



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

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RICK SCOTT
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SECRETARY

July 8, 2013

Ms. Sine Murray
Planning Manager
Office of Park Planning, Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 525
Tallahassee, FL 32399-3000

Re: Grayton Beach State Park – Lease # 3386

Dear Ms. Murray:

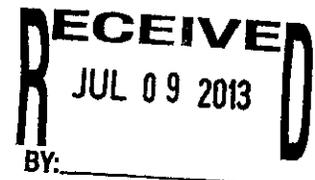
The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the Grayton Beach State Park management plan. The next management plan update is due July 8, 2023.

Approval of this land management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

A handwritten signature in cursive script that reads "M. S. Gengenbach".

Marianne S. Gengenbach
Office of Environmental Services
Division of State Lands



Grayton Beach State Park

APPROVED Unit Management Plan

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION**

**Division of Recreation and Parks
June 2013**



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INTRODUCTION

Grayton Beach State Park is located along the Gulf of Mexico in south Walton County (see Vicinity Map). Access to the park is from County Road 30A (or Scenic 30A), a designated Florida Scenic Highway. Access to County Road 30A is from U.S. Highway 98 via County Roads 395, 283, 83 and 393 (see Reference Map). Grayton Beach State Park is located 18 miles east of the City of Destin and 25 miles west of Panama City.

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP), initially acquired Grayton Beach State Park to develop, maintain and utilize this property for state park and outdoor recreational and educational purposes. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on January 30, 1985, the Trustees leased (Lease Number 3386) the property to the DRP under a 50-year lease. The current lease will expire on January 30, 2035. Currently, the park contains approximately 2,187 acres.

Grayton Beach State Park is designated single-use to provide public outdoor recreation and other park-related uses. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

PURPOSE AND SIGNIFICANCE OF THE PARK

The purpose of Grayton Beach State Park is to provide for resource-based public outdoor recreational activities, especially saltwater beach activities and hiking. The park's natural areas and sandy beaches provide opportunities for outdoor recreation and conservation for the enjoyment of Florida residents and visitors.

Park Significance

- The park protects a representative sample of Florida's native gulf coast beach dune and scrub communities.
- The park protects portions of three coastal dune lakes that support a diversity of rare and endemic plant and wildlife species.
- The park protects more than 600 acres of wetland communities, including wet prairie and seepage slope, which provide habitat for rare and endemic species, including three listed species of pitcher plant.
- The park protects an integral area used by rare and imperiled migratory bird species as a "jumping off" point for the trans-gulf flight.
- The park protects a population of endangered Choctawhatchee beach mice (*Peromyscus polinotus allophrys*), which were successfully reintroduced to the park in 1987 and 1989 and augmented in 2011.
- The park provides Florida residents and visitors with the opportunity to participate in recreational beach activities and experience rare coastal ecosystems along a portion of Florida's rapidly growing gulf coast.

Grayton Beach State Park is classified as a state recreation area in the DRP's unit classification system. In the management of a state recreation area, major emphasis is placed on maximizing the recreational potential of the unit. However, preservation of the park's natural and cultural resources remains important. Depletion of a resource by any recreational activity is not permitted. In order to realize the park's recreational potential the development of appropriate park facilities is undertaken with the goal to provide facilities that are accessible, convenient and safe, to support public recreational use or appreciation of the park's natural, aesthetic and educational attributes.

PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Grayton Beach State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the 2002 approved plan.

The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management and restoration of natural conditions.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development, measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives locate use areas and propose the types of facilities and programs and the volume of public use to be provided.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives, and (3) estimated costs to complete each action and objective.

Legend

- Park Boundary
- Interstates
- FDOT US Routes
- FDOT State Routes
- FDOT Local Roads

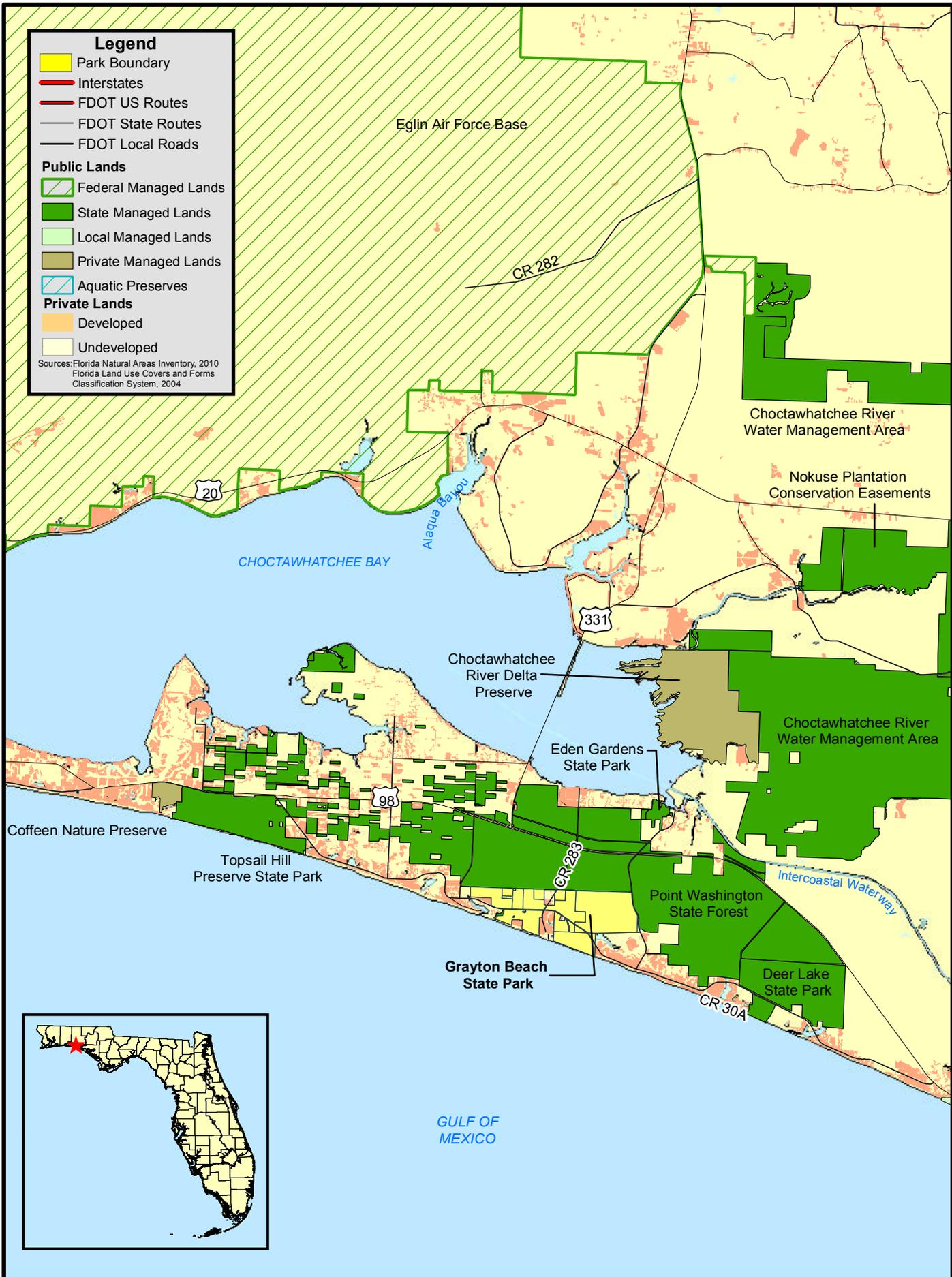
Public Lands

- Federal Managed Lands
- State Managed Lands
- Local Managed Lands
- Private Managed Lands
- Aquatic Preserves

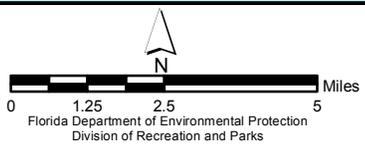
Private Lands

- Developed
- Undeveloped

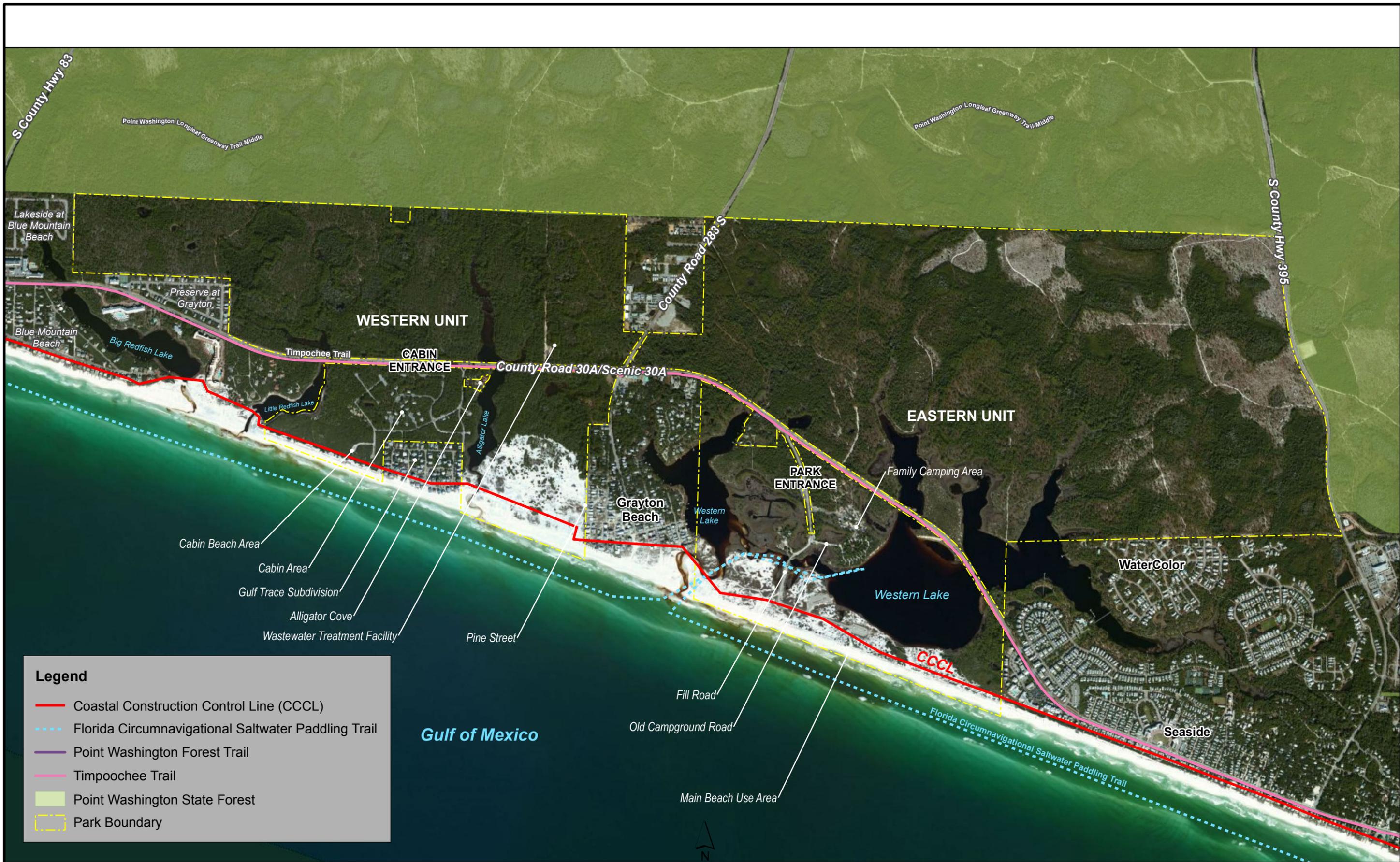
Sources: Florida Natural Areas Inventory, 2010
Florida Land Use Covers and Forms
Classification System, 2004



**GRAYTON BEACH
STATE PARK**



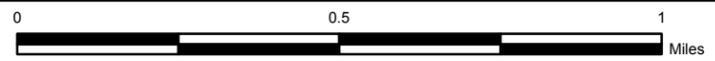
**VICINITY
MAP**



Legend

- Coastal Construction Control Line (CCCL)
- - - Florida Circumnavigational Saltwater Paddling Trail
- Point Washington Forest Trail
- Timpochee Trail
- Point Washington State Forest
- Park Boundary

GRAYTON BEACH STATE PARK



Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning

REFERENCE MAP

In the development of this plan, the potential of the park to accommodate secondary management purposes (“multiple uses”) was analyzed. These secondary purposes were considered within the context of the DRP’s statutory responsibilities and an analysis of the resource needs and values of the park. This analysis considered the park’s natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that timber management could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that timber management would be appropriate at this park as an additional source of revenue for land management since it is compatible with the park’s primary purpose of resource-based outdoor recreation and conservation.

The use of private land managers to facilitate restoration and management of this unit was also analyzed. Decisions regarding this type of management (such as outsourcing, contracting with the private sector, use of volunteers, etc.) will be made on a case-by-case basis as necessity dictates.

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, the DRP is charged with the responsibility of developing and operating Florida's recreation and parks system. These are administered in accordance with the following policy:

It shall be the policy of the Division of Recreation and Parks to promote the state park system for the use, enjoyment, and benefit of the people of Florida and visitors; to acquire typical portions of the original domain of the state which will be accessible to all of the people, and of such character as to emblemize the state's natural values; conserve these natural values for all time; administer the development, use and maintenance of these lands and render such public service in so doing, in such a manner as to enable the people of Florida and visitors to enjoy these values without depleting them; to contribute materially to the development of a strong mental, moral, and physical fiber in the people; to provide for perpetual preservation of historic sites and memorials of statewide

significance and interpretation of their history to the people; to contribute to the tourist appeal of Florida.

The Trustees granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely affect public recreational uses.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the DRP's Operations Manual (OM) that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

Park Management Goals

The following park goals express the DRP's long-term intent in managing the state park.

1. Provide administrative support for all park functions.
2. Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
3. Restore and maintain the natural communities/habitats of the park.
4. Maintain, improve or restore imperiled species populations and habitats in the park.
5. Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
6. Protect, preserve and maintain the cultural resources of the park.
7. Provide public access and recreational opportunities in the park.
8. Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

The park is managed in accordance with all applicable laws and administrative rules. Agencies having a major or direct role in the management of the park are discussed in this plan.

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of

state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FWC aids the DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites. The Florida Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Coastal Systems aids staff in planning and construction activities seaward of the Coastal Construction Control Line. In addition, the Bureau of Beaches and Coastal Systems aid the staff in the development of erosion control projects.

Public Participation

The DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on December 4, 2012, and December 5, 2012, respectively. Meeting notices were published in the Florida Administrative Register, November 26, 2012, Volume 38, Issue 77, included on the DEP Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

Other Designations

Grayton Beach State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not under study for such designation. The park is a component of the Florida Greenways and Trails System.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this unit are also classified as Class III waters by DEP. This unit is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) in accordance with Chapter 258, Florida Statutes, has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan are consistent with DEP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

The DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes and should not imperil other native species or seriously compromise park values.

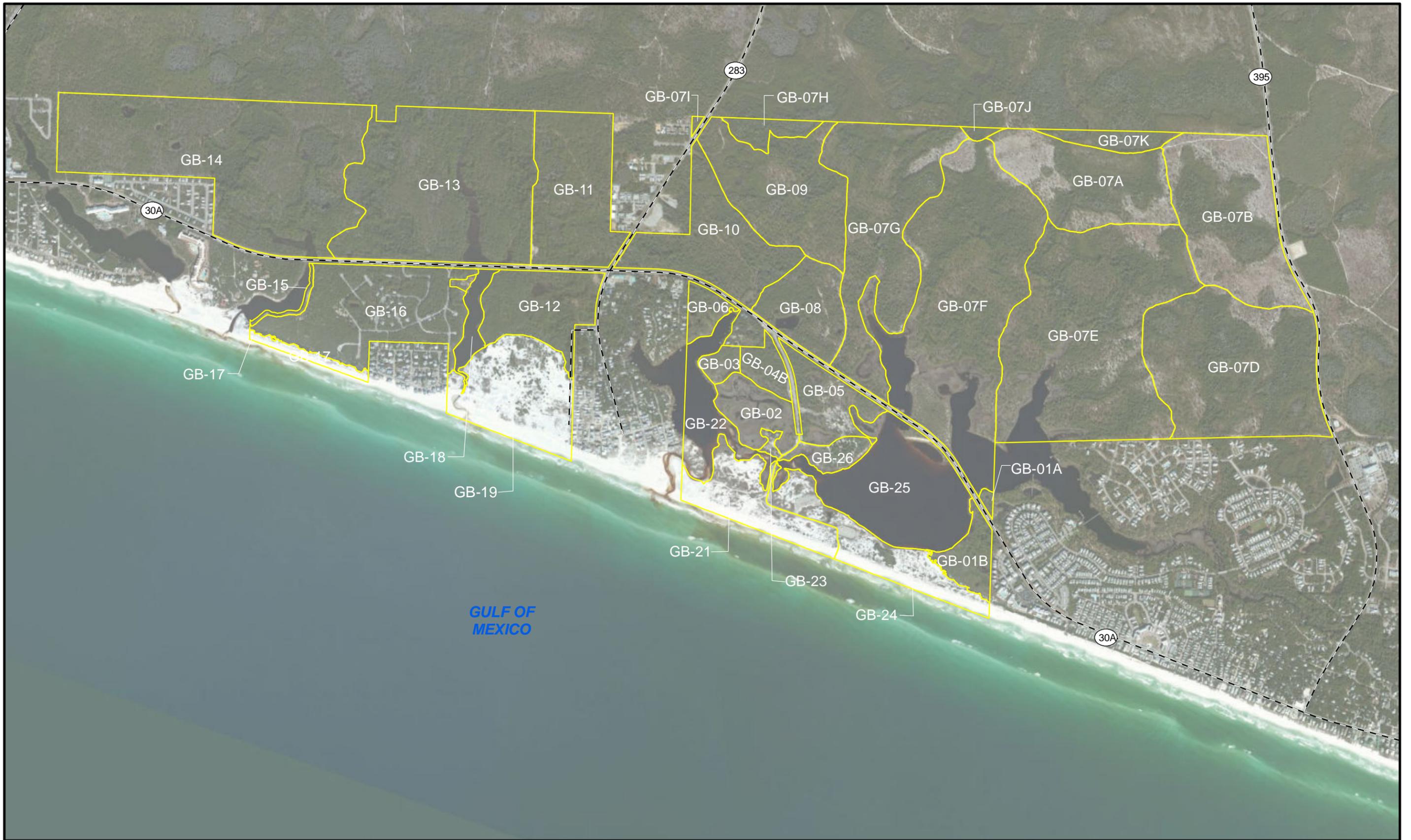
The DRP's management goal for cultural resources is to preserve sites and objects that represent Florida's cultural periods, significant historic events or persons. This goal often entails active measures to stabilize, reconstruct or restore resources, or to rehabilitate them for appropriate public use.

Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to reference management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and natural firebreaks. It is important to note that all burn zones are management zones; however, not all management zones include fire-dependent natural communities. Table 1 reflects the management zones with the acres of each zone.

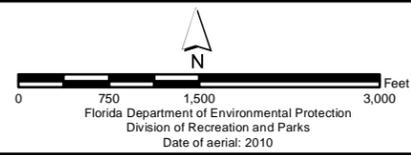
Table 1: Grayton Beach State Park Management Zone Acreage

Management Zone	Acreage	Managed with Prescribed Fire
GB-01A	1.64	Yes
GB-01B	19.46	Yes
GB-02	26.52	No
GB-03	7.17	No
GB-04B	12.98	Yes
GB-05	31.88	Yes
GB-06	11.30	Yes
GB-07A	81.47	Yes
GB-07B	108.21	Yes
GB-07D	147.15	Yes
GB-07E	217.45	Yes
GB-07F	215.79	Yes
GB-07G	126.87	Yes
GB-07H	12.00	Yes
GB-07I	0.85	No
GB-07J	2.33	Yes
GB-07K	13.66	Yes
GB-08	40.47	Yes
GB-09	86.22	Yes
GB-10	71.24	Yes
GB-11	80.23	Yes
GB-12	51.25	Yes
GB-13	178.15	Yes
GB-14	218.23	Yes
GB-15	2.87	No
GB-16	95.18	No
GB-17	7.42	No
GB-18	11.89	No
GB-19	71.53	No
GB-21	44.37	No
GB-22	36.33	No
GB-23	2.46	No
GB-24	48.44	No
GB-25	92.29	No
GB-26	12.22	No



GULF OF MEXICO

GRAYTON BEACH STATE PARK



MANAGEMENT ZONES MAP

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

Grayton Beach State Park lies within the Gulf Coastal Lowlands physiographic region. The Coastal Lowlands form the entire coastline of Florida, including the Florida Keys, and reach inland as much as sixty miles at some points. The inner edge generally lies at the 100-foot contour line. These lowlands were, in recent geologic times, marine terraces (sea floors) during at least three successive inundations by higher seas. The coastline of Florida has shifted significantly both seaward and landward in the past five million years. Many topographic features were formed when sea levels were higher than they are presently.

This region is flat except where old dune ridges occur or where the surface has been modified by erosion and underground solution. Elevation extremes on the park range from sea level to a height of 28 feet above sea level. The park's highest elevations correspond to dune ridges. Many of these features were formed when sea levels were higher. Tropical cyclone events, such as Hurricane Opal in 1995, Hurricane Ivan in 2004 and Hurricane Dennis in 2005, caused significant damage and erosion to the primary dunes of the park.

Geology

Grayton Beach State Park falls within the southeast coastal plain. Some of its most interesting geological features are the dune ridges formed in the late Holocene and its multiple coastal dune lakes. The coastal ecosystem at the park acts as a barrier island. Barrier islands need a continual supply of sand. Since the sand supply has been limited, portions of the park beaches and dunes are eroding (Campbell 1984).

The dunes form the seaward shoreline of the coastal dune lakes at the park. The park borders three coastal dunes lakes, with much of Western Lake contained within the park boundaries. Coastal dune lakes are freshwater lakes that vary in their level of salinity depending on the frequency and duration that they purge and are open to the Gulf of Mexico. Coastal dune lakes are oligotrophic low-nutrient lakes fed by seepage slopes, blackwater streams and flatwoods.

The park is composed of Pleistocene terrace quartz sands underlain by reworked Miocene and Pliocene deposits from the Alum Bluff and Citronelle formations. Bruce Creek Limestone formation underlies all of the reworked deposits.

Soils

According to the National Resources Conservation Service, 17 soil types are found at the park (see Soils Map). A detailed description of these soil types is contained in Addendum 4.

The soils at Grayton Beach State Park are generally composed of two different complexes: Kureb-Lakeland-Newhan and Hurricane-Pamlico. The Kureb-Lakeland-Newhan soil complex contains nearly level to very steep excessively drained sandy soils. This soil complex is found on the dunes and beach. Hurricane-Pamlico soils complex is nearly level to gently sloping, somewhat poorly drained to nearly poorly drained soils. This soil complex is sandy and may or may not have an organic layer underlain by sandy substrate. This soil complex is found in the remainder of the park supporting flatwoods, seepage slope and wet prairie natural communities.

The dunes at Grayton Beach State Park are eroding. It is difficult to quantify the amount of erosion on the dunes at the park. At least one structure that was formerly considered to be located in the secondary dunes has since been eroded by tropical storms, and its remains are now located in primary dunes. The large dune ridges are directly facing the Gulf of Mexico. Dune restoration efforts that have included planting have been moderately successful in some areas of the park. The park plans to continue these efforts to maintain the beach dune community.

Water is channeling along some of the firebreaks in the park causing erosion. These roads need hydrological restoration in order to prevent short-circuiting of water flow along these roads and subsequent erosion.

Minerals

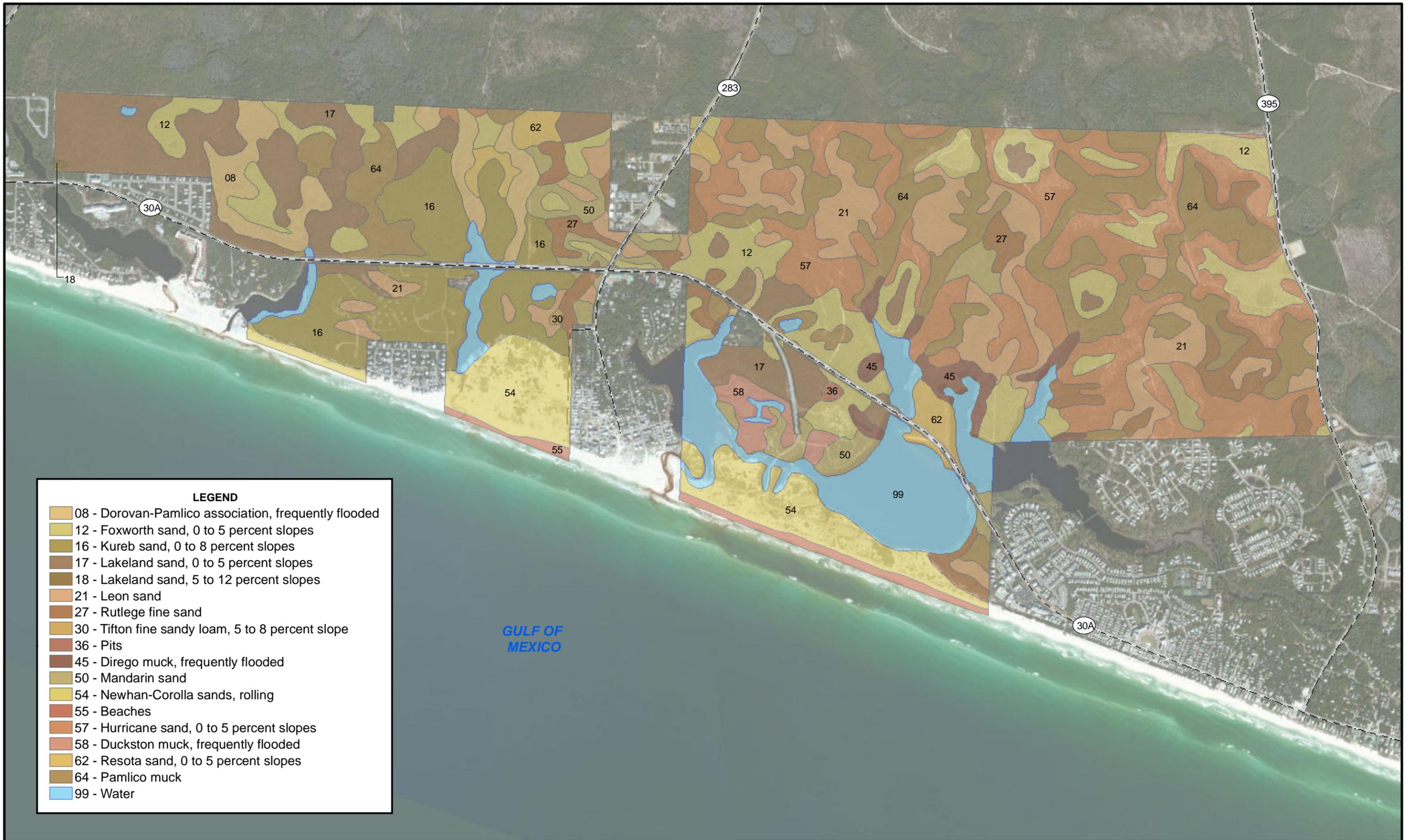
There are no minerals of commercial value within the park. Light beach-grade sand is found in the park.

Hydrology

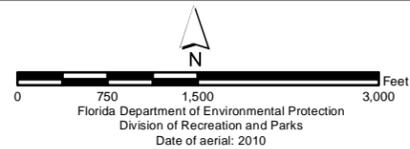
Grayton Beach State Park is bordered on the south by the Gulf of Mexico and is within the Choctawhatchee Bay watershed. Three coastal dune lakes are partially within the park, including Western Lake, Alligator Lake and Little Redfish Lake. The Choctawhatchee Bay is located just north of the park and is an important hydrological driver in the park.

The hydrology at the park is divided into two layers, the surficial aquifer and the Floridan aquifer. The surficial aquifer is water that is found on or right below the soil surface and is not confined. It is recharged by rainfall and moves topographically downhill into basins, swales and the Gulf of Mexico. It is important for supplying streams, lakes and wetlands with adequate water flow.

The Floridan aquifer system underlays all of Walton County, including the park. The surficial aquifer is an important source for recharging the Floridan aquifer. Several small fresh water bodies, classified as basin marshes, basin swamps and dome swamps occur in the park.



GRAYTON BEACH STATE PARK



SOILS MAP

Several hydrological disruptions are present in the park from past disturbances. A roadbed bisects one small arm of the Western Lake. Fill for the road was installed by the DRP to provide access to the camping area when the park was first acquired. The DRP has since acquired additional land to the north of this arm and has established a new campground road through uplands. The DRP has also installed a culvert as part of a wetland mitigation project, but it is not sufficient for historic hydrological connection. The roadbed should be removed, and the hydrology allowed to re-establish.

In developing a crossing of Western Lake between management zones GB-22 and GB-25, rerouted an oxbow of Western Lake and added fill along the banks in order to install a bridge and paved park road to allow visitors driving access to the beach. Common reed (*Phragmites australis*) has established and is expanding in the former oxbow area. The DRP should review the need for a larger span bridge, removal of fill and reconnection of the original oxbow channel.

In preparation for silvicultural activities prior to state acquisition, several wetlands were bedded or ringed with bedding. These beds serve as an impediment to important hydrological flow through flatwoods, seepage slopes and wet prairie. In many cases, the bedding still contains vegetative species indicative of the natural community. The park should investigate methods for flattening bedding to improve hydrology without further impacts to the natural community.

A few of the fireline roads at the park are short-circuiting sheet flow from flatwoods, seepage slopes and wet prairies. This water is channeling down the road, creating erosion and robbing the wetlands of water. The park should restore these roads or reroute them so that the hydrological regime of neighboring natural communities is intact.

The water level of the three coastal dune lakes in the park is managed by Walton County to prevent flooding of neighboring homeowners. When the water level threatens to flood septic tanks, Walton County digs a channel that prematurely connects the lakes to the Gulf of Mexico, thus purging the lakes into the Gulf artificially. The lakes naturally purge into the Gulf, but the natural opening is based on many factors including lake level, sand berm level and storm surge. Artificial purging of the lakes alters the frequency and timing of the hydrological regime and affects not only the lake level but also its salinity, species composition and vulnerability to tropical storms. The park should work with DEP and Walton County to ensure that the trigger level for opening is set as high as possible to allow the lakes to purge naturally.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of the desired future condition of each natural community and identifies the actions that will be required to bring the

community to its desired future condition (DFC). Specific management objectives and actions for natural community management, exotic species management, imperiled species management and restoration are discussed in the Resource Management Program section of this component.

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI; 2010). The premise of this system is that physical factors such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub--two communities with similar species compositions--generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

When a natural community within the park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include maintaining optimal fire return intervals for fire-dependent communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.

The park contains 14 distinct natural communities as well as developed areas (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.

BEACH DUNE

Desired future condition: The desired future condition for beach dune community at Grayton Beach State Park includes mounds and ridges of unconsolidated sediments formed by wind and wave action. Dunes should reach up to 32 feet in height in a series of ridges and swales that parallel the beach and are connected to scrub. These ridges should be interrupted periodically by blowouts. Vegetation on dunes should be patchy with some bare sand exposed and include a diversity and richness of plants such as sea oats (*Uniola paniculata*), gulf coast lupine (*Lupinus westianus*), gulf coast bluestem (*Schizachyrium maritimum*), golden asters (*Chrysopsis spp.*) and panic grass (*Panicum amarum*). Occasionally shrubs may be scattered within the herbaceous vegetation, such



Legend

BD	- Beach Dune	147.85 ac.
MF	- Mesic Flatwoods	240.10 ac.
SH	- Sandhill	430.35 ac.
SC	- Scrub	264.70 ac.
SCF	- Scrubby Flatwoods	231.39 ac.
WF	- Wet Flatwoods	73.97 ac.
BM	- Basin Marsh	54.21 ac.
BS	- Basin Swamp	37.50 ac.
DM	- Depression Marsh	4.52 ac.
DS	- Dome Swamp	15.44 ac.
SSL	- Seepage Slope	98.20 ac.
WP	- Wet Prairie	331.54 ac.
CDLK	- Coastal Dune Lake	208.21 ac.
MUS	- Marine Unconsolidated Substrate	22.39 ac.
CL	- Clearing	1.33 ac.
DV	- Developed	25.53 ac.

GRAYTON BEACH STATE PARK



NATURAL COMMUNITIES
EXISTING CONDITIONS MAP

as Florida rosemary (*Ceratiola ericoides*), woody goldenrod (*Chrysoma paucifloculosa*), seashore elder (*Iva frutescens*) and sand live oak (*Quercus geminata*).

A self-sustaining population of Choctawhatchee beach mice (*Peromyscus polinotus allophrys*), a federally-listed endangered species, should occupy all available beach dune habitats. Nesting shorebirds including least terns (*Sternula antillarum*) and snowy plovers (*Charadrius nivosus*) should successfully nest along the dune front and in dune blowout areas. Shorebirds should have connectivity between the beach dune community to various foraging habitats (such as the shoreline and/or the coastal dune lakes). In particular, corridors should be free from human disturbance and vehicle rutting during the breeding season to allow shorebirds (and their flightless young) to make the journey from the nest to available foraging habitats.. Sea turtles should nest along a dark beach, and hatchlings should be able to crawl to the water on a beach that is free of vehicle ruts and artificial light. The gulf coast solitary bee (*Hesperapis oraria*) should occupy the backside of the dunes, primarily where yellow buttons (*Balduina angustifolia*) are found. No exotic plants or animals should be present.

Wind and water shape this community. It is a dynamic system and is constantly changing depending on the stage of recovery after storm impacts. Although this community type may burn, the fire return interval is unknown and there is a low likelihood that fire would be introduced from an adjacent natural community.

Description and assessment: The beach dunes at Grayton Beach State Park have eroded significantly since Hurricane Opal in 1995. In places, the erosion is so severe that the dunes form steep scarps that place the beach directly adjacent to dune oak scrub. Despite the erosion, the dunes at the park are some of the best examples of undeveloped, intact dune habitat left in Walton County. Beach dune community on the park is found on high ridges running parallel and adjacent to the shoreline of the Gulf of Mexico.

The vegetative cover of the dunes varies with some being vegetated in a patchy distribution and others being mostly vegetated. Vegetation on the primary dunes includes sea oats, seashore elder, bluestem, sandbur and panic grass. Vegetation on the secondary dunes includes Florida rosemary, woody goldenrod, false rosemary (*Conradina canescens*) and sand live oak. The swales primarily contain smooth cord grass and gulf coast bluestem. The dunes at the park are connected to wetlands or coastal dune lakes.

These dunes are the primary habitat of the Choctawhatchee beach mouse. Beach mice make burrows in the dune and forage at night for dune plant and insect species. Maintaining the park's dune community in good condition is critical for sustaining and recovering the species.

Federally-listed loggerhead (*Carretta caretta*) and green sea turtles (*Chelonia mydas*) nest on the beach and in the dunes at the park. Annual sea turtle nesting ranges from one to ten nests. State-listed snowy plover and least terns nest on the beach, in the dunes, and within dune blowouts at the park. Annual nesting for snowy plovers ranges from 1-7 nests, and for least terns, nesting ranges from 1-30 nests depending on the season.

The beach dune community at the park is in fair condition. This dynamic system is eroding. Tropical storms and human alteration are the biggest threats to beach dunes at the park. Storm surge from tropical storms has eroded the primary dunes and inundated sea turtle nests. Salt spray from tropical storms can impact dune vegetation by top-killing foliage and creating a moisture deficit that can desiccate plants. Recovery from tropical storms can be slow with at least two years needed before vegetation is capable of producing seeds and additional years for some woody species to recover. Visitors continue to access the beach without authorization through the dunes from Pine Street (management zone GB-19). This has caused trampling of dune vegetation and dune erosion at that section of the park.

After tropical storms, excessive vehicle driving has prevented establishment of dune vegetation. When high storm surge washes away posted areas, vehicles drive closer and closer to the dune line, affecting dune plants and exacerbating the erosion. In addition, contractors of homeowners and Walton County drive through the park on the beach in order to haul sand and heavy equipment to build berms in front of their beachfront homes.

Exotic predators, including coyotes and cats, have been present at the park and can affect the rare faunal populations in beach dunes. Cat colonies are reportedly established on both sides of the park boundaries and were witnessed by both FWC and USFWS biologists as recent as April 2011.

“Sky glow” can be seen from the park, and artificial lighting impacts to the beach dune community are moderate. Sea turtle disorientations from artificial lighting are rare and have not been reported for the past two years (FWC 2009 and 2010).

General management measures: Park visitor access into and through beach dune areas should be controlled as much as possible to prevent degradation of the beach dune community at the park. Dune walkover areas should be designated and protected with boardwalks in the visitor use area. Unauthorized trails in dunes should be actively discouraged with interpretive signs, ranger interpretation, post and rope, dune plantings and other natural barriers.

Driving on or near established dunes should be prohibited except through designated beach access areas. Beach driving by law enforcement, contractors, county officials, wildlife officials and assessment crews has increased since 2010 due to reconnaissance

for oil from the Mississippi Canyon block 252 (also known as Deepwater Horizon) oil well blowout. Vehicular rutting associated with beach driving impacts shorebird and sea turtle hatchling nest success and recruitment. Beach drivers should follow the guidelines in the FWC *Best Management Practices for Operating Vehicles on the Beach* (FWC BMPs) and try to keep from disturbing the wrack line. Symbolic fencing (i.e., posts, signs and rope) should be used to protect the beach dune habitat from potential detrimental impacts associated with beach driving. Moreover, efforts to protect the beach habitat should focus on protecting shorebird nesting habitat and dune restoration areas while creating a corridor for driving access as close to the wet sand as possible.

After tropical storms, impacts to dunes should be assessed. Plantings and other dune restoration techniques should be considered when and where necessary to prevent further dune erosion. A plan should be developed prior to any planting to address dune restoration while maintaining low vegetated dune blowouts for nesting shorebirds.

Exotic predators should be controlled to prevent negative impacts to rare faunal populations, such as Choctawhatchee beach mice and snowy plovers. A tracking assessment of exotic predators should be conducted prior to the start of the shorebird nesting season and during beach mice and shorebird monitoring to establish predator control needs. Efforts to avoid and/or minimize disturbance, including the impacts associated with the presence of human and dog, around nesting shorebirds are critical to nesting success.

Artificial lighting or glow should not be present on the beach dune. Artificial lights disorient sea turtles and can affect their ability to successfully enter the marine environment. A nighttime assessment of lighting should be conducted annually before sea turtle monitoring commences to anticipate and prevent sea turtle hatchling disorientations.

MESIC FLATWOODS

Desired future condition: At the park the desired future condition of mesic flatwoods is a scattered overstory of uneven aged mixed slash pine (*Pinus elliotii*) and longleaf pine (*Pinus palustris*) with a diversity of low herbaceous and woody species in the understory. Native herbaceous groundcover should be over at least 50 percent of the area and less than 3 feet in height. Saw palmetto (*Serenoa repens*) and shrub component should comprise no more than 50 percent of total understory cover. Shrub species include saw palmetto, gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), runner oak (*Quercus pumila*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium mysinites*) and dwarf huckleberry (*Gaylussacia dumosa*). Shrubs should be generally knee-high or less, and there should be few, if any, large trunks of saw palmetto along the ground. This fire dependent community should be burned every 2-5 years. No invasive exotics should be present. The natural hydrology has been restored and is maintained.

Description and assessment: The park has some of the nicest mesic flatwoods in coastal Walton County in the northeastern portion of the park. Most of the components, including second successional old growth longleaf pines, are intact (Spector 2010). Good fire management for the past 20 years has also kept this community in good condition. The diverse low understory is composed of many species including gallberry, fetterbush, runner and dwarf live oaks, false rosemary shiny blueberry and huckleberry.

On the western portion of the park, the mesic flatwoods are in fair condition. The lack of burning and hydrological disruptions from neighboring development has altered the structure of the community, allowing shrubs to dominate the community.

General management measures: Prescribed fire is important to this community and should continue to be implemented on a 2-5 year interval. In areas where fire has been suppressed for many years, reintroduction of fire in these communities must be undertaken sensitively to prevent tree crown consumption and duff smoldering that can lead to tree mortality in older trees (Varner 2005). Once fire has been reintroduced, it will take many years of careful burning before this community will return to good condition. Burns during the recovery period should take into account the duff moisture prior to burning. If sufficient duff moisture exists then prescribed burns should be conducted with ignition techniques tailored accordingly to reduce the likelihood of old growth mortality.

In this natural community as well as other pyric communities it is understood that in most cases growing season burns may be the most advantageous for natural community health. However, in this park, there are also smoke management and safety considerations due to the wildland urban interface that limit the number of opportunities that prescribed fire can be introduced during any particular season. The park should continue to strive to schedule prescribed burns so that variability in the seasonality of burns between zones exists, and that growing season opportunities are maximized.

The park should continue to maintain the original hydrology and prevent future hydrological alteration. Care must be taken to prevent any further disruption to hydrology. Careful consideration should be given to the type, location, creation and maintenance of firelines.

SANDHILL

Desired future condition: Sandhills sit on well-drained sands and should contain a diverse understory of herbaceous and woody plants and a low density of uneven aged longleaf pine. Dominant pines should be longleaf pine. Herbaceous and low woody species cover may be 80 percent or greater, typically of wiregrass (*Aristida stricta*), bluestem grasses (*Andropogon spp.*), woody goldenrod, shiny blueberry, silk grass

(*Pityopsis* spp.) and blazing star (*Liatris* spp.), and should be less than 3 feet in height. Scattered individuals, clumps or ridges of onsite oak species, usually turkey oaks (*Quercus laevis*), sand post oak (*Quercus margaretta*) and blue-jack oak (*Quercus incana*), should occur. In old growth conditions, sand post oaks are commonly 150-200 years old, and some turkey oaks are over 100 years old. The optimal fire return interval for this community is 2-4 years.

Description and assessment: Most of the sandhill at the park is in various stages of restoration. On the eastern side of the park, the sandhill community is in good condition for its stage of restoration. In 2003, invading sand pine was removed and in 2004, containerized longleaf pine plants were planted at 400 stems per acre. After six years and two burns, the survival rate of longleaf pine was measured in 2010 to be greater than 85 percent. A diversity of understory species including wiregrass, shiny blueberry, blazing star, golden asters, woody goldenrod and silk grass are abundant. Turkey oaks and bluejack oaks are also found scattered throughout the community. The sandhill on the western portion of the park is in poor condition. Sand pine has invaded the sandhill and dominates the overstory and understory light regime. The understory has been degraded by the lack of light, competition with sand pine and lack of burning. A few older trees with turpentine scars called “catfaces” still can be found loosely scattered in the sandhill.

General management measures: In order to continue to restore the sandhill community, sand pine will need to be harvested and longleaf pine planted. In some areas, a diversity of groundcover may need to be planted. The park has worked on a restoration plan and will be implementing it during the tenure of this plan.

Prescribed fire is one tool used to manage sandhill communities. The park should continue to burn the areas that are being restored and plan to reintroduce fire in areas that are planned for restoration.

SCRUB

Desired future condition: The scrub community should be dominated by evergreen shrubs including sand live oak, Florida rosemary, myrtle oak (*Quercus myrtifolia*) and Chapman’s oak (*Quercus chapmanii*). This community can either have sand pine present or absent. Scrub occurs on dry sandy ridges. The fire return interval for stand replacement fires in scrub on the peninsula of Florida is 4-15 years, but, there is no evidence that fire is an important process that shapes the coastal scrub in the Florida panhandle (Drewa et al. 2008; Parker et al. 2001). Coastal processes such as salt spray and tropical force winds are believed to play more of a role in regulating Panhandle scrub than fire (Parker et al. 2001; Huck et al. 1996; FNAI 2010). Sand pines damaged by high winds and salt spray create gaps in the canopy for recruitment where seeds can germinate and grow. Non-serotinous cones exhibited by panhandle sand pine (*Pinus clausa* var *immuginata*) allow for continuous seed source that is not dependent on fire for

release. In oak scrub salt spray and wind regulates the community creating openings and light gaps after tropical storms. Gaps or scattered openings in the canopy with bare patches of sand support many imperiled or endemic plant species; these species should flower regularly to replenish their seed banks.

Two variants of scrub occur: oak scrub and sand pine scrub. Groves of sand pine in select locations in the panhandle may exceed 100-150 years of age. Sand pine growing in scrub in the panhandle exhibits different characteristics such as non-serotinous cones and is considered a sub-species of sand pine (*Pinus clausa* var. *immuginata*; Clewell 1988; Ward 1963). Stands of panhandle coastal sand pine scrub exhibit an uneven age character in marked contrast to Peninsular scrub where even-aged stands are created by infrequent but stand replacing fires (Drewa et al. 2008; Parker et al. 2001). In oak scrub adjacent to beach dunes, contiguous mature cover of seed producing scrub shrubs provide important refugia for Choctawhatchee beach mice after tropical storms that damage the primary dunes. This oak scrub found on the sandy ridges closest to the Gulf of Mexico is most influenced by salt spray that “prunes” or shapes the structure of the evergreen oaks, preventing them from becoming tall and creating patches of dead vegetation. Salt spray and wind appear to take the place of fire in shaping panhandle coastal scrub.

The scrub community should grade into beach dune and flatwoods communities without barriers such as roads, trails, fire breaks, etc. No exotic plants or animals should be present.

Description and assessment: The park has two variations of scrub, including sand pine scrub and oak scrub. Oak scrub is found on the sandy ridges of old dunes adjacent to the beach dunes. This community is in good condition in the park, but the community is fragmented by private in-holdings and represents just a remnant of the probably once vast expanses of coastal oak scrub. In fact, the neighboring town of Seagrove was named for this natural community of picturesque salt pruned dwarfed oaks. The coastal oak scrub is exceedingly dense in certain areas of the park, such as south of the cabin area where the beach access dune walkover crosses it. Hurricanes and salt spray have an obvious and direct effect on this community and appear to be the processes that shape or maintain this community.

Where the scrub community occurs adjacent to the beach dunes, it is very important for the survival of the Choctawhatchee beach mouse. This community serves as a reservoir for food and cover for beach mice during and after catastrophic storms that may damage or destroy the primary dune systems. In general, the larger the contiguous area of habitat, the better survivability and habitat quality for beach mice. As with beach dune, the soils and vegetation are highly sensitive to and are easily damaged by off road vehicle use and foot traffic.

Sand pine scrub is found further inland, sometimes adjacent to the oak scrub. The scrub begins to appear behind the beach dunes and transitions in some areas to scrubby flatwoods. Sand pine scrub at the park is in good condition. Most of the scrub community exhibits the uneven age stand character as described by Drewa et al. (2008). A small portion of the western stand of scrub shows evidence of being previously altered.

Coastal scrub is also home to listed plant species, such as gulf coast lupine and largeleaf jointweed (*Polygonella macrophylla*). The park has a healthy population of these species because of the good condition of scrub habitat.

General management measures: Visitor and management access to coastal oak scrub should be controlled through designated at-grade footpaths. Paths or walkways through this community should be minimized as these paths serve as corridors that allow coastal winds and salt spray to penetrate into the scrub creating soil erosion and mortality of trees, thus further fragmenting this community. Additional accesses or development should avoid coastal scrub where possible to prevent impacts and keep it in good condition. Motor vehicle use in this area should continue to be limited or eliminated. Exotic animals and plants should be controlled, including feral cats, coyotes (*Canis latrans*), red foxes (*Vulpes vulpes*) and armadillos (*Dasypus novemcinctus*), to protect the population of beach mice.

The use of ignition techniques to mimic stand replacing or catastrophic canopy fires should not be applied to coastal scrub in the park since researchers (Drewa et al. 2008; Parker et al. 2001) have concluded that stand replacing fire was not the natural process driving the structure and health of these coastal panhandle scrub communities. Use of stand replacing fire would not mimic a normal natural process in these communities and would alter the natural uneven age stand structure of sand pine. It might also expose the oak refugia that beach mice and other species use following tropical storms to abnormally high wind and water erosion, and create larger gaps between fragmented coastal scrub along the well-developed coast.

Mechanical clearing followed by prescribed fire has been used to manage scrub communities in peninsular Florida in order to mimic with prescribed fire, in a more manageable fashion, the stand replacing fire regime appropriate to scrub in that region. Similar techniques should not be used in the park as evidence shows that stand replacing fire was rare in these communities. The challenge is not to create a situation where canopy fires can be conducted in a safe fashion, but, to recreate the natural process which did not include catastrophic stand replacement fires in this location.

Prescribed fire in adjacent fire type natural communities should be allowed to burn across ecotones into the scrub when burning under typical growing season weather conditions. It should be noted, however, that under these natural conditions, the

coastal scrub will not readily carry fire. The salt pruned, low oak scrub would have historically had the least exposure to naturally occurring fires as fire would have to move from the flatwoods or sandhill through sand pine scrub before reaching the oak scrub. The fires would have occurred during periods with regular afternoon sea breeze with high humidity. It is wind, wind erosion and salt spray that create obvious effects on coastal scrub. Wind throws create gaps, and salt spray kills apical meristems, keeping the canopy low. After tropical storms, many scrub plants are defoliated and killed from salt spray only to re-sprout from the base.

SCRUBBY FLATWOODS

Desired future condition: The desired future condition of scrubby flatwoods at the park should be characterized by an open overstory of scattered slash pine. There should be a diverse shrubby understory often with patches of bare white sand. A scrub oak midstory should vary in height from 3-8 feet and there should be a variety of oak age classes/heights across the landscape. Understory species should include a mixture of scrub and flatwoods species, such as false rosemary, rusty lyonia (*Lyonia ferruginea*), bluestem, sand live oak and myrtle oak. The understory can be scattered or dense leaving various size and configurations of bare sandy patches. Due to the coastal influence, fire should burn in this community every three to 15 years and the return interval should vary within that range.

Description and assessment: This community is found in several areas of the park but mostly in the western side of the park. It is composed of a scattered slash pine overstory and an understory of mostly scrubby shrubs including myrtle oak, false rosemary, rusty lyonia and sand live oak. This community is in poor condition in the western area of the park and needs restoration. Sand pine has invaded and now dominates the light regime and prevents the reintroduction of prescribed fire. It appears that a portion of the community at the park was used for agriculture in the mid 20th century. A restoration plan should be developed prior to commencement of restoration.

General management measures: Scrubby flatwoods should burn every three to 15 years. Before reintroducing prescribed fire, the park should remove invading sand pine as part of community restoration.

WET FLATWOODS

Desired future condition: At the park the desired future condition of wet flatwoods should be represented by an overstory of scattered slash pine with a mixture of low shrubs and herbs in the groundcover. Sparse to no midstory should be present. Common shrubs should include fetterbush, titi (*Cliftonia monophylla*), saw palmetto (*Serenoa repens*) and wax myrtle (*Myrica cerifera*). Fire should burn through this community every two to four years. Soils should be saturated much of the year with little to no duff accumulation. The natural hydrology has been restored and is maintained.

Description and assessment: Most of the wet flatwoods are in fair ecological condition. Some older slash pines are still found in these communities on the park. Some minor hydrological alterations, such as plow scars through the flatwoods from fire suppression, have altered the community somewhat. In most cases, all the components of this community are intact and, with the continued use of prescribed fire, the community should return to good condition. Some older slash pine tree mortality has occurred due to the reintroduction of prescribed burns due to consumption of duff that has built up due to fire exclusion. In areas where fire has been suppressed for many years, reintroduction of fire in these communities must be undertaken sensitively to prevent tree crown consumption and duff smoldering that can lead to tree mortality in older trees (Varner 2005). Once fire has been reintroduced, it will take many years of careful burning before this community will return to good condition. Burns during the recovery period should take into account the duff moisture.

General management measures: Prescribed fire should be used to maintain this community. The fire return interval should range from two to four years. Older trees have duff accumulation around their base. Duff should be assessed prior to burning, and duff moisture parameters and appropriate ignition techniques should be included in prescriptions to prevent mortality of trees and other species.

Hydrological disruptions or alterations should be avoided. Historic fire plow scars should be mapped and assessed for restoration needs.

BASIN MARSH

Desired future condition: This natural community is composed of emergent herbaceous and low shrub species that are dominant over most of the area with open vistas. Trees are few and if present occur scattered. There is little accumulation of dead grassy fuels due to frequent burning; one can often see the soil surface through the vegetation when the community is not inundated. Dominant vegetation in basin marsh connected to coastal dune lakes at the park includes sawgrass (*Cladium jamaicense*). A common species in interior basin marshes imbedded in flatwoods is state imperiled species, Curtis's sandgrass (*Calamovilfa curtissii*). Basin marsh is an important breeding and/or foraging habitat for many marsh and wading bird, amphibian, or bat species. The optimal fire return interval for this community depends on fire frequency of adjacent communities.

Description and assessment: The basin marshes at the park are in poor to excellent condition. The hydrology of the majority of them remains unaltered and burning has kept these communities in excellent condition. Other basin marshes in the park are overgrown with woody species or have major hydrological impacts.

The basin marshes associated with Western Lake have the greatest alteration. When the park was first acquired by the state, a fill road was placed in one of the basin marshes of Western Lake cutting the north portion of the marsh off from the lake. Since this time, the DRP has built a new upland road that avoids the lake and associated basin marshes. The fill road should be removed and the basin marsh restored.

A basin marsh connected to the western lobe of Western Lake has been dredged and ditched. This hydrological impact is severe enough to be visible on aerial photos. The history of the ditching is unknown but it needs to be restored.

General management measures: Intact hydrology should be maintained even when installing or preparing firelines. Firelines should not ring these marshes to allow both fire and water into the basin marsh. Fire is important to burn dead thatch and prevents duff accumulation. Fires should burn at the interval of the surrounding natural community. In the areas where prescribed burning is conducted, the fire return interval should probably mirror that of neighboring flatwoods natural communities.

Spraying for nuisance invertebrates, such as mosquitoes, should only be carried out after the development of an arthropod control plan which under most conditions does not include natural areas of the park. Mosquitoes and other arthropods are important for many species dependent on these freshwater marshes at the park, including bats and frogs. Herpetofauna also depend on these marshes and are sensitive to pesticides and pollutants.

BASIN SWAMP

Desired future condition: The desired future condition of basin swamp at the park is a forested basin wetland that is highly variable in shape and species composition and has an extended hydroperiod typically of 200-300 days. The dominant trees include slash pine, sweetbay (*Magnolia virginiana*) and swamp red bay (*Persea palustris*). Depending upon fire history and hydroperiod, the understory shrub component can be throughout or concentrated around the perimeter. Shrubs can include a variety of species, including Virginia willow (*Itea virginica*), wax myrtle and titi. The herbaceous component is also variable and may include a wide variety of species such as ferns, arrowheads (*Sagittaria* spp.), lizard's tail (*Saururus cernuus*) and sphagnum moss (*Sphagnum* spp.). Basin swamp provides important foraging and/or nesting grounds for avian species such as the swallow-tailed kites (*Elanoides forficatus*) or various amphibian species. Soils are acidic and nutrient poor peats that overlay an organic lens. Hydrology should not be disrupted. Exotics species should not be present.

Description and assessment: The basin swamps on the park contain St. John's wort (*Hypericum* spp.), fetterbush (*Lyonia lucida*) wax myrtle and meadowbeauty (*Rhexia* spp.) around the ecotone. In the deeper areas of the basin swamp, slash pine, sweetbay and swamp red bay are found in the overstory and shrubs, such as Virginia willow, wax

myrtle and titi, are found in the understory. The ecotone of some sites within this community is also ringed by elevated bedded rows created by commercial forestry operations prior to state acquisition that interrupts hydrological flow from the surrounding natural communities. The water in the basin swamps drains slowly toward the coastal dune lakes. The basin swamp is in good condition despite several being ringed by forestry beds, which disrupt the hydrology.

General management measures: The hydrology of the basin swamp on the park should not be altered. Installation of firelines or trails near or in the swamp must take care not to disrupt hydrology. The forestry bedding should be flattened to original grade to restore hydrological functioning. It is standard to use herbicides to control any observed exotic plant species. Care should be used when applying herbicides as ferns and amphibians found in this community may be sensitive to pollutants.

DEPRESSION MARSH

Desired future condition: Depression marshes are shallow circular depressions in sand substrate with herbaceous vegetation or small woody shrubs, often in concentric bands. Depression marshes are embedded within upland communities, such as sandhill and flatwoods communities. The concentric zones or bands of vegetation are related to the hydrological regime. Herbaceous vegetation, such as Vasey longleaf threeawn (*Aristida palustris*), beaksedges (*Rhynchospora spp.*), yellow-eyed grass (*Xyris spp.*), St. John's wort, and patches of Curtiss' sandgrass occupy the ecotonal zone between depression marsh and the surrounding natural community. In the community proper other scattered herbs, such as fringed yellow-eyed grass (*Xyris fimbriata*), pipeworts (*Eriocaulon spp.*), beaksedges and spikerushes (*Eleocharis spp.*), can be found. Maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), white waterlily (*Nymphaea odorata*) and bulltongue arrowhead (*Sagittaria lancifolia*) can be found in the deeper portions of the community. Fire should burn at least partially into these communities to maintain the herbaceous character. Depression marshes should be allowed to burn on the same frequency as the adjacent fire type community, allowing fires to naturally burn across ecotones.

Description and assessment: Most of the depression marshes at the park are ringed by Curtiss' sandgrass signaling a transition to an ephemeral wetland. Vegetation in the wetter areas includes pipeworts and St. John's wort. They hold water for some of the year but because they are shallow, they usually dry up during periods with little rain. Some of these marshes occur in flatwoods communities that have been bedded. This bedding impacts the hydrological regime of the community. The depression marshes that do not have this hydrological disruption are in good condition. Those with bedding are in fair condition. These marshes are important breeding grounds for the ornate chorus frog (*Pseudacris ornata*) and other amphibians, snakes, marsh birds and wading birds.

General management measures: The fire regime of this community should mirror that of the natural community where it occurs. Fire is important for keeping this community herbaceous. Areas surrounding the marsh that have been bedded should be restored to return the depression marsh to the historical hydrological regime. The park should avoid altering the hydrology of depression marshes especially when planning new firelines or development. Herbicide use should be limited in these marshes as the amphibians that depend on them may be sensitive to pollutants.

DOME SWAMP

Desired future condition: Dome swamps are isolated, forested, depression wetlands occurring within a fire maintained matrix, such as mesic flatwoods. The characteristic dome appearance is created by smaller trees that grow on the outer edge, where there is shallower water and less peat, and the larger trees that grow in the interior. Pond cypress (*Taxodium ascendens*) should typically dominate, but black gum (*Nyssa sylvatica biflora*) may also form a pure stand or occur as a co-dominant. Other subcanopy species can include red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*), myrtle holly (*Ilex myrtifolia*), swamp bay and sweetbay. Shrubs can be absent to moderate (a function of fire frequency) and can include Virginia willow, fetterbush, buttonbush (*Cephalanthus occidentalis*), wax myrtle and titi. An herbaceous component can range from absent to dense and include ferns, maidencane, sawgrass, sedges, lizards tail and sphagnum moss. Vines and epiphytes will commonly be found. Maintaining the appropriate hydrology and fire frequency is critical for preserving the structure and species composition of the community. Dome swamps should be allowed to burn on the same frequency as the adjacent fire type community, allowing fires to naturally burn across ecotones. Fires should be appropriately planned to avoid high severity fuel consumption within the dome swamp. Dome swamps provide important habitat for many species, including breeding habitat for amphibians and roosting habitat for wading birds. Dome swamps should be free of pollutants in order to provide habitat for these species.

Description and assessment: The dome swamps at the park are found within the flatwoods, wet prairie natural community matrix. They are composed mainly of pond cypress and myrtle-leaved holly. A variant of myrtle-leaved holly with yellow fruits is also found at the park in dome swamps. Many dome swamps are choked along the ecotones by overgrown titi from lack of fire, but others have a more herbaceous ecotone. Some are also ringed by forestry bedding that interrupts hydrological flow from the surrounding natural communities. St. John's wort, fetterbush, wax myrtle and meadowbeauty are also found in these dome swamps. Despite the previously mentioned alterations, the dome swamps are in fair condition.

General management measures: Dome swamps should be allowed to burn when the adjacent communities burn. The fire regime should mimic the neighboring natural communities. Hydrological alterations, such as the forestry bedding ringing the domes,

should be restored. Further hydrological disruptions should be avoided especially when installing firelines. Mosquitoes and other arthropods are important for many species at the park, including bats and frogs. Herpetofauna and avian species also depend on these domes and are sensitive to pesticides and herbicides. Neither should be used without an exotics and arthropod control plan.

SEEPAGE SLOPE

Desired future condition: Seepage slopes are herbaceous communities that are determined by gently sloping low nutrient and saturated soils. They are open low herbaceous dominated narrow wetlands that border small streams on the park.

Flatwoods or sandhill natural communities surround this community at a slightly higher elevation than the seepage slopes. The subtle topographic change between the more upland natural communities and the small streams that form the centerline of the lineal seepage slopes, results in a gentle slope. Rain that falls on adjacent upland communities percolates down through poor sandy soils. When the percolating water reaches the high surface water table it spreads laterally through the sandy soil emerging on the slope as it approaches the stream, keeping the soil of the area down slope saturated. At Grayton Beach State Park, it is in this narrow, linear area along the stream bank that seepage slope most often occurs. This is in contrast to the typical natural community description of areas found elsewhere which are spatially larger and have a greater degree of slope.

Seepage slopes are known for their high diversity of rare and carnivorous species, including pitcher plants (*Sarracenia spp.*), sundews (*Drosera spp.*), butterworts (*Pinguicula spp.*), orchids and lilies. Sphagnum moss should be present to help seeds germinate and acidify the soil, keeping nutrients from being available to other plants. This suite of plants requires a saturated, nutrient impoverished soil that is exposed to sunlight in order to flourish. Seepage slopes are also an important habitat for various amphibian species.

Although fire that spreads from the adjacent flatwoods and sandhills plays an essential supporting role in keeping this community intact by helping to prevent encroachment of woody plants and burning through the seepage slope; the poverty of nutrients available to plants is the primary key to maintaining the rare plants that symbolize this community. Frequent fire in the adjacent uplands keeps ground litter at a minimum and reduces the pulse of nutrient created by fire from reaching the seepage slope leaving the sandy soils nutrient poor. The surface hydrology helps to further leach nutrients from the soils and maintains saturation which both compacts soil and creates anoxic conditions that keep nutrients from becoming available to more competitive plant species thus helping to prevent woody plant encroachment. Seepage slopes generally have a very gradual slope where sub-surface water seeps down the slope keeping the soils saturated.

The fire regime should mimic the regime of neighboring flatwoods or sandhill communities and should be included in the same burn zones with these neighboring communities. Hydrological regime should be intact providing constant seepage to the natural community.

Description and assessment: The majority of the seepage slope community at the park is in poor condition. The lack of fire for decades and the forestry practice of bedding the soil has allowed shrubs to invade and completely shade herbaceous species. Tree-like titi (*Cyrilla racemiflora* and *Cliftonia monophylla*) of up to 14-inch diameter at breast height (DBH) and up to 30 feet in height dominates the light regime and litters the ground with rich organic matter. This organic matter has built a deep layer of duff that is foreign to this community. Few herbaceous species can be found persisting in this altered condition. The rich diversity of species characteristic of this natural community, including carnivorous plants, has been almost eliminated in most areas.

In some, but not all of the seepage slopes, surface and sub-surface hydrology has been interrupted by the installation of forestry bedding along the upland wetland ecotone prior to state acquisition. This hydrology is important for the functioning of seepage slopes and helps to keep nutrients from being available to plants and prevents woody shrub encroachment.

The park has been introducing fire into these communities for ten years, but progress is slow by using fire alone. Overgrown titi is very resistant to prescribed fire under permitted conditions. Even if fire is able to penetrate the stand of titi, it leaves an excessive and unnatural amount of standing and downed dead fuel with subsequent vigorous re-sprouting from roots. Exacerbating the situation is the nutrient loading in these degraded sites where many decades of biomass is stored. Nutrient stored in the woody biomass of overgrown shrubs becomes available for woody re-growth both through slow decomposition and when fire transfers nutrients and minerals from standing live shrubs, and dead, standing and downed tree-form shrubs and redistributes them to the soil in the form of ash. Roots of woody shrubs absorb this pulse of nutrients and minerals, resulting in a surge of growth by shrubs and reinforcing their dominance in these communities.

General management measures: Frequent fire and proper hydrological regime are important processes to this diverse herbaceous natural community. Both of these have been altered in the seepage slope communities of the park and have changed the dynamics of the community. Most of the seepage slope in the park needs restoration. Restoration of seepage slope should focus on titi removal, restoring hydrological seepage from upslope and impoverishment of the soil.

In order to prevent the nutrients stored in the build-up of woody biomass on-site from being recycled, mature stands of shrubs as titi should be cleared and removed from site to return the plant structure and nutrient levels to appropriate levels. Titi from a few very small areas has been cleared. The response of seepage slope species was immediate. Purple pitcher plants (*Sarracenia purpurea*), butterworts, sundews, multiple orchid species and lilies were just a few species that responded to openings. Once the restoration process has started and the heavy stand of titi is removed, then prescribed fire from the adjacent community will be able to better burn into the seepage slope.

Seepage slopes with soft saturated soil are sensitive to soil disturbance from vehicles. Roads and firebreaks as well as equipment use and activities related to restoration should be designed to prevent hydrological disruption. Some roads on the park are already short circuiting water and causing erosion of the roads. These should be addressed and proper crossings that allow hydrological connections, such as low water crossings, should be installed.

Seepage slopes should not be isolated from neighboring natural communities on which they depend for headwaters for seepage. Firelines should not be installed along the ecotones between seepage slopes and their neighboring communities to allow fire to spread through both communities. Herbicide use should be avoided in these natural communities. If necessary, herbicides should only be used with extreme caution in these natural communities, as many of the plant species are sensitive to overspray, drift and root transfer and amphibian species are generally highly-sensitive to any herbicide use.

WET PRAIRIE

Desired future condition: Wet prairies are herbaceous communities that are supported by low nutrient and saturated soils found in low, slight depressions within a matrix of sandhill and flatwoods communities. Fire plays an essential supporting role in keeping this community nutrient poor by helping to prevent encroachment of woody plants and burning through the wet prairie; the poverty of nutrients available to plants is the primary key to maintaining the rare plants that symbolize this community. Frequent fire in the adjacent uplands keeps ground litter at a minimum and reduces the pulse of nutrient created by fire from reaching the wet prairie leaving the sandy soils nutrient poor. The surface hydrology helps to further leach nutrients from the soils and maintains saturation which both compacts soil and creates anoxic conditions that keep nutrients from becoming available to more competitive plant species thus helping to prevent woody plant encroachment. Generally, wet prairies are slightly lower in elevation than the neighboring flatwoods community receiving surface water sheet flow, keeping it saturated much of the year.

Trees and shrubs will be few or absent. Groundcover will be herbaceous, dense and exceptionally species-rich. Wet prairies are known for their high diversity of carnivorous plant species including pitcher plants, sundews and butterworts.

Sphagnum moss should be present to help seeds germinate and acidify the soil, keeping nutrients from being available to other plants.

The fire regime should mimic the regime of neighboring flatwoods or sandhill communities and should be included in the same burn zones with these neighboring communities. Hydrological regime should be intact, providing constant seepage to the natural community.

Description and assessment: The wet prairie at the park contains a diversity of herbaceous bog species, including yellow-eyed grass, candy root (*Polygala nana*), bladderworts (*Utricularia spp.*), pitcher plants, sundews and rose pogonia orchid (*Pogonia ophigolossoides*). The wet prairies are in fair condition due to the lack of fire. A high density of titi and other shrubs dominates the light regime and litters the ground with rich organic matter. Few herbaceous species can be found persisting in this altered condition. The rich diversity of species characteristic of this natural community, including carnivorous plants, has been almost eliminated in most areas.

In some, but not all of the wet prairies, hydrology has been interrupted by the installation of forestry bedding along the upland wetland ecotone prior to state acquisition. This hydrology is important for the functioning of seepage slopes.

The park has been introducing fire into these communities for ten years, but progress is slow by using fire alone. Overgrown titi is very resistant to prescribed fire under permitted conditions. Even if fire is able to penetrate the stand of titi it leaves an excessive and unnatural amount of standing and downed dead fuel with subsequent vigorous re-sprouting from roots. Exacerbating the situation is the soil nutrient in these degraded sites where many decades of biomass is stored. Nutrient stored in the woody biomass of overgrown shrubs becomes available for woody re-growth both through slow decomposition and when fire transfers nutrients and minerals from standing live shrubs, dead, standing and downed tree-form shrubs and redistributes them to the soil in the form of ash. Roots of woody shrubs take up this pulse of nutrients and minerals resulting in a surge of growth by shrubs reinforcing their dominance in these communities.

Titi from a few very small areas of less has been cleared and burned. Herbaceous species in sites that were dominated by a greater amount of woody biomass before restoration did not respond as readily as those sites with a lower amount of woody biomass removed.

General management measures: Frequent fire and proper hydrological regime are important processes to this diverse herbaceous natural community. Both of these have been altered in the wet prairie communities and have changed the dynamics of the community at the park. Most of the wet prairies of the park need restoration.

Restoration of wet prairie should focus on titi removal, impoverishment of the soil and reintroduction of fire.

Wet prairies with soft saturated soil are sensitive to soil disturbance from vehicles and equipment used in restoration. Roads and firebreaks should be designed to prevent hydrological disruption. Some roads on the park are already short circuiting water and causing erosion of the roads. These should be addressed and proper crossings that allow hydrological connections, such as low water crossings, should be installed.

Wet prairies should not be isolated from neighboring natural communities on which they depend for headwaters of seepage. Firelines should not be installed along the ecotones between wet prairies and their neighboring communities to allow fire spread into both communities.

Herbicide use should be avoided in these natural communities. If needed herbicides should only be used with extreme caution in these natural communities as many of the plant species are sensitive to overspray, drift and root transfer.

COASTAL DUNE LAKE

Desired future condition: The desired future condition of a coastal dune lake is a freshwater lake that is periodically connected to the Gulf of Mexico. Because of this connection varying in frequency and duration, the salinity level also varies over time and across lakes. Coastal dune lakes should be oligotrophic with low nutrients and a mostly sand bottom. When the lake level is high enough to breach the impounding sand beach berm the lake purges into the Gulf of Mexico. The height at which each lake purges varies depending on many factors including sand berm level and storm surge. The lakes should not be artificially or prematurely opened. The lakes should be free from exotic species. The shoreline may vary from open and sandy to vegetated with herbaceous and shrubby wetland plant species. The coastal dune lake outfalls provide important foraging and breeding habitat for many rare shorebird species. Federally-listed piping plover (*Charadrius melodus*) use the outfalls regularly during spring and winter migration for foraging. Red knots (*Calidris canutus*; a federal candidate species) also uses the outfall and lake sandy edges for foraging during migration and winter. Snowy plovers and least terns frequently select beach dune nesting habitat directly adjacent to the coastal dune lakes in order to nest in close proximity to high-quality foraging habitat for their chicks. Snowy plover bring their chicks the wet sand edges at the outfall to feed, and least terns feed regularly at the outfall to bring small fish back to their chicks.

Description and assessment: There are three coastal dune lakes partially within the park boundaries: Western Lake, Alligator Lake and Little Redfish Lake. Despite many hydrological alterations and development around much of its shoreline, Western Lake is still in good condition. Alligator Lake and Little Redfish Lake are in fair condition.

Torpedo grass (*Panicum repens*) is found growing along the lakeshore and in the outfall. Torpedo grass may not only be altering the lakeshore riparian zone, but may also be impacting the frequency and levels at which the lakes purge into the Gulf by stabilizing the impounding berm. Common reed has also expanded in many areas of Western Lake, especially in the channel connecting the east and west lobe of the lake and in the channel connecting the lobes to the outfall.

Walton County is permitted to artificially open the lakes to the Gulf at a set lake level as established by a regulatory permit. The artificial openings encourage vegetation to establish lower on the shoreline and the lake may become more saline over time shifting the lake to a more estuarine character. The artificial openings often result in a channel opening with steep walls that is generally inaccessible to foraging shorebirds.

The Choctawhatchee Basin Alliance (CBA) has coordinated with Florida Lakewatch and the park to monitor the coastal dunes lakes. A chart of the averages for the past ten years is below (from CBA and Florida Lakewatch).

Name	Avg P μ/L (range)	Avg N μ/L (range)	Chlorophyll μ/L	Secchi (ft)	Trophic State
Alligator	12.09 (6-35)	599.89 (250-1900)	4.77	2.14	High mesotrophic
Little Redfish	18.98 (5-67)	601.95 (240-1230)	9.30	2.19	Eutrophic
Western (Grayton)	17.56 (4-625)	364.60 (170-4020)	4.19	6.8	Mesotrophic
Western (Park)	7.21 (2-19)	278.86 (80-700)	1.75	4.9	Oligotrophic
Western (NE)	7.5 (3-21)	316.05 (80-800)	1.97	4.7	Oligotrophic

Table 2 contains information on water quality based on the ten-year average coastal dune lakes found at Grayton Beach State Park. The table includes data separately for each lake on the average and range observed for phosphorus and nitrogen in micrograms per liter of water, the average chlorophyll in micrograms per liter of water, secchi or depth of turbidity from the water surface, and the trophic state. There are four classifications for trophic states: Oligotrophic (low productivity, low nutrient content, clear waters), Mesotrophic (intermediate productivity, some aquatic vegetation, and medium levels of nutrients), Eutrophic (high biological productivity due to excessive nutrients), and Hypereutrophic (very nutrient-rich, severe algal blooms, and low transparency).

Neighboring development around the lakeshore has impacted the quality of the water in the lakes. The Grayton arm of Western Lake and Alligator Lake are the most developed and are trending to a more nutrient rich trophic state. Water quality is the poorest in the spring and summer when nutrient levels increase. The park portion and the northeastern (NE) of Western Lake remain oligotrophic mainly due to the lack of development and urban stormwater runoff into these water bodies.

All three of the coastal dune lakes have hydrological impoundments or alterations. One alteration within the park impounds a marsh connected to Western Lake in management zone (MZ) GB-05. The other impoundments are from the development of County Road 30A. Ditching has occurred in the marsh north of the current shop area in MZ GB-02 before acquisition.

The coastal dune lakes were threatened when oil from the Mississippi Canyon block 252 oil well blowout lapped up on the beaches of Walton County. The county blocked the entrance to the coastal dune lakes by placing a berm of sand between the Gulf and the lakes and imbedding a one-way culvert drain. These berms and culverts have since been removed. Due to these measures, oil has not been found in the coastal dune lakes.

General management measures: Coastal dunes lakes in the park should be managed to improve and maintain good water quality and restore and maintain historic hydrological regimes. Impoundments, ditching and alterations to hydrology should be addressed and restored. The park should work with the county and other agencies to promote restoration of the hydrological flow during any future modifications to County Road 30A in all the coastal dune lakes in the park. The park should develop a plan to restore ditches in Western Lake and remove the impoundment within the park on the old campground road. Native shoreline vegetation should remain intact and buffers should be set to prevent development along the shoreline. The park should work with the county to improve stormwater runoff into the lakes, convert neighboring homeowners from using septic tanks to municipal sewer and advocate for the fewest artificial openings to the coastal dune lakes. The park should continue to work with CBA and Florida Lakewatch to monitor the water quality and character of the coastal dune lakes.

Because the coastal dune lakes are an important component for nesting, foraging, migrating, and wintering shorebirds steps to provide access to the lake edge for shorebirds is necessary. During artificial lake openings, a plan should be in place to ensure that the channel does not become steep walls inaccessible to shorebirds. In addition, the lake outfalls are very desirable to the public. Protecting portions of the outfall edge with symbolic fencing for shorebirds may be necessary during the busy months of the year.

Torpedo grass and common reed should also be controlled around the lakeshore without impacting native interspersed vegetation. A restoration plan should be in place to ensure that control methods do not denude the lakeshore, allowing torpedo grass to become more vigorous and dense. Spraying for nuisance invertebrates, such as mosquitoes, should only be carried out after the development of an arthropod control plan.

MARINE UNCONSOLIDATED SUBSTRATE

Desired future condition: The desired future condition of this community for the park is a dynamic system with an open, wide, white sandy beach free of toxins, manmade debris and vehicular rutting. The lower or wet portion of the beach should contain a high density of infauna, and pelagic organisms that support a variety of foraging shorebirds. Organic marine flotsam, including seaweed and driftwood, should form a wrack line on the beach. Nesting shorebirds should nest in the upper portion of the beach without disturbance. Foraging shorebird broods (i.e., flightless chicks) and migratory shorebird species should forage on the wet sand without disturbance. Sea turtles should use the gulf-side beach for nesting. Non-native predators should be absent. Sparse vegetation may be colonizing on the upper beach depending on the amount of time since the last tropical storm.

Description and assessment: This natural community is the beach proper. This community is extremely important to many designated species such as nesting sea turtles and shorebirds. Shorebirds use these areas for foraging, loafing and resting. This is a dynamic system; movement of sand changes the community constantly. This community is in good condition. Erosion is the biggest factor affecting the shoreline.

General management measures: Vehicular driving should be discouraged as it creates rutting and can affect infaunal populations. Rutting can cause a barrier to hatchling sea turtles as they crawl their way to the Gulf after hatching. Driving on the beach can also disturb nesting, resting and foraging shorebirds. Shorebird chicks are very vulnerable to predation, especially from ghost crabs or gulls, when trapped in ruts. Newly hatched chicks tend to squat in vehicle ruts to hide from an oncoming vehicle and may be run over.

Manmade non-organic, non-biodegradable debris should be cleaned off the beach as much as is feasible after tropical storms. Wrack lines with natural materials should not be moved or destroyed. A healthy wrack line on the wet beach is important for supporting macroinvertebrates. Shorebirds forage in the wrack line as well as in the wet beach. As high tides move wrack up to the dry sandy beach, it can then serve to trap sand and support colonizing dune vegetation.

Beach driving by law enforcement, contractors, county officials, wildlife officials and assessment crews has increased since 2010 due to reconnaissance for oil from the Mississippi Canyon block 252 oil well blowout. Vehicular rutting associated with beach driving impacts shorebird and sea turtle hatchling nest success and recruitment. Beach drivers should follow the guidelines in the FWC *Best Management Practices for Operating Vehicles on the Beach* (FWC BMPs) and try to keep from disturbing the wrack line. Symbolic fencing (i.e., posts, signs and rope) should be used to protect the beach dune habitat from potential detrimental impacts associated with beach driving. Moreover, efforts to protect the beach habitat should focus on protecting shorebird nesting habitat and dune restoration areas while creating a corridor for driving access as close to the wet sand as possible.

Exotic predators should be controlled to prevent negative impacts to rare faunal populations, such as Choctawhatchee beach mice and snowy plovers. A tracking assessment of exotic predators should be conducted prior to the start of the shorebird nesting season and during beach mice and shorebird monitoring to establish predator control needs. Efforts to avoid and/or minimize disturbance, including the impacts associated with the presence of humans and dogs, around nesting shorebirds is critical to nesting success.

Artificial lighting or glow should not be present on the beach. Artificial lights disorient sea turtles and can affect their ability to successfully enter the marine environment. A nighttime assessment of lighting should be conducted annually before sea turtle monitoring commences to anticipate and prevent sea turtle hatchling disorientations.

DEVELOPED

Desired future condition: The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Priority invasive plant species (FLEPPC Category I and II species) will be controlled from all developed areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

The desired future condition of the ruderal wastewater treatment plant and retention pits is scrub. Cost-effectiveness, return on investment and consideration of other higher priority restoration projects within the park will determine the extent of restoration measures in these ruderal areas.

Description and assessment: Parking areas, buildings, campgrounds and other facilities as well as maintained rights-of-way and roadsides are included. Of special note is the defunct wastewater treatment facility and associated retention pits located on the park. The old metal building should be removed and settling ponds should be restored or reclaimed. This ruderal area is used for piling fill from ecological restoration

and operational projects. Some of it should remain ruderal for park operations, but other portions should be restored to scrub. A plan should be developed and implemented when funds are available. Cogon (*Imperata cylindrica*) and torpedo grasses have established in this area and are being controlled by park staff.

General management measures: Staff will continue to control invasive exotic plant species in developed areas of the park. Defensible space will be maintained around all structures in areas managed with prescribed fire or at risk of wildfires. Restoration plans should be developed for the reclamation of the wastewater treatment facility and associated pits. Exotic species should continue to be controlled.

Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2); or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern.

Most of the imperiled plant species are associated with either the dune and scrub systems or the seepage slope wet prairie systems. The listed species found in the dunes including Cruise's golden aster (*Chrysopsis gossypina ssp. cruisiana*), Godfrey's golden aster (*Chrysopsis godfreyi*), gulf coast lupine and large leaved jointweed. Both of the golden aster species and the gulf coast lupine are vulnerable to storm surge, dune erosion and salt spray from tropical storms. Populations were observed to decrease after the tropical storms of 2004 and 2005. They appear to be more plentiful in the dunes after several years without storms. Large leaved jointweed is found in coastal scrub and scrub. Not much is known about its response to fire but it appears to prosper in open to partially open scrub. Protection of dunes from visitor and development impacts and preventing soil disturbance are crucial for managing these species.

Curtiss' sandgrass is found in the ecotone between flatwoods and basin marshes, basin swamps, seepage slopes and wet prairie. It is endemic to the Florida panhandle and responds well to fire. The park supports a healthy population. White fringed orchid (*Platanthera blephariglottis*), rose pogonia, white-top pitcher plant (*Sarracenia leucophylla*), parrot pitcher plant (*Sarracenia psitticina*), and purple pitcher plant are associates found in wet prairie and seepage slopes. All these species have been in decline at the park due to the invasion of titi and fire suppression (Johnson 2001). Reintroduction of prescribed burning has not had the desired effect on the canopy-sized titi so an active restoration project is being undertaken. Titi is being removed by hand and chipped and transported off-site. Some species have responded well to this treatment. In other cases these targeted species need to be reintroduced. The park is working with the Atlanta Botanical Garden to propagate and reintroduce these species in certain areas as appropriate.

The Choctawhatchee beach mouse is listed as endangered by the USFWS and the FWC, and the USFWS has designated portions of the park as Critical Habitat for the Choctawhatchee beach mouse. When Grayton was first acquired, mice were not present on the park. Mice were reintroduced to the park in 1987 and 1989 from populations at St. Andrews State Park, Shell Island. The population introduced at Pine Street (MZ GB-19) became quickly extirpated (Van Zant and Wooten 2003). The population at the main part of the park (MZ GB-21, GB-24) has been declining. In 2011, the population of Choctawhatchee beach mice at the park was augmented with Choctawhatchee beach mice from the Topsail Hill Preserve State Park population. Habitat loss all along its former range is the major contributing factor to the decline of the sub-species. Other threats include further development, hurricanes, introduction of competitors such as house mice, and exotic predators such as coyotes and feral cats. The DRP will continue to work with the USFWS and the FWC on conservation efforts regarding this critically imperiled species. The park should continue tracking surveys in conjunction with FWC to document presence and distribution of mice. In addition, tracking surveys help to alert management to the presence of non-native predators or other threats. Cats have been a constant threat to the beach mice population at the park. Cat colonies have been established at three locations near the park boundaries and are a continual threat. Predator control is very important to maintain the population of beach mice.

Two species of sea turtles are known to nest at this unit. The majority of nests are from loggerhead turtles, but green turtles also nest on the park annually. The park conducts nest surveys daily according to *FWC Marine Turtle Conservation Guidelines* (2007). Coyotes, storm surge and artificial lighting are the main threats to sea turtle nests and hatchlings at the park. Sky glow can be seen from the park but disorientation events are rare. Predator control is also very important to prevent nest depredation. The DRP will coordinate with the USFWS to educate the properties outside of the park on lighting issues and the detrimental impacts they can have on sea turtles nesting within the park.

Gopher tortoises are found in the park's sandhill and scrub communities. Although the population is unknown, it is assumed low due to the lack of an abundance of burrows. With continuing restoration of sandhill and improvement of habitat for gopher tortoises, populations should increase.

Eastern diamondback rattlesnakes use gopher tortoise burrows to help regulate their body temperatures. The low number of gopher tortoise burrow from the park is a threat to eastern diamondback rattlesnakes. Negative public perception is another threat to eastern diamondback rattlesnakes. The park should educate the public about the importance of snakes, including poisonous snakes, to reverse negative public perception.

The biggest threats to alligators at the park are from interactions with visitors. Visitors should be educated on the dangers of feeding or molesting alligators both in terms of harm to the alligator and the visitor.

Grayton Beach State Park has not supported a large nesting shorebird population; however, several state and federally-listed species of shorebirds use the park (Himes et al. 2006). Snowy plovers and least terns nest here typically nest here. American oystercatchers and black skimmers are occasionally observed with courtship behavior, but no nests were ever documented. The American oystercatcher and black skimmer are in the process of being state-listed as Threatened by FWC. Wilson's plover are also occasionally observed at the park, but no nesting has occurred. Gull-billed terns frequent the park for roosting and foraging, no nesting is documented to date. Shorebird nesting surveys are conducted regularly throughout the nesting season each year by park staff and district biologists. In the past, nesting of shorebirds at the park was low, usually limited to one or two snowy plover pairs per year and productivity was very poor due to disturbance and predators. Least terns had not successfully nested in the park during the past decade. However, in response to habitat management and predator removal efforts, Grayton Beach State Park now supports at least five nesting pairs of snowy plovers and 150-200 pairs of least terns. The number of nesting shorebirds the park supports has grown and productivity has improved each year since targeted management began. In fact, the 2012 nesting season not only supported a record number of plovers and terns but also maintained the highest fledge rate (number of chicks fledged per nesting pair) of any of the coastal parks in the panhandle. The main threats to snowy plovers, least terns and other potentially nesting shorebird species include vehicle rutting, predation, disturbance, adjacent cat colonies and the presence of domestic dogs on the beach. Management for these threats should continue to support the successful shorebird nesting efforts at Grayton Beach State Park. In particular, predator control is also very important to prevent nest depredation.

The federally-listed piping plover uses the park during migration and also overwinter, loaf, and feed at the park, particularly near the coastal dune lake outfalls. Surveys and management for piping plover should follow the *Comprehensive Conservation Strategy* (U.S. Fish and Wildlife Service 2012). Additionally, the red knot is a candidate species for federal listing and is expected to be listed sometime in 2013. Red knots also use the park during migration and typically forage at the coastal dune lake outfall. Regular surveys are conducted year-round for non-breeding shorebirds to determine location, the number utilizing the park, and to provide protection measures from human or predator disturbance if needed. Sandwich terns also use the park during migration and as a roosting site for much of the year. Most of their foraging activity takes place over the adjacent waters in the gulf.

During the seasonal migrations, numerous other listed bird species use this park as an important stopover point for the trans-gulf flight. American kestrels and merlin are

observed in significant numbers during migratory periods. Appropriate management actions for this species include conserving and maintaining suitable natural area with little to no human disruption or alteration. This is considered Management Action 14 (Other) in the table below. Southern bald eagles and ospreys are resident in the area and use the adjacent waters as important feeding areas. Ospreys need snags for nesting and perching. Snags should be left in place for osprey management. Swallow-tailed kites typically use the park for foraging; they tend to forage for insects over wet open areas. It is uncertain whether they nest at the park due to a lack of detailed surveys for this species.

Wading birds, such as little blue heron, snowy egret and tricolor heron, reddish egret and white ibis are found in the freshwater swales, coastal dune lakes and basin marshes. Good quality wetlands are important for their foraging and nesting. Hydrology should be maintained in these wetlands, and spraying of insecticide should be minimized as much as possible. Although all of these species except for the reddish egret are in the process of delisting by FWC, it is still important to maintain quality wetlands for these species.

Florida black bears have occasionally been spotted at the park. Dumpsters and garbage cans should be animal proof to prevent attracting and habituating nuisance and exotic animals. The park staff should be trained in nuisance bear prevention and harassment measures.

The Gulf coast solitary bee is typically present in patches of yellow buttons located on the backside of the primary dunes from August to October depending on the bloom cycle of its host plant. Although not much is known about this bee species, like all bees it is likely sensitive to arthropod control measures with the use of insecticides. Insecticides should not be used during the period of time when the solitary bee is present (August to October) in locations where either yellow buttons are present or where the bee has been previously documented.

Table 3 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by DRP staff or others and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

Table 3: Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Curtiss' sandgrass <i>Calamovilfa curtissii</i>			LT	G3, S3	1, 4, 7	Tier 1
Cruise's golden aster <i>Chrysopsis gossypina ssp cruisiana</i>			LE	G5T2, S2	10	Tier 1
Godfrey's golden aster <i>Chrysopsis godfreyi</i>			LE	G2, S2	10	Tier 1
Catesby's lily, Pine lily <i>Lilium catesbaei</i>			LT		1, 4	Tier 1
Gulf coast lupine <i>Lupinus westianus</i>			LT	G3, S3	10	Tier 1
White fringed orchid <i>Platanthera blephariglottis</i>			LT		1, 4	Tier 2
Rose pogonia <i>Pogonia ophioglossoides</i>			LT		1, 4	Tier 2
Large leaved jointweed <i>Polygonella macrophylla</i>			LT	G3, S3	1,10	Tier 1
White-top pitcher plant <i>Sarracenia leucophylla</i>			LE	G3, S3	1, 4, 7	Tier 2
Parrot pitcher plant <i>Sarracenia psitticina</i>			LT		1, 4, 7	Tier 2
Purple pitcher plant <i>Sarracenia purpurea</i>			LT		1, 4, 7	Tier 2
REPTILES						
American alligator <i>Alligator mississippiensis</i>	FT(SA)	FT(S/A)		G5, S4	4, 10, 13	Tier 1
Loggerhead sea turtle <i>Caretta caretta</i>	ST	FT		G3, S3	8, 10, 13	Tier 4
Green sea turtle <i>Chelonia mydas</i>	SE	FE		G3, S2	8, 10, 13	Tier 4
Gopher tortoise <i>Gopherus polyphemus</i>	ST			G3, S3	1, 7, 8	Tier 3
BIRDS						
Snowy plover <i>Charadrius nivosus</i>	ST			G4,S1	8, 10, 13	Tier 4
Piping plover <i>Charadrius melodus</i>	ST	FT		G3, S2	8, 10, 13	Tier 3

Table 3: Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Wilson's Plover <i>Charadrius wilsonia</i>				G5, S2	8, 10, 13	Tier 4
Red knot <i>Calidris canutus</i>	N/A	FC		G5, S2	8, 10, 13	Tier 2
American Oystercatcher <i>Haematopus palliatus</i>		ST			8, 10, 13	Tier 4
Southeastern American kestrel <i>Falco sparverius paulus</i>	ST			G5T4, S3	1, 7, 14	Tier 2
Little blue heron <i>Egretta caerulea</i>	SSC			G5, S4	4, 10, 13	Tier 2
Snowy egret <i>Egretta thula</i>	SSC			G5, S3	4, 10, 13	Tier 2
Tricolored heron <i>Egretta tricolor</i>	SSC			G5, S4	4, 10, 13	Tier 2
Swallow-tailed kite <i>Elanoides forficatus</i>				G5, S2	14	Tier 2
White ibis <i>Eudocimus albus</i>	SSC			G4, S4	4	Tier 2
Merlin <i>Falco columbarius</i>				G5, S2	14	Tier 2
Brown pelican <i>Pelicanus occidentalis</i>	SSC			G4, S3	10, 13	Tier 2
Black skimmer <i>Rynchops niger</i>		ST		G5, S3	8, 10, 13	Tier 3
Least tern <i>Sternula antillarum</i>	ST			G4, S3	8, 10, 13	Tier 3
Sandwich tern <i>Sterna sandvicensis</i>				G5, S2	8, 10	Tier 2
Gull-billed tern <i>Gelochelidon nilotica</i>				G5, S2	8, 10, 13	Tier 3
MAMMALS						
Choctawhatchee beach mouse <i>Peromyscus polionotus allophrys</i>	SE	FE		G5T1, S1	8, 10, 12, 13	Tier 3
Florida black bear <i>Ursus americanus floridanus</i>	ST			G5T2, S2	10, 13, 14	Tier 1
INVERTEBRATES						
Gulf coast solitary bee <i>Hesperapis oraria</i>				G1G2, S1S2	14	Tier 2

Management Actions:

1. Prescribed Fire
2. Exotic Plant Removal
3. Population Translocation/ Augmentation/ Restocking
4. Hydrological Maintenance/ Restoration
5. Nest Boxes/ Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law enforcement
11. Decoys (shorebirds)
12. Vegetation planting
13. Outreach & Education
14. Other

Monitoring Level:

- Tier 1.** Non-Targeted Observation/Documentation: Includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of *Wildlife Observation Forms*, or other district specific methods used to communicate observations.
- Tier 2.** Targeted Presence/Absence: Includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.
- Tier 3.** Population Estimate/Index: An approximation of the true population size or population index based on a widely accepted method of sampling.
- Tier 4.** Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.
- Tier 5.** Other: May include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

Detailed management goals, objectives and actions for imperiled species in this park are discussed in the Resource Management Program section of this component and the Implementation Component of this plan.

Exotic Species

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such as diseases,

predatory insects, etc. If left unchecked, invasive exotic plants and animals alter the character, productivity and conservation values of the natural areas they invade.

Although the park only has a few invasive exotic species, they need continual treatment and monitoring to prevent infestations from enlarging. There are three locations of cogon grass on the park. Two of these locations have been treated in past years and are continually monitored and treated. Cogon grass is difficult to eradicate, so tenacity and repeated treatments are needed. Torpedo grass is by far the most widespread and most difficult invasive exotic plant species on the park to control. Torpedo grass is especially problematic where established along the shorelines of the coastal dune lakes and in the outfalls. The network of rhizomes may be stabilizing the berms that keep the lakes from connecting to the Gulf. Since it is also intermixed with native species, it is difficult to target without impacting non-target native species.

Infestations of lantana (*Lantana camera*), wisteria (*Wisteria sinensis*) and Chinese tallow tree (*Sapium sebiferum*) are minor. When found they are treated by the park immediately. The park needs to continue monitoring for these species and treating them as they appear in order to prevent larger infestations from establishing.

Common reed (*Phragmites australes*) has been controlled in the past on the park. Debate continues about the origin of different strains of *Phragmites*. Because of this debate as to whether different strains originate in Europe or North America, the park does not consider it exotic, but will control it when it dramatically expands its range and dominates other coastal dune lake vegetation. Presently common reed is dominating many areas of the lakes especially the channels and outfalls.

The park has treated 31.356 acres of exotic plant species between 2000 and 2010. Most of the treatment has focused on cogon grass and Chinese tallow trees.

Table 4 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC 2011). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 4: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone
PLANTS			
Cogon grass <i>Imperata cylindrica</i>	I	2	GB-10, GB-11, GB-16
Lantana <i>Lantana camera</i>	I	2	GB-16, GB-23
Torpedo grass <i>Panicum repens</i>	I	2	GB-3, GB-4B, GB-16, GB-18, GB-21, GB-24
Chinese tallow tree <i>Sapium sebiferum</i>	I	1	GB-1B, GB-7D, GB-13
Chinese wisteria <i>Wisteria sinensis</i>	II	1	GB-16, GB-26

Distribution Categories:

- 0** No current infestation: All known sites have been treated and no plants are currently evident.
- 1** Single plant or clump: One individual plant or one small clump of a single species.
- 2** Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.
- 3** Scattered dense patches: Dense patches of a single species scattered within the gross area infested.
- 4** Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.
- 5** Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.
- 6** Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc. within the gross area infested.

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, the DRP actively removes exotic animals from state parks, with priority being given to those species causing the ecological damage.

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or

activities create special management problems. Examples of animal species from which nuisance cases may arise include raccoons, gray squirrels, venomous snakes and alligators. Nuisance animals are dealt with on a case-by-case basis.

Coyotes harass nesting sea turtles, depredate sea turtle and shorebird nests and chicks. They also flush nesting shorebirds at the park preventing birds from settling within the habitat for nesting or causing nest abandonment. In addition, the presence of coyotes and foxes can flush nesting shorebirds, leaving eggs and chicks vulnerable to predation by other species including ghost crabs, herons, crows and snakes. Predator control was initiated in 1997 and continues when funded. Following a year of heavy removal, productivity for nesting shorebirds greatly increases.

The presence of coyotes and other mammalian predators should be monitored and detected while monitoring for shorebirds, sea turtle nests, and beach mice. Any observations of known predation to nests should be recorded and reported. Park staff should work with district biologist to assess the threat and work with trappers to decide the best method to achieve control. The screening of sea turtle nests in order to prevent successful nest depredation from coyotes should continue. Trapping coyotes in winter prior to shorebird and sea turtle nesting season is recommended as the most effective method of control due to cooler temperatures and to minimize disturbance to shorebird nests during the trapping process.

Raccoons can be a nuisance by raiding campsite dumpsters and stealing food from park visitors. Once raccoons become habituated, they can become a danger to visitors. In addition, raccoons can be effective predators of sea turtle and shorebird nests.

Feral cats and red and gray foxes can be detrimental to populations of beach mice and shorebirds. Feral cats are very effective at hunting small mammals, including beach mice. A well-fed cat can range away from home and into the dune system where beach mice are found. Feral cats have been present at the park for many years. There are two reported cat colonies on either side of the main part of the park and another west of MZ GB-19. While it is unknown why beach mice populations have declined in recent years, feral cats certainly may have contributed. Monitoring for the presence of feral cats and red foxes should be integrated with the monitoring of beach mice. Trapping should be initiated when cat tracks are found or when beach mice presence declines. The park removed one red fox and nine feral cats from the park from 2000 to 2010. Predator removal efforts increased during the past two years, and this effort should continue. For example, nine foxes, four feral cats, and six coyotes were removed in 2011-2012.

Laurel wilt, caused by the non-native fungus, *Raffaelea lauricola*, and spread by the non-native redbay ambrosia beetle (*Xyleborus glabratus*), kills trees in the Laurel (*Lauraceae*) family, including redbay (*Persea borbonia*), swamp red bay (*Persea palustris*) and sassafras (*Sassafras albidum*). In 2010, laurel wilt was documented in neighboring Bay County. The

park staff will monitor for signs of laurel wilt and will notify county agricultural extension agents and district biologists if spotted.

Detailed management goals, objectives and actions for management of invasive exotic plants and exotic and nuisance animals are discussed in the Resource Management Program section of this component.

Special Natural Features

The park has two special natural features, its dunes and its coastal dune lakes. The coastal dunes at the park are not only scenic, but support a diversity of rare and endemic plant and wildlife species. The three coastal dune lakes at the park are considered by FNAI to be globally rare and imperiled.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled properties; the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

Evaluating the condition of cultural resources is accomplished using a three-part evaluation scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists to the ideal condition. Good describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. Fair describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A fair assessment is usually a cause for concern. Poor describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

Level of Significance

Applying the criteria for listing in the National Register of Historic Places (NRHP) involves the use of contexts as well as an evaluation of integrity of the site. A cultural resource's significance derives from its historical, architectural, ethnographic or archaeological context. Evaluation of cultural resources will result in a designation of NRL (National Register or National Landmark listed or located in an National Register district), NR (National Register eligible), NE (not evaluated) or NS (not significant) as indicated in the table at the end of this section.

There are no criteria for use in determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

The following is a summary of the FMSF inventory. In addition, this inventory contains the evaluation of significance.

Prehistoric and Historic Archaeological Sites

Desired future condition: All significant archaeological sites within the park that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: There are six prehistoric sites, four historic sites and one linear resource group for a total of eleven archaeological sites located in the park. However, two of the sites might be the same site. At the park, six sites represent the aboriginal cultural period. Alligator Lake site (8WL00029) is a Middle and Late Woodland aboriginal site represented by Deptford, Santa Rosa-Swift Creek and Weeden Island cultural materials. Homestead sites (8WL00083) represent the Weeden Island aboriginal period and the Early American Period. Both pottery sherds and chimney bricks were found on the site indicating use by different cultural groups. Western Lake West I (8WL00876) is an aboriginal site of unknown cultural origin. The ceramic sherds recovered were plain and were not identifiable to time period. New Site (8WL01069) is a ceramic scatter site of unknown origin. Klint's Scatter (WL2555) and Baggett Point (WL2556) are located close together and may represent different ends of the same site. They are prehistoric campsites and shell middens representing unknown historic period.

The First Spanish Period in Florida is characterized by Spanish settlements including forts, missions and ports. At the park, Western Lake 1 (8WL00047), an isolated find of Spanish armor represents this period. This site is suspected to be the same as recorded site 8WL00024 but the location site as documented in the FMSF may be inaccurate. We will work with the DHR to clarify whether or not these two sites are in fact the same site. The Early American Period is characterized by the expansion of settlements in North America. At the park, this period is represented by a homestead site (8WL00083). The Wallin Homestead site (8WL2570) represents the early 19th century historic period.

Two additional sites are located within the park. Grayton Beach State Recreation Area (8WL01483) is the site of an isolated find of metal materials of unknown origin. Grayton Trail (8WL00457) is a linear site from the American 19th Century period originating in the present day town of Grayton Beach.

An Archaeological Sensitivity Model was conducted at Grayton Beach State Park capturing 90% of recorded locations in high or medium sensitivity areas. High and medium sensitivity areas comprised 28.9% and 23.6% of the acreage of the park respectively.

Condition assessment: The archaeological sites at the park are in good to fair condition. All sites along the dune system or lakeshore are in fair and unstable condition due to the dynamic nature of the coastal system where artifacts may disappear and reappear depending upon shifting sands. Because of the dynamic visibility of artifacts, extra monitoring of these sites is needed when artifacts are exposed. Threats to these sites include wind and water erosion, tropical storm damage and debris that may mix with artifacts. Visitors may also pick-up and remove exposed artifacts on the beach or dunes. Another site located along the road right-of-way has been disturbed and is threatened by flooding, ditching and further development along the road right-of-way. Inland sites are in good and stable condition but may be potentially degraded by fireline installation, restoration activities and prescribed fire.

Level of significance:

FMSF has record of six archaeological sites and one resource group in Grayton Beach State Park. Although the surveyor deemed the site "Ineligible for NRHP," SHPO cited "Insufficient Information" for evaluation of Western Lake West I (8WL00876). Alligator Lake (8WL00029), represented by Deptford, Santa Rosa-Swift Creek, and Weeden Island cultural materials, is a Middle and Late Woodland site not evaluated by SHPO. Surveyors cited "Insufficient Information" to evaluate Western Lake 1 (8WL00047), the site of an isolated find not evaluated by SHPO; site file notes indicate that this may be the same site as 8WL00024, another isolated find site that was not evaluated by the recorder or SHPO. Neither the recorders nor SHPO evaluated Homestead (8WL00083), New Site (8WL01069), Grayton Beach State Recreation Area site (8WL01483), Klint's

Scatter (WL2555), Baggett Point (WL2556) nor Wallin Homestead site (8WL2570). Grayton Trail (8WL00457) is a linear resource (resource group) not evaluated by SHPO.

No NR Listed or Eligible resources warranting higher profile monitoring and measures to stabilize and mitigate deterioration and disturbance are located within the park. All recorded sites will be located, visited and monitored regularly with necessary steps taken to conserve their integrity. Evidence of previously unrecorded sites will be documented and newly discovered sites will be recorded according to DHR/FMSF standards. Boundaries of sites will be redefined as appropriate; potential duplicate sites will be clarified. The park has no significant collection of artifacts.

General management measures: Even though preservation is the treatment selected for all the sites in the park, the sites, especially those on the beach and dunes, cannot be protected from damage from natural causes, such as tropical storms and associated storm surge. The park will protect these sites from damage during resource management or development activities and potential visitor collection of exposed surface artifacts. The park will prevent impacts from human disturbance by posting and roping sensitive dune areas where necessary. Signage should be placed at the park entrance and public use areas interpreting the rules and regulations related to the collection of artifacts at the park.

Historic Structures

Description: There are no historic structures in the park, but several structures within the park will turn 50 during the life of this plan.

Seven of these structures were constructed in the late 1960s and are associated with the operation of the state park. Two support structures, Shop (8WL02573) and Equipment Shelter (8WL02579), are currently used by the park. Shop, which serves as the main shop building, has been modified from the original building and is now enclosed. Entrance Station (8WL02574) is the park's original entrance station and was used as such until 2010. Four picnic shelters, Beach Pavilions 1-4 (8WL02575, 8WL02576, 8WL02577 and 8WL02578), are located in the park's day use area, proximal to Western Lake.

Two treatment structures associated with an abandoned development project are located on the park property. Wastewater Treatment Facility (8WL02580) is a metal structure about 30 feet wide by 100 feet long by 14 feet tall set on a 10-inch concrete slab. Water Treatment Facility (8WL02581) consists of one block building, one large aeration building made of poured concrete slabs, one metal tank and one very large metal tank.

Condition assessment: All of the structures associated with park operations, including Shop, Entrance Station, Equipment Shelter and Beach Pavilions 1-4, are in good

condition. Each structure, except Entrance Station, are maintained for current use at the park. The primary threat to these structures is from tropical storms.

Wastewater Treatment Facility (8WL02580) and Water Treatment Facility (WL02581) are in poor condition. Neither have been operated and both have been abandoned since their completion. Both sites are planned for demolition since they do not represent any historical or cultural significance. Both sites will be documented in the FMSF with associated photos.

Level of significance: None of the soon-to-be historic structures located in the park meet the criteria for eligibility in the National Register of Historic Places either individually or as components of a potential district. The Wastewater Treatment Facility (8WL02580) and Water Treatment Facility (8WL02581) are standard treatment structures built as predecessors of a residential development that never occurred and have no association with the original park buildings built in the late 1960's. The remaining seven structures are standard park buildings and are not unique in their style or design. The structures are located in various locations throughout the park and not developed as part of an overall park plan; they therefore do not constitute a potential National Register district as either a physical grouping or a unified architectural type.

General management measures: The park will continue to regularly maintain all of the structures being used in the park to keep them in good condition.

Collections

Desired future condition: All historic, natural history and archaeological objects within the park that represent Florida's cultural periods, significant historic events or persons, or natural history specimens are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The park has no collections.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program section of this component. Table 5 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the FMSF. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.

Table 5: Cultural Sites Listed in the Florida Master Site File Site

Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Alligator Lake A & B 8WL00029	Aboriginal- Prehistoric (Middle and Late Woodland)	Archaeological Site	NE	G	P
Western Lake 1 8WL00047 & 8WL0024	First Spanish Period	Archaeological Site	NS	G	P
Homestead 8WL00083	Aboriginal (unknown)	Archaeological Site	NE	G	P
Western Lake West I 8WL00876	Aboriginal- Prehistoric (unknown)	Archaeological Site	NS	G	P
New Site 8WL01069	Aboriginal (unknown)	Archaeological Site	NE	G	P
Grayton Beach State Recreation Area 8WL01483	American (unknown)	Archaeological Site	NE	G	P
Grayton Trail 8WL00457	American (1890s)	Linear Resource	NE	G	P
Klint's Scatter 8WL2555	Aboriginal- Prehistoric (unknown)	Archaeological Site		G	P
Baggett Point 8WL2556	Aboriginal- Prehistoric (unknown)	Archaeological Site		G	P
Wallin Homestead 8WL2570	American (1900s)	Archaeological Site		G	P
Shop 8WL02573	1969	Historic Structure	NS	G	P
Entrance Station 8WL02574	1969	Historic Structure	NS	G	P
Beach Pavilion 1 8WL02575	1969	Historic Structure	NS	G	P
Beach Pavilion 2 8WL02576	1969	Historic Structure	NS	G	P
Beach Pavilion 3 8WL02577	1969	Historic Structure	NS	G	P
Beach Pavilion 4 8WL02578	1969	Historic Structure	NS	G	P

Table 5: Cultural Sites Listed in the Florida Master Site File Site					
Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Equipment Shelter 8WL02579	c1970	Historic Structure	NS	G	P
Wastewater Treatment Facility 8WL02580	c1972	Historic Structure	NS	P	R
Water Treatment Facility 8WL02581	c1972	Historic Structure	NS	P	R

Significance:

- NRL National Register listed
- NR National Register eligible
- NE Not evaluated
- NS Not significant

Condition:

- G Good
- F Fair
- P Poor
- NA Not accessible
- NE Not evaluated

Recommended Treatment:

- RS Restoration
- RH Rehabilitation
- ST Stabilization
- P Preservation
- R Removal
- N/A Not applicable

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Grayton Beach State Park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a

consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

While the DRP utilizes the ten-year management plan to serve as the basic statement of policy and future direction for each park, a number of annual work plans provide more specific guidance for DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management and imperiled species management. Annual or long-term work plans are developed for natural community restoration and hydrological restoration. The work plans provide the DRP with crucial flexibility in its efforts to generate and implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, the DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Chapters 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. Since the plan is based on conditions that exist at the time the plan is developed, the annual work plans will provide the flexibility needed to adapt to future conditions as they change during the ten-year management planning cycle. As the park's annual work plans are implemented through the ten-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

Goal: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done

primarily by filling or plugging ditches, removing obstructions to surface water “sheet flow,” installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

Objective: Conduct/obtain an assessment of the park’s hydrological restoration needs.

The park should assess the hydrological disruptions by forestry bedding around selected wetlands and by erosion caused by firebreaks and roads. The park should also assess the dredged area in the basin marsh in MZ GB-02. An area in the Grayton arm of Western Lake has been dredged previously. Although the dredged area can be seen on aerial photographs, little is known about the history and impact of this dredging. A hydrological assessment of this area by an engineer is needed. Once an assessment is conducted, the park should determine if and how to proceed with restoration and develop a restoration plan accordingly.

An assessment of replacing the bridge over Western Lake between zones GB-22 and GB-25 should be conducted. The bridge was built by creating a causeway, diverting the flow of the lake and filling in a portion of the lake. Once this hydrological disruption is assessed, the DRP should determine if restoration should proceed. If this portion of the lake is to be restored then an engineering drawing should be designed and a restoration plan developed.

Objective: Improve natural hydrological conditions and functions of approximately 75 acres of coastal dune lake natural community.

The park should work with Walton County to enhance the hydrological connection of the coastal dune lakes impacted by impoundments from construction of County Road 30A. The park should also work with Walton County to reduce the number of artificial openings of the lake to the gulf.

Objective: Explore possible methods and then conduct flattening of forestry beds around selected wetlands.

Bedding around wetlands alters the hydrological regime of the wetland but flattening the bedding can also impact wetlands. Different methods of flattening windrows should be explored to determine how to flatten beds without greater impacts to wetlands and sensitive species such as pitcher plants, sundews and orchids. Once a method is determined then the park should work to flatten the remaining bedding around wetlands.

Objective: Install low water crossing along firelines at five locations in the park.

The park needs low water crossings at five different locations (in MZ GB-11, GB-13, GB-07E and GB-07D) in order to provide sufficient access for resource management activities, especially prescribed burning. The low water crossings will help stabilize the firelines through wetland soils without disrupting the hydrological regime.

Natural Communities Management

Goal: Restore and maintain the natural communities/habitats of the park.

As discussed above, the DRP practices natural systems management. In most cases, this entails returning fire to its natural role in fire-dependent natural communities. Other methods to implement this goal include large-scale restoration projects as well as smaller scale natural communities' improvements. Following are the natural community management objectives and actions recommended for the state park.

Prescribed Fire Management: Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

All prescribed burns in the Florida state park system are conducted with authorization from the FFS. Wildfire suppression activities in the park are coordinated with the FFS.

Objective: Within ten years, have 844 acres of the park maintained within the optimum fire return interval.

Fire-dependent natural communities at the park include mesic flatwoods, wet flatwoods, basin marsh, wet prairie, seepage slope, depression marsh, dome, sandhill and scrubby flatwoods. Local wildlife populations that depend on or benefit from well maintained fire adapted natural communities include ornate chorus frog, pygmy rattlesnake, coachwhip, six-lined racerunner, bobcat, southeastern kestrel, loggerhead shrike, brown-headed nuthatch and pine warbler. Imperiled species, such as red pitcher plant, yellow pitcher plant, parrot pitcher plant, purple pitcher plant, white fringed orchid and rose pogonia, will benefit from regular prescribed fire. Prescribed burning is the primary management tool for mimicking natural process and improving and maintaining quality habitats for these and many other wildlife species.

Any prescribed burn program in natural communities adjacent to coastal scrub must take into account the needs of the Choctawhatchee beach mouse. Coastal scrub is very important refugia for these mice after hurricanes when dune vegetation, cover and forage are minimal. It is important to ensure that a significant amount of coastal scrub remains at a successional stage that will be sufficient to provide cover and food for beach mice at all times. Since research has shown that natural fire is not the process that shapes and maintains scrub communities in the panhandle of Florida (Drewa et al. 2008; Parker et al. 2001), prescribed fire should not be planned in these natural communities. Prescribed fire that is introduced to natural communities adjacent to scrub, during growing season when natural lightning fires would have occurred, should be given the

opportunity to spread across the ecotone into scrub. Panhandle scrub communities within the park should not be mechanically reduced and ignited in a manner that would mimic a stand replacement fire. Any plan to introduce prescribed fire directly into these natural communities would require consultation with USFWS and FWC concerning the effect on Choctawhatchee beach mice. It should be noted that for fire to have occurred naturally in salt pruned, coastal oak scrub it would have spread from flatwoods, through sand pine scrub into the salt pruned coastal scrub.

Burn zone descriptions, management objectives, GIS generated maps, and current burn prescriptions are reviewed annually and updated as necessary as part of the District 1 annual prescribed fire planning process. Specific management zone information, such as burn histories, natural community configurations, backlog status, as well as staff training, crew qualification status and burn experience, is maintained in the DRP's statewide burn database.

Park staff will coordinate with the district burn coordinator to identify yearly burn objectives. Once zones have been selected, burn prescriptions will be completed and reviewed by the end of the calendar year. All primary and secondary (contingency) firelines for the planned burn zones will be completed by the end of the calendar year as well. At a minimum, firelines will be cleared of all significant vegetation and fine dead fuels up to twice the width of the adjacent live understory fuels. In most cases, resource management roads are used as primary firebreaks, and provide for a mineral soil fireline component without the need for disking. Segments of existing well-established firelines that require light disking shall be prepared well prior to burning. If disking is required, it is recommended that only the outer edge of the fireline be disked, in order to preserve vehicular access along the remaining majority of the fireline. Prior planning for any new firelines must be coordinated through the BNCR and the DHR.

While the body of knowledge that supports prescribed fire supports fires that occur in growing (lightening) season, not all prescribed fires at this park can be conducted during that season. Urban development adjacent to the park, and resulting smoke management and safety concerns place limitations on the opportunities that are available in any given time period. Prescribed burn efforts should be managed so that the seasonality of prescribed burns is rotated throughout zones that are in maintenance stage management so that each zone will have exposure to lightening season fire.

Park staff will communicate with the district burn coordinator, and regional fire managers, in order to gather additional burn crew and equipment needed to safely conduct burns. Park staff will be responsible for tracking weather conditions throughout the burn season, and identifying potential burn windows based on weather forecasts.

All fire suppression equipment will be routinely inspected and operationally tested. Any necessary maintenance and repairs will be accomplished or facilitated by park staff, or if necessary, coordinated with the district burn coordinator. Accurate and complete rainfall data will be maintained on-site, in order to effectively track the local drought index and plan prescribed fire activities.

In the case of management zones GB-11, GB-12, GB-13, GB-14 and GB-16, the adjacent development or high fuel loading prevents a prescribed fire program until certain conditions, such as wider firelines, mechanical fuel reduction, low water crossing and/or restoration, are met. The total area of these zones is 622 acres, which has been subtracted from the total acreage of natural communities targeted for management with prescribed fire. Once these zones can be brought into the prescribed fire program, the targets will be increased to include these zones. In addition, all other zones with an urban interface will receive mechanical fuel reduction if needed prior to any prescribed fire treatments to reduce fire intensity.

Table 6 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval based on the DRP burn database, and the annual average target for acres to be burned.

Table 6: Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Sandhill	430	2-4
Mesic Flatwoods	240	2-5
Seepage Slope	100	2-5
Wet Prairie	332	2-5
Scrubby Flatwoods	231	3-15
Basin Marsh	54	3-15
Depression Marsh	5	2-5
Wet Flatwoods	74	2-4
Annual Target Acreage*	280-685	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.	280-685	

The park is partitioned into burn zones, and burn prescriptions are implemented on the prescribed burn cycle for each zone (see Management Zones Map). The park’s burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning

based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

In order to track fire management activities, the DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training/experience, backlog, if burn objectives have been met, etc. The database is also used for annual burn planning, which allows the DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated and reports are produced that track progress towards meeting annual burn objectives.

In order to maintain the natural communities within the areas that are managed with prescribed burning the park's annual target acreage is 280-685 acres within the fire dependent communities listed in the table above. Of course, before the park can meet this target, all the communities must be in a condition to be burned using prescribed fire.

Natural Communities Restoration: In some cases, the reintroduction and maintenance of natural processes is not enough to reach the natural community desired future conditions in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that include mechanical treatment of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond management activities routinely done as standard operating procedures, such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, small-scale vegetation management and so forth.

The following natural community/habitat restoration and maintenance actions are recommended to create the desired future conditions in the sandhill, scrub, seepage slope, wet prairie and scrubby flatwoods at Grayton Beach State Park (see Desired Future Conditions Map).

Objective: Conduct habitat/natural community restoration activities on up to 3.5 acres of beach dune natural community after major impacts from tropical storms as needed.

The park should assess, plan and restore beach dunes after tropical storms when impacts are moderate to severe. The park should focus on planting in order to mimic the natural dune building process. The park should monitor the progress of dune restoration by using photo points. In addition, during the planning stage of restoration, the park should ensure that patches of beach with little to no vegetation remain for shorebird nesting habitat.

Objective: Conduct habitat/natural community restoration activities on 10 acres of seepage slope and wet prairie, 350 acres of sandhill and scrubby flatwoods, 35 acres of scrub, and 1 acre of beach dune and scrub associated with the Grayton Beach Nature Trail.

Seepage slope and wet prairie: Most of the seepage slope and wet prairies of the park need restoration. A diversity of species, including many imperiled species, both plants and herpetofauna, depend on these natural communities. Many of these species are being extirpated from the park from canopy shading, which can be slowed or prevented through restoration. Woody species, especially titi, have invaded and grown quite large, dominating the canopy. Because of the sensitive herbaceous understory species coupled with hydric soils, use of mechanical equipment is probably not appropriate in these communities. However, during dry portions of the year, mechanical equipment may be appropriate for woody biomass removal. Instead, low impact biomass removal that minimizes rutting on wetland soils should be conducted, for example, by using hand crews. Small areas of seepage slope and wet prairie should be restored throughout the park to ensure pockets of remnant species persist. Future restoration efforts can build off these small areas. A restoration plan should be developed that includes photo points and target species documentation as part of this project. The park will coordinate with FWC and DRP District biologists during the restoration and seek external funding and potential use of additional mechanical equipment.

Sandhill and scrubby flatwoods: Timbering and the lack of fire prior to state acquisition has allowed sand pine to invade management zones GB-11, GB-13 and GB-14, forming a closed canopy and dominating the community. The invading sand pine should be logged on 350 acres and groundcover established, if needed. A restoration plan should be developed prior to restoration activities and should include a monitoring plan that includes at least qualitative monitoring, such as photo point documentation. Once the zone is cleared of sand pine, the park should monitor the area closely to determine if groundcover re-establishes. If groundcover does not reestablish, the park should plan to plant groundcover seed collected from other suitable areas of the park. Once groundcover responds or is planted, the area should be maintained with prescribed fire and incorporated into the park's burn plan.

Scrub: The remnant paved roads and cul-de-sacs in MZ GB-16 should be removed and restored to scrub once the tent-only camping area is delineated and established as described in the land use component. A restoration plan should be developed. The park should work with the DEP Ecosystem Restoration Section greenhouse to arrange for seeds and cuttings from park plants to be grown and planted once the pavement and associated off-site fill material are removed. The park should monitor the restoration with the use of photo points.

Beach dune and scrub: The Grayton Beach Nature Trail that meanders through the coastal dunes and scrub in MZ GB-24 is eroding from foot traffic. The park should try to assess the problematic areas and develop a plan for arresting the erosion. The park will need to cooperate with the USFWS and FWC to ensure that any work in the dunes will not impact the Choctawhatchee beach mice population in the park. This project is in progress and may benefit from additional volunteers and community involvement and outreach.

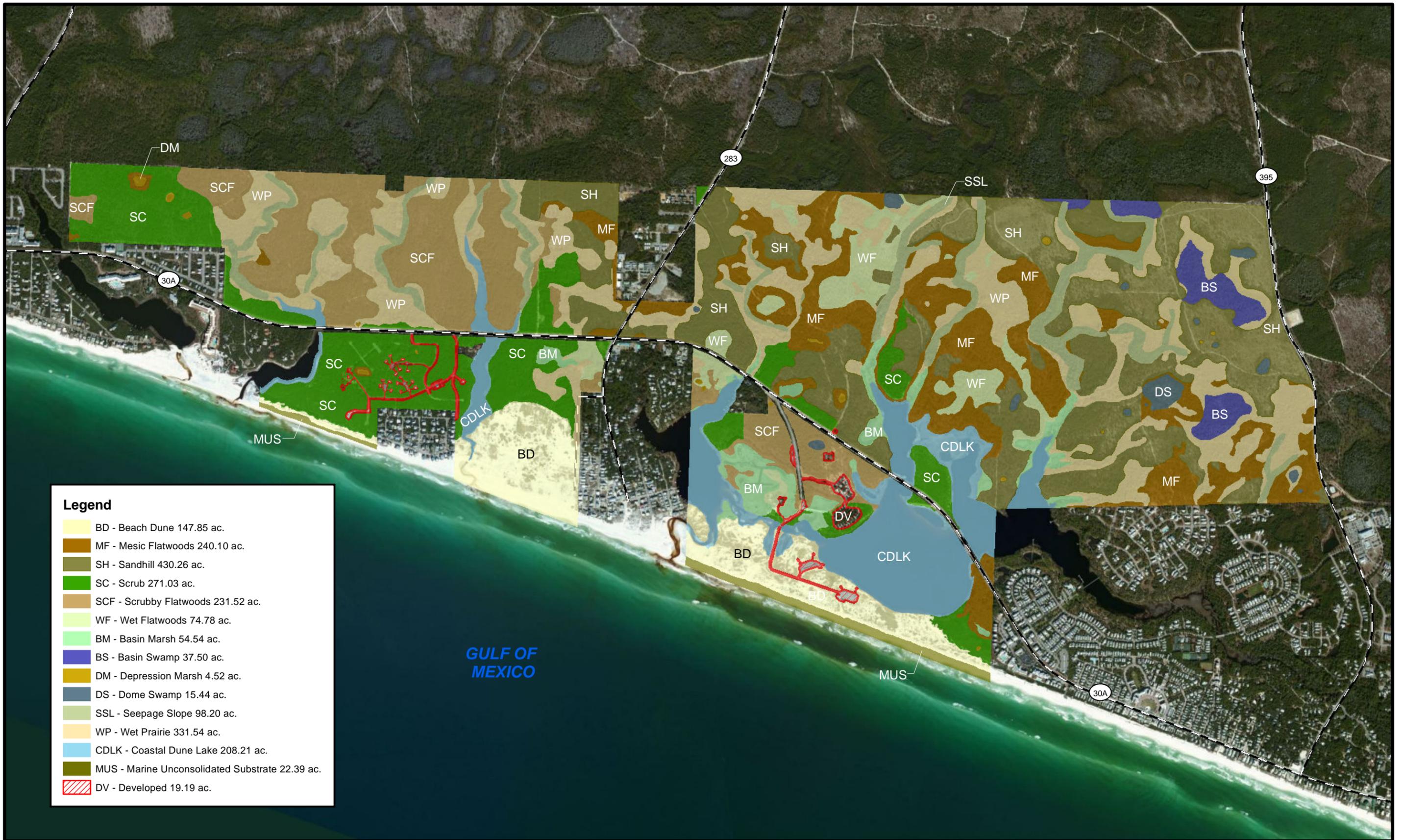
Natural Communities Improvement: Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. Following are the natural community/habitat improvement actions recommended at the park.

Objective: Conduct habitat improvement activities on ten acres of beach dune and scrub communities.

The park should try to find funding, develop a plan and work with the DEP, Ecosystem Restoration Section, greenhouse to collect for seeds and cuttings from park plants to be grown and planted in the beach dunes and scrub communities in MZ GB-19 to enhance habitat for beach mice and gopher tortoises. Past impacts to this community prior to acquisition, such as driving on dunes, have left wide unvegetated gaps where plants are not establishing. A plan should be developed prior to implementing the restoration. The plan should include exceptions for areas of current and potential shorebird nesting.

Objective: Control unauthorized access in sensitive natural communities.

Post and rope coupled with enforcement should be employed to prevent degradation of sensitive natural communities, such as beach dune, due to unauthorized visitor access. Within the beach dune habitat, post and rope should be placed to minimize the impacts of beach driving by providing travel corridors for vehicles as close to the wet sand as possible. Park staff should work with park police to monitor visitor activities and discourage behaviors that might degrade sensitive areas. Additionally, interpretive signs placed near closed areas to inform visitors about the sensitive habitats will also help discourage detrimental behaviors.



Legend

	BD - Beach Dune 147.85 ac.
	MF - Mesic Flatwoods 240.10 ac.
	SH - Sandhill 430.26 ac.
	SC - Scrub 271.03 ac.
	SCF - Scrubby Flatwoods 231.52 ac.
	WF - Wet Flatwoods 74.78 ac.
	BM - Basin Marsh 54.54 ac.
	BS - Basin Swamp 37.50 ac.
	DM - Depression Marsh 4.52 ac.
	DS - Dome Swamp 15.44 ac.
	SSL - Seepage Slope 98.20 ac.
	WP - Wet Prairie 331.54 ac.
	CDLK - Coastal Dune Lake 208.21 ac.
	MUS - Marine Unconsolidated Substrate 22.39 ac.
	DV - Developed 19.19 ac.

GRAYTON BEACH STATE PARK



NATURAL COMMUNITIES
 DESIRED FUTURE CONDITIONS MAP

Imperiled Species Management

Goal: Maintain, improve or restore imperiled species populations and habitats in the park.

The DRP strives to maintain healthy populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

In the preparation of this management plan, DRP staff consulted with staff of the FWC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, DRP staff consulted with FDACS. Data collected by the FWC, USFWS, FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed by park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet the DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

Objective: Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.

Depending on funding, a full plant survey needs to be conducted at the park to determine presence and location of other listed plant species. In addition, the park has never been fully surveyed for herptofauna, insects, bats, or birds. If funding is available, surveys for these species should be conducted and the species list updated. Surveys for these species are particularly important around wet community types such as depression marsh, basin swamp, or dome swamp that are critical for breeding

amphibians, but where arthropod control may occur to limit the presence of mosquitoes. District biologists in partnership with FWC may survey for herptofauna. The park will work with district biologists to conduct limited surveys, update the imperiled species lists, and utilize observations to update the arthropod control plan to minimize the impacts of spraying to potentially sensitive species. In addition, specific surveys aimed at determining the presence of reticulated flatwoods salamander (*Ambystoma bishopi*) are needed. This listed species is highly associated with wetlands in a flatwoods matrix. They utilize small ponds without predatory fish for breeding and uplands for roosting or foraging. They are not documented at the park to date but could be present.

Objective: Monitor and document eleven selected imperiled animal species in the park.

Sea turtle nests, including loggerhead and green, are monitored by staff using strict methods and protocols developed by FWC that fully census the population of nesting sea turtles and hatchlings, as well as hatchling success rates. Monitoring methods and protocols included nest surveys, nest inventories, and survey of disorientations and strandings (FWC Conservation Guidelines for Marine Turtles 2007).

The park will conduct surveys of gopher tortoise burrows after each burn to determine the number of occupied and potentially occupied burrows in the park. This should allow the park to have a rolling population estimate of gopher tortoises.

Snowy plover, Wilson's plover, American oystercatcher, least tern, black skimmer, and gull-bill terns nesting is monitored to determine the number of nesting attempts, the number of nesting adults, nest fate, sources of predation, and annual productivity. Snowy plovers, Wilson's plovers, and American oystercatchers are banded with individual color combinations to help biologists determine productivity as well as juvenile survival, adult survival, natal dispersal, and between-season and in-season dispersal. These efforts will help determine the level of connectivity for these species from Grayton Beach State Park to other beaches throughout Florida and in the long-term determine population growth in response to management actions. Shorebird nest monitoring methods at the park may change during this unit management planning cycle depending on funding of a district shorebird monitor. The current funding is provided by a coordinated effort between the DRP, FWC, and the USFWS as part of the State Wildlife Grant program. Funding of a full-time district shorebird monitor is needed to maintain this level of monitoring. Other shorebirds, including federally-listed piping plovers and federal candidate red knots will be monitored for presence, the population using the park, habitat use, and dispersal. These two species are regularly banded with individual color combinations on their breeding grounds and collection of band re-sights allow for determining dispersal from breeding to wintering grounds. In DRP staff monitor all shorebird, seabird, raptor, or wading bird species observed

during surveys conducted twice a month during the winter months (September to February) and weekly during the breeding season (February to August).

Choctawhatchee beach mice are monitored for presence or absence and relative distribution through tube tracking surveys. FWC has helped the park set-up tracking tubes to replace the sand tracking method. These tubes determine presence, absence and relative distribution but have an advantage of not being dependent on sand tracking conditions. The park will continue to work with FWC to monitor these tubes on a monthly basis. Research of the beach dune community and its response after tropical storms is important for understanding baseline conditions and succession of dune community after storms. Additional staff time or funding for OPS staff is needed in order to conduct the tracking monitoring and dune community research.

Objective: Monitor and document five selected imperiled plant species in the park.

All of the wet prairie and seepage slopes species, including white-fringed orchid, rose pogonia, white-top pitcher plant, parrot pitcher plant and purple pitcher plants, will be monitored annually for presence or absence. These species have been in continual decline (Johnson 2001). Monitoring is important to determine how recent restoration efforts are affecting these species. The park will conduct this monitoring in conjunction with the district biologists.

Objective: Continue to support marine turtle recovery by minimizing sources of light pollution within the park.

In the few areas of the park with lighting needs, the park will utilize “turtle-friendly” lighting as recommended by the FWC Marine Turtle Lighting guidelines. In addition, during the marine turtle nesting season (May 1- October 31), special events to be located on the beach will be scheduled during daylight hours.

Objective: Prevent disturbance to nesting and wintering shorebirds.

The park should post and rope suitable shorebird areas annually prior to nesting season to prevent visitor disturbance to shorebird nesting. Posting should follow the guidelines established by FWC (Avissar et al. 2012). Protection of nesting habitat with symbolic fencing results in an increase of nesting events, a greater number of nesting shorebirds, and increased productivity (Pruner 2010). The outfalls of the coastal dune lakes are popular with visitors but are also good quality foraging habitat for nesting shorebirds, shorebird broods, and foraging shorebirds during migration and winter. Protection of brood foraging area with symbolic fencing also increases fledge rates. In fact, Pruner et al. (2011) observed that twice as many chicks fledged in protected areas compared to areas that were not. Staff or district biologists should post and protect the freshwater inlets and outfalls year-round because they are important foraging shorebird areas. Clear guidance to visitors of the location of sensitive areas and posting may help to reduce this conflict. Presence of law enforcement and/or interpretive programs during high visitor use periods (particularly holidays) is recommended to help protect

shorebird nests. The DRP will coordinate with the USFWS, FWC, Audubon of Florida, and other agencies on interpretive programs aimed at educating and informing park visitors about shorebirds and the potential impacts recreation can have on nesting activities.

Driving on the beach should be limited as much as possible. Vehicular rutting associated with beach driving impacts shorebird and sea turtle hatchling nest success and recruitment. Beach drivers should follow the guidelines in the FWC *Best Management Practices for Operating Vehicles on the Beach* (FWC BMPs) and try to keep from disturbing the wrack line. Symbolic fencing (i.e., posts, signs and rope) should be used to protect the beach dune habitat from potential detrimental impacts associated with beach driving. Moreover, efforts to protect the beach habitat should focus on protecting shorebird nesting habitat and dune areas while creating a corridor for driving access as close to the wet sand as possible.

Objective: Augment population of Choctawhatchee beach mice as needed.

The park should work closely with FWC and USFWS to determine when the population of Choctawhatchee beach mice should be augmented. Research on the genetics of the population at the park is needed in order to determine if the population on the park represents the genetic diversity of Choctawhatchee beach mice. Since the population of mice from the previous augmentation was small, at least one more augmentation is likely to be needed during the next ten years. In addition, if population levels decline, additional augmentations may be necessary. The park will work closely with FWC and USFWS to determine when augmentation may be necessary.

Exotic Species Management

Goal: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.

The DRP actively removes invasive exotic species from state parks, with priority being given to those causing the ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective: Annually treat all acres of exotic plant species in the park.

Infested areas of cogon grass and torpedo grass will be checked annually and treated with herbicides as necessary until the areas are in maintenance condition. Spot checks for individual Chinese tallow trees, lantana shrubs and wisteria vines will be conducted annually. Maintenance condition describes a formerly active infestation that has been treated to the extent that any plants remaining are manageable with existing staff and resources, total area is stable or declining, mature reproducing individuals are absent, and the species poses no significant threat to listed plants or animals. Thus, the actual treated zone may reduce in area over time though the entire extent would need to be inspected indefinitely. An important exception is an instance where the exotic plants are well mixed with native vegetation, which would need an accompanying restoration

program to plant natives in the formerly infested area. The reason for this caveat is that in this situation herbicide application would likely result in significant non-target damage; the resulting area would be denuded of live vegetation and highly vulnerable to re-infestation by exotic plant species. Such removal of native vegetation may lead to the necessity of perpetual treatment and subsequent loss of native plant species from that area. A restoration effort to replant the area with native vegetation appropriate for that habitat following treatment would be intended to preempt potential exotic growth into the open space.

Objective: Implement control measures on six nuisance and exotic animal species in the park.

The park should continue a program of controlling coyotes, raccoons, red foxes, gray foxes, feral cats, and Virginia opossums on the park. All of these species are threats to imperiled coastal species. In fact, Pruner et al. (2011) found that the more coyotes removed, the higher the probability of hatching success for shorebird nests. A tracking assessment of exotic animal predator species should be conducted prior to the start of the shorebird nesting season and during beach mice, shorebird and sea turtle monitoring to establish predator control needs. In addition, any documented predation event (e.g., shorebird nest, sea turtle nest) should be reported to the district office to coordinate predator removal efforts with the USDA. Coordinated efforts between the FWC, USFWS, and the DRP as part of the State Wildlife Grant program and funding associated with the BP oil spill will adequately fund the predator removal program with the USDA at this park until 2017.

The feral cat colonies continue to be a problem. The park staff will work closely with the USDA on trapping efforts to increase the number removed. The park will follow the DRP's Resource Management Standard for Nuisance and Exotic Animal Removal. Research is needed on effective methods for trapping feral cats. Spector (2009) found that traditional cat trapping with live traps using food as bait was not effective for controlling cats even when conducted daily. The DRP will coordinate with the USFWS and FWC on an education and outreach program aimed at the public (park visitors and neighboring communities) on the impacts feral cats have on wildlife.

Special Management Considerations

Timber Management Analysis

Chapters 253 and 259, Florida Statutes, require an assessment of the feasibility of managing timber in land management plans for parcels greater than 1,000 acres if the lead agency determines that timber management is not in conflict with the primary management objectives of the land. The feasibility of harvesting timber at this park during the period covered by this plan was considered in context of the DRP's statutory responsibilities and an analysis of the park's resource needs and values. The long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of

those communities specifically managed as early successional. Additionally, the DRP is a resource-based recreation agency that only considers timber harvest of timber stands that are off-site timber or those that were platted as part of previous silviculture practices.

Grayton Beach State Park has portions of three management zones where timber harvesting would aid in the restoration of disturbed sites (see Addendum 8 – Timber Management Assessment). Resource Management Zones GB-11, GB-13 and GB-14 have had a past disturbance in the upland areas that removed their dominant longleaf pine overstory. The zones now have an environment that is dominated by a more than 50-year encroachment of sand pine. Timber harvesting of the sand pine will be require as part of a restoration project to return longleaf pine dominance to these zones.

Coastal/Beach Management

The DRP manages over 100 miles of sandy beach, which represents one-eighth of Florida's total sandy beach shoreline. Approximately one-quarter of Florida's state parks are beach-oriented parks and account for more than 60 percent of statewide park visitation. The management and maintenance of beaches and their associated systems and processes is complicated by the presence of inlets and various structures (jetties, groins, breakwaters) all along the coast. As a result, beach restoration and nourishment have become increasingly necessary and costly procedures for protecting valuable infrastructure. All of these practices affect beaches for long distances on either side of a particular project. DRP staff need to be aware of and participate in the planning, design and implementation of these projects to ensure that park resources and recreational use are adequately considered and protected.

Grayton Beach State park encompasses 2.01 miles of beach. The beach habitat at the park is protected under the Coastal Barrier Resources Act (CBRA). The CBRA helps ensure that the coastal habitat remains intact by minimizing the likelihood of development on this sensitive and dynamic habitat. The boundary protected under CBRA was updated in 2006 to no longer include privately-owned outparcels located within the park. None of the beach is considered critically eroding by DEP's Bureau of Beaches and Coastal Systems (*Critically Eroded Beaches in Florida* 2010). As identified in the Resource Management Program, dune restoration may be needed after tropical storms, and dunes should be assessed after each storm to determine the need.

In 2006, over 450,000 sea oats and other dune species were planted along the foredune area to restore the dunes that were eroded from tropical storm damage in 2004 and 2005. A follow up planting of 30,000 sea oats was conducted in 2010. Some of the plantings have accelerated foredune growth, thus protecting larger more stable back dunes. Other areas were eroded from high surf. Survival of sea oats plantings after six months was 90 percent in areas that did not erode.

The Trustees have granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). Management of Grayton Beach State Park includes certain management activities within the buffer zone of sovereign submerged land along the entire beach, beginning at the mean high water or ordinary high water line, or from the edge of emergent vegetation and extending waterward for 400 feet. This area comprises the marine unconsolidated substrates of the park. The submerged resources within the buffer zone significantly increase the species diversity within the park and offers additional recreational opportunities for park visitors. Visitors are able to access this community either from the beach or from a boat. Management actions occurring within the buffer zone include patrolling for boats and watercraft too close to the park's beaches, removal of trash, litter, and other debris, public safety activities, and resource inventories and monitoring.

Extension of the park's boundary into sovereign submerged land, 150 feet beyond the Gulf of Mexico shoreline is needed to manage and protect the park's coastal communities, including the listed species that occur there (including but not limited to rare plants, sea turtles, shorebirds and beach mice). The park also needs the same boundary extension into sovereign submerged bottom to manage the three coastal dunes lakes on the park. These lakes are considered by FNAI to be globally rare and imperiled. Walton County is permitted to artificially open the lakes to the Gulf at a set lake level. The artificial openings encourage vegetation to establish lower on the shoreline and the lake to become more saline over time shifting the lake to a more estuarine character. The park should work with the county and DEP Beaches and Coastal Systems to reduce the number of artificial openings and allow the coastal dune lakes to open naturally.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, the DRP works with the local mosquito control district to achieve consensus. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. The DRP does not authorize new physical alterations of marshes through ditching or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation.

The park is sampled prior to any mosquito control efforts. Surveillance at the park is completed by using a New Jersey trap, sentinel chicks, and dip netting for larval mosquitoes. Once mosquitoes are detected, surveillance efforts continue in order to determine the extent of this issue. Larval treatment is limited to the temporary ponds by the cabin area in the western portion of the park. All larvicide is applied by ground

(truck spray). Adult treatment is limited to maintenance areas, staff residences, the campground, and cabin areas. The maintenance and staff residences are treated whenever route 9 is treated and the campground and cabin areas are sprayed at the park manager's request. Adulticides are applied by ground (truck spray) and do not occur during butterfly migration periods.

Sea Level Rise

Potential sea level rise is now under study and will be addressed by Florida's residents and governments in the future. The DRP will stay current on existing research and predictive models, in coordination with other DEP programs and federal, state and local agencies. The DRP will continue to observe and document the changes that occur to the park's shorelines, natural features, imperiled species populations and cultural resources. This ongoing data collection and analysis will inform the Division's adaptive management response to future conditions, including the effects of sea level rise, as they develop.

Cultural Resource Management

Cultural resources are individually unique and collectively very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. The DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in Grayton Beach State Park.

Goal: Protect, preserve and maintain the cultural resources of the park.

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places and collections care must be submitted to the DHR for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to the DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that the DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of the DHR.

Objective: Assess and evaluate eleven of eleven recorded cultural resources in the park.

The park will assess all of the known sites within the park every other year. The site condition will be evaluated and any threats examined. The park will set up and use photo points at each site to evaluate changes of the site from previous assessment periods. Management measures will be prioritized after assessments to determine management needs for each site. Sites located in the dunes faced with erosion and the potential for overlap in exposed artifacts and human recreation should be monitored more frequently. Additionally, several sites will need to be accurately relocated, evaluated and assessed (see below). Once sites 8WL00047 and 8WL00024 are evaluated, and if it is determined that they are the same site, there will only be ten sites to assess.

Objective: Compile reliable documentation for all recorded historic and archaeological resources.

The park will update the FMSF as needed. At least two of the sites, the Grayton Trail (8WL00457) and the Homestead site (8WL0083) should be found, described and located with GPS. This updated information should be sent to the FMSF. Further research is needed for the Grayton Trail (8WL00457) as the exact location is unknown. The park should work with the DHR on locating the trail. A complete predictive model for high, medium and low probability of locating archaeological sites within the park should be conducted. A Phase I survey should be conducted on priority sites at the park as identified by the predictive model so they can be evaluated by the State Historic Preservation Officer (SHPO) for National Register eligibility. Oral interviews should be conducted of those who discovered sites at the park, including Van Ness Butler, Jr. and Malcolm Patterson, and those who have worked at the park for many years, including Dale Shingler, Ray King and Dan Stiller. These individuals may be able to give a more recent history of the role of the park service at the park.

Objective: Bring eleven of eleven recorded cultural resources into good condition.

Since all of the located sites (seven sites) are already in good condition, the park should monitor each site annually to determine if maintenance or management measures are needed. The remaining sites should be located and added to the monitoring and management program. Photo points will be set up at each site and taken every other year for monitoring purposes. If management measures are needed the park should implement those measures to preserve the sites. No preservation projects are needed at the park presently, but the park may need to install post and rope to prevent visitor disturbance or install native vegetation in dune areas to stabilize erosion from tropical storms as necessary. Once sites 8WL00047 and 8WL00024 are evaluated, and if it is determined that they are the same site, there will only be ten sites to keep in good condition.

Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is located in the Implementation Component of this management plan.

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan. Grayton Beach State Park was subject to a land management review on August 19, 2010 (see Addendum 9). The review team made the following determinations:

1. The land is being managed for the purpose for which it was acquired.
2. The actual management practices, including public access, complied with the management plan for this site.

LAND USE COMPONENT

INTRODUCTION

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Division of Recreation and Parks (DRP). These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan to guide the location and extent of future park development. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management, and through public workshops, and user groups. With this approach, the DRP's objective is to provide quality development for resource-based recreation with a high level of sensitivity to the natural and cultural resources at each park throughout the state.

This component of the unit plan includes a brief inventory of the external conditions and the recreational potential of the unit. Existing uses, facilities, special conditions on use, and specific areas within the park that will be given special protection are identified. The land use component then summarizes the current conceptual land use plan for the park, identifying the existing or proposed activities suited to the resource base of the park. Any new facilities needed to support the proposed activities are described and located in general terms.

EXTERNAL CONDITIONS

An assessment of the conditions that exist beyond the boundaries of the unit can identify any special development problems or opportunities that exist because of the unit's unique setting or environment. This also provides an opportunity to deal systematically with various planning issues, such as location, regional demographics, adjacent land uses and park interaction with other facilities.

Grayton Beach State Park is one of ten barrier island state parks located between Mexico Beach and Pensacola, an area known as the "Emerald Coast." The Emerald Coast is one of the most popular tourist destinations in Florida (Visit Florida! 2010). Sweeping beaches, clear gulf water and moderate climate are characteristic of the region. It is estimated that nearly 8.1 million tourists visit the area every year, with peak visitation occurring during the summer months of June, July and August (Visit Florida! 2010). At this time of the year, total population climbs to nearly four times the permanent resident population (Visit Florida! 2010; U.S. Census 2010).

In 2009, approximately 80.9 million tourists traveled to or within Florida. One in ten travelers, approximately 8.1 million people, visited the northwest region of the state, which includes the Emerald Coast. Of these individuals, 90 percent traveled for leisure, and 60 percent of leisure travelers visited over a weekend. An overwhelming majority (93 percent) traveled by non-air transport (such as by car, train or RV), and more than three-fourths paid for overnight accommodations. Forty-four percent identified visiting the beach or waterfront as their top vacation activity. Nearly half visited in the summer months, between June and August, with a median length of stay of four nights. Although the average household income for visitors to the region was over \$81,000, one-third came from households with income of \$50,000 or less (Visit Florida! 2010).

The population of Walton County grew slowly in the mid-twentieth century, averaging four percent growth per decade from 1940 to 1970 (UF 2010). In the 1970s, population growth jumped up steeply to more than 30 percent (UF 2010). Throughout the eighties, nineties and 2000s, Walton County maintained an average rate of growth of 36 percent (BEBR 2010, U.S. Census Bureau 2010). Although sustained development occurred along the coastal areas of Walton County, many natural areas remain. This is due in part to the amount of protected land, which includes three state parks, two preserves and a state forest, but may also be attributed to the pattern of growth that took place within the county. Many communities implemented smart growth policies, particularly New Urbanism, which promotes walkability and preservation of natural areas. The most notable of these communities is Seaside, which is located approximately one-half mile east of the park boundary. The most densely developed areas of Walton County occur along the gulf, near the Okaloosa and Bay County boundaries.

Over the last decade, the region suffered a number of setbacks that have affected the park. Active hurricane seasons in 2004 and 2005 changed coastal habitat, damaged infrastructure and disrupted park operations. The Deepwater Horizon oil spill in 2010 caused ecological upset within the region, as well as negative impacts on tourism. Perceptions about the condition of coastal parks and other resultant factors may have negatively affected park attendance. In addition, a depressed economic climate from 2008 through the end of the decade led to slowed development, tourism and population growth in the area.

Several resource-based recreation opportunities exist in the surrounding area. Henderson Beach, Topsail Hill Preserve, Deer Lake, and Camp Helen State Parks are located along the gulf coast beaches within 15 miles of the park boundary. While Deer Lake and Camp Helen are day use parks, Henderson Beach and Topsail Hill Preserve State Parks offer overnight accommodations. Henderson Beach offers full-facility camping, and Topsail Hill Preserve offers full-facility camping and

cabins. All of the parks offer beach activities, fishing, wildlife viewing and nature trails.

Point Washington State Forest and Wildlife Management Area (WMA) are located immediately adjacent to the park on the north side. They offer unpaved trails for hiking and biking, as well as wildlife viewing opportunities. Choctawhatchee River Wildlife Management Area is located within 10 miles of the park. It provides recreational opportunities for primitive camping, bank and river fishing, paddling, hiking, and wildlife viewing. Lafayette Creek Wildlife Management Area is located within 15 miles of the park. It provides recreation opportunities for fishing, hiking and wildlife viewing. Pine Log State Forest and Wildlife Management Area, located approximately 15 miles east-northeast of the park, offer full-facility and group camping, wildlife viewing, picnicking, unpaved hiking, biking and equestrian trails, and freshwater activities including swimming, fishing and boat launching. Pine Log State Forest also contains a segment of the Florida National Scenic Trail. Hunting in accordance with the regulations established by the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Forest Service (FFS) is permitted within many of the State's wildlife management areas.

The park contains a section of the Timpoochee Trail, a 19-mile paved shared-use trail (formerly known as the 30A Walton County bike path) that extends from Dune Allen Beach to Rosemary Beach. The trail provides connections to Deer Lake and Topsail Hill Preserve State Parks and goes through the towns of Santa Rosa Beach, Blue Mountain Beach, Grayton Beach, WaterColor, Seaside, Seagrove and Seacrest. The paved trail is a popular amenity for pedestrians and bicyclists because it provides a safe route to many destinations along Scenic Highway 30A.

The park is the junction point for segments two and three of the Florida Circumnavigational Saltwater Paddling Trail. Users of the paddling trail can access the park via the beachfront and an inlet to Western Lake. The park's campground is also accessible to canoes and kayaks from the shore of Western Lake.

The park is located 10 miles southeast of Eglin Air Force Base. The closest area of the base is sometimes used for training activities that have little to no impact on park use.

Existing Use of Adjacent Lands

The town of Grayton Beach is located south of County Road 30A, between the eastern and western park units. The dominant future land use (FLU) designation in Grayton Beach is "Residential Preservation" (RP), with a few "Neighborhood Infill" lots interspersed. Development generally consists of single-family homes and rental units, commercial properties including retail and restaurants; and several realty

offices and other tourism related businesses. The town is developed to its maximum spatial extent; however, the density and intensity of development may increase.

A commercial park is located on County Road 283, adjacent to the park's northern boundary. Its FLU designation is "Village Mixed Use" (VMU). Approximately half of the lots within the commercial park have been developed. Additional development is expected to occur within this area.

WaterColor is located on the east side of the park and contains the eastern arm of Western Lake. This development was constructed in the New Urbanist style as an adjoining community to Seaside. The development is within a court-ordered overlay district that allows for three categories of mixed-use development, which can include residential units of 8 to 12 dwelling units (DU) per acre, golf courses, neighborhood commercial, community facilities and neighborhood scale public utilities, religious institutions, employment centers, lodging accommodations, and agriculture/silviculture. Although these uses are permitted, the judgment contains provisions that limit development rights in order to protect surrounding natural resources, such as dune lakes, wetlands and water quality (Consent Amended Final Judgment, Topsail and Deer Lake, Case No. 94-923-CA).

Many vacant lots exist within the adjacent planned communities of WaterColor, Seagrove, Preserve at Grayton and Lakeside at Blue Mountain Beach. Continued development of these parcels is anticipated.

The Gulf Trace subdivision is located on the gulf as an outparcel in the park's western unit. It consists of approximately 80 upscale single-family homes. Residents access the subdivision via Forest Dunes Boulevard off County Road 30A. Forest Dunes Boulevard also serves a park residence and Alligator Cove, a residential street with three upscale residences.

Planned Use of Adjacent Lands

The park is part of a conservation corridor that includes Point Washington State Forest/WMA, Deer Lake State Park, Topsail Hill Preserve State Park and Coffeen Nature Preserve. The northern park boundary borders the state forest; therefore, no development is anticipated to occur in this area. However, development is likely to take place in the adjacent areas to the east, west and southern parts of the park. The adjacent Grayton Beach and Seaside/WaterColor communities have nearly reached their maximum build-out potential spatially, yet development could occur as infill, and development density and intensity could also increase. Development in the surrounding areas could also lead to increased vehicular traffic on the roadways that divide the park property. Additional low- and medium-density commercial and office uses are also anticipated in the area surrounding the park. Although the surrounding area is expected to grow over time, the pattern of development over

the last ten years, as well as the popularity of the Emerald Coast as a tourist destination, suggests that the pace of growth is likely to fluctuate with the overall economic climate.

PROPERTY ANALYSIS

Effective planning requires a thorough understanding of the unit's natural and cultural resources. This section describes the resource characteristics and existing uses of the property. The unit's recreation resource elements are examined to identify the opportunities and constraints they present for recreational development. Past and present uses are assessed for their effects on the property, compatibility with the site, and relation to the unit's classification.

Recreation Resource Elements

This section assesses the unit's recreation resource elements, those physical qualities that, either singly or in certain combinations, support the various resource-based recreation activities. Breaking down the property into such elements provides a means for measuring the property's capability to support individual recreation activities. This process also analyzes the existing spatial factors that either favor or limit the provision of each activity.

Land Area

County Road 30A divides the park property into northern and southern portions. Each portion of the park features different natural communities and provides opportunities for various resource-based recreational activities.

Four upland communities, mesic flatwoods, sandhill, scrub and scrubby flatwoods, are represented in the northern portion of the park. They provide an ideal setting for the park's shared-use recreational trails and provide opportunities for wildlife observation and nature study. Hiking and biking are popular activities on the trails north of County Road 30A. The park's trail network provides connections to the hiking trails in Point Washington State Forest, the paved Timpoochee Trail that runs parallel to County Road 30A, and the Walton County paved trails that run along County Road 283 and 395.

Four upland communities, beach dune, scrub, scrubby flatwoods and mesic flatwoods, are represented in the southern portion of the park. The upland area in the southern portion of the park provides the setting for the family campground, cabins, beach areas and picnicking facilities.

Water Area

The park contains portions of three coastal dune lakes. In addition to being defining features of the park, the lakes provide important visual resources for park visitors and significant habitat for area wildlife. These freshwater communities provide opportunities for paddling, fishing, boating, wildlife observation and nature study.

However, due to the sensitivity of these rare resources, widespread or high-intensity recreational access is not recommended.

Western Lake provides the most potential for recreation. Western Lake features a large open area that is easily accessible from several existing use areas. Several family-campsites are adjacent to the lakeshore, allowing campers to launch canoes and kayaks from the campground. A boat ramp on Western Lake allows visitors to launch canoes, kayaks and larger boats. Shoreline and small craft fishing are also popular on Western Lake.

Due to their sensitivity, size and limited accessibility, the smaller coastal dune lakes, Alligator and Little Redfish Lake, are not suitable for widespread recreational use. However, both lakes provide exceptional natural scenery and provide ideal opportunities for wildlife observation and nature study. Limited access to the shores of these lakes, such as is provided at a modest scenic overlook or trailside bench, would allow visitors to enjoy these natural areas with minimal impact.

Shoreline

The park features approximately two miles of gulf coast beaches. Beaches within the park are visually spectacular, boasting fine-grain white sand and tall sweeping dunes. Two beach areas are located in the park. The beach access in the eastern unit serves day use visitors and family campers, while the beach access in the western unit serves visitors to the park's cabins. Popular uses of the park's beachfront are swimming, shoreline fishing, ocean kayaking and other saltwater beach activities.

Natural Scenery

The park's unique natural resources and expansive undeveloped natural areas, provide ample opportunities for scenic viewing. Adjacent development is visible in a few areas, including the cabin area and beaches, but most of the park provides sweeping views with minimal visual intrusion. The forested upland areas north of 30A and the southern dune fields provide a variety of natural scenery for visitors to enjoy. Visitor access and recreational facilities should be provided in both areas so that visitors can experience the full spectrum of natural scenery that the park provides. Planned viewing opportunities, such as overlook points or framed views, should be established in order to expose visitors to scenic vistas while controlling the extent of visitor impacts. New trails and facilities should be planned to include strategic viewing opportunities of unique features, such as coastal dune lakes and rare plant communities. Negative visual elements, such as adjacent development or incompatible land uses, should be buffered using vegetation and other methods to protect and frame scenic views.

Significant Habitat

The park's natural communities provide significant habitat for many rare and endemic plant and wildlife species. The beach dune and scrub communities are

critical habitat for the imperiled Choctawhatchee beach mouse. Gopher tortoise and eastern diamondback rattlesnake inhabit the scrub and sandhill communities. Loggerhead and green marine turtles nest on the beaches. Many migratory and shorebird species use the park for rest, nesting and foraging. The coastal dune lakes provide habitat and a source of freshwater in the park's saltwater coastal community. The park's seepage slopes and wet prairies are known for their high diversity of carnivorous plant species and other herbaceous bog species. The park's wetlands provide habitat and breeding area for amphibians and many other organisms. Public access and recreational activities should be tempered with the importance of these areas to native wildlife.

Natural Features

The beach dunes, coastal scrub community and coastal dune lakes are significant natural features of the park. The park encompasses a large area of coastal edge where upland communities, such as scrubby flatwoods and sandhill, transition into lowland communities, such as scrub and beach dune. Once characteristic of the gulf coast region, much of the beach dune and coastal scrub has been lost and/or degraded by coastal development. Few large swaths of these related communities, as is found at the park, remain in the region today. Providing recreational uses and interpretative elements through the range of communities will allow visitors to learn how these ecosystems relate to one another.

Coastal dune lakes are freshwater lakes that periodically open to the gulf. These communities are considered globally rare and critically imperiled in Florida. Statewide, coastal dune lakes are only found in the northwest panhandle coastal region. Portions of three coastal dune lakes, Western Lake, Alligator Lake and Little Redfish Lake, occur within the park boundary. Interpreting these communities and allowing visitors to experience the striking visual quality of these features provides a truly unique experience that is not reproduced elsewhere in Florida. Access to the coastal dune lakes must be balanced with protection in order to preserve these resources for the future.

Archaeological and Historical Features

There are seven cultural resource sites in the park that date from the aboriginal and prehistoric period to the American 19th Century. Although none of the features are considered culturally significant, they may still inspire the subject matter for interpretive programming and elements. Interpretation of the time period and groups that may have occupied the region could help to educate visitors about how early inhabitants used the park's resources.

Assessment of Use

All legal boundaries, significant natural features, structures, facilities, roads and trails existing in the unit are delineated on the base map (see Base Map). Specific uses made of the unit are briefly described in the following sections.

Past Uses

Several other uses took place on the park property before its acquisition as a state park. Recreational uses, such as fishing and beach activities, are known to have occurred on the property. Evidence of silviculture and agricultural activities has also been found in the sandhill and scrubby flatwoods communities. “Cat-faced” pine trees, remnants from past turpentine collecting activity, are still present in the park’s upland forests. Portions of the western park unit were prepared for subdivision development. Roads, utility features and other infrastructure still remain in this area. Future projects at the park will include removal of the remaining unused utility facilities and restoration of the natural area.

Future Land Use and Zoning

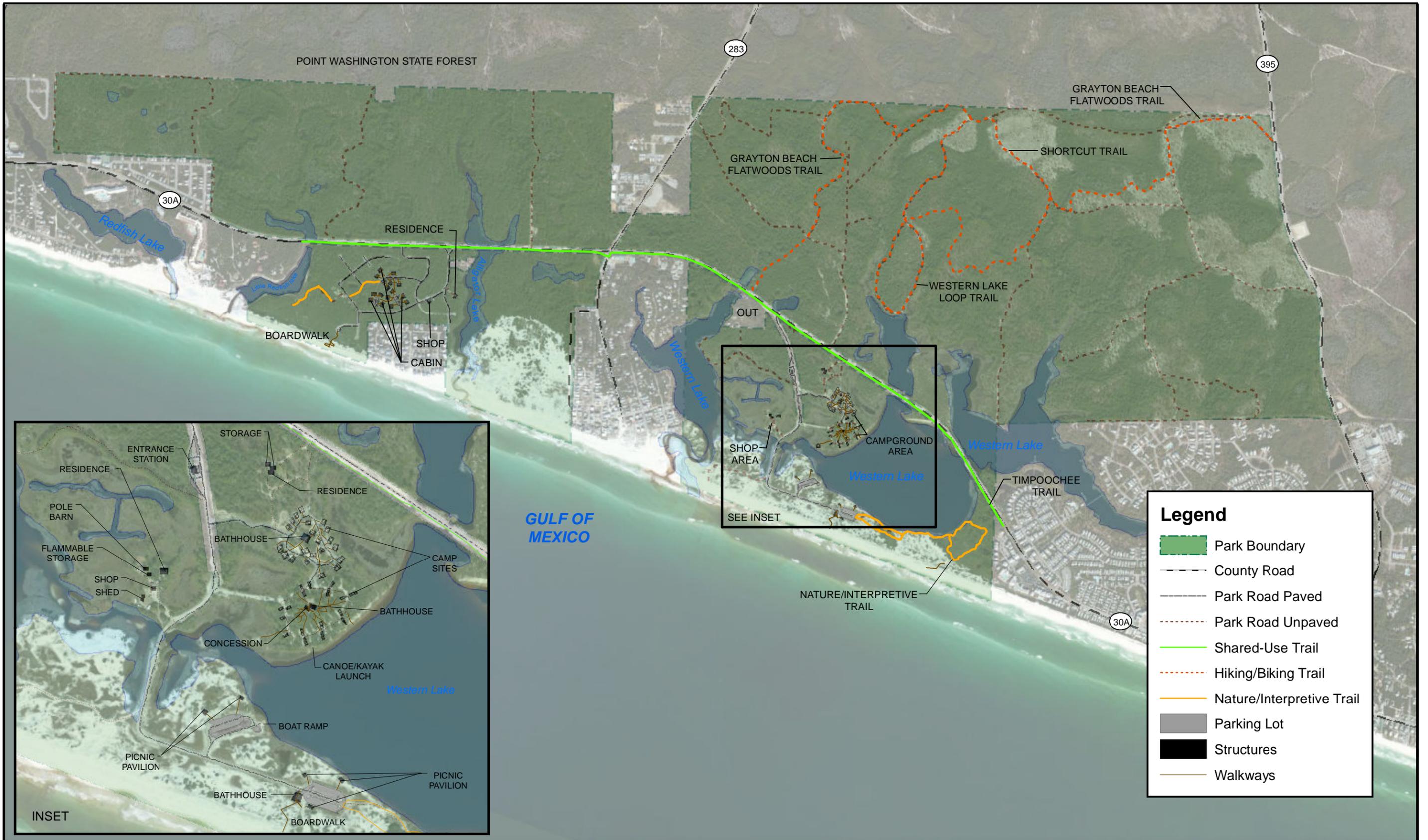
The DRP works with local governments to establish designations that provide both consistency between comprehensive plans and zoning codes and permit typical state park uses and facilities necessary for the provision of resource-based recreation opportunities.

According to the Walton County Land Development Code (LDC), the existing land use (zoning) of the park property is “Park and Recreation” (P&R) (Walton County 2011). This designation applies to land that is municipally-owned and provides for civic and public uses, including parks and passive recreation activities (Walton County 2011). Setback and buffer restrictions applicable to development within this existing land use designation are outlined in the LDC. The park is designated as “Conservation” on the county Future Land Use Map (FLUM) (Walton County 2010). This designation allows for state parks with zero development density except for recreation and conservation uses as outlined in the management plan (Walton County 2010). No conflicts between proposed park development and the existing or future land use designations are expected to occur.

The Coastal Construction Control Line (CCCL) passes through the park approximately 500 feet landward of the coast. Development seaward of the line is limited by the comprehensive plan; however, public infrastructure providing shoreline access, natural resource conservation or protection, as well as some types of park facility development are permitted (Walton County 2011). Proposed development at or seaward of the line should involve coordination with county planning officials.

Current Recreational Use and Visitor Programs

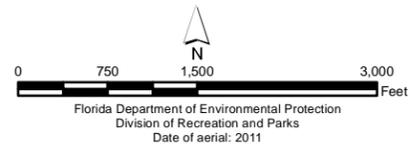
The park provides a range of day use and overnight recreational opportunities. Currently, day use activities are offered primarily in the eastern unit. Trails north of Scenic 30A provide opportunities for hiking, biking, wildlife observation and nature study. The main beach use area provides opportunities for picnicking,



Legend

- Park Boundary
- County Road
- Park Road Paved
- Park Road Unpaved
- Shared-Use Trail
- Hiking/Biking Trail
- Nature/Interpretive Trail
- Parking Lot
- Structures
- Walkways

GRAYTON BEACH STATE PARK



BASE MAP

boating, canoeing and kayaking, fishing, swimming and other beach activities. Visitors can stay overnight in the park's cabins or campground. The campground offers two degrees of campsite facility. The older campground loop features smaller sites that are buffered with vegetation and provide electric and water utilities. The new campground loop features larger sites with hook-ups for electric, water and sewer.

The park offers several concessions for the benefit of park visitors. Firewood and ice are sold at the ranger station. A laundry concession is also available for family campers. Local bike shops may deliver rental bikes to park patrons.

According to DRP data, 115,464 people visited the park in the last fiscal year (FY), generating approximately \$4.9 million for the local economy. The DRP estimates that visitors from FY 2010/2011 contributed an additional \$345,703 in sales tax revenue and approximately 114 new jobs to the local economy (FDEP DRP, 2011).

Other Uses

Choctawhatchee Electric Cooperative (CHELCO) maintains overhead power lines in the south portion of the eastern unit. The utility lines run alongside the park road and out to the main beach use area. Approximately 1,200 feet run along the beach dune ridge, on the south side of the park drive. The DRP should coordinate with CHELCO to convert overhead lines within the park to underground facilities, if possible.

Protected Zones

A protected zone is an area of high sensitivity or outstanding character from which most types of development are excluded as a protective measure. Generally, facilities requiring extensive land alteration or resulting in intensive resource use, such as parking lots, camping areas, shops or maintenance areas, are not permitted in protected zones. Facilities with minimal resource impacts, such as trails, interpretive signs and boardwalks are generally allowed. All decisions involving the use of protected zones are made on a case-by-case basis after careful site planning and analysis.

At Grayton Beach State Park, the basin marsh, basin swamp, beach dune, coastal dune lakes, depression marsh, dome swamp, seepage slope, wet flatwoods and wet prairie communities have been designated as protected zones as delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreation Facilities

Recreational facilities occur in five primary areas: the campground, boat launch area, main beach use area, cabin area and the area north of County Road 30A. The

campground features family campsites and a laundry concession. The boating access area features a boat ramp, canoe and kayak launch, picnic pavilions and boardwalks. The main beach use area includes picnic pavilions, a nature trail, boardwalks and dune crossovers. In the western unit, the cabin area features duplex cabins, interpretive trail and dune crossover. In the area north of County Road 30A, the park features multi-use trails and interpretive elements.

Support Facilities

Support facilities occur in seven primary areas: the park entrance, campground, shop area, boating access area, main beach use area, cabin area and the area north of County Road 30A. The entrance area includes a ranger station, paved parking and the former ranger station. The family camping area features bathhouses and a dump station. Just north of the campground is a residence, pole barn and equipment shelter. The shop/residence area includes a residence, pole barns, equipment shelter and flammable storage shed. The boat launch area includes paved parking. The main beach use area features a bathhouse and paved parking. The western unit includes paved parking at the cabin beach area and a shop area with a residence, shop building and storage shed. The park also features a paved park drive and service roads. An inventory of existing recreational and support facilities is included below.

Entrance Area

Ranger station
 Paved parking (6 spaces)
 Old ranger station (vacant)

Shop/Residence Area

Residence
 Pole barns (2)
 Equipment shelter
 Flammable storage shed

Boating Access Area

Boat ramp
 Canoe and kayak launch
 Picnic pavilions (2)
 Boardwalk
 Paved parking area (33 spaces)

Main Beach Use Area

Dune crossover/boardwalks (2)
 Picnic pavilions (3)
 Interpretive trail (0.75 miles)
 Bathhouse
 Paved parking (80 spaces)

Eastern Family Camping Area

Family campsites (59)
 Bathhouses (2)
 Laundry concession
 Dump station
 Residence
 Pole barn
 Equipment shelter

Western Cabin Area

Duplex cabins (15)
 Hiking trail (422 feet)
 Paved parking (81 spaces)

Cabin Beach Area

Dune crossover

North of County Road 30A

Shared-use trails (4.0 miles)

Western Shop Compound

Residence

Shop building

Storage shed

Parkwide

Park drive (8.5 miles)

Service roads (47.5 miles)

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for this park. As new information is provided regarding the environment of the park, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions (see Conceptual Land Use Plan). A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

During the development of the management plan, the DRP assessed potential impacts of proposed uses or development on the park resources and applied that analysis to decisions on the future physical plan of the park, as well as the scale and character of proposed development. Potential impacts are more thoroughly identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are more thoroughly investigated. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the projects. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses**Public Access and Recreational Opportunities**

Goal: Provide public access and recreational opportunities in the park.

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be

continued. New and improved activities and programs are also recommended and discussed below.

Objective: Maintain the park's current recreational carrying capacity of 2,028 users per day.

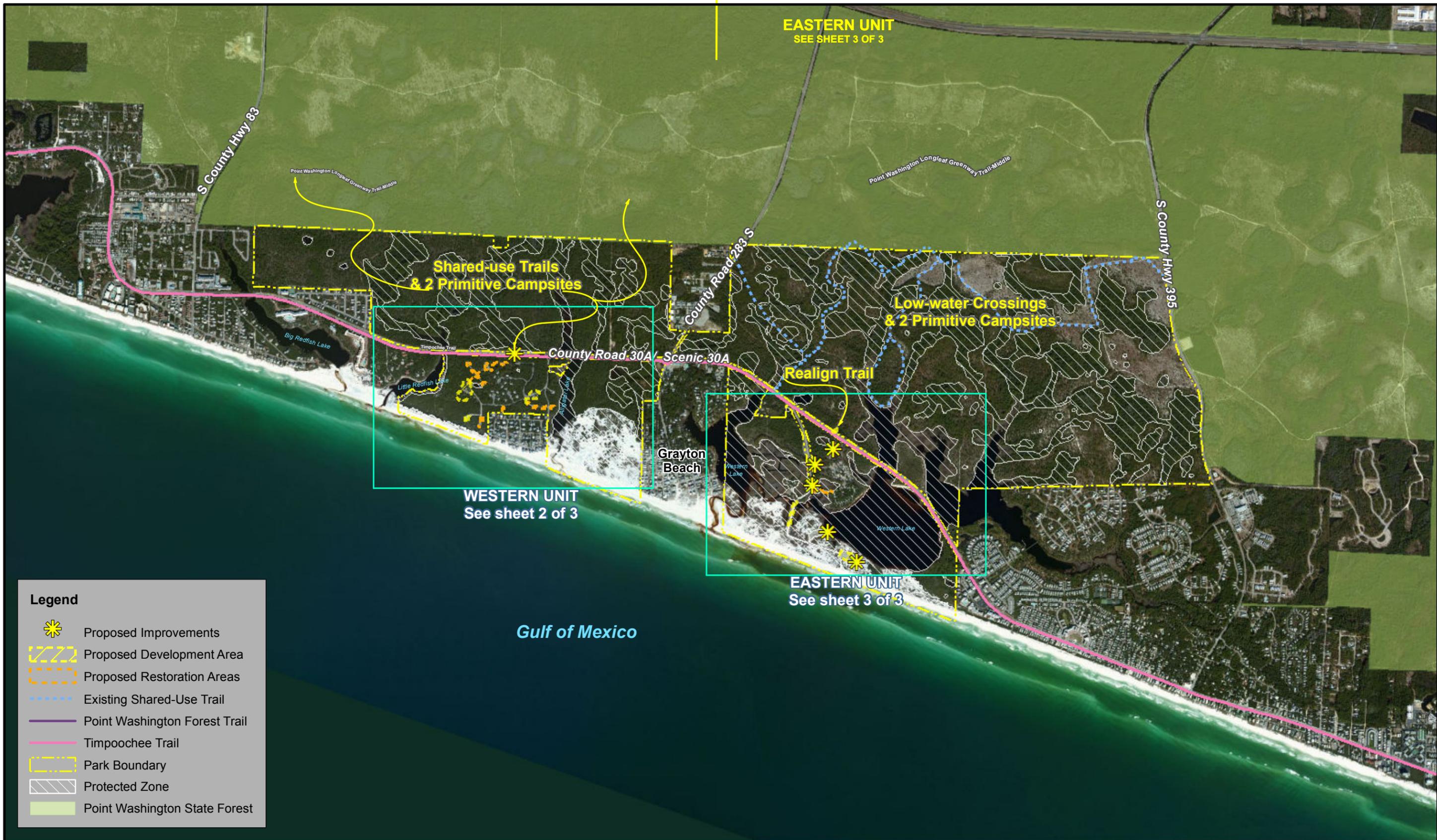
The park will continue to provide the current range of recreational day use and overnight opportunities. Hiking, biking, wildlife observation, nature study, picnicking, boating, canoeing and kayaking, fishing, swimming and other beach activities are popular day use activities for park patrons. The cabins and campground provide visitors with affordable resource-based overnight accommodations.

Objective: Expand the park's recreational carrying capacity by 288 users per day.

New shared-use trails and a trailhead will expand and enhance recreational opportunities for hiking and bicycling. A tent-only campground in the western unit and primitive campsites north of County Road 30A will increase recreational camping opportunities. The park will also consider opportunities for optimizing the existing campground by adding campsites.

Objective: Continue to provide the current repertoire of 22 interpretive, educational and recreational programs on a regular basis.

The park should continue to provide the current range of interpretive, educational and recreational programs for the benefit and enjoyment of park visitors. Programs are offered in a wide range of formats, including in-personal presentations and guided walking tours, on an array of topics that include regional history and ecology, park issues, and wildlife demonstrations. *Pirates, Beaches and Democracy* educates visitors about how pirates used the Emerald Coast. *The True Story of Smokey Bear* educates visitors about wildfire prevention through Smokey Bear and other historic campaigns. Florida history and culture are covered in several programs, including *Florida Folklife Music and Poetry*, *Florida Photography Exhibit* and *Folklore and Stories of the Emerald Coast*. *Questions and Answers with the Park Ranger* and *Become a Junior Ranger* allow visitors to interact with park rangers and learn about the roles and responsibilities of park staff. Wildlife programs are offered on sea turtles, snakes and Choctawhatchee beach mice. *Attracting Wildlife and Birds to Your Yard* teaches visitors about gardening for local bird species. Guided walking tours, including *Beach Dune Ecosystem Nature Walk* and *A Walk Through Grayton Beach State Park Forest*, are offered on the park's trails. Recreational programs currently offered at the park include *Cast Net Fishing*, *Crabbing*, *Yolo Boarding*, *Surf Fishing* and *Sand Castle Building*. Several programs, including *Introduction to Birding Basics*, *Hiking and Biking Trail Safety*, *Beach and Surf Safety* and *Guided Canoe Tour of Western Lake*, combine interpretive and recreational themes.



EASTERN UNIT
SEE SHEET 3 OF 3

**Shared-use Trails
& 2 Primitive Campsites**

**Low-water Crossings
& 2 Primitive Campsites**

Realign Trail

WESTERN UNIT
See sheet 2 of 3

EASTERN UNIT
See sheet 3 of 3

Legend

-  Proposed Improvements
-  Proposed Development Area
-  Proposed Restoration Areas
-  Existing Shared-Use Trail
-  Point Washington Forest Trail
-  Timpochee Trail
-  Park Boundary
-  Protected Zone
-  Point Washington State Forest

GRAYTON BEACH STATE PARK



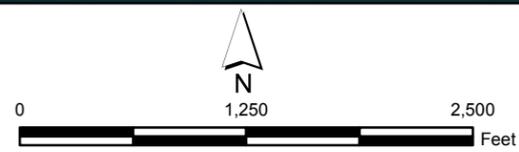
CONCEPTUAL LAND USE PLAN
SHEET 1 OF 3

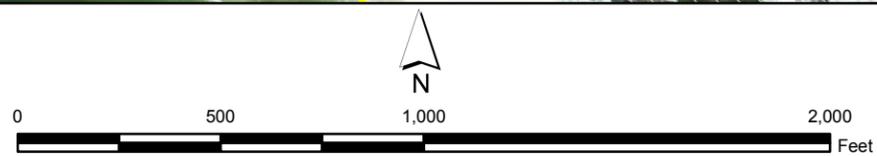


Legend

-  Proposed Improvements
-  Proposed Development Area
-  Proposed Restoration Area
-  Timpochee Trail
-  Park Boundary
-  Protected Zone

WESTERN UNIT
See sheet 2 of 3





Several self-guided interpretive tours, exhibits and publications are also available for park visitors. Signage throughout the park educates visitors about natural resources and protection techniques and warns about potential hazards, such as rip currents and alligators.

Objective: Develop six new interpretive, educational and recreational programs.

Interpretive, educational and recreational programs at the park should be expanded. Development of six additional programs is recommended in the tenure of this plan. A program that educates visitors about exotic and invasive species is recommended. Additional themes for educational programming could also include Florida state park history and the Civilian Conservation Corps. Recreational programs on campfire cooking, surfing or beginner kayaking are also recommended. The park will coordinate with FWC and USFWS to offer educational programs to park visitor and area residents regarding the park's resources.

Proposed Facilities

Capital Facilities and Infrastructure

Goal: Develop and maintain the capital facilities and infrastructure necessary to implement the recommendations of the management plan.

The proposed development concept for the park is two-fold. It includes improvements to existing use areas that will enhance the visitor experience and increase access to recreational opportunities. In addition, new facilities are proposed that will add recreational activities that are compatible with those currently offered at the park.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities that visitors enjoy while in the park, to improve the protection of park resources, and to streamline the efficiency of park operations. As recommended by the FWC Marine Turtle Lighting guidelines, all exterior lighting for current and proposed facilities will utilize "turtle-friendly" lighting. The following is a summary of improved or renovated and/or new facilities needed to implement the conceptual land use plan for Grayton Beach State Park:

Objective: Maintain all public and support facilities in the park.

All capital facilities, trails and roads within the park will be kept in proper condition through the daily or regular work of park staff and/or contracted help.

Objective: Improve/repair nine existing facilities and 400 feet of road.

Major repair projects for park facilities may be accomplished within the ten-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by the DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

Entrance Area: Since the last update to the unit management plan, the park has undergone several improvements affecting the park entrance. A new ranger station was constructed closer to US Highway 98 and a new campground entrance road was completed. The former ranger station structure remains in the center of the park drive, but the structure is degraded and unused. It is recommended that the old ranger station building be removed and the surrounding roadway repaired and/or reconfigured.

Eastern Family Camping Area: The park's campground was recently expanded to include a new entrance off the park drive and additional sites and bathhouses. This plan recommends that a camp store concession be added to further enhance the camping experience for park visitors. Some items, such as ice and firewood, are currently available through the ranger station. By adding a camp store to offer these and other items, the park could better satisfy the needs of visitors while freeing up space in the ranger station. A camp store concession could include a small concession building and appropriate parking area.

Shop Area: The park's shop area is located in a flood prone area that is adjacent to wetlands. Seasonal flooding of the area causes many of the shop buildings to become inundated, compromising the structures and their contents. Relocation of the shop buildings from this area is recommended. One pole barn should be relocated to the ranger residence north of the campground. The remaining structures should be relocated to the shop area in the western unit, southeast of the cabins. The park manager's residence is also located in the flood prone shop area. The structure is constructed on pilings and is thus safe from flooding. This residence should remain at the current location for its functional life. When the structure needs to be replaced or rebuilt, the residence should be relocated to a more appropriate location.

Parkwide: Just south of the shop area, the park drive crosses over Western Lake. The road features a small bridge, but much of the roadway has been filled, constricting water flow through Western Lake. According to a recent assessment by FDOT (2011), the Western Lake Bridge is not structurally deficient; however, it is in need of repair. This plan recommends that an engineering study be completed to assess the potential to replace or improve the bridge to recommended FDOT

structural ratings and restore normal hydrologic flow to Western Lake. The Western Lake Bridge project is discussed in further detail in under the “Hydrology” and “Hydrological Management” sections of the Resource Management Component.

Construction of up to five low-water crossings is proposed on unpaved service roads in the northern portion of the park. These improvements will allow park staff to easily access areas of the park for resource management activities. Low-water crossings are discussed in further detail in under the “Hydrological Management” section of the Resource Management Component.

Boating Access Area: In 2006, the DRP produced recommendations for expanding boating access in state parks. The recommendation for Grayton Beach State Park included the addition of a convenience dock near the existing boat ramp at Western Lake (FDEP DRP 2006). A convenience dock would provide space for mooring small boats and allow visitors to arrive at the park by boat. A small- to moderately-sized convenience dock, appropriately sized for conditions and users of Western Lake, is recommended. Because the level of Western Lake fluctuates naturally by as much as two feet, a floating dock facility may be preferred.

Main Beach Use Area: The parking area in the main beach use area is adequate for typical visitor needs but sometimes reaches capacity during peak use times, such as weekend holidays in the summer. Because attendance and visitor demand for beach day use facilities is expected to grow, reorganization of the parking area is recommended. The parking area should be reorganized within the existing footprint in order to move traffic more efficiently and potentially accommodate additional parking spaces and/or a mobile concession. By improving the parking area in this fashion, it may be possible to increase efficiency and capacity while limiting the need for additional paved surfaces.

Two additional picnic pavilions are also recommended for the main beach use area. The existing facilities are adequate for current visitor needs; however, additional facilities may be necessary in the future. Placement of additional pavilions will require coordination with FWC regarding potential impacts to dune habitat.

Western Cabin Area: Recommended improvements in the park’s cabin area include adding a laundry concession. The laundry facility in the campground is a popular amenity for visitors and raises revenue for the park. This plan recommends that a similar laundry concession be added to the park’s western unit to benefit cabin campers. Recommended facilities would include a small laundry building and associated parking area. The laundry concession should be located in the disturbed area just southwest of the cabin shop, over the footprint of a former subdivision roadbed that was constructed prior to state acquisition.

Cabin Beach Area: The beach access facilities in the western unit serve visitors to the park's cabins and their guests. While these facilities serve a limited number of park visitors, improvements are necessary to accommodate current visitor capacity and additional users of a proposed tent-only camping area. Beach access improvements include improving the paved area, adding designated parking spaces and adding a small restroom. The paved area should be resurfaced and reorganized to accommodate easy drop-off and turnaround maneuvers. Up to eight paved parking spaces and two universally-accessible parking spaces should be installed. Improvements should occur in the disturbed area and efforts should be made to minimize impacts to the surrounding coastal scrub. Due to the sensitivity of the surrounding community, a sewer connected restroom facility is recommended.

Objective: Construct 21 new facilities and four miles of trail.

Tent-Only Camping Area: A tent-only camping area is proposed for the south portion of the western unit, just west of the cabins. Where possible the proposed facilities should use the disturbed areas and former subdivision roadbeds that remain in the area. The tent-only camping area would feature up to 12 tent-only sites clustered around two culs-de-sac. Campsites would be set within the existing vegetation and trees, which would provide an effective buffer between sites. Each site would be unimproved, but provide room for two large family-sized tents, a picnic table, and fire ring. Potable water would be available at two or three central locations, and all 12 sites would be served by a modest bathhouse facility. Several small areas of stabilized parking spaces would be located a short walk from the campsites. Up to two sites would be designed to meet ADA accessibility guidelines. Consideration will be given to providing an area for hammock poles. Restoration of adjacent unused roadbeds, as described in the Resource Management Component, may be conducted in conjunction with this project.

North of County Road 30A:

Trailhead: Users of the shared-use trail network frequently park along the grassy shoulder of Scenic 30A, near the existing trail entrance. A trailhead is proposed on the north side of Scenic 30A to alleviate parking on the road shoulder and enhance the recreational experience for trail users. The trailhead would be located at the intersection of the county road and an existing service road. The trailhead would feature a stabilized parking area, honor box and interpretive signage. The existing trail entrance would be realigned to the proposed trailhead.

Pedestrian Crossings: Users of the Timpoochee paved trail have also been observed crossing Scenic 30A to access the entrance to the park's shared-use trails. To increase visitor safety, two pedestrian crossings are proposed on Scenic 30A that would allow trail users to safely travel between the Timpoochee Trail and the park's shared-use trails. One pedestrian crossing should be located at the proposed

trailhead as described in the preceding paragraph. The second pedestrian crossing should be located at the cabin area entrance road to provide a connection to the expanded shared-use trail network.

Shared-use Trails: Currently, the park’s shared-use trail network is confined to the northern portion of the eastern unit. This plan recommends expansion of the shared-use trail network into the western unit. The western unit can accommodate approximately four miles of shared-use trails. The expanded trails network would connect to more than 20 miles of existing trails, including those in Point Washington State Forest.

Primitive Campsites: Up to four designated primitive campsites are proposed in the area north of County Road 30A. Two primitive sites would occur in each unit, and the number of campsites will be reevaluated based on demand during the period covered by this plan. The primitive campsites should be located strategically along the existing and expanded trails system to accommodate multi-day hikes connecting various parks and public lands in the area and provide a level of privacy from day-hikers. At minimum, each primitive campsite should provide room for up to two tents and a fire ring. Additional campsite amenities could include a picnic table, rustic restroom facility and/or a simple shelter to provide protection from inclement weather.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 8) located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist the DRP in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

Entrance Area

Remove old ranger station (vacant)
Roadway improvements to Western
Lake Bridge

Main Beach Use Area

Reorganize parking area
Additional picnic shelters (2)

Shop/Residence Area

Remove and relocate shop buildings

Boating Access Area

Convenience dock

Eastern Family Camping Area

Camp store concession

Western Cabin Area

Laundry concession building with
paved parking

Tent-Only Camping Area

Tent-only sites (up to 12)
Paved parking
Bathhouse

Cabin Beach Area

Reorganize paved area
Paved parking (8 spaces)
ADA spaces (up to 2)
Restroom (small)

North of County Road 30A

Trailhead
Unpaved parking
Honor box
Interpretive signage
Shared-use trails (up to 4 miles)
Pedestrian crossings (2)
Primitive campsites (up to 4)
Low-water crossings (up to 5)

Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 7).

Table 7: Recreational Carrying Capacity

Activity/Facility	Existing Capacity*		Proposed Additional Capacity		Future Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Camping						
Standard	424	424			424	424
Tent-only			96	96	96	96
Cabins	180	180			180	180
Primitive			32	32	32	32
Boating						
Limited power	17	34			17	34
Small craft and paddling	45	90			45	90
Trails						
Interpretive	8	32			8	32
Shared-use	40	160	40	160	80	320
Beach Use/Picnicking	554	1,108			554	1,108
TOTALS	1,268	2,028	168	288	1,436	2,316

*Existing capacity has been revised from approved plan to better follow DRP carrying capacity guidelines.

The recreational carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 7.

Optimum Boundary

As additional needs are identified through park use, development, research, and as adjacent land uses change on private properties, modification of the unit's optimum boundary may occur for the enhancement of natural and cultural resources, recreational values and management efficiency.

Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property's identification on the optimum boundary map is not for use by any party or other government body to reduce or restrict the lawful right of private landowners. Identification on the map does not empower or require any government entity to impose additional or more restrictive environmental land use or zoning regulations. Identification is not to be used as the basis for permit denial or the imposition of permit conditions.

The optimum boundary map reflects lands identified for direct management by the DRP as part of the park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities.

Three parcels are identified in the optimum boundary, totaling approximately four acres. A county-owned property located on the north side of County Road 30A is identified in the optimum boundary. Currently, park staff use this property to access the northwestern corner of the park. Acquisition of this property would complete the boundary out to County Road 30A, and ensure continued access to this area of the park, which is necessary in order to carry out needed restoration activities. If acquired, development of limited recreational facilities, such as a trailhead, may be appropriate at this location in the future. The optimum boundary includes a two-acre outparcel at the park's northern boundary. Acquisition of this property would complete the park's boundary out to Point Washington State Forest, providing an uninterrupted natural corridor for wildlife and resource management activities. The optimum boundary also includes a one-half-acre parcel on the northwestern edge of Western Lake. This parcel is contiguous to the current park property and would enhance the park's resource management activities in that area.

In addition, this plan recommends that the park boundary (and leased area) be extended off the south side of the park to include an additional 150 feet from the existing surveyed boundary into the Gulf of Mexico. Extending the park boundary would give the DRP the authority to manage and protect the park's coastal communities, including the listed species that occur there (including but not limited to rare plants, sea turtles, shorebirds and beach mice), in accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, for the purposes of visitor safety and resource protection.

A parcel of approximately 0.84 acres is identified as surplus to the needs of the park. This parcel contains intact forest, but is isolated from larger areas of the park by County Road 283 S and adjacent development. The limited size of the parcel makes development of recreational facilities unlikely, and its discontinuous nature complicates resource management activities, such as prescribed burning. The parcel is adjacent to Point Washington State Forest and shares the same intact tree canopy.



Legend

- Park Boundary
- Optimum Boundary
- Potentially Surplus to DRP Management Needs

GULF OF MEXICO



IMPLEMENTATION COMPONENT

The resource management and land use components of this management plan provide a thorough inventory of the park's natural, cultural and recreational resources. They outline the park's management needs and problems, and recommend both short and long-term objectives and actions to meet those needs. The implementation component addresses the administrative goal for the park and reports on the Division of Recreation and Parks' (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

MANAGEMENT PROGRESS

Since the approval of the last management plan for Grayton Beach State Park in 2002, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and the DRP.

Park Administration and Operations

- A weekly cabin rental rate was implemented, and the reservation system was improved to include non-cabin-specific reservations.
- Developed a cabin maintenance program.
- Approximately 64,000 volunteer hours have been contributed to the park to assist with park maintenance, visitor services, administration, interpretation, protection and resource management activities.
- The park's Citizen Support Organization (CSO) provided funding for the purchase of a trail mower and a 4X4 Gator to facilitate resource management activities.
- The CSO also funded landscaping at the new ranger station.

Resource Management

Natural Resources

- Continued efforts to expand the prescribed fire program, including firebreak improvements and installation of six low-water crossings.
- Continued prescribed burn program, which burned approximately 1,067 total acres, an average of 118.5 acres per year.
- Continued habitat protection and monitoring efforts for Choctawhatchee beach mouse. Activities included trapping of predators, such as coyote, red fox and

- Continued research and practical methods to restore pitcher plant habitat, including completion of two segments of restored or reclaimed pitcher plant habitat.
- Began a large restoration project to improve health of seepage slope and wet prairie communities in September 2011.
- Continued shorebird surveys.
- Continued sea turtle nesting surveys.
- Continue exotic removal program, treating over 47 acres and removed 861 stems.
- Continued cooperation with Walton County, Choctawhatchee Basin Alliance and Florida Lakewatch regarding water quality monitoring and recording in coastal dune lakes.
- Continued maintenance of beach access boardwalks to minimize damage of dune system and associated wildlife.
- Continued natural communities restoration by removed and revegetating an old beach access road.
- Began a project to remove the fill road that served as the old entrance to the campground to allow for restored hydrological function in an area of wetlands.
- Established and implemented a gopher tortoise mapping program.
- Continued to compile an inventory of park biota.

Cultural Resources

- Continued efforts to maintain, protect and interpret the park's archaeological sites.
- Continued periodic monitoring of recorded sites.

Recreation and Visitor Services

- The park's CSO continued to provide a range of amenities for park visitors, including sales of firewood and ice, and a coin-operated laundry concession in the new campground.
- The CSO replaced the park's rental canoes.
- Continued expanding the park's multi-use trails, including one mile of trail in the western unit, four miles in the eastern unit, and multiple trail connections to the Point Washington State Forest.
- Interpretive signage was installed on the day-use nature trail and the multi-use trails in the eastern unit.

Park Facilities

- The family-camping area was expanded to include 22 additional sites, which include 50 amp electrical service, sewer hookups, and a bathhouse.

- A universally-accessible beach access boardwalk was completed in the day-use area.
- Connections to municipal sewer service were expanded to include the older campground restroom and dump station.
- A new ranger station was constructed.
- A new entrance road was constructed to the campground.

MANAGEMENT PLAN IMPLEMENTATION

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 8) summarizes the management goals, objectives and actions that are recommended for implementation over this period and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided, and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

Many of the actions identified in the plan can be implemented using existing staff and funding. However, a number of continuing activities and new activities with measurable quantity targets and projected completion dates are identified that cannot be completed during the life of this plan unless additional resources for these purposes are provided. The plan's recommended actions, time frames and cost estimates will guide the DRP's planning and budgeting activities over the period of this plan. It must be noted that these recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that the DRP can adjust to changes in the availability of funds, improved understanding of the park's natural and cultural resources, and changes in statewide land management issues, priorities and policies.

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 8 may need to be adjusted during the ten-year management planning cycle.

Table 8
 Grayton Beach State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 1 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Continue day-to-day administrative support at current levels.	Administrative support ongoing	C	\$770,000
Objective B	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	C	\$110,000
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Conduct/obtain an assessment of the park's hydrological needs.	Assessment conducted	UFN	\$42,500
Action 1	Conduct/obtain an assessment of the hydrological disruptions by forestry bedding around selected wetlands and by erosion caused by firebreaks and roads.	Assessment conducted	UFN	\$20,000
Action 2	Conduct/obtain an assessment of the dredged area in the basin marsh in the Grayton arm of Western Lake (GB-02) to determine feasibility and extent of restoration needs.	Assessment conducted	UFN	\$15,000
Action 3	Conduct/obtain an assessment for bridge replacement over Western Lake between GB-22 and GB-25 to determine feasibility and extent of restoration needs.	Assessment conducted	UFN	\$7,500
Objective B	Improve natural hydrological conditions and functions of approximately 75 acres of coastal dune lake natural community.	# Acres restored or with restoration underway	LT	\$2,500
Objective C	Explore possible methods and then conduct flattening of forestry beds around selected wetlands.	# Acres restored or with restoration underway	UFN	\$80,000
Objective D	Install low water crossings along firelines at five locations in the park.	# Facilities constructed	UFN	\$40,000

* 2013 Dollars
 ST = actions within 2 years
 LT = actions within 10 years
 C = long term or short term actions that are continuous or cyclical
 UFN = currently unfunded need

Table 8
 Grayton Beach State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 2 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal III: Restore and maintain the natural communities/habitats of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Within ten years, have 844 acres of the park maintained within the optimum fire return interval.	# Acres within fire return interval target	LT	\$441,500
Action 1	Update annual burn plan.	Plan updated	C	\$16,000
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 280-685 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	\$300,000
Action 3	Manage existing firelines annually.	# Miles maintained	C	\$120,000
Action 4	Construct # miles of firelines in western unit, following logging.	# Miles constructed	LT	\$5,500
Objective B	Conduct habitat/natural community restoration activities on up to 3.5 acres of beach dune natural community after major impacts from tropical storms.	# Acres restored or with restoration underway	ST, following event	\$151,600
Action 1	Develop/update site specific restoration plan.	Plan developed/updated	ST, following event	\$1,600
Action 2	Implement restoration plan.	# Acres with restoration underway	UFN	\$150,000
Objective C	Conduct habitat/natural community restoration activities on 10 acres of seepage slope and wet prairie, 350 acres of sandhill and scrubby flatwoods, 35 acres of scrub, and 1 acre of beach dune and scrub associated with the Grayton Beach Nature Trail.	# Acres improved or with improvements underway	LT	\$1,136,600
Action 1	Develop/update site specific restoration plan(s)	Plan developed/updated	ST	\$6,600
Action 2	Implement restoration plan(s).	# Acres with restoration underway	C	\$1,130,000
Objective D	Conduct habitat improvement activities on 10 acres of beach dune and scrub communities.	# Acres improved or with improvements underway	UFN	\$26,600
Action 1	Develop/update site specific restoration plan	Plan developed/updated	UFN	\$1,600
Action 2	Implement restoration plan	# Acres with restoration underway	UFN	\$25,000
Objective E	Control unauthorized access in sensitive natural communities.	Enforcement measures underway	C	\$170,000

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 UFN = currently unfunded need

Table 8
 Grayton Beach State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 3 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.	List updated	UFN	\$100,000
Action 1	Conduct/obtain a thorough plant survey to determine presence and location of listed plant species.	Survey completed	UFN	\$50,000
Action 2	Conduct/obtain a thorough survey of herptofauna and insects.	Survey completed	UFN	\$50,000
Objective B	Monitor and document 11 selected imperiled animal species in the park.	# Species monitored	C	\$180,000
Action 1	Implement FFWCC monitoring protocols for 2 imperiled animal species including loggerhead and green sea turtles.	# Species monitored	C	\$80,000
Action 2	Implement monitoring protocols for 11 imperiled animal species including those listed in Action 1 and gopher tortoise, snowy plover, Wilson's plover, American oystercatcher, least tern, black skimmer, piping plover, gull-bill terns and Choctawhatchee beach mice.	# Species monitored	C	\$100,000
Objective C	Monitor and document 5 selected imperiled plant species in the park.	# Species monitored	C	\$25,000
Action 1	Implement monitoring protocols for 5 including white-fringed orchid, rose pogonia, white-top pitcher plant, parrot pitcher plant and purple pitcher plants.	# Species monitored	C	\$25,000
Objective D	Continue to support marine turtle recovery by minimizing sources of light pollution within the park.	# of actions implemented		\$3,000
Objective E	Prevent disturbance to nesting and wintering shorebirds.	Protection measures implemented	C	\$31,600
Action 1	Annually install post and rope around suitable shorebird areas prior to nesting season.	Protection measures implemented	C	\$30,000
Action 2	Develop and implement plan to inform and educate visitors of the location of sensitive shorebird nesting areas.	Plan implemented	C	\$1,600
Objective F	Augment population of Choctawhatchee beach mice, as needed. [Per event cost]	Augmentation completed	LT	\$36,000
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Annually treat all acres of exotic plant species in the park.	# Acres treated	C	\$28,200
Action 1	Annually develop/update exotic plant management work plan.	Plan developed/updated	C	\$4,200
Action 2	Implement annual work plan by treating all acres of exotic plant species in park, annually, and continuing maintenance and follow-up treatments, as needed.	Plan implemented	C	\$24,000
Objective B	Implement control measures on 6 exotic and nuisance animal species in the park.	# Species for which control measures implemented	C	\$150,000
Action 1	Continue to implement control measures for coyotes, red foxes, gray foxes and feral cats, on a case-by-case basis.	# Animals removed	C	\$150,000

* 2013 Dollars
 ST = actions within 2 years
 LT = actions within 10 years
 C = long term or short term actions that are continuous or cyclical
 UFN = currently unfunded need

Table 8
 Grayton Beach State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 4 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VI: Protect, preserve and maintain the cultural resources of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Assess and evaluate 11 of 11 recorded cultural resources in the park.	Documentation complete	LT	\$600
Action 1	Complete 11 assessments/evaluations of archaeological sites. Prioritize preservation and stabilization projects.	Assessments complete	LT, ST	\$600
Objective B	Compile reliable documentation for all recorded historic and archaeological sites.	Documentation complete	LT	\$21,400
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	\$200
Action 2	Complete a predictive model for high, medium and low probability of locating archaeological sites within the park.	Probability Map completed	ST	\$11,800
Action 3	Develop and adopt a Scope of Collections Statement.	Document completed	ST	\$2,300
Action 4	Conduct oral history interviews.	# Interviews complete	ST	\$1,800
Action 5	Compile a park administrative history.	Report completed	ST	\$3,800
Action 6	Locate, describe and GPS the Grayton Trail (8WL00457) and the Homestead site (8WL0083) for documentation in FMSF.	# Sites updated	LT	\$1,500
Objective C	Bring 11 of 11 recorded cultural resources in good condition.	# Sites in good condition	C	\$2,800
Action 1	Implement regular monitoring programs for 11 cultural sites.	# Sites monitored	C	\$2,800
Goal VII: Provide public access and recreational opportunities in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain the park's current recreational carrying capacity of 2,028 users per day.	# Recreation/visitor	C	\$980,000
Objective B	Expand the park's recreational carrying capacity by 288 users per day.	# Recreation/visitor	UFN	\$140,000
Objective C	Continue to provide the current repertoire of 22 interpretive, educational and recreational programs on a regular basis.	# Interpretive/education programs	C	\$9,700
Objective D	Develop 6 new interpretive, educational and recreational programs.	# Interpretive/education programs	ST or LT	\$9,800

* 2013 Dollars
 ST = actions within 2 years
 LT = actions within 10 years
 C = long term or short term actions that are continuous or cyclical
 UFN = currently unfunded need

Table 8
 Grayton Beach State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 5 of 5

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain all public and support facilities in the park.	Facilities maintained	C	\$2,870,000
Objective B	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	C	\$440,000
Objective C	Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.	Plan implemented	LT	\$24,000
Objective D	Improve and/or repair nine existing facilities and 400 feet of road as identified in the Land Use Component.	# Facilities/Feet of Road	UFN	\$1,660,000
Objective E	Construct 21 new facilities and 4 miles of trail.	# Facilities/Miles of Trail	UFN	\$806,800
Summary of Estimated Costs				
		Total Estimated Cost* (10-years)		
Management Categories				
Resource Management		\$2,669,900		
Administration and Support		\$880,000		
Capital Improvements		\$2,490,800		
Recreation Visitor Services		\$4,449,500		
Law Enforcement Activities**		**Law enforcement activities in Florida State Parks are conducted by the DEP Division of Law Enforcement and by local law enforcement agencies.		

* 2013 Dollars
 ST = actions within 2 years
 LT = actions within 10 years
 C = long term or short term actions that are continuous or cyclical
 UFN = currently unfunded need

Addendum 1 – Acquisition History

Grayton Beach State Park Acquisition History

Purpose of Acquisition

The Florida Board of Parks and Historic Memorials (FBPHM), predecessor in interest to the State of Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP), initially acquired Grayton Beach State Park to develop, maintain and utilize this property for state park and outdoor recreational and educational purposes.

Sequence of Acquisition

On September 21, 1964, FBPHM acquired, through a lease, an approximately 356-acre property that constituted the initial area of Grayton Beach State Park. The FBPHM acquired the property from the State Board of Education of the State of Florida (Board) under a 99-year term lease, Lease No. 2225. On November 2, 1967, the Board transferred and conveyed its title interest in the 356-acre property to the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) without affecting FBPHM's leasehold interest in the property.

On January 7, 1985, the Trustees purchased an approximately 872-acre property from the Federal Deposit Insurance Corporation. This purchase was funded under the Save Our Coast (SOC)/Conservation and Recreation Lands (CARL) program.

Since the 1985 purchase, the Trustees have acquired several parcels through purchases and a transfer and added these parcels to Grayton Beach State Park. The purchases were funded under the Preservation 2000/ Additions and Inholdings (P2000/ A&I) program. The transfer was from State of Florida Department of Agriculture and Consumer Services and Florida Fish and Wildlife Conservation Commission. The current total area of the park is approximately 2,187 acres.

Title Interest

The Trustees hold fee simple title to Grayton Beach State Park.

Lease Agreement

On January 30, 1985, the Trustees leased the property it had purchased on January 7, 1985, to DRP under a 50-year lease, Lease No. 3386, which will expire on January 30, 2035.

Grayton Beach State Park Acquisition History

On February 2, 1993, the Trustees assigned a portion of Point Washington Resolution Trust Corporation property to DRP to manage as part of Grayton Beach State Park under a Letter of Interim Management. On May 23, 1995, the Trustees leased this property to DRP under Amendment No. 2 to Lease No. 3386.

On September 15, 1995, DRP amended the 356-acre property it had been managing under Lease No. 2225 to Lease No. 3386. On October 3, 1995, DRP released its leasehold interest in Lease No. 2225. Today, DRP manages Grayton Beach State Park under only one lease, which is Lease No. 3386.

Special Conditions on Use

Grayton Beach State Park is designated single-use to provide resource-based public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry other than those forest management activities specifically identified in this plan are not consistent with the management purposes of the park.

Outstanding Reservations

There are no known outstanding reservations and encumbrances that apply to Grayton Beach State Park. However, the following outstanding rights may apply to the park:

Type of Instrument:	Warranty Deed
Grantor:	Van R. Butler
Grantee:	Trustees
Beginning Date:	July 12, 1985
Ending Date:	Perpetuity
Outstanding Rights:	The deed is subject to an easement recorded in Walton County, Florida, in record book 84, page 485.

Grayton Beach State Park Acquisition History

Type of Instrument: Warranty Deed
Grantor: Grayton Beach Corporation
Grantee: Trustees
Beginning Date: July 12, 1985
Ending Date: Perpetuity
Outstanding Rights: The deed is subject to an easement recorded in Walton County, Florida, in record book 84, page 485.

Type of Instrument: Warranty Deed
Grantors: Van Ness R. Butler, Jr., Jonnye M. Butler, Helen J. Toole, Robert W. Infinger, E. Gretchen Infinger
Grantee: Trustees
Beginning Date: July 12, 1985
Ending Date: Perpetuity
Outstanding Rights: The deed is subject to an easement recorded in Walton County, Florida, in easement recorded in record book 84, page 485.

Type of Instrument: Quitclaim Deed
Grantor: Federal Insurance Deposit Corporation
Grantee: Trustees
Beginning Date: January 7, 1985
Ending Date: Perpetuity
Outstanding Rights: The quitclaim deed is subject to a certain state road drainage easement recorded in deed book 162, page 492.

Type of Instrument: Quitclaim Deed
Grantor: Federal Deposit Insurance Corporation
Grantee: Trustees
Beginning Date: January 7, 1985
Ending Date: Perpetuity
Outstanding Rights: (1) This quitclaim deed is subject to a statutory way of necessity ingress and egress easement in favor of Tradewinds Investment Corporation, and (2) the quitclaim deed is also subject to a statutory way of necessity in favor of Gulf Trace Inc.

Grayton Beach State Park Acquisition History

Addendum 2 – Advisory Group Members and Report

Grayton Beach State Park Advisory Group Members

Local Government Representatives

The Honorable Scott Brannon,
Chairman
Walton County Board of
County Commissioners
76 North 6th Street
DeFuniak Springs, Florida 32433

Agency Representatives

Mr. Matthew Allen, Park Manager
Grayton Beach State Park
357 Main Park Road
Santa Rosa Beach, Florida 32459

Mr. Jason Love, Senior Forester - OPL
Region 1
Florida Forest Service
Florida Department of Agriculture and
Consumer Services
Tallahassee Forestry Center
865 Geddie Road
Tallahassee, Florida 32304

Ms. Kristi Yanchis, Ecologist
U. S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City, Florida 32405

Dr. John Himes, Non-Game Biologist
Florida Fish and Wildlife Conservation
Commission
3911 Highway 2321
Panama City, Florida 32409

Ms. Cathy S. Johnson, Chair
Choctawhatchee River Soil and Water
Conservation District
239 John Baldwin Road, Suite B
DeFuniak Springs, Florida 32433-3804

Tourist Development Council Representative

Ms. Dawn Moliterno, Executive Director
Walton County Tourist Development
Council (Visit South Walton)
25777 U.S. Highway 331 South
Santa Rosa Beach, Florida 32459

Environmental and Conservation Representatives

Mr. Walt Spence, President
Choctawhatchee Audubon Society
1519 18th Street
Niceville, Florida 32578

Ms. Celeste Cobena
Beach To Bay Connection
412 Hilltop Drive
Santa Rosa Beach, Florida 32459

Recreational User Representatives

Mr. Eugene Mims
(Regular park user)
PO Box 1232
Santa Rosa Beach, Florida 32459

Mr. Joe Godbee
(Cycling community representative)
PO Box 2261
Santa Rosa Beach, Florida 32459

Adjacent Landowners

Ms. Kitty Taylor, Secretary
Grayton Beach Neighborhood
Association
c/o Grayton Coast Properties
133 Defuniak Street
Santa Rosa Beach, Florida 32459

Grayton Beach State Park Advisory Group Members

Mr. Jim Moyers, Wildlife Biologist
The St. Joe Company
133 D South Watersound Parkway
Panama City Beach, Florida 32413

Citizen Support Organization Representatives

Mr. Tom Patton, President
Friends of Grayton Beach
c/o Grayton Beach State Park
357 Main Park Road
Santa Rosa Beach, Florida 32459

Grayton Beach State Park Advisory Group Report

The Advisory Group meeting to review the proposed land management plan for Grayton Beach State Park was held at the Camp Helen State Park Lodge on Wednesday, December 5, 2012, at 9:00 AM.

Amy Raybuck represented John Himes. Megan Harrison represented Dawn Moliterno. Cynthia Alexander represented Celeste Cobena. Cathy Johnson, Walt Spence, Joe Godbee, and Commissioner Brannon (Walton County) were not in attendance. All other appointed Advisory Group members were present. Attending staff were Matthew Allen, Danny Jones, John Bente, Chris Albanese, and Jennifer Carver.

Ms. Carver began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. Ms. Carver summarized public comments received during the previous evening's public workshop. Ms. Carver then asked each member of the Advisory Group to express his or her comments on the draft plan.

Summary of Advisory Group Comments

Amy Raybuck (Florida Fish and Wildlife Conservation Commission (FWC)) stated that the plan was well-written, and FWS supports the use of fire proposed in the plan. She encouraged more natural flow into the coastal dune lakes rather than artificial purging to manage lake levels. Ms. Raybuck asked if there were studies of the species composition in the lakes as the water levels change. She mentioned the discussion of hand removal of titi from the seepage slopes and wetland prairies and asked if any mechanical clearing is conducted. She indicated that FWS has been able to do some mechanical removal at Yellow River where it was dry enough. Ms. Raybuck encouraged the park to take steps to increase fledgling success for shorebirds, including restriction of visitor access and parkwide removal of predators (especially cats). She pointed out that Table 3 is missing the state level listing for some items. Ms. Raybuck also pointed out several upcoming changes in status of listed species that may need to be mentioned in the plan: the black skimmer is in the process of becoming state-threatened; the little blue heron, snowy egret, tricolored heron, white ibis and brown pelican are in the process of being delisted. She suggested that the park conduct a full survey of herpetofauna in the park and identified several species that were not included in Addendum 5. Staff explained the purpose of hand removal of titi and indicated that mechanical clearing is being conducted as appropriate where biomass is limited. Ms. Raybuck also provided written comments to further clarify FWC's comments on the plan (attached).

Eugene Mims (regular park user) stated that he appreciates the state's vision in planning for the future of the parks. He asked for clarification on which trailhead will be moved and stated that he supports moving the main trailhead to the east to a safer locations, and he supports limited trails in the park that allow visitors to enjoy the resource without negative impacts. Mr. Mims also asked for clarification on the effect

Grayton Beach State Park Advisory Group Report

of a species being delisted. Staff indicated that the species being delisted would still need to be protected in the park.

Megan Harrison (Walton County Tourist Development Council (TDC)) agreed with others that the plan is extremely well-written. She stated that the TDC is thankful for Grayton Beach State Park and other public lands in the area. She did not have any comments on the management of the park but indicated that the TDC is eager to continue promoting the park.

Cynthia Alexander (Beach to Bay Connection) stated that she supports the plan, as she is a long-time resident of the area and has helped support and preserve the park over the years. She mentioned that the park is within a Coastal Barrier Resources Act (COBRA) zone under federal protection and suggested that the plan mention this protection. She stated that some areas were incorrectly included in the COBRA zone, and it is important to mention this in the plan. Ms. Alexander stated that the coastal dune lakes are in good shape, but they need help. She recommended that funding from the TDC or other programs could possibly be used to construct full bridges on County Road 30A where it crosses coastal dune lakes. Ms. Alexander was concerned that artificial management of the water levels in Western Lake has resulted in high water that has damaged pine trees. She also stated that Little Redfish Lake is too low and recommended acquisition of a parcel on the lake that would include allow modification of the existing berm to restore the natural system. Ms. Alexander suggested the management zones GB06 and possibly GB04B be reevaluated for mechanical treatment, rather than prescribed burn due to their proximity to adjacent homes. She indicated that there were some anecdotal wildlife observations that might need to be added to Appendix 5: a Florida panther was observed at Gulf Trace and Grayton Beach, bald eagles and ospreys are routinely observed, and black bears have been observed. FWC and FWS staff stated that photos and foot casts are needed to confirm wildlife sightings, and residents should call FWC and/or FWS in the event of sightings. Ms. Alexander stated that she personally appreciates the relocation of the trailhead, because opportunistic parking at the current trailhead is eroding the bank at a sensitive wetland area. Also, the current site creates a traffic hazard at the subdivision entrance and it is awkward to park there and try to get back on the road. She also supports removing the paved roads from the old subdivision in the western unit of the park and restoring that area.

Jason Love (Department of Agriculture and Consumer Services, Florida Forest Service (FFS)) commended the Division of Recreation and Parks (Division) on a very well-written plan. He commends the park's aggressive plans to treat all acres of exotic plant species within the park, which is directly adjacent to Point Washington State Forest. Mr. Love suggested that the text regarding management coordination (page 8) be revised to more clearly reflect how the FFS and DRP work together. He will provide suggested text. Mr. Love suggested that more explanation be provided for Table 2 to clarify terms

Grayton Beach State Park Advisory Group Report

and abbreviations related to coastal dune lake monitoring. He also pointed out several other locations where more explanation would be helpful (pages 39, 43, 88). Mr. Love suggested that the fire return intervals in Table 6 be reviewed to confirm consistency with Florida Natural Areas Inventory (FNAI) recommendations. He also noted significant differences between Addendum 5 and the species list for Point Washington State Forest and recommended that the list be modified as needed. Mr. Love recommended that the timber management analysis assess the timber in the entire park rather than only 330 acres and offered to coordinate with staff on the analysis. Staff indicated that timber in the park is evaluated in terms of managing natural communities in their pre-settlement condition rather than for timber harvest. Staff will review the assessment and clarify the goals and purposes of the park's timber management as needed.

Tom Patton (Friends of Grayton Beach State Park) asked why the titi was being thinned in the park and whether there was ecological value in 70-year-old stands of titi. Staff explained that the titi in the park has grown to an artificially large size due to the longtime fire suppression in the park. Part of the park's mission is to maintain the natural community in pre-settlement condition, and management efforts include returning the titi to a more natural size for this natural community that would allow the other plants in the community, such as pitcher plants, to flourish. Mr. Patton asked about the number of campsites to be added, both primitive and in the tent-only area. He supports the proposed trails but is concerned that too many primitive campsites could lead to negative impacts. Staff explained that the park's goal provide access to all types of campers and minimize the impact of campgrounds to the park's resources. Staff indicated that the primitive campsites are part of a longer-term vision to connect the public lands in the area. Mr. Patton identified an opportunity for expansion of the park and better management of Little Redfish Lake through acquisition of a parcel at the western boundary along the lake. He pointed out that the parcel is on the Optimum Boundary map in the current unit management plan but is not on the proposed map for the plan update. Mr. Patton stated that the plan is exciting, and he looks forward to working with the Division.

Matt Allen (Park Manager) stated that he appreciates the comments and input from the other Advisory Group members, all of whom bring valuable information and expertise to the plan update process.

Kristi Yanchis (U.S. Fish and Wildlife Service (FWS)) mentioned that FWS has funding for predator control in state parks. FWS staff monitor for tracks around beach mice tracking tubes to identify predators. Ms. Yanchis indicated that FWS can assist with education (both staff time and funding) to provide information to the public about wildlife and predators, including feral cats. Staff indicated they are working with USDA and FWS on shorebird and sea turtle programs. Ms. Yanchis provided additional comments by email (see Summary of Written Comments below).

Grayton Beach State Park Advisory Group Report

Kitty Taylor (Grayton Beach Neighborhood Association) grew up in Grayton Beach and is very supportive of the park. She supports relocation of the trailhead. Ms. Taylor is concerned about the invasion of phragmites in Western Lake and asked if the plan needs to mention this issue and what property owners can do to address the problem. Staff indicated that they are not treating phragmites on private property and does have a plan for addressing the issue in the boat ramp area of the park where the grass is hindering native plants. Ms. Taylor also provided a copy of an email she received from an area resident and frequent park user regarding concerns with pesticide spraying in the park. Staff indicated that the South Walton Mosquito Control District only sprays if a problem has been identified based on their testing, and, if necessary, they spray on Wednesdays in certain areas around the park, typically around the shop and around one of the residences.

Jim Moyers (St. Joe Company) applauded the park's efforts to enhance its controlled burn program. He encouraged the park to put fire lines in place along the park boundary to better maintain the wildland-urban interface, and promote the visibility and use of prescribed fire. Mr. Moyers stated that WaterColor is ready to assist the park as needed with prescribed burning, as it is beneficial to their homeowners as well. He indicated that St. Joe Company performs mechanical management and continuing education regarding prescribed fire and nuisance exotic species. He encouraged the park to partner with other agencies, such as University of Florida Extension or Sea Grant staff and the Friends of Grayton Beach State Park, to encourage local landowners to assist with removal of exotics. Mr. Moyers mentioned that predators are an ongoing problem and that education is needed regarding the negative impacts to wildlife and human health of trap, neuter, and release programs.

Summary of Written Comments

Amy Raybuck (Florida Fish and Wildlife Conservation Commission (FWC)) provided written comments to DRP staff in addition to further clarify her comments made at the meeting. The comments also include specific revisions which are suggested for Appendix 5. A copy of the comments is attached.

Kitty Taylor (Grayton Beach Neighborhood Association) provided a copy of an email sent to her by Lauren Comstock, a frequent park user, regarding spraying conducted by the South Walton Mosquito Control District in the park. Ms. Comstock's understanding was that the park is sprayed several times a week with Evolour 4-4/Permethrin. This information led to Ms. Comstock deciding not to buy an annual park pass. The email and information sent by Ms. Comstock regarding Permethrin are attached.

Grayton Beach State Park Advisory Group Report

Kristi Yanchis (U.S. Fish and Wildlife Service (FWS)) provided written comments to DRP staff in addition to the comments she made at the meeting. FWS offered to work with the park to identify options to prevent trampling of the dune habitat in management zone GP19. Ms. Yanchis also offered to work with the park to encourage shorebird nesting, such as outreach programs to educate the public about predators, reduction in the amount of driving in the park, and posting of additional conservation areas. She suggested potential partnerships to assist the park with establishment of a greenhouse for native plan. Ms. Yanchis suggested that the park consider various measures in existing and future parking areas, such as using impervious surface, providing critter-proof trash cans, allowing heavy vegetation to surround the parking area to deter people from entering where they shouldn't, and considering lighting issues. Ms. Yanchis reiterated the need to work with the park's neighbors to inform them of their lighting issues and how detrimental they can be to the turtles nesting within the park. A copy of the comments is attached.

Cynthia Alexander (Beach to Bay Connection) provided additional information via email regarding the property that may be available for acquisition at the western boundary of the park. She also provided additional comments by email providing further information regarding the comments made at the meeting. She recommended that documentation about the COBRA/Otherwise Protected Area designation technical revision be included in the park files and plan documents. She stated that this information is important for the records due to the problems experienced by some property owners whose land was mistakenly included in the Department of Interior's map. She recommended that the park work with transportation agencies to secure funding to install bridges and remove dams where County Road 30A crosses Western, Alligator, and Little Redfish Lakes. She also provided information and recommended that the park assist with and advocate for greater protection of Little Redfish Lake and restoration of normal lake levels. She recommended that vegetation management in zones GB-06 and GB-04B be reconsidered as described above. She strongly recommended that the State acquire seven acres of property on the western border of the park and include that property in the Optimum Boundary map. She suggested that the acquisition history and plan maps should include the 20-foot access easement for the Redfish Lane Association at the western edge of the park. Finally, she affirmed her support for the plan and the park and reiterated her support for the trailhead relocation and removal of unused roads and sewer in the western portion of the park.

Staff Recommendations

The staff recommends approval of the proposed management plans for Grayton Beach State Park as presented, with the following significant changes:

Grayton Beach State Park Advisory Group Report

- Update the text regarding coordination with other agencies as appropriate.
- Modify the discussion of titi removal to indicate that mechanical clearing is conducted as appropriate. Also, reevaluate use of mechanical treatment for management zones CB06 and GB04B and modify text as appropriate.
- Modify Table 2 and related text to clarify terms and abbreviations.
- Modify Table 3 to include state level listing and include a discussion of species whose listing status is in the process of changing.
- Review Addendum 5 (Plant and Animal List) and modify as appropriate to included species found in the park.
- Modify the discussion of protected zones to mention the Coastal Barrier Resources Act (COBRA) zone provisions.
- Add language to indicate the park will coordinate with the County and other agencies to promote restoration of hydrologic systems during any future modifications to County Road 30A.
- Confirm the fire return intervals listed in Table 6.
- Coordinate with FFS and modify the timber management analysis as appropriate.
- Modify the discussion of primitive camping to clarify that the number of campsites will be reevaluated as needed based on demand.
- Enhance the discussion of arthropod control in the park to clarify how monitoring and spraying are conducted.
- Enhance the language regarding educational programs to mention partnerships with FWS and FFWCC.

A suggestion was made to consider acquisition of a parcel at the western boundary of the park at the outlet of Little Redfish Lake. This parcel was evaluated by Division staff, and it was determined that the parcel does not provide significant benefits to the management of park resources and/or recreational activities.

Additional revisions were made throughout the document to address editorial corrections, consistency of spellings and notations, and other minor corrections.

Notes on Composition of the Advisory Group

Florida Statutes Chapter 259.032 Paragraph 10(b) establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an advisory group:

“Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an advisory group. Members of this advisory group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official.”

Grayton Beach State Park Advisory Group Report

Advisory groups that are composed in compliance with these requirements complete the review of State park management plans. Additional members may be appointed to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. DRP's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by DRP staff.

Grayton Beach State Park Advisory Group Report

Addendum 3 – References Cited

Grayton Beach State Park References Cited

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Grayton Beach State Park References Cited

Addendum 4 – Soils Descriptions

Grayton Beach State Park Soils Descriptions

8-Dorovan-Pamlico association, frequently flooded. This association consists of soils that are nearly level and very poorly drained. They are in a regular and repeating pattern. The landscape is mainly large, hardwood swamps and flood plains of major drainageways. The Dorovan soil is in the middle of the delineation, and Pamlico soil is on the outer part. Mapped acres range from 20 to more than 750 acres. Individual areas of each soil range from 10 to 200 acres.

Dorovan soil makes up 50 to 70 percent of the association. Typically, this soil is black muck to a depth of at least 60 inches.

This Dorovan soil has a high water table near or above the surface for most of the year. This soil floods more often than once every 2 years for periods of more than 1 month. Permeability is moderate, and the available water capacity is very high. The organic matter content is very high. The internal drainage rate is slow because of the high water table. Response to drainage is rapid.

The natural vegetation is mostly bald cypress, blackgum, sweetbay, sweetgum, titi and scattered slash pine. The understory is brackenfern, greenbrier, muscadine vine and wax myrtle.

12-Foxworth sand. This soil is moderately well drained and nearly level to gently sloping. It is on uplands and in elevated areas on flatwoods. Individual areas of this soil range mostly from 10 to more than 200 acres; some areas are as small as 5 acres. Slopes are mostly smooth to convex but are concave in places.

Typically, this soil is sand throughout. The surface layer is about 7 inches and brown below that. The underlying material is yellowish brown to a depth of 18 inches, brownish yellow to a depth of 44 inches, yellow to a depth of 54 inches, very pale brown to a depth of 69 inches and light gray to a depth of at least 80 inches. Included with this soil in mapping are small areas of Albany, Blanton, Chipley, Lakeland and Troup soils. Also included are soils similar to Foxworth soil except they have slopes of 5 to 8 percent. Included are areas of soils that have a slight increase in clay content just above dark color subsoil. The included soils make up less than 15 percent of the map unit.

The natural vegetation is mostly slash pine, loblolly pine, longleaf pine, live oak, post oak, bluejack oak, turkey oak, laurel oak, red oak, water oak, huckleberry, gallberry, and dogwood. Wiregrass is the most common native grass.

16-Kureb sand. This soil is excessively drained and nearly level to sloping. It is on broad, undulating ridges and short side slopes on upland sand hills and dune-like ridges. Individual areas of this soil range from 50 to 800 acres. Slopes are smooth to convex and concave.

Grayton Beach State Park Soils Descriptions

Typically, the surface layer is gray sand 4 inches thick. The subsurface layer is white sand to a depth of 17 inches. The subsoil is sand to a depth of 68 inches. To a depth of 28 inches, it is brownish yellow with white tongues. It is yellowish brown to a depth of 37 inches, brownish yellow to a depth of 47 inches and yellow below that. The substratum is very pale brown sand to a depth of at least 80 inches.

Included with this soil in mapping are small areas of Corolla, Mandarin, Newhan and Resota soils. Also included are some areas of Kureb soil mainly along bays and beaches that have abrupt drop off. This soil is designated by the short, steep slope symbol. The included soils make up less than 20 percent of the map unit.

Natural vegetation is mostly turkey oak, bluejack oak, live oak and scattered sand pine. The understory is huckleberry. In some areas, sand pine is the dominant tree.

17-Lakeland sand, 0-5 percent slopes. This soil is excessively drained and nearly level to gently sloping. It is on broad ridgetops on uplands. Individual areas of this soil range mostly from 40 to more than 300 acres; some areas are as large as 1,000 acres and others are as small as 5 acres. Slopes are mostly smooth to concave but are convex in places.

Typically, the surface layer is dark grayish brown sand 4 inches thick. The underlying material is sand. It is yellowish brown to a depth of 7 inches, brownish yellow to a depth of 60 inches and light yellowish brown to a depth of at least 80 inches.

Included with this soil in mapping are small areas of Bonifay, Chipley, Dorovan, Eglin, Foxworth, Kenansville, Pamlico and Troup soils. Also included are areas of soils that have slopes of more than 5 percent but are otherwise similar to Lakeland soil and soils that are similar but have a few thin lamellae below a depth of 65 inches. The lamellae have cumulative thickness of less than 1 centimeter. The soils containing lamellae generally are along areas near the Choctawhatchee River and are near delineations of Troup soils. A few small wet areas are shown by wet spot symbols. The included soils make up less than 15 percent of the map unit.

The natural vegetation is mostly slash pine, loblolly pine, longleaf pine, turkey oak, post oak and blackjack oak. In the southern part of the county, the vegetation is sand pine, live oak, saw palmetto and reindeer moss. Wiregrass is the most common native grass.

18- Lakeland sand, 5-10 percent slopes. This soil is excessively drained and sloping to strongly sloping. It is mainly on upland side slopes leading to drainage ways and around depressions. Individual areas of this soil range mostly from 30 to more than 100 acres; some areas are as small as 5 acres. Slopes are smooth to convex. Typically, the surface layer is dark grayish brown sand 3 inches thick. Included with this soil in mapping are small areas of Bonifay, Chipley, Foxworth and Troup soils. Also included

Grayton Beach State Park Soils Descriptions

are some areas of Lakeland soil that have an abrupt drop off. This soil is designated by the short, steep slope symbol. Areas of soils that have slopes of less than 5 percent and soils that have slopes of more than 12 percent are also included. Small areas of poorly drained soils are at seepage spots, in and along stream bottoms and drainage ways. The included soils makeup less than 20 percent of the map unit.

This Lakeland soil has low available water capacity. Permeability is rapid. The organic matter content is very low or low. Rainfall is absorbed in protected areas and there is little runoff. This soil does not have a seasonal high water table within a depth of 6 feet. Natural vegetation is mostly slash pine, loblolly pine, longleaf pine, turkey oak, and blackjack oak. In the southern part of the county sand pine, scrub oak, live oak and saw palmetto are included. Pineland threeawn (wiregrass) is the most common native grass. Other grasses include creeping bluestem, lopsided indiagrass, hairy panicum, splitbeard bluestem, purple lovegrass and broomsedge bluestem.

21-Leon sand. This soil is poorly drained and nearly level. It is on flatwoods. Individual areas of this soil range from five to 90 acres. Slope is smooth to convex and ranges from 0 to 2 percent.

Typically, the surface layer is very dark gray sand 9 inches thick. The subsurface layer is gray sand to a depth of 18 inches. The subsoil is dark reddish brown sand to a depth of 22 inches, black loamy sand to a depth of 27 inches and yellowish brown sand to a depth of 31 inches. Below that is white sand to a depth of 67 inches and very dark gray sand to a depth of at least 80 inches.

Included with this soil in mapping are small areas of Chipley, Hurricane, Mandarin and Rutlege soils. Rutlege soils are the most common inclusion. Also included are few areas of soils similar to Leon soil except they have a surface layer that is thicker, have a Bh horizon that is more than 30 inches below the surface, or more than half of the dark color subsoil is weakly cemented.

The natural vegetation is mostly longleaf pine, loblolly pine, slash pine, water oaks and myrtle. The understory is saw palmetto, running oak, fetterbush and gallberry. The most common native grass is wiregrass.

27-Rutlege fine sand. This soil is very poorly drained and nearly level. It is in shallow depressions and on stream or creek flood plains and upland flats. Individual areas of this soil range from 5 to 80 acres. Slopes are smooth to concave and are less than 2 percent.

Typically, the surface layer is black fine sand 17 inches thick. The underlying material is fine sand to a depth of at least 80 inches. It is grayish brown to a depth of 22 inches, light brownish gray to a depth of 60 inches and light gray below that.

Grayton Beach State Park Soils Descriptions

Included with this soil in mapping are small areas of Chipley, Hurricane, Leon, Pamlico and Pickney soils. Also commonly included are soils similar to this Rutlege soil except they have dark color surface layer less than 10 inches thick, have dark color subsoil below a depth of 50 inches, have loamy subsoil that is mixed or stratified below a depth of 60 inches or have a loamy sand surface layer. The included soils make up less than 30 percent of the map unit.

The natural vegetation in mostly hardwoods and pond pines or slash and loblolly pines. The understory is huckleberry, myrtle, greenbriers, wiregrass and sedges. Some areas do not have pine trees.

30- Tifton fine sandy loam, 5 to 8 percent. The Tifton series consists of very deep, well drained, moderately slowly permeable soils that formed in loamy marine sediments. These soils are on nearly level to gently sloping uplands. Typically the surface layer is 9 inches thick. It is very dark grayish brown fine sandy loam in the top 5 inches and dark brown gravelly fine sandy loam below that. The subsoil is sandy clay loam to a depth of at least 80 inches. It is strong brown to a depth of at least 16 inches, yellowish red to a depth of 21 inches and yellowish brown to a depth of 56 inches. It is mottled yellowish brown below that. Runoff is medium. Permeability is moderate in the Btc horizons and moderately slow in the Btv horizons.

36-Pits. This miscellaneous area consists of open excavations from which sand and loamy material has been removed. The excavations vary from 2 to more than 12 feet deep. The material from these excavations is used mainly in the construction and repair of roads and as fill material for foundations. In some areas, mixtures of sandy, loamy and clayey material are piled or scattered around the edges of the excavations. This material has been mixed to the extent that the identification of individual soils is not possible. Individual mapped areas generally range from 5 to 100 acres. Areas that are too small to be delineated are shown on the map by the two shovel spot symbol. Pits occur throughout the county but have a small total acreage.

Most areas are almost barren. Some pits have been abandoned, but many are still used. In a few areas, especially in areas that have a high water table, water ponds during high rainfall.

Pits have little or no value for agriculture or pine trees; however, pine trees are growing in some older pits. No interpretations, limitations or potential ratings are given for these areas.

45-Dirego muck frequently flooded. This soil is very poorly drained and is frequently flooded by brackish water. It is frequently found on broad, level tidal marshes that

Grayton Beach State Park Soils Descriptions

border the Choctawhatchee Bay. Individual areas of this soil range from 10 to 400 acres. Slopes are smooth and less than 1 percent.

Typically, the surface layer is muck about 48 inches thick. It is black to a depth of 40 inches and very dark gray below that. The substratum is dark olive gray fine sand to a depth of at least 65 inches.

Included with this soil in mapping are small areas of Maurepas soils. Also included are narrow, sandy areas of soils along the banks of streams and rivers. The included soils make up less than 25 percent of the map unit.

The natural vegetation consists of salt-tolerant plants, such as black needlerush, big cordgrass, smooth cordgrass, marshhay cordgrass and row grass.

This soil is not suited to cultivated crops, pasture grasses or woodland. The potential for these uses is very low because of frequent flooding, high salt content and high sulfur content.

50-Mandarin sand. This soil is somewhat poorly drained and nearly level. It is in slightly elevated areas on flatwoods. Individual areas of this soil range from 3 to 50 acres. Slopes are smooth to concave.

Typically, the surface layer is gray sand about 8 inches thick. The subsurface layer is light gray sand to a depth of about 21 inches. The subsoil extends to a depth of 60 inches. It is black sand to a depth of 23 inches, very dark gray fine sand to a depth of 25 inches, dark reddish brown sand to a depth of 38 inches and yellowish brown sand below that. The substratum is white sand to a depth of at least 80 inches.

Included with this soil in mapping are small areas of Chipley, Foxworth, Hurricane, Leon, Resota, and Rutlege soils. Also included are small areas of soils similar to Mandarin soil except they have a dark color subsoil that is lighter in color than is typical for the Mandarin series. Small areas of similar soils that have dark color subsoil at a depth of more than 30 inches are also included. The included soils make up less than 20 percent of the map unit.

The natural vegetation is mostly longleaf pine, loblolly pine, slash pine and scrub oaks. The understory is saw palmetto, running oak, and fetterbush. The common native grass is wiregrass.

54-Newhan-Corolla sands, rolling. This map unit consists of Newhan and Corolla soils in undulating dune-like areas adjacent to the Gulf of Mexico. These soils are gently sloping to a steep. Newhan soil is excessively drained, and Corolla soil is moderately well drained or somewhat poorly drained. Areas of these soils are too intricately mixed

Grayton Beach State Park Soils Descriptions

and too small to be mapped separately at the selected scale. Areas of this map unit range from 10 to 200 acres. Individual areas of soils within the map unit range from less than 1 acre to 5 acres.

Newhan soil makes up about 35 to 55 percent of the map unit. Typically, the surface layer is light gray sand about 5 inches thick. The underlying material to a depth of 80 inches or more is white sand that contains horizontal bands of black heavy minerals. Permeability of this soil is very rapid throughout. The available water capacity and organic matter content are very low. This soil does not have a high water table within a depth of 6 feet.

Natural vegetation is sparse. It is chiefly stunted sand pine, sea oats, switchgrass, rosemary, reindeer lichen, scrub live oak and palmetto. The vegetation is stunted because of salt spray.

55-Beaches. Beaches are narrow strips of tide washed sand along the Gulf of Mexico. The sand is white and has few to common heavy minerals. Beaches range from 200 to 500 feet in width. As much as half of the beach can be covered by saltwater daily by high tide and wave action, and all of it can be covered during storms. The shape and slope of the beaches commonly change with every storm. Most areas have a uniform gently slope, but a short, stronger slope is at the water's edge. Beaches generally have no vegetation, but inland edges are sometimes sparsely covered with sea oats. The high water table ranges from the surface to a depth of 4 feet or more. The depth varies depending on distance from the water, height of the beach, effect of storms, and time of year. Permeability is very rapid.

Included in mapping are sand dunes on the north side. The dunes are generally Newhan and Corolla soils. They are not subject to wave action except during storms, but they commonly receive salt spray.

Beaches are not suited to use for cultivated crops, pasture, or woodland. They are mainly suited to recreational use and to use as habitat for wildlife.

57-Hurricane sand. This soil is somewhat poorly drained and nearly level. It is in slightly elevated areas on flatwoods. Individual areas of this soil generally range from 10 to more than 100 acres; a few are as small as 3 acres. Slopes are smooth to slightly convex.

Typically, the surface layer is very dark gray sand 5 inches thick. The subsurface layer is sand to a depth of 63 inches. It is brown to a depth of 14 inches, yellowish brown to a depth of 22 inches, brownish yellow to a depth of 47 inches and white below that. The subsoil is black sand to a depth of at least 80 inches.

Grayton Beach State Park Soils Descriptions

Included with this soil in mapping are small areas of Chipley, Foxworth, Leon, Mandarin and Rutlege soils. Also included are poorly drained soils in which the surface layer is underlain by shallow, weakly developed, dark color subsoil. Also included are soils similar to this Hurricane soil except they are poorly drained and areas of soils in which the content of clay increases just above the deep, dark color subsoil. The included soils make up less than 15 percent of the map unit.

Natural vegetation consists mostly of slash pine, loblolly pine, longleaf pine, bluejack oak, turkey oak and post oak. The understory is yaupon, saw palmetto, gallberry, broomsedge bluestem and wiregrass.

58-Duckston muck frequently flooded. This soil is very poorly drained and frequently flooded by heavy rains or high storm tides. It is on broad, level tidal marshes that border the Choctawhatchee Bay. Individual areas of this soil range from 10 to 400 acres. Slope is smooth and less than 1 percent.

Typically, 4 inches of black muck is on the surface. The surface layer is sand to a depth of 21 inches. It is dark grayish brown to a depth of 6 inches and dark gray below that. The substratum is sand in shades of gray to a depth of at least 80 inches.

Included with this soil in mapping are small areas of Dirego, Leon, and Rutlege soils. Also included are soils that have more than 8 inches of muck on the surface. The included soils make up less than 20 percent of the map unit.

The natural vegetation includes sand cordgrass, marshhay cordgrass, smooth cordgrass and few scattered wax myrtle.

62-Resota sand. This soil is moderately well drained and nearly level to gently sloping. It is on moderately elevated ridges on flatwoods. Individual areas of this soil range mostly from 10 to more than 50 acres; some areas are as small as 5 acres. Slopes are mostly smooth to convex but are concave in places.

Typically, the surface layer is gray sand 3 inches thick the subsurface is light gray sand 10 inches thick. The subsoil is sand to a depth of 53 inches. To a depth of 19 inches, it is yellowish brown with light gray tongues.

The natural vegetation is mostly sand pine, longleaf pine, slash pine and live oak. The understory is saw palmetto, woody goldenrod, sand heath and panicum.

64-Pamlico muck. This soil is poorly drained and nearly level. It is in depressional areas of the flatwoods. Individual areas of this soil range from three to 100 acres. Slopes are smooth to convex and are less than 2 percent.

Grayton Beach State Park Soils Descriptions

Typically, the surface layer is black muck 25 inches thick. The underlying material is sand to a depth of at least 60 inches. It is black to a depth of 28 inches, very dark gray to a depth of 35 inches, dark gray to a depth of 42 inches, and gray below that.

Included with this soil in mapping are small areas of Dorovan, Leon, Pickney and Rutlege soils.

The natural vegetation is mostly swamp cyrilla, greenbrier, bald cypress, pond pine and sweetbay.

Addendum 5 – Plant and Animal List

Grayton Beach State Park Plants

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
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LICHENS

Resurrection cladonia*Cladonia prostrata*
 Reindeer lichen.....*Cladonia spp.*

PTERIDOPHYTES

Club moss.....*Lycopodium alopecuroides*

GYMNOSPERMS

Southern red cedar.....*Juniperus silicicola*
 Sand pine.....*Pinus clausa*
 Slash pine*Pinus elliottii*
 Longleaf pine*Pinus palustris*
 Pond cypress.....*Taxodium ascendens*

ANGIOSPERMS

Gerardia.....*Agalinis obtusifolia*
 Gerardia.....*Agalinis purpurea*
 Common ragweed*Ambrosia artemisiifolia*
 Broomsedge*Andropogon virginicus*
 Wiregrass.....*Aristida stricta*
 Salt marsh aster*Aster subulatus*
 Salt bush*Baccharis halimifolia*
 Yellow buttons.....*Balduina angustifolia*
 Saltwort.....*Batis maritima*
 Sea oxeye*Borrichia frutescens*
 Curtiss' sandgrass*Calamovilfa curtissii* BM, BS, DM
 Deer's tongue.....*Carphephorus odoratissimus*
 Partridge-pea*Cassia fasciculata*
 Wild sensitive plant*Cassia nictitans*
 Butterfly-pea*Centrosema virginianum*
 Buttonbush.....*Cephalanthus occidentalis*
 Rosemary.....*Ceratiola ericoides*
 Sand-dune Spurge.....*Chamaesyce ammannioides*
 Lamb's quarters.....*Chenopodium album*
 Bush goldenrod*Chrysoma pauciflosculosa*
 Godfrey's golden aster*Chrysopsis godfreyi*..... BD, SC

Grayton Beach State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Cruise's golden aster	<i>Chrysopsis gossipina</i> sp <i>cruiseana</i>	BD, SC
Sawgrass	<i>Cladium jamaicense</i>	
Tread softly	<i>Cnidocolus stimulosus</i>	
Conradina	<i>Conradina canesens</i>	
Rattle-box	<i>Crotalaria pallida</i>	
Rabbit-bells	<i>Crotalaria rotundifolia</i>	
Croton	<i>Croton glandulosus</i>	
Beach tea	<i>Croton punctatus</i>	
Dodder	<i>Cuscuta pentagona</i>	
Sedge	<i>Cyperus retrofractus</i>	
Starrush	<i>Dichromena colorata</i>	
Poor Joe	<i>Diodia teres</i>	
Buttonweed	<i>Diodia virginiana</i>	
Dwarf sundew	<i>Drosera brevifolia</i>	
Pink sundew	<i>Drosera capillaris</i>	
Dew threads	<i>Drosera tracyi</i>	
Southern fleabane	<i>Erigeron quercifolius</i>	
Dog fennel	<i>Eupatorium leptophyllum</i>	
Goldenrod	<i>Euthamia minor</i>	
Fimbristylis	<i>Fimbristylis caroliniana</i>	
Umbrellagrass	<i>fuirena scirpoidea</i>	
Scratch daisy	<i>Haplopappus divaricatus</i>	
Diamond-flower	<i>Hedyotis nigricans</i>	
Rockrose	<i>Helianthemum corymbosum</i>	
Camphor weed	<i>Heterotheca subaxillaris</i>	
Big rose hibiscus	<i>Hibiscus grandiflorus</i>	
Hydrocotyle	<i>Hydrocotyle bonariensis</i>	
St. John's wort	<i>Hypericum cistifolium</i>	
St. Peter's wort	<i>Hypericum crux-andreae</i>	
Pinweed	<i>Hypericum gentianoides</i>	
St. Andrews-cross	<i>Hypericum hypercoides</i>	
Gallberry	<i>Ilex glabra</i>	
Yaupon	<i>Ilex vomitoria</i>	
Hairy indigo	<i>Indigofera hirsuta</i>	
Beach morning-glory	<i>Ipomoea imperati</i>	
Railroad vine	<i>Ipomoea pes-caprae</i>	
Saltmarsh morning-glory	<i>Ipomoea sagittata</i>	
Beach morning-glory	<i>Ipomoea stoloniferus</i>	
Marsh elder	<i>Iva frutescens</i>	
Iva	<i>Iva imbricata</i>	

Grayton Beach State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Needlerush.....	<i>Juncus roemeianus</i>	
Wicky	<i>Kalmia hirsuta</i>	
Saltmarsh mallow	<i>Kosteletzkya virginica</i>	
Blazing Star	<i>Liatris tenuifolia</i>	
Catesby's lily, pine lily	<i>Lilium catesbaei</i>	MF, WF
Ludwigia	<i>Ludwigia alata</i>	
Gulf Coast lupine	<i>Lupinus westianus</i>	BD, SC
Staggerbush.....	<i>Lyonia ferruginea</i>	
Fetterbush.....	<i>Lyonia lucida</i>	
Southern magnolia.....	<i>Magnolia grandiflora</i>	
Mikania.....	<i>Mikania scandens</i>	
Spotted beebalm.....	<i>Monarda punctata</i>	
Wax myrtle.....	<i>Myrica cerifera</i>	
White water-lily.....	<i>Nymphaea odorata</i>	
Seaside evening-primrose.....	<i>Oenothera humifusa</i>	
Prickly pear	<i>Opuntia humifusa</i>	
Beachgrass.....	<i>Panicum amarun</i>	
Fall panicum	<i>Panicum dichotomiflorum</i>	
Sand-squares.....	<i>Paronychia rugelii</i>	
Knotgrass.....	<i>Paspalum distichum</i>	
Cape-weed	<i>Phyla nodiflora</i>	
Pokeweed	<i>Phytolacca americana</i>	
Yellow-flowered butterwort.....	<i>Pinguicula lutea</i>	
Golden aster	<i>Pityopsis graminifolia</i>	
White fringed orchid	<i>Platanthera blephariglottis</i>	SSL, WP
Salt marsh fleabane	<i>Pluchea odorata</i>	
Rose pogonia.....	<i>Pogonia ophioglossoides</i>	SSL, WP
Milkwort.....	<i>Polygala brevifolia</i>	
Drumheads.....	<i>Polygala cruciata</i>	
Milkwort.....	<i>Polygala nana</i>	
Candy weed	<i>Polygala lutea</i>	
Milkwort.....	<i>Polygala grandiflora</i>	
Large leaved jointweed	<i>Polygonella macrophylla</i>	BD, SC
October-flower.....	<i>Polygonella polygama</i>	
Pickeral weed.....	<i>Pontederia cordata</i>	
Proserpinaca	<i>Proserpinaca pectinata</i>	
Black cherry.....	<i>Prunus serotina</i>	
Bracken	<i>Pteridium aquilinum</i>	
Mock bishop's-weed.....	<i>Pterilimnium capillaceum</i>	
Sand-live oak	<i>Quercus geminata</i>	

Grayton Beach State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Myrtle oak	<i>Quercus myrtifolia</i>	
Live oak	<i>Quercus virginiana</i>	
Meadow beauty	<i>Rhexia cubensis</i>	
Swamp azalea	<i>Rhododendron viscosum</i>	
Winged sumac	<i>Rhus copallina</i>	
Dewberry	<i>Rubus trivialis</i>	
Sourdock.....	<i>Rumex hastatulus</i>	
Cabbage palm	<i>Sabal palmetto</i>	
White flowered sabatia.....	<i>Sabatia brevifolia</i>	
Marsh pink	<i>Sabatia grandiflora</i>	
Arrowhead	<i>Sagittaria lancifolia</i>	
Coastal plain willow	<i>Salix caroliniana</i>	
Yellow trumpets	<i>Sarracenia flava</i>	SSL, WP
White-top pitcherplant.....	<i>Sarracenia leucophylla</i>	SSL, WP
Purple pitcherplant	<i>Sarracenia purpurea</i>	SSL, WP
Parrot pitcherplant.....	<i>Sarracenia psittacina</i>	SSL, WP
Saw-palmetto	<i>Serenoa repens</i>	
Sea purslane	<i>Sesuvium portulacastrum</i>	
Knotroot foxtail	<i>Setaria geniculata</i>	
Black senna.....	<i>Seymeria cassioides</i>	
Sida.....	<i>Sida cordifolia</i>	
Greenbriar	<i>Smilax auriculata</i>	
Catbriar	<i>Smilax bona-nox</i>	
Jackson-brier	<i>Smilax smallii</i>	
Nightshade.....	<i>Solanum americanum</i>	
Black nightshade	<i>Solanum nigrescens</i>	
Goldenrod	<i>Solidago chapmanii</i>	
Seaside goldenrod.....	<i>Solidago sempervirens</i>	
Goldenrod	<i>Solidago tortifolia</i>	
Saltmarsh cordgrass.....	<i>Spartina alterniflora</i>	
Marshhay.....	<i>Spartina patens</i>	
Smutgrass	<i>Sporobolus indicus</i>	
Virginia dropseed	<i>Sporobolus virginicus</i>	
Shoe buttons.....	<i>Syngonanthus flavidulus</i>	
Spanish moss	<i>Tillandsia usneoides</i>	
Poison ivy	<i>Toxicodendron radicans</i>	
Marsh St. John's-wort	<i>Tridenum virginicum</i>	
Arrowgrass.....	<i>Triglochin striata</i>	
Sea oats	<i>Uniola paniculata</i>	
Bladderwort	<i>Utricularia biflora</i>	

Grayton Beach State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Vervain	<i>Verbena brasiliensis</i>	
Frost weed	<i>Verbesina virginica</i>	
Yellow-eyed grass	<i>Xyris spp.</i>	
Spanish bayonet	<i>Yucca aloifolia</i>	
Hercules'-club.....	<i>Zanthoxylum clava-herculis</i>	

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
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INVERTEBRATES

Gulf Coast Solitary Bee.....*Hesperapis oraria*.....BD

AMPHIBIANS

Southern cricket frog*Acris gryllus* MF, WF, BM
 Southern toad*Anaxyrus terrestris*..... MTC
 Dwarf salamander.....*Eurycea quadridigitata* MTC
 Eastern narrowmouth toad.....*Gastrophryne carolinensis* MTC
 Green treefrog.....*Hyla cinerea* MTC
 Southern spring peeper.....*Pseudacris crucifer*..... MTC
 Ornate chorus frog.....*Pseudacris ornata*..... MTC
 Barking treefrog.....*Hyla gratiosa*.....BM, BS, WF
 Squirrel treefrog*Hyla squirella*.....BM, BS, WF
 Bronze frog.....*Lithobates clamitans clamitans*.....BM, BS
 Southern leopard frog*Lithobates sphenoccephalus*BM, BS
 Southeastern slimy salamander ...*Plethodon grobmani*..... BM
 Southern chorus frog*Pseudacris nigrita nigrita* BM
 Pig frog*Lithobates grylio* BM, BS, CDLK
 Eastern spadefoot toad.....*Scaphiopus holbrookii* BM, BS, CDLK

REPTILES

Florida cottonmouth.....*Agkistrodon piscivorus conanti*..... BM, BS, CDLK
 American alligator*Alligator mississippiensis* BM, BS, CDLK
 Green anole*Anolis carolinensis carolinensis* MTC
 Atlantic loggerhead turtle.....*Caretta caretta caretta*.....BD, MUS
 Green turtle.....*Chelonia mydas*.....BD, MUS
 Common snapping turtle.....*Chelydra serpentina* BD, BM, CDLK
 Florida cooter.....*Chrysemys floridana floridana*..... BD, BM, CDLK
 Six-lined racerunner*Cnemidophorus sexlineatus sexlineatus* MTC
 Southern Black Racer.....*Coluber constrictor priapus* MTC
 Eastern diamondback.....*Crotalus adamanteus* SH, MF, SCF, SC
 Southern ringneck snake.....*Diadophis punctatus punctatus*WP, SH, MF, SCF
 Corn snake*Pantherophis guttatus guttatus*.....WP, SH, MF, SCF
 Gray rat snake.....*Pantherophis spiloides*WP, SH, MF, SCF
 Five-lined skink.....*Plestiodon fasciatus*.....SC, SH, MF, SCF
 Southeastern five-lined skink.....*Plestiodon inexpectatus*WP, SH, MF, SCF
 Broad-headed skink.....*Plestiodon laticeps*.....MF, DEV

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Mud snake.....	<i>Farancia abacura</i>	BM, BS
Gopher tortoise.....	<i>Gopherus polyphemus</i>	SH, SC
Eastern kingsnake	<i>Lampropeltis getulus getulus</i>	DS, BS, BM, WP
Scarlet kingsnake.....	<i>Lampropeltis triangulum elapsoides</i>	DS, BS, BM, WP
Central Newt.....	<i>Notophthalmus viridescens louisianensis</i> .	DS, BS, BM, WP
Ground skink.....	<i>Scincella lateralis</i>	SC, SF
Eastern coachwhip.....	<i>Coluber flagellum flagellum</i>	BD, SC, SF, SH
Banded water snake.....	<i>Nerodia fasciata fasciata</i>	BM, BS, MF, WF
Eastern glass lizard	<i>Ophisaurus ventralis</i>	MTC
Southern fence lizard.....	<i>Sceloporus undulatus undulatus</i>	MTC
Dusky pigmy rattlesnake.....	<i>Sistrurus miliarius barbouri</i>	BD, SC
Stinkpot	<i>Sternotherus odoratus</i>	BM, BS, CDLK
Gulf Coast box turtle	<i>Terrapene carolina major</i>	MTC
Eastern ribbon snake	<i>Thamnophis sauritus sauritus</i>	MTC
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	MTC
Gulf Coast spiny softshell.....	<i>Apalone spiniferus aspera</i>	BM, BS, CDLK

BIRDS

Cooper's hawk.....	<i>Accipiter cooperii</i>	MTC
Sharp-shinned hawk.....	<i>Accipiter striatus</i>	MTC
Spotted sandpiper	<i>Actitis macularius</i>	BD, CDLK, MUS
Red-winged blackbird.....	<i>Agelaius phoeniceus</i>	MTC
Wood duck.....	<i>Aix sponsa</i>	BM, BS, CDLK
Seaside sparrow	<i>Ammodramus maritimus</i>	BM, CDLK
Nelson's sharp-tailed sparrow	<i>Ammodramus nelsoni</i>	BM, CDLK
Northern pintail	<i>Anas acuta</i>	MTC
Green-winged teal.....	<i>Anas carolinensis</i>	MTC
Blue-winged teal	<i>Anas discors</i>	MTC
Mallard	<i>Anas platyrhynchos</i>	MTC
Anhinga.....	<i>Anhinga anhinga</i>	BM, BS, CDLK
American pipit.....	<i>Anthus rubescens</i>	BM, BS, CDLK
Chuck-will's widow.....	<i>Antrostomus carolinensis</i>	MTC
Whip-poor-will.....	<i>Antrostomus vociferus</i>	MTC
Ruby-throated hummingbird.....	<i>Archilochus colubris</i>	MTC
Great egret.....	<i>Ardea alba</i>	MTC
Great blue heron.....	<i>Ardea herodias</i>	MTC
Redhead.....	<i>Aythya americana</i>	adjacent waters, CDLK
Lesser scaup	<i>Aythya affinis</i>	adjacent waters, CDLK
Greater scaup.....	<i>Aythya marila</i>	adjacent waters, CDLK

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Tufted titmouse	<i>Baeolophus bicolor</i>	MTC
Cedar waxwing	<i>Bombycilla cedrorum</i>	MTC
American bittern	<i>Botaurus lentiginosus</i>	BM, BS, CDLK
Great horned owl	<i>Bubo virginianus</i>	MTC
Cattle egret	<i>Bubulcus ibis</i>	MTC
Bufflehead	<i>Bucephala albeola</i>	adjacent waters, CDLK
Common goldeneye.....	<i>Bucephala clangula</i>	adjacent waters, CDLK
Red-tailed hawk	<i>Buteo jamaicensis</i>	MTC
Red-shouldered hawk	<i>Buteo lineatus</i>	MTC
Broad-winged hawk	<i>Buteo platypterus</i>	MTC
Green heron	<i>Butorides striatus</i>	MTC
Sanderling	<i>Calidris alba</i>	BD, CDLK, MUS
Dunlin	<i>Calidris alpina</i>	BD, CDLK, MUS
Red knot	<i>Calidris canutus</i>	BD, CDLK, MUS
White-rumped sandpiper	<i>Calidris fuscicollis</i>	BD, CDLK, MUS
Western sandpiper	<i>Calidris mauri</i>	BD, CDLK, MUS
Pectoral sandpiper	<i>Calidris melanotos</i>	BD, CDLK, MUS
Least sandpiper	<i>Calidris minutilla</i>	BD, CDLK, MUS
Semipalmated sandpiper	<i>Calidris pusilla</i>	BD, CDLK, MUS
Northern cardinal.....	<i>Cardinalis cardinalis</i>	MTC
Pine siskin	<i>Carduelis pinus</i>	MTC
American goldfinch	<i>Carduelis tristis</i>	MTC
Turkey vulture.....	<i>Cathartes aura</i>	MTC
Hermit thrush.....	<i>Catharus guttatus</i>	MTC
Hermit thrush.....	<i>Catharus ustulatus</i>	MTC
Gray-cheeked thrush	<i>Catharus minimus</i>	MTC
Brown creeper.....	<i>Certhia Americana</i>	MF, WF
Chimney swift	<i>Chaetura pelagica</i>	MTC
Snowy plover.....	<i>Charadrius nivosus</i>	BD, CDLK, MUS
Piping plover	<i>Charadrius melodus</i>	BD, CDLK, MUS
Semipalmated plover.....	<i>Charadrius semipalmatus</i>	BD, CDLK, MUS
Killdeer	<i>Charadrius vociferus</i>	MTC
Wilson's plover.....	<i>Charadrius wilsonia</i>	BD, CDLK, MUS
Black tern.....	<i>Chlidonias niger</i>	BD, CDLK, MUS
Common nighthawk.....	<i>Chordeiles minor</i>	MTC
Bonaparte's gull.....	<i>Chroicocephalus philadelphia</i>	adjacent waters, MUS
Northern harrier	<i>Circus cyaneu</i>	MTC
Marsh wren.....	<i>Cistothorus palustris</i>	CIS
Sedge wren.....	<i>Cistothorus platensis</i>	MTC
Yellow-billed cuckoo.....	<i>Coccyzus americanus</i>	MTC

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	MTC
Northern flicker	<i>Colaptes auratus</i>	MTC
Northern bobwhite	<i>Colinus virginianus</i>	MF, WF, WP
Rock dove	<i>Columba livia</i>	MTC
Common ground-dove	<i>Columbina passerina</i>	MTC
Eastern wood-pewee	<i>Contopus virens</i>	MTC
Black vulture	<i>Coragyps atratus</i>	MTC
Fish crow	<i>Corvus ossifragus</i>	MTC
American crow	<i>Corvus brachyrhynchos</i>	MTC
Blue jay	<i>Cyanocitta cristata</i>	MTC
Bobolink	<i>Dolichonyx oryzivorus</i>	MTC
Pileated woodpecker	<i>Dryocopus pileatus</i>	BS, DS
Gray catbird	<i>Dumetella carolinensis</i>	MTC
Little blue heron	<i>Egretta caerulea</i>	BM, BS, CDLK
Reddish egret	<i>Egretta rufescens</i>	MTC
Snowy egret	<i>Egretta thula</i>	MTC
Tricolored heron	<i>Egretta tricolor</i>	MTC
Swallow tailed kite	<i>Elanoides forficatus</i>	MTC
White ibis	<i>Eudocimus albus</i>	MTC
Merlin	<i>Falco columbarius</i>	MTC
Southeastern American kestrel	<i>Falco sparverius paulus</i>	MTC
Magnificent frigatebird	<i>Fregata magnificens</i>	OF
American coot	<i>Fulica americana</i>	BM, BS, CDLK
Common snipe	<i>Gallinago gallinago</i>	BM, BS, CDLK
Common gallinule	<i>Gallinula galeata</i>	MTC
Common loon	<i>Gavia immer</i>	adjacent waters, CDLK
Gull-billed tern	<i>Gelochelidon nilotica</i>	BD, CDLK, MUS
Common yellowthroat	<i>Geothlypis trichas</i>	MTC
House finch	<i>Haemorhous mexicanus</i>	BD, RUD, DEV
Purple finch	<i>Haemorhous purpureus</i>	MTC
Bald eagle	<i>Haliaeetus leucocephalus</i>	MTC
American Oystercatcher	<i>Haematopus palliatus</i>	BD, MUS
Black-necked stilt	<i>Himantopus mexicanus</i>	MTC
Barn swallow	<i>Hirundo rustica</i>	MTC
Caspian tern	<i>Hydroprogne caspia</i>	BD, CDLK, MUS
Wood thrush	<i>Hylocichla mustelina</i>	MTC
Mississippi kite	<i>Ictinia mississippiensis</i>	MTC
Baltimore oriole	<i>Icterus galbula</i>	MTC
Orchard oriole	<i>Icterus spurius</i>	MTC
Yellow-breasted chat	<i>Icteria virens</i>	MTC

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Least bittern	<i>Ixobrychus exilis</i>	BM, BS, CDLK
Dark-eyed junco	<i>Junco hyemalis</i>	MTC
Loggerhead strike	<i>Lanius ludovicianus</i>	MTC
Herring gull	<i>Larus smithsonianus</i>	BD, CDLK, MUS
Laughing gull	<i>Leucophaeus atricilla</i>	BD, CDLK, MUS
Ring-billed gull.....	<i>Larus delawarensis</i>	BD, CDLK, MUS
Marbled godwit.....	<i>Limosa fedoa</i>	BD, CDLK, MUS
Short-billed dowitcher.....	<i>Limnodromus griseus</i>	BD, CDLK, MUS
Hooded merganser	<i>Lophodytes cucullatus</i>	adjacent waters, CDLK
Belted kingfisher	<i>Megaceryle alcyon</i>	BM, BS, CDLK
Eastern screech owl.....	<i>Megascops asio</i>	MTC
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	MTC
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	MTC
White-winged scoter.....	<i>Melanitta deglandi</i>	adjacent waters
Surf scoter.....	<i>Melanitta perspicillata</i>	adjacent waters
Swamp sparrow	<i>Melospiza georgiana</i>	MTC
Song sparrow	<i>Melospiza melodi</i>	MTC
Red-breasted merganser	<i>Mergus serrator</i>	adjacent waters, BM, CDLK
Northern mockingbird	<i>Mimus polyglottos</i>	MTC
Black-and-white warbler.....	<i>Mniotilta varia</i>	MTC
Brown-headed cowbird.....	<i>Molothrus ater</i>	MTC
Northern gannet.....	<i>Morus bassanus</i>	adjacent waters
Great crested flycatcher.....	<i>Myiarchus crinitus</i>	MTC
Whimbrel.....	<i>Numenius phaeopus</i>	BD, CDLK, MUS
Yellow-crowned night heron	<i>Nyctanassa violacea</i>	MTC
Orange-crowned warbler.....	<i>Oreothlypis celata</i>	MTC
Osprey.....	<i>Pandion haliaetus</i>	BM, BS, CDLK
Louisiana waterthrush	<i>Parkesia motacilla</i>	MTC
House sparrow	<i>Passer domesticus</i> *.....	DV
Savannah sparrow	<i>Passerculus sandwichensis</i>	MTC
Blue grosbeak.....	<i>Passerina caerulea</i>	MTC
Indigo bunting.....	<i>Passerina cyanea</i>	MTC
American white pelican	<i>Pelecanus erythrorhynchos</i>	adjacent waters
Brown pelican.....	<i>Pelecanus occidentalis</i>	adjacent waters
Bachman's sparrow.....	<i>Peucaea aestivalis</i>	SH, MF
Double crested cormorant	<i>Phalacrocorax auritus</i>	adjacent waters, CDLK, MUS
Rose-breasted grosbeak.....	<i>Pheucticus ludovicianus</i>	MTC
Downy woodpecker	<i>Picoides pubescens</i>	MTC
Hairy woodpecker	<i>Picoides villosus</i>	MTC
Eastern towhee	<i>Pipilo erythrophthalmus</i>	MTC

* Non-native Species

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Scarlet tanager	<i>Piranga olivacea</i>	MTC
Summer tanager	<i>Piranga rubra</i>	MTC
American golden plover	<i>Pluvialis dominica</i>	BD, CDLK, MUS
Black-bellied plover	<i>Pluvialis squatarola</i>	BD, CDLK, MUS
Horned grebe.....	<i>Podiceps auritus</i>	adjacent waters, CDLK
Pied-billed grebe	<i>Podilymbus podiceps</i>	CDLK
Blue-gray gnatcatcher.....	<i>Polioptila caerulea</i>	MTC
Carolina chickadee.....	<i>Poecile carolinensis</i>	MTC
Sora.....	<i>Porzana carolina</i>	CDLK
Purple martin.....	<i>Progne subis</i>	flyover
Prothonotary Warbler	<i>Protonotaria citrea</i>	MTC
Boat-tailed grackle	<i>Quiscalus major</i>	MTC
Common grackle	<i>Quiscalus quiscula</i>	MTC
Clapper rail	<i>Rallus longirostris</i>	CDLK
American avocet.....	<i>Recurvirostra americana</i>	BD, CDLK, MUS
Ruby-crowned kinglet.....	<i>Regulus calendula</i>	MTC
Golden-crowned kinglet	<i>Regulus satrapa</i>	MTC
Bank swallow.....	<i>Riparia riparia</i>	MTC
Black skimmer	<i>Rynchops niger</i>	BD, CDLK, MUS
Eastern phoebe	<i>Sayornis phoebe</i>	MTC
American woodcock.....	<i>Scolopax minor</i>	MF, SCF, SH
Northern parula	<i>Setophaga americana</i>	MTC
Hooded warbler	<i>Setophaga citrina</i>	MTC
Yellow-rumped warbler.....	<i>Setophaga coronata coronata</i>	MTC
Prairie warbler.....	<i>Setophaga discolor</i>	MTC
Yellow-throated warbler.....	<i>Setophaga dominica</i>	MTC
Palm warbler.....	<i>Setophaga palmarum</i>	MTC
Chestnut-sided warbler.....	<i>Setophaga pensylvanica</i>	MTC
American Yellow warbler.....	<i>Setophaga petechia</i>	MTC
Pine warbler	<i>Setophaga pinus</i>	MF, SCF, WF, SH
American redstart	<i>Setophaga ruticilla</i>	MTC
Eastern bluebird	<i>Sialia sialis</i>	MTC
Red-breasted nuthatch	<i>Sitta canadensis</i>	MF, SCF
White-breasted nuthatch.....	<i>Sitta carolinensis</i>	MF, SCF
Brown-headed nuthatch	<i>Sitta pusilla</i>	MTC
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	MF, SCF
Chipping sparrow	<i>Spizella passerina</i>	MTC
Field sparrow	<i>Spizella pusilla</i>	MTC
Northern rough-winged swallow.....	<i>Stelgidopteryx serripennis</i>	MTC
Least tern.....	<i>Sternula antillarum</i>	BD,CDLK, MUS

Grayton Beach State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Forster's tern.....	<i>Sterna forsteri</i>	BD, CDLK, MUS
Common tern.....	<i>Sterna hirundo</i>	BD, CDLK, MUS
Eurasian collared dove.....	<i>Streptopelia decaocto</i> *	MTC
Barred owl.....	<i>Strix varia</i>	MTC
Eastern meadowlark.....	<i>Sturnella magna</i>	MTC
European starling.....	<i>Sturnus vulgaris</i> *	MTC
Tree swallow.....	<i>Tachycineta bicolor</i>	MTC
Royal tern.....	<i>Thalasseus maximus</i>	BD, CDLK, MUS
Sandwich tern.....	<i>Thalasseus sandvicensis</i>	BD, CDLK, MUS
Carolina wren.....	<i>Thryothorus ludovicianus</i>	MTC
Brown thrasher.....	<i>Toxostoma rufum</i>	MTC
Lesser yellowlegs.....	<i>Tringa flavipes</i>	BD, CDLK, MUS
Greater yellowlegs.....	<i>Tringa melanoleuca</i>	BD, CDLK, MUS
Eastern Willet.....	<i>Tringa semipalmata semipalmata</i>	BD, CDLK, MUS
Western Willet.....	<i>Tringa semipalmata inornata</i>	BD, CDLK, MUS
Solitary sandpiper.....	<i>Tringa solitaria</i>	BD, CDLK, MUS
House wren.....	<i>Troglodytes aedon</i>	MTC
Winter wren.....	<i>Troglodytes hiemalis</i>	MTC
Buff-breasted sandpiper.....	<i>Tryngites subruficollis</i>	BD, CDLK, MUS
American robin.....	<i>Turdus migratorius</i>	MTC
Gray kingbird.....	<i>Tyrannus dominicensis</i>	MTC
Eastern kingbird.....	<i>Tyrannus tyrannus</i>	MTC
Yellow-throated vireo.....	<i>Vireo flavifrons</i>	MTC
White-eyed vireo.....	<i>Vireo griseus</i>	MTC
Red-eyed vireo.....	<i>Vireo olivaceus</i>	MTC
Blue-headed vireo.....	<i>Vireo solitarius</i>	MTC
Mourning dove.....	<i>Zenaida macroura</i>	MTC
White-throated sparrow.....	<i>Zonotrichia albicollis</i>	MTC
White-crowned sparrow.....	<i>Zonotrichia leucophrys</i>	MTC

MAMMALS

Coyote.....	<i>Canis latrans</i> *	MTC
Beaver.....	<i>Castor canadensis</i>	BM, BS, CDLK
Nine-banded armadillo.....	<i>Dasypus novemcinctus</i> *	MTC
Virginia opossum.....	<i>Didelphis virginiana</i>	MTC
Domestic cat.....	<i>Felis catus</i> *	MTC
North American River otter.....	<i>Lontra canadensis</i>	CDLK
Striped skunk.....	<i>Mephitis mephitis</i>	MTC
White-tailed deer.....	<i>Odocoileus virginianus</i>	MTC

* Non-native Species

Grayton Beach State Park Animals

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
Cotton mouse.....	<i>Peromyscus gossypinus</i>	BD, SC
Choctawhatchee beach mouse	<i>Peromyscus polionotus allophrys</i>	BD, SC
Raccoon.....	<i>Procyon lotor</i>	MTC
Eastern mole	<i>Scalopus aquaticus</i>	MF, SH
Eastern gray squirrel	<i>Sciurus carolinensis</i>	MTC
Hispid cotton rat	<i>Sigmodon hispidus</i>	MTC
Marsh rabbit.....	<i>Sylvilagus palustris</i>	CDLK
Gray fox	<i>Urocyon cinereoargenteus</i>	MTC
Florida black bear.....	<i>Ursus americanus floridanus</i>	MTC
Red fox	<i>Vulpes vulpes</i>	BD, MF, SC
Southeastern myotis	<i>Myotis austroriparius</i>	MTC
Eastern red bat.....	<i>Lasiurus borealis</i>	MTC
Seminole bat.....	<i>Lasiurus seminolus</i>	MTC
Northern yellow bat	<i>Lasiurus intermedius</i>	MTC
Tri-colored bat	<i>Perimyotis subflavus</i>	MTC
Evening bat	<i>Nycticeius humeralis</i>	MTC
Big brown bat.....	<i>Eptesicus fuscus</i>	MTC
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	MTC
Hoary bat.....	<i>Lasiurus cinereus</i>	MTC

Natural Community Abbreviations for Habitat

TERRESTRIAL

Beach Dune	BD
Coastal Berm	CB
Coastal Grassland	CG
Coastal Strand	CS
Dry Prairie	DP
Keys Cactus Barren	KCB
Limestone Outcrop	LO
Maritime Hammock	MAH
Mesic Flatwoods	MF
Mesic Hammock	MEH
Pine Rockland	PR
Rockland Hammock	RH
Sandhill	SH
Scrub	SC
Scrubby Flatwoods	SCF
Shell Mound	SHM
Sinkhole	SK
Slope Forest	SPF
Upland Glade	UG
Upland Hardwood Forest	UHF
Upland Mixed Woodland	UMW
Upland Pine	UP
Wet Flatwoods	WF
Xeric Hammock	XH

PALUSTRINE

Alluvial Forest	AF
Basin Marsh	BM
Basin Swamp	BS
Baygall	BG
Bottomland Forest	BF
Coastal Interdunal Swale	CIS
Depression Marsh	DM
Dome Swamp	DS
Floodplain Marsh	FM
Floodplain Swamp	FS
Glades Marsh	GM
Hydric Hammock	HH
Keys Tidal Rock Barren	KTRB
Mangrove Swamp	MS
Marl Prairie	MP
Salt Marsh	SAM

Natural Community Abbreviations for Habitat

Seepage Slope	SSL
Shrub Bog	SHB
Slough	SLO
Slough Marsh.....	SLM
Strand Swamp	STS
Wet Prairie	WP

LACUSTRINE

Clastic Upland Lake.....	CULK
Coastal Dune Lake	CDLK
Coastal Rockland Lake	CRLK
Flatwoods/Prairie.....	FPLK
Marsh Lake.....	MLK
River Floodplain Lake	RFLK
Sandhill Upland Lake.....	SULK
Sinkhole Lake.....	SKLK
Swamp Lake.....	SWLK

RIVERINE

Alluvial Stream.....	AST
Blackwater Stream	BST
Seepage Stream.....	SST
Spring-run Stream.....	SRST

SUBTERRANEAN

Aquatic Cave	ACV
Terrestrial Cave	TCV

ESTUARINE

Algal Bed	EAB
Composite Substrate.....	ECPS
Consolidated Substrate	ECNS
Coral Reef	ECR
Mollusk Reef	EMR
Octocoral Bed.....	EOB
Seagrass Bed	ESGB
Sponge Bed.....	ESPB
Unconsolidated Substrate	EUS
Worm Reef	EWR

Natural Community Abbreviations for Habitat

MARINE

Algal Bed	MAB
Composite Substrate.....	MCPS
Consolidated Substrate	MCNS
Coral Reef	MCR
Mollusk Reef	MMR
Octocoral Bed.....	MOB
Seagrass Bed	MSGB
Sponge Bed.....	MSPB
Unconsolidated Substrate	MUS
Worm Reef	MWR

ALTERED LANDCOVER TYPES

Abandoned field.....	ABF
Abandoned pasture	ABP
Agriculture	AG
Canal/ditch.....	CD
Clearcut pine plantation.....	CPP
Clearing	CL
Developed	DV
Impoundment/artificial pond	IAP
Invasive exotic monoculture	IEM
Pasture - improved	PI
Pasture - semi-improved.....	PSI
Pine plantation.....	PP
Road	RD
Spoil area	SA
Successional hardwood forest.....	SHF
Utility corridor.....	UC

MISCELLANEOUS

Many Types of Communities.....	MTC
Overflying	OF

Addendum 6 – Imperiled Species Ranking Definitions

Imperiled Species Ranking Definitions

The Nature Conservancy and the Natural Heritage Program Network (of which FNAI is a part) define an element as any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave or other ecological feature. An element occurrence (EO) is a single extant habitat that sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element.

Using a ranking system developed by The Nature Conservancy and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks to each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element occurrences, estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

Federal and State status information is from the U.S. Fish and Wildlife Service; and the Florida Game and Freshwater Fish Commission (animals), and the Florida Department of Agriculture and Consumer Services (plants), respectively.

FNAI GLOBAL RANK DEFINITIONS

- G1Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.
- G2Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4apparently secure globally (may be rare in parts of range)
- G5demonstrably secure globally
- GHof historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)
- GX.....believed to be extinct throughout range
- GXC.....extirpated from the wild but still known from captivity or cultivation
- G#?Tentative rank (e.g.,G2?)
- G#G#.....range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T#rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)

Imperiled Species Ranking Definitions

- G#Q.....rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q.....same as above, but validity as subspecies or variety is questioned.
- GUdue to lack of information, no rank or range can be assigned (e.g., GUT2).
- G?.....Not yet ranked (temporary)
- S1Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4apparently secure in Florida (may be rare in parts of range)
- S5demonstrably secure in Florida
- SH.....of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SX.....believed to be extinct throughout range
- SAaccidental in Florida, i.e., not part of the established biota
- SE.....an exotic species established in Florida may be native elsewhere in North America
- SN.....regularly occurring but widely and unreliably distributed; sites for conservation hard to determine
- SUdue to lack of information, no rank or range can be assigned (e.g., SUT2).
- S?.....Not yet ranked (temporary)
- NNot currently listed, nor currently being considered for listing, by state or federal agencies.

LEGAL STATUS

FEDERAL

(Listed by the U. S. Fish and Wildlife Service - USFWS)

- LE.....Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
- PE.....Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

Imperiled Species Ranking Definitions

- LT.....Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.
- PT.....Proposed for listing as Threatened Species.
- C.....Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
- E(S/A).....Endangered due to similarity of appearance.
- T(S/A).....Threatened due to similarity of appearance.

STATE

ANIMALS ..(Listed by the Florida Fish and Wildlife Conservation Commission - FFWCC)

- LE.....Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.
- LT.....Listed as Threatened Species by the FFWCC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.
- LS.....Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species?

PLANTS(Listed by the Florida Department of Agriculture and Consumer Services - FDACS)

- LE.....Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all

Imperiled Species Ranking Definitions

species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.

LT.....Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

Addendum 7 – Cultural Information

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

Statutory Authority and more in depth information can be found in the following:

Chapter 253, F.S. – State Lands

Chapter 267, F.S. – Historical Resources

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)

Chapter 872, F.S. – Offenses Concerning Dead Bodies and Graves

Other helpful citations and references:

Chapter 1A-32, F.A.C. – Archaeological Research

Other helpful citations and references:

Chapter 1A-44, F.A.C. – Procedures for Reporting and Determining Jurisdiction Over Unmarked Human Burials

Chapter 1A-46, F.A.C. – Archaeological and Historical Report Standards and Guidelines

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings

D. Management Implementation

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

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

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

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

**Management Procedures for Archaeological and Historical Sites and Properties on
State-Owned or Controlled Properties (revised February 2007)**

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, the following information, at a minimum, must be submitted for comments and recommendations.

Project Description - A detailed description of the proposed project including all related activities. For land clearing or ground disturbing activities, the depth and extent of the disturbance, use of heavy equipment, location of lay down yard, etc. For historic structures, specific details regarding rehabilitation, demolition, etc.

Project Location - The exact location of the project indicated on a USGS Quadrangle map, is preferable. A management base map may be acceptable. Aerial photos indicating the exact project area as supplemental information are helpful.

Photographs - Photographs of the project area are always useful. Photographs of structures are required.

Description of Project Area - Note the acreage of the project; describe the present condition of project area, and any past land uses or disturbances.

Description of Structures - Describe the condition and setting of each building within project area if approximately fifty years of age or older.

Recorded Archaeological Sites or Historic Structures - Provide Florida Master Site File numbers for all recorded historic resources within or adjacent to the project area. This information should be in the current management plan; however, it can be obtained by contacting the Florida Master Site File at (850) 245-6440 or Suncom 205-6440.

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

Tim Parsons
Division of Historical Resources
Bureau of Historic Preservation
Compliance and Review Section
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Phone: (850) 245-6333

Fax: (850) 245-6438

Eligibility Criteria for National Register of Historic Places

The criteria to be used for evaluating eligibility for listing in the National Register of Historic Places are as follows:

- 1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
 - a) are associated with events that have made a significant contribution to the broad patterns of our history; and/or
 - b) are associated with the lives of persons significant in our past; and/or
 - c) embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
 - d) have yielded, or may be likely to yield, information important in prehistory or history.

- 2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
 - a) a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
 - b) a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
 - c) a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
 - d) a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or

Eligibility Criteria for National Register of Historic Places

- e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- f) a property achieving significance within the past 50 years, if it is of exceptional importance.

Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

Stabilization is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Addendum 8 – Timber Management Analysis

Grayton Beach State Park Timber Management Analysis

Timber Stand 1

Stand 1 encompasses the upland portions of Resource Management Zones GB-11, GB-13 and GB-14 where a natural encroachment of sand pine has occurred for more than 50 years. A total of 337 acres of these zones comprise the timber stand. This timber analysis is for the sand pine species only, as any longleaf pine or slash pine found growing within this area will not be harvested.

In Resource Management Zone GB-11, 38 acres has been infested by the advancing sand pine. An estimated 800 to 1,000 sand pine trees per acre are present within this zone. The trees are up to 50 years in age and range in diameter size from 1 inch to 12 inches dbh (diameter at breast height - 4.5 feet above the ground). The average dbh is 5-7 inches. The tallest trees are about 40 feet in height. There are scattered mature longleaf pines that are 100 years or more in age as determined from tree cores. The understory of this zone is composed of mostly saw palmetto and turkey oak. There is very little herbaceous growth, but some scattered wiregrass clumps are present. Slope is gently rolling and there are some wetland areas adjacent to the stand.

Resource Management Zone GB-13 has 134 acres that is dominated by sand pine. An estimated 800 to 1,000 sand pine trees per acre are present here. The trees are up to 50 years in age and range in diameter size from 1 inch to 12 inches dbh with an average dbh of 6-8 inches. The tallest trees are about 50 feet in height. On the drier, sandy areas, scattered mature longleaf pines are growing. In the lower, moister areas, mature slash pines are growing. The understory of this zone is composed of mostly scrubby shrubs including myrtle oak, sand live oak and rusty lyonia. Slope is gently rolling and there are some wetland areas within the zone and adjacent to the portions of the stand.

For 165 acres of Resource Management Zone GB-14, sand pine can be found as the dominant overstory tree species. An estimated 800 to 1,000 sand pine trees per acre are present here. The trees are up to 50 years in age and range in diameter size from 1 inch to 12 inches dbh with an average dbh of 6-8 inches. The tallest trees in this zone are about 60 feet in height. The dry, sandy portions of the zone are also home to scattered mature longleaf pines. In the low, wetter areas, mature slash pines are growing. The understory of this zone is composed of mostly scrubby shrubs including myrtle oak, sand live oak and rusty lyonia. Slope is gently rolling and there are some wetland areas within the zone and adjacent to the portions of the stand.

The timber value of sand pine is poor for both pulp and wood products. The common use of sand pine timber is as fuel wood. Fuel wood harvest can remove all sizes of sand pine and involves a whole tree harvest where tops and limbs can be included as harvested material. There is no burn history for any portions of this timber stand and it appears that none of these zones have ever been prescribed burned. Access to the timber stand and all three management zones is via County Road 30-A to the south.

Grayton Beach State Park Timber Management Analysis

Addendum 9 – Land Management Review

February 18, 2011

TO: Marianne Gengenbach, Program Administrator
Division of State Lands

FROM: Parks Small, Chief, Bureau of Natural and Cultural Resources
Division of Recreation and Parks 

Albert Gregory, Chief, Office of Park Planning 
Division of Recreation and Parks

SUBJECT: Response to Draft Land Management Review (LMR)
Grayton Beach State Park

The Land Management Review draft report provided to DRP determined that management of Grayton Beach State Park by the Division of Recreation and Parks met the two tests prescribed by law. Namely, the review team concluded that the land is being managed for the purposes for which it was acquired and in accordance with the land management plan.

Below are Additional Recommendations and Checklist Findings (items the LMR determined should be further addressed in the management plan update) of the draft LMR report, with our Manager's Response to each. The responses were prepared via a coordinated effort of the park, district office, and our offices.

Due to the resource needs identified in the review and the current allocation of 100% of the park budget to recreation and public access, the team recommends an increase in the budget specifically allocated, not a reallocation, to resource management. (VOTE: 6+, 2-)
Managing Agency Response: Agree. The updated unit management plan will address land management funding needs. However, Division funding is determined annually by the Florida Legislature and funds are allocated to the 160 state parks according to priority needs.

The team recommends that DRP consider developing a primitive tent camping only area during the next planning process within the old subdivision. (VOTE: 8+, 0-)
Managing Agency Response: The Division will consider these recommendations during the next unit management plan revision.

The team recommends seeking external and financial assistance with which to manually remove and chemically treat excessive woody vegetation in the cypress domes community. (VOTE: 8+, 0-)
Managing Agency Response: Agree. District Biologists will communicate with FWC Regional Biologist to develop a plan that will benefit herpetofauna as well as seepage slope and cypress domes in the Park and then pursue funding to follow that plan.

Discussion in the management plan regarding non-native, invasive & problem species, specifically control and prevention of pests/pathogens.
Managing Agency Response: Agree. The updated management plan will address control of invasive and problem species. Prevention of invasive species entering the Park is often outside our control.

Discussion in the management plan regarding adjacent property concerns, specifically discussion of potential surplus land determination and surplus lands identified.

Managing Agency Response: Agree. The Division will address adjacent property concerns and the determination of surplus lands in the update of the management plan.

Discussion of the deficiencies in management resources, specifically funding, with documentation in the management plan.

Managing Agency Response: The updated unit management plan will address land management funding needs. However, Division funding is determined annually by the Florida Legislature and funds are allocated to the 160 state parks according to priority needs.

Thank you for your attention.

GK

CC: Danny Jones, Chief, Bureau of Parks District 1
Tony Tindell, Assistant Chief, Bureau of Parks District 1
Dale Shingler, Park Manager, Grayton Beach State Park
John Bente , Environmental Specialist, Bureau of Parks District 1