetry dataset documented movement patterns which were collected from a total of 78 manatees, tagged and monitored for varying amounts of time between 1988 and 1997. Of the 78 total manatees monitored, 10 were documented utilizing the ICW and other connected navigable waterways of Flagler County during this time period. Please see Figure 31 below for an overview of the locations of manatees documented by the telemetry dataset. Aerial surveys of the ICW were completed between the years 2005 to 2007. The aerial surveys documented countywide manatee distribution on a per flight basis, with generally two flights conducted per month over this time period. The aerial surveys confirmed the findings of the telemetry data, both of which document manatee usage throughout Flagler County's ICW and other connected navigable waterways with higher use during the warmer months of the year.

Figure 31: Telemetry Data Manatee Locations, 1988-1997. Source: USGS

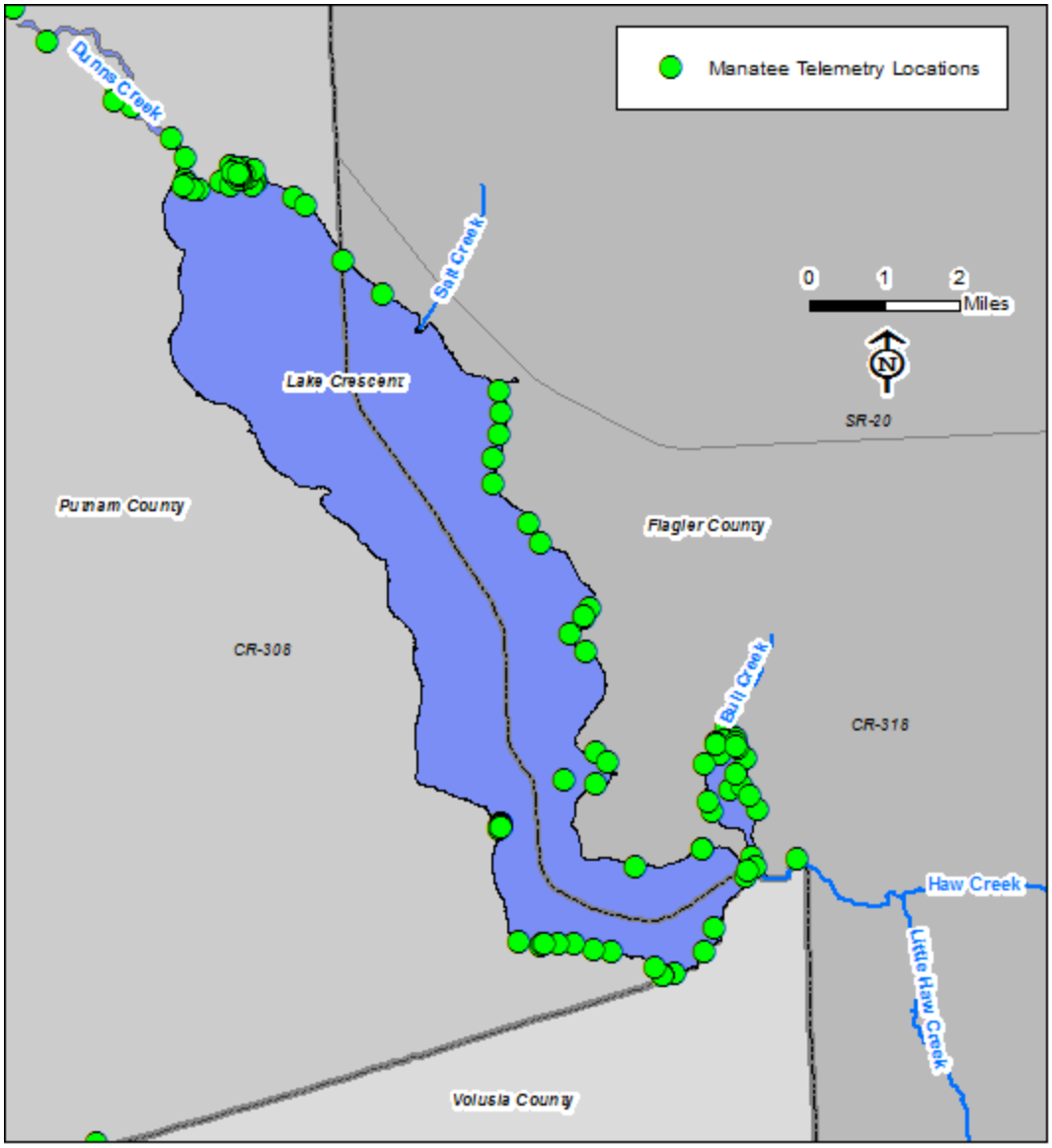


The Manatee East Coast Telemetry data did not document manatee use in Lake Crescent and no aerial surveys have been completed. Since no manatee aerial surveys have been completed

for the Lake Crescent area of the SJR, additional manatee telemetry data was reviewed to evaluate potential manatee use for this area. Manatee telemetry data obtained from Sea to Shore Alliance (S2S) shows some warm season use of Lake Crescent by manatees. This organization is responsible for tracking and monitoring manatees that are released back into the wild, following rehabilitation. This work, as part of the Manatee Rehabilitation Partnership, helps to document that rehabilitated manatees are acclimating back into their natural habitats successfully. While a number of the manatees tracked by S2S transited the waters off the entrance waterbody to Lake Crescent, two male manatees did show extensive use of this waterbody in June/July 2005 and June 2007 and were sometimes noted as being accompanied by up to four other manatees (Ross, 2015). This is an indication that these animals are using waterways similarly to other wild manatees. Given the time spent in the area and the available forage, it is reasonable to assume that manatees may use the lake for foraging in addition to other behaviors such as traveling, resting, and socializing. With documented manatee use of natural springs in the general area, such as Welaka Spring, and those farther to the south (Salt Spring, Silver Glen Spring, Blue Spring, etc.), this area may receive frequent use and further documentation may come through the follow-up tracking of other manatees along the St. Johns River. Figure 32 documents the manatee telemetry data from Sea to Shore Alliance, which is tracking data for two male manatees that used Lake Crescent (2005 and 2007).

For more information on the Sea to Shore Alliance manatee tracking please see their website, http://sea2shore.org/focal-species/manatees/united-states/tracking-manatees/

Figure 32: Telemetry Data Manatee Locations, 2005-2007. Source: Ross, 2015



3.2 Aerial Surveys

The FWC Fish and Wildlife Research Institute (FWRI) completed aerial manatee surveys of coastal Flagler County to help understand the spatial and temporal distribution of manatees in the ICW area. The aerial surveys were flown by FWC staff twice a month for two years, from

November 2005 through September 2007 (FWC- FWRI, 2005-2007). A total of 47 survey flights were flown throughout the two year survey period. Each flight surveyed approximately 8.7 square kilometers of Flagler County coastal waters. Aerial surveys have been the most reliable data collection technique for the determination of relative manatee abundance and distribution (Hartman, 1979; Irvine and Campbell, 1978; Packard et al., 1986; Ackerman, 1995). Observations can be used to generally assess the relative abundance and distribution of manatees at the time the survey was flown. As a result, counts must be viewed as relative only to trends in general abundance, countywide distribution, and habitat use patterns (Irvine AB andCampbell HW, 1978). Sight obstructions such as tree canopy cover, wind and wave action, surface glare, and water clarity may inhibit the sighting of manatees during aerial surveys. However, the number of manatees sighted during aerial surveys and the frequency of manatee sightings may reflect the value of an area to manatees for foraging, resting, calving, and traveling. The aerial surveys documented the transient nature of manatee movement through coastal Flagler County waters. No aerial surveys have been completed for Lake Crescent. The manatee sightings from the 2005-2007 surveys are depicted in the Figures 33-37.

The aerial surveys also documented that manatee use primarily occurs in Flagler County during the warmer months. Of the 47 flights, no manatees were observed in the months of December, January, or February. Only 6 manatees were observed in the month of November. The numbers increased slightly during the months of March, April, September, and October with total manatee counts of 16, 15, 14 and 14, respectively for those months. The months of May through August saw higher numbers of total manatees each month, as anticipated with warmer waters. Please see Figure 38 for a graph of the seasonal variation of manatees observed during the 2005-2007 aerial surveys. Manatee counts were highest within planning Section D.

Figure 33: Aerial Survey Map Section A. Data Source: FWC-FWRI

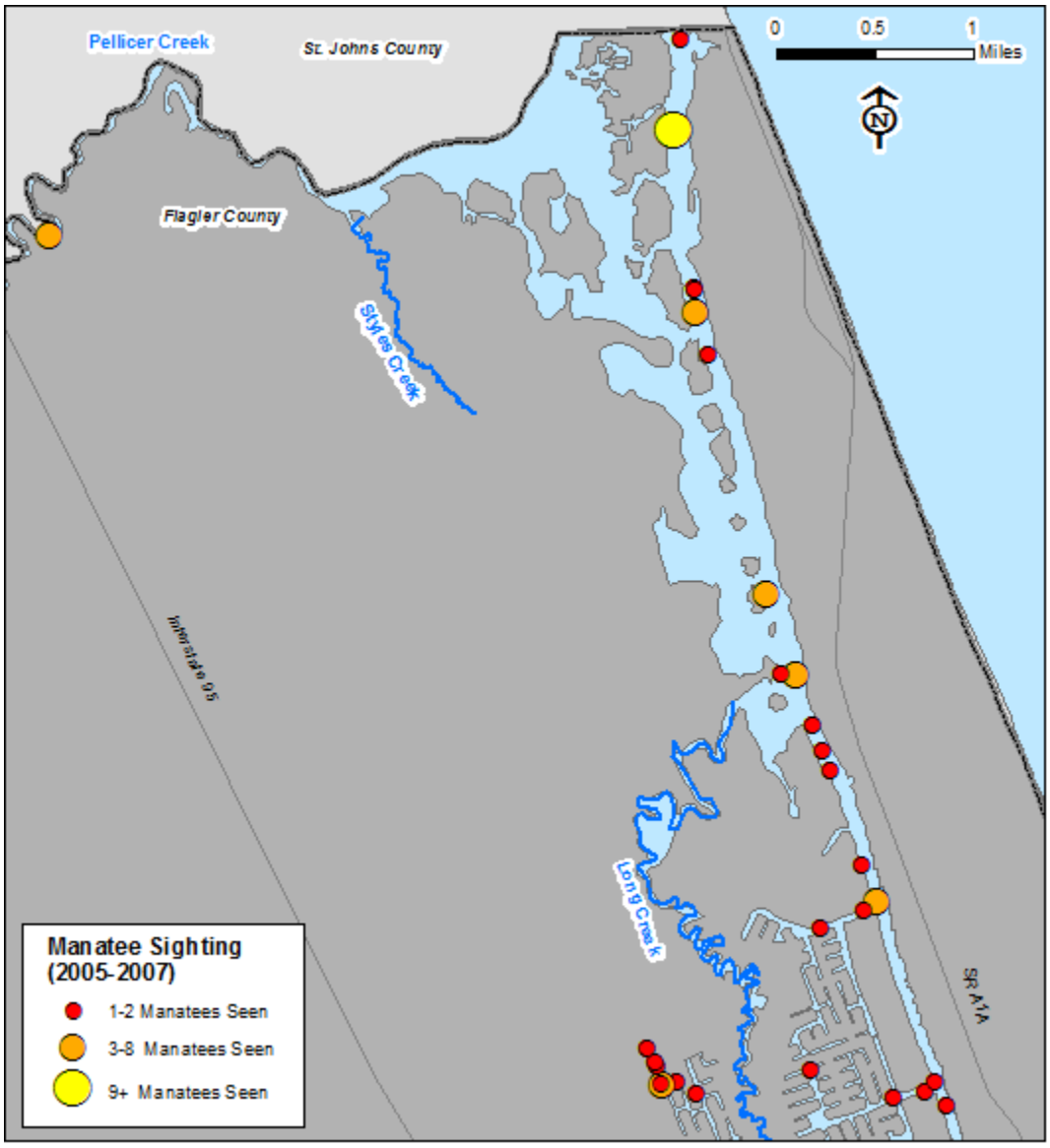


Figure 34: Aerial Survey Map Section B. Data Source: FWC-FWRI

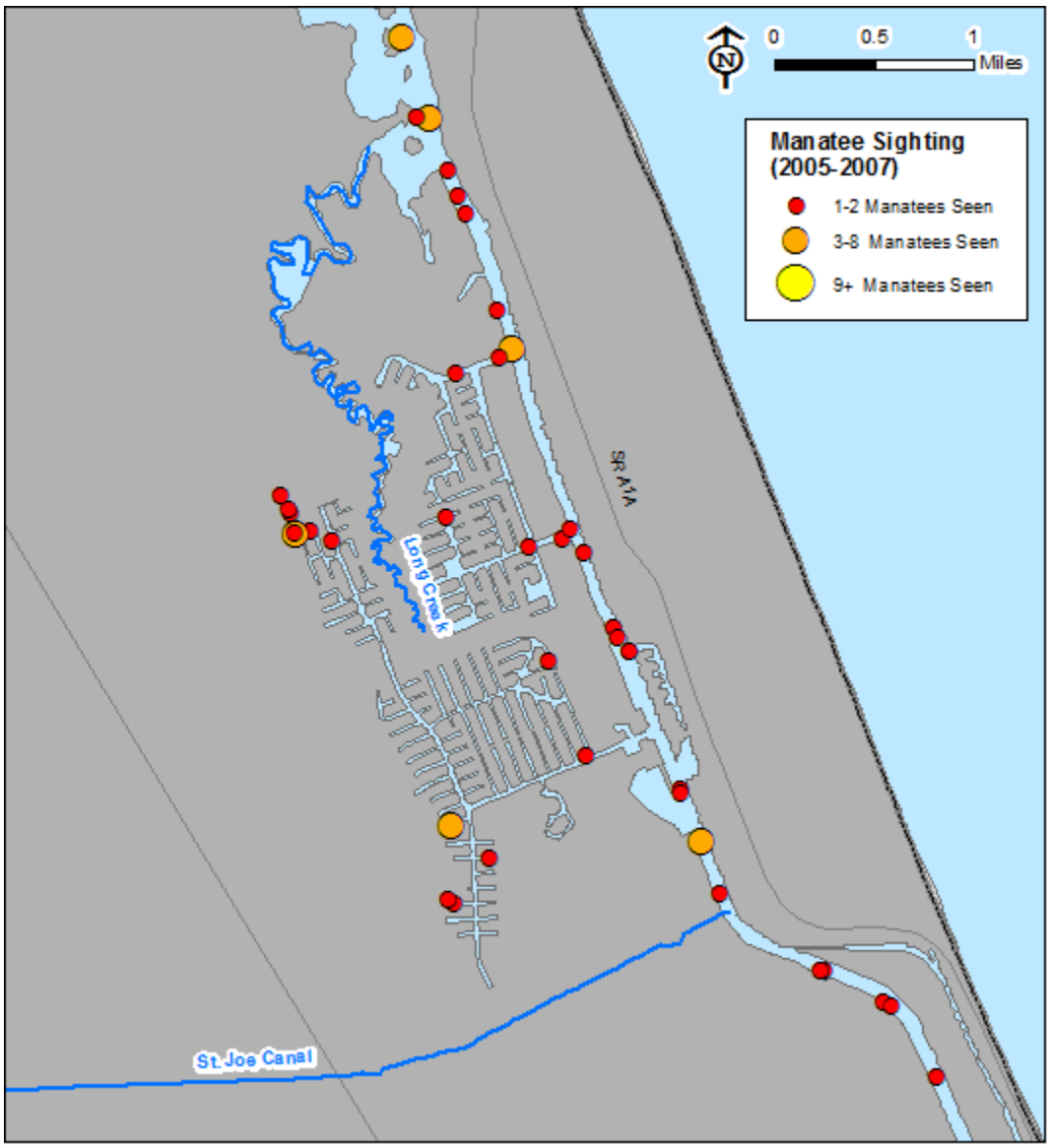


Figure 35: Aerial Survey Map Section C. Data Source: FWC-FWRI

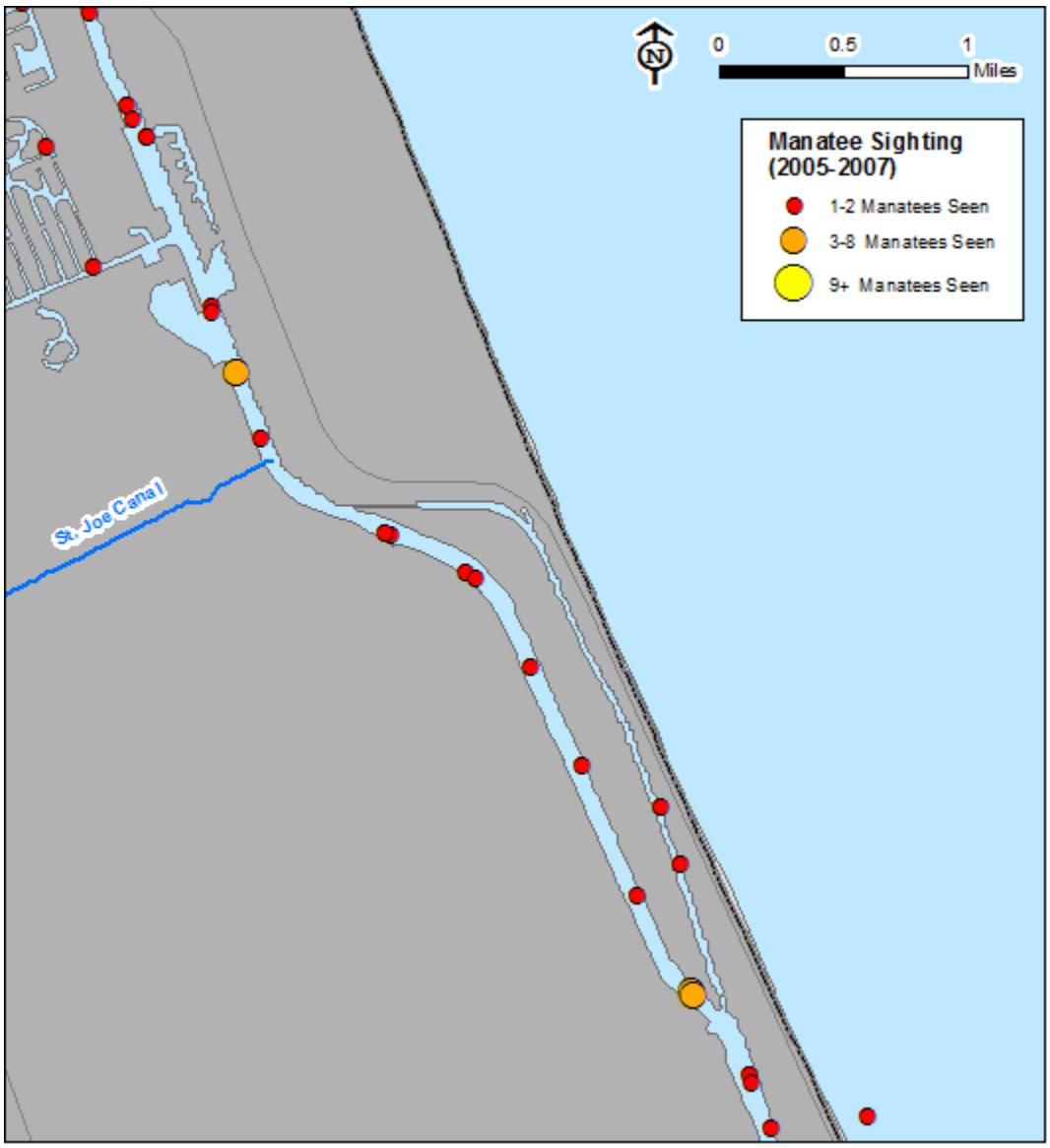


Figure 36: Aerial Survey Map Section D. Data Source: FWC-FWRI

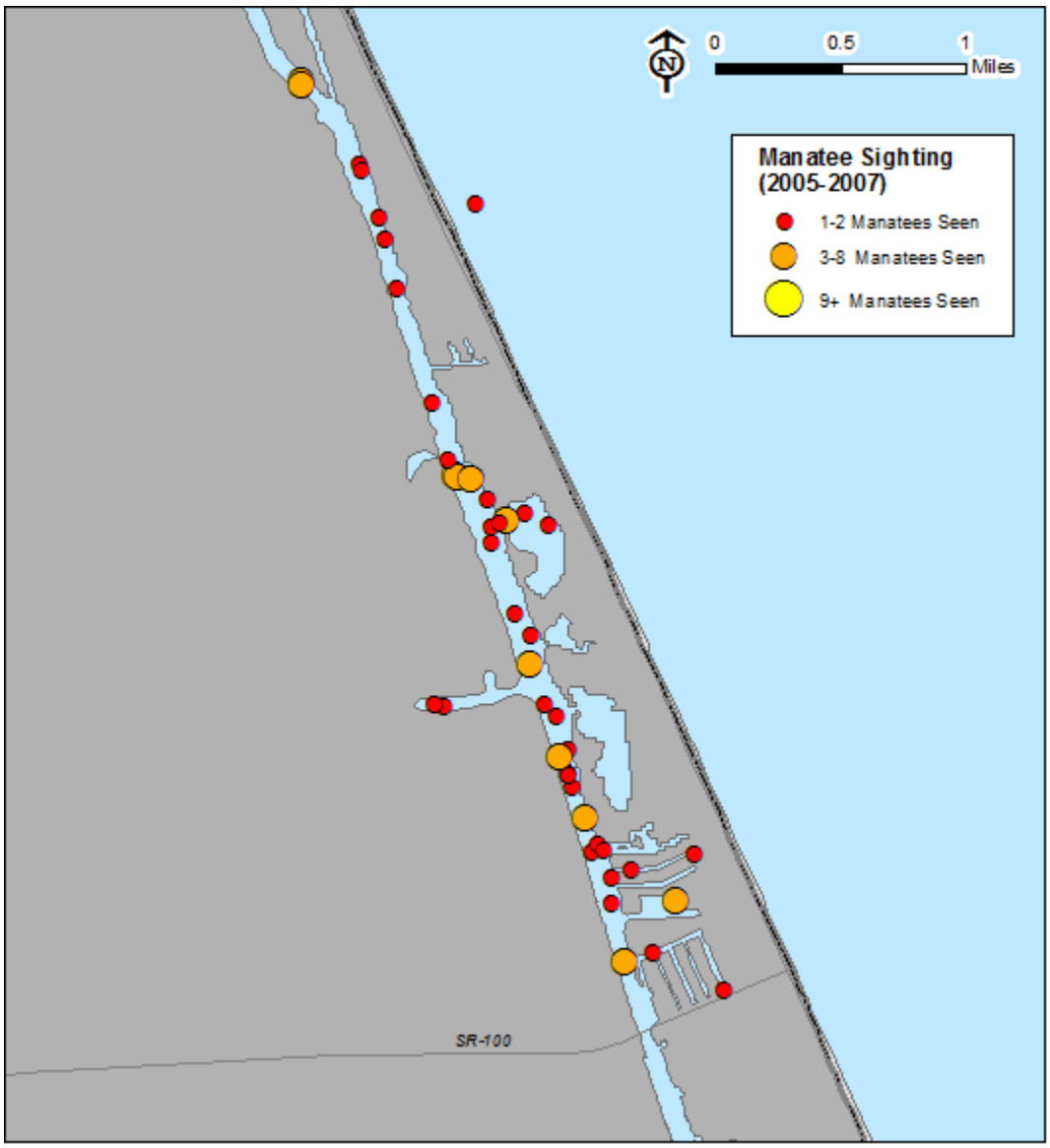


Figure 37: Aerial Survey Map Section E. Data Source: FWC-FWRI

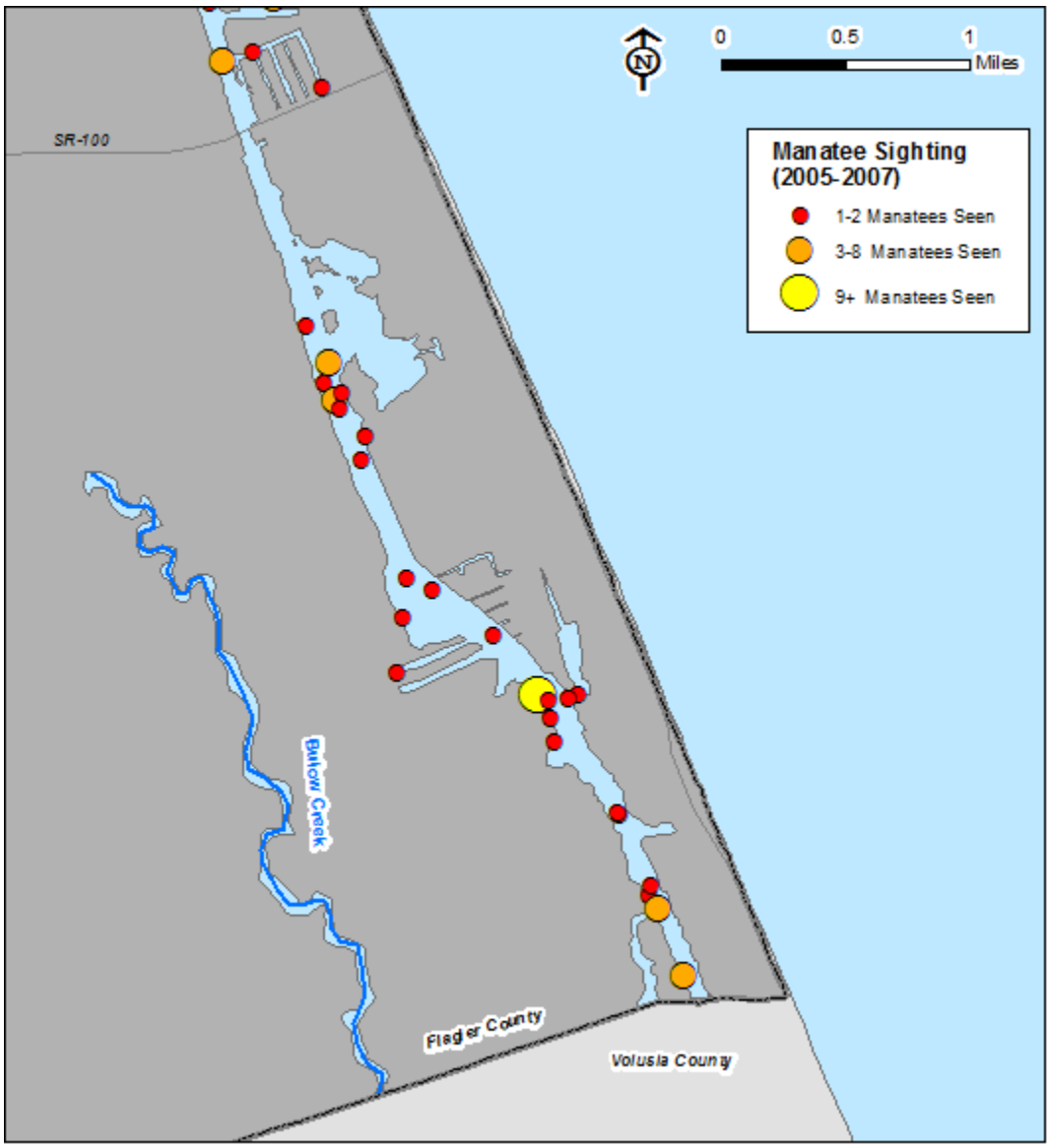
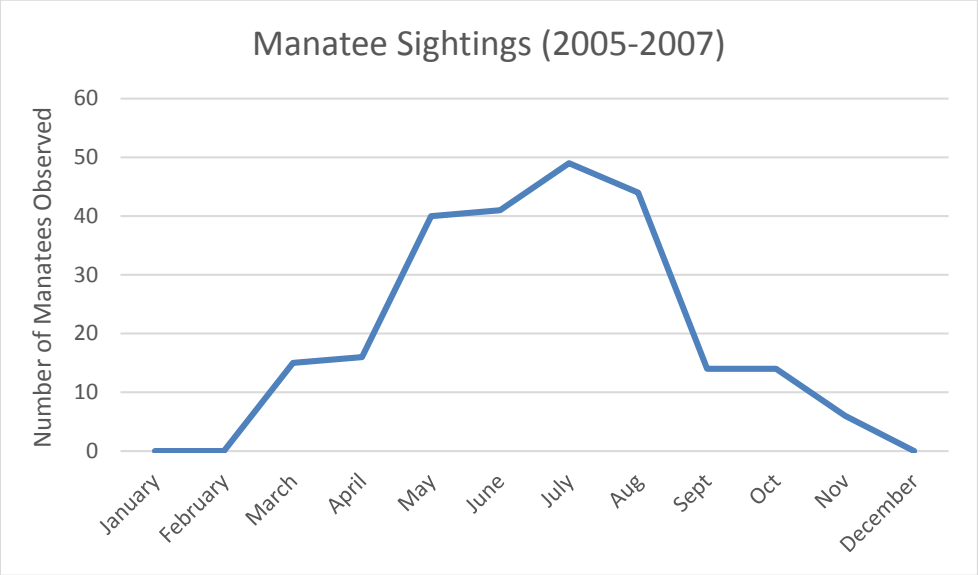


Figure 38: Seasonal Overview of Manatee Surveys. Data Source: FWC-FWRI



3.3 Manatee Mortality

Manatee carcasses have been routinely recovered and examined by either state or federal entities since 1974. A Manatee Carcass Salvage Program was initiated by federal entities, and that program was transferred to the State of Florida in July 1986. In 1992, a dedicated state laboratory and necropsy facility was constructed to perform post-mortem examinations. Currently, staff from four field stations collect most carcasses from Florida and transport them to the FWC Marine Mammal Pathobiology Laboratory (MMPL) in St. Petersburg, Florida or examine identified carcasses in the field.

Manatee mortality in Flagler County has been observed within the ICW and in smaller natural and man-made tributaries and canals and Crescent Lake. Also, eight (8) manatee mortalities were reported in the Atlantic Ocean since 1974.

Figure 39: Flagler County Manatee Mortality Categories. Data Source: FWC-FWRI

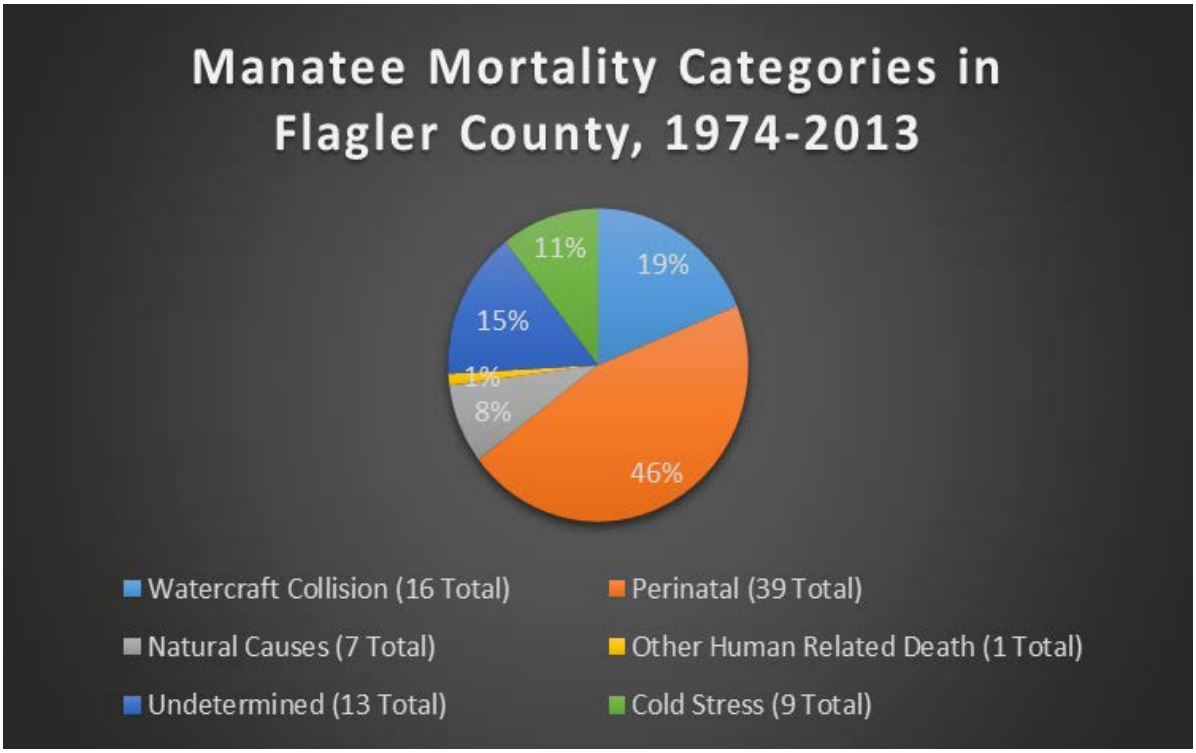


Figure 39 provides graphic representation of manatee mortality categories for Flagler County. There have been a total of eighty-five reported manatee mortalities between 1974 and 2013 in Flagler County. Perinatal deaths account for approximately 46 percent (39 total) of manatee mortality in Flagler County. Mortalities attributed to watercraft collisions account for 19 percent (16 total) of reported mortalities. One percent (1 total) of mortality was attributed to other human related activities (non-watercraft related). Mortalities attributed to cold stress account for 11 percent (9 total) of the reported mortalities. Mortalities attributed to natural causes account for 8 percent (7 total) of the reported mortalities. Mortalities attributed to undetermined causes account for 15 percent (13 total) of the reported mortalities.

Sixteen (16) watercraft-related deaths have been documented in Flagler County waters between 1974 and 2013. One of the watercraft-related deaths in May 2007 was a known vessel

strike from a 24-26 foot vessel and was recovered south of the SR100 Bridge. The locations of all verified manatee deaths in Flagler County between 1974 and 2013 are illustrated below in Figures 40- 45. Table 2 documents each manatee mortality identified on the maps with the date of recovery, sex, cause of death, and size of the manatee. Maps displaying the spatial distribution of recovered carcasses should be approached with caution because carcass recovery locations may only represent points of recovery, not necessarily locations where animals were injured or died.

Figure 40: Manatee Mortalities Section A. Data Source: FWC - FWRI

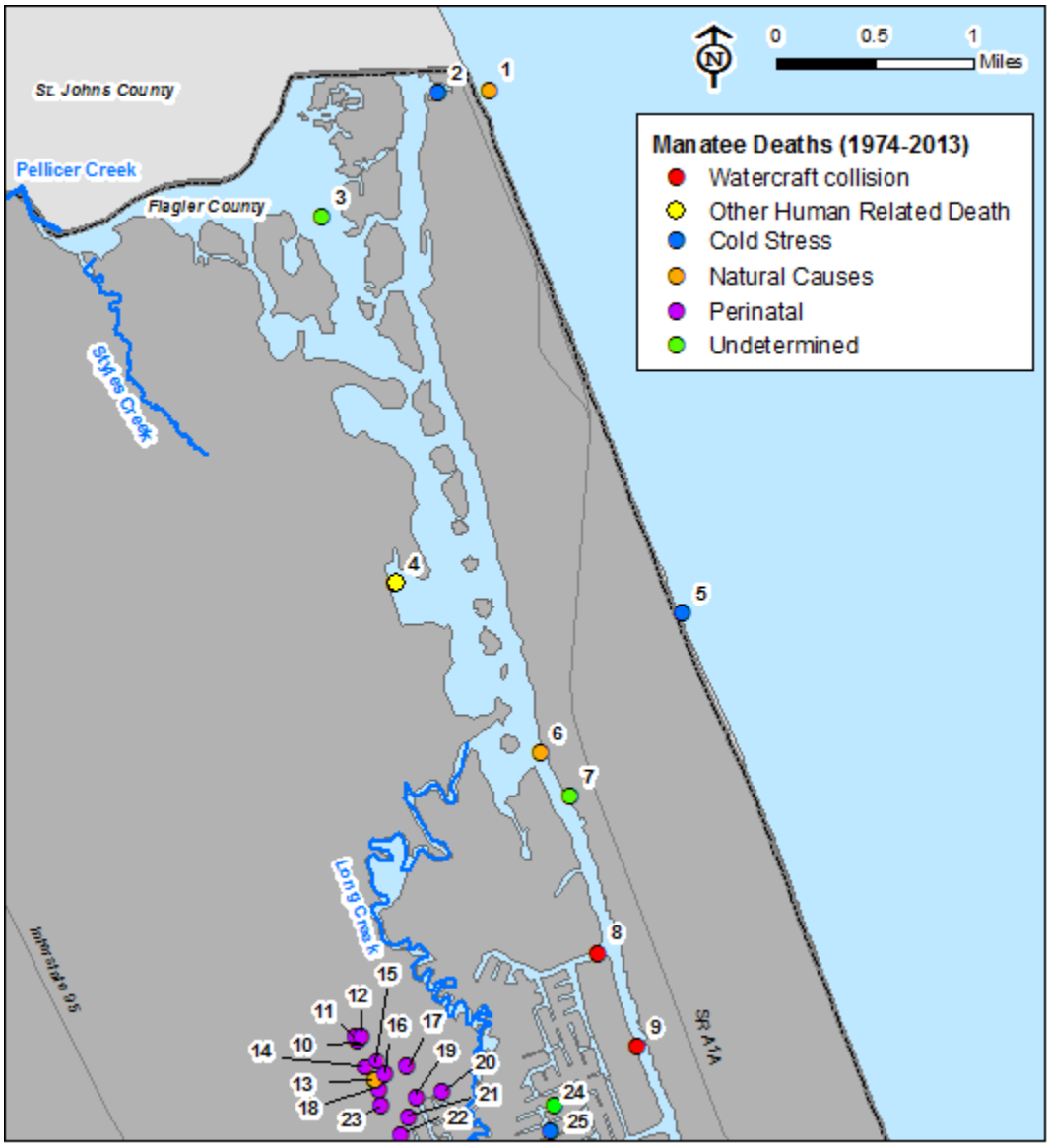


Figure 41: Manatee Mortalities Section B. Data Source: FWC – FWRI

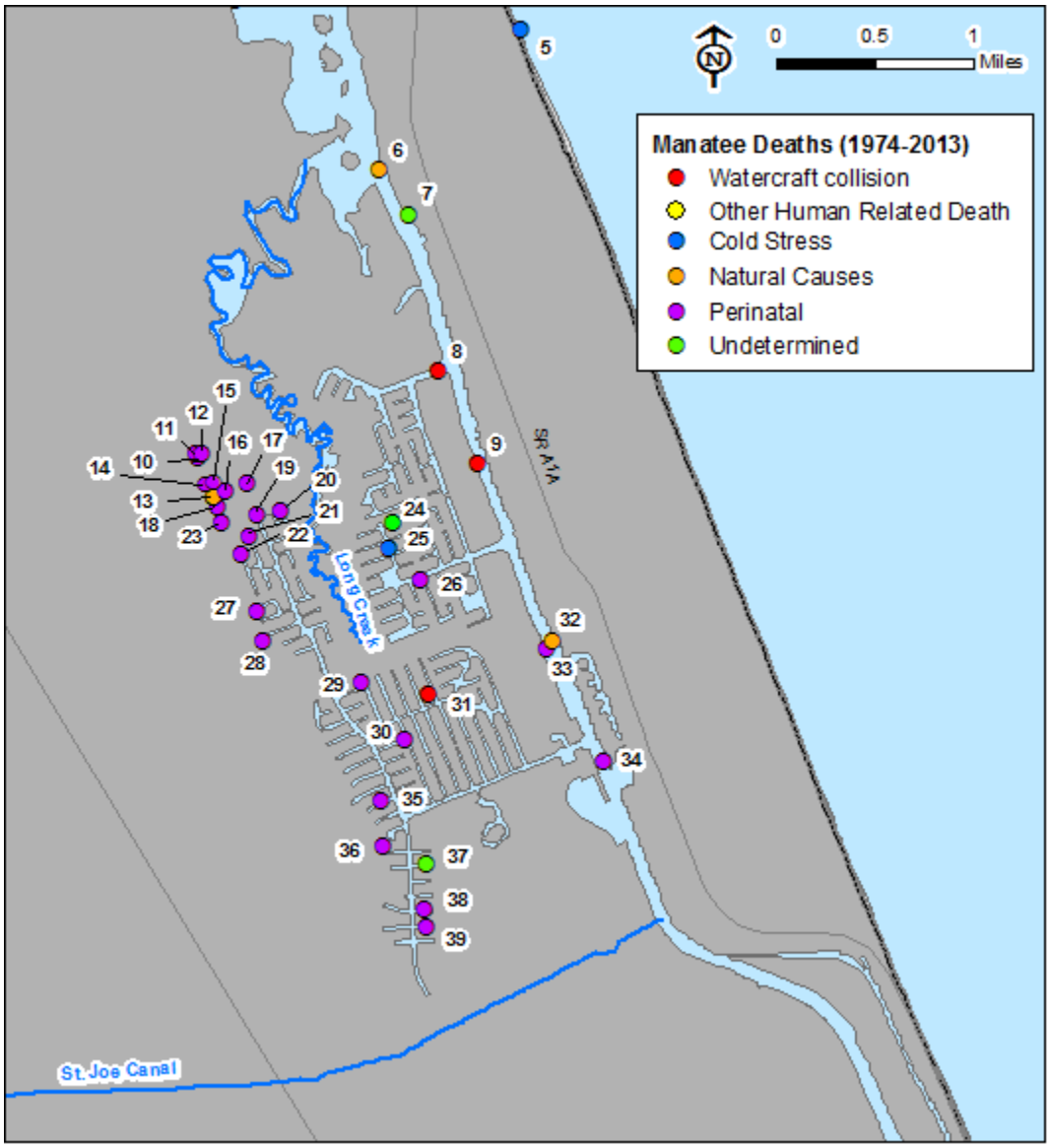


Figure 42: Manatee Mortalities Section C. Data Source: FWC – FWRI

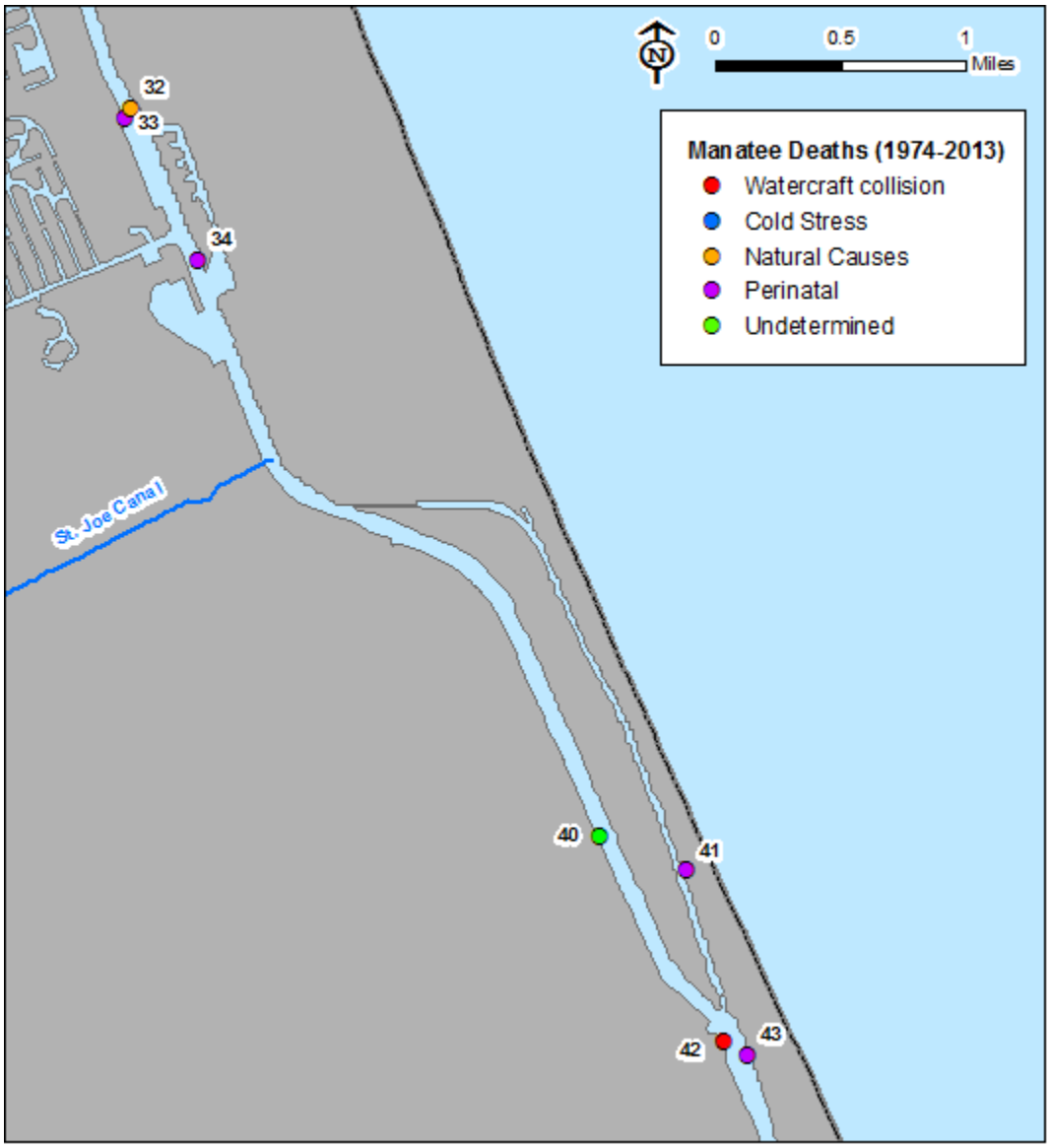


Figure 43: Manatee Mortalities Section D. Data Source: FWC – FWRI

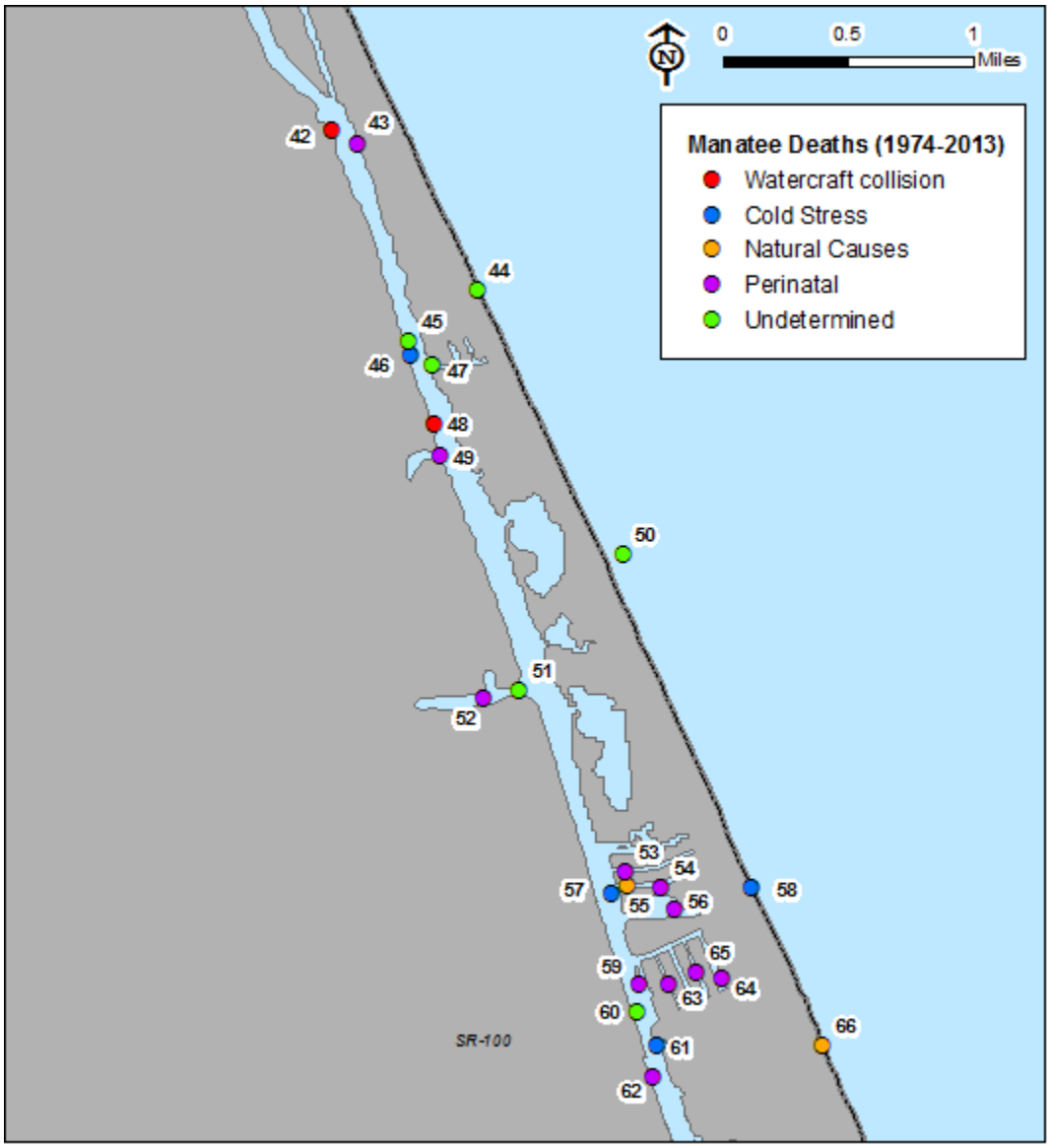


Figure 44: Manatee Mortalities Section E. Data Source: FWC - FWRI

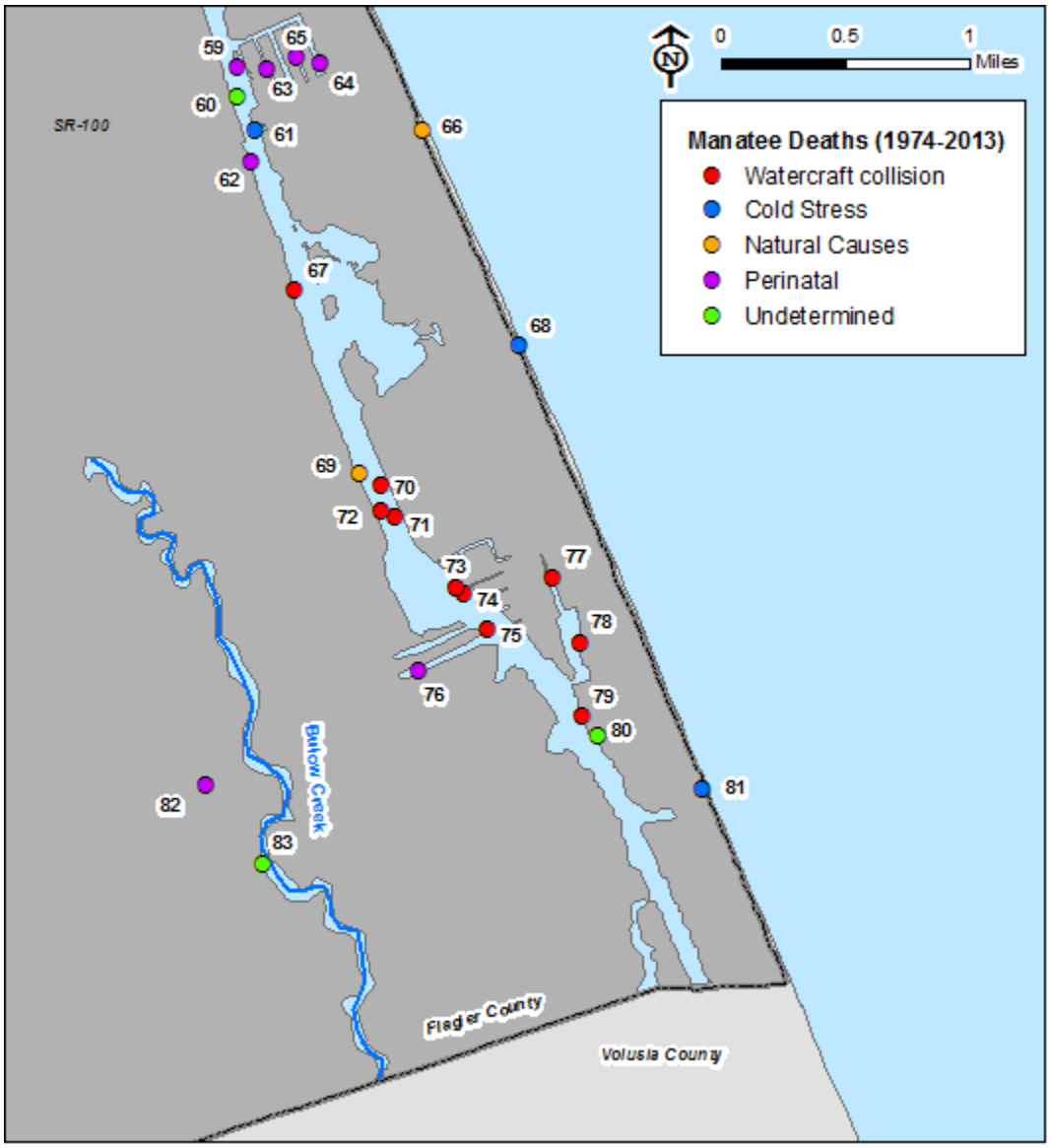


Figure 45: Manatee Mortalities Section F. Data Source: FWC - FWRI

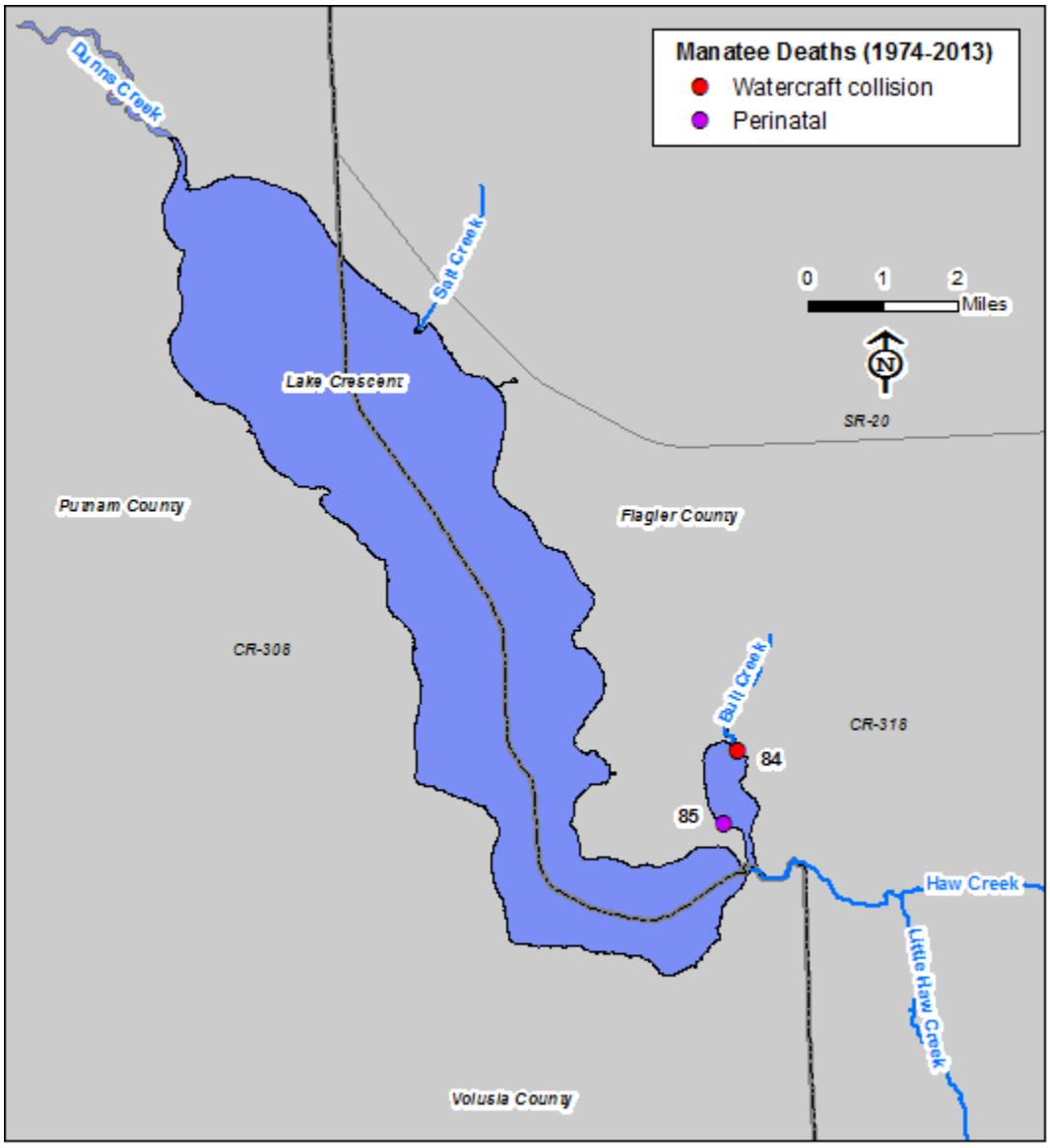


Table 2: Flagler County Manatee Mortality Data, 1974-2013. Data Source: FWC-FWRI

Map ID	Reported Date	Sex	Cause of Death	Carcass Length (cm)
1	2/19/1989	M	Natural: Other (includes red tide)	233
2	1/5/2004	F	Natural: Cold Stress (beginning in 1986)	219
3	7/3/2005	M	Undetermined: Too decomposed	352
4	12/6/1992	F	Human Related: Other	208
5	1/18/1996	M	Natural: Cold Stress (beginning in 1986)	234
6	2/9/1996	M	Natural: Other (includes red tide)	175
7	10/17/2008	U	Undetermined: Too decomposed	178
8	5/12/1990	F	Human Related: Watercraft collision	279
9	1/11/1995	M	Human Related: Watercraft collision	263
10	4/21/1992	F	Perinatal (<= 150 cm)	108
11	5/7/2003	F	Perinatal (<= 150 cm)	114
12	7/19/2004	M	Perinatal (<= 150 cm)	152
13	5/14/1995	F	Natural: Other (includes red tide)	308
14	5/12/1995	M	Perinatal (<= 150 cm)	135
15	5/13/1995	F	Perinatal (<= 150 cm)	147
16	7/26/2000	F	Perinatal (<= 150 cm)	128
17	5/13/2008	F	Perinatal (<= 150 cm)	149
18	5/7/2003	M	Perinatal (<= 150 cm)	102
19	5/7/1999	M	Perinatal (<= 150 cm)	123
20	7/21/2002	M	Perinatal (<= 150 cm)	133
21	11/20/2010	M	Perinatal (<= 150 cm)	133
22	8/20/2007	M	Perinatal (<= 150 cm)	125

23	9/28/2001	F	Perinatal (<= 150 cm)	135
24	10/3/2012	F	Undetermined: Too Decomposed	131
25	3/10/2007	M	Natural: Cold Stress (beginning in 1986)	215
26	5/8/1991	M	Perinatal (<= 150 cm)	109
27	7/6/1991	F	Perinatal (<= 150 cm)	148
28	4/21/2003	M	Perinatal (<= 150 cm)	133
29	6/6/1997	M	Perinatal (<= 150 cm)	104
30	4/16/2003	F	Perinatal (<= 150 cm)	127
31	6/10/1998	M	Human Related: Watercraft collision	272
32	6/11/1998	M	Natural: Other (includes red tide)	228
33	5/24/1976	M	Perinatal (<= 150 cm)	114
34	4/10/1987	F	Perinatal (<= 150 cm)	124
35	9/15/1990	F	Perinatal (<= 150 cm)	148
36	11/3/2001	F	Perinatal (<= 150 cm)	138
37	6/8/2000	M	Undetermined: Too decomposed	273
38	8/9/2006	F	Perinatal (<= 150 cm)	128
39	6/21/2004	F	Perinatal (<= 150 cm)	136
40	5/25/2012	F	Undetermined: Too Decomposed	210
41	8/21/2003	F	Perinatal (<= 150 cm)	123
42	6/4/2012	M	Human Related: Watercraft Collision	249
43	8/6/2005	M	Perinatal (<= 150 cm)	134
44	2/13/2001	M	Undetermined: Too decomposed	330
45	7/28/2007	M	Undetermined: Too decomposed	295
46	11/24/2009	M	Natural: Cold Stress (beginning in 1986)	266
47	9/16/2006	F	Undetermined: Too decomposed	333
48	9/29/2006	M	Human Related: Watercraft collision	271

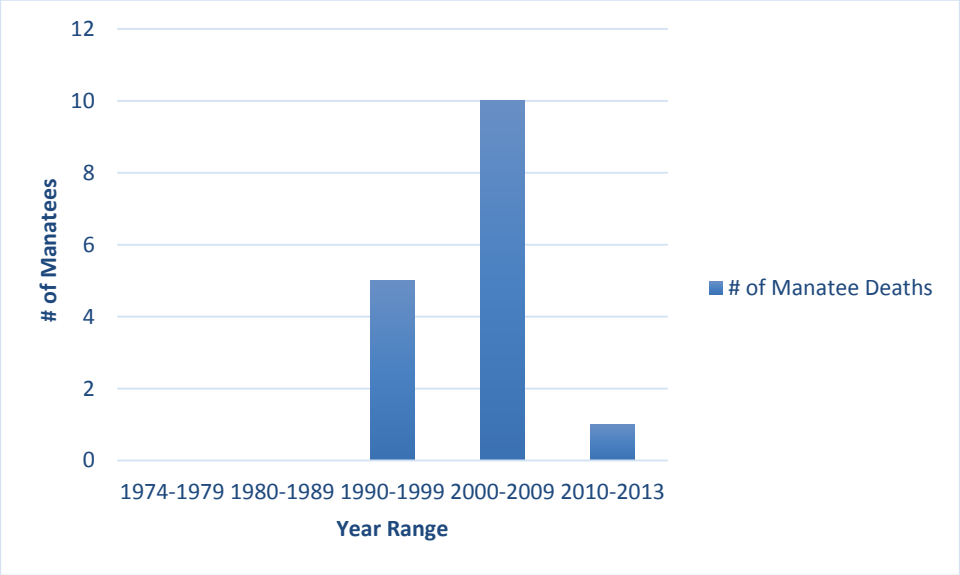
49	8/9/1998	M	Perinatal (<= 150 cm)	111
50	2/8/1990	M	Undetermined: Too decomposed	273
51	1/18/1987	M	Undetermined: Other	226
52	3/24/1993	F	Perinatal (<= 150 cm)	120
53	10/2/1980	F	Perinatal (<= 150 cm)	123
54	7/26/2002	M	Perinatal (<= 150 cm)	117
55	4/3/1976	F	Natural: Other (includes red tide)	300
56	8/14/1997	F	Perinatal (<= 150 cm)	133
57	1/9/2010	M	Natural: Cold Stress (beginning in 1986)	295
58	1/31/2013	F	Natural: Cold Stress (beginning in 1986)	194
59	5/30/2009	M	Perinatal (<= 150 cm)	117
60	7/10/2008	F	Undetermined: Other	196
61	1/30/2009	F	Natural: Cold Stress (beginning in 1986)	192
62	9/2/1996	M	Perinatal (<= 150 cm)	125
63	6/13/2007	F	Perinatal (<= 150 cm)	139
64	7/19/2003	M	Perinatal (<= 150 cm)	120
65	5/3/2009	M	Perinatal (<= 150 cm)	124
66	4/1/2009	F	Natural: Other (includes red tide)	245
67	5/20/2007	M	Human Related: Watercraft collision	214
68	12/24/1989	F	Natural: Cold Stress (beginning in 1986)	180
69	9/27/2008	F	Natural: Other (includes red tide)	338
70	7/14/2009	M	Human Related: Watercraft collision	307
71	11/13/1993	M	Human Related: Watercraft collision	153
72	5/29/1994	F	Human Related: Watercraft collision	245
73	6/5/2007	M	Human Related: Watercraft collision	324
74	7/23/2006	M	Human Related: Watercraft collision	308

75	7/22/2004	M	Human Related: Watercraft collision	296
76	8/16/2008	M	Perinatal (<= 150 cm)	123
77	5/24/2003	F	Human Related: Watercraft collision	267
78	5/25/2003	F	Human Related: Watercraft collision	125
79	5/10/2002	F	Human Related: Watercraft collision	275
80	4/22/2001	M	Undetermined: Too decomposed	321
81	12/13/2012	M	Natural: Cold Stress (beginning in 1986)	225
82	9/20/2012	M	Perinatal (<= 150 cm)	150
83	5/6/2007	M	Undetermined: Too decomposed	216
84	3/1/2008	F	Human Related: Watercraft collision	221
85	4/16/1990	M	Perinatal (<= 150 cm)	149

3.3.1 Watercraft-Related Manatee Mortalities

Flagler County is not recognized as an area with high watercraft-related manatee deaths, but the County does recognize that the number of deaths in the early to mid-2000's increased to a number of concern (with spikes to 2 deaths each year in 2003, 2006, & 2007). During the time period of 1974 through 1989, no watercraft-related manatee deaths were confirmed. During the 1990's, five (5) watercraft-related manatee deaths were confirmed. During the 2000's, a total of ten (10) watercraft-related manatee deaths were confirmed and from 2010 to 2013, only one (1) watercraft-related manatee deaths has been confirmed. Please see Figure 46 for a graphic representation of these findings.

Figure 46. Watercraft-Related Manatee Deaths per Decade. Data Source: FWC - FWRI



Based upon aerial surveys, telemetry and manatee mortality data collected, the following conclusions can be made:

- Manatee use of the Flagler County waterways is widespread, and the Flagler County waterways support a primarily seasonal manatee presence with the greatest abundance during non-winter months. Manatee deaths have been documented during the winter months, with most being related to cold stress. Though of the 16 documented watercraft-related manatee deaths, 2 occurred during the winter months.

- The largest number of watercraft-related manatee deaths have occurred within Section E – Smith Creek south of SR 100 (10 of the total 16 verified watercraft-related manatee deaths).

- Flagler County serves as a travel corridor for manatees migrating north and south to other counties. Manatees are widely dispersed and move freely between each area of the County and within the canals and lakes, particularly during non-winter months.

• Some Flagler County waterways are used by manatees for nursing and calving. The most significant locations for these types of activities appear to be the man-made canals within the City of Palm Coast and Flagler Beach. The canals within these two cities are primarily at build-out level and most parcels have existing single family docks. Manatee protection from watercraft-related mortality is currently in place through local no wake zones within the canals.

• Watercraft-related manatee mortality in Flagler County was at an elevated level between 2002 and 2009.

3.4 Boat Activity

According to 2013 Florida Department of Highway Safety and Motor Vehicles (FDHSMV) data, Flagler County currently ranks 13th (last) out of 13 Florida East Coast Atlantic counties in number of registered boating vessels (Table 3) and 39th in overall abundance statewide. A breakdown of boat sizes registered in Flagler County in 2013 is included in Table 4.

Table 3: Boater Registrations in East Coast Atlantic Counties, 2013. Source: FDHSMV

COUNTY	Recreational	Commercial	TOTAL
DADE	59,031	1,829	60,860
BROWARD	40,208	937	41,145
PALM BCH	36,852	1,046	37,898
BREVARD	32,185	822	33,007
DUVAL	27,072	663	27,735
MONROE	24,422	2,515	26,937
VOLUSIA	25,898	702	26,600
MARTIN	14,871	541	15,412
ST. JOHNS	12,854	379	13,233
ST. LUCIE	11,983	499	12,482
IND.RIVER	9,983	415	10,398
NASSAU	5,755	160	5,915
FLAGLER	4,989	65	5,054
TOTAL	**306,103**	**10,573**	**316,676**

Table 4: Boat Types Registered in Flagler County, 2013. Source: FDHSMV

Year	Class A-1		Class A-2		Class 1		Class 2		Class 3		Class 4		Class 5		Subtotals		Totals
	< than 12'		12-15'11"		16'-25-11"		26'-39'11"		40'-64'11"		65'-109'11"		110' OR More				
	Rec	Com	Rec	Com	Rec	Com	Rec	Com	Rec	Com	Rec	Com	Rec	Com	Rec	Com	
2013	855	3	1,149	28	2,481	25	372	6	73	2	2	1	0	0	4,989	65	**5,054**

3.4.1 Boating Accident Statistics

A summary of boating accident statistics for the state of Florida and Flagler County for the year 2013 (data received from FWC Division of Law Enforcement - LE) is provided in Table 5. Only two (2) boating accidents were reported in 2013 in Flagler County, placing the County 40th overall in boating accidents and representing only 0.27% of all statewide reported boating accidents.

Table 5: Florida Boating Accident Statistics, 2013. Source: FWC - LE

County	Total Vessels	Reportable Accidents	Fatalities	Injuries	Property Damage	Rank	Accident Rate
Alachua	10,320	0	0	0	$0	51	0
Baker	2,184	0	0	0	$0	52	0
Bay	18,315	13	0	12	$228,650	17	1:1,409
Bradford	2,227	0	0	0	$0	53	0
Brevard	33,456	24	2	19	$189,600	7	1:1,394
Broward	41,657	50	1	29	$270,510	4	1:833
Calhoun	1,530	0	0	0	$0	54	0
Charlotte	20,545	12	1	10	$93,500	18	1:1,712
Citrus	15,618	17	0	17	$60,800	14	1:919
Clay	11,725	9	0	10	$27,350	22	1:1,303
Collier	21,775	22	3	12	$120,224	9	1:990
Columbia	4,273	0	0	0	$0	55	0
Desoto	2,220	1	1	0	$0	44	1:2,220
Dixie	2,485	2	2	6	$5,200	38	1:1,243
Duval	27,840	19	4	6	$529,280	10	1:1,465
Escambia	15,753	6	3	6	$5,250	26	1:2,626
Flagler	**5,054**	**2**	**0**	**1**	**$4,100**	**40**	**1:2,537**
Franklin	3,370	6	1	2	$69,900	27	1:562

Gadsden	2,348	0	0	0	$0	56	0
Gilchrist	1,619	0	0	0	$0	57	0
Glades	1,193	5	0	2	$154,000	28	1:239
Gulf	2,819	1	1	1	$2,500	46	1:2,819
Hamilton	882	0	0	0	$0	58	0
Hardee	1,520	0	0	0	$0	59	0
Hendry	2,853	2	0	0	$6,450	39	1:1,427
Hernando	8,885	5	0	2	$18,865	29	1:1,777
Highlands	8,172	3	1	3	$6,250	34	1:2,724
Hillsborough	41,004	19	0	13	$91,200	11	1:2,158
Holmes	2,103	0	0	0	$0	60	0
Indian River	10,449	10	1	2	$44,00	19	1:1,045
Jackson	4,635	2	0	2	$0	43	1:2,318
Jefferson	1,340	0	0	0	$0	61	0
Lafayette	921	0	0	0	$0	62	0
Lake	20,326	8	1	5	$33,450	24	1:2,541
Lee	43,736	30	1	14	$215,504	6	1:1,446
Leon	16,638	0	0	0	$	63	0
Levy	4,128	1	0	1	$0	48	1:4,128
Liberty	1,122	0	0	0	$0	64	0
Madison	1,146	0	0	0	$0	65	0
Manatee	17,425	9	0	9	$44,200	20	1:1,936
Marion	18,169	2	0	3	$4,480	42	1:9,085
Martin	15,606	18	3	8	$309,951	12	1;867
Miami-Dade	61,537	104	4	50	$1,660,557	1	1;592
Monroe	27,100	100	5	56	$937,500	2	1:2271
Nassau	5,937	2	0	1	$2,600	41	1:2,969
Okaloosa	17,978	24	4	13	$590,670	8	1:749
Okeechobee	4,801	4	0	1	$54,400	33	1:1,200
Orange	26,991	7	0	3	$67,500	25	1:3,856
Osceola	7,998	5	1	3	$62,000	30	1:1,600
Palm Beach	38,142	56	3	20	$927,650	3	1:681
Pasco	23,241	9	1	6	$95,400	21	1:2,582
Pinellas	46,929	47	8	22	$456,600	5	1:998
Polk	27,455	5	1	5	$33,500	31	1:5,491

Putnam	7,720	3	0	0	$23,000	35	1:2,573
Santa Rosa	14,162	2	1	7	$173,000	36	1:7,081
Sarasota	21,577	15	1	10	$121,300	16	1:1,438
Seminole	17,305	5	1	2	$15,000	32	1:4,326
St. Johns	13,308	9	3	6	$54,001	23	1:1,479
St. Lucie	12,564	17	0	5	$292,800	15	1:739
Sumter	4,098	0	0	0	$0	66	0
Suwannee	2,683	1	0	1	$3,500	45	1:2,683
Taylor	3,726	1	0	0	$4,000	47	1:3,726
Union	895	0	0	0	$0	67	0
Volusia	26,828	18	0	10	$88,650	13	1:1,490
Wakulla	4,743	1	0	1	$0	49	1:4,743
Walton	5,419	1	0	0	$3,500	50	1:5,419
Washington	2,288	2	1	2	$75	37	1:1,144

3.4.2 Boating Studies in Flagler County

MOTE Marine Laboratory (MML) collected boating data in Flagler County from August 2007 through February 2009 using aerial surveys. The MML flew 20 surveys during this time period. The data were collected in four survey quarters: Winter (December – February), Spring (March – May), Summer (June – August), and Fall (September – November). Each quarter contained five flights consisting of two weekday flights and three weekend flights. The boat data used in this analysis was a subset of the overall dataset for multiple counties. An overview of the findings of boating densities throughout Flagler County is represented in Figure 47.

The survey differentiated vessel size categories per the standard FWC Law Enforcement size classes, and designated as: Less than 16 feet, 16 - 25 feet, 26– 39 feet, 40– 64 feet, 65– 109 feet, and greater than 110 feet.

The survey also identified Vessel speeds as: Anchor/Drift, Human-Powered (Oar/Paddle), Under Sail, Idle / Slow, Plowing, Cruising, and Planing. The speed definitions for vessels under power were taken from Gorzelany (2009) and were originally adapted from the Florida Administrative Code 62N-22. Individual speed categories were defined as follows:

Idle Speed

The minimum speed that maintains steerage of a vessel, or the speed at which a vessel is normally docked. Little or no displacement of water is observable from either the bow or stern, and the vessel remains level in the water at all times. This typically corresponds to a speed of less than 5 miles per hour (Gorzelany, 2009).

Slow Speed

The speed at which all vessels are completely off plane and fully settled in the water. Some minimal water displacement at either the bow or stern (or both) may be observed. Because this will vary greatly from vessel to vessel, this speed has also been defined as approximately five to nine miles per hour (Gorzelany, 2009).

Plowing Speed

An intermediate speed between slow speed and planing speed; the bow of the vessel typically rides higher than the stern, and substantial displacement of water occurs. Depending on the size and type of vessel, plowing may occur at a variety of speeds, but is most often observed between 10 and 20 miles per hour (Gorzelany, 2009). This speed designation is used specifically for vessels with planing-type hulls.

Cruising Speed

A qualitative speed designation uniquely applied to a relatively fast-moving vessel with a non-planing-type hull (e.g.; a pontoon boat or displacement hull vessel). It is identified by noticeable water displacement from the bow and/or stern and an observed speed faster than the previously defined slow speed designation. Similar to those at plowing speed, vessels at cruising speed most often travel at speeds between 10-20 miles per hour (Gorzelany, 2009).

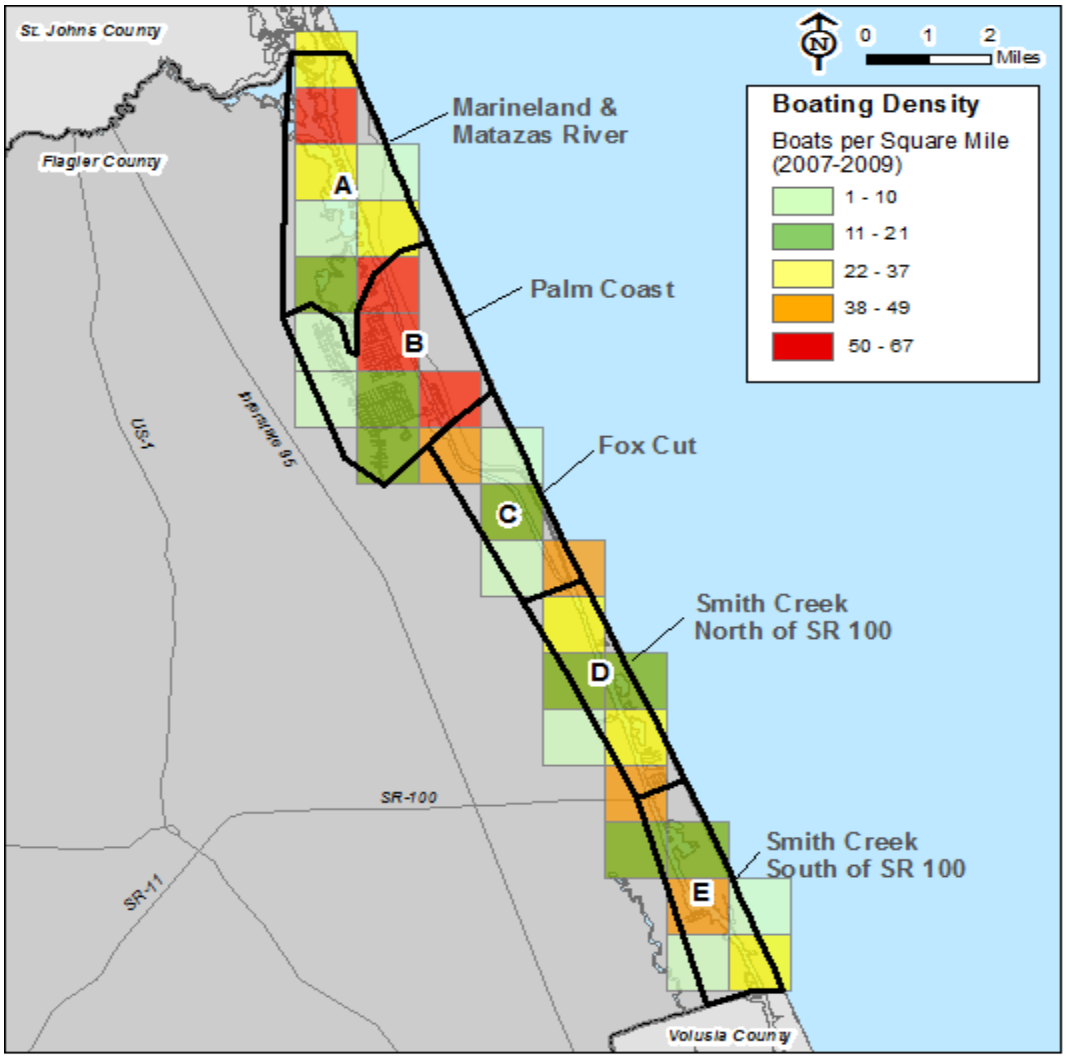
Planing Speed

A vessel traveling at sufficient speed to partially raise the vessel out of the water during travel. Vessel planing speeds vary widely depending upon vessel size and hull design; however the majority of planing vessels typically travel at speeds in excess of 15 miles per hour (Gorzelany, 2009).

In regards to manatees, the important categories of boats are those under power and at a speed of plowing, cruising, or planing. The power boat data set included a total of 732 boats in Flagler County. The Flagler County power boat data were further subdivided to include vessels that were classified as plowing, cruising or planing. This "Fast Boats" subset included a total of 277 boats, or approximately 38% of the dataset (Gorzelany, 2009). Data from this survey were utilized to complete the boating density figure below.

The MML boat surveys document that the areas of heavy boat concentrations in Flagler County waters are near the existing marinas, within the canals (which are primarily at full build out), within areas that are known for recreational fishing, or are near existing boat ramps. These areas specifically include around the Palm Coast Marina and Hammock Beach Resort Yacht Harbor, the city of Palm Coast canals, Bing's Landing boat ramp, Herschel King Park boat ramp, and the Moody Public boat launch. There are Manatee Protection Zones in the areas of known high boat traffic density and areas of greatest potential manatee-boater overlap. The Manatee Protection Zones were previously described in Section 1.5. No boating studies have been completed for Lake Crescent. Due to its known use as a destination for largemouth bass and speckled perch by recreational anglers, the assumption is made that Lake Crescent is primarily used by small bass boats (less than 20' in length) and pontoon boats.

Figure 47: Boating Density Overview. Data Source: FWC-FWRI



3.5 Existing Boating Facility Inventory

A study utilizing permitting data, current Flagler County Property Appraiser data, FWC data, 2014 aerial imagery, and ground-truthing was completed as part of this Manatee Protection Plan to inventory the existing boat slips and boat ramps (with appropriate number of boat trailer parking spaces) presently found in Flagler County. The data was compiled to create an

inventory of all existing facilities with 5 or more slips, commercial slips, boat ramps, and transient mooring slips such as those at restaurants in Flagler County. Facility type designations were established for Commercial Marina (CM) and Residential Marina (RM), Boat Ramp (BR), Transient Slip (TS), and Commercial Facility (CF). In this analysis of all facility types combined, there was a total of 772 wet slips, 136 dry slips, 25 boat ramp lanes, and 144 boat ramp boat trailer parking spaces. Please see Table 6 and Figure 48 below for documentation of the existing facility types and locations.

3.5.1 Commercial and Residential Marinas

Sixteen (16) marinas were identified, of which twelve (12) were multi-family residential marinas, two (2) were multi-family residential/commercial marinas, and two (2) were commercial marinas. Total slip capacity for each boat facility type was indicated by the sum of all wet slips and dry slips. A total of 784 slips (717 wet and 36 dry) were identified for this grouping of boat facilities. Slip occupancy was found to vary widely and frequently, as a few marinas appear to be at full occupancy and a few marinas appear to be at low occupancy.

3.5.2 Ramps and Transient Slips

Thirteen (13) boat ramps were identified along with three (3) transient slip facilities (restaurants). Total slip capacity for each ramp was indicated by the sum of available boat trailer parking spaces. For the transient slip facilities (restaurants), total moorings were used to indicate total slip capacity. There was a total of 187 slips (144 boat trailer parking spaces and 43 transient slips) that were identified for this grouping of boat facilities.

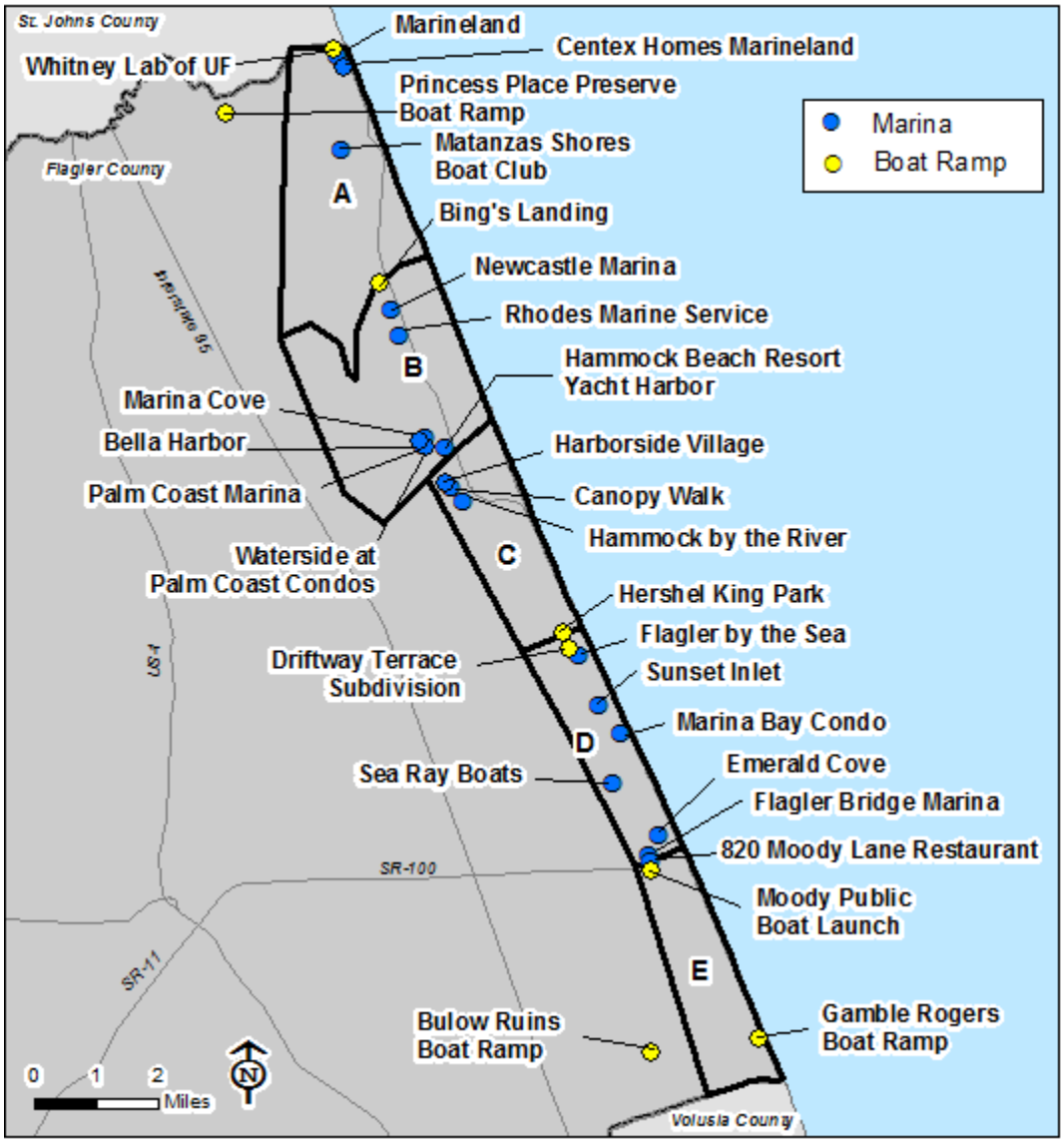
3.5.3 Commercial Facilities

Three (3) commercial facilities were identified. Total slip capacity for the commercial facilities was 12 wet slips and 100 dry slips that were identified for this grouping of boat facilities.

Table 6: Flagler County Boating Access Inventory

FACILITY NAME	TYPE	ADDRESS	WET SLIPS	DRY SLIPS	RAMP LANES	RAMP PARKING	TOTAL SLIPS
Bella Harbor	RM	Bella Harbor Ct	6	0	0	0	6
Bing's Landing	TS,BR	5862 N. Oceanshore Blvd	10	0	2	48	10
Bull Creek Fish Camp	TS,BR	3861 CR 2006 W	20	0	1	10	20
Bulow Ruins State Park	BR	3501 Old Kings Rd S	0	0	1	2	0
Canopy Walk	RM	550 Canopy Walk	69	0	0	0	69
Centex Homes Marineland	RM,BR	9600 N. Oceanshore Blvd	5	0	1	0	5
Driftway Terrace Subdivision	BR	Driftway Terrace	0	0	1	0	0
Emerald Cove	RM	N. Flagler Ave	8	0	0	0	8
Flagler Bridge Marina	CM,BR	127 Lehigh Ave	82	36	2	0	118
Flagler by the Sea	RM	2982 N. Oceanshore Blvd	6	0	0	0	6
Gamble Rogers State Park	BR	3100 S. Oceanshore Blvd	0	0	1	15	0
Hammock Beach Yacht Harbor	CM,RM	106 Yacht Harbor Dr	212	0	0	0	212
Hammock by the River	RM	11 Hammock Oak Ct	10	0	0	0	10
Harborside Village Marina	RM	100 Palm Harbor Pkwy	30	0	0	0	30
Herschel King Park	BR	150 Waterfront Park Rd	0	0	2	43	0
Matanzas Shores Boat Club	RM	400 San Juan Dr	6	0	0	0	6
Marina Bay	RM	100 Marina Bay Dr	49	0	0	0	49
Marina Cove	RM	Marina Point Place	68	0	0	0	68
Marineland Marina	CM	9507 N. Oceanshore Blvd	25	0	0	0	25
Moody Public Boat Launch	BR	825 Moody Ln	0	0	4	22	0
New Castle Marina	CF	5658 N. Oceanshore Blvd	0	0	1	0	0
Palm Coast Marina	CM,RM,BR	15 Palm Coast Resort Blvd	100	0	1	0	100
Princess Place Preserve	BR	1281 Princess Place Rd	0	0	2	0	0
Rhodes Marine Service	CF	5478 N. Oceanshore Blvd	0	0	1	0	0
Russell Landing Haw Creek	BR	1105 CR 2007	0	0	1	1	0
Sea Ray Boats	CF	100 Sea Ray Dr	12	100	2	0	112
Shell Bluff Park	BR	14331 SR 100 W	0	0	1	3	0
Sunset Inlet	RM	Morning Light Ct	31	0	0	0	31
Waterside at Palm Coast Condos	RM	106 Clubhouse Dr	10	0	0	0	10
Whitney Lab of UF	BR	9505 N. Oceanshore Blvd	0	0	1	0	0
820 Moody Lane Restaurant	TS	820 Moody Ln	13	0	0	0	13
TOTAL			**772**	**136**	**25**	**144**	**908**

Figure 48: Overall Boating Facilities Map



3.5.4 Marineland & Matanzas River Region – Section A

The northern-most analysis region depicted in Figure 49 is approximately four (4) miles long and extends from an area just south of Bing's Landing Park to the northern county line. The

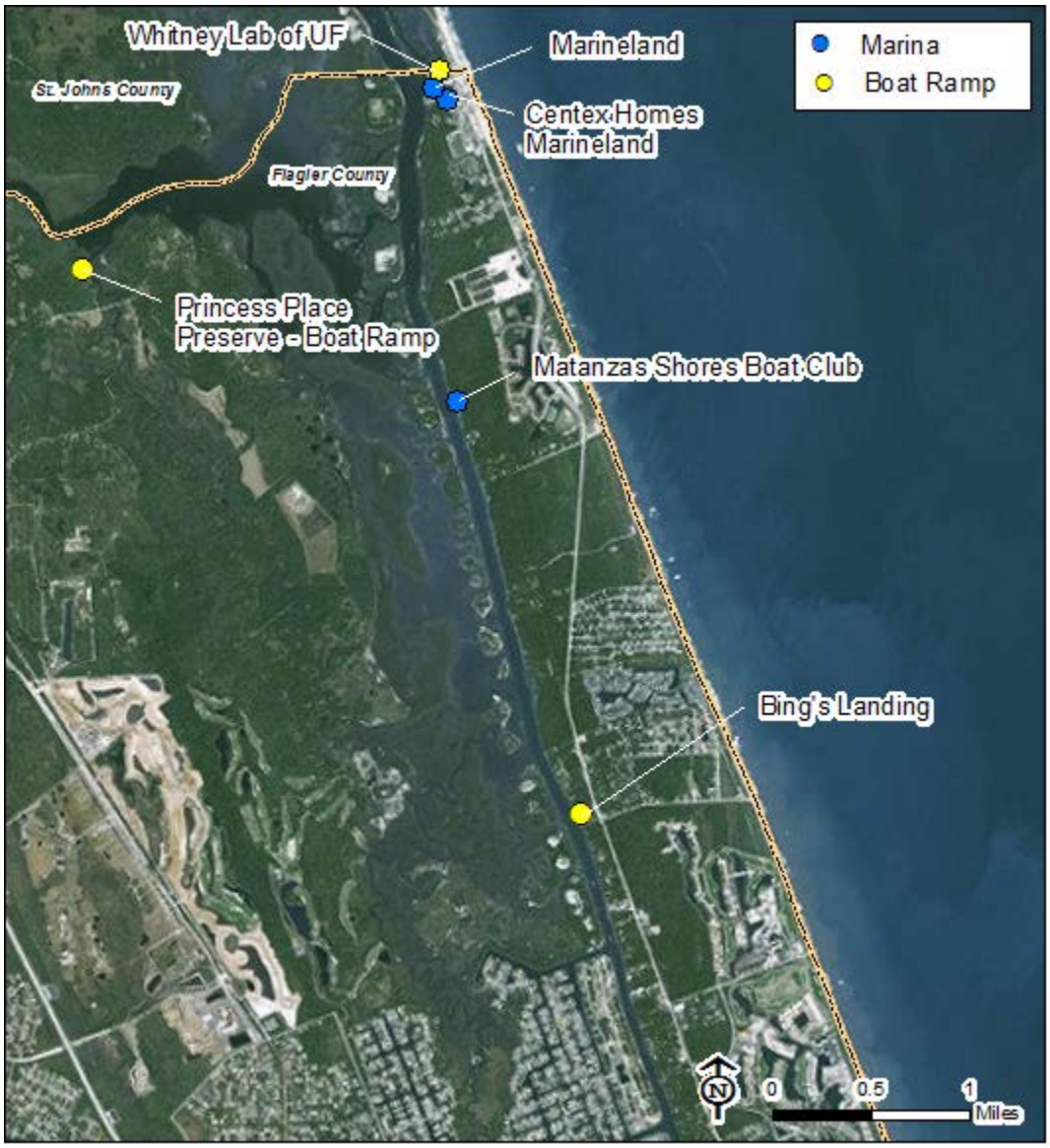
entire western side of the ICW in this region, roughly 22,000 linear feet, has been effectively removed from development via the public acquisitions of Pellicer Flats and Princess Place Preserve. The eastern side of the ICW contains non-development areas of Washington Oaks State Gardens (1.3 miles of shoreline), Matanzas Shores Conservation Area (0.716 miles of shoreline), and River to Sea Preserve (0.6 miles of shoreline). Out of approximately 8 miles of shoreline, roughly 6.7 miles, or 84%, have limited potential for development of boating facilities.

A commercial marina facility is located in the Town of Marineland. This facility currently has 25 boat slips with 55 more planned. A small residential dock is located within the Centex Homes Marineland property. This dock has moorings for 5 boats, but is currently not used due to the development not being constructed. A small residential marina is located within the Matanzas Shores Subdivision. This marina currently has 6 transient residential boat slips for subdivision residents only.

Princess Place Preserve has two small canoe/kayak launches. No motorized boats are launched from these ramps, and no designated trailer spaces are located within the park.

This region also contains Bing's Landing Park. Bing's Landing is a County owned public two lane boat ramp which contains 48 boat trailer parking spaces and also has a dock with moorings for 10 boats for transient use. Further expansion of this Park to provide additional trailer parking spaces would be very difficult. The property to the north is developed with a single family home, and while the park itself does contain some undeveloped areas, this park also contains the ruins of Joseph Hernandez's plantation home. The home's ruins and surrounding property is on the U. S. Department of the Interior's National Register of Historic Places.

Figure 49: Boating Facilities Section A



3.5.5 Palm Coast Region – Section B

To the south of the Marineland and Matanzas River region is the Palm Coast region (Figure 50). It is approximately three miles in length. Its northern boundary is south of Bing's Landing Park, while the southern boundary is approximately the Hammock Dunes Bridge.

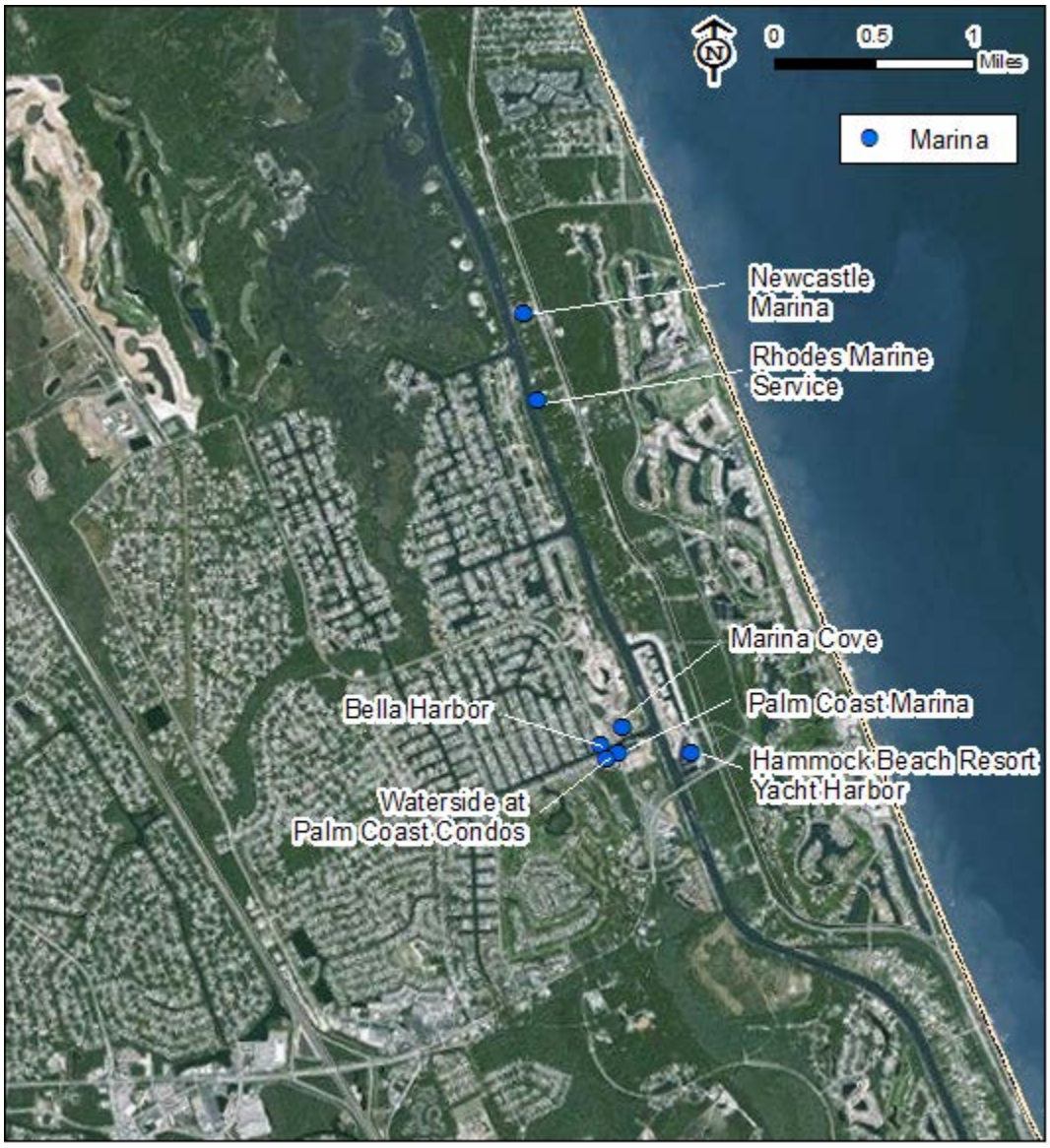
Existing boating facilities include the Marina at Hammock Beach Resort which contains 212 total wet slips and the Palm Coast Marina with 80 total wet slips. These two marinas are the largest commercial/residential mixed use marinas in Flagler County. The marinas are predominately used by residential owners and guests of the mixed residential use properties on the uplands. Both properties provide transient slips - for non-owners.

This region also contains the Marina Cove, Bella Harbor, and Waterside at Palm Coast Condos residential marinas, which accommodates only residential owners and guests. The Marina Cove marina has 68 total wet slips, Bella Harbor has 6 total wet slips, and Waterside at Palm Coast Condos has 10 total wet slips.

This region also contains two commercial facilities, the Newcastle Marina, a +/-4.5 acre defunct large yacht manufacturing facility with 300' of ICW waterfront and a marine railway and the Rhodes Marine Service which also has a marine railway and caters to smaller vessels. Both commercial facilities are located on parcels which could be expanded for use as a boating facility in the future. Each facility has 1 ramp system for launching boats via travel lift, railway, or fork lift.

This region also contains the canals of the City of Palm Coast. These canals were dredged during the development of the city by the International Telephone and Telegraph Corporation (ITT), which was the primary owner of the property which is now the City of Palm Coast. They are predominately single family residential lots which are at near full build out condition and most currently have existing boat docks for residential use.

Figure 50: Boating Facilities Section B

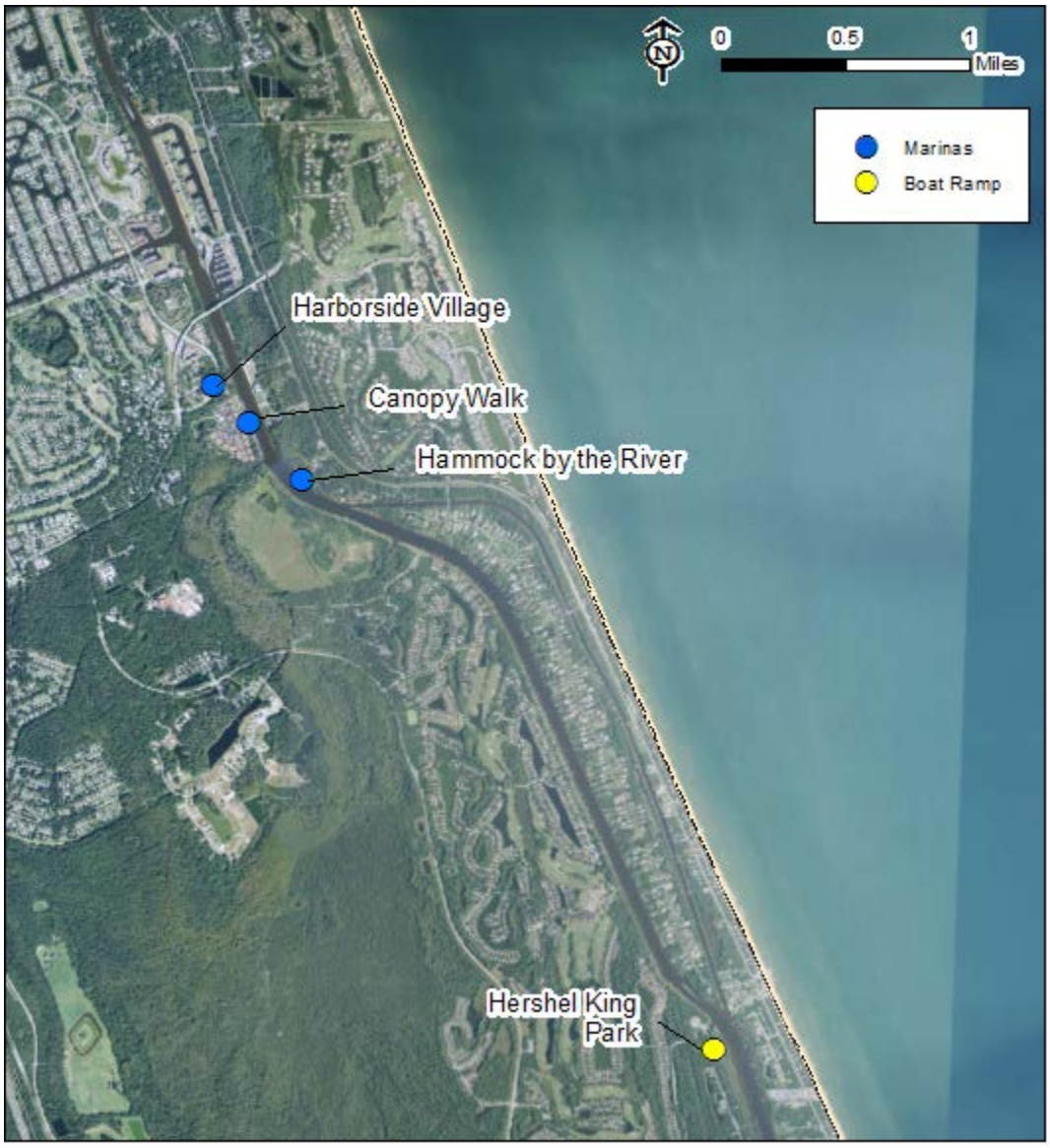


3.5.6 Fox Cut Region – Section C

This section is approximately 3.5 miles in length, extending from the Hammock Dunes Bridge south to the Herschel King Park (Figure 51). The Harborside Village condominium is located south of the Hammock Dunes Bridge. The Harborside Village has a residential marina facility associated with the Harborside Village Condominiums. The facility currently has 30 wet slips available for condo owners and guests only. The slips are presently constructed in water depths too shallow for boat use. No boats are currently kept at the Harborside Village Marina and future dredging would be required for use. Canopy Walk is a residential marina facility associated with the Canopy Walk Condominiums. This facility has 69 existing wet slips available for condo owners and guests only. The permit for Canopy Walk limits the vessel size within this residential marina to a 25 foot maximum length. The Hammock by the River subdivision and residential marina are also located in this region. This is a small neighborhood dock with 10 slips available for owners and guests only.

Hershel King Park is a County owned two-lane boat ramp and basin along the western side of the ICW. The 17 acre facility provides 43 boat trailer parking slips with approximately 1800' of ICW frontage. This Park has room for boat trailer parking expansion. Currently no plans have been completed for future expansion of this park.

Figure 51: Boating Facilities Section C



3.5.7 Smith Creek North of SR 100 Region – Section D

This Region is approximately 4 miles in length and extends from south of Hershel King Park in its northern extent to the SR 100 Bridge to the south (Figure 52). The western side of the ICW in this Region is dominated by single family homes with docks. The eastern side of the ICW within this Region has single family docks in the northern section, very few docks in the mid-section in the City of Flagler Beach, and upland cut canals with single family homes to the south.

The Driftway Terrace Subdivision is located within this section. This subdivision has a small boat ramp for community access to the waterway. The Flagler by the Sea mobile home park is located within this section. This community has a small residential marina with 6 total wet slips. The Sunset Inlet residential marina is also located in this section. The Sunset Inlet Subdivision has 31 single family lots with slips already constructed. This subdivision is currently under construction. Also within this section is the 49 slip Marina Bay Condominium located within Silver Lake. This is a residential marina for Condo owners and guests only. Silver Lake is one of two bays along the east side of the ICW. The Emerald Cove residential marina is a small 8 slip residential marina for the use of Emerald Cove subdivision owners and guests only.

The Sea Ray boat manufacturing plant is located northeast of Roberts Road. This commercial facility is one of the largest private sector employers in the County and is rapidly growing. This facility has 12 total wet slips, 100 total dry slips, and 2 ramp lanes. Sea Ray tests each vessel built at the Palm Coast facility on the Intracoastal Waterway. The wet slips, dry slips, and ramp lanes are used specifically by the facility only. Typically, testing times are between 7:00 AM and 4:30 PM Monday through Thursday. There is a maximum of three (3) vessels being operated at the same period of time on the water. Vessels constructed and tested are in the 40+ foot range. These test runs may be anywhere from 90 to 180 minutes with speeds ranging from idle to the maximum posted speed.

The Flagler Beach Marina is a commercial marina located north of the SR100 Bridge. This small commercial marina is permitted for 82 wet slips and 36 dry storage slips. This marina currently accommodates trailers and dry slip boats within the grassed upland parking area as boat storage. No dry storage facility is found onsite. A small ramp is located on the property and appears it could also be used by a travel lift system.

A defunct, closed restaurant property located at 820 Moody Lane, just north of the SR100 Bridge, is also located in this region. This closed restaurant has finger piers and moorings for a total of 13 small boats. This total was included as wet slips and identified as a transient slip facility. The slips could be utilized in the future if the restaurant is re-opened.

This region also contains the canals of Flagler Beach. They are predominately single family residential lots which are at near full build out condition and most currently have existing boat docks for residential use. A large percentage of the Flagler Beach residential docks are utilized for sailboat dockage.

Figure 52: Boating Facilities Section D

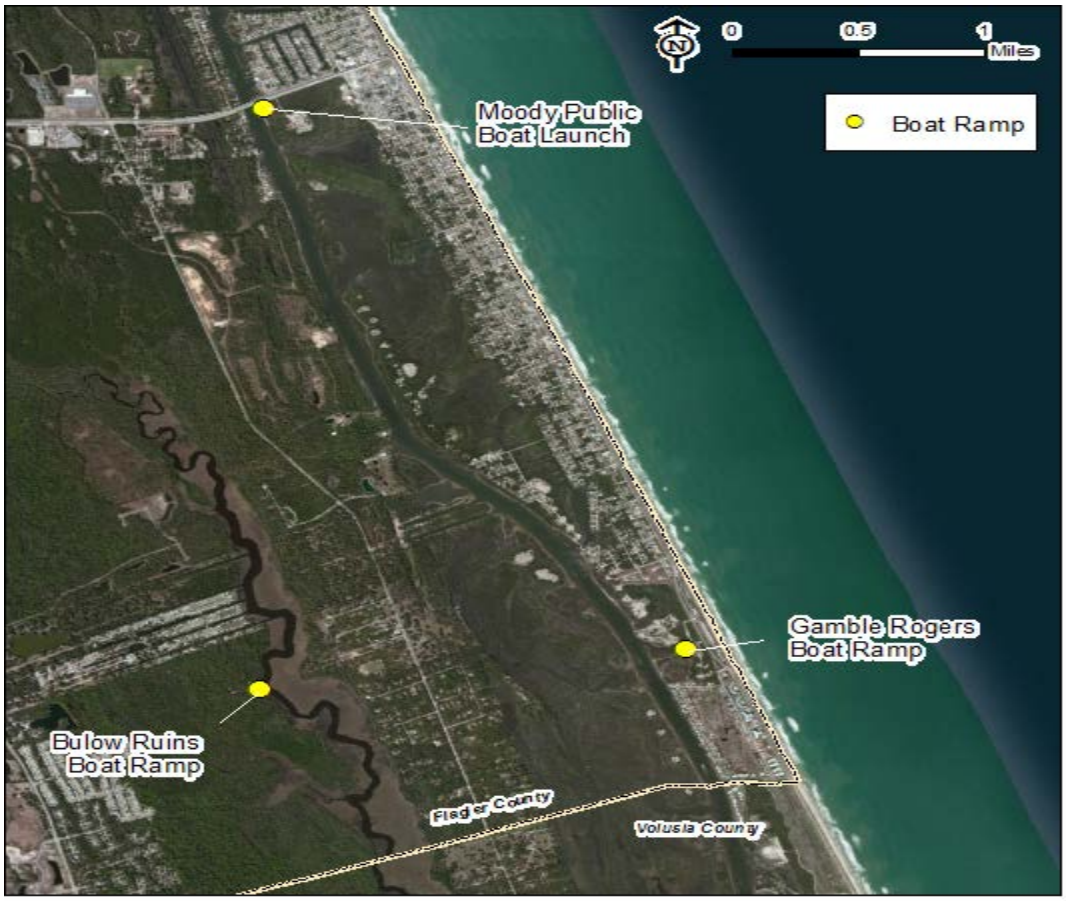
3.5.8 Smith Creek South of SR 100 Region – Section E

The southernmost section is approximately four (4) miles long and is dominated by single family homes and conservation lands (Figure 53).

This area contains the Moody Public Boat Launch. This popular public boat launch has 4 ramp lanes and 22 boat trailer parking spaces. This area also contains the Bulow Ruins State Park boat ramp. This is a one ramp launch that accommodates only small boats less than 16' in length. Only 2 parking spaces are available here for boat trailers.

Gamble Rogers Memorial State Recreation Area has a one lane boat ramp which provides access to the ICW. The Recreation Area's parking lot has undesignated boat trailer parking but appears that it would accommodate up to 15 boat trailers.

Figure 53: Boating Facilities Section E



3.5.9 Lake Crescent Region – Section F

The Lake Crescent Region of Flagler County is dominated by conservation lands, agricultural use, and large wetland floodplain systems along its shore (Figure 54). Three county operated boat ramps are located on Lake Crescent and Dead Lake (Shell Bluff Park boat ramp, Bull Creek boat ramp, and Russell Landing Haw Creek Preserve). The Shell Bluff Park ramp has one lane and 3 trailer parking spaces. The Bull Creek Fish Camp has one lane and approximately 10 trailer parking spaces. There is a bait shop and restaurant owned by Flagler County adjacent to the Bull Creek boat ramp. Twenty transient slips associated with the restaurant and bait shop

are located here. The Russell Landing Haw Creek Preserve boat ramp is a small one lane ramp with only one trailer parking space.

Figure 54: Boating Facilities Section F

3.6 Manatee Spatial Overlap Analysis

During the 2010-2012 rulemaking process to establish manatee protection boat speed zones in the coastal portion of Flagler County, FWC staff provided a data summary and analysis document to the Local Rule Review Committee established by Flagler County. As part of that data analysis, manatee density geographical information system covers (covers) were created using the FWC manatee aerial survey data and boating density covers were created using the boating aerial survey data collected by Mote Marine Lab. The density covers were multiplied together to create warm-season and cold-season covers showing the spatial overlap between the manatee and boating observations. Areas with higher spatial overlap, referred to as coincidence in the data document, represent locations with a higher potential for manatee-boat interactions. Coincidence data was one of several datasets used in developing the protection zones.

Spatial overlap analysis assists in understanding and depicting the areas where manatee protection zones may be needed and whether there are seasonal components to manatee-boat interactions that need to be considered. As such, this type of manatee risk analysis is most pertinent to the development of protection zones. The boat facility siting strategy data analysis considers all information that adds to the understanding of how the contribution of additional boat traffic may adversely affect manatees. While the 2010 spatial overlap analysis was used primarily for the evaluation of speed zones, it is referenced in this plan as additional information related to manatee use in Flagler County. The 2010 document should be consulted for more information about the spatial overlap analysis.

3.7 Information Assessment Discussions

This section summarizes the data included throughout Section 3 in regards to manatee and boating use overlap, watercraft-related manatee deaths, existing marine facilities, and existing manatee protection measures. The discussions are described by planning section.

Marineland and Matanzas River Region – Section A

Manatee Protection Zones: No manatee protection zones are located in this region.

Existing Watercraft Access: There are a total of approximately 94 points of watercraft access in this area. This access consists of 48 boat trailer parking spaces at one boat ramp and 46 marina

slips. The remainder of property within this region is primarily public lands or single family residential parcels.

Boating Traffic: The MML boating study verified the majority of boats in the region were located near or at the Marineland marina or Bing's Landing boat ramp. Boats routinely traverse the ICW in this area making their way north to St. Augustine or south towards Palm Coast. Boat traffic in this region would be considered light.

Manatee Data: Manatee use in this area seems primarily limited to traveling in the ICW. Only one watercraft-related manatee death was identified in this region, occurring in 1992. Manatees have been regularly sighted in this area.

Summary: Shoreline land use in this area is predominately conservation and single family parcels. This is primarily a conservation area with regular manatee use and predominately low boat activity. FWC did not identify this area as requiring manatee protection zones.

Palm Coast Region – Section B

Manatee Protection Zones: The state manatee protection zone around the Hammock Dunes/Palm Coast Parkway Bridge encompasses approximately 0.6 miles of navigable ICW. The canals within the City of Palm Coast have slow no wake zones which were placed into effect by local government for human safety and property protection, but which also provide protection to manatees known to utilize this area.

Existing Watercraft Access: There are a total of approximately 377 points of watercraft access in this area. This access consists of 376 boat slips and 2 commercial marina ramps. This section includes the canal network found within the City of Palm Coast. This network of canals provides single family dock access to the ICW. The canals within the City appear to be at build-out capacity.

Boating Traffic: The MML boating study verified the majority of boats in the region were located near or at the existing large boat facilities just north of the Hammock Dunes Bridge. This area also includes the canal networks within the City of Palm Coast. Boat traffic in this area is the highest found within the County, primarily due to the existing boat facilities and high number of single family docks.

Manatee Data: The aerial survey manatee sightings for this area were of moderate numbers, although this is a known area of higher manatee numbers especially in the warm season. Manatees have been regularly sighted in this area by residents and visitors of Palm Coast. The canals are also identified as utilized for calving and nursing by manatees. Three watercraft-related manatee deaths were identified in this region, all occurring in the 1990's. Only one of these occurred within the canal network.

Summary: Shoreline land use in this area includes conservation, residential and commercial marinas, and single family parcels. This area was identified as the highest boat traffic area in the County. Warm season speed zones around the Hammock Dunes Bridge have been in place since 2012.

Fox Cut Region – Section C

Manatee Protection Zones: The state manatee protection zone around the Hammock Dunes/ Palm Coast Parkway Bridge encompasses approximately 0.6 miles of navigable ICW, of which a small portion is within this section south of the bridge.

Existing Watercraft Access: There are a total of approximately 152 points of watercraft access in this area. This access consists of 109 residential marina slips and 43 boat trailer parking spaces at one boat ramp. Of the 109 residential marina slips, 30 at Harborside Village are not currently used by boats. This section also includes the large single family neighborhoods of Island Estates and Grand Haven, which include single family docks.

Boating Traffic: The MML boating study verified the majority of boats in the region were located near the Hammock Dunes Bridge, which is also where the three boat facilities in this section are located. Boat traffic in this area is the highest near the bridge and boat facilities but then lowers as you head south around Fox Cut.

Manatee Data: The manatee surveys for this area documented movement of manatees throughout the ICW and Fox Cut. No canals or other waterways are found within this region and both the ICW and Fox Cut are narrow waterways, therefore manatees are moving through this area as they head north and south to other areas. One watercraft-related manatee death was identified in this region, occurring recently in 2012. Manatees have been regularly sighted in this area.

Summary: Shoreline land use in this area includes mostly single family parcels and public lands. This area was identified as a moderate boat traffic area in the County. Warm season speed zones around the Hammock Dunes Bridge have been in place since 2012.

Smith Creek North of SR100 Region – Section D

Manatee Protection Zones: State manatee protection zones around the Flagler Beach/SR 100 Bridge and within the Lehigh Canal cover approximately 2.7 miles of navigable ICW within this region. The canals within the City of Flagler Beach have slow no wake zones which provide protection to manatees known to utilize this area.

Existing Watercraft Access: There are a total of approximately 301 points of watercraft access in this area. This access consists of 176 residential and commercial marina slips, 112 commercial facility slips (100 are dry storage for boat manufacture), and 13 restaurant-related transient slips. This section includes the canal network found within the City of Flagler Beach. This network of canals provides single family dock access to the ICW. The canals within the City are generally at build-out capacity.

Boating Traffic: The MML boating study verified the majority of boats in the region were located near the SR100/Flagler Beach Bridge, which is also where the larger boat facility and canals are located.

Manatee Data: Manatee aerial survey sightings for this area were relatively high. One watercraft- related manatee death was identified in this region, occurring in 2006.

Summary: Shoreline land use in this area includes conservation, residential and commercial marinas, restaurant, commercial facilities, and single family parcels. Warm season speed zones from the SR100/Flagler Beach Bridge north to Beverly Beach have been in place since 2012.

Smith Creek South of SR100 Region – Section E

Manatee Protection Zones: State manatee protection zones are located around the Flagler Beach/SR 100 Bridge and a southern zone starts at the Flagler County border and extends north/northwest for 2.1 miles on the navigable ICW.

Existing Watercraft Access: There are a total of approximately 39 points of watercraft access in this area. This access consists of 39 boat trailer parking spaces at three boat ramp facilities. The remainder of property within this region is primarily public lands or single family residential parcels.

Boating Traffic: The MML boating study verified a moderately high level of boats extending the entire length of this region even though boating access points are limited. It is anticipated this is due to the recreational fishing aspect of the vast saltmarshes found within southern Flagler and northern Volusia County.

Manatee Data: Manatee use in this area is spread out throughout the ICW. Ten watercraft-related manatee deaths were identified in this region, with 8 occurring in the 2000's. One of the watercraft-related deaths in May 2007 was a known vessel strike from a 24-26 foot vessel with the carcass recovered south of the SR100 Bridge. Manatees have been regularly sighted in this area. Warm season speed zones have been in effect since 2012.

Summary: Shoreline land use in this area is generally characterized as conservation and single family parcels. This is primarily a conservation area with regular manatee use and moderate boat activity. Due to the watercraft-related manatee deaths which occurred in recent years, warm season speed zones were established in 2012.

Lake Crescent Region – Section F

Manatee Protection Zones: No manatee protection zones are located in this region.

Existing Watercraft Access: There are a total of approximately 33 points of watercraft access in this area. This access consists of 23 boat trailer parking spaces at two boat ramps and 10 transient restaurant/fish camp slips. The remainder of property within this region is primarily public lands, agriculture, large floodplain wetlands, or large single family residential parcels.

Boating Traffic: No boating studies have been completed for Lake Crescent. Lake Crescent is a freshwater lake connected to the St. Johns River by Dunn's Creek. The lake is known for its high quality largemouth bass and speckled perch recreational fishery. Boat use is primarily limited to small bass boats and pontoon boats.

Manatee Data: No manatee surveys have been completed for Lake Crescent. One watercraft-related manatee death was identified in this region, occurring in 2008. Manatees have been regularly sighted in the lake and Dunn's Creek. SAV is found along the shoreline and shallow areas throughout the lake.

Summary: Shoreline land use in this area is predominately agriculture, conservation, floodplain wetland swamp, and large single family parcels. This is primarily a conservation/agricultural area with regular manatee use (Ross, 2015).

3.8 Manatee and Boat Overlap Conclusions

The Intracoastal Waterway (ICW) within Flagler County serves as a travel corridor for manatees migrating north and south to other counties. As discussed within the manatee data section of the plan, manatee presence is primarily seasonal with the greatest abundance during non-winter months. Manatees are widely dispersed and move freely throughout the County's waterways. Some Flagler waterways are used by manatees for nursing and calving. The most significant locations for nursing and calving appear to be the man-made canals within the cities of Palm Coast and Flagler Beach.

There are various types and intensity of boat activity within Flagler County. As discussed in the boat activity section, the areas of heaviest boat use are near the existing boat facilities and boat ramps, within the City of Palm Coast canals and at known fishing spots.

The shoreline along Flagler County's waterways may be subject to various uses depending on location and landowner. Some areas are characterized by a significant amount of conservation areas, and similar areas where development of waterfront facilities is not encouraged or allowed. This limits the locations available for development of new boat facilities. Areas within the County that are publicly owned and are likely to be managed in the long term for conservation purposes have been identified as "Conservation" areas for the purpose of boat facility siting recommendations. For the remaining areas of the county that are not in conservation, recommended levels of boat facility development have been established in this plan based on an assessment of the amount of boat/manatee overlap and existing manatee protection speed zones.

The following areas have been identified as appropriate for unrestricted boat facility development:

The east shoreline of the ICW to just north of 16th Road East; a parcel of property now owned by the Flagler County School Board on the east side of the ICW within the Palm City limits; the ICW and the Fox Cut canal south of the Palm Coast Parkway to just past the southern end of the Fox Cut canal; a portion of the Lehigh Canal; an area on the east shore of the ICW north and south of the Moody Boulevard Bridge; an area south of the Moody Boulevard Bridge on the west side of the ICW; and the shoreline of Crescent and Dead Lakes that are not identified as conservation areas.

The following areas have been identified as appropriate for moderate boat facility development:

ICW and adjacent canal entrances north of Hammock Dunes Bridge through the city limits of Palm Coast on the west side of the ICW and to just north of 16th Road East on east side of the ICW, except for the location in this area identified above for unrestricted development: This area is an important travel corridor for manatees. The boat traffic is also relatively heavy primarily due to the vessel traffic in and out of the Palm City residential area canals and the existing marinas just north of the Hammock Dunes Bridge.

ICW and connected waterways south of Fox Cut except for the areas identified as Conservation areas and the locations in this area identified above for unrestricted development: This area is also an important travel corridor for manatees. There is regular boat traffic related to the Flagler Beach residential area canals and the existing marinas near the SR100/Flagler Beach Bridge. This boat traffic is regulated by seasonal slow speed zones within most of this area.

Bulow Creek and connected canals except where the shoreline of the creek is identified as a Conservation Area: Manatees are present in Bulow Creek, and the creek is navigable. A lot of the creek shoreline has been identified in this plan as Conservation Areas where new and expanded boat facility development is not generally expected, and would be limited if it did occur.

The following areas have been identified as appropriate for minimal boat facility development:

The man-made canals within the City of Palm Coast. Manatees often give birth, nurse and rest in these canals that are predominately bordered by single family homes. New or expanding boat facilities would not be preferred in these areas, with boat facility development allowed at a minimal level.

A list of known future boat facility projects and previously permitted projects is provided within Appendix 1. These projects were utilized by Flagler County and the reviewing wildlife agencies in preparing the boat facility siting recommendations of this plan.

4.0 BOAT FACILITY SITING

The Boat Facility Siting strategy of the Flagler County MPP is designed to minimize watercraft-related manatee mortalities by establishing recommendations for new construction, renovation, or the expansion of existing boat facilities. The required elements within this plan are designed such that subsequent boating activity will be less likely to affect manatees or their habitat. The approach is to balance long term manatee protection needs, habitat conservation, and boating safety with commercial and recreational marine interests.

All boat facilities within the jurisdiction of this document are required to adhere to the federal, state, and local management plans and rules, as well as the recommendations listed below. All boat facilities determined to be existing as defined in this MPP will continue to operate according to permitting guidelines.

The boat facility siting objective is to minimize the overlap between boat traffic and areas of higher manatee use and to reduce the potential for human/manatee interaction. The intention is to minimize secondary and cumulative impacts to manatees and manatee habitat as a result of boat facilities, in a long term, comprehensive manner. The following were factors considered when developing recommendations for construction of a new facility or expansion of an existing facility, when applicable:

- Manatee use areas (based on aerial, telemetry, mortality data, etc.)
- Areas of productive habitat (vegetation, resting, calving areas, etc.)
- Areas of high manatee mortality
- Identification of sensitive, undisturbed natural areas frequented by manatees
- Areas with well flushed, deep water where the least dredging is required
- Areas with high demand for water access
- Travel time to high use boater destinations
- Existing Manatee Protection Zones

4.1 County and Municipality Jurisdiction

The MPP applies to incorporated as well as unincorporated areas of Flagler County. However, Flagler County is a non-charter county, meaning Flagler County is only authorized to exercise the powers of self-government prescribed in the Florida Constitution and state laws. The County does not have jurisdiction over the incorporated municipalities that exist within the

County. While Flagler County may not be able to require incorporated municipalities to follow the provisions of the MPP, the provisions of the MPP will be used by FWC and USFWS to streamline the process of reviewing proposed boat facility projects whether they occur in an unincorporated area or in an incorporated municipality.

4.2 Boat Facility Siting Development Criteria

Section 3 of this MPP documents the data assessment of manatee related information in regards to manatee abundance, telemetry, watercraft-related manatee mortalities, existing marine facilities, and boating survey data. The findings were utilized for the development of this Boat Facility Siting strategy. The factors which are considered when assessing the relative importance of specific areas to manatees and potential risks associated with watercraft activity, include natural resource data, documented or anticipated boating patterns, and/or physical waterbody characteristics. The most critical factors which represent the relative potential for manatee/watercraft overlap are:

- Manatee abundance
- Manatee calving and resting areas
- Watercraft-related manatee mortality areas
- Proximity to known boating destinations
- Existing marine facility sizes and locations
- Presence of Manatee Protection Zones and Preservation Lands
- Marine facility types and amount of boat traffic generated

For a thorough discussion of these and other factors considered to identify areas where boat activity interacts with high use manatee areas, and to determine what appear to be appropriate locations for new and expanded boat facilities, refer to Section 3 of this MPP.

4.3 Boat Facility Siting Recommendations

This Boat Facility Siting strategy has been completed and incorporated into the MPP to help reduce the potential for adverse manatee/watercraft interaction. The recommendations herein apply to the construction of any new boating facility as defined in this MPP and/or the expansion of an existing boating facility.

A. Unless specified otherwise, the Boat Facility Siting recommendations defined in 4.3.B below, and in Figures 55-67, apply to any new boating facility, as defined in the MPP, with five (5) or more slips, or expansion of an existing boating facility as defined in this plan, into a facility with 5 or more slips. The Boat Facility Siting recommendations do not apply to Boat Facilities with a total of four (4) or less slips. Facilities with less than five slips for repeat or transient use will be addressed on a case by case basis by the wildlife agencies during their reviews.

B. Boat Facility Slip Recommendations are as follows:

- **Preferred Category** – Color-coded shoreline where development is not restricted for the purpose of manatee protection. Other local, state, or federal restrictions may limit slip numbers for other reasons.
- **Moderate Category** - Development on shoreline color-coded as Moderate is recommended at a level of up to five (5) slips for every 100 feet of shoreline owned or controlled by the applicant. For example: A site has 342 feet of shoreline. In order to calculate the allowable number of slips, 342 is rounded up to the next one hundred foot increment (400), then divided by 100 which equals 4. That number is multiplied by the slip to shoreline ratio (5). In this example, 20 would be the allowable number of slips.
- **Non-Preferred Category** – Development on shoreline color-coded as non-preferred is recommended at a level of one slip for every 100 feet of shoreline owned or controlled by the applicant. For example: A site has 442 feet of shoreline. In order to calculate the allowable number of slips, 442 is rounded up to the next one hundred foot increment (500), then divided by 100 which equals five (5). That number is multiplied by the slip to shoreline ratio one (1). In this example, five (5) would be the allowable number of slips.
- **Conservation Area Category** – Development on shoreline color-coded as conservation will be according to the policies of the entity managing the area if those policies have been documented in a management plan that has been reviewed and approved by the wildlife agencies as addressing potential impacts to manatees. If policies specifically addressing potential impacts to manatees have not been documented in the management plans, then development is

recommended at a level of one slip for every 100 feet of shoreline. Proposals for watercraft access are not expected in these areas, which are primarily owned by governmental entities for conservation purposes.

C. For the purpose of calculating shoreline slip densities for Moderate, Conservation and Non-Preferred categories, the contiguous, linear shoreline used for these calculations is shoreline that existed as of the original date of approval of this plan and is color-coded on the boat facility siting maps, (Figures 55 - 67). These boat facility recommendations are specific only to the parcels that are categorized and color-coded. Boat slip development on shoreline that has not been categorized and color-coded will be evaluated as described below in subsection F.

D. **Dredging of Basins** - The creation of new or the enlargement or widening of existing basins along the categorized shoreline is not restricted by this plan. However, the shoreline used to calculate the number of slips is the shoreline that existed prior to dredging, as defined within subsection C above for calculating slip densities based on linear shoreline.

E. Large single family developments that are proposed on parcels with color-coded or categorized shoreline and would allow more than five single family docks should be reviewed under this MPP.

F. **Parcels Without Color-Coded or Categorized Shoreline** - Not all shoreline has a boat facility siting designation (due to waterway navigability issues, development potential, manatee accessibility, etc.). However, the reasons for lack of a shoreline designation may change over time (such as connecting landlocked waterways). Boat facility development on this shoreline is recommended as follows:

a. Proposals for no more than two slips per parcel (such as is allowed for a single family dock as referenced in the List of Definitions) or at a density of one slip per 100 feet of shoreline will be consistent with the MPP.

b. Proposals not described in (a) above require a case by case evaluation by federal and state wildlife agencies.

G. The boat facility siting recommendations do not apply to Boat Facilities accommodating human–powered vessels such as canoes and kayaks. These facilities are considered consistent with the MPP if the facility is consistent with all local, state and federal environmental standards in place at the time of permit application.

H. Unforeseen boat facility siting matters that may arise which are not addressed by the boat facility siting strategy will be evaluated on a case by case basis.

Figure 55: Boat Facility Siting Recommendations – County Overview

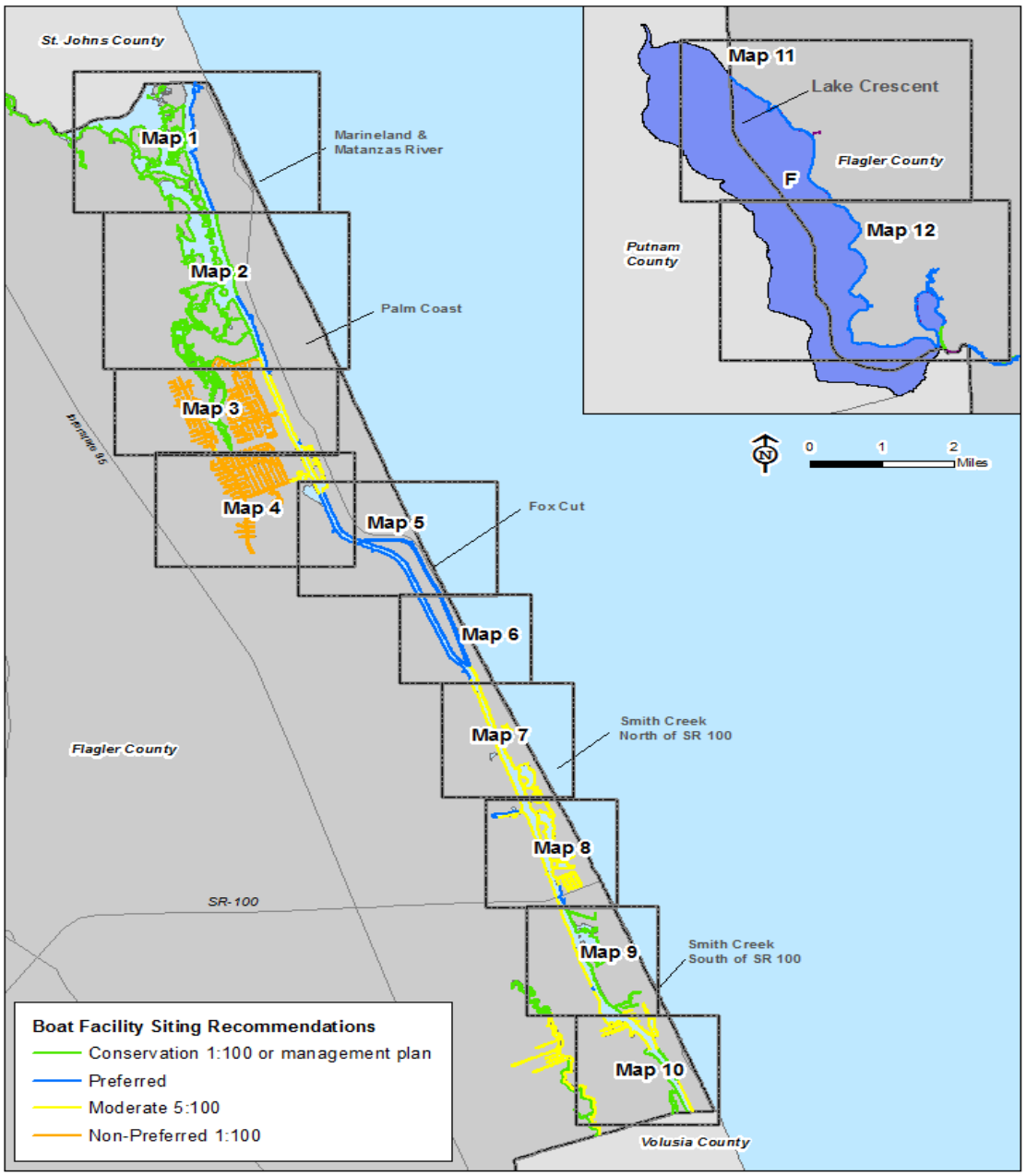


Figure 56: Boat Facility Siting Recommendations – Map 1

Figure 57: Boat Facility Siting Recommendations – Map 2

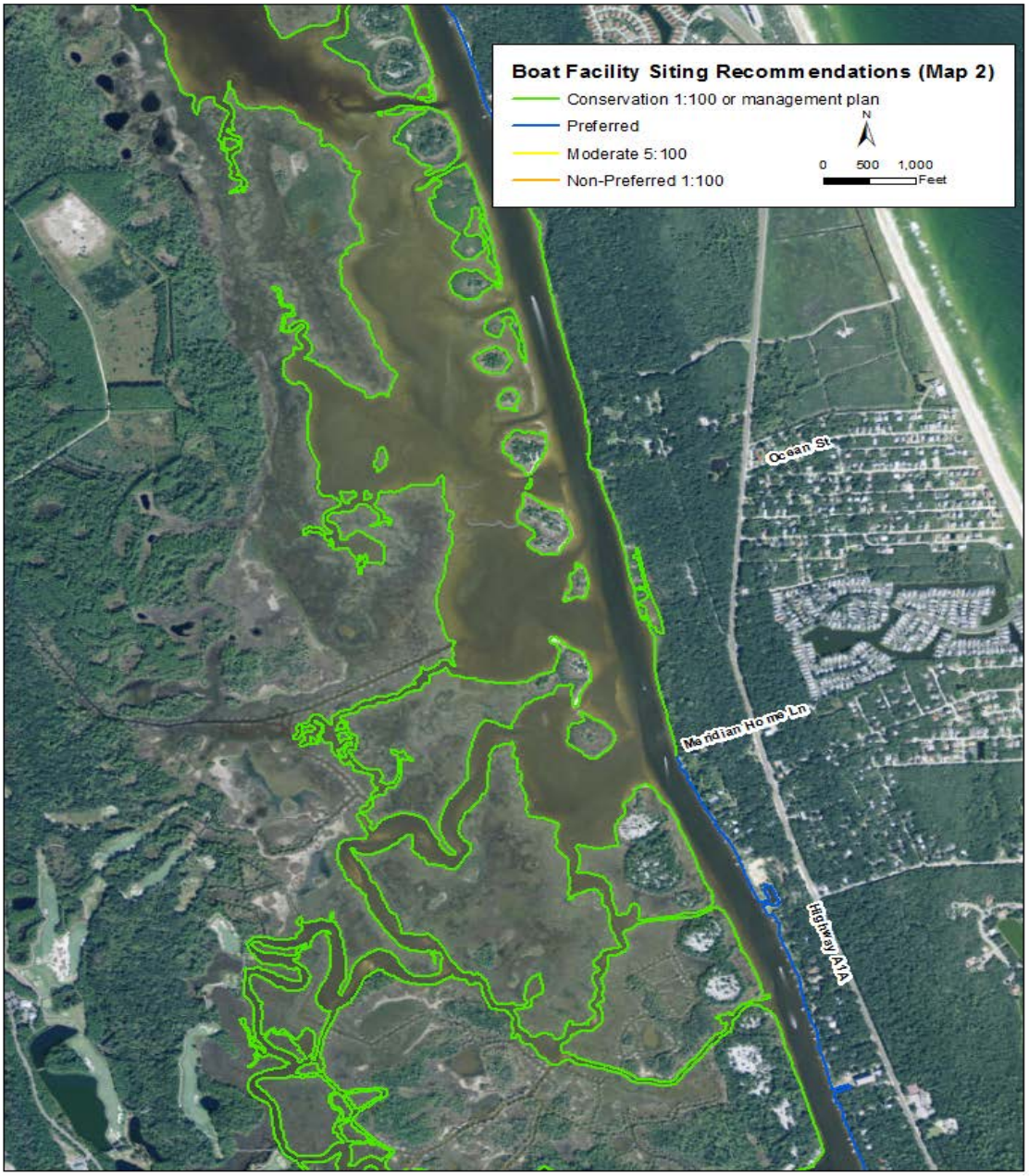


Figure 58: Boat Facility Siting Recommendations – Map 3

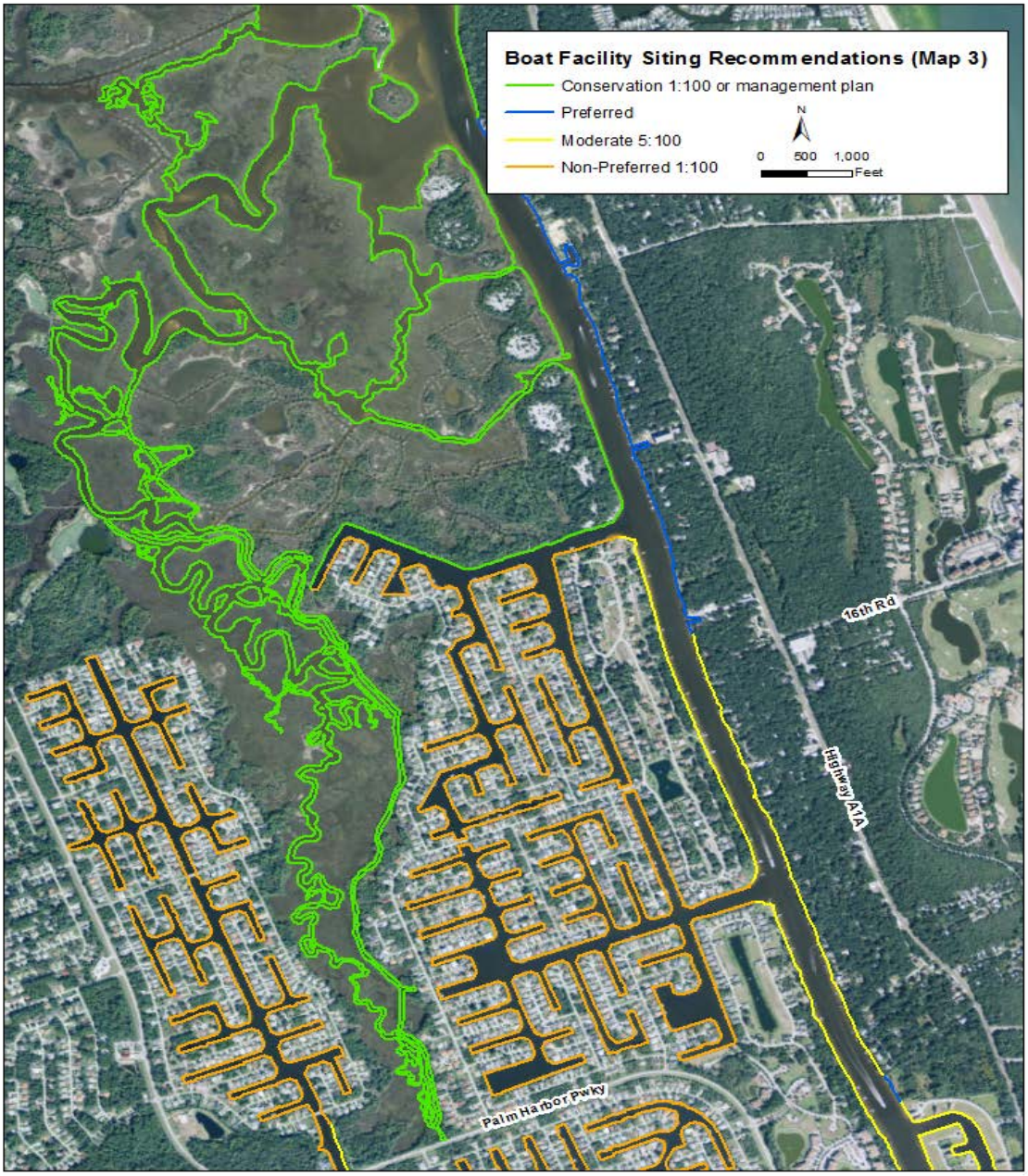


Figure 59: Boat Facility Plan Recommendations – Map 4

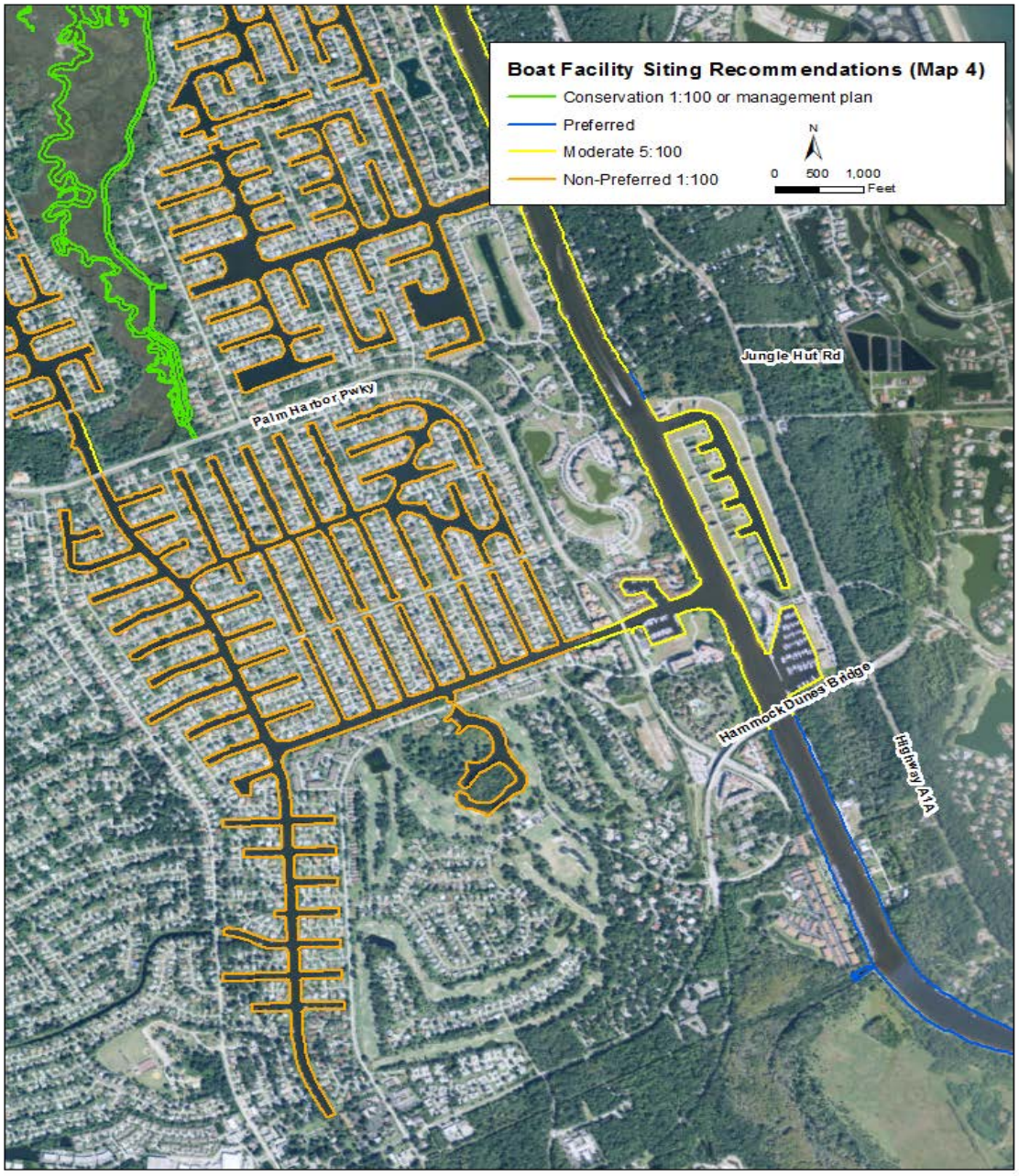


Figure 60: Boat Facility Plan Recommendations – Map 5

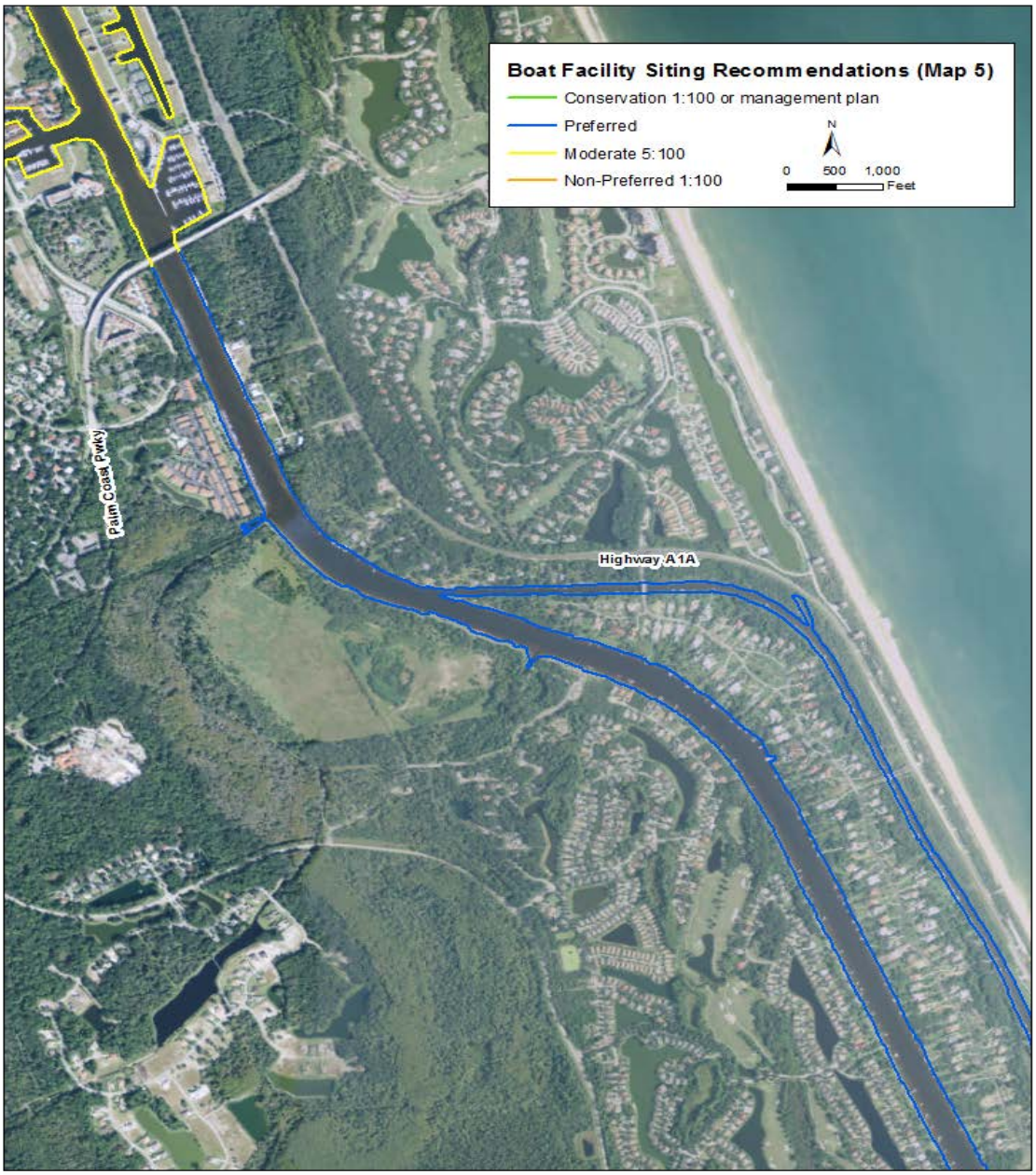


Figure 61: Boat Facility Siting Recommendations – Map 6

Figure 62: Boat Facility Siting Recommendations – Map 7

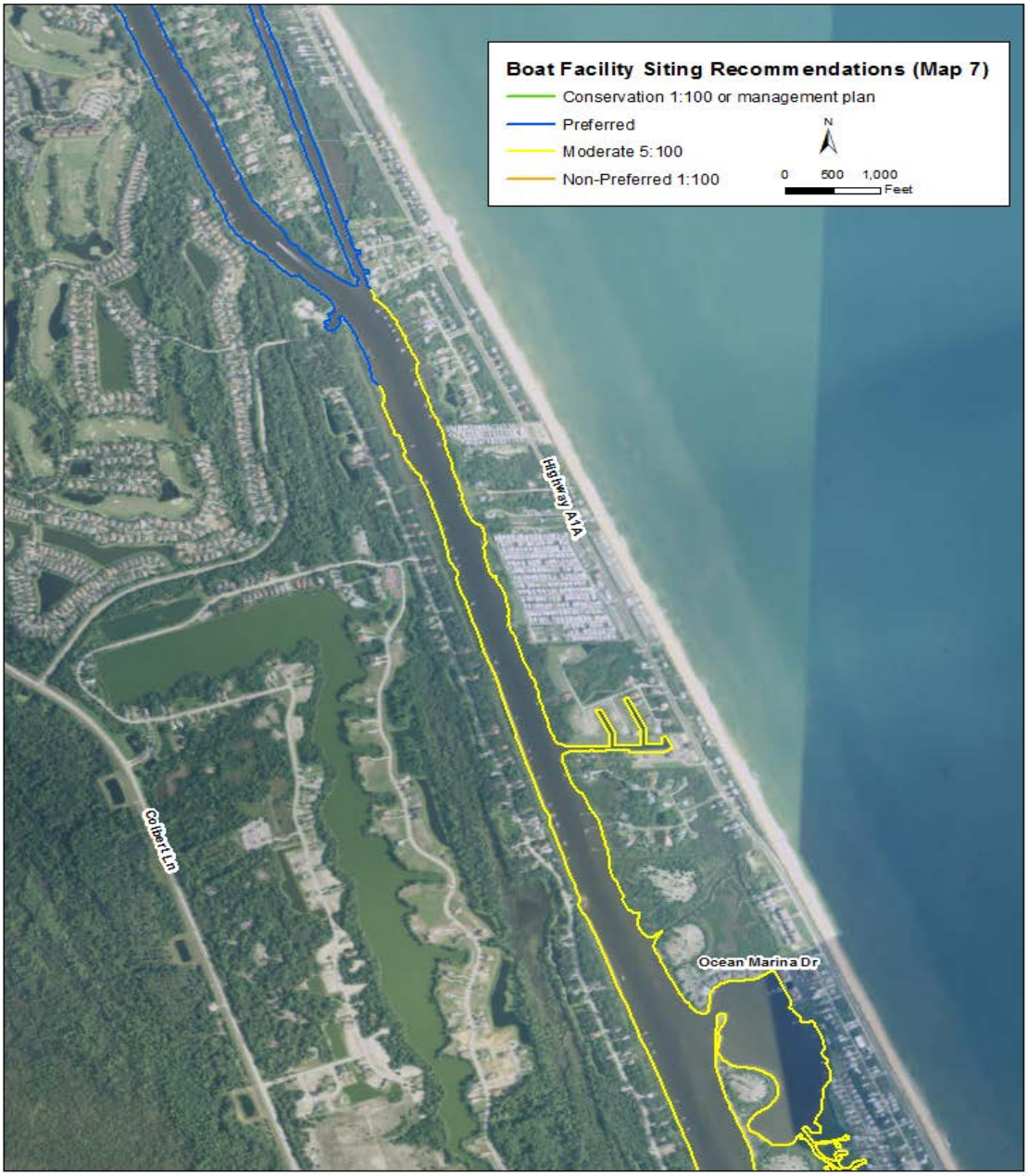


Figure 63: Boat Facility Siting Recommendations – Map 8

Figure 64: Boat Facility Siting Plan Recommendations – Map 9

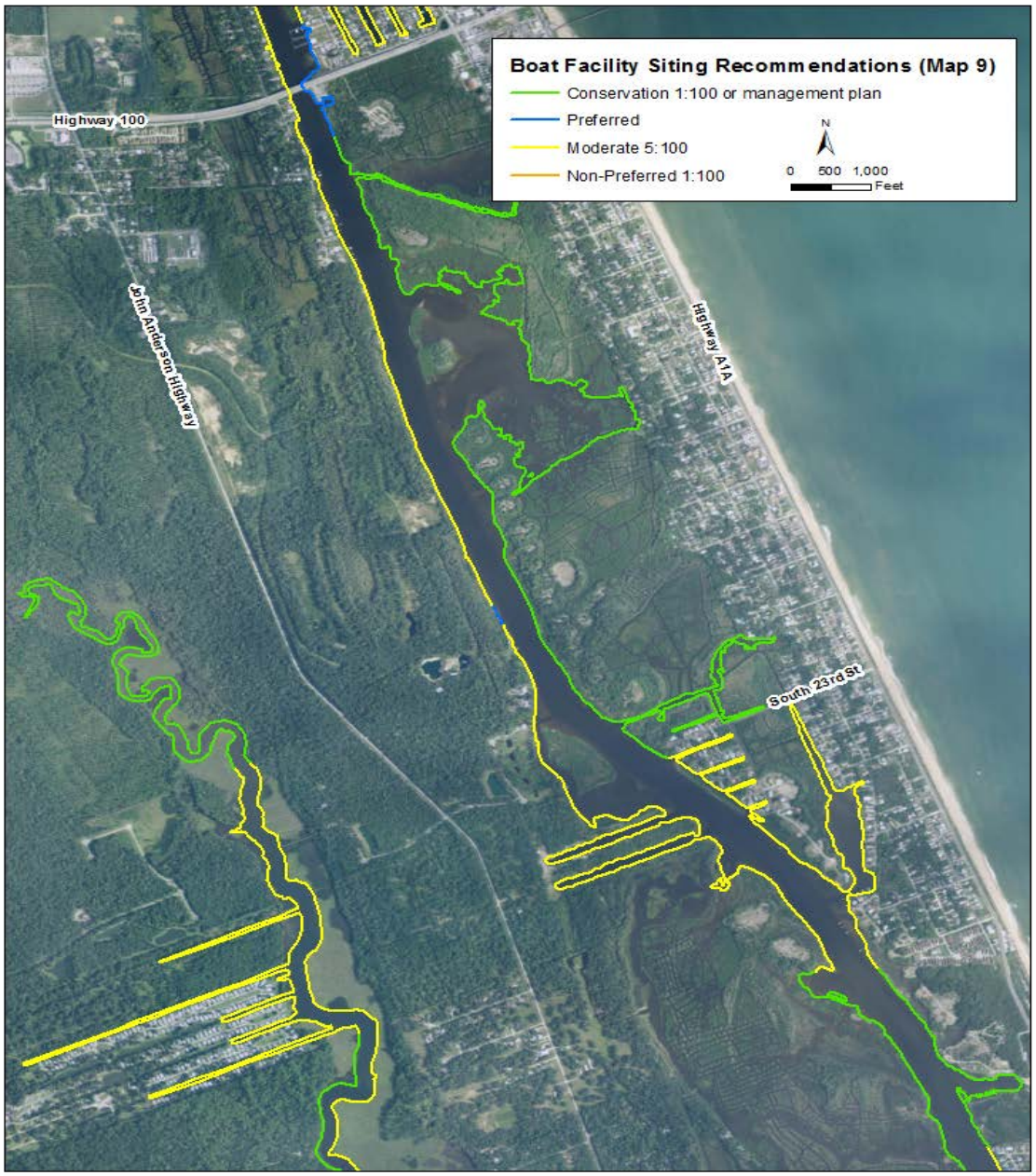


Figure 65: Boat Facility Siting Recommendations – Map 10

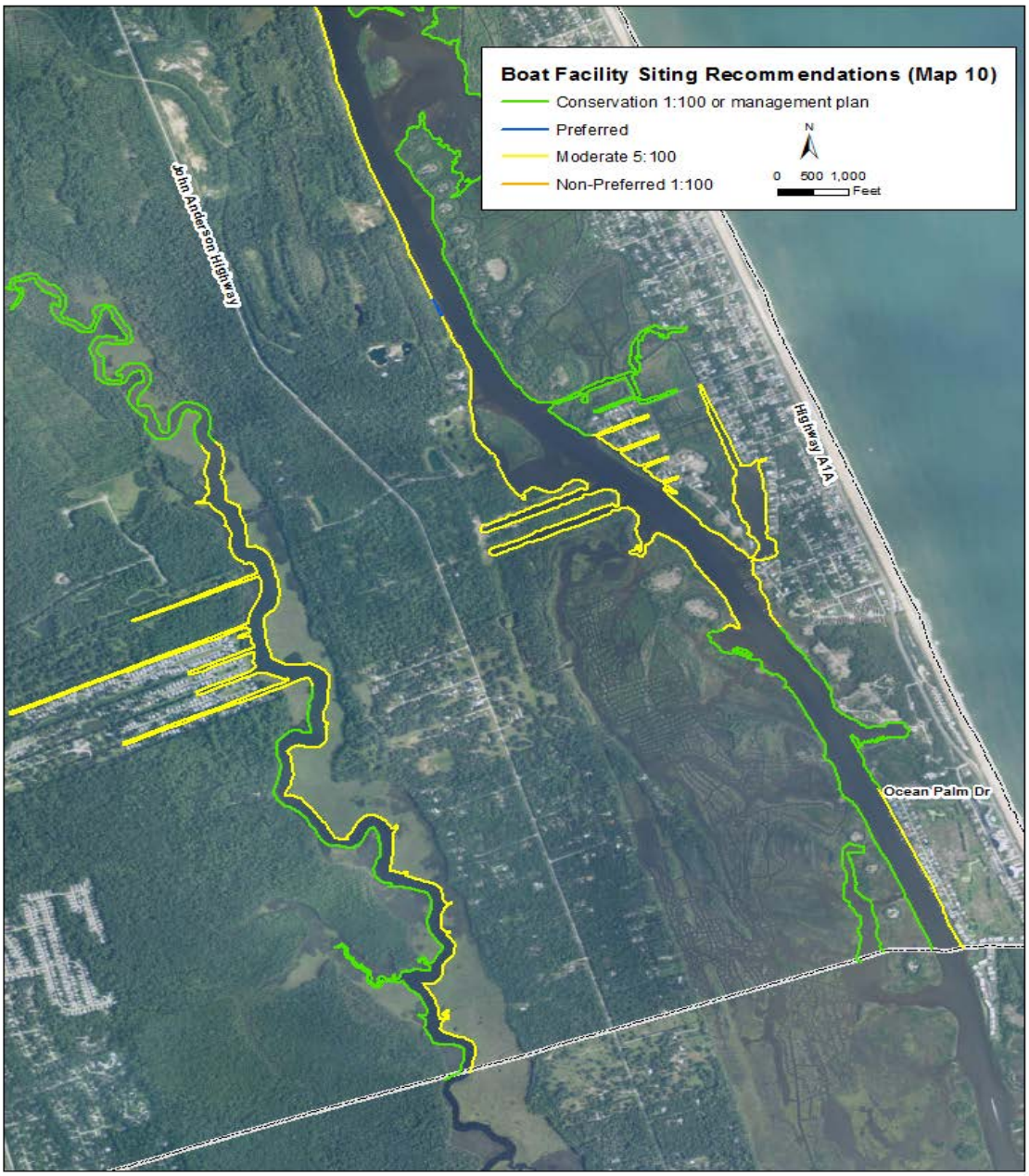


Figure 66: Boat Facility Siting Recommendations – Map 11

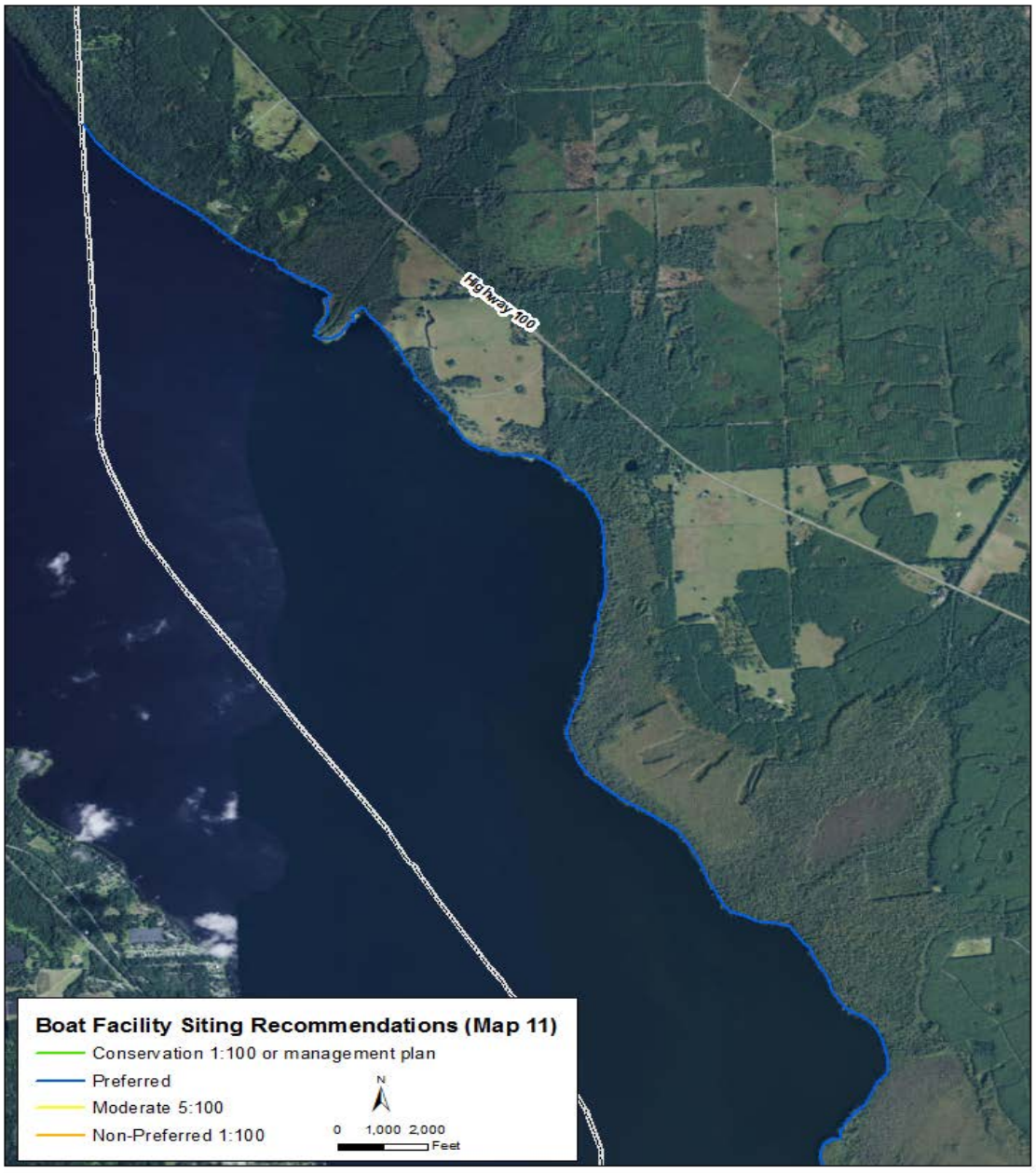
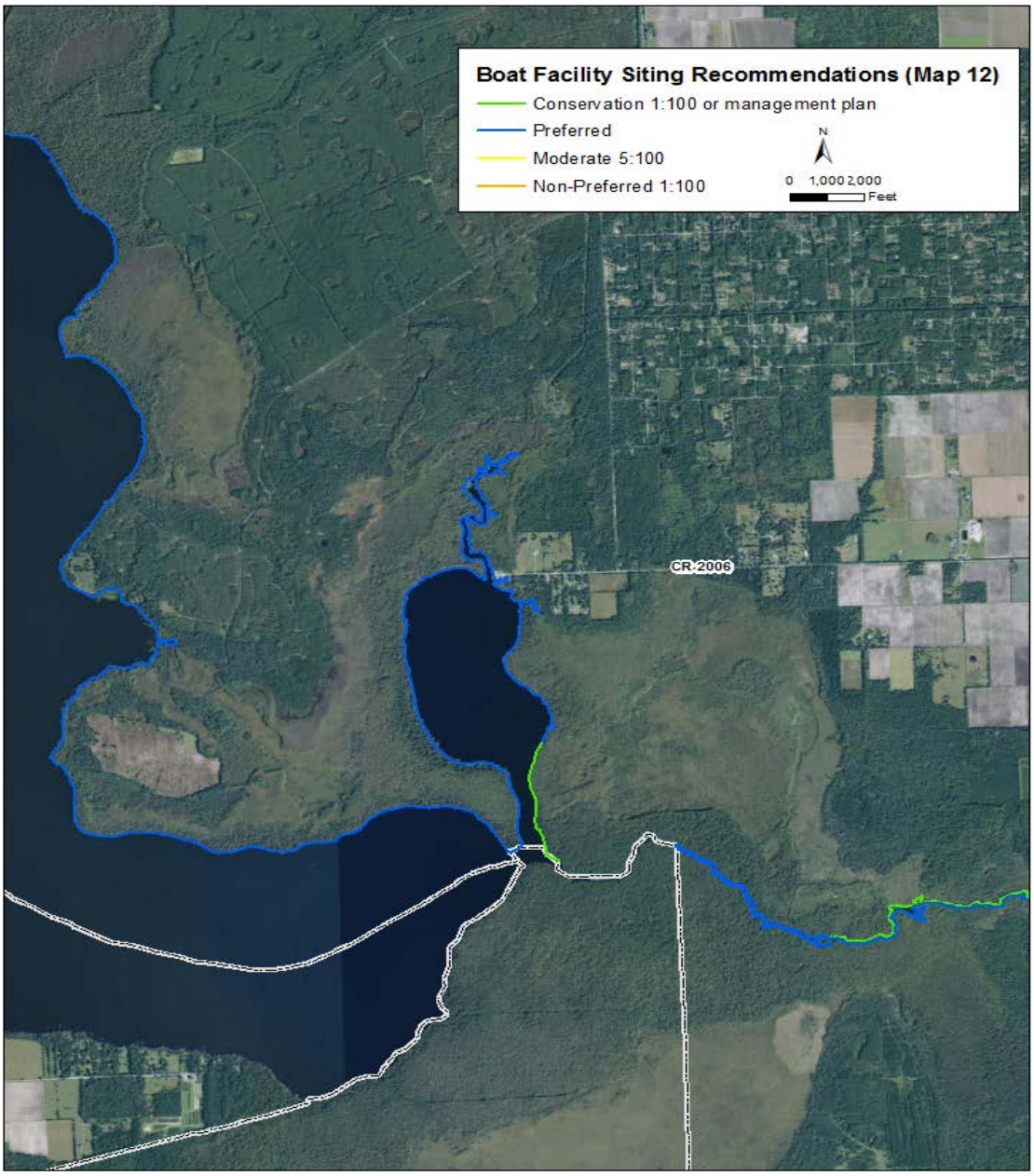


Figure 67: Boat Facility Siting Recommendations – Map 12



5.0 EDUCATION PLAN

In order to communicate with Flagler County citizens regarding the objectives incorporated into the Manatee Protection Plan for Flagler County, an Education component to the Manatee Protection Plan has been developed. The intent of the Education and Awareness component of the MPP is to increase knowledge, awareness, and understanding among Flagler County residents and visitors with respect to the presence of manatees in Flagler County's waterways. There are many successful models for Flagler County to follow in the development of an education plan. The County will coordinate its efforts as appropriate with federal, state, and local agencies and organizations in providing information to the public regarding manatee safety issues. Completion of these initiatives is the responsibility of the County but may require additional, outside funding sources or partnerships and will be implemented once funding is secured and/or partnerships are formalized. Partnering agencies in these efforts might include Florida Sea Grant, University of Florida- IFAS, Florida Fish and Wildlife Conservation Commission (FWC), University of Florida's Whitney Laboratory for Marine Bioscience (Whitney Lab), Florida Department of Environmental Protection (FDEP), Guana Tolomato Matanzas National Estuarine Research Reserve (GTM-NERR), St. Johns River Water Management District (SJRWMD), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA), Flagler County School Board (FCSB), Flagler County Property Appraiser (FCPA), Flagler County Sheriff's Office (FSO), Flagler County Tax Collector (Tax Collector), Boy Scouts of America (Boy Scouts), Girl Scouts of the USA (Girl Scouts), Georgia Aquarium, private sector businesses and Save the Manatee Club (SMC).

Funding for some of these education and awareness initiatives may be paid for by Flagler County, but funding assistance will also be sought in the form of grants and donations. Some funding mechanisms that are being considered include a portion of funds from enforcement related penalties, impact fees on waterfront development, and federal, state, and local grant programs.

Since 2010, Flagler County School District staff has had access to an 18 lesson curriculum correlated to Florida's Sunshine State Standards for 3rd grade classes at Rymfire and Bunnell Elementary Schools. The program is jointly administered by the University of Florida, College of Veterinary Medicine and the Whitney Laboratory for Marine Bioscience and was developed by Florida SeaGrant staff at the University of Florida's Institute for Food and Agricultural Sciences

(IFAS) program located in Bunnell. The program is based on a book called "Sam the Sea Cow" and introduces students to manatee biology and threats facing manatees while addressing math and science curriculum needs. The program includes lessons about adaptations, characteristics of mammals, what manatees need to survive and marine pollution. The specific curriculum can be found at:
http://edis.ifas.ufl.edu/topic_series_third_grade_manatee_workbook.

Flagler County identifies each of the initiatives as short-term, near-term, and long-term. Short-term refers to beginning an initiative within the first two years of Plan implementation. Near-term initiatives will begin between three to five years from Plan implementation and long-term will begin later than 5 years from the date of Plan implementation. In Appendix 1, Flagler County's educational initiatives are listed along with their planned implementation timelines and proposed funding sources.

5.1 Informational Kiosks

One valuable source of manatee education for boaters is the inclusion of kiosks at high use public boat ramps. Flagler County currently does not have informational kiosks at any of the county owned and managed boat ramps. Due to the changes in boating speed zones and need for further manatee educational materials for the public, Incorporation of informational kiosks at Bing's Landing Park, Herschel King Park, and Moody Public Boat Launch are proposed by the County. The kiosks will include information about the speed zone areas and signage, speed limits, and current information on the status of the manatee in Flagler County along with biology of the species and conservation measures. The development of educational materials for informational kiosks will be coordinated with the FWC and USFWS. The kiosks will be funded by Flagler County and will be installed within 1 year of approval of this MPP.

5.2 Boating Guide Pamphlets

Flagler County will also implement a boating guide pamphlet which can be distributed at the DMV, local marinas, boat ramps, and be available online. Flagler County will also provide the pamphlets to special on-water events such as fishing tournaments and poker runs as they occur. The pamphlet will include general information about boating safety, habitat and resource protection, and parks and recreation resources and opportunities. The pamphlet will also include navigation aid information, manatee protection zone and boat speed zone information (including a guide to markers and signs for both manatee protection zones and

safety zones), locations of boat ramps, marinas, and waterside facilities. The pamphlet will also include emergency contact numbers and sheriff's office information. The pamphlet will be produced with assistance of the Flagler County Sheriff's Office and the FWC. The development of educational materials for boating guides will be coordinated with the FWC and USFWS.

6.0 MANATEE PROTECTION ZONES AND LAW ENFORCEMENT

Manatee protection speed zones for boaters are considered by FWC and USFWS to be an important element of long term, comprehensive manatee conservation. Although it is difficult to measure the direct "effectiveness" of speed zones in terms of manatee survivorship, both the USFWS and FWC recommend that reductions in watercraft speeds will likely result in a reduction of the risk of collision with manatees. According to the U.S. Army Corps of Engineers Manatee Programmatic Biological Opinion from 2011: "The enforcement of manatee speed zones is the primary conservation measure through which proposed projects could reduce the likelihood of take from watercraft collisions to an unlikely-to-occur level." Manatee density and abundance in relation to boating density and abundance is assumed to play a key role in determining the likelihood for injury and fatality for manatees. It appears from historical boating studies in the State of Florida that the visible presence of law enforcement on the waterway encourages slower boat traffic. In addition, the subsequent slowing of boat traffic from the presence of law enforcement on the water exists for a period of time after enforcement personnel have left the waterway, known as the "halo effect."

On-water law enforcement in Flagler County is performed by officers from the Florida Fish and Wildlife Conservation Commission's Law Enforcement Division (FWC-LE) and the Flagler County Sheriff Office (FCSO). FWC-LE is the lead enforcement agency in patrolling the Manatee Protection Zones. FCSO provides enforcement whenever FWC-LE is not scheduled to patrol on water. The FCSO has provided a commitment to supply assistance in the enforcement of speed zones for manatee protection. FWC-LE and FCSO on-water hours, citations, and warnings for the 2015 Manatee Protection Zone enforcement period of May 1st through September 7th were reviewed as part of this plan. An overview of the findings is documented below.

During the speed zone enforcement time period of 2015 (May 1-September 7), the FWC-LE patrolled the Manatee Protection Zones for a total of approximately 200 hours each month. During the enforcement period, FWC-LE gave 11 written warnings and 0 citations to boaters. The FCSO patrolled the Manatee Protection Zones for a total of approximately 40 hours each month. During the enforcement period, FCSO gave 103 verbal warnings, 37 written warnings, and 10 citations to boaters. The combined total of the two agencies equals approximately 240 on-water patrol hours of the Manatee Protection Zones per month during the enforcement period. Therefore, on average the Manatee Protection Zones are being patrolled

approximately 8 hours per day. This does not include any hours patrolled by U.S. Fish and Wildlife Service Law Enforcement (USFWS-LE). USFWS-LE patrols a limited number of days throughout the year in Flagler County waterways.

Flagler County will work to coordinate a Manatee Protection Zone Enforcement Task Force which will include FWC-LE, USFWS-LE, and FCSO, and also include the USFWS North Florida Ecological Services Office, the FWC Imperiled Species Management Section and Flagler County Land Management Division. The goal will be for the Task Force to meet each year in the spring prior to the May 1st start of enforcement of the Manatee Protection Zones and in the fall after the September 7th end of the enforcement period. The spring meeting will be used to coordinate specific law enforcement coverage periods for each agency. The fall meeting will be to discuss the findings and operations of the law enforcement period and to determine if changes to methods of coverage are necessary. The FCSO has agreed to provide monthly updates to Flagler County staff during the Manatee Protection Zone enforcement months of May 1st through September 7th. Flagler County staff will also coordinate with FWC-LE for monthly updates. Flagler County staff will also provide a yearly report to FWC and USFWS regarding law enforcement efforts for the previous year.

Flagler County will also provide a press release to the public each spring prior to the May 1st start of the enforcement the Manatee Protection Zones. This will be accomplished by publishing the press release through media outlets such as the Flagler County website, the Daytona-Flagler News Journal, and the Flagler Live website.

7.0 IMPLEMENTATION PLAN

7.1 Manatee Protection Plan Adoption

Once this MPP is approved by the Flagler County Board of County Commissioners, FWC and USFWS, the County will move forward with adoption of the plan as an amendment to the County Code of Ordinances. The County will coordinate with and encourage the cities and municipalities within Flagler County to adopt this MPP into their respective Codes. It is anticipated that the incorporation of the final approved plan will be completed within one year of approval. The MPP will be made available to the public through the Flagler County Government website. GIS shapefiles of the Boat Facility Siting strategy maps will be made available to allow for planning, development, and future permitting on properties.

7.2 Manatee Protection Plan Annual Report

Flagler County staff will develop a MPP Annual Report. This report will include a review of all new manatee-related data, any new waterfront development permitting and construction, manatee deaths with a focus on those related to human causes, speed zone law enforcement, the status of implementing educational programs, MPP funding efforts and habitat protection efforts. The review and report will be completed on a yearly basis. This report will be submitted to the FWC Imperiled Species Management Section and USFWS North Florida Ecological Services Office by the end of January each year.

7.3 Manatee Protection Zone Law Enforcement Report

Flagler County staff will coordinate with FWC Law Enforcement and the Flagler County Sheriff Office staff to develop a Law Enforcement Report. This report will include items such as a discussion of how the FCSO has assisted FWC with the enforcement of zones, the total number of on water patrol hours and number of warnings/citations reported for both agencies, boating accidents, and general speed zone compliance issues and discussions. The review and report will be completed on a yearly basis as part of the MPP Annual Report (submitted to USFWS and FWC by the end of January each year), and the County will provide this information to all law enforcement agencies in separate discussions, such as at task force meetings.

7.4 Manatee Protection Plan Funding

A critical component of any MPP is to maintain adequate funding for implementation of the plan. Flagler County will provide a yearly budget towards implementation of the MPP. To successfully implement the objectives of this MPP, Flagler County will:

A. Continue to fund the Flagler County Sheriff's budget on an annual basis, which currently includes on water patrol activities for the Intracoastal Waterway, in conjunction with the FWC-LE; and

B. Continue to fund the County's Growth Management division, which will oversee development and compliance with the MPP; and

C. Continue to fund the Flagler County's Land Management division, which will provide USFWS and FWC the MPP Yearly Report, and organize educational activities; and

D. Provide funds through the General Fund to ensure consistent support for these activities; and

E. Work to identify additional funding sources that might be available in order to implement specific MPP tasks. These other possible funding sources include governmental grant programs, corporate sponsors, private donations, public interest groups, etc.

7.5 Manatee Protection Plan Recommendations

Table 7 below is a summary of the recommendations and implementation of the Flagler County Manatee Protection Plan.

Table 7: Flagler County MPP Recommendations

MPP Objective	Action	Anticipated Schedule
Flagler County Code of Ordinances will be amended to incorporate the Manatee Protection Plan	Submit County Code of Ordinances to FWC	Upon approval of the MPP by FWC, USFWS, & Flagler County Board of County Commissioners
Flagler County Growth Development will utilize the MPP during review of potential waterfront developments	Distribute and coordinate with County development review staff. Provide GIS shapefiles of BFSP maps to development review staff.	Immediately upon approval
Inventory all waterfront construction of slips, manatee mortalities, and habitat impact	Draft and update a Yearly MPP Status Report	January of each year
Review the enforcement of Manatee Protection Zones for effectiveness	Engage Flagler County Sheriff's Office to draft and update a Yearly Law Enforcement Status Report	January of each year or as needed, for task force meetings
Consider the MPP for revision	Review the MPP in conjunction with FWC and USFWS to determine if revisions are necessary; Requires compilation of data and reports described above	Provide a MPP Summary Report every 5 years to the wildlife agencies for review to determine if any major or minor revisions are necessary.
Increase manatee habitat protection	Work with agencies involved with the Flagler County Blueways Project to source funding for the purchase and management of additional lands identified within the Flagler County Blueways	Ongoing

	study. Continue to manage and secure funding for restoration projects on County Preserves.	
Implement Manatee Education Measures	Continue manatee education measures in place and follow implementation schedule for additional educational measures	Active and Ongoing
Facilitate law enforcement participation in manatee protection	Coordinate spring and fall Task Force meetings with LE agencies	April and October of each year

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Appendix 1

Future Boat Facility Projects

- **Newcastle Marine Property** – This property (Flagler County Parcel ID # 40-10-31-3150-00000-0420) consists of the existing Newcastle commercial marine facility. This facility is currently closed. It formerly existed as a commercial boat building facility. The property is anticipated to be converted into a dry storage facility in the future. It is anticipated up to 200 dry slips will be proposed for this special development area.
- **Jose Park Property** – This property consists of multiple parcels (Flagler County Parcel ID #'s 40-10-31-3150-00000-0570, 40-10-31-3150-00000-0580, 40-10-31-3150-00000-0590, 40-10-31-3150-00000-0630, 40-10-31-3150-00000-0640, and 40-10-31-3150-00000-0650) known as the Jose Park property and is approximately 18 acres. The property is currently zoned as a mix of commercial and residential. A PUD was approved in 2005 for 150 boat slips. The project did receive a state permit for the marina from FDEP but did not complete its federal permit due to the downturn in the economy, and no construction occurred. It exists presently as undeveloped land, and the Rhodes Marine Service is located at the southern extent of the property and has 1 commercial facility slip. Contact was made with the owner of the Jose Park property in regards to future use and timeframes. The owner acknowledged the desire to construct a development which would service the Hammock Dunes properties to the east and would include a predominately dry slip marina for boat storage utilized primarily by Hammock Dunes property owners. It is anticipated the development would include the construction of approximately 50 wet slips and a dry stack building able to hold approximately 150 boats. Therefore, it is anticipated up to 200 slips will be proposed for this special development area.
- **Villages at Palm Coast Property** – This property consists of three linear parcels (Flagler County Parcel ID #'s 05-11-31-5918-00000-00C0, 05-11-31-5918-00000-00F0, and 05-11-31-5918-00000-00G0) along the ICW owned by the Villages at Palm Coast Home Owners Association and Tidelands Condominium. The three parcels equal approximately 9.5 acres and are a part of the Villages at Palm Coast PUD. A denied USACE permit for the Tidelands Docks (described in the Executive Summary) is located within this parcel. The applicant was seeking a 100 wet slip linear marina for residential use only. The PUD includes slips as accessory to the residential communities and has granted 38 slips to date. Future slips are permissible to the City of Palm Coast Land Development Code. It is anticipated the northern parcel of this property will seek permits for wet slips in the future. The maximum limit on slips per the City of Palm Coast LDC would be 271. These would be accessories to the existing residential units and would only be allowed for owners and guests use.

- **Flagler County School Board Property** – This 20 acre parcel (Flagler County Parcel ID # 07-11-31-7085-00170-0000) is owned by the Flagler County School Board. It is anticipated a public marina will be constructed on this parcel in the future. The proposed use is for a total of 100 wet and dry slips (designation of total of each separately is unknown at this time).
- **Cline Construction** – This property consists of one single family residential parcel (Flagler County Parcel ID # 26-11-31-5450-00000-0200). This property is permitted to construct a new boat basin and 5 commercial slips. The marina was permitted to provide construction support to the planned marina developments in the area. The federal permit is currently suspended.
- **Harbor View Marina Property** – This property consisting of multiple parcels (Flagler County Parcel ID #'s 35-11-31-0000-01010-0060, 02-12-31-0000-01010-0041, and 02-12-31-0000-01010-0050) is the location of the USACE revoked Harbor View Marina Permit (SAJ-2004-08169). The marina and upland development is part of an existing PUD. The PUD allows for the construction of an 83 wet slip marina basin. The proposed development also includes 135 single family residence lots along the proposed upland cut canal that could potentially lead to 2 future boat slips for each lot. The maximum boat size in the marina basin will be 30 feet.

  The owner of the parcel has indicated the desire to potentially modify the site plan for this parcel so as not to construct the planned freshwater canals with 135 single family residential lots with boat dock potential. In return the property owner would propose constructing a dry stack marina of a size not to exceed the 270 slips that would have been created from the 135 waterfront lots. (135 lots X 2 slips per dock). Therefore the project would include the 83 wet slip marina and a 270 slip dry stack marina facility.
- **McKinna – Grand Haven Marina Property** – This property consisting of multiple parcels (Flagler County Parcel ID #'s 02-12-31-0000-01010-0040, 02-12-31-0000-01010-0044, 02-12-31-0000-01010-0060, 02-12-31-0000-01010-0080, 02-12-31-4938-00000-0010, 02-12-31-4938-00000-0020, 02-12-31-4938-00000-0030, 02-12-31-4938-00000-0040, 02-12-31-4938-00000-0050, 02-12-31-4938-00000-0060, 02-12-31-4938-00000-0100, 02-12-31-4938-00000-0110, 02-12-31-4938-00000-0120, and 02-12-31-4938-00000-0130) is the location of the USACE revoked McKinna – Grand Haven Marina Permit (SAJ-2003-12778). This permit authorized the construction of a new boat basin and an 80 wet slip marina. The proposed development also included 200 dry storage slips.
- **Flagler Beach Marina Property** – This parcel (Flagler County Parcel ID # 12-12-31-2425-00840-0010) contains an existing commercial marina permitted for 82

wet slips and 72 dry storage slips. Currently the dry storage slips exist as outdoor parking within a grassed parking lot. Flagler Beach Marina pursued a permit modification through the FDEP to increase the number of dry slips by 128 to a total of 200. The FWC provided comment to FDEP to deny the permit modification citing manatee protection concerns. It is anticipated that the property owner will pursue expansion of the existing marina in the future.

- **820 Moody Lane Restaurant Property** – This parcel (Flagler County Parcel ID # 12-12-31-2425-00850-0010) is currently developed as a restaurant with 23 moorings (transient boat slips). It is anticipated the property will be proposed for a commercial marina in the future. This future development will consist of 80 wet slips.
- **Hammock Beach River Club Property** – This large parcel (Flagler County Parcel ID # 13-12-31-0000-01010-0000) is known as the Hammock Beach River Club. The Hammock Beach River Club is the last remaining large, undeveloped (unrestricted) ICW property left in Flagler County. The property is approximately 2,000 acres in size and has approximately 5,600 linear feet of ICW shoreline. This parcel is the location of the USACE revoked Hammock Beach River Club Permit (SAJ-1996-00918). This permit authorized the construction of a 10 wet slip residential marina. The proposed development also includes 74 single family residence lots along the ICW that could potentially lead to future boat slips for each lot. The SJRWMD permit for this development remains valid. The property owner was contacted in regards to the future use of the property. The owner anticipates applying for a modification of the existing permit to incorporate a more recreational, eco-tourism type development utilizing the vast amount of preservation land along Bulow Creek for hiking and other passive uses. The revised plan will potentially include a mix of single family slips as previously permitted and a residential marina including wet and dry slips. The developer envisions a total of 250 slips for the project (this includes single family lots, small residential marina, and approximately 100 dry slip storage). The developer does not have a set timeframe for permitting or construction, but did indicate it would be well into the future.
- **Flagler County Hammock Beach Property** – This small parcel (Flagler County Parcel ID # 13-12-31-2850-0PL30-0000) is owned by Flagler County and is located within the Hammock Beach River Club described above. This parcel is anticipated to be a small public park and will include 2 boat ramp lanes and approximately 40 parking spaces.
- **Single Family Parcels** – Many small parcels, primarily in the unincorporated ICW areas of the County, provide the opportunity for single family docks and small

docking facilities. The incorporated areas of the City of Palm Coast and Flagler Beach are, for the most part, completely developed and single family docks already exist with the lots. The primary areas of additional single family docks will come with the final construction of the remaining PUD's along the ICW. These include the build-out of the Grand Haven PUD, the Palm Coast Plantation PUD, the Harbor View Marina property, the Hammock Beach River Club PUD, the Flagler Beach Polo Club PUD, and the Bulow Preserve PUD.

Appendix 2

Flagler County Educational Initiatives

Education and Awareness Initiative	Timeline -	Objective	Funding Source and Administration	Potential Partnering Agencies	Educational Material Delivery Methods
Boater Education Brochure and Map	Near-Term	Provide and distribute a brochure and map to registered boaters and property owners in the county	To Be Determined	Flagler County Tax Collector or Property Appraiser – for Distribution	FCPA or Tax Collector Mailing, Supply Marine Businesses, Supply Municipalities as necessary
Flagler County TV Spot	Short-Term	Reach broad segment of Flagler County with manatee conservation discussion	Flagler County Communications	Sea Grant, UF-IFAS, NOAA, FWC	Recurring broadcast spot on FCTV
Flagler County Website	Near-Term	Provide access to MPP and other manatee conservation information on County Website	Flagler County I.T., Flagler County Land Management	FWC, USFWS, NOAA, Sea Grant, UF-IFAS	Provide access to management and other documents to general public on-demand
Local Radio PSA	Near-	Reach broad	Flagler County	Local Radio	Provide a written or recorded radio spot for

Education and Awareness Initiative	**Timeline -**	**Objective**	**Funding Source and Administration**	**Potential Partnering Agencies**	**Educational Material Delivery Methods**
	Term	segment of Flagler County with manatee conservation information and direct to website	Communications	Stations	local radio outlets
Manatee Alert for NOAA radio broadcast	Near-Term	Provide boater-specific waterway and manatee alerts	TBD	NOAA	Periodic broadcast on NOAA radio channels
Manatee conservation educational signs and kiosks at boat ramps	Short-term	Provide boaters with educational materials and reminders to "Share the waterway" with manatees	Funding – TBD, Administration – Flagler County Parks and Recreation	Flagler County	Strategic sign and kiosk placement at high-traffic boat ramps in Flagler County
"No feeding or watering" signs, brochures and information to residents	Short-term	Reminders and education of waterfront homeowners that feeding manatees	TBD	City of Palm Coast, Beverly Beach, Flagler Beach	Placement of signs in waterways and canals

Education and Awareness Initiative	Timeline -	Objective	Funding Source and Administration	Potential Partnering Agencies	Educational Material Delivery Methods
		is harmful/illegal			
Grades K-5 Manatee Education Programs	Near-term (existing)	Continue to utilize the curriculum developed by Florida Sea Grant	Continue existing funding	Sea Grant	Continue to provide educational materials and curriculum in elementary schools
Manatee training for Law Enforcement officers.	Short-Term	Provide LE with tools to educate public during their interactions and for "manatee spotter/reporting" as necessary	TBD	FWC, FCSO, USFWS	Contact with citizens during on-water patrols
Increased on-water presence of Law Enforcement	Long-Term	Provide funding and develop intergovernmental cooperation and capacity for multi-agency on-water presence for maintaining safe speeds and "halo"	TBD	FWC, FCSO	On-Water presence by Law Enforcement officers has been shown to be a significant preventative for violations of speed zones.

Education and Awareness Initiative	**Timeline -**	**Objective**	**Funding Source and Administration**	**Potential Partnering Agencies**	**Educational Material Delivery Methods**
		effect			
Tabling at Local Festivals and Environmental Fairs	Near-Term	Provide educational materials to the public	TBD	Festival Organizers and Sponsors	Brochures, Posters, Presenters
Volunteer Speaker's Forum	Long-Term	Create a forum for conservation professionals, students, and volunteers to discuss conservation issues including manatees	TBD	Local High Schools, and regional colleges, advocacy groups, and non-profit organizations	Spoken Word and Audio-visual presentations