



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

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TALLAHASSEE, FLORIDA 32399-3000

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April 21, 2014

Ms. Jennifer Carver
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: Camp Helen State Park – Lease # 4124

Dear Ms. Carver:

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 Camp Helen State Park management plan. The next management plan update is due April 21, 2024.

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,

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



Camp Helen State Park

APPROVED
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
April 21, 2014



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INTRODUCTION

Camp Helen State Park is located in Bay County (see Vicinity Map). Access to the park is from U.S. Highway 98 (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Currently, the park contains 182.26 acres, as reflected on the current Properties under Jurisdiction of the Division of Recreation and Parks (Division) and reflected in the Jurisdiction Report Update July 31, 2013.

The park was acquired in 1996 by The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) using Conservation and Recreation Lands (CARL) funds and Preservation 2000 (P2000) funds (see Addendum 1). At Camp Helen State Park, public outdoor recreation and conservation is the designated single use of the property. There are no legislative or executive directives that constrain the use of this property.

PURPOSE AND SIGNIFICANCE OF THE PARK

The purpose of Camp Helen State Park is to provide Florida residents and visitors with public access to natural areas for high-quality resource-based outdoor recreation, to conserve native habitat, help preserve water the quality of Lake Powell, and educate the public about local history. The park provides opportunities for resource-based public outdoor recreation, including hiking, swimming, picnicking and historical interpretation.

- The park protects the Camp Helen Historic District, which functions as an outdoor cultural museum and is listed on the National Register of Historic Places. The park presents a complex of authentic structures characteristic of the type of employee retreat resort built by large industrial mills and companies for their workers in the first half of the 20th century.
- The park protects six known archeological sites listed on the Florida Master Site File and presents an additional opportunity to educate visitors and residents about the long history of occupation by native people and early Florida residents at the park.
- The park is located on Lake Powell, the largest example of a freshwater coastal dune lake in the Florida Panhandle and an Outstanding Florida Water (OFW).
- The park serves as part of a research/ monitoring program for the study of endangered shorebirds, as well as a nesting area for endangered sea turtles and protected habitat for a number of imperiled plant species.

Camp Helen 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.

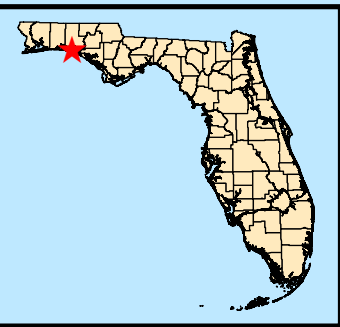
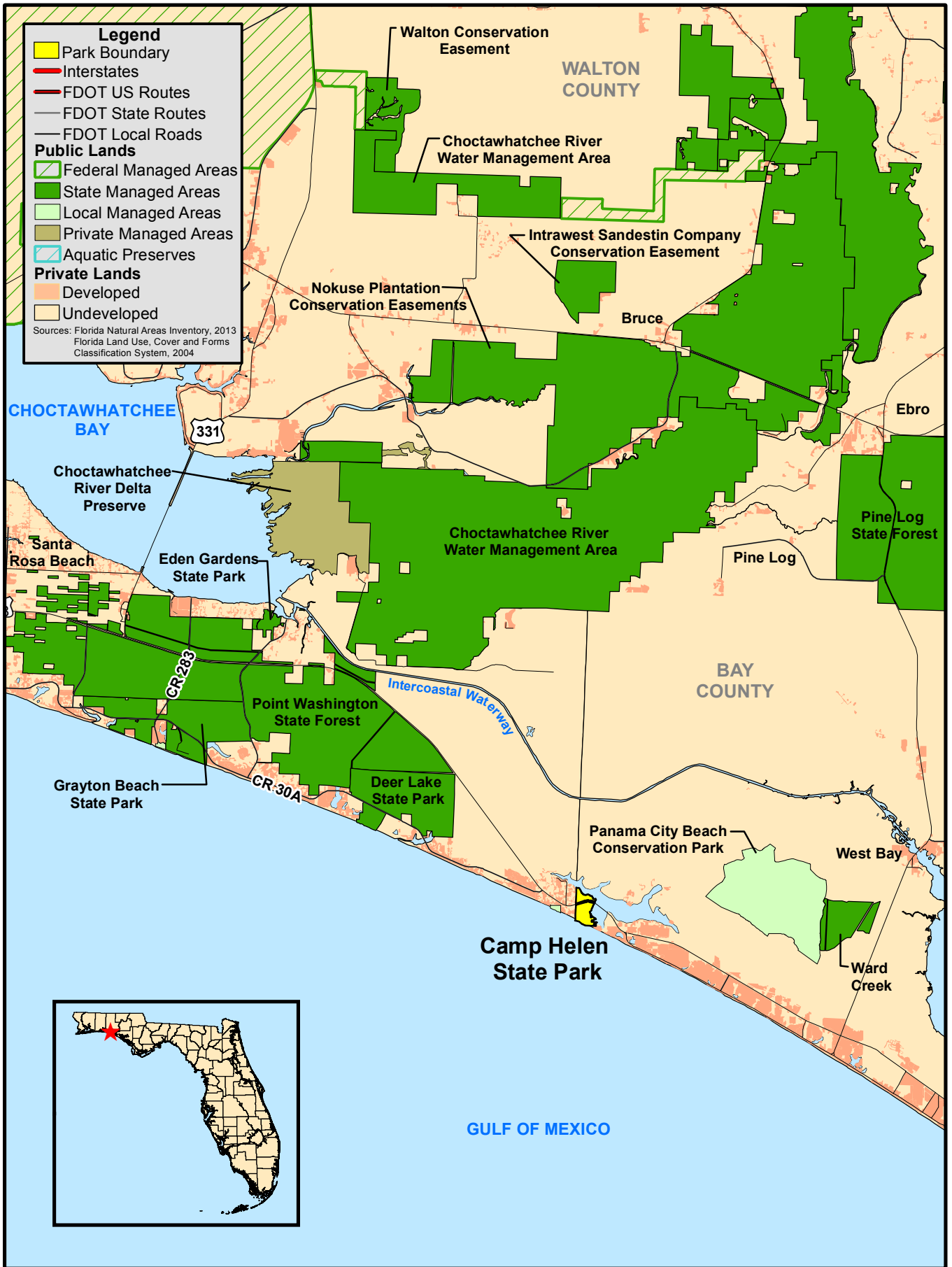
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Camp Helen State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or 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 is intended to be consistent with the State Lands Management Plan. Upon approval, this management plan will replace the 2003 approved plan.

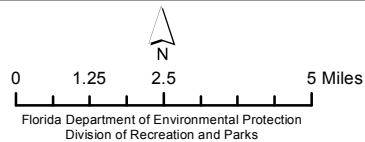
The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management problems and needs 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 resource base 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 Division's implementation progress, (2) timeframes for



**CAMP HELEN
STATE PARK**



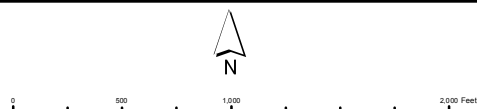
**VICINITY
MAP**



Legend

- Park Boundary
- Hiking/Biking
- Nature/Interpretive
- Parking Lot
- Walkways

CAMP HELEN STATE PARK



REFERENCE MAP

completing actions and objectives, (3) estimated costs to complete each action and objective.

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. This plan is also intended to meet the requirements for beach and shore preservation, as defined in Chapter 161, Florida Statutes, and Chapters 62B-33, 62B-36 and 62R-49, Florida Administrative Code.

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of the DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, and visitation and visitor experience. For this park, it was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation. 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.

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 multiple-use management activities would not be appropriate as a means of generating revenues for land management. Instead, techniques such as entrance fees, concessions and similar measures will be employed on a case-by-case basis as a means of supplementing park management funding.

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes, and Chapter 62D-2, Florida Administrative Code, the Division of Recreation and Parks (Division) 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 Board of Trustees of the Internal Improvement Trust Fund (Trustees) has 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 standard system-wide and are set by internal direction. These procedures are outlined in the Division'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:

- Provide administrative support for all park functions.
- Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
- Restore and maintain the natural communities/habitats of the park.
- Maintain, improve or restore imperiled species populations and habitats in the park.
- Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
- Protect, preserve and maintain the cultural resources of the park.
- Provide public access and recreational opportunities in the park.
- 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 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.

Public Participation

DRP provided an opportunity for public input by conducting two public workshops and Advisory Group meetings to present the draft management plan to the public. The first meetings were held on December 17 and 18, 2013, respectively. Meeting notices were included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The second joint meeting was held on January 29, 2014 and was published in the Florida Administrative Register, Volume 40/Issue 12, included on the Department 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

Camp Helen State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Division's Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. This park 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.

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.

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 fire breaks. 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: Camp Helen State Park Management Zones		
Management Zone	Acreage	Managed with Prescribed Fire
CH-1	40.5	N
CH-2	14.2	N
CH-3	34.2	N
CH-4	37.2	N
CH-5	64.0	N

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

Camp Helen State Park lies within the Gulf Coastal Plain physiographic region and encompasses landforms representing two physiographic divisions: the flatwoods forest, and beach dunes with wave-cut bluffs (Schmidt and Clark 1980; Huffman/Tarmey 2003). These divisions were formed during the Pleistocene as a set of marine terraces created by sea level fluctuations. The park is situated on the southwestern shoreline of Lake Powell, the largest coastal dune lake in the vicinity located along the Bay and Walton County lines. This lake is sporadically connected to the nearby Gulf of Mexico via the Phillips Inlet, which is usually plugged with sand except when rainfall-fed surface water flow raises the lake level high enough to breach the barrier. The flatwoods portion, consisting of mostly level plains potentially able to support local pooling of water, occurs mainly in the western-central and northern areas of the park; the most prominent wetland, a depression marsh referred to as Duck Pond, is situated centrally on park property. Much of the rest of the park consists of beach dunes toward the Gulf coast grading into rolling sand ridges, peaking at the steep bluff along much of the park's eastern boundary lakeshore, which is dominated by maritime hammock and scrub communities. Elevation of the park ranges from sea level along the Gulf coast to about 30 feet on the highest bluff.

Geology

Camp Helen State Park lies on the Bay County side of the Walton/Bay County line and is underlain by a geological formation called the Apalachicola Embayment, which occurs in at least a portion of six counties (Schmidt and Clark 1980). This is a thickened sequence of Neogene sediments (period spans ~ 2.5 to 23 million years ago) possessing thicker layers than units occurring further north, indicating a deeper marine origin.

This formation constituted the floor of an ancient sea bed and now consists of a series of terraces. The Silver Bluff Terrace extends from 0 to 10 feet above sea level and the

Pamlico Terrace spans from 10 to 25 feet in elevation, both of which occur in this park. Opportunities to view ancient strata as exposed on the surface are relatively limited given the flatness of Bay County, but the oldest visible rock is an Early Miocene limestone along Econfinia Creek near the Washington County line.

Soils

There are eight soil types in Camp Helen State Park (USDA 1984). Underlying the intertidal zone of the Gulf of Mexico as well as the open expanse up to Lake Powell's southernmost shoreline is beach sand, which produces conditions too harsh for significant plant growth when tidally flooded with salt water and since its loose particles are easily transported from the site. The highest sand dunes in the park occur on Fripp-Corolla Complex soils, which are typical of the steep, sloping dunes along the Gulf of Mexico; while the Fripp soil is very well drained and the Corolla moderately to poorly drained, they occur intermixed in such proximity that they are mapped within the same complex at this scale. Kureb sand underlies most of the scrub and maritime hammock communities; the ridgetop of the highest lakeside bluff is also composed of Kureb Sand. It is highly permeable with a water table lower than 80 inches throughout the year and a very low available water capacity, fertility, and organic matter content. Lakeland Sand, with typical slopes of 8 to 12 percent and more common in the northern portion of Bay County, comprises the steep slopes around the sides of the highest bluff on the northeast corner of the park. The mesic flatwoods are primarily underlain by Rutledge Sand and Resota Fine Sand, which are rather different soils. The former is very poorly drained soil with a surface water table for part of a typical year, a medium natural fertility, and high organic matter content on the surface while the latter has a water table generally no less than 40 inches in depth and low natural fertility and organic matter content. The three isolated depression marshes also occur on Rutledge Sand. Dirego Muck is described as being a poorly drained, level soil with a high-water table subject to tidal influence, low natural fertility, and very high organic matter content. However, this soil underlies a variety of community types including depression marsh, mesic flatwoods, and salt marsh. The wet flatwoods primarily occur on Mandarin Sand, which is a level, somewhat poorly drained soil, though the surface itself is permeable with a low water capacity. Mandarin Sand commonly supports flatwoods communities.

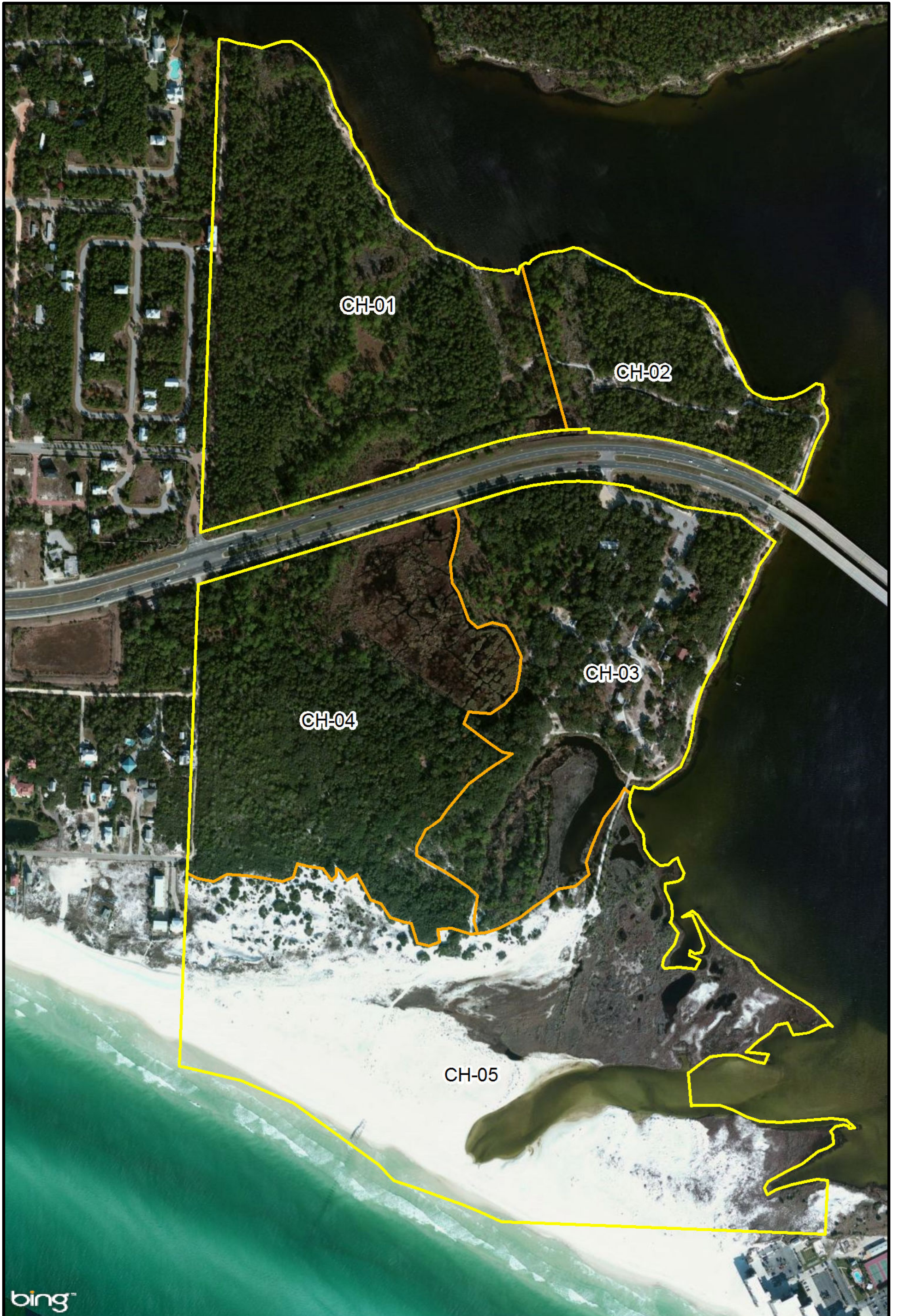
Minerals

There are no known minerals of commercial value found within the property.

Hydrology

Camp Helen State Park is bordered to the south by the Gulf of Mexico and to the east and north by Lake Powell, an Outstanding Florida Water. Most areas of the park are underlain by porous sandy soils through which rainfall quickly percolates. A portion of the surface runoff drains into the largest depression marsh, Duck Pond, where it would have originally retained the water before releasing it over a saddle on its southern

fringe into a nearby extension of Lake Powell in the vicinity of the beach dunes. A network of two connected canals was constructed in the mid-20th century to drain excess water from Duck Pond toward the lake north of the park boundary. This measure was taken at the time in order to provide for mosquito control related drainage of the site and the relocation of any channels away from the developed area frequented by guests at the building complex. These canals have experienced flooding issues in the past as a result of beaver damming, but beaver activity has not been apparent over the last few years. Over the course of the upcoming planning cycle, a restoration plan will be developed that would restore the natural hydrology of the Duck Pond and the mesic flatwoods to the north of Highway 98. This plan would outline procedures involved in (1) filling the canals with material that is compatible with local soils so that they are restored to the natural landscape contour and (2) replacing them with a culvert that allows drainage over the saddle toward an extension of the lake southeast of the pond. Using compatible fill material in the canals would ensure that chemical and physical properties inherent to the natural condition of the park are preserved. This compatibility would favor the persistence of plant species adapted to thriving in this locality and prevent the artificial surface pooling of water that may not percolate through other materials with different porosity properties. It should be noted that the Duck Pond itself was subject to relatively shallow canal excavation to reduce standing water volume, which is clearly visible in aerial photography as a network of intersecting troughs. Since it is believed that any filling of these canals and recontouring of this area would be a very significant perturbation to the vegetation persisting at this location, it was determined that the best course of action would be to retain the soil substrate in its current state. Lake Powell is the largest coastal dune lake in this area. This unique water body has an intermittent connection to the Gulf of Mexico only when flooding conditions allow the water levels to overtop the beach sand and form an ephemeral drainage canal for the days or weeks it might take to decrease the lake water level. Once the Gulf and lake levels are roughly comparable, sand will eventually accumulate and once again obstruct the temporary channel. A major ecological consequence of this phenomenon is that biota in the lake are exposed to widely varying salinity levels depending on whether seawater is being exchanged along an open connection.

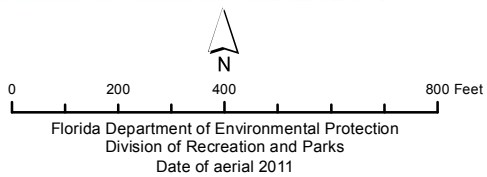




Legend

- 11 - Lakeland sand, 8 to 12 percent slopes
- 27 - Mandarin sand
- 29 - Rutlege sand
- 41 - Dirego muck
- 42 - Resota fine sand, 0 to 5 percent slopes
- 44 - Beaches
- 45 - Kureb sand, 0 to 5 percent slopes
- 48 - Fripp-Corolla complex, 2 to 30 percent slopes
- 99 - Water

CAMP HELEN STATE PARK



SOILS MAP

The lake would historically fill or empty as it expanded or contracted depending on rain inputs. As a consequence of residential development along sections of Lake Powell's shoreline, the water level at which the lake "breaks out" and forms a channel often is too high to avoid flooding private property. Therefore, the maximum allowable lake water level is determined in consultation with multiple governmental agencies as part of maintaining the applicable permit issued to Bay County and DRP; heavy equipment is brought on site to mechanically excavate a starter canal segment that initiates the water flow necessary to carve out the rest of the channel.

District biologists work closely with park staff in order to monitor lake levels and arrange for the Bay County public works department to dig the canal when necessary. While Lake Powell itself does not occur on park property, the connection must be opened on State land managed by DRP and is a joint responsibility of Bay County and DRP.

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 (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, and imperiled species management 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). 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 a 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 ten distinct natural communities and 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: Beach dune is a coastal mound or ridge of unconsolidated sediments found along shorelines with high energy waves. Vegetation will consist of herbaceous dune forming grass species such as sea oats (*Uniola paniculata*) and cordgrass (*Spartina* sp.). Other typical species include sea rocket (*Cakile constricta*), dune rosemary (*Ceratiola ericoides*), woody goldenrod (*Chrysoma pauciflosculosa*), and beach morning glory (*Ipomoea imperati*). As plant species colonize the substrate, they will progressively trap more windborne sand grains that collect at the base of the plant. These dunes will generally increase in height unless significant storm damage washes the sand and vegetation away, which resets the cycle of sand aggregation and vegetation establishment to build the dunes again.

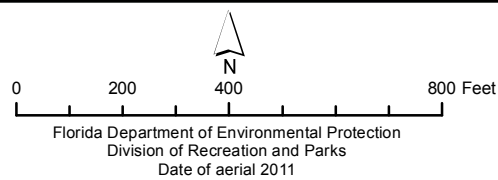
Description and assessment: Beach dunes occur along the southern portion of the park just inland from the open, tidally washed beach. Dunes that have been stabilized by vegetation for a number of years can succeed into scrub, which is observed just north of the dunes. In 1995, Hurricane Opal heavily impacted the beach dunes, overwashing a large expanse toward the park's southern boundary. The primary dunes, found the most seaward, have been slowly reforming in the time since the hurricane. Sea oat planting by DRP staff several years ago helped to accelerate the process, but many years will pass before they approach their former heights. The natural meandering of the outfall channel from Phillips Inlet across the wide area also serves to export sand from the dune field. A beneficial effect of this wide open, sparsely vegetated, sandy expanse near the channel is that it is prime nesting habitat for rare shorebird species, particularly snowy plovers with excellent foraging along the interface with the lake, channel, and Gulf shorelines. Closer to the southwestern corner of the park boundary, tall dunes were sufficiently sheltered to have partially survived the hurricane. Incidence of woody species and individual plant size is greater on these lofty dunes compared with the shorter primary dunes. The dunes that survived the storm may be described to be in good condition since they have retained their structure and plant cover. It may be debatable whether dunes that had been disturbed by storm conditions could even be



Legend

- BD - Beach Dune 30.76 ac.
- CG - Coastal Grassland 11.99 ac.
- MAH - Maritime Hammock 22.02 ac.
- MF - Mesic Flatwoods 13.54 ac.
- SC - Scrub 55.69 ac.
- WF - Wet Flatwoods 6.04 ac.
- DM - Depression Marsh 10.72 ac.
- SAM - Salt Marsh 12.5 ac.
- CDLK - Coastal Dune Lake 1.55 ac.
- MUS - Marine Unconsolidated Substrate 12.51 ac.
- CD - Canal/ditch 0.82 ac.
- DV - Developed 11.81 ac.

CAMP HELEN STATE PARK



NATURAL COMMUNITIES MAP
EXISTING CONDITIONS

characterized as being in a degraded condition since this is part of the natural cycle. Rather, anthropogenic influences that would prevent reestablishment of the dunes in the future (e.g. trampling, development) would cause the system to be in a degraded condition. In other words, for an ecosystem that is so defined by fluctuations and forces of change, health may be determined as being resilient (ability to return to an original state) instead of resistant (ability to prevent change to a state). Nonetheless, the scarcity of intact dune habitat, the time to reestablishment, the imperiled plants that occur in this system, and the shorebirds that nest in the less vegetated eroded areas that transition to the beach, emphasize the importance of preserving this community type from perturbations. Some of the plant species that may be observed in the dune system include all four imperiled plants at the park (Godfrey's goldenaster [*Chrysopsis godfreyi*], Cruise's goldenaster [*Chrysopsis gossypina* sub. *cruiseana*], gulf coast lupine [*Lupinus westianus*], and large-leaf jointweed [*Polygonella macrophylla*]), sea oats, woody goldenrod, dune rosemary, sand squares [*Paronychia erecta*], finger rot [*Cnidoscolus stimulosus*], beach morning glory, and blackberry [*Rubus* sp.].

General management measures: Regular monitoring of imperiled shorebird and sea turtle species during the warm months of their breeding seasons by park and district staff will continue at Camp Helen as with all other state parks with comparable coastal habitat. Prevention of visitor trampling is a major objective, since this disturbance damages the vegetation and loosens the sand to promote erosion. In order to prevent tropical storm impacts to the dunes, the planting of sea oats seaward of the main dune system to build primary dunes would be a desirable step toward preventing further loss of this habitat to the elements. These primary dunes are currently intact and are protecting the remaining dune system.

COASTAL DUNE LAKE

Desired future condition: Coastal dune lakes are typically permanent water bodies with periodic connections to saltwater bodies, such as the Gulf of Mexico in this case. Since this intermittent connection varies in frequency and duration, the salinity level of the lake also varies over time and with other coastal dune lakes in the vicinity. These lakes should be oligotrophic with low nutrient content and a primarily sandy bottom. When the water level is high enough to breach the impounding sand berm, the lake purges over the beach into the Gulf. The height that each lake purges depends on multiple factors, including the height of the sand berm and storm surge. The shoreline may vary from being open and sandy, too vegetated with shrubby or herbaceous wetland plant species. Federally-listed piping plovers (*Charadrius nivosus*) may use the outfalls regularly during spring and winter migration for foraging. Red knots (*Calidris canutus*), a federal candidate species, also may use the outfall and lakeshore sandy edges for foraging during migration and in the winter. Snowy plovers (*Charadrius nivosus*) and least terns (*Sternula antillarum*) 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.

Description and assessment: While Lake Powell is the largest coastal dune lake in the vicinity, a small extension of this lake occurs within the park boundary, which roughly coincides with a metal bridge crossing from the main bluff where the building complex is located to a raised sand road forming the shortest route to the beach. The calibrated gauge that park staff use to assess the water level height and consequent opening of the outfall by Bay County personnel, as described in the Hydrology section, is located on this bridge. The margins of this small extension are dominated by cattails and (*Typha* sp.) other wetland vegetation. Lake Powell is classified as an Outstanding Florida Water and is in good condition.

General management measures: The most significant management measure for Lake Powell consists in monitoring the water level and coordinating for excavation of a starter channel through Philips Inlet so that the lake may drain to a lower level. While the natural condition would not require operations promoting the artificial drainage of the lake, development on private property along the lakeshore would be subject to flooding risk without this measure. Since the outfall occurs on park property, this duty is a DRP responsibility and is accompanied by the maintenance of appropriate permits with other state and federal agencies. More detail on channel opening is provided in the Natural Resource Management section of the RMC. Park staff should monitor for exotic vegetation along the shoreline and outfall and treat these species when encountered. In order to prevent soil erosion and protect water quality, native vegetation should be retained along the steeper shorelines, particularly along the margins of the small extension to the west of the metal bridge. Any existing or future development in the park should be maintained or planned, respectively, so that soil erosion and surface runoff of pollutants into the lake does not occur.

COASTAL GRASSLAND

Desired future condition: Coastal grassland is predominantly an herbaceous community typically occupying the flatter and drier portions of the transition zone between the primary beach dunes and the natural communities dominated by woody species. The coastal grassland occurring in this park resulted from severe storm disturbance that washed away a section of the dune system. As such, it is may be considered to be a relatively unstable community type that will be subject to succeed to beach dunes unless affected by storms or the meandering of the channel draining Lake Powell. Characteristic plant species include bluestem grasses [*Andropogon* sp.], camphorweed [*Pluchea camphorata*], and greenbrier [*Smilax* sp.]. Other common species include seaoats, bitter panicgrass [*Panicum amarum*], and saltmeadow cordgrass [*Spartina patens*].

Description and assessment: The coastal grassland occurs in the broad sandy expanse between low primary dunes and the salt marsh along the southern shoreline of Lake Powell. This particular example results from the overwash event caused by Hurricane

Opal in 1995, and so is considered to be of the more ephemeral variety. However, since it is also in close vicinity to the outfall channel from Phillips Inlet, migration of the channel over the scale of years might affect the rate of succession. The low primary dunes were created in the years following this hurricane. There are scattered woody plants spread across the northern half of the grassland, some possibly survivors from the hurricane strike, including stunted slash pines [*Pinus elliottii*], saltbush [*Baccharis halimifolia*], yaupon [*Ilex vomitoria*], and wax myrtle [*Myrica cerifera*]; there was evidence of slash pine recruitment, likely indicating the initial stages of succession at least in this portion of the grassland. Some herbaceous plant species that may be observed include sea oats, the bluestem grasses, saltmeadow cordgrass, bitter panicgrass, and southern umbrellasedge [*Fuirena scirpoidea*]. This community may be described to be in fair condition since woody plants are encroaching from the north and dunes are building in the south.

General management measures: No exotic species were observed within the coastal grassland, but park staff should monitor and treat these plants if they are located. Visitors should be cautioned against walking into this community type, which is not penetrated by any hiking trails, by signage indicating the potential for erosion and the damaging effects of trampling on vegetation. No measures are suggested to specifically upgrade this community's condition from fair since this grassland is a temporary phenomenon resulting from the serious perturbation of Opal. An attempt to preserve this grassland in an ideal state would only serve to hinder the natural processes of the coastal ecosystem.

DEPRESSION MARSH

Desired future condition: Depression marsh is characterized as containing low emergent herbaceous and shrub species which will be dominant over most of the area and include open vistas. Trees will be few and if present, will occur primarily in the deeper portions of the community. There will be 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 and depression marsh will include maidencane [*Panicum hemitomon*], common reed [*Phragmites australis*], pickerelweed [*Pontederia cordata*], arrowheads [*Sagittaria* sp.], buttonbush [*Cephalanthus occidentalis*], St. John's wort [*Hypericum* sp.], and coastalplain willow [*Salix caroliniana*].

Description and assessment: There are multiple depression marshes in the park with the largest by far being centrally located and referred to as Duck Pond. This feature has been extensively altered from its original condition. Before changes initiated in the early to mid-20th century, the Duck Pond had drained when sufficiently filled toward the south over a saddle located southwest of what is now the main visitor use area / historic building complex. This drainage was accelerated with the construction of a canal in order to create pastureland and enable cattle grazing. As Avondale Mills

developed the site for an employees' retreat destination, this canal's location was perceived as an impediment to convenient beach access and a possible safety hazard for people falling into after sunset. Thus, in 1945, a canal system was excavated that reversed the hydrological flow toward the north to drain into Lake Powell along the park's northern shoreline. Occasional beaver damming in this canal system over the years has further disrupted flow patterns and this flooding is may have been a factor in the likely extirpation of pitcher plants from the property (Johnson 2001). Construction of a four lane divided Highway 98 across the northern portion of Duck Pond and installation of culverts under the road, further affected hydrological flow. Extensive canal features may be observed within the substrate of Duck Pond itself, likely dating to the period when this marsh was drained for grazing and for mosquito control purposes. As such, Duck Pond can be described as being in fair condition since it is still well represented by vegetation typical of a depression marsh, despite extensive changes to its hydrological regime and substrate as well as fire exclusion. There are three smaller isolated, irregularly-shaped depression marshes located within one of the mesic flatwood strips north of Highway 98; these features are fringed by particularly massive slash pines. These isolated depression marshes are in good condition.

General management measures: Introduction of prescribed fire to the Duck Pond area would assist with controlling woody plant encroachment and maintaining an herbaceous-dominated flora typical of a marsh community. Environmental conditions would need to be optimal so that the ground is not flooded yet the vegetation is not too dry to present a wildfire risk. Park staff has succeeded in removing most of the Chinese tallows (*Sapium sebiferum*) that had grown in and around this marsh up until a couple years ago; efforts to monitor and treat exotic plants in this area should continue. Torpedo grass (*Panicum repens*) clumps occur in some of the marsh habitat north of Highway 98 and should be herbicidally treated. Restoration of hydrology would be best accomplished by burying the canal north of the highway and reestablishing flow through a culvert drain toward the south over the saddle.

MARINE UNCONSOLIDATED SUBSTRATE

Desired future condition: Marine unconsolidated substrate will consist of expansive unvegetated, open areas of mineral based substrate composed of shell, coral, marl, mud, and/or sand (sand beaches). Desired conditions include preventing soil compaction, dredging activities, and disturbances such as the accumulation of pollutants.

Description and assessment: The exposed beach and submerged shore combine to form the marine unconsolidated substrate. This community occurs between the Gulf waters and the stabilized beach dune communities. The quartz sand found here is an integral part of the natural dune building process and beach dynamics. Windblown sand particles from the beach gradually build dunes up as they accumulate behind plants acting as barriers. Gentler waves in the spring and summer tend to deposit sand

onto the beach from near shore bars while larger fall and winter waves usually erode sand back to the bars in an annual cyclic process. These mechanisms serve to connect the beaches, dunes, and near shore bars in an interactive relationship and demonstrate the importance of conserving each component for the smooth functioning of the system.

General management measures: The Deepwater Horizon oil spill off the Gulf coast from the Mississippi delta devastated the regional marine ecosystem with variable quantities of oil coming ashore in different locations. The beach in this part of Bay County only received infrequent tar balls, so it escaped the worst case scenarios. However, the necessary patrolling of local beaches by disaster response organizations was a stressor on the system. DRP staff will continue to survey the beaches and dunes for imperiled sea turtle and shorebird species as part of ongoing monitoring procedures during their breeding and nesting season. Tidally deposited wracklines, which consist of marine debris, are found as linear features from along the mean high tide line as well as higher on the beach as a result of storm tides. These wracklines may be picked clean of trash and unnatural debris but should remain on the beach as they provide excellent forage area for shorebirds; these wracklines are critically important in maintaining viable populations of imperiled shorebirds, a principal feature species that should be maintained at this park.

MARITIME HAMMOCK

Desired future condition: Maritime hammock is a coastal evergreen hardwood forest occurring in narrow bands along stabilized coastal dunes. Canopy species will typically consist of live oak (*Quercus virginiana*), red bay (*Persea borbonia*), and cabbage palm (*Sabal palmetto*). The canopy will typically be dense and often salt-spray pruned. Understory species consist of yaupon holly, saw palmetto (*Serenoa repens*), and wax myrtle. Herbaceous groundcover will generally be very sparse to nonexistent.

Description and assessment: Maritime hammock occupies two zones south of Highway 98: between the Duck Pond and the scrub / beach dune systems as well as between the highway and the main visitor facilities. Vegetative density is high in most locations with a thick canopy and midstory casting deep shade onto the soil, leading to a relatively scarce groundcover among the fallen leaves. While the community is in good condition at this time, its proximity to ancient and historic habitation sites in the main visitor area suggests that it has experienced a varied land use history particularly influenced by human activity. While the soil type and landscape position of this "maritime hammock" do not completely fit the definition according to the FNAI 2010 Natural Community Guide, anthropogenic soil additions have influenced the community to resemble a maritime hammock. In fact, Tesar (1996) suggests that the accumulation of discarded food waste, ashes, and decayed structures since prehistoric times in this community type contributed to its lush vegetation by providing nutrients and calcium carbonate from shells, which serve to buffer soil acidity. Pre-historic middens and a mound may still be observed in this area. Contemporary refuse has

been extracted from this stand since the park was established. Anecdotal reports even suggest that a gas station was formerly located in the maritime hammock; the site was found to contain metal objects, glass, brick, concrete, and ceramics (Thomas et al. 1996). Plant species observed here include live oak, sand live oak (*Quercus geminata*), laurel oak (*Quercus hemisphaerica*), pignut hickory (*Carya glabra*), red cedar (*Juniperus silicicola*), southern magnolia (*Magnolia grandiflora*), red bay, beautyberry (*Callicarpa americana*), buckthorn (*Bumelia lanuginosa*), yaupon, saw palmetto, sparkleberry (*Vaccinium arboreum*), blackberry, wax myrtle, narrow-leaf silkgrass (*Pityopsis graminifolia*), woodbine (*Parthenocissus quinquefolia*), witchgrass (*Dichanthelium* sp.), and deer moss (*Cladina* sp.).

General management measures: No exotic plant species were observed in the maritime hammock, though staff should continue to monitor and treat any that may be encountered. Preserving these stands against development pressures is especially important because coastal development has destroyed many other examples of this community type in Florida.

MESIC FLATWOODS

Desired future condition: Most of the overstory trees are slash pines, having replaced the formerly predominant tree, longleaf pine (*Pinus palustris*), over the course of the 20th century. Native herbaceous groundcover would cover at least 25 percent of the area and would be less than 3 feet in height. Saw palmetto/ shrub component would comprise no more than 50 percent of the total shrub species cover, and would generally be less than 3 feet in height. Shrub species would include saw palmetto, gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), runner oak (*Quercus elliotii*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium myrsinites*), and dwarf huckleberry (*Gaylussacia dumosa*). Shrubs would generally be knee-high or less, and there would be few if any large trunks of saw palmetto along the ground. This shift from woody to herbaceous dominance will accelerate after several successful prescribed burns have been conducted.

Description and assessment: The mesic flatwoods in the park occur on soils with water availability intermediate between the well-drained scrub and the depression marshes. These flatwoods are chiefly located in the vicinity of the Duck Pond and along two strips north of Highway 98. While their vegetative structure is still typical of this community type, a long period of fire suppression has resulted in high fuel loads; the reintroduction of fire would help to reduce this biomass, increase the habitat quality for pyric species, and increase the coverage of herbaceous groundcover. The overstory is dominated by a discontinuous canopy of slash pines underlain by mainly saw palmetto and gallberry. Some of the slash pines fringing the smaller depression marshes north of Highway 98 are very large and may be said to exhibit various “old growth” characteristics, including large trunk diameter and twisted limbs in the crown. Future prescribed fire planning should incorporate measures to minimize the probability of

damage to these trees. Closer to the canal north of the highway, clumps of needle rush may be observed intermixed with more typical flatwoods vegetation. In these wetter areas of the stand, patches of thick torpedo grass occur sporadically that retard growth of other herbaceous plants in those locations. This community type can be described to be in fair condition on account of the heavy fuel loading; reintroduction of fire should help with restoring the mesic flatwoods into good condition.

General management measures: The most important management need for the mesic flatwoods is to introduce prescribed fire. This will be particularly challenging at this park since no fire infrastructure currently exists, a housing development occurs just beyond the western park boundary, and the nearby Highway 98 is a well-traveled route that cannot be blocked with thick smoke passing over it. Staff should commence with mechanical fuel load reduction in order to prepare this community for eventual burning. Another management need is to control torpedo grass infestations in the vicinity of the canal and depression marshes; diligent care should be used to ensure that herbicidal treatment of the torpedo grass does not result in non-target damage to native vegetation that would then promote the spread of torpedo grass regrowth. The community also should be checked for Chinese tallow, which can establish unseen in thick vegetation; as prescribed burning progresses, these thickets will decrease.

SALT MARSH

Desired future condition: Salt marsh is a largely herbaceous community that occurs in the portion of the coastal zone affected by tides and seawater and protected from large waves. Salt marsh typically will have distinct zones of vegetation based on water depth and tidal fluctuations. Saltmarsh cordgrass (*Spartina alterniflora*) will dominate the seaward edge, which are the areas most frequently inundated by tides. Needle rush (*Juncus roemarianus*) will dominate the higher, less frequently flooded areas. Salt-tolerant shrubs, such as groundsel tree, will occur on the drier, landward fringes of the marsh. Soil salinity and flooding will be the two major environmental factors that influence salt marsh vegetation. Fire may sporadically burn into the salt marsh from surrounding pyric communities, though this would likely be limited in extent given the patchiness of the fuels and the wetter areas interspersed among the drier zones.

Description and assessment: There are two areas on park property along the shorelines of Lake Powell that are here described as a salt marsh: a small area at the northern terminus of the Duck Pond drainage canal and on the edge of a broad shore in the vicinity of Phillips Inlet. Since a coastal dune lake is a unique feature with widely variable salinities depending on whether the sea connection is open or not, vegetation found here will experience long periods with low salinity. Furthermore, it is entirely possible that these expanses of salt marsh, particularly that along the park's northern shoreline, initially developed during the period of 1945 to 1970 when Phillips Inlet was more actively maintained to be open to the Gulf, thus increasing the exchange of seawater into Lake Powell. Current management with a more intermittent connection

would translate into lower salinity levels for the majority of the time. South of the zone 5 salt marsh band, a coastal grassland extends several hundred yards to reforming primary dunes; this area was overwashed during Hurricane Opal in 1995. Salt marsh habitat in the park is in good condition, though it is somewhat limited in extent. Some species that may be observed in these marshes includes needle rush, cordgrass, common reed, saltbush, greenbrier, yellow eyed grass, marsh pennyroyal (*Hydrocotyle* sp.), umbrella grass, and spadeleaf (*Centella asiatica*).

General management measures: Park staff should continue to monitor these communities for exotic plant species and treat them when encountered. Also, visitor foot traffic through these areas may damage vegetation and disturb the soil, so access should be discouraged.

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*). Sand pine (*Pinus clausa* var *immuginata*) may be locally present or absent. Scrub occurs on dry sandy ridges. The fire return interval for stand replacement fires in scrub on the Florida peninsula is 4 to 15 years, but there is no evidence that fire is a significant process shaping 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 a more prominent role in regulating Panhandle scrub than fire (Parker et al. 2001; Huck et al. 1996; FNAI 2010). Sand pines damaged by high winds or salt spray create gaps in the canopy for recruitment of new seedlings. 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. 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). 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.

Description and assessment: Scrub is the most abundant community type occurring at this park. It occupies most of the acreage north of Highway 98 with the exception of two lower lying strips that are dominated by wetter community types. The sand ridges in this area form tall bluffs along Lake Powell's western shoreline which gradually taper off into a gently rolling scrub landscape as one heads toward the park's western boundary. It is a relatively mature stand with a well-developed canopy in most areas. The understory is variable with the tallest bluff supporting a tree canopy dominated by sand pine overtopping understory woody plant cover alternating with open areas blanketed with dry oak leaves, deer lichen, and scattered grasses and forbs. Other portions may be practically impenetrable thickets or consist of an abundant saw palmetto understory overtopped by oaks and sand pines. A large scrub area also occurs

between the maritime hammock and the beach dunes with a rather gradual transition zone at the edges; this scrub stand occurs on secondary dunes and represents a later successional stage from the beach dune. This southerly stand is generally more open than the other scrub habitats north of the highway, likely reflecting its younger age as well as its more stressful environment closer to the Gulf of Mexico. The scrub stands in the park may be described as being in a good condition and possess appreciable habitat heterogeneity and species diversity across space. Some of the plant species that may be observed in this community include sand pine, sand live oak, myrtle oak, saw palmetto, laurel oak, Chapman oak, red bay, southern magnolia, sparkleberry, coral bean (*Erythrina herbacea*), false rosemary (*Conradina canescens*), buckthorn, woody goldenrod, Adam's needle (*Yucca filamentosa*), grapevine (*Vitis rotundifolium*), narrow-leaf silkgrass, greenbrier, and Spanish moss (*Tillandsia usneoides*).

General management measures: No exotic plant infestations were observed within the communities away from trails or disturbed areas, which is not surprising given the deep sandy soils and their capacity for quick drainage following rainfall. Park staff should continue to survey for and treat exotic plant when they are encountered.

The use of ignition techniques to mimic stand replacing or catastrophic canopy fires should not be applied to this park's scrub stands since researchers (Drewa et al. 2008; Parker et al. 2001) have concluded that stand replacing fire was not the primary driver of the Panhandle scrub, and would likely initiate growth of an even-aged stand in contrast to the typical stand structure in this region. Concomitantly, mechanical clearing to thin a stand prior to prescribed burning is also not recommended for this community. It should be noted that the impetus is not to produce a state that allows for manageable canopy replacement fires, but rather to recreate the natural processes that typically shape a community. Nonetheless, prescribed fire in adjacent pyric communities should be allowed to cross the ecotone into the scrub when burning under usual growing season weather conditions. It should be noted, though, that these natural conditions do not readily promote the carrying of fire through the vegetation.

WET FLATWOODS

Desired future condition: Dominant pines consist of slash pine at this park, which would have been planted after longleaf pine was harvested. The canopy would be open with pines being widely scattered and belonging to varied age classes. Native herbaceous cover would be at least 50 percent, with weedy cover of not more than ten percent. Herbaceous groundcover species such as yellow-eyed grass, beaksedge (*Rhynchospora* sp.), and wiregrass (*Aristida stricta*) would be present and abundant in some areas. Common shrubs include sweet pepperbush (*Clethra alnifolia*), fetterbush, large leaf gallberry (*Ilex coriacea*), titi (*Cyrilla racemosa*), and wax myrtle.

Description and assessment: Wet flatwoods occurs in a limited area west of and along the northern fringe of Duck Pond. This area had previously been mapped as basin

swamp, but recent field observations for this plan and Johnson's (2001) assessment suggests that a very fire suppressed wet flatwoods designation is a more accurate descriptor. The overstory is dominated by a discontinuous canopy of slash pine, some very large. The midstory forms a tangled thicket of shrubs, small trees, and vines that sometimes rises to a height of over ten feet. Access through parts of this stand is impossible without fashioning a temporary access trail. Some plant species that may be observed here include southern magnolia, sweet bay (*Magnolia virginiana*), fetterbush, saw palmetto, gallberry, wax myrtle, buttonbush, greenbrier, and grapevine. Groundcover is completely shaded out in most parts of the stand, but small gaps near the edges of this community may support broomsedge (*Andropogon virginiana*), dog fennel (*Eupatorium capillifolium*), and St. Johns wort. This community is in poor condition as a result of very high vegetative fuel loads resulting from years of fire suppression.

General management measures: Bringing the stand into a maintenance condition with prescribed fire would enable wildfire risk to be reduced, restore a vegetative structure more typical of wet flatwoods, and open up habitat for grasses and forbs. In the interim, burning this stand would be quite challenging since the plant density is so high. The first couple burns would have to be undertaken with extreme caution and following extensive prep work. Staff should commence with mechanical fuel load reduction in order to prepare this community for eventual burning. Chinese tallows were able to establish and grow while being relatively hidden from observation; extensive searching and herbicidal treatment over the past couple years have controlled this species, but park staff should continue to monitor this stand for other exotic plant infestations.

CANAL

Desired future condition: The canals in this park will be managed to minimize the effect of these areas on adjacent natural areas. Priority invasive plant species (EPPC Category I and II species) will be removed 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.

Description and assessment: There are two canals situated to drain excess water from Duck Pond toward the north into Lake Powell. These canals significantly altered the natural hydrology of the main depression marsh (Duck Pond) that originally overflowed over a saddle toward the south and into the lake. The first canal flows east to a small catchment basin then the water enters a second canal on its northward route. There have been issues with beaver damming obstructing this flow over the years, and subsequent flooding may have been responsible for the white-top pitcher plants (*Sarracenia leucophylla*) from this park (Johnson 2001). At which time that a hydrological restoration project is initiated for Duck Pond, these canals would be filled in so that the

ground surface would follow its original contour and these strips could be restored back to forested stands.

General management measures: Park staff should ensure that exotic plants do not establish here and spread to other natural areas by treating infestations when they are observed. Also, beaver damming should be prevented as much as possible by breaching dams if flow is significantly impeded so that flooding is avoided. Eventually, these canals would be retired and filled in again under a hydrological restoration project.

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 (EPPC Category I and II species) will be removed 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.

Description and assessment: Developed areas of the park include the facilities at the main visitor complex (e.g. administrative office and visitor center, lodge and other historic buildings associated with the Avondale Mills employee retreat, parking lot, access roads, lawns, and picnic pavilions), a shop area, park staff residence, volunteer campground, and drainage canals carrying excess water north from Duck Pond.

General management measures: Park staff will continue to monitor for signs of erosion, stormwater issues, and exotic plant species in developed and disturbed areas. If issues arise in these areas, staff will institute measures to arrest soil loss, adequately divert surface flows so that natural communities do not accept volumes of contaminated water, and treat exotic plants when encountered.

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 (FFWCC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern.

Several state-listed imperiled plant species may be found in the park, including Godfrey's goldenaster, Cruise's goldenaster, gulfcoast lupine, and large-leaf jointweed. All four species thrive on well drained sandy soils and may be found scattered in the beach dune habitat. Large-leaf jointweed may also be observed in portions of the maritime hammock and scrub, while the goldenasters are also encountered on scrub ridges or other sandy areas. The most important conservation measure is to protect

these plants from visitor impacts by preventing disturbance to the sandy substrate of the dunes, which can promote vegetative damage and erosion. Visitors should also be encouraged to remain on the trails and other public access areas through signage.

Past land use history and hydrological alterations have changed the ecological character of the wetter habitats over time. Johnson (2001) conducted a resource management evaluation for white-top pitcher plants (*Sarracenia leucophylla*) at the park. While there were anecdotal reports of these plants being observed up to the 1990s, he was not able to locate any individuals (nor have any been encountered since that time). Johnson argued that a combination of hydrological changes resulting from beaver damming and ditching as well as decades of fire suppression leading to very high vegetative fuel loads have been instrumental in reducing the habitat quality. Hydrological restoration of the Duck Pond and the introduction of prescribed fire are expected to improve habitat conditions and may consequently provide a future opportunity for reintroduction of pitcher plants to the park.

The park occurs within an area that was believed to have historically supported the rare Choctawhatchee beach mouse (*Peromyscus polionotus allophrys*), which is now imperiled primarily as a result of habitat loss to coastal development. FWC biologists completed a project to monitor for beach mice during 2011-2012 in which tracking tubes, designed to preserve footprints leading to a food item, were laid out over the course of multiple nights. This effort recorded no signs of the beach mice, so they are not currently believed to inhabit the site. While the park's coastal habitat is suitable to support a beach mouse population, it is unfortunately a small, isolated area unlikely to sustain many individuals or exchange individuals with other populations. Therefore, the park has a lower priority for species reintroduction efforts though this remains a possibility. If beach mice were to be reintroduced to the park, the DRP would work with FWC and FWS in order to draft a cooperative plan for this endeavor.

Along with other beach parks in the Panhandle, DRP staff perform intensive monitoring efforts on imperiled coastal species of sea turtles and shorebirds. Sea turtles spend almost their entire adult lives at sea, but must return to sandy beaches in order to lay eggs in shallow pits that they excavate in the sand then bury. The nests left behind are undefended and vulnerable to predation or human disturbance. In order to increase the probability for successful recruitment, conservationists (including park staff) patrol Panhandle beaches early every morning during their breeding season (March to October) to survey for indications of nocturnal activity (e.g. active nests, false crawls, predated nests). When a nest is located, it is marked with signage, cordoned off, and the sand surface is covered with a large mesh screen that allows hatchlings to emerge while preventing excavation by predators (primarily coyotes and ghost crabs). Once located, each nest is revisited daily until the eggs hatch and diagnostic indicators are recorded. In this way, one may track the success or failure of particular attempts at reproduction. At this park, one or two loggerhead (*Caretta caretta*) nests have been

observed each year for four years over the last decade, yielding an annual average of 0.3 nests; no other sea turtle species' nests have been observed over the last planning cycle. While the relatively narrow stretch of beach at this park offers limited space for sea turtle nesting opportunities, and thus can only support a low number of nests in a typical year, data collected at this park is used along with other statewide data to estimate population trends based on the samples observed; thus, sea turtles (in this park's case, the loggerhead) are monitored at tier 3.

The open beach along the Gulf of Mexico and the adjacent beach dune community provide shorebird nesting habitat. The park currently supports a fairly large abundance and diversity of nesting shorebirds, including several state and federally listed species (Himes et al. 2006, Pruner et al. 2011). The species that nest here include snowy plovers and least terns. Black skimmers (*Rynchops niger*) are observed at the park during the breeding season, but have not been seen to initiate nesting at this location. The main threats to nesting shorebirds include vehicle rutting, predation, disturbance, and the presence of domestic dogs on the beach. Unintended and indirect impacts can be caused by visitor foot traffic driving adults from nests, thus leaving chicks more susceptible to predation. Additionally, free roaming chicks may be kept in a continual state of avoidance, expending excess energy and making foraging more difficult. Typically, hatch and fledge rates have been fairly high at the park. Nests and chicks are directly impacted primarily by coyote and feral cat predation, off-leash dogs, and vehicle traffic within the plover's primary foraging area near the shoreline. Coyotes (*Canis latrans*) are a particularly severe threat to successful shorebird nesting at the park. Other predators of shorebird nests include ghost crabs (*Ocypode quadrata*), foxes (*Vulpes vulpes* and *Urocyon cinereoargenteus*), opossums (*Dasypus novemcinctus*), and fish crows (*Corvus ossifragus*). A cooperative program with USDA Wildlife Services is ongoing to remove these predators from the park when necessary.

Dogs have been an additional threat to shorebirds at the park. Off-leash dogs have been observed chasing snowy plover and piping plover chicks. Dog tracks are often and regularly observed within posted and presumably protected nesting habitat. It should be noted that the simple presence of dogs within sight of shorebirds changes their normal behavior. Management for these potential threats should continue in order to support the successful shorebird nesting efforts at the park. In response to multispecies habitat management that includes predator removal and protection of nesting and brood rearing habitat from potential impacts related to human disturbance, a substantial increase in nesting shorebirds has occurred at the park (Pruner et al. 2011).

In the early spring prior to the breeding season, park and district staff identify potential nesting areas and post these areas by cordoning off approximate boundaries with "symbolic fencing" (post, sign, rope) intended to protect these areas from disturbance by visitor entry and enhance nesting success. Posting should follow the guidelines established by FWC (Avisar et al. 2012).

During the nesting season (February to August), the park is monitored for nesting activity on a weekly basis by district biologists. Nests are located and monitored for fate (hatch or fail). Based on these observations, adjustments may be made to areas protected by symbolic fencing. If nests fail, efforts are made to determine the cause for failure (e.g. predation, overwash, abandonment). For snowy plovers, nests that hatch, efforts are made to band adults and chicks with a unique color combination. These bands are used in the short-term to monitor fledge rates and establish local population abundance. Over the long term, banding is used for determining survival and dispersal. For example, since banding began in 2010 at Camp Helen State Park, chicks that originally fledged from the park have been observed nesting throughout the state of Florida. For the banding program, emphasis is placed on the chicks because doing so establishes known-age cohorts. All banding efforts are in collaboration with FWC, USFWS, and the University of Florida. For colonial nesting species (e.g. least terns, black skimmers, gull-billed terns (*Gelochelidon nilotica*), nests are monitored for their fate. Once nests hatch, chicks at various stages are counted (e.g. downy, pin-feather, or fledged) to get an idea of hatch and fledge rates by species for the colony. All nesting data for all shorebird species is entered into the Florida Shorebird Alliance (FSA) database. All nesting surveys should be completed following established protocol by FWC, FSA, and DRP.

The area that transitions between the beach dune, marine unconsolidated substrate (beach), the Gulf of Mexico, and Lake Powell are particularly important forage areas for snowy plover chicks and their ability to visit these areas undisturbed is linked to their survival. This plan proposes the optimum boundary 150 feet into the lake and Gulf. One of the benefits of this change is to insure the protection of this area for shorebirds to utilize.

During the non-breeding or winter months (August to February), a variety of shorebirds use the park. Snowy plovers are residents at the park; most of the individuals that nest at the park also winter here as well. In addition to snowy plovers, a suite of shorebirds migrate through or overwinter at the park including piping plovers and red knots. Many of the federally listed piping plovers observed are individually marked by researchers on their breeding grounds throughout their range. Any marked individuals should be recorded, photographed if possible, and reported following the guidelines of the FSA website. Piping plovers have high winter site fidelity and the same marked individuals tend to return to the same site each winter. The piping plovers at the park typically use the coastal dune lake shoreline, outfall, and tidal pools; the primary foraging area is along the swash zone of the Gulf front. While not foraging, piping plovers roost in tire ruts, behind hummocks, beach vegetation, and within dune blowouts. The level of site fidelity observed indicates the importance of preserving the coastal habitats they utilize at the park. Surveys and management for

piping plovers should follow the Comprehensive Conservation Strategy (US Fish and Wildlife Service 2012).

The red knot is a candidate species for federal listing and is expected to be listed in the near future. Red knots primarily use the park during the fall and spring migrations and typically forage along the swash zone on the Gulf front and along the coastal dune lake outfall. General shorebird surveys are conducted year-round for nonbreeding shorebirds in addition to piping plovers and red knots to determine habitat use, the number utilizing the park, and to provide protection measures from human or predator disturbance if needed. The nonbreeding surveys include observations of all shorebird and seabird species using the park, including American avocets (*Recurvirostra americana*), sandwich terns (*Thalasseus sandwicensis*), Caspian terns (*Hydroprogne caspia*), and magnificent frigate birds (*Fregata magnificens*). American avocets are typically observed in small numbers foraging at the park, in tidal pools, or along the swash zone during spring or fall migration. Sandwich terns use the park during migration and as a roosting site for much of the year. Caspian terns are observed in small numbers at the park, primarily during migration and during winter months. Magnificent frigate birds are irregularly observed foraging off the Gulf shoreline. Sooty terns have been observed at the park, but only after storm activity and are not included in Table 2. For the seabird species listed here, the park provides a roosting site and all foraging activity takes place over the adjacent waters in the Gulf. FWC is in the process of developing a nonbreeding bird survey protocol and database. Surveys should be adjusted to fit any new requirements.

Wading birds, such as little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), and reddish egret (*Egretta rufescens*) are found in the freshwater swales and brackish salt marsh and lakeshore. Good quality wetlands are important for both foraging and nesting of wading birds. Hydrology should be maintained in these wetlands and spraying of insecticide should be minimized as much as possible. Although the little blue heron, snowy egret, and tricolored heron are in the process of delisting by FWC, it is still important to maintain quality wetlands for these species.

The brown pelican (*Pelecanus occidentalis*) utilizes the park for foraging and loafing. These large seabirds are frequently observed gliding in formation along the surfline in search of bait fish or loafing along the open beach. Brown pelicans are included in the nonbreeding shorebird surveys conducted throughout the park by district biologists. The nearest active nesting site is located in Panama City on Audubon Island. Many of the core breeding sites in the western Gulf were heavily impacted by the 2010 Deepwater Horizon oil spill. The long term implications of this man-made, environmental disaster on the brown pelican are yet to be determined.

A small number of kestrels (*Falco sparverius paulus*), merlins (*Falco columbarius*), and peregrin falcons (*Falco peregrinus*) migrate through the park, often using snags for perches. Snags should remain in place for these species in most habitats, however, snags that occur near the beach or adjacent to shorebird nesting or roosting locations should be removed if possible to minimize predation of shorebirds by raptors.

The DRP will minimize the impacts to shorebirds from visitors to the park's sensitive coastal habitats. In collaboration with FWC, other government agencies, local non-governmental organizations, and volunteers, park staff will identify and delineate habitats and educate the public about shorebird protection.

Management decisions will be informed by evaluation of data on nest settlement patterns, habitat use in the park and observations of negative impacts during prior nesting seasons. Areas of importance, where focused management actions are needed, will be based on evaluation of data. These actions will typically include:

- Demarcating potential shorebird habitat by enclosing the perimeter of the habitat and buffer area with appropriate fencing and signage.
- Monitoring during the nesting season to identify and protect new breeding sites.
- Providing interpretive and educational outreach to the public prior to and during the nesting season to encourage visitor use that protects shorebirds and their habitat.
- When the same breeding sites are used year after year, posting the protected area will occur prior to the season (pre-posting).
- When new breeding sites are indicated, appropriate measures will be implemented, including demarcating new protected areas and expanding or initiating interpretive programs.
- Coordinating with FWC and local law enforcement agencies to ensure compliance with park rules and shorebird protection, as needed.

When it is necessary to limit recreational activities or visitor access to protect nesting habitat, park staff or volunteers will provide onsite interpretation to educate visitors about the management of imperiled shorebird habitat. These outreach programs will commence prior to nesting seasons and prior to placing limits on access to recreational areas. Pre-posting the identified habitat areas combined with early public notification regarding the park's shorebird protection program will improve visitor compliance with park rules and promote broad-based public stewardship of shorebird nesting, resting, and foraging habitats in the park.

Clear guidance to visitors of the location of sensitive areas and posting may help to reduce conflicts. Presence of law enforcement and/or interpretive programs during high visitor use periods (particularly holidays) is recommended to help protect shorebirds. The DRP will coordinate with the USWFS, FWC, the Florida Shorebird Alliance, Audubon of Florida, the American Bird Conservancy, and other agencies on

interpretive programs aimed and educating and informing park visitors about shorebirds and the potential impacts recreation can have on nesting and foraging activities. Training for park staff by district biologist many also be necessary to ensure that all staff are informed about shorebirds at the park.

Driving on the beach by authorized personnel for resource management and park operations should be limited as much as possible year-round. Vehicular rutting associated with beach driving impacts shorebird and sea turtle hatchling nest success and recruitment. Additionally, during the winter months, shorebird species such as snowy plovers frequently roost in tire ruts as a break against the wind. Roosting plovers are at risk from beach driving if they do not have ample response time from oncoming vehicles. For this reason all beach drivers should drive slow (≤ 10 mph), watch for roosting birds, should follow the guidelines in the FWC Best Management Practices for Operating Vehicles on the Beach (FWC 2010b) and try to keep from disturbing the wrack line. An education program aimed at individuals that drive the beach habitat (e.g., park staff, law enforcement, etc.) should be implemented at the park to reduce impacts to wildlife and the beach habitat associated with beach driving.

Appropriate management actions for these species include conserving and maintaining suitable natural area with little or no human disruption or alteration. This is considered Management Action 14 (Other) in Table 2 below.

Table 2 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 5**.

Table 2: Imperiled Species Inventory						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Godfrey's golden aster <i>Chrysopsis godfreyi</i>			LE	G2,S2	10,13	Tier 1

Table 2: Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Cruise's golden aster <i>Chrysopsis gossypina sub. cruiseana</i>			LT	G5T2, S2	10,13	Tier 1
Gulfcoast lupine <i>Lupinus westianus</i>			LT	G2,S2	10,13	Tier 1
Large-leaf jointweed <i>Polygonella macrophylla</i>			LT	G2,S2	10,13	Tier 1
REPTILES						
American alligator <i>Alligator mississippiensis</i>	FT(S/A)	T(S/A)		G5,S4	10,13	Tier 1
Atlantic loggerhead sea turtle <i>Caretta caretta</i>	FT	LT		G3,S3	8,10, 13,14	Tier 3
BIRDS						
Red knot <i>Calidris canutus</i>		C		G4,S2	10,13,14	Tier 3
Snowy plover <i>Charadrius nivosus</i>	ST			G4,S2	8,10, 13,14	Tier 4
Piping plover <i>Charadrius melodus</i>	FT			G3,S2	8,10, 13,14	Tier 3
Little blue heron <i>Egretta caerulea</i>	SSC			G5,S4	10,13	Tier 1
Reddish egret <i>Egretta rufescens</i>	SSC			G4,S2	10,13	Tier 1
Snowy egret <i>Egretta thula</i>	SSC			G5,S4	10,13	Tier 1
Tricolored heron <i>Egretta tricolor</i>	SSC			G5,S4	10,13	Tier 1
Merlin <i>Falco columbarius</i>				G5, S2	14	Tier 1
Peregrin falcon <i>Falco peregrinus</i>				G4,S2	14	Tier 1

Table 2: Imperiled Species Inventory						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Southeastern American kestrel <i>Falco sparverius paulus</i>	ST			G5,S4	14	Tier 1
Magnificent frigatebird <i>Fregata magnificens</i>				G5,S1	10,13	Tier 1
Gull-billed tern <i>Gelochelidon nilotica</i>				G5,S2	8,10,13	Tier 2
Caspian tern <i>Hydroprogne caspia</i>				G5,S2	10,13	Tier 2
Brown pelican <i>Pelecanus occidentalis</i>	SSC			G4,S3	10,13	Tier 1
American avocet <i>Recurvirostra americana</i>				G5,S2	14	Tier 2
Black skimmer <i>Rynchops niger</i>	SSC			G5,S3	10,13	Tier 2
Sandwich tern <i>Sterna sandvicensis</i>				G5,S2	8,10	Tier 2
Least tern <i>Sternula antillarum</i>	ST			G4,S3	10,13	Tier 3

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 and 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 and Nuisance 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.

Intensive control efforts over the past few years have succeeded in reducing the abundance of exotic plant species in the park, which had been established as infested patches dominated by several FLEPPC category 1 species. Chinese tallow trees had occurred in the open expanses along Duck Pond's shoreline, in several other wet areas prone to ephemeral flooding after heavy rains north of Highway 98, and scattered in the thickly vegetated habitats between these features. Hidden from common sight, some of these individuals had grown to an appreciable girth. Now that all known reproducing individuals have been felled and herbicidally treated, the quantity of saplings will continue to decrease over time so that occasional scouting for scattered incidentals arriving from outside the park would be sufficient to control this population. This is a similar case with mimosa at the park, which is infrequently observed in disturbed or edge habitats and treated when necessary. A small patch of cogon grass (*Imperata cylindrical*) was discovered a couple years ago where the northern grassy shoulder of

Highway 98 transitions into the scrub stand in CH-1; subsequent treatment has killed all above ground traces of this species with follow up annual checks and treatments applied as needed to prevent regrowth, which is a long term issue with cogon grass.

Torpedo grass occurs mostly as scattered patches in multiple areas of the park, such as along access roads and trails, along the Lake Powell shoreline, or within depressions receiving runoff after heavy rains, though some wetter soils can support thicker clumps. Since torpedo grass may subsist at low densities intermixed in native vegetation, herbicidal treatment may have the unintended consequence of promoting the spread of torpedo grass if less resilient native plants nearby are killed through unintentional non-target application. Therefore, torpedo grass infestations are generally targeted in those cases (e.g. denser clumps or monocultures, disturbed habitats) where surrounding native plants are not decimated, which would yield low or negative net returns for the effort.

Table 3 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 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
PLANTS			
Mimosa <i>Albizia julibrissin</i>	II	0	CH-2,3
Cogon grass <i>Imperata cylindrica</i>	I	1	CH-1
Torpedo grass <i>Panicum repens</i>	I	2	CH-1,2,3,5
Chinese tallow <i>Sapium sebiferum</i>	I	0	CH-1,3,4

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, DRP actively removes exotic animals from state parks, with priority being given to those species causing the greatest 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, venomous snakes and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis in accordance with DRP's Nuisance and Exotic Animal Removal Standard.

Feral cats and dogs are occasionally encountered at the park. Cats are naturally adept hunters and can prey on and negatively impact many small animal species, notably birds, reptiles, and amphibians. Dogs are particularly problematic at this park when they pursue rare shorebirds and cause them to expend valuable energy in the chase; they can also dig up nests or present safety concerns for visitors. In order to prevent complications, park staff should strive to remove these free ranging animals from the site when encountered by contacting pet owners or the local animal control service for their assistance. Coyotes, foxes, raccoons (*Procyon lotor*) and Virginia opossums can also be a conservation issue at the park since they can be major predators on sea turtle and/or shorebird eggs, and are capable of decimating these rare species populations. When these species are problematic, USDA personnel can be contracted to trap and remove these animals. Alligators (*Alligator mississippiensis*) represent a potential native nuisance species that may occur in Duck Pond or along Lake Powell. In order to prevent conflicts with visitors, signage and other interpretative materials should warn the public against feeding the alligators, which can encourage menacing behavior and a higher probability of approach.

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

Lake Powell is an Outstanding Florida Water and is the largest local example of the unique lacustrine ecosystem of the coastal dune lake, is a special natural feature that is adjacent to the park boundary and has enormously influenced the natural and cultural heritage of Camp Helen State Park. While most of the lake falls outside the park boundary, the outlet that provides an intermittent connection to the Gulf of Mexico crosses park managed land. This outlet is not only a unique hydrological feature found in few places of the world, it is also provides excellent foraging habitat for snowy plovers, a component of this special natural feature and a highlight of the park.

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 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 NR 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: The main focal area of Camp Helen State Park, the main visitor area and historic resort building complex, is situated on a particularly high sandy bluff overlooking Lake Powell to the immediate east and the Gulf of Mexico further to the south. Consequently, this area offers bountiful marine resources and a fresh water source (from Gum Pond) that had attracted indigenous people for many generations. Archaeological research indicates that there was intensive occupation during the Early Deptford, Santa Rosa - Swift Creek, and Late Deptford - Early Weeden Island periods, an interval extending to about 700 B.C (Thomas et al. 1996). Occupation during the Fort Walton period appears to have been more sporadic from the archaeological record.

In 1918, C.B. Moore was the first archaeological expert to report on research conducted in the park. He located a mound feature (BY00013) in an area now covered by maritime hammock, described its general location and characteristics, and excavated artifacts from it. He reported having discovered two bundle-type burials as well as an assemblage of indigenous ceramics. In 1940, G. Willey returned to the site, but was uncertain of its position and was thus unable to locate it; he did, however, deduce from Moore's information that the artifacts dated from the Weeden Island period. Dr. Judith Bense from the University of West Florida visited the property in 1984 and reported that two middens occurred on either side of the mound; the general locality she describes covers a larger area than Moore's original mound site and was given the separate designation BY00013A. Since the principal Camp Helen site (BY00013A) encompasses a relatively large area in a prime location, historic and archaeological artifacts uncovered at this site are varied and were created over the span of the past two thousand years. Thomas et al. (1996) was able to locate the mound and confirm that this site and the principal Camp Helen site (BY00013A) did not completely correspond to each other, which had been a source of confusion prior to their report. During a cultural survey conducted prior to the construction of Highway 98, Almy et al. (1991) located site 8BY00013B on the southern shoulder of the highway in the vicinity of the park entrance; they also sampled artifacts just north of where the west-bound lane of the highway bridge transitions to the land surface, which was later judged to be from a site known since 1975 but not recorded until 1992 (BY00788).

Several construction projects in the park involving significant ground disturbances have been preceded by sampling or monitoring efforts by experts that then reported on the artifacts uncovered, thus contributing to knowledge about the site (e.g. Almy et al. 1991, Tesar 2001). Other efforts improving the understanding of the past have been more exploratory in nature, including a phase I archaeological survey (Curren et al. 2001) and a volunteer archaeological monitor training exercise (Wheeler and Baker 1999). In 2012, the Alliance for Integrated Spatial Technologies, affiliated with the University of South Florida, released its report on field work and analysis undertaken during an archaeological resource sensitivity modeling effort that examined all state parks in Florida. Collins et al. (2012) sought to predict areas of high to low probability for locating currently unknown cultural resources based on GIS layers, existing cultural sites, and other background information about the park. They ultimately judged that about half of the park acreage has a high likelihood of containing cultural resources, which included much of the higher ground on the bluffs, the vicinity of the canals draining Duck Pond, other sections of the scrub or beach dunes in the south central and northwestern portions of the park, and the flats around Phillips Inlet. This spatially explicit information can be used to guide future surveys. The study participants also visited existing cultural sites to reassess their character and dimensions. Additionally, they located a new cultural site, referred to as the Camp Helen shipwreck site (8BY1579), which consisted of iron, wood, and pumice stone fragments visible on the

sandy surface in the flats associated with Phillips Inlet south of Lake Powell; though they did not collect artifacts nor excavate the substrate, they recorded it as an American vessel of undetermined age.

Condition Assessment: With one exception, the intact archaeological sites in the park are in good condition, showing no obvious signs of erosion, looting, or visible deterioration. The exception is the Phillips Inlet site (BY00013), which would be rated as being in fair condition. While there are no signs of contemporary damage or degradation, past excavations from this mound by archaeological experts or looters have served to alter the overall profile of the feature and reduce its apparent dimensions compared to how it was described by C.B. Moore in 1918 (Thomas et al. 1996). It is likely that most or all of this deterioration occurred before Camp Helen was established as a park. Furthermore, much of the mound is now obscured by vegetation in the maritime hammock so that casual observers on the walking trails may not even notice it is there. There is one other site listed in Table 4 that was believed to have been destroyed by Hurricane Opal, Camp Helen #10 (BY00877). Pottery shards from the Fort Walton period were recovered from this site in the vicinity of the sand dunes before the storm overwashed the area and removed all traces of it.

Level of Significance: The Camp Helen (BY00013A) site has been evaluated by several surveyors as potentially eligible for the National Register as an individual site. The site is a large, multi-component prehistoric and historic site which contains a high density of prehistoric and historic artifacts and maintains much of its subsurface integrity, due to very little disturbance beyond road and construction projects on the surface of the site. These factors indicate that the site has the potential to yield information important to the understanding of prehistory and history of the area (National Register Criterion D). The site has not been formally evaluated by the State Historic Preservation Officer (SHPO) for National Register eligibility.

The Phillips Inlet (BY0013) site was first recorded to the FMSF in 1949, but the surveyor made no potential evaluation of the site for National Register eligibility. The Camp Helen #1 (BY00788) site was initially recorded in 1995, at which time the surveyor evaluated the site as ineligible for the National Register due to a low density of artifacts and heavy impacts from coastal erosion and highway construction. In 2006, a limited survey of a portion of both sites was made for a proposed tram path, at which time the surveyor evaluated both sites as being ineligible for the National Register. The SHPO agreed that the limited nature of the proposed tram project would have no adverse effect on the sites, but indicated that there was insufficient information to evaluate the overall sites for National Register eligibility. Therefore, both the Phillips Inlet (BY00013) site and Camp Helen #1 (BY00788) site should be considered as not evaluated.

The No Name (BY00013B) site was evaluated as ineligible for the National Register by several surveyors of the site, who referenced the site as disturbed and containing a sparse amount of undistinguished cultural material unlikely to add to the prehistoric record. The site was officially determined ineligible by the SHPO on July 19, 1991.

Twenty-four pieces of prehistoric ceramics were removed from Camp Helen #10 (BY00877) prior to the advent of Hurricane Opal in 1995. The FMSF form for the site was completed after the hurricane at which time the surveyor evaluated the site as ineligible for the National Register as it no longer existed due to damage caused by the storm surge associated with the hurricane. The site was not formally evaluated by the SHPO.

The Camp Helen Shipwreck (BY01579) site was not evaluated for National Register eligibility by the surveyor or the SHPO.

General management measures: Park staff will continue to monitor the archaeological sites to ensure that they are not actively degrading or being looted for artifacts. Any potentially significant ground disturbance planned on park property is evaluated by the Division of Historical Resources prior to initiation in order to prevent damage to cultural features. Archaeological monitors on staff are present whenever excavation occurs in order to ensure that artifacts or information is recovered and to stop the project if necessary.

Historic Structures

Desired future condition: All significant historic structures and landscapes 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: Historical settlement of the vicinity did not begin in earnest until the late 1800s, but a couple earlier events bear mentioning (Thomas et al. 1996). In 1844, a group of Seminole Indians led by a man named "Indian Joe" killed the crew of a schooner that had run aground in the Phillips Inlet area; Indian Joe was eventually tracked down and captured between present day Panama City and Apalachicola. During the Civil War (early to mid-1860s), Union naval forces raided salt works erected along the eastern shore of Lake Powell, which was a significant center for clandestine salt production for the Confederate war effort. In the 1920s, the McCaskill Investment Company of DeFuniak Springs started developing a resort on land that would become Camp Helen State Park. A lodge and cottages were built on the high lakeside bluff. Margaret Hicks first managed the site after her husband, initially intending to act as manager, passed away before construction was complete. In 1937, ownership was transferred from the company to Ms. Hicks, who later sold the parcel to the Avondale Textile Company of Alabama in 1945. Several more buildings were erected in the early

years of its ownership and the complex was used as an employee retreat resort until 1987. Camp Helen State Park was opened to public visitation in 1996.

The historic buildings in the park function as an “outdoor cultural museum” and have been the focus of intensive restoration efforts in recent years. The water tower and its associated well house were the first targets of restoration in 1996 when the park first opened to the public; the structures were rebuilt to ensure that they were structurally sound and not prone to collapse. A project to restore the main lodge building was executed in the early 2000s during which time the roof was repaired, wall logs were replaced as needed, the electrical system was upgraded, and the lodge was repainted. The Guest Apartment, also restored at the same time as the lodge, had its exterior repainted, some windows and wall logs were replaced, and the roof was repaired. A large-scale restoration project beginning in 2009 sought to make necessary repairs on most of the other buildings in the complex; progress was stalled by acts of vandalism on some of the almost completed structures during the night, but repairs soon remedied the damage. The four rainbow cottages were refurbished for display purposes with the interior of cottage 1 restored and fitted with 1950s period furniture while only the exteriors of the other three cottages were renovated; however, none of these buildings can be occupied by guests since the plumbing and electrical systems were disconnected by park staff, largely for safety reasons and to discourage vandalism. The front porch roofs and screens were replaced and asbestos removed on all four cottages, while select doors and windows had to be repaired or replaced as a result of the vandalism. An ADA accessible ramp was installed on cottage 1 to facilitate viewing of the interior features and the sidewalk for the whole complex was rebuilt to ADA specifications. The Recreation Hall was fully restored on the inside and outside, including such measures as confirmation that the concrete roof is structurally sound, repainting the exterior in its original color, installation of ADA accessible bathrooms and other features, salvaging of intact glass blocks for reconfiguring of the façade (the rest of the “windows” were screened), repair/repainting of the concrete floor, replacement of the plumbing system, and stocking the building with new picnic tables. With the Stable, the exterior was repainted to the original color, decaying wooden planks on the first floor were taken out and replaced with fill material, and an ADA accessible walkway leading through the building was constructed. Other work during this project included roof repair or replacement on all buildings as needed, upgrading the restroom building to be ADA accessible, and the repainting of the Cat House (Cottage A) exterior in its original color.

Condition Assessment: Owing to the extensive restoration efforts undertaken to date, most structures and the overall building complex are now in good condition. The kitchen building is a major exception as it has not yet been the focus of renovation efforts. Some structural elements are visibly sagging and deteriorating so that stabilization is necessary in order to prevent possible storm damage in the future; the façade is in need of repainting. Since some of the restoration measures on the Stable

from the 2009 project were not successful at addressing various issues, the roof and second story flooring need further work; thus, the Stable can be said to be in fair condition. Duplex 1 (used as a CSO office building) is in poor condition.

Level of Significance: The Camp Helen Historic District (BY00941) was listed on the National Register of Historic Places on May 24, 2012, and is considered significant under National Register Criteria A (Event) and C (Design/Construction) in the areas of social history, architecture, and recreation/entertainment. The nomination considered only the built environment of Camp Helen; archaeological significance was not included in the nomination. The following historic structures are listed as contributing to the historic district: the Lodge (BY00879), the Guest Apartment (BY00880) also known as the Guest House or Carriage House, the Stable (BY00881), the Maid & Butler House (BY00882) also known as the Maid's Cabin, the Kitchen (BY00883), the four Guest Cottages (BY00884) also known as the Rainbow Cottages, the Water Tower and Pump House (BY01041) and associated Water Tank, the Shelter on Bluff (BY01042) also known as the Gazebo, Cottage A also known as "Cat House" (BY01043), Cottage B also known as "Cooks House" (BY01044), the Recreation Hall (BY01570), and Duplex 1 (BY01572), and Duplex 2 (BY01573), also referred to as the Duplex Cottages. A Historic Structures Report (HSR) needs to be prepared for Duplexes 1 and 2.

The Well House (BY01571) was not included in the National Register nomination, either as a contributing or noncontributing building, although it appears to be within the district boundary. This inadvertent omission is likely due to its separation from other structures in the district and its partially obscured location. A Historic Structures Report (HSR) needs to be prepared for the Well House. The Well House (BY01571) is believed to be potentially eligible for the National Register as a contributing building to the Camp Helen Historic District (BY00941) due to its date of construction (c. 1950), which clearly places it within the period of significance for the district (1932-1962).

General management measures: Despite the restoration work so far completed, there remain further measures necessary to bring some structures to a desired future condition. On the main lodge, the front porch needs some repair work, especially on the flooring. As mentioned above, the Stable roof should be repaired to prevent leaks and the second story flooring needs stabilization before anyone can trust walking up there. In the Recreation Hall, the steel beams were treated and painted in 2009 in order to remove and prevent rusting, however, rust is evident again on these elements so the beams need further attention. The kitchen building needs to be assessed for its restoration needs in the near future in order to prevent further deterioration and return it to good condition if the building is judged to be suitable for rebuilding rather than demolition. Finally, the dock in front of the lodge was damaged in a storm years ago and is no longer intact. The park staff does not necessarily advocate for its total rebuilding, but suggests that the platform structure present until a short time ago could be reconstructed for interpretive purposes.

Park staff regularly monitors the structures and the complex grounds for any maintenance issues that need to be addressed. Vegetation is managed so as to prevent limbs from falling on structures and foliage from contacting building exteriors, which may accelerate deterioration. Pest control services conduct annual inspections for signs of infestation by termites or other pest animals and treat as necessary; park staff also continually monitor for such issues. Once restored, buildings constructed with inorganic materials (e.g. stucco, cinder block) would be expected to resist deterioration from exposure and coastal conditions better than wooden structures (e.g. Cat House, Cook's House); park staff pays special attention to the condition of wooden buildings in order to provide timely response to issues that may compromise the structures

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: At this time, the park possesses only a limited quantity of collections items that were either donated from the public or were gathered by park staff. Various small historic artifacts from the Avondale Mills era (e.g. photos, objects, paper items) are on display in a glass showcase within the visitor center. This center also displays a small collection of stuffed animal specimens indicative of local species that may be observed on the park property. The park staff also stores an assemblage of paper records in a file cabinet in the administrative office, including newspaper articles, cultural reports, and other items relevant to the site's history.

The park hosted an Avondale Day event in 2012, which was a reunion of former employees of the textile mill that had actually stayed at the building complex when it was a company resort. While there have been occasional reunions over the years, this was the first time that a particular focus of the event was a request for participants to bring items or personal written accounts concerning the site's history in lieu of an admission charge. The goal was to promote the donation of these items and this information to the park for preservation and interpretive purposes. Attendance was high and an assortment of photos was given to the park.

Condition Assessment: The items currently in the park's collection are in good condition. While they are helpful in communicating the park's cultural and natural heritage to the public, they would not necessarily be considered monetarily valuable or in need of elaborate procedures for storage or preservation.

Level of Significance: The park collections which are on display in the visitor's center serve two functions: to educate the public on the animals which may be seen in the park and to inform visitors of the social and recreational history of Camp Helen. Although these collections are informal and small, they provide a glimpse into Camp Helen's past and present and its importance as a coveted haven for relaxation and recreation by humans and wildlife.

The collection items on display in the northernmost Guest Cottage (Rainbow Cottage) are not original to the cottage, but represent the type of furniture and other items that might have been used to outfit a small vacation cabin in the mid-twentieth century. These items help demonstrate the "camp" nature of the overall Camp Helen site; the tiny cottages were used mainly used for sleeping; eating and recreational activities occurred elsewhere in the camp.

General management measures: The collection items are housed in the visitor center, which is a climate controlled environment that would not expose these items to the elements or degradation. Given the center's proximity to a bluff overlooking Lake Powell and the Gulf of Mexico, these items may need to be transported to a safer location on or off the park property in the event of likely direct hit from a severe hurricane. There is not currently a Scope of Collections Statement in effect for this assemblage of objects; therefore, such a statement would need to be drafted during the next planning cycle.

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 4** contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. 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 4: Cultural Sites Listed in the Florida Master Site File						
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment	Management Zone
Phillips Inlet BY00013	Weeden Island, A.D. 450 - 1000	Archaeological Site	NE	F	P	4
Camp Helen BY00013A	American - 20 th Century; Deptford, 700-300 B.C.; Weeden Island, A.D. 450 - 1000; Weeden Island 1-4, Ft. Walton A.D. 1000-1500; Leon Jefferson; Middle Woodland; Santa Rosa - Swift Creek; Seminole 1716 - Present	Archaeological Site	NR	G	P	3,4
No Name BY00013B	Swift Creek - Late; Weeden Island 2	Archaeological Site	NS	G	P	3
Camp Helen #1 BY00788	Weeden Island, A.D. 450 - 1000	Archaeological Site	NE	G	P	2
Camp Helen #10 BY00877	Ft. Walton A.D. 1000-1500	Archaeological Site	NS	NE	P	5
The Lodge BY00879	c. 1933	Historic Structure	NR L	G	P	3
Guest Apartment BY00880	c. 1933	Historic Structure	NR L	G	P	3
Stable BY00881	c. 1938	Historic Structure	NR L	F	RS	3
Maid & Butler House BY00882	c. 1933	Historic Structure	NR L	G	P	3
Kitchen BY00883	c. 1940	Historic Structure	NR L	P	R	3

Table 4: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment	Management Zone
Guest Cottages BY00884	c. 1940	Historic Structure	NR L	G	P	3
Water Tower and Pump House BY01041	c. 1938	Historic Structure	NR L	G	P	3
Camp Helen Historic District BY941	1932-1962	Resource Group	NR L	G	P, RH	3
Shelter on Bluff BY01042	c. 1933	Historic Structure	NR L	G	P	3
Cottage A "Cat House" BY01043	c. 1938	Historic Structure	NR L	F	P	3
Cottage B "Cooks House" BY01044	c. 1940	Historic Structure	NR L	F	P	3
Recreation Hall BY01570	c. 1950	Historic Structure	NR L	G	P, RH	3
Well House BY01571	c. 1950	Historic Structure	NR	G	P	3
Duplex 1 BY01572	c. 1950	Historic Structure	NR L	P	RH	3
Duplex 2 BY01573	c. 1952	Historic Structure	NR L	G	RH	3
Camp Helen shipwreck BY01579	American (non-specific)	Archaeological Site	NE	P	P	5

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 DRP’s management goals for Camp Helen 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, 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 longer- term work plans are developed for natural community restoration and hydrological restoration. The work plans provide 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, 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 Sections 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. The ten-year management plan is based on conditions that exist at the time the plan is developed, and the annual work 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: Manage water levels in Lake Powell in order to prevent flooding of private property along the shoreline.

The park staff monitors the water level of this coastal dune lake using a professionally calibrated depth marker mounted on the steel bridge that connects the building complex with the beach. This bridge passes over a small extension of Lake Powell. Once the water level reaches a point explicitly defined in the current permit, this prompts the Bay County Public Works Department to bring their heavy equipment to the Phillips Inlet area in order to excavate a narrow, shallow channel that will initiate the flow of water that will erode a natural drainage connection to the Gulf. While this

coastal dune lake would naturally “break out” and drain with significant influxes of rain water, the level at which this occurs is often higher than homeowners along the shoreline can tolerate due to the flood risk. On average, there are about six inlet openings per year with variation above or below this quantity depending on rainfall patterns. During openings, the park manager generally spends the equivalent of one work day through coordination of activities, on-site observation, and providing the necessary notifications. Special attention should be directed to the avoidance and protection of shorebirds and sea turtles in the planning and execution of the authorized excavation. This is particularly important during the nesting season (May to October for sea turtles and February to September for shorebirds). The placement of the excavated channel should consider the potential expansion of the eroded outlet and the potential to impact not only nests but foraging snowy plover chicks. Coordination with district biologists is appropriate and as necessary with the USFWS and FWC personnel. This diligence is not only necessary to insure compliance with permit conditions and to avoid unauthorized "take" of imperiled species but is needed to protect and preserve important wildlife features of the park. The current permit should expire in 2022, which is at the end of the current planning cycle; several months in advance of the expiration date, it is imperative that park and district staff, in concert with Bay County staff, initiate the permit renewal process and address reviewer comments and concerns.

Objective: Restore natural hydrological conditions and functions to approximately 9.4 acres of the depression marsh and mesic flatwoods natural communities.

This project would involve the filling of the two canals draining the Duck Pond toward the north into Lake Powell and replacing it with a culvert drainage system bringing water over the saddle landform toward the lake to the south. This would restore the hydrological flow to a pattern more closely approximating its condition before the canals were constructed in the mid-20th century. Installation of a flash board riser (a type of regulated culvert) along the southern edge of the Duck Pond could allow for some degree of control over the water level before it leaves the marsh by manipulating the height of a weir. Filling the canals and contouring the ground surface to a natural condition would involve removing the spoil piles along the waterways and sacrificing the vegetation growing on these piles. This segment of the project would involve a restoration of natural hydrological functioning to the mesic flatwoods north of Highway 98. The project would restore hydrology for about nine acres of depression marsh (Duck Pond) and approximately 0.4 acres of mesic flatwoods along the course of the north flowing canal. Preliminary engineered drawings were drafted in previous years, and these could be used as a basis for updated drawings or edits to the originals. DRP staff would cooperate with other agencies (e.g. US Army Corps of Engineers, DEP, Bay County) in the course of applying for a permit and obtaining its approval. Once the canals have been filled with compatible material, native vegetation typical of the surrounding mesic flatwoods would be replanted.

Natural Communities Management

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

As discussed above, 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 FDACS, Division of Forestry (DOF). Wildfire suppression activities in the park are coordinated with the DOF.

Objective: Within 10 years, have the appropriate acres in the park maintained within the optimum fire return interval.

Table 5 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval, and the annual average target for acres to be burned.

Table 5: Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Mesic flatwoods	16.4	3-5
Depression marsh	10.7	3-5
Wet flatwoods	3.6	3-5
Annual Target Acreage*	[blank]	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.		

The park is partitioned into management zones including those designated as burn zones (see Management Zones Table and Map). Prescribed fire is planned for each burn zone on the appropriate interval. 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.

Mesic flatwoods, wet flatwoods, and depression marsh are natural communities dependent on periodic burning. After years of fire suppression, all these communities currently harbor exceedingly high amounts of standing biomass and extensive site preparation would be necessary to bring the zones into a condition sufficient for the safe exercise of prescribed burning. Once these communities are in fire rotation, periodic burning would improve their habitat quality and promote the growth of plant species adapted to pyric conditions. Burning would also promote the growth of readily palatable forage material for generalist herbivores. In addition, reducing biomass over time with prescribed fire would reduce the risk of wildfire in this area.

The pyric communities found at the park demonstrate different system-wide behaviors. In the maintenance condition, the mesic and wet flatwoods communities would burn as a low intensity ground fire that serves to reduce the abundance of woody species in favor of herbaceous grass and forbs while not significantly impacting the mature slash pines that form a discontinuous canopy overhead. The depression marsh depends on periodic low intensity fires to kill shrubs and trees that otherwise would increase in size and abundance until the system would likely succeed into another community type; thus, the fires act to maintain the herbaceous vegetative structure of the depression marsh. The fire frequency would typically depend on the frequency of the surrounding community type (flatwoods) in addition to the fire-carrying attributes of the marsh vegetation (FNAI 2010). Existing corridors, including access roads and the Highway 98 shoulder, can be used as firelines with preparation and maintenance efforts directed by the district prescribed fire coordinator. Any additional needed firelines would also be planned with consultation from this coordinator.

Labor and equipment necessary to establish a functional prescribed fire infrastructure that permits pyric natural communities to be burned and eventually enter a maintenance condition is substantial. Furthermore, heavy fuel loads within the park will require up to 50-foot wide firelines to contain the risk of fire spread with narrower widths as fuel loads are decreased. Therefore, staff will commence with mechanical fuel reduction treatment of the mesic and wet flatwoods over this planning cycle in order to reduce the underbrush density and reduce the chances of fire reaching the tree canopy or spreading beyond the targeted zones. Burning of the depression marsh habitat would be dependent on the flatwoods communities attaining a maintenance

condition so this fire can be safely contained. Prescribed burning would only proceed once the vegetative structure is brought to such a condition that would prevent wildfire risk or damage to the trees, which would likely occur toward the end of the planning cycle. The park would also need to possess sufficient equipment and skilled labor resources for prescribed fire to be performed. Thus, specific annual target acreage is not specified above.

In order to track fire management activities, 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 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.

Imperiled Species Management

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

DRP strives to maintain and restore viable 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 USFWS, FWC, 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 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.

Plant and animal species have been observed and recorded on multiple occasions in preparation for the species lists included in this plan. However, there remains an ongoing need to continue to survey for species not yet documented or newly migrated into the park. Particular emphasis would be placed on being vigilant for the rare, listed taxa that may not yet be known to exist on the property. Park and district staff will maintain a record of species encountered in the course of the various management activities executed. Observations about known imperiled species, unless elsewhere noted for increased scrutiny and more involved monitoring procedures, will be documented at a Tier 1 (Non-Targeted Observation/Documentation) level as encountered.

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

Eleven imperiled species documented at the park are monitored at levels greater than Tier 1. Monitoring procedures for these species are already established and in effect. A complete population census of all known individuals is conducted for snowy plovers (Tier 4). Population trends deduced from monitoring the observed sample of individuals for a portion of the year while they are present at the park are collected for least terns, black skimmers, piping plovers, red knots, and loggerhead sea turtles (Tier 3). Observations of any other imperiled seabirds or shorebirds (i.e. gull-billed terns, Caspian terns, brown pelicans, American avocets, sandwich terns) are recorded in the course of actively monitoring the aforementioned species in the same habitat (targeted presence/absence at Tier 2). For this park, the black skimmer is occasionally observed and thus monitored; other species would be included here if encountered. These procedures are more fully described in the Imperiled Species description section above.

Exotic Species Management

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

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 1 acre of exotic plant species in the park.

In the past few years, park staff have herbicidally treated all known Chinese tallow trees that had encircled the Duck Pond and grew obscured and scattered in the thick, fire suppressed vegetation of the mesic and wet flatwoods. Around that same time, a relatively small patch of cogon grass was located where Highway 98's north shoulder transitioned into the natural area on park property. Herbicide has been applied to it annually whenever its blades are observed and the infestation is in maintenance condition. Park staff will continue to monitor for regrowth of these species and treat if necessary. Torpedo grass is still an issue at the park, chiefly along disturbed areas and in wetter soils with light interception reaching the ground surface. Park staff will strive to treat at least one gross acre of torpedo grass per year; a gross acre refers to the total extent formed by an outer perimeter around the infestation so that native species or bare ground may occupy a substantial proportion of the area. It is possible that as these pest plants are treated, the gross acreage will decrease over the next planning cycle so that one acre is no longer available to treat in the future.

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

There are two exotic species that can cause problems for native and possibly rare animal species if present at the park: feral or free ranging dogs and cats. Feral cats can decimate coastal wildlife because they not only target nests and young, but also target adults. Park staff will coordinate with the local animal control agency to trap and remove cats and dogs from the property. 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 of feral cats on wildlife.

Additionally, coyotes, foxes, raccoons, and Virginia opossums are potentially predators of sea turtle nests and chicks. These species have been well documented in coastal District 1 state parks to substantially impact shorebird nesting success. When coyotes are in the locality as evidenced by diagnostic signs and losses of eggs at imperiled shorebird or sea turtle nests or actual sightings of the animal, DRP staff can arrange with USDA to trap and remove these species as necessary.

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 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.

A timber management analysis was not conducted for this park since its total acreage is below the 1,000-acre threshold established by statute. Timber management will be re-evaluated during the next revision of this management plan.

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 needs 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.

Camp Helen State Park includes about 1,700 feet of beachfront habitat adjacent to the waters of the Gulf of Mexico. An ongoing responsibility of DRP staff is to monitor the water level on Lake Powell and open a channel through Phillips Inlet when sufficient depth is reached so that residences along the lakeshore are not flooded. While this outfall would and does occur naturally on its own, the water depth at which this happens can be variable and may be too high to protect structures on private property. DRP staff cooperates with other governmental agencies (Bay County Public Works, USFWS, US Army Corps of Engineers, DEP) in fulfilling the mutually agreed upon permit conditions governing appropriate benchmarks and methodologies for the artificial opening of this water connection. This coastal habitat also harbors at least five imperiled animal species (snowy plovers, piping plovers, black skimmers, loggerheads, least terns) for at least a portion of the year and active monitoring programs conducted by park and district personnel are ongoing. Predation by coyotes and harassment by unleashed dogs are issues potentially impacting these species; DRP staff seeks to minimize these threats through its management program.

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, 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. 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. In 2003, an Arthropod Management Plan was drafted and implemented in order to guide field efforts by the Beach Mosquito Control District.

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 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. DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in Camp Helen 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 must be submitted to the FDOS, Division of Historical Resources (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, monitoring of the project 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 DHR for consultation and 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 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 DHR.

Objective: Assess and evaluate 19 of 20 recorded cultural resources in the park.

There are 20 known cultural sites at the park, including five archaeological sites inhabited during the pre-Columbian era and 14 historical sites constructed during the park's resort era in the early to mid-20th century. The Shipwreck Site was recorded in Collins et al. (2010) and is considered to be an archaeological site with a non-specific historical American origin. Over the course of this planning cycle, park staff will coordinate with the Bureau of Natural and Cultural Resources so that these cultural sites can be formally evaluated. This effort seeks to record a detailed account of the site's condition and identify any potential threats to its integrity. Photo points at defined intervals should be established in order to visually monitor and document the condition over time and arrest any deterioration. The archaeological site referred to as Camp Helen #10 (BY00877), located in the vicinity of the beach dunes, was documented to have been overwashed and presumably destroyed in 1995 by Hurricane Opal.

Historic Structure reports should be prepared for 3 historic structures in the park not previously evaluated. The necessary upgrades and repairs for the Well House, Duplex 1 and Duplex 2 should be prioritized.

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

Park staff will continue efforts to collect any available information about the six archaeological and 14 historic sites in the park. The park staff promotes reunions and activities that bring people to the park who may have had personal experiences here when it was still an employee retreat for Avondale Mills. In fact, park staff held an Avondale Day event in 2012 in which former employees or guests were encouraged to bring written accounts or historically significant items pertaining to the retreat; this event allowed for a number of historic photos to be collected. Park staff will also seek to conduct interviews with people that may have had family connections to significant people from the site's history or that can relate anecdotes or details about the park's past. Opportunities for archaeological experts to survey the park and uncover unknown cultural resources should be pursued. While many resources have already been identified, there likely remains new sites and artifacts to be discovered. For example, Tesar (1996) points out that it may still be possible to someday find organic indigenous artifacts (e.g. wooden implements, nets, or fabric) preserved in the anoxic sediments of the lake bottom or wetlands. Collins et al. (2012) completed an archaeological resource sensitivity analysis that sought to identify areas of high likelihood for locating unknown cultural sites, which can be used for a guide to future surveys.

Objective: Bring 3 of 20 recorded cultural resources into good condition.

The Kitchen and Duplex 1 (CSO building) are currently dilapidated structures in poor condition. The kitchen in particular would likely need extensive stabilization work to

restore its structural integrity along with further effort to improve its aesthetic appeal. The DRP needs to evaluate these buildings and determine whether their deterioration is too far advanced to warrant the extensive restoration work and expense that would be necessary; demolition may be a more practical alternative. The Stable is in fair condition and needs additional repair work on the roof to stop leaks and on the second story flooring to make it structurally sound and safe to walk on. The Cat's House and Cook's House were listed in Table 4 as being in fair condition. Rather than being based on any specific restoration needs apparent at this time, this rating was based on the fact that these are antique wooden buildings generally subject to quicker degradation in the harsh coastal environment than structures built with other more resistant materials. There are no restoration efforts planned at this time for these buildings, but the park staff will closely monitor their condition and recommend remedies if necessary.

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. DRP considered recommendations of the land management review team and updated this plan accordingly.

Camp Helen State Park was subject to a land management review on May 4, 2000. The review team made the following determinations:

- The land is being managed for the purpose for which it was acquired.
- 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. 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 that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management, through public workshops, and environmental groups. With this approach, the Division objective is to provide quality development for resource-based recreation throughout the state with a high level of sensitivity to the natural and cultural resources at each park.

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.

Camp Helen State Park is located at the western edge of Bay County. The Park is bordered on the south by the Gulf of Mexico and on the east and north by Lake Powell. The park is bisected by U.S. Highway 98 (State Road 30), a 4-lane divided highway. Approximately 55 acres of the park are located north of the highway, and the remaining 128.5 acres stretch from the highway south to the Gulf of Mexico.

There are a number of resource-based recreation opportunities in proximity to Camp Helen State Park. These include the Choctawhatchee River Wildlife Management Area, Pine Log State Forest and Point Washington State Forest, where visitors can enjoy picnicking, boating, fishing, bicycling, hunting, camping and

equestrian activities. Camp Helen State Park is also in close proximity to other state parks such as St. Andrews State Park, Grayton Beach State Park and Deer Lake State Park where visitors can swim, fish, bird watch, hike, bike and rent cabins. The park is near Eden Gardens State Park where visitors can to enjoy a tour of the restored 1897 Wesley House and the gardens, as well as picnic, hike, and bird watch. The park is also a designated part of the Great Florida Birding and Wildlife Trail.

Existing Use of Adjacent Lands

Camp Helen State Park is located between the population centers of Panama City and Panama City Beach, and rapidly expanding South Walton County residential, commercial and resort development. The park is bordered on the north and east by Lake Powell and on the south by the Gulf of Mexico. There is the potential for up to 3,000 new residential units to be developed near the shoreline of Lake Powell within the life of this plan. A new 600-unit residential development has been constructed on Lake Powell and adjoins the northern boundary of the park. A St. Joe Company Development of Regional Impact is also planned along the east side of Lake Powell and northward. These developments will affect the park through the increased use of Lake Powell by motor boats and canoes and kayaks. The additional population will increase the need for outdoor recreational resources in the area.

According to the 2010 Census, Bay County's population increased by 12 percent over the 2000 Census population. The County's coastal location and favorable weather serves as a draw for increasing numbers of visitors and retirees along the Big Bend area of the Gulf coast.

The land uses east of Camp Helen State Park include single and multi-family residential developments. Directly east across Lake Powell from the southern portion of the property are high rise condominium developments. Approximately one mile east of the park begins the strip development of Panama City Beach. West of Camp Helen State Park there are single family residences, including the residential community of Inlet Beach, and commercial establishments along U.S. Highway 98.

Planned Use of Adjacent Lands

The park property is currently designated Public/Institutional on the County's future land use and zoning maps. Residential development adjoins the western boundary of the northern portion of the park. Various land use categories adjoin western boundary of the southern portion of the park, they include categories that allow single family and multi-family uses with some commercial zoning along US Highway 98.

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, supports 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

The park is situated on the shore of Lake Powell, the largest coastal dune lake along the Bay and Walton county coastlines. Both portions of the park have commanding views of Lake Powell from the high bluff areas in the park. Six upland communities, beach dune, coastal grassland, maritime hammock, mesic flatwoods, scrub and wet flatwoods, are represented in the park. They provide an ideal setting for the park's historic area, recreational trails, wildlife observation and nature study. They also provide potential opportunities for day use, such as picnicking, paddling, boating, and overnight stays.

Water Area

The park is surrounded on three sides by the Gulf of Mexico, Lake Powell and Phillips Inlet (the extension of Lake Powell from the highway bridge to the Gulf). This unique location allows access to both salt and freshwater and provides an exceptional base for fishing, kayaking, canoeing, nature study and wildlife observation.

Shoreline

Camp Helen has approximately two miles of shoreline on Lake Powell, Phillips Inlet and the Gulf of Mexico, giving the park access to both freshwater and saltwater. Beach recreation is not considered the primary recreational opportunity provided by this park due to the distance from the beach to the nearest visitor parking facilities. The beach and the southern shoreline of Phillips Inlet also provide habitat and nesting areas for imperiled shorebirds and sea turtles.

Natural Scenery

The particular combination of topography and location on the lake and Gulf, along with the maritime hammock, the dune and the beach area, create a dramatic and picturesque quality to the park.

Significant Habitat

The beach dune, coastal grassland, and marine unconsolidated substrate provide habitat for all four imperiled plant species and the three imperiled bird species in the park. The park provides nesting and feeding areas for the imperiled shorebirds and nesting areas for sea turtles (see Addendum 7). The area has consistently produced fledgling birds and is typically higher than other state parks in the district. These habitat areas provide opportunities for an array of interpretive and environmental education programs for park visitors.

Natural Features

The significant natural features of Camp Helen include the high quality quartz sand beach, the elevation of the park's shoreline overlooking Lake Powell, the maritime hammock and the number of endemic plants found in the park. Ten natural communities located throughout the park provide a unique cross section of Florida Panhandle coastal ecology.

Archaeological and Historical Features

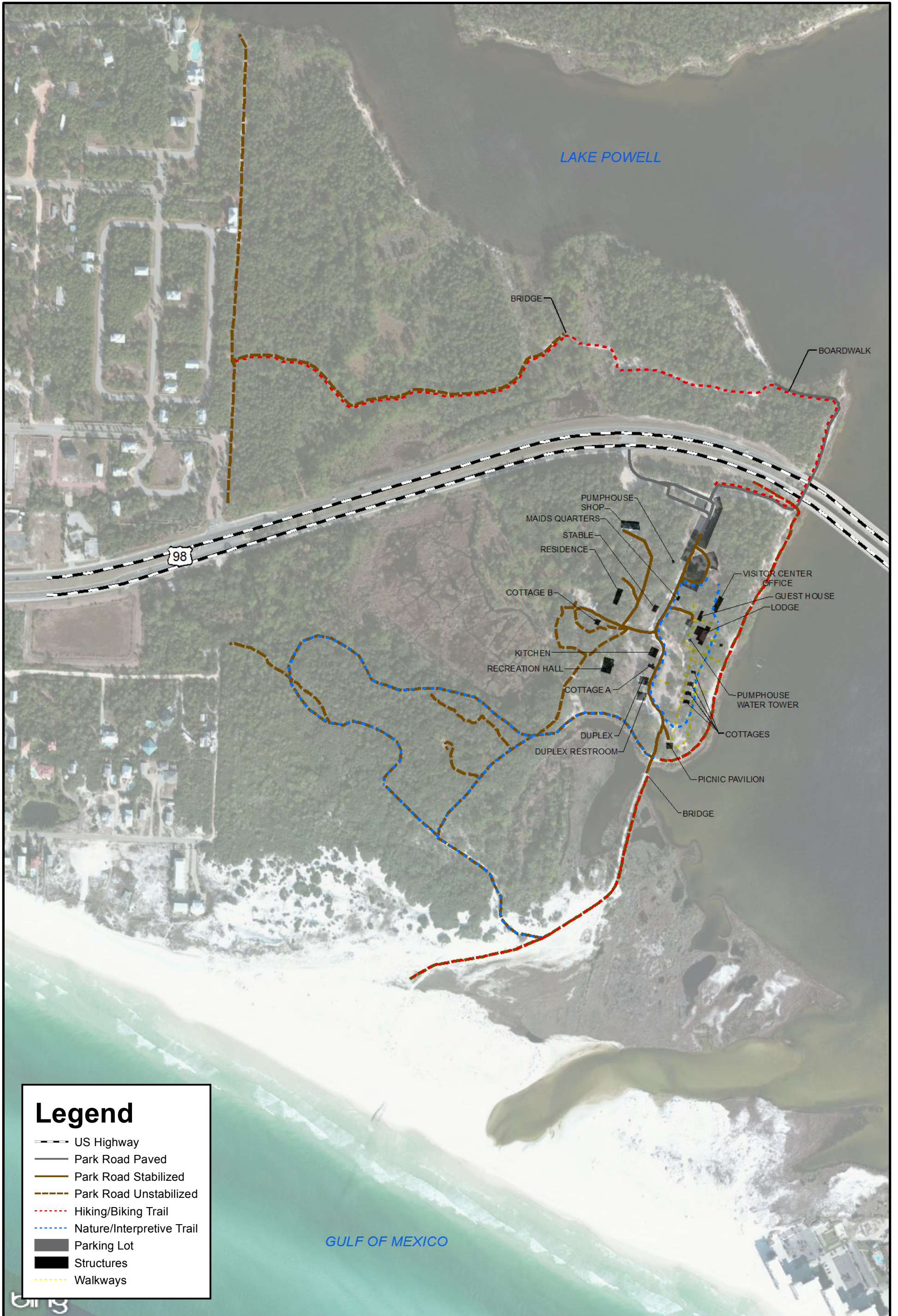
The prehistoric and historic cultural resources of Camp Helen State Park are the most significant aspects of this property. The location of Camp Helen State Park, situated on high ground at the interface between freshwater and saltwater, has been attractive to humans for thousands of years. The multi-layered cultural landscape of Camp Helen State Park provides a unique opportunity for interpretation and environmental education programs. The Native American archaeological sites and the historic architectural components of this park give visitors direct physical examples of the many ways that humans have used and changed the natural landscape on the Florida Panhandle coast over the past 4,000 years.

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

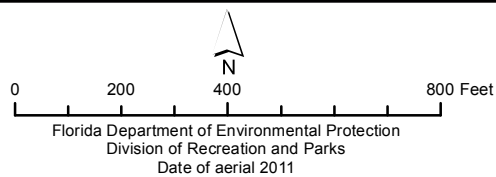
Native Americans used the Camp Helen State Park area thousands of years ago. In the 1920s, Camp Helen State Park was offered as a residential and resort development by the McCaskill Investment Company of DeFuniak Springs. The unique Craftsman Style lodge, support buildings and four masonry cottages were built in the 1930s by Robert and Margaret Hicks. Mrs. Hicks and her daughter lived



Legend

- US Highway
- Park Road Paved
- Park Road Stabilized
- Park Road Unstabilized
- - - Hiking/Biking Trail
- - - Nature/Interpretive Trail
- Parking Lot
- Structures
- - - Walkways

CAMP HELEN STATE PARK



BASE MAP

in the Lodge until the mid-1940s. In 1945, the Avondale Textile Company bought the resort from Mrs. Hicks and developed a recreational camp for the benefit of its employees. Lodging, picnicking, fishing, swimming, boating, hiking and beach activities were provided for nearly 40 years to company employees and guests at Camp Helen State Park. Avondale operated the camp until the mid-1980s, and maintained an on-site presence for upkeep and security until it was purchased by the State in 1996. Footpaths and a jeep trail on the north side of U.S. Highway 98 indicate recreational uses have also been made of that lake shoreline in the past, but facilities were never constructed in that area of the park.

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.

The current land use and zoning categories for Camp Helen are the same, Public/Institutional (PI). This category allows "existing and planned public buildings and grounds, educational facilities, colleges and universities, military installations, hospitals, prisons, places of worship, group homes, lodges, nursing homes, halls, exhibition center, fairgrounds, civic center, public utilities, communication towers, solid waste facilities, public commerce or industrial parks owned by a governmental entity and other similar uses." This land use and zoning does not reflect the existing or planned use for the park. There are two other land use/zoning categories that would be more appropriate for the park, Conservation/Recreation or Recreation. These categories better reflect the current and planned uses for the park.

Current Recreational Use and Visitor Programs

Natural and cultural resource interpretation and resource based recreation are the primary recreational uses at Camp Helen State Park. The interpretation of the history of Camp Helen and the park's natural and cultural environs are a priority for the park. The park also offers water-based recreation, picnicking and hiking.

Camp Helen recorded approximately 38,382 visitors to the park in Fiscal Year 2012-2013. By DRP estimates, the FY 2012-2013 visitors contributed over \$1,857,377 in direct economic impact and the equivalent of 30 jobs to the local economy (Florida Department of Environmental Protection 2013).

Other Uses

There are no other uses in the park other than recreation.

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 Camp Helen, the cultural resource sites, wetland communities, the beach dune community and the Gulf beach have been designated as protected zones (see CLUP Map).

Existing Facilities

Recreation Facilities

Existing recreational facilities at Camp Helen State Park include the interpretation of the buildings and cultural resources on the south portion of the park, hiking trails through the maritime hammock and scrub, access to the beach area and Phillips Inlet for fishing and bird watching and numerous areas for picnicking. The lodge and recreation hall can be used or rented for group activities and weddings.

Visitor center
Lodge
Guest House
Maid and Butler's House
Kitchen
Masonry cottages (4)
Mule Barn
Water Tower/Pump House

Restroom
Picnic tables and grills
Shared use trail
Nature trails
Picnic pavilions (2)
Interpretive displays
Waiting pavilions (4)

Support Facilities

Ranger residence
Restrooms for volunteer camp sites
2-bay shop
Pole barn
Paved parking area (58 Spaces)
Recreation hall

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 Division 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 314 users per day.

Historic interpretation and resource based recreation are the primary recreational uses at Camp Helen State Park. The interpretation of the history of Camp Helen and

the park's natural and cultural environs should be a priority for the park and should be suited to the resources in the Camp Helen State Park.

Objective: Expand the park's recreational carrying capacity by 204 users per day.

A day use area with access, picnic pavilions, restrooms, potential for a small or mobile concession structure and parking is proposed in the northern portion of park . A looped trail from the termination point of the existing shared-use trail through the western portion of the park is also proposed.

A new combined visitor center, concession building and restrooms, a new boat dock, and a canoe/kayak launch are planned for the south part of the park.

Improvements are planned for the existing path from the historic area to the beach that will promote universal accessibility and connect the historic area, beach and natural areas on a lopped trail; while protecting shorebird habitat.

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

Currently the park offers self -guided walking tours assisted by a walking tour brochure. Guided history tours are offered on the first Saturday of each month and on request by tour groups. The park staff offers guided shorebird interpretive walks as well as educational nature trail walks. The park provides nature trail and history tours for school and scout groups.

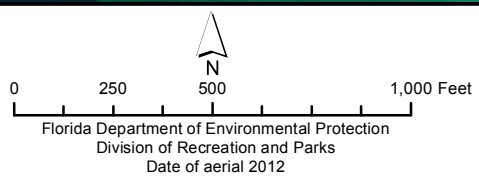
Objective: Develop three new interpretive, educational and recreational programs.

Expansion of the park's interpretive program to include wildlife in the park such as sea turtles and shorebirds, birds of prey and how to identify animal tracks is recommended. There are plans for programs related to coastal dune lake and beach/dune habitat and ecology, and prevention of marine debris. There are also plans for interactive programs such as fishing for children in both the surf and freshwater lake and ranger-guided kayak tours.



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CAMP HELEN STATE PARK



CONCEPTUAL LAND USE PLAN

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 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. The following is a summary of improved, renovated and new facilities needed to implement the conceptual land use plan for Camp Helen 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 three existing facilities and replace signage.

Despite the historic structures restoration work that has been completed, there are additional measures necessary to bring some of the structures to a good condition.

The Duplex used for CSO office space is in poor condition and in need of repair in order to maintain the integrity of the structure.

The Kitchen building has been discussed as a place for interpretation of the Camp history during the Avondale period. The building may also provide food service for park visitors. The assessment of this building is needed to determine if it is suitable for adaptive reuse for future park purposes.

The Stable roof should be repaired to prevent leaks and the second story flooring needs stabilization before anyone can access the upper portion of the building.

Replacement of existing interpretive signage along the Oak Canopy Trail and in the coastal scrub and beach dune areas is needed. The signage should include materials on beach wildlife, shorebirds and shorebird management.

Major repair projects for park facilities may be accomplished within the 10-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).

Objective: Construct new day use picnic area, walking trail, day use canoe/kayak launch and new boat dock.

A natural surface looped walking trail from the termination point of the shared use trail through the western portion of the park is proposed.

A canoe/kayak launch area is also proposed along Phillips Inlet near the bridge, adjoining the shared-use trail providing access from the existing parking area (see CLUP). The day use canoe/kayak launch should be capable of launching and landing two boats simultaneously.

The day use picnic area should include picnic pavilions (two small and one medium), interpretive kiosks, and fencing. This area may include a future concession structure if the increase in park visitors warrants. Support facilities for the area include the access road, a medium restroom, 20 paved parking spaces and utilities.

Construct a boat dock accommodating six to eight private boats and capable of docking a tour boat or water taxi craft in Phillips Inlet at the location of the old dock across from the Lodge. Additional opportunities to enhance public access through improved connectivity to the local community will also be considered. The dock will be designed to accommodate the fluctuation in water levels in Phillips Inlet.

Improvements are planned for the existing access route from the historic area to the beach. The improvements are needed to promote universal accessibility and enhance visitor safety. The proposed improvements will also facilitate the creation of an interpretive loop from the historic area, to the primary beach access and along a service road that connects to the existing nature trail. Interpretive overlooks with information on the park's natural resources will be featured along the loop. Final design of the proposed improvements will likely include a combination of trail stabilization and boardwalk construction. All improvements are proposed within the disturbed areas created by the existing service road and the current beach access route. The final design and layout of the proposed improvements will emphasize the protection of critical shorebird habitat and the park's sensitive coastal communities. The design will also include a path for equipment used to open the Phillips Inlet outfall when the situation arises.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 6) 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 Division 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:

Trails

Nature trail (0.90 mile)

Day Use Picnic Area

Picnic pavilions (2 small; 1 medium)

Interpretive signs and fencing

Restroom

Parking

Utilities

Access road (0.5 mile)

New Park Administration Building

Interpretive exhibits

Concession Space

Restrooms

Historic Building Adaptive Reuse

Repair Duplex 1

Convert Cottage A "cathouse" to use as the interpretive visitor center for the park.

Asses the Kitchen and proceed with adaptive reuse modifications if feasible

Water Craft Areas

Boat dock

Public canoe/kayak launch

Signage

Replace interpretive signage along trail in the southern portion of the park.

Beach Access Improvements

Promote universal accessibility

Connect historic area, beach and

maritime hammock on looped trail

Combination of trail stabilization and boardwalk

Protection of bird habitat

Maintain equipment path

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 6).

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 6.

Table 6. Recreational Carrying Capacity

Activity/Facility	Existing Capacity*		Proposed Additional Capacity		Future Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Visitor Center	30	120			30	120
Picnicking	52	104	32	64	84	168
Boat Dock			10	40	10	40
Kayak/canoe rentals			30	60	30	60
Interpretive Trails	10	40	10	40	20	80
Beach use	50	50			50	50
TOTALS	142	314	82	204	224	518

*Existing capacity was revised from 2004 plan to better represent DRP carrying capacity guidelines.

Optimum Boundary

The optimum boundary map reflects lands that have been identified as desirable for direct management by DRP as part of the state park. These parcels may include public as well as privately owned lands that improve the continuity of existing parklands, provide the most efficient boundary configuration, improve access to the park, provide additional natural and cultural resource protection or allow for future expansion of recreational activities. The map also identifies lands that are potentially surplus to the management needs of DRP. As additional needs are identified through park use, development, or research, and changes to land use on adjacent private property occurs, modification of the park's optimum boundary may be necessary.

Two parcels are identified in the optimum boundary map, along with 150 feet of unconsolidated substraight waterward of the current park boundary. The two portions of parcels are adjoining the south eastern portion of the park where Lake Powell meets the Gulf of Mexico. Both of these parcels are habitat for imperiled shore birds. Their addition to the park boundary would better protect the habitat of these imperiled species.

In addition, this plan recommends that the park boundary (and leased area) be extended off the water ward boundary of the park to include an additional 150 feet from the existing surveyed boundary into the Gulf of Mexico and Lake Powell. 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, and shorebirds), in accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, for the purposes of visitor safety and resource protection.



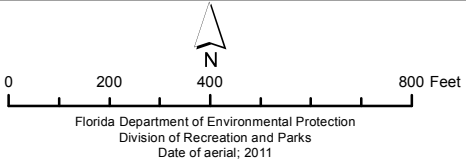
Legend

- Park Boundary
- Optimum Boundary

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Image courtesy of USGS Earthstar Geographics SIO © AND

CAMP HELEN STATE PARK



OPTIMUM BOUNDARY MAP

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 Camp Helen State Park in 2004, 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.

Acquisition

In 1996 the Board of Trustees of the Internal Trust Fund of the State of Florida purchased the Orman House with CARL funds. That same year the trustees leased Camp Helen State Park to Division of Recreation and Parks (DRP) under a 50 year lease. In 2000, the Trustees amended the lease to become effective as of July 1, 2000. The current management lease agreement for the park expires in 2050.

Park Administration and Operations

- The Park continues to actively work with organizations and members of the public that wish to volunteer their time.
- The Park has an active citizen's support organization (CSO) and maintains an ongoing relationship with the local organizations such as Audubon Society, Lake Powell Community Alliance, Choctawhatchee Basin Alliance and Bay County staff.

Resource Management

Natural Resources

- Park staff has worked to maintain the natural resources in the park through protection, enhancement and public education.

- Staff has worked to protect the remnant natural communities such as maritime hammock, beach dune, scrub, mesic flatwoods and depression marsh by removing exotic plants and introducing fire where possible.
- Staff has worked to maintain the imperiled species in the park by monitoring and collecting information on the nesting shorebird population and sea turtle nesting area while protecting the habitat of imperiled plants.
- Staff monitors Lake Powell water levels and outfall in regard to flooding issues.

Cultural Resources

- During the last 10 years the park staff has worked to maintain Camp Helen, associated structures and known archeological sites.
- Historic building restoration projects have been accomplished on Cabin A (Rainbow Cottage), the Recreation Hall, Cathouse, Mule Barn, Carriage House/Garage and the Water Tower.
- Cabin A in the Rainbow cottages has been furnished and staged to represent the Avondale period of the park. The historic walkways in front of the Rainbow cottages were repaired and improved to provide ADA access.
- A walking tour with brochures was developed and audio interpretive signage was installed throughout the historic structure area in the park to offer additional information and interpretation of the structures.

Recreation and Visitor Services

- During the past 10 years a number of facilities have been added or enhanced that add to the visitor experience in the Park.
- Park staff has worked with local volunteers and the Gulf Beach Garden Club to add plantings to Hicks Garden.
- Two ADA compliant picnic and grill areas have been added to the park.
- The day use restrooms were constructed.
- A deck and outdoor shower adjoining the day use restrooms was added
- A stabilized shared use path and waiting pavilions were constructed and connect the southern and northern portions of the park.
- A paved parking lot was added to the southern portion of the park near the Visitors Center.

Park Facilities

- Facilities have been added to the park in order for staff to maintain the park and enhance the visitor experience in the park.
- An existing storage area was converted to a restroom to serve the volunteer camping area.
- The maintenance shop was constructed.
- An entrance sign to the park was constructed.

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 6) summarize 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 6 may need to be adjusted during the ten-year management planning cycle.

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	\$323,919
Objective B	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	C	\$210,528
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	Manage water levels in Lake Powell in order to prevent flooding of private property along the shoreline.	Complete any support work to maintain permit	C	\$15,900
Action 1	Continue to monitor water levels on a daily basis using the gauge mounted on the steel bridge south of the building complex.	Maintain record of water levels	C	\$11,500
Action 2	Coordinate efforts with various agencies, especially the Bay County Public Works Department, to manage water levels and excavate a channel at Phillips Inlet in order to drain lake water when necessary.	Drain high water or test water quality	C	\$4,400
Objective B	Restore natural hydrological conditions and functions to approximately 9.4 acres of depression marsh and mesic flatwoods natural communities.	Hydrology restored to # of acres of Depression marsh and Mesic flatwoods	UFN	\$124,250
Action 1	Complete restoration plan for Duck Pond (depression marsh) and canals	Plan completed	UFN	\$750
Action 2	Contract engineers to edit or redraw draft plan drawings	Drawings completed	UFN	\$20,000
Action 3	Work with other agencies (e.g. US Army Corps of Engineers, DEP, Bay County) to submit application and obtain permit	Obtain permit	UFN	\$3,500
Action 4	Complete ground work by restoring overflow toward the south, filling canals in the north, and planting native vegetation	Ground work completed	UFN	\$100,000

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 10 years, have the appropriate acres of the park maintained within optimal fire return interval.	# Acres with optimal fire return interval	LT	\$76,000
Action 1	Establish a plan that specifies necessary steps to prepare burn zones and update based on field conditions	Burn plan established and updated	ST	\$16,000
Action 2	Complete infrastructure and preparation work (especially mechanical fuel reduction) in order to reintroduce fire.	Amount of preparation work accomplished	LT	\$60,000
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	C	\$7,000
Action 1	Surveillance activities to observe imperiled and other species are conducted throughout the park.	List updated	C	\$5,000
Action 2	Protect listed plants from visitor impacts by preventing disturbance to sandy substrate of existing dunes through education, limiting access and signage.	Signage posted, educational information provided	C	\$2,000
Objective B	Monitor and document 11 selected imperiled animal species in the park.	# Species monitored	C	\$137,360
Action 1	Monitor snowplovers under currently established procedures (other shorebird species are also recorded during same visits)	Protocols implemented	C	\$49,200
Action 2	Monitor loggerhead sea turtles (or other rare sea turtle species) and their nests, providing protective measures and recording data	Protocols implemented	C	\$58,160
Action 3	Deduce population trends by monitoring the imperiled shorebirds/rare birds, and loggerhead sea turtles as they are observed in the park	# Imperiled animal species monitored	C	\$30,000
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 1 acre of exotic plant species in the park.	# acres treated	C	\$10,900
Action 1	Annually develop/update exotic plant management work plan	Plan developed and updated	C	\$5,300
Action 2	Implement annual work plan by treating at least 1 acre of exotic plants every year, particularly torpedo grass, and continuing maintenance and follow-up treatments as needed	# of acres treated	C	\$5,600
Objective B	Implement control measures on 6 exotic animal species in the park.	# Species for which control measures implemented	C	\$364,800
Action 1	Remove exotic animals encountered in the park as determined necessary as they are encountered either through park staff efforts or with assistance from other agencies	Removal procedures implemented	C	\$364,800

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 19 of 20 recorded cultural resources in the park.	Evaluations completed	C	\$45,478
Action 1	Assess 6 archaeological sites and document them in written and photographic format, using a consistent format enabling future comparison of conditions.	# of Assessments completed	ST	\$478
Action 2	Prepare Historic Structure Reports (HSR) for 3 historic structures in the park not previously evaluated and prioritize necessary upgrades / repairs: Well House, Duplex 1, Duplex 2	Completed HRS reports	LT	\$45,000
Objective B	Compile reliable documentation for all recorded historic and archaeological sites.	Documentation complete	LT	\$81,808
Action 1	Determine priority areas for Level 1 archaeological survey based on results of the University of South Florida predictive model.	Assessment completed	UFN	\$79,579
Action 2	Develop a Scope of Collections Statement for the park.	Scope of Collections Statement completed	ST	\$2,229
Objective C	Bring 3 of 20 recorded cultural resources into good condition.	# Sites in good condition	LT	\$779,934
Action 1	The Kitchen and Duplex 1 (CSO building) should be evaluated by an engineer or preservation architect to determine if their deterioration is too advanced for restoration and whether demolition is a more practical alternative.	Evaluations completed	ST	\$50,000
Action 2	Improvements should be completed on the Stable to enhance its condition (e.g. second story floor stabilization, roof repairs).	Improvements completed	ST	\$100,000
Action 3	Develop a monitoring program for all cultural sites in the park listed on the master site file.	Program developed and implemented	ST	\$886
Action 4	Develop a maintenance program for all structures in the park listed on the master site file.	Program developed and implemented	ST	\$629,048

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 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 314 users per day.	# Recreation/visitor opportunities per	C	\$352,086
Objective B	Expand the park's recreational carrying capacity by 204 users per day.	# Recreation/visitor opportunities per	LT	\$228,684
Objective C	Continue to provide the current repertoire of 3 interpretive, educational and recreational programs on a regular basis.	# Interpretive/education programs	C	\$42,200
Objective D	Develop 3 new interpretive, educational and recreational programs.	# Interpretive/education programs	LT	\$53,390
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	\$394,337
Objective B	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	\$10,000
Objective C	Improve four existing facilities and replace signage.	Facilities improved	UFN	\$574,500
Objective D	Construct new day use picnic area, nature trail, day use canoe/kayak launch and new boat dock	Facilities constructed	LT	\$2,119,948
Objective E	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	C	\$256,224
Summary of Estimated Costs				
Management Categories			Total Estimated Manpower and Expense Cost* (10-years)	
Resource Management			\$1,643,430	
Administration and Support			\$344,947	
Capital Improvements			\$2,694,448	
Recreation Visitor Services			\$1,096,921	
Law Enforcement Activities ¹				
			1Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.	

Addendum 1 – Acquisition History

Camp Helen State Park Acquisition History

Purpose of Acquisition

The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (“Trustees”) acquired Camp Helen State Park to (1) conserve the flatwoods, hammocks, and dunes around Lake Powell in order to enhance the water quality and recreational fishery; preserve the habitat of several rare plants and shorebirds; and provide the public with a scenic area to learn about and enjoy shrinking natural world of the Coastal region of Walton County, Florida.

Sequence of Acquisition

On June 7, 1996, the Trustees acquired a 182.26-acre property, commonly known as Lake Howell CARL project, constituting Camp Helen State Park. The Trustees purchased the property from Dana Beach Resorts, Inc. The Conservation and Recreation Lands (CARL) program with Preservation 2000 (P2000) funded the purchase.

Title Interest

The Trustees holds fee simple title to Camp Helen State Park.

Lease Agreement

On July 1, 1996, the Trustees leased Camp Helen State Park to the State of Florida Department of Environmental Protection, Division of Recreation and Parks (DRP), under Lease No. 4124. This lease was for a period of fifty-years, which would expire on June 30, 2046. However, on June 8, 2000, the Trustees amended Lease No. 4124 to become effective as of July 1, 2000. Lease No. 4124, will now expire on June 30, 2050. DRP manages Camp Helen State Park only for the conservation and protection of natural and historical resources and resource based public outdoor recreation and related purposes.

Special Conditions on Use

Camp Helen State Park is designated single-use to provide resource-based public recreation and other related uses.

Outstanding Reservations

There are no known outstanding reservations or encumbrances on Camp Helen State Park.

Camp Helen State Park Acquisition History

Addendum 2 – Advisory Group Members and Report

Camp Helen State Park Advisory Group Members

Local Government Representatives

The Honorable Mike Thomas
Bay County Board of County
Commissioners
644 Mulberry Avenue
Panama City, Florida 32405

John McMurray, Chair
Bay Soil and Water Conservation
District
6741 Camp Flowers Road
Youngstown, Florida 32466

Agency Representatives

Sasha Craft, Park Manager
Camp Helen State Park
357 Main Park Road
Santa Rosa Beach, Florida 32459

Amy Raybuck, Regional Biologist
Florida Fish and Wildlife Conservation
Commission
3911 Highway 2321
Panama City, Florida 32409

Mike Weisenbaker
Bureau of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32399

Johnny Sabo, Center Manager
Chipola Forestry Center
Florida Division of Forestry
715 West 15th Street
Panama City, Florida 32401

Local Visitors Bureau

Dan Rowe, Executive Director
Panama City Beach Convention and
Visitors Bureau
Post Office Box 9473
Panama City Beach, Florida 32413

Recreational User Representatives

Len Warren
Florida Paddling Trails Association
3937 Voyles Road
Panama City, Florida, 32409

Citizens Support Organization Representatives

Ted Turnbough
President, Friends of Camp Helen
2 Blue Crab Lane
Panama City Beach, Florida 32413

Environmental and Conservation Representatives

Emily Ellis
Vice-President, Lake Powell
Community Alliance.
PO Box 611
Rosemary Beach, Florida 32461

Mary Jo Capra
Bay County Audubon Society
728 Blanchard Dr.
Panama City Beach-32413
Post Office Box 1182
Panama City, Florida 32402

Adjacent Land Owner

Joan Knowles
Grande Pointe Development
Homeowners Association
259 Baywinds Dr.
Destin, Florida 32541

Camp Helen State Park Advisory Group Report

The Advisory Group meeting to review the proposed land management plan for Camp Helen State Park was held at the Lodge at Camp Helen on Wednesday, December 18, 2013, at 9:00 AM.

Pete Knowles represented Joan Knowles. County Commissioner Mike Thomas, Dan Rowe and John McMurray were not in attendance. Amy Raybuck from Florida Fish and Wildlife Conservation Commission and Mike Weisenbaker from the Division of Historic Resources did not attend but provided written comments. All other appointed Advisory Group members were present. Attending staff were Daniel Jones, Tony Tindell, Arthur Stiles, Lew Scruggs, Katie Parrish, Sasha Craft, and Enid Ehrbar. Ms. Ehrbar began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. Ms. Ehrbar summarized the comments received during the previous evening's public workshop. Ms. Ehrbar then asked each member of the Advisory Group to express his or her comments on the draft plan.

Summary of Advisory Group Comments

Mary Jo Capra (Bay County Audubon Society) stated that the protection of bird habitat was a priority. She requested more information on placement and management of the boardwalk. Audubon is opposed to the new overnight cabins because of the impact to the scrub. Ms. Capra stated that a large group camp was being built on the north shore, and would serve this purpose. Audubon was opposed to the food concession because of the additional trash that attracts predators that impact the shorebirds. They do not think a boat dock for tour boats is appropriate and would prefer a fishing pier. They support the proposed trail and picnic area on the north side. They also support the kayak launch. She stated that this is a very small park; it does not need a large increase in people. Mary Jo Capra provided additional written comments from the members of Audubon. These comments are included in the public meeting summary.

Len Warren (Florida Paddling Trails Association-Bay County Kayakers) inquired if motor boats would be allowed to use the canoe/kayak launch and was told they would not. He made several suggestions on the design of the launch.

Aaron Kincaid (Department of Agriculture and Consumer Services, Florida Division of Forestry) discussed the burn program for the park. Staff should establish management zones with trails and reestablish fire in the scrub and depression marsh. If the cabins are built, it should be done using the Firewise design and construction.

Ted Turnbough (Camp Helen Citizens Support Organization) discussed what the Camp Helen Citizens Support Organization (CSO) does for the park. He noted that the relatively small parking area (58 spaces) constrains the CSO from holding big events at the park. The CSO is concerned about park attendance and funding. They don't want to sacrifice the natural areas, but understand the need for funds. They like the section of the plan that proposes restoration and potential adaptive reuse of the historic structures. The dock is not a CSO priority; they think a fishing pier would be preferable in that location. They like the idea of the kayak/canoe launch and would like the CSO to manage the rentals; this would retain 100% of the money for the park. The CSO thinks the new administration building with a bigger visitor center for more displays is good. There is concern about the safety of motorists as they approach the park. A deceleration lane is needed for east bound traffic. They are not sure the boardwalk would really protect the birds, since most people come from boats at the inlet area. They have mixed feelings

Camp Helen State Park Advisory Group Report

on the group camp and day use area. One of the CSO priorities is the updating of signs on the trails. They would like to see minimal impact to natural areas given the amount of development happening in the area.

Emily Ellis (Lake Powell Alliance) stated there are a number of things in the plan that members of the Alliance can support, such as restoration of the cultural sites and buildings. They support better signage on the trails. They are opposed to the cabins because of the destruction of habitat. The area already has a number of camping/RV and cabin facilities at other state parks within close proximity to this park. She inquired about handling stormwater, utilities, type of fencing and how the cabins would be rented to individuals. They have similar issues as the other advisory group members with the boat dock and prefer a fishing Pier. They question the need for the dock and water taxi/tour boats. They support the kayak/canoe launch at the bridge but the number of boats needs to be small, limited to 6 craft, and the CSO should run the concession. They inquired about the concession process and how concessions are leased.

They feel the boardwalk will increase impacts to the shorebird nesting area and will provide perches for predators. They were concerned that there is no mention of new staffing for all the additional development proposed. Ms. Ellis provided additional written comments from members of the Lake Powell Alliance. These comments are included in the public meeting summary.

Pete Knowles (Grande Pointe development) stated he was not totally familiar with the plan, but attended the public meeting Tuesday night. He had not been to Camp Helen State Park before, and it was interesting to learn about the bird habitat. He stated he was a numbers guy, and he understands that you have to have revenue to support protection of the parks resources. He agrees that the lake is a unique feature in this area, but it is not possible to keep people from using the lake.

Summary of Public Comments

Laura Paris (St Andrews Bay Resource Management Association (RMA), St. Andrews Bay Watch Program) presented a letter from Patrice Couch the Director of the Bay Watch Program. She stated that the Bay Watch program had been monitoring area lakes for 25 years. Their main concern was the impact on the natural resources and therefore, the impact on the water quality. They are opposed to the group camp because of the impact to the scrub which is a migratory bird food source. They think there are many other overnight accommodations already available in the area. They are opposed to the kayak/canoe rentals at possibly 60 per day. Bay Watch questions the boat dock with the commercial vessels and the impact to the lake caused by turbidity and fuel contamination. They are opposed to the food concession because of the trash that will attract predators. Laura Paris provided additional written comments from members of St Andrews Bay Watch. These comments are included in the public meeting summary.

Richard Bryan (Inlet Beach Water Company) stated that the Inlet Beach Water Company's first priority was to serve the Inlet Beach community. They only have a certain amount of capacity. He was concerned about how the additional development in the park would be served by water. He stated that the park staff needs to talk to Bay County in order for the County to bring water over the bridge and into this area.

Camp Helen State Park Advisory Group Report

Summary of Written Comments

Mike Wisenbaker (Bureau of Historical Resources (BHR)) reviewed the cultural section of the plan and noted an inconsistency in the Resource Management Component that states there are five archeological sites, but six are shown in the Table 4. He suggests the word “interpret” be added to the management goal that states the plan strives to “protect, preserve and maintain the cultural resources at the park”. Lastly the plan lists 14 historic structures, but there are only ten master site file forms in the BHR records. Numbers were assigned, but forms were not completed.

Amy Raybuck (Florida Fish and Wildlife Conservation Commission) reviewed the Resource Management Component, Land Use Component and Appendices of the plan and made suggestions to clarify items related to the Duck Pond, listed species, natural communities, imperiled species and additional suggestions related to natural resource management.

Emily Ellis (Lake Powell Alliance) provided a written version of her comments that were stated at the Advisory Group meeting.

Emily Ellis provided additional written comments. She stated the Lake Powell Alliance in most part agreed with the new administration building and restrooms, improvements and restoration of the historic structures ,extension of the walking/bike trail in the northern portion of the park, new interpretive signage, the public canoe launch and restoration of the Duck Pond. They did not agree with the construction of the boat dock to accommodate private interest, the day use/picnic area in the northern portion of the park, the beach boardwalk, the group camp (that she knew was deleted), and the food and kayak concessions.

Mary Jo Capra (Bay County Audubon Society) sent additional written comments where she agreed with the elimination of the group camp and access road. She was also in favor of the extension of the walking trail in the northern portion of the park and the new administration building. She was still not in favor of the boardwalk to the beach, any food concessions or the proposed boat dock.

Staff Recommendations

The staff recommends approval of the proposed management plans for Camp Helen State Park as presented, with the following changes:

- The group camping area will be deleted from the plan.
- The access road that extends to the group camp will be deleted from the plan.
- The trail that extends from the existing shared use trail will be extended through the scrub area to create a looped interpretive/ hiking trail.
- The boardwalk will be shortened so it extends from the historic area and ties into the existing trail through the maritime hammock and scrub at the edge of the beach dune creating a loop trail. Access from the boardwalk to the beach will be provided where appropriate.
- Additional language regarding management actions to protect the imperiled shorebirds will be included in the Imperiled Species section.

Camp Helen State Park Advisory Group Report

- Revisions will be made to the Cultural Resource Inventory and Management sections of the plan.

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.”

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. The 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.

Camp Helen State Park Advisory Group Report

Addendum 3 – References Cited

Camp Helen State Park References Cited

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Addendum 4 – Soil Descriptions

Camp Helen State Park Soil Descriptions

(11) Lakeland sand, 8 to 12 percent slopes. This excessively drained, strongly sloping soil occurs on upland hillsides in the northern part of the county. Slopes are smooth, irregular, and convex.

Typically, the surface layer is dark brown or dark grayish brown sand 3 to 4 inches thick. The underlying layer is sand extending to a depth of 80 inches or more. The upper 38 inches is brownish yellow and overlies pale brown or very pale brown sand.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Foxworth, and Troup soils. Also included are small areas of soils that occur at the bases of steeper slopes and have a mixed sandy clay loam and sandy clay subsoil at varying depths. Also included are soils that are similar to this Lakeland soil but have slopes of 5 to 8 percent and a few areas where slopes are 12 to 30 percent. The steeper slopes are generally narrow escarpments adjacent to drainageways and low-lying wet depressional areas. Included soils make up less than 20 percent of any mapped area.

This Lakeland soil has a low available water capacity, low natural fertility, and low organic matter content throughout. Permeability is very rapid.

The natural vegetation consists of longleaf and slash pine and blackjack, bluejack, turkey and post oak. The understory consists of smilax, blackberry, yaupon, dwarf live oak, running oak, huckleberry, milkweed, ragweed, mayweed, cornflower, dogfennel, cudweed, and sparse pineland threeawn. Large areas of this soil have been planted to slash pine and sand pine.

This soil is not suited to cultivated crops because of droughtiness, low natural fertility, steepness of slope, and susceptibility to erosion.

This soil is moderately suited to pasture. Deep-rooted plants such as Coastal bermudagrass and bahiagrass are well adapted, but yields are reduced by periodic droughts. Regular fertilizing and liming are needed. For maximum yields, grazing should be controlled to permit plants to maintain vigor.

This soil has moderately high potential productivity for pine trees. Equipment limitations and seedling mortality are management concerns. Slash pines are the best species to plant.

Steep slopes are a moderate limitation to use of this soil as for most urban uses and a severe limitation to use for recreational development. Septic tank absorption fields function best if laid out on the contour or parallel to the slope rather than up and down the slope. The sandy texture and the hazard of cutbanks caving limit use as sites for shallow excavations and recreational development. Shoring and surface stabilization help to offset these limitations.

This soil is in capability subclass VIs.

Camp Helen State Park Soil Descriptions

(27) Mandarin sand. This somewhat poorly drained, nearly level soil is on low ridges and knolls in the flatwoods. Slopes are generally smooth to slightly convex and range from 0 to 2 percent.

Typically, the surface layer is gray sand about 7 inches thick. The subsurface layer is white sand about 18 inches thick. The subsoil is dark brown sand to a depth of about 36 inches and then brown and dark brown sand to about 57 inches. The substratum is light brownish gray sand to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Chipley, Foxworth, Centenary, Kureb, Leon, Resota, and Hurricane soils. Also included are small areas of soils that are similar to this Mandarin soil but have a thinner subsoil or organic stained layer and small areas of soils that are similar to Mandarin soil but are poorly drained. Included soils make up less than 15 percent of any mapped area.

This Mandarin soil has a water table at a depth of 20 to 30 inches for 1 month to 3 months and at a depth of 30 to 60 inches for about 9 months in most years. Available water capacity is very low in the surface and subsurface layers and is low in the subsoil. Permeability is rapid in the surface and subsurface layers and is moderate in the subsoil.

The natural vegetation consists of longleaf and slash pine; water, bluejack, turkey, and post oak; and an understory of waxmyrtle, saw palmetto, running oak, fetterbush, and pineland three awn.

Rapid permeability and low available water capacity are very severe limitations for cultivated crops. Row crops should be rotated with cover crops; cover crops should be on the land for three-fourths of the time. Soil improving cover crops and all crop residues should be left on the land. Maximum yields require good seedbed preparation, fertilizing, and liming.

This soil has moderate potential productivity for pine trees. Equipment limitations and seedling mortality are the main management problems. Slash pines are the best trees to plant.

A water table that is moderately high during rainy seasons is a moderate to severe limitation for recreational and urban development. Water control measures must be used or fill material must be added if this soil is used for recreational or urban development or as septic tank absorption fields. The sandy texture and the hazard of cutbanks caving are limitations to uses that require shallow excavations. Shoring of side slopes is required.

Camp Helen State Park Soil Descriptions

The soil is in subclass VIs.

(29) Rutlege sand. This very poorly drained soil is on nearly level or slightly depressional areas along drainageways. Slopes are smooth to concave and range from 0 to 2 percent.

Typically, the surface layer is sand about 22 inches thick. The upper 13 inches is black and the lower 9 is very dark gray. The next layer is gray sand 33 inches thick, and the lower layer is 25 inches thick and is light gray sand mottled with yellow and brown.

Included with this soil in mapping are small areas of Dorovan, Leon, Allanton, Mandarin, Osier, Pamlico, Pantego, Pickney, Pottsburg, and Rains soils. In a few mapped areas, there is a sandy loamy subsoil. Small areas of soil that are similar to this Rutlege soil but have a dark surface horizon less than 10 inches thick are included in some mapped areas. Included soils make up less than 20 percent of any mapped area.

This Rutlege soil has a water table at or near the surface for 4 to 6 months during most years and is ponded for 4 to 6 months annually. Available water capacity is low. Permeability is rapid. Internal drainage is very slow, impeded by the high water table. Natural fertility is medium, and organic matter content is high in the surface layer.

The natural vegetation is buckwheattree, sweetbay, blackgum, cypress, and scattered slash pine. The understory is gallberry, waxmyrtle, pineland threeawn, and various reeds and sedges.

Wetness is a very severe limitation for cultivated crops. Without intensive water control, the number of adapted crops is very limited. With adequate water control, such crops as corn and soybeans can be grown. The water control system should provide a means of removing excess surface water rapidly after heavy rains and provide rapid internal drainage to the upper layers. Seedbed preparation should include bedding of the rows. Regular applications of lime and fertilizer are needed. Crop rotations should keep close-growing, soil-improving crops on the land at least two thirds of the time. All crop residues and soil-improving crops should be left on the surface.

When properly managed, this soil is moderately suited to pasture and hay crops. Tall fescuegrass, Coastal bermudagrass, bahiagrass, and white clovers are well adapted. Surface ditches are needed to remove excess surface water rapidly during heavy rains. Fertilizer and lime are needed. Grazing should be controlled to prevent overgrazing and reduction of plant vitality.

Where adequate water-control systems are installed this soil has high potential productivity for slash and loblolly pine, sweetgum, and water tupelo. Equipment limitations and seedling mortality caused by excessive wetness are the main

Camp Helen State Park Soil Descriptions

management concerns. Adequate water control is necessary before trees can be planted. Loblolly and slash pine are the best species to plant.

The high water table and ponding of depressional areas during rainy seasons are severe limitations to use of this soil as sites for recreational and urban development uses. Complex and intensive water-control systems are required for any of these uses. Fill material 3 feet or more thick and surface ditches for rapid removal of excess surface water are required. The high water table limits functioning of septic tank absorption fields. The hazards of cutbanks caving limits use for purposes that require shallow excavations. The high water table and sandy texture limit the use of this soil as sites for sanitary land fill.

This soil is in capability subclass IVw.

(41) Dirego muck. This level to nearly level, poorly drained soil is in the tidal marshes. Slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is dark reddish brown muck about 28 inches thick. It is underlain by a mixture of very dark brown, gray, and dark gray mucky fine sandy loam, loamy fine sand, and fine sand that extends to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Bayvi, Dorovan, Leon, Osier, Pamlico, Pickney, Pottsburg and Rutlege soils. Also included are a few small areas of soils that are similar to this Dirego soil, but have a surface layer less than 16 inches in thickness. Included soils make up less than 15 percent of any mapped area.

This Dirego soil has a water table at a depth of less than 10 inches, or the soil is ponded for 6 to 12 months during most years. This soil is subject to tidal flooding. Available water capacity is low. Permeability is rapid in all horizons. Internal drainage is very slow, impeded by the high water table. Natural fertility is low and organic matter content is very high.

The natural vegetation is dominantly needlegrass rush, torpedograss, and cordgrass.

This soil is unsuited for cultivated crops and improved pastures because of wetness, flooding, high salinity, excess organic matter, and high sulfur content. Overcoming these limitations is not practical.

This soil is unsuited to slash, loblolly pine, or longleaf pine. Salt water retards the growth of trees. It is also unsuited to recreational uses or urban development because it is inundated each day with tidewater.

This soil is in capability subclass VIIIw.

(42) Resota fine sand, 0 to 5 percent slopes. This moderately well drained, nearly level to gently sloping, deep sandy soil occurs on small to broad, slightly ridged areas near the Gulf of Mexico in the southern part of the county. Slopes are

Camp Helen State Park Soil Descriptions

generally convex to smooth.

Typically, the surface layer is light brownish gray fine sand about 4 inches thick. The subsurface layer is light gray fine sand about 15 inches thick. The subsoil extends to a depth of more than 80 inches. The upper 8 inches is brownish yellow fine sand with lenses of darker colors. Next is 15 inches of yellow fine sand with brownish mottles. The lower layer is very pale brown fine sand that grades to white with increasing depth.

Included with this soil in mapping are small areas of Chipley, Foxworth, Kureb, Lakeland, Leon, and Mandarin soils. Included soils make up less than 10 percent of any mapped area.

This Resota soil has very low available water capacity. The water table fluctuates between depths of 40 and 60 inches in wet seasons and between 60 and more than 80 inches in dry seasons. Permeability is very rapid. Natural fertility and organic matter content is low.

The natural vegetation is slash pine, sand pine, longleaf pine, turkey oak, dwarf live oak, sawpalmetto, rosemary, and sparse pineland threeawn. Most areas remain in cutover woodland. Some areas near the coast have been cleared for urban development.

Droughtiness and rapid leaching of plant nutrients are very severe limitations for cultivated crops. Intensive soil management practices are required when this soil is cultivated. Row crops should be planted on the contour in strips with alternating strips of close growing crops. Crop rotations should keep close-growing, soil-improving crops on the land at least three-fourths of the time. All crop residues and soil-improving crops should be left on the land. Only a few crops produce good yields without irrigation. Irrigation is generally feasible where irrigation water is readily available.

This soil is moderately suited to pasture and hay crops. Deep rooted plants such as bahiagrass are well adapted but yields are reduced by periodic droughts. Regular fertilizing and liming are needed. Grazing should be controlled to prevent overgrazing and reduction of plant vitality for maximum yields.

This soil has moderate potential productivity for pine trees. Equipment limitations and seedling mortality are the main management concerns. Sand pine is the best species to plant.

Use of this soil as sites for recreational and urban development is moderately to severely limited. Wetness is a moderate limitation to the use of the soil as septic tank absorption fields. The hazards of cutbanks caving limits use for purposes that require shallow excavations. Shoring of sidewalls is necessary. The sandy texture, poor filtering ability, and very rapid permeability limit the use of this soil as sites for trench and area sanitary land fill.

Camp Helen State Park Soil Descriptions

This soil is in capability subclass VIs.

(44) Beaches. Beaches are narrow strips of nearly level to gently sloping sand along the Gulf of Mexico. These areas are inundated with saltwater daily by high tide and wave action. This map unit is a mixture of quartz sand, heavy minerals (principally rutile and ilmenite), and fragments of seashells. The material is subject to movement by wind, tides and waves and is bare of vegetation. The water table is above the surface or within 10 inches of the surface most of the time. The salt content of the ground water is high.

Included in mapping are very small knolls or ridges of coastal sand dunes. These areas are generally too small to map separately, are unstable, and shifted by wind or water action, and make up less than 5 percent of the unit.

Beaches are used intensively for recreational activities. Because of their location, their value for recreational activities, and the daily flooding by saltwater, other uses are not practical or feasible.

(45) Kureb sand, 0 to 5 percent slopes. This excessively drained, nearly level to sloping soil is on moderately broad upland areas near the coast in the southern part of the county. Slopes are smooth to convex.

Typically, the surface layer is grayish brown sand about 6 inches thick. The next layer is light gray sand about 8 inches thick over yellowish brown sand about 11 inches thick. Below that, brownish yellow sand about 50 inches thick overlies very pale brown sand that extends to a depth 80 or more inches.

Included with this Kureb soil in mapping are small areas of Foxworth, Lakeland, Leon, Pottsburg, and Rutlege soils. In a few areas, soils that are similar to this Kureb soil but have slopes of 5 to 12 percent are included on the side slopes of ridges. Included soils make up less than 10 percent of any mapped area.

This soil has very low available water capacity. The water table is below a depth of 80 inches throughout the year. Permeability is rapid. Natural fertility and organic matter content are very low.

The natural vegetation is scattered longleaf and sand pine, dwarf live oak, turkey oak, and bluejack oak. The understory consists of huckleberry, lichens, sawpalmetto, rosemary and sparse pineland threawn. Most areas of this soil are still in woodland or are in urbanized areas along the gulf coast.

This soil is not suited for cultivated field crops. It is poorly suited to pasture. Grasses such as Coastal bermudagrass, and bahiagrass make only fair growth when fertilized. Clovers are not adapted.

This soil has low potential productivity for pine trees. Equipment limitations and seedling mortality caused by excessive wetness are the main management concerns. Sand pines are the best trees to plant.

Camp Helen State Park Soil Descriptions

Use of this soil as a sites sanitary facilities and recreation uses is severely limited. The sandy texture throughout limits most recreational development unless complex conservation practices are used. The hazard of cutbanks caving limits use for purposes that require shallow excavation unless side slopes are immediately shored. Adding topsoil, nutrients, and water will help to overcome these limitations for recreational use.

This soil is in capability subclass VIIc.

(48) Fripp-Corolla Complex, 2 to 30 percent slopes. This map unit is gently sloping to steep. It consists dominantly of excessively drained Fripp soils and moderately well drained to somewhat poorly drained Corolla soils in areas so intricately intermixed in the landscape that they could not be mapped separately at the scale selected. Fripp and Corolla soils are on undulating, dunelike areas adjacent to the Gulf of Mexico. The sloping to steep Fripp soils are on the upper two thirds of the side slopes, and the gently sloping Corolla soils are on the lower one-third. These areas are subject to rare storm tide flooding.

The Fripp soils make up about 55 to 60 percent of the complex. Typically, the surface layer is gray sand about 3 inches thick. Below this to a depth of 8- inches or more is white sand that contains horizontal bands of black heavy minerals and lenses of gray sand.

Depth to the water table is more than 72 inches. Permeability is rapid. Available water capacity and organic matter content are very low.

The moderately well drained to somewhat poorly drained Corolla soils make up about 25 percent of the complex. Typically, the surface layer is dark gray sand about 3 inches thick. The next 12 inches is gray sand. The next 50 inches is gray sand. The next 15 inches is light brownish sand. Horizontal bands of heavy black minerals are throughout the soil.

The water table is 20 to 60 inches below the soil surface for 1 month to 3 months during most years. Permeability is very rapid throughout. Available water capacity and organic matter content are very low.

Soils of minor extent make up the rest of the complex. Included are Bayvi, Dirego, Dorovan, Osier, Pamlico, and Rutledge soils. Also included in this unit are soils that are similar to Fripp sand but have a water table at a depth of 20 to 40 inches for 2 to 6 months during most years.

The natural vegetation is stunted sand pine, sea oats, switchgrass, rosemary, reindeer lichen, scrub live oak, and palmetto.

The soils in this complex are not suitable for cultivated crops or for pasture.

Camp Helen State Park Soil Descriptions

The potential productivity of the complex for pine trees is moderate. Equipment limitations and seedling mortality are the main management concerns. Sand pines are the best species to plant.

Use of these soils for most urban and recreational development is severely limited because these areas are subject to rare storm tides. Water control measures are necessary to lower the water table and maintain it at a proper depth if the soils are used as septic tank absorption fields. The hazard of cutbanks caving is severe if the soils are used for purposes that require shallow excavations. Shoring is necessary. Surface stabilization is necessary if the soils in this complex are developed for recreational uses.

The soils in this complex are in capability subclass VIIc.

Addendum 5 – Plant and Animal List

CAMP HELEN STATE PARK

PLANTS and ANIMALS

 Common Name Scientific Name Primary Habitat Codes

PLANTS

Red maple.....	<i>Acer rubrum</i>	
Mimosa *	<i>Albizia julibrissin</i>	
Milkweed.....	<i>Asclepias humistrata</i>	
Andropogon	<i>Andropogon brachystachus</i>	
Bushy beardgrass	<i>Andropogon glomeratus</i>	
Broomsedge.....	<i>Andropogon virginicus</i>	
Common ragweed	<i>Ambrosia artimisiifolia</i>	
Pepper vine.....	<i>Ampelopsis arborea</i>	
Wiregrass	<i>Aristida stricta</i>	
Small-fruited Pawpaw	<i>Asimina parviflora</i>	
Crested saltbush	<i>Atriplex pentandra</i>	
Saltbush	<i>Baccharis halimifolia</i>	
Coastal plain honeycombhead	<i>Balduina angustifolia</i>	
Gopherweed.....	<i>Baptisia lanceolata</i>	
Romerillo	<i>Bidens alba</i>	
Bushy seaside oxeye	<i>Borrchia frutescens</i>	
Buckthorn	<i>Bumelia lanuginosa</i>	
Sea-rocket	<i>Cakile constricta</i>	
Scarlet calamint	<i>Calamintha coccinea</i>	
Beauty berry	<i>Callicarpa americana</i>	
Sedge	<i>Carex sp.</i>	
Deer's tongue	<i>Carphephorus odoratissimus</i>	
Pignut hickory	<i>Carya glabra</i>	
Coast sandspur	<i>Cenchrus spinifex</i>	
Spadeleaf	<i>Centella asiatica</i>	
Buttonbush.....	<i>Cephalanthus occidentalis</i>	
Rosemary	<i>Ceratiola ericoides</i>	
Partridge pea	<i>Chamaecrista fasciculata</i>	
Sensitive pea	<i>Chamaecrista nictitans</i>	
Sandmat	<i>Chamaesyce sp.</i>	
Woody goldenrod.....	<i>Chrysoma pauciflosculosa</i>	
Godfrey's golden aster	<i>Chrysopsis godfreyii</i>	MTC
Cruise's golden aster.....	<i>Chrysopsis gossypina ssp. cruiseana</i>	MTC
Deer moss (lichen)	<i>Cladina sp.</i>	
Sawgrass	<i>Cladium jamaicense</i>	
Coastal sweet pepper bush.....	<i>Clethra alnifolia</i>	
Black titi.....	<i>Cliftonia monophylla</i>	
Finger rot.....	<i>Cnidocolus stimulosus</i>	
False rosemary	<i>Conradina canesens</i>	
Horseweed.....	<i>Conyza canadensis</i>	
Yellowleaf hawthorn	<i>Crataegus flava</i>	
Rabbit-bells.....	<i>Crotalaria rotundifolia</i>	
Pine barren flatsedge.....	<i>Cyperus retrorsus</i>	

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name	Scientific Name	Primary Habitat Codes
White titi	<i>Cyrilla racemiflora</i>	
Witchgrass	<i>Dichanthelium</i> sp.	
Saltgrass	<i>Distichlis spicata</i>	
Oakleaf fleabane	<i>Erigeron quercifolius</i>	
Early whitetop fleabane.....	<i>Erigeron vernuus</i>	
Flattened pipewort.....	<i>Eriocaulon compressum</i>	
Tenangle pipewort.....	<i>Eriocaulon decangulare</i>	
Rattlesnake master.....	<i>Eryngium yuccifolium</i>	
Coral bean.....	<i>Erythrina herbacea</i>	
Dog fennel.....	<i>Eupatorium capillifolium</i>	
Slender flattop goldenrod	<i>Euthamia caroliniana</i>	
Cottonweed	<i>Froelichia floridana</i>	
Milk-pea.....	<i>Galactia volubilis</i>	
Dwarf huckleberry.....	<i>Gaylussacia dumosa</i>	
Woolly huckleberry	<i>Gaylussacia mosieri</i>	
Wiregrass gentian.....	<i>Gentiana pennelliana</i>	
Pinebarren frostweed	<i>Helianthemum corymbosum</i>	
Stiff sunflower.....	<i>Helianthus radula</i>	
Camphor weed.....	<i>Heterotheca subaxillaris</i>	
Largeleaf pennywort	<i>Hydrocotyle bonariensis</i>	
St. Peters-wort.....	<i>Hypericum crux-andreae</i>	
Atlantic St. Johns-wort.....	<i>Hypericum reductum</i>	
Sand holly.....	<i>Ilex ambigua</i>	
Dahoon.....	<i>Ilex cassine</i>	
Large gallberry.....	<i>Ilex coriacea</i>	
Gallberry.....	<i>Ilex glabra</i>	
Myrtle dahoon	<i>Ilex myrtifolia</i>	
American holly	<i>Ilex opaca</i>	
Yaupon	<i>Ilex vomitoria</i>	
Beach morning-glory	<i>Ipomoea imperati</i>	
Seashore elder.....	<i>Iva imbricata</i>	
Bighead rush	<i>Juncus megacephalus</i>	
Black needlerush.....	<i>Juncus roemarianus</i>	
Southern red cedar	<i>Juniperus silicicola</i>	
Little wicky.....	<i>Kalmia angustifolia</i>	
Lantana *	<i>Lantana camara</i>	
Virginia pepperweed.....	<i>Lepidium virginianum</i>	
Blazing star	<i>Liatris tenuifolia</i>	
Gopher apple	<i>Licania michauxii</i>	
Florida toadflax.....	<i>Linaria floridana</i>	
Trumpet honeysuckle	<i>Lonicera sempervirens</i>	
Anglestem primrosewillow.....	<i>Ludwigia leptocarpa</i>	
Gulf coast lupine.....	<i>Lupinus westianus</i>	MTC
Rusty staggerbush.....	<i>Lyonia ferruginea</i>	

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name.....	Scientific Name	Primary Habitat Codes
Fetterbush.....	<i>Lyonia lucida</i>	
Southern magnolia.....	<i>Magnolia grandiflora</i>	
Sweetbay.....	<i>Magnolia virginiana</i>	
Partridge berry.....	<i>Mitchella repens</i>	
Bayberry.....	<i>Myrica heterophylla</i>	
Wax myrtle.....	<i>Myrica cerifera</i>	
Spatterdock.....	<i>Nuphar advena</i>	
Waterlily.....	<i>Nymphaea odorata</i>	
Floating hearts.....	<i>Nymphoides aquatica</i>	
Evening-primrose.....	<i>Oenothera laciniata</i>	
Prickly pear cactus.....	<i>Opuntia sp.</i>	
Wild olive.....	<i>Osmanthus americanus</i>	
Common yellow woodsorrel.....	<i>Oxalis corniculata</i>	
Beach grass.....	<i>Panicum amarum</i>	
Torpedo grass *.....	<i>Panicum repens</i>	
Switchgrass.....	<i>Panicum virgatum</i>	
Sandsquares.....	<i>Paronychia erecta</i>	
Virginia creeper.....	<i>Parthenocissus quinquefolia</i>	
Red bay.....	<i>Persea borbonia</i>	
Common reed.....	<i>Phragmites australis</i>	
American pokeweed.....	<i>Phytolacca americana</i>	
Slash pine.....	<i>Pinus elliottii</i>	
Sand pine.....	<i>Pinus clausa</i>	
Narrowleaf silkgrass.....	<i>Pityopsis graminifolia</i>	
Sweetscent.....	<i>Pluchea odorata</i>	
Orange milkwort.....	<i>Polygala lutea</i>	
Candyroot.....	<i>Polygala nana</i>	
Large-leaved jointweed.....	<i>Polygonella macrophylla</i>	MTC
October flower.....	<i>Polygonella polygama</i>	
Rustleaf.....	<i>Polypremum procumbens</i>	
Pickereel weed.....	<i>Pontederia cordata</i>	
Bracken fern.....	<i>Pteridium aquilinum</i>	
Resurrection fern.....	<i>Polypodium polypodioides</i>	
Chapman's oak.....	<i>Quercus chapmanii</i>	
Laurel oak.....	<i>Quercus hemisphaerica</i>	
Sand live oak.....	<i>Quercus geminata</i>	
Myrtle oak.....	<i>Quercus myrtifolia</i>	
Live oak.....	<i>Quercus virginiana</i>	
Water oak.....	<i>Quercus nigra</i>	
Meadowbeauty.....	<i>Rhexia alfanius</i>	
Yellow meadow beauty.....	<i>Rhexia lutea</i>	
Winged sumac.....	<i>Rhus copallina</i>	
Giant white top.....	<i>Rhynchospora latifolia</i>	
Sandy field beaksedge.....	<i>Rhynchospora megalocarpa</i>	

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name	Scientific Name	Primary Habitat Codes
Sand blackberry	<i>Rubus cuneifolius</i>	
Dock.....	<i>Rumex hastatulus</i>	
Cabbage palm	<i>Sabal palmetto</i>	
Arrowhead.....	<i>Sagittaria lancifolia</i>	
Coastal plain willow.....	<i>Salix caroliniana</i>	
Chinese tallow tree *	<i>Sapium sebiferum</i>	
Gulf bluestem grass.....	<i>Schizachyrium maritima</i>	
Sensitive briar.....	<i>Schrankia microphylla</i>	
Saw palmetto.....	<i>Serenoa repens</i>	
Sea purslane	<i>Sesuvium portulacastrum</i>	
Blue-eyed grass.....	<i>Sisyrinchium rosulatum</i>	
Greenbrier	<i>Smilax auriculata</i>	
Catbrier	<i>Smilax bona-nox</i>	
Sarsaparilla.....	<i>Smilax pumila</i>	
American black nightshade	<i>Solanum americanum</i>	
Sticky nightshade *	<i>Solanum sisymbriifolium</i>	
Goldenrod	<i>Solidago chapmanii</i>	
Seaside goldenrod.....	<i>Solidago sempervirens</i>	
Smooth cordgrass	<i>Spartina alterniflora</i>	
Marshay	<i>Spartina patens</i>	
Coastal dropseed.....	<i>Sporobolus virginicus</i>	
Spanish moss	<i>Tillandsia usneoides</i>	
Poison ivy	<i>Toxiodendron radicans</i>	
Spiderwort.....	<i>Tradescantia hirsutiflora</i>	
Blue curls	<i>Trichostema dichotomum</i>	
Venus' looking glass.....	<i>Triodanis biflora</i>	
Cattail	<i>Typha latifolia</i>	
Sea oats.....	<i>Uniola paniculata</i>	
Bladderwort.....	<i>Utricularia biflora</i>	
Horned bladderwort.....	<i>Utricularia cornuta</i>	
Purple bladderwort.....	<i>Utricularia purpurea</i>	
Sparkleberry.....	<i>Vaccinium arboreum</i>	
Highbush blueberry	<i>Vaccinium corymbosum</i>	
Darrow's blueberry.....	<i>Vaccinium darrowii</i>	
Shiny blueberry.....	<i>Vaccinium myrsinites</i>	
Deer berry.....	<i>Vaccinium stamineum</i>	
Bog white violet.....	<i>Viola lanceolata</i>	
Muscadine grape	<i>Vitis rotundifolium</i>	
Baldwin's yellow-eyed grass	<i>Xyris baldwinii</i>	
Adam's needle	<i>Yucca filamentosa</i>	
Hercules club	<i>Zanthoxylum clava-herculis</i>	

CAMP HELEN STATE PARK

PLANTS and ANIMALS

 Common Name.....Scientific NamePrimary Habitat Codes

AMPHIBIANS

Southern toad.....	<i>Anaxyrus terrestris</i>	MTC
Eastern narrow mouthed toad.....	<i>Gastrophryne carolinensis carolinensis</i>	MTC
Gray treefrog.....	<i>Hyla chrysocelis</i>	DM, BS
Green treefrog.....	<i>Hyla cinerea</i>	DM, BS
Southern spring peeper	<i>Pseudacris crucifer bartcamiana</i>	DM, BS
Pine woods treefrog.....	<i>Hyla femoralis</i>	MF
Squirrel treefrog.....	<i>Hyla squirella</i>	MTC
Southeastern slimy salamander	<i>Plethodon grobmani</i>	MTC
Southern chorus frog	<i>Pseudacris nigrita nigrita</i>	DM, BS
Little grass frog.....	<i>Pseudacris ocularis</i>	DM, BS
Bullfrog	<i>Lithobates catesbeiana</i>	DM, BS
Bronze frog.....	<i>Lithobates clamitans</i>	DM, BS
Southern leopard frog	<i>Lithobates sphenoccephalus</i>	DM, BS
Eastern spadefoot toad.....	<i>Scaphiopus halbrooki</i>	DM, BS

ARTHROPODS

House cricket.....	<i>Acheta domestica</i>	MTC
Two-spotted lady beetle.....	<i>Adalia bipunctata</i>	MTC
Summer mosquitoes	<i>Aedes</i> sp.	MTC
Gulf fritillary butterfly.....	<i>Agraulis vanillae</i>	MTC
Dragonfly	<i>Anax junius</i>	MTC
Palmetto walkingstick	<i>Anismorpha buprestoides</i>	MTC
Damselfly.....	<i>Argia fumipennis atra</i>	MTC
American bumble bee.....	<i>Bombus pennsylvanicus</i>	MTC
Deer fly.....	<i>Chrysops</i> sp.....	MTC
Orange sulphur butterfly.....	<i>Colias eurytheme</i>	MTC
House mosquitoes	<i>Culex pipiens</i>	MTC
Monarch butterfly	<i>Danaus plexippus</i>	MTC
Cow Killer "velvet ant".....	<i>Dasymutilla occidentalis</i>	MTC
Black turpentine beetle	<i>Dendroctonus terebrans</i>	MTC
Southern pearly-eye butterfly.....	<i>Enodia portlandia</i>	MTC
Zebra swallowtail butterfly.....	<i>Eurytides marcellus</i>	MTC
Common water strider.....	<i>Gerris remigis</i>	MTC
Northern mole cricket.....	<i>Gryllotalpa hexadactyla</i>	MTC
Field cricket	<i>Gyrillus pennsylvanicus</i>	MTC
Deer tick	<i>Ixodes scapularis</i>	MTC
Common buckeye butterfly.....	<i>Junonia coenia</i>	MTC
Daddy-long-legs	<i>Leiobunum</i> sp.....	MTC
Viceroy butterfly.....	<i>Limenitis archippus</i>	MTC
Carolina wolf spider	<i>Lycosa carolinensis</i>	MTC
House fly	<i>Musca domestica</i>	MTC
Eastern tiger swallowtail.....	<i>Papilio glaucus</i>	MTC
Palamedes swallowtail butterfly	<i>Papilio palamedes</i>	MTC
American cockroach.....	<i>Periplaneta americana</i>	MTC

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name	Scientific Name	Primary Habitat Codes
Cloudless sulphur butterfly	<i>Phoebis sennae</i>	MTC
Love bug	<i>Plecia nearctica</i>	MTC
Common checkered skipper	<i>Pyrgus communis</i>	MTC
Eastern subterranean termite	<i>Reticulitermis flavipes</i>	MTC
Southeastern lubber grasshopper	<i>Romalea microptera</i>	MTC
Red fire ant *	<i>Solenopsis invicta</i>	MTC
Black horse fly	<i>Tabanus atratus</i>	MTC
Long-tailed skipper	<i>Urbanus proteus</i>	MTC
Eastern yellow jacket	<i>Vespula maculifrons</i>	MTC

BIRDS

Spotted sandpiper	<i>Actitis macularia</i>	BD
Red-winged blackbird	<i>Agelaius phoeniceus</i>	SAM, DM
Wood duck	<i>Aix sponsa</i>	SAM, DM
Anhinga	<i>Anhinga anhinga</i>	SAM, DM
Great blue heron	<i>Ardea herodias</i>	SAM, DM
Cedar waxwing	<i>Bombycilla cedrorum</i>	MTC
Red-shouldered hawk	<i>Buteo lineatus</i>	MTC
Red-tailed hawk	<i>Buteo jamaicensis</i>	MTC
Cattle egret	<i>Bubulcus ibis</i>	MTC
Green-backed heron	<i>Butorides striatus</i>	SAM, DM
Sanderling	<i>Calidris alba</i>	BD
Dunlin	<i>Calidris alpina</i>	BD
Red knot	<i>Calidris canutus</i>	BD
Semipalmated sandpiper	<i>Calidris pusilla</i>	BD
Chuck-will's widow	<i>Caprimulgus carolinensis</i>	MTC
Whip-poor-will	<i>Caprimulgus vociferus</i>	MTC
Northern cardinal	<i>Cardinalis cardinalis</i>	MTC
Great egret	<i>Casmerodius albus</i>	SAM, DM
Turkey vulture	<i>Cathartes aura</i>	MTC
Hermit thrush	<i>Catharus guttatus</i>	MF
Belted kingfisher	<i>Ceryle alcyon</i>	SAM, DM
Chimney swift	<i>Chaetura pelagica</i>	MTC
Piping plover	<i>Charadrius melodus</i>	BD
Snowy plover	<i>Charadrius nivosus</i>	BD
Semipalmated plover	<i>Charadrius semipalmatus</i>	BD
Killdeer	<i>Charadrius vociferus</i>	BD
Northern harrier	<i>Circus cyaneus</i>	SAM, DM
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	MTC
Northern flicker	<i>Colaptes auratus</i>	MTC
Fish crow	<i>Corvus ossifragus</i>	MTC
Blue jay	<i>Cyanocitta cristata</i>	MTC
Yellow-rumped warbler	<i>Dendroica coronata</i>	MF

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name	Scientific Name	Primary Habitat Codes
Yellow-throated warbler	<i>Dendroica dominica</i>	MF
Pine warbler	<i>Dendroica pinus</i>	MF
Palm warbler	<i>Dendroica palmarum</i>	MF
Gray catbird	<i>Dumetella carolinensis</i>	MTC
Pileated woodpecker	<i>Dryocopus pileatus</i>	MF
Little blue heron	<i>Egretta caerulea</i>	SAM, DM
Reddish egret	<i>Egretta rufescens</i>	SAM, DM
Snowy egret	<i>Egretta thula</i>	SAM, DM
Tricolored heron	<i>Egretta tricolor</i>	SAM, DM
Acadian flycatcher	<i>Empidonax virescens</i>	MF
Merlin	<i>Falco columbarius</i>	MTC
Peregrin falcon	<i>Falco peregrinus</i>	MTC
Southeastern American kestrel	<i>Falco sparverius paulus</i>	MF
Magnificent frigatebird	<i>Fregata magnificens</i>	BD
Common loon	<i>Gavia immer</i>	SAM, DM
Gull-billed tern	<i>Gelochelidon nilotica</i>	BD
Common yellowthroat	<i>Geothlypis trichas</i>	MF
Bald eagle	<i>Haliaeetus leucocephalus</i>	MTC
Caspian tern	<i>Hydroprogne caspia</i>	BD
Wood thrush	<i>Hylocichla mustelina</i>	MF
Mississippi kite	<i>Ictinia mississippiensis</i>	MTC
Orchard oriole	<i>Icterus spurius</i>	MTC
Herring gull	<i>Larus argentatus</i>	BD
Laughing gull	<i>Larus atricilla</i>	BD
Ring-billed gull	<i>Larus delawarensis</i>	BD
Bonaparte's gull	<i>Larus philadelphia</i>	BD
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	MTC
Red-breasted merganser	<i>Mergus serrator</i>	SAM, DM
Wild turkey	<i>Meleagris gallopavo</i>	MF
Mockingbird	<i>Mimus polyglottos</i>	MTC
Black and white warbler	<i>Mniotilta varia</i>	MF
Brown-headed cowbird	<i>Molothrus ater</i>	MTC
Great crested flycatcher	<i>Myiarchus crinitus</i>	MTC
Osprey	<i>Pandion haliaetus</i>	SAM, DM
Northern parula	<i>Parula americana</i>	MF
Carolina chickadee	<i>Parus carolinensis</i>	MF
Tufted titmouse	<i>Parus bicolor</i>	MF
Indigo bunting	<i>Passerina cyanea</i>	MF
American white pelican	<i>Pelecanus erythrorhynchos</i>	SAM, DM
Brown pelican	<i>Pelecanus occidentalis</i>	SAM, DM
Double-crested cormorant	<i>Phalacrocorax auritus</i>	SAM, DM
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	MF
Scarlet tanager	<i>Piranga olivacea</i>	MTC
Summer tanager	<i>Piranga rubra</i>	MTC

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name	Scientific Name	Primary Habitat Codes
Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>	MF
Sora	<i>Porzana carolina</i>	SAM, DM
Purple martin	<i>Progne subis</i>	MTC
Prothonotary warbler	<i>Protonotaria citrea</i>	MF
Boat-tailed grackle	<i>Quiscalus major</i>	SAM, DM
Common grackle	<i>Quiscalus quisqualis</i>	MTC
American avocet	<i>Recurvirostra americana</i>	BD
Ruby-crowned kinglet	<i>Regulus calendula</i>	MTC
Black skimmer	<i>Rynchops niger</i>	BD
Common tern	<i>Sterna hirundo</i>	BD
Royal tern	<i>Sterna maxima</i>	BD
Sandwich tern	<i>Sterna sandvicensis</i>	BD
Least tern	<i>Sternula antillarum</i>	BD
Barred owl	<i>Strix varia</i>	MF
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	MTC
Chipping sparrow	<i>Spizella passerina</i>	MTC
Eastern phoebe	<i>Sayornis phoebe</i>	MF
Greater yellowlegs	<i>Tringa melanoleuca</i>	BD
Tree swallow	<i>Tachycineta bicolor</i>	MTC
Carolina wren	<i>Thryothorus ludovicianus</i>	MTC
American robin	<i>Turdus migratorius</i>	MTC
Brown thrasher	<i>Toxostoma rufum</i>	MTC
White-eyed vireo	<i>Vireo griseus</i>	MF
Solitary vireo	<i>Vireo solitarius</i>	MF
Red-eyed vireo	<i>Vireo olivaceus</i>	MF
Hooded warbler	<i>Wilsonia citrina</i>	MF
Mourning dove	<i>Zenaida macroura</i>	MTC

MAMMALS

Coyote *	<i>Canis latrans</i>	MTC
Beaver	<i>Castor canadensis</i>	SAM, DM
Nine-banded armadillo *	<i>Dasyus novemcinctus</i>	MTC
Opposum	<i>Didelphis virginiana</i>	MTC
Bobcat	<i>Lynx rufus</i>	MTC
Eastern woodrat	<i>Neotoma floridana</i>	MF
White-tailed deer	<i>Odocoileus virginianus</i>	MTC
Cotton mouse	<i>Peromyscus gossypinus</i>	MTC
Raccoon	<i>Procyon lotor</i>	MTC
Eastern mole	<i>Scalopus aquaticus</i>	MF
Eastern gray squirrel	<i>Sciurus carolinensis</i>	MTC
Hispid cotton rat	<i>Sigmodon hispidus</i>	MTC
Eastern cottontail	<i>Sylvilagus floridanus</i>	MTC
Marsh rabbit	<i>Sylvilagus palustris</i>	MTC

CAMP HELEN STATE PARK

PLANTS and ANIMALS

Common Name	Scientific Name	Primary Habitat Codes
Gray fox.....	<i>Urocyon cinereoargenteus</i>	MTC

REPTILES

Florida cottonmouth	<i>Agkistrodon piscivorus</i>	DM, BS
American alligator	<i>Alligator mississippiensis</i>	DM
Green anole	<i>Anolis carolinensis</i>	MTC
Atlantic loggerhead turtle	<i>Caretta caretta</i>	MCNS
Florida cooter	<i>Chrysemys floridana</i>	DM, BS
Six-lined racerunner	<i>Cnemidophorus sexlineatus</i>	MTC
Southern black racer.....	<i>Coluber constrictor</i>	MTC
Eastern diamondback rattlesnake....	<i>Crotalus adamanteus</i>	MF
Eastern chicken turtle.....	<i>Deirochelys reticularia</i>	DM
Southern ringneck snake.....	<i>Diadophis punctatus</i>	MTC
Red rat, Corn snake	<i>Elaphe guttata</i>	MTC
Gray rat, Oak snake	<i>Elaphe obsoleta</i>	MTC
Southeastern five-lined skink	<i>Eumeces inexpectatus</i>	MTC
Broad-headed skink.....	<i>Eumeces laticeps</i>	MTC
Eastern mud snake	<i>Farancia abacura</i>	DM
Eastern mud turtle.....	<i>Kinosternon subrubrum</i>	DM
Banded water snake.....	<i>Nerodia fasciata</i>	DM
Eastern glass lizard	<i>Ophisaurus ventralis</i>	MF
Southern fence lizard	<i>Sceloporus undulatus</i>	MTC
Ground skink.....	<i>Scincella lateralis</i>	MTC
Dusky pygmy rattlesnake	<i>Sistrurus miliarius</i>	MTC
Gulf coast box turtle	<i>Terrapene carolina</i>	MTC
Eastern ribbon snake	<i>Thamnophis sauritus</i>	MTC
Eastern garter snake.....	<i>Thamnophis sirtalis</i>	MTC

Primary Habitat Codes

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

Primary Habitat Codes

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

Primary Habitat Codes

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 – Cultural Information

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)

D. Management Implementation

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

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

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

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

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at:

http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

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

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

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

Phone: (850) 245-6425

Toll Free: (800) 847-7278

Fax: (850) 245-6435

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 7 – Camp Helen Shorebird Information

Camp Helen- Shorebirds

Current Status:

Camp Helen State Park currently supports a small population of nesting snowy plover (Charadrius nivosus) and least terns (Sternula antillarum). Both of these nesting shorebird species are listed as threatened in Florida. The individuals that nest at Camp Helen are a part of the larger metapopulation of shorebirds nesting in Florida. For example, individual snowy plovers that hatched and fledged from Camp Helen now nest at Shell Island (St. Andrews State Park) and on Ft. Pickens (Gulf Islands National Seashore).

The open beach along the Gulf of Mexico and the adjacent beach dune community provide shorebird nesting and foraging habitat. Shorebirds are continually present at Camp Helen State Park due to the presence of Lake Powell, which provides a low-energy, high-quality food source. Coastal dune lakes are not only important for nesting shorebird species (e.g., snowy plover), but are also used by federally-listed migratory and/or wintering shorebird species such as the piping plover (Charadrius melodus) and red knot (Calidris canutus).

The main threats to shorebirds include beach driving, predation, visitor disturbance, and the presence of domestic dogs and cats on the beach. Dogs are a major threat to shorebirds at the park. Off-leash dogs have been observed chasing plover chicks and various foraging adult shorebirds including snowy plovers and least terns. In addition, dog tracks are observed within the protected nesting/resting habitat during most surveys at Camp Helen. Cat tracks are also observed regularly in the nesting area and based on tracking evidence at the nest are thought to be responsible for predated an adult snowy plover in addition to depredating snowy plover and least tern nests. Snowy plover and least tern, nesting is monitored by district biologist to determine the number of nesting attempts, the number of nesting adults, nest fate, fledge rates, recruitment, and sources of nest failure (e.g., predation, washover, abandonment, etc.). The nesting surveys begin February 15th to reflect the earliest snowy plover found in Florida (Himes et al. 2006). The established nesting window for shorebirds in Florida is February to August (recommendation by FWC). However, broods may still be around in September if they hatched from late season nests in August. Current monitoring at the park occurs on weekly basis during the breeding season (February to August) and bi-weekly during the non-breeding season (September to January).

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With a banding permit from FWC and coordination with the USFWS and the University of Florida, snowy plovers are currently banded by district biologists with individual color combinations to determine productivity, juvenile survival, adult survival, natal dispersal and between-season and within-season adult dispersal. Banding efforts began at Camp Helen in 2010 and continue to the present. Based on observations of banded individuals, we have documented an average of 4.75 (range 4-5) snowy plover fledglings produced per season at Camp Helen from 4 to 5 nesting pair. Thus, the fledgling per breeding pair ratio currently ranges from 0.95-1.18. Although the fledge rates observed at Camp Helen are typically higher than other state parks in the district (Pruner et al. 2011), productivity remains below the established 5-year average goal of 1.5 fledglings per breeding pair to maintain snowy plover replacement and population stability (Hunter et. al 2002).

Documented nesting sites for shorebirds that overlap with visitor access are delineated, signed and roped off during the nesting season (February - August). Smaller sites such as Camp Helen are protected year round to provide a protected roosting area away from vehicles and visitor foot traffic. The posts are maintained and/or adjusted throughout the season if nests are located outside of the protected area or when posts are impacted by weather or visitor vandalism. At Camp Helen the rope is regularly cut on the back side of the posted area adjacent to Lake Powell by visitors coming by boat. These visitors cut the rope and walk through the protected areas to more easily access the Gulf beach.

Impacts from visitor access:

The presence of human activity on beaches has the ability to reduce habitat quality (i.e., in terms of nest survival; Pruner 2010). However, protection efforts (e.g., signs, posts and rope) can improve hatch rates. Nests that are protected from disturbance are nearly twice as likely to hatch (Pruner 2010, Pruner et al. 2011). Previous studies have also shown benefits from restricting human disturbance (Lafferty et al. 2006, Lauten et al. 2007, Pruner 2010). On coastal beaches without protection, human activity can lead to direct trampling of nests (Yasue and Dearden 2006, Page et al. 2009). Human activity may also indirectly impact success through the flushing of individuals from nests (Frid and Dill 2002, Yasue and Dearden 2006), leaving eggs exposed to opportunistic predators (e.g., fish crow, laughing gull, ghost crab, etc.) in the process (Page et al. 2009) or exposed to the sun resulting in embryo mortality (Webb 1987).

Protection of brood rearing habitat can improve fledge rates (Pruner et al. 2011). However, it is difficult to protect brood rearing habitat without actually closing portions of the beach. Shorebird broods (i.e., flightless chicks) typically forage

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along low energy areas. At Camp Helen, shorebird broods are found foraging along the edge of Lake Powell or on the Gulf swash zone. However, these foraging locations are only temporarily available when visitors are not present. When visitors are present, plover broods are restricted to foraging in the vegetation and dunes. Although plovers are able to glean food in these secondary foraging habitats, growth to fledging (i.e., flight capable) is prolonged to 6-8 weeks rather than the average 30 days (Page et al. 2009). Thus increasing the amount of time chicks are vulnerable to predation and reducing the probability of individual chicks fledging.

Additionally, human disturbance directly influences chick survival. Broods in areas with lower levels of disturbance fledged more chicks (Pruner 2010). Colwell et al. (2007) also observed lower fledge rates of plovers on beaches with greater human activity. Already Camp Helen shorebird fledge rates are below the expected replacement rate. Increasing visitor access at the park will reduce the current fledge rates. Similarly, human disturbance influences the probability of nest abandonment (Page et al. 2009). With the current level of human disturbance and trespassing into the closed nesting areas, least terns abandoned the colony this 2013 nesting season after repeated instances of visitors walking through the colony.

Given the amount of off-leash dogs and vandalism observed with current levels of recreation, greater vigilance and stewarding of nesting habitat will be required alongside an increase in park visitors. However, associated with increased vigilance is an increase in beach driving (e.g., park staff, law enforcement, etc.). These two concerns will need to be reconciled through and increase in education and interpretation aimed at park visitors and beach drivers (e.g., law enforcement, county officials, park staff, etc.) or by increasing protection measures such as closing sections of the beach to provide sanctuaries for nesting shorebirds.

Camp Helen is one of the few sites with coastal dune lakes that still support nesting shorebirds. Other coastal dune lakes in the area had historic nesting (Chase and Gore 1989), but no longer support nesting due to the incompatibility of nesting alongside heavy beach recreation (Himes et al. 2006).

Additional impacts from proposed visitor access:

Two concepts currently under consideration in Unit Management Planning discussion may affect shorebird nesting and recruitment at this park. Providing visitor access across Lake Powell from a development north of the lake is problematic from a natural resource perspective. While potentially providing the benefit of reducing natural community impact with an off-site

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vehicle parking lot, the benefit is offset by increased natural community fragmentation and disturbance with an access corridor through the park. The intent of the corridor is to direct visitors to the beach and the area that shorebirds need to find refuge. If the plan includes a parking area for golf carts and bicycles in or at the edge of the beach dune natural community then the natural community loss becomes a substantial negative factor. The new access corridor will result in increased, difficult to manage visitor presence in and adjacent to preferred shorebird nesting and foraging areas. Experience tells us this will result in reduced shorebird nesting success and recruitment.

While canoe and kayak rentals seem to always be the most appropriate way to experience a lake in an environmentally sensitive manner they present a challenge at Camp Helen. The majority of boaters on Lake Powell seem to be eventually drawn to the lake outlet, where they get out of their craft and access the shallow water and shoreline of the outlet channel as well as the Gulf beach. This is precisely the area where shorebirds particularly broods need to forage. In this situation visitor disturbance comes from all sides and the birds will be driven to areas of poor forage, negating the benefit of choosing this prime nesting location. With limited staff presence managing the adverse effect of kayak rentals will be a challenge.

The Division of Recreation and Parks has often promoted the idea that in South Walton and Bay County all Parks do not need to provide all services to all people and that a wide variety of unparalleled natural resource experience can be found at multiple parks located in a small geographic area. Camp Helen with its limited acreage provides a high level of visitor experience that may be compromised if we abandon the walk to the beach concept.

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