

Florida Department of Environmental Protection

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April 23, 2012

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

RE: San Pedro Underwater Archeological Preserve State Park - Lease # MA-44-012

Dear Ms. Murray:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the San Pedro Underwater Archaeological State Park land management plan. The next management plan update is due April 23, 2022.

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,

MS Gusquball
Marianne S. Gengenbach

Office of Environmental Services

Division of State Lands

MSG/ci

San Pedro Underwater Archaeological Preserve State Park

APPROVED Unit Management Plan



STATE OF FLORIDA Department of Environmental Protection

Division of Recreation and Parks April 23, 2012

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INTRODUCTION

San Pedro Underwater Archaeological Preserve State Park is located in Monroe County (see Vicinity Map); it is located in 18 feet of water approximately 1.25 nautical miles south of Indian Key Historic State Park (see Reference Map). Access to the park is by boat using GPS coordinates 24°51.3′N and 80° 40.6′W as well as Coast Guard Navigational Charts and Markers. In addition, significant land and water resources existing near the park have been identified on the Vicinity Map.

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP), and the Florida Department of State (FDOS), Division of Historical Resources (DHR), manage San Pedro State Underwater Archaeological Preserve State Park to protect, preserve and enhance natural and cultural resources of said property without interfering with the maintenance of public navigation and other public projects.

On March 28, 1989, the Board of Trustees of the Internal Improvement Trustee Fund (Trustees) conveyed management authority of San Pedro State Underwater Archaeological Preserve State Park to the co-management of DRP and DHR, under Management Agreement for Sovereignty Submerged Lands No. MA-44-012 for a period of twenty-five (25) years and will expire on March 27, 2014. San Pedro State Underwater Archaeological Preserve State Park contains approximately 644 submerged acres.

At San Pedro Underwater Archaeological Preserve 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 the San Pedro Underwater Archaeological Preserve State Park is to protect the historic remnants of the Spanish ship San Pedro, and to commemorate the site of the destruction of a 1733 Spanish fleet on its way from Havana to Spain. Of the 21 ships that made up that fleet, only one ship survived and returned to Havana after encountering a hurricane along the Florida Keys.

Park Significance

The significant aspects of the San Pedro Preserve State Park are:

- The park preserves the physical remains of the San Pedro, consisting of an anchor and a 90 by 30 foot pile of ballast stones under which lie a few of the timbers from the ship's hull.
- The park is the site of one of 13 wrecks from one of the most significant maritime disasters in Spanish-American history.
- As described in the documentation of its listing on the National Register of Historic Places, the San Pedro wreck site is of state and national importance for

- its potential to yield information on 18th Century merchant ships, convoy systems and Spanish Colonial activities in the Florida Keys.
- The park provides opportunities for Florida's residents and visitors to enjoy recreational SCUBA and snorkel diving in combination with a unique opportunity to learn about a local historic event of international importance.

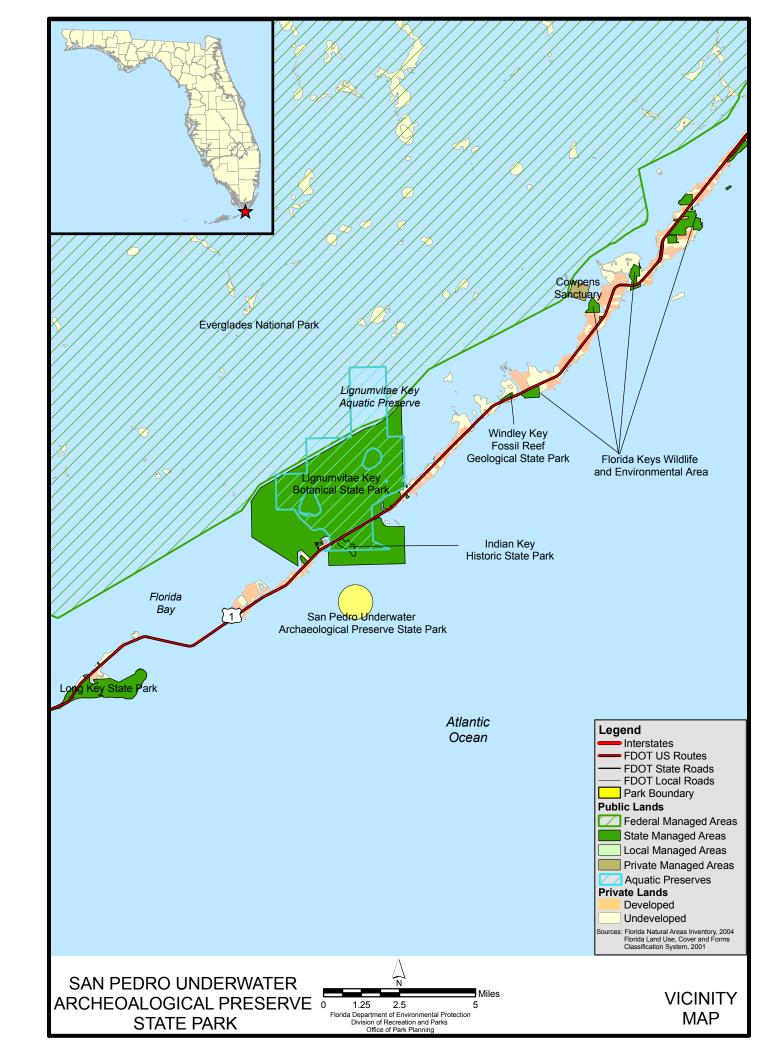
San Pedro Underwater Archaeological Preserve State Park is classified as a state preserve in DRP's unit classification system. In the management of a state preserve, preservation and enhancement of natural conditions is all important. Resource considerations are given priority over user considerations and development is restricted to the minimum necessary for ensuring its protection and maintenance, limited access, user safety and convenience, and appropriate interpretation. Permitted uses are primarily of a passive nature, related to the aesthetic, educational and recreational enjoyment of the preserve, although other compatible uses are permitted in limited amounts. Program emphasis is placed on interpretation of the natural and cultural attributes of the preserve.

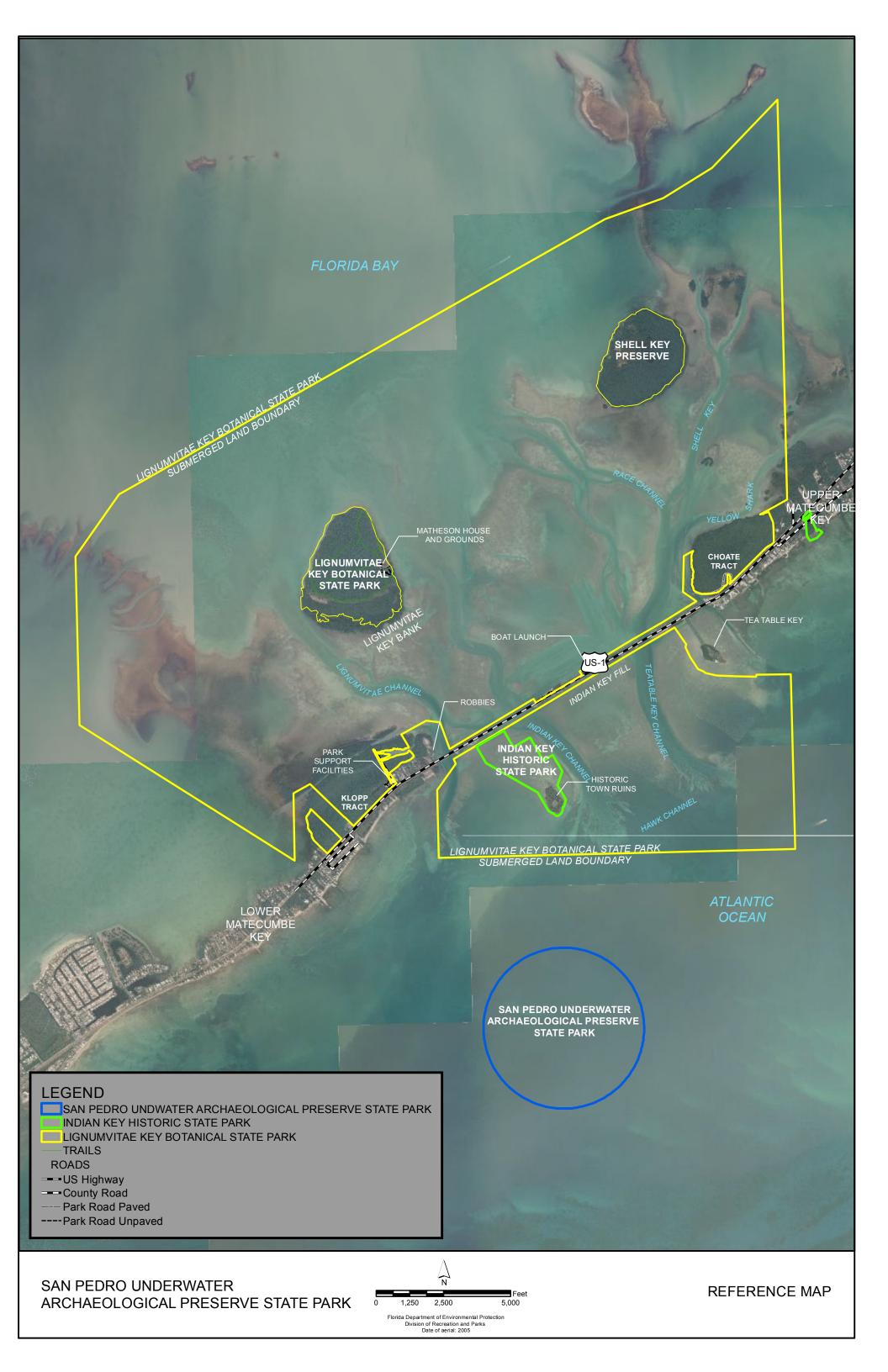
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of San Pedro Underwater Archaeological Preserve 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. 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 June 20, 2000 approved plan.

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

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





programs and the volume of public use to be provided.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate DRP's implementation progress, (2) timeframes for completing actions and objectives and (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 DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. 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 or the management purposes of the park.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that 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.

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

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

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

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

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

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

Park Management Goals

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

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

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 Fish and Wildlife Conservation Commission (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites. The DEP's Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The DEP's Bureau of Beaches and Coastal Systems aids staff in planning and construction activities seaward of the Coastal Construction Line. In addition, the Bureau of Beaches and Coastal Systems aid the staff in the development of erosion control projects.

Public Participation

The DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group Meeting to present the draft management plan to the public. These meetings were held on Wednesday, October 26, 2011 and Thursday, October 27, 2011, respectively. Meeting notices were published in the Florida Administrative Weekly, October 14, 2011 Volume 37, Issue 41, 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

San Pedro Underwater Archaeological Preserve State Park is within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the DEP. This park is adjacent to the Lignumvitae Key aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes) and is within the Florida Keys National Marine Sanctuary.

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. The management measures expressed in this plan are consistent with the 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.

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

San Pedro Underwater Archaeological Preserve State Park is located in 18 feet of water 1.25 nautical miles south of Indian Key Historic State Park. The submerged land between the geographic regions of the Florida Keys is a gentle slope from shore seaward to the edge of the continental shelf where it quickly drops off, approximately

eight miles offshore. This submerged area is dotted with seagrass beds, hardbottom community, patch reefs and outer bank reefs further offshore. Topographical features at the San Pedro consist of the ballast stones, an anchor and replica cannons.

Geology

The upper layer geologic formation of the Florida Keys from Soldier Key to Bahia Honda is Key Largo limestone. Built by the coral polyps of ancient coral reef formations, these fossilized remains are similar to the present living coral reefs offshore. The land mass of south Florida has alternately been submerged and exposed above the level of the water as sea level has fluctuated over time. Approximately 120,000 years ago, sea level dropped close to its present level exposing the coral and allowing for the formation of the islands of the Florida Keys. When the area of the Keys is submerged, the limestone from ancient coral reefs provides the necessary substrate for new growth of coral formations and coral reefs. Subsequently, the Key Largo limestone is quite thick, as much as 145 feet in some areas of the upper Keys (Hoffmeister, 1974).

Soils

The U.S. Department of Agriculture's (USDA) <u>Classification and Correlation of the Soils of Monroe County Keys Area Florida</u> does not include soil descriptions for submerged communities. The soil at the San Pedro Underwater Archaeological Preserve State Park consists of carbonate sand on top of the Key Largo limestone substrate.

Minerals

There are no minerals found at this site other than Key Largo limestone.

Hydrology

Prior to the drainage of the Everglades, freshwater flowed from the mainland into Florida Bay creating an estuarine environment. Tidal flow from the bayside to the ocean side of the islands would then have transported water that was less saline than the current conditions. Due to the alterations in the Everglades, Florida Bay is mostly a marine environment so fluctuation in salinity in the nearshore waters where the San Pedro rests is dependent upon the amount of rainfall.

The San Pedro site lies of the Atlantic shoreline of the Florida Keys between Upper and Lower Matecumbe Keys. Water quality at the park is affected by run-off from the nearby islands of the Florida Keys, by water flow from Florida Bay, the Gulf of Mexico and the Gulfstream. Poor water quality and/or turbidity in the water will impact the natural resources at the park by limiting the amount of available sunlight for the seagrass, corals and macroalgae.

Natural Communities

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

community to its desired future condition (DFC). Specific management objectives and actions for natural community management, exotic species management, imperiled species management 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 dependant 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 three distinct natural communities as well as ruderal and developed areas. A list of plants and animals occurring in the park is contained in Addendum 3.

SEAGRASS BED

Desired future condition: Seagrass beds are typically characterized as expansive stands of vascular plants and are one of the most productive communities in the world. Seagrass beds occur in clear, coastal waters where wave energy is moderate and where there is suitable substrate depth in order to establish their underground biomass root structure. They are typically found in waters ranging from 20° to 30°C (68° to 86°F), and require clear water for photosynthesis. Seagrass beds do not thrive where nutrient levels are high because of increased turbidity and competition of undesirable algae species. The three most common species of seagrasses in Florida are turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), and shoal grass (*Halodule wrightii*). Johnson's grass (*Halophila* spp.) may be intermingled with the other

seagrasses, but species of this genus are considerably less common especially in the Florida Keys.

Seagrass beds provide important habitat for a host of commercially and recreationally important animals including but not limited to fish, crab, shrimp and lobster. Most species spend part or all of their life cycle in the seagrass, which provides food, oxygen and shelter. Seagrass blades trap suspended sediment in the water allowing clear water to be transported to the offshore coral reefs during tidal movement.

Description and assessment: The submerged community surrounding the unconsolidated substrate at the San Pedro is seagrass bed. The three species of seagrass found in this community are turtle grass, shoal grass, and manatee grass with turtle grass being the dominant species. Species of macroalgae including Shaving brush algae (*Penicillus* spp.), Oatmeal algae (*Halimeda* spp.), *Udotea* spp., Mermaid's wine cup (*Acetabularia* sp.), Fern algae (*Caulerpa* spp.), and *Batophora* sp. are found in association with the seagrass community although they are not as abundant in the climax grass bed that is predominantly a monoculture of turtle grass. Several non-reef building species of coral can be found in this habitat including finger coral rose coral, ivory tube coral, golfball coral, and lobed star coral. These species are adapted to the higher salinity and temperature conditions of a seagrass bed, as well as being able to survive in water with higher suspended sediment than is typical of a coral reef ecosystem offshore.

General management measures: The seagrass bed community at the San Pedro is in excellent condition. Due to its depth, it is not subjected to boat grounding events that are prevalent in other nearhsore water regions of the Florida Keys. However, water quality and turbidity influences from Florida Bay, the Gulfstream and other currents that affect the waters off the Florida Keys can potentially impact the desired future condition of this habitat. Therefore, education about pollution and run-off is an important component to protecting the seagrass beds at the San Pedro.

Five mooring buoy delineate the site of the wreck of the San Pedro. These provide a safe alternative to anchoring in the seagrass bed or over the wreck to protect the habitat and the wreck features.

MARINE UNCONSOLIDATED SUBSTRATE

Desired future condition: Marine unconsolidated substrate is characterized as expansive, relatively open areas of subtidal, intertidal, and supratidal zones that lack dense populations of sessile plant species. Unconsolidated substrates are unsolidified material and include coral, algae, marl, mud, mud/sand, sand or shell. This community may support a large population of infaunal organisms as well as a variety of transient planktonic and pelagic organisms. While these areas may seem relatively barren, the densities of infaunal organisms in subtidal zones can be quite numerous, making this habitat an important feeding ground for many bottom feeding fish. Unconsolidated

substrates are important because they form the foundation for the development of other marine and communities.

Description and assessment: Marine unconsolidated substrate consists primarily of unvegetated loose sand and marl depositions. Infaunal organisms found at this site include worms, mollusks, shrimp and crab species. At the San Pedro, the marine unconsolidated substrate is interspersed with marine grass beds but is mainly found surrounding the wreck. Shifting sand has been problematic in the past in that some of the site features have been partially or fully covered. However, storm events in 2004 and 2005 have benefited the site by uncovering partially buried cannons and again exposing the wreck features.

General management measures: The marine unconsolidated substrate at the San Pedro is in excellent condition, but it is closely tied to the interpretation and maintenance of the wreck. Therefore to maintain the desired future condition of this habitat it will need to be regularly monitored along with the conditions of the wreck features to ensure that shifting sand does not partially or completely bury the features.

Again, the five mooring buoy that delineate the site of the wreck provide a safe alternative to anchoring over the wreck, thereby protecting the habitat.

MARINE CONSOLIDATED SUBSTRATE

Desired future conditions: Marine consolidated community is characterized by Key Largo limestone substrate with minimal sediment accumulation. This habitat is also known as hardbottom and often times consist of a combination of macroalgae, octocoral and stony coral species. Because there is minimal sediment accumulation, seagrass do not thrive in this environment.

Description and assessment: The marine consolidated substrate at the San Pedro consists of macroalgae species including Shaving brush algae (*Penicillus capitatus* and *P. dumetosus*), Fern algae (*Caulerpa septentrionalis*), Oatmeal algae (*Halimeda incrassata*), and *Sargassum* spp. Octocorals including sea whips (*Ptergorgia* spp.) and sea rods (*Plexaurella* spp.) can be found mixed with stony corals such as star coral (*Siderastrea siderea*), lesser starlet coral (*S. radians*), blushing starlet coral (*Stephanocoenia intersepta*), and brain coral (*Diplora* spp.). The wreck of the San Pedro is unique in that the ballast stones, anchor and the replica cannons provide the suitable substrate for these organisms to grow. Recent hurricane activity has enhanced the site by removing accumulated sediment from on and around the replica cannons so that physical removal of the sediment to expose the cannons is no longer necessary.

This community was classified in the previous Unit Management Plan as a coral reef, but it is more suitably classified as marine consolidated substrate. The marine consolidated substrate grades into the unconsolidated substrate that surrounds the San Pedro wreck.

General management measures: The wreck of the San Pedro supports various coral and macroalgae species. In order to maintain the desired future conditions, this site needs to be monitored on a bi-annual basis to ensure that this habitat is not being adversely impacted by visitors and/or looting. Regular monitoring will also provide important data on the status of the coral species found at this site particularly in reference to the presence of coral bleaching and coral disease. The presence of the mooring buoys protects the habitat from impacts to boat anchors and these will continue to be maintained.

Imperiled Species

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

Table 1 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 4.

The loggerhead, green and hawksbill turtle are found in the waters surrounding the San Pedro Underwater Archaeological Preserve State Park. Although sea turtle nesting activity in the Florida Keys is significantly less common than on the mainland of Florida, it does occur, so the presence of these species offshore is of great importance.

The wreck of the San Pedro provides suitable substrate for the development of several species of stony coral. Of these boulder star coral, massive starlet coral, symmetrical brain coral, grooved brain coral and maze coral have global significance. Protection of these species as well as all coral species found at the San Pedro will be accomplished by regular monitoring of the site, and continuing with the maintenance of the mooring buoys to prevent impacts from boat anchors.

Table 1: Imperiled Species Inventory

COMMON & SCIENTIFIC NAME	IMPERILED SPECIES STATUS				MANAGEMEN T ACTIONS	MONITORING LEVEL	
	FFWCC	USFWS	FDACS	FNAI	MAJ	MO]	
INVERTEBRATES							
Symmetrical brain coral Diplora strigosa				G4,S2	10,13	Tier 2	
Grooved brain coral Diplora labyrinthiformis				G4,S2	10,13	Tier 2	
Maze coral Meandrina meandrites				G4,S2	10,13	Tier 2	
Boulder star coral Montanstraea annularis				G5,S2	10,13	Tier 2	
Massive starlet coral Siderastrea siderea				G4,S2	10,13	Tier 2	
REPTILES							
Atlantic loggerhead Caretta caretta	LT	LT		G3,S3	10,13	Tier 1	
Green turtle Chelonia mydas	LE	LE		G3,S2	10,13	Tier 1	
Hawksbill turtle Eretmochelys imbricata	LE	LE		G3,S1	10,13	Tier 1	

Management Actions:

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

Monitoring Level:

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

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

Exotic Species

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such as diseases, predatory insects, etc. If left unchecked, invasive exotic plants and animals alter the character, productivity and conservation values of the natural areas they invade.

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.

There are no known exotic species at this site. However, with the increase in the number of exotic marine fish species, particularly lionfish observed in other locations within the Florida Keys, regular monitoring will be conducted in order to prevent the establishment of invasive species within the waters of the San Pedro Underwater Archeological Preserve State Park and the Florida Keys National Marine Sanctuary.

Special Natural Features

The special natural feature at this site is the presence of stony coral species that grow on the wreck of the San Pedro.

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 5 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 historic structures and landscapes 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 caused 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. Every cultural resource's significance derives from historical, architectural or archaeological contexts. Evaluation 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.

For collections, 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.

Pre-Historic and Historic Archaeological Sites

Desired future conditions: 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 Florida Master Site File (FMSF) lists the wreck of the San Pedro (MO104) as the only archaeological site in the park.

The San Pedro Underwater Archaeological Preserve State Park consists of the 1733 wreck of the San Pedro surrounded by a ring of unconsolidated substrate grading into marine grass bed. The San Pedro, a 287-ton ship, was one of a fleet of 21 Spanish vessels traveling from Havana to Spain. Two days out of port the fleet was driven aground by a hurricane with only one ship safely returning to Havana. Once the fate of the fleet was known, rescue ships were dispatched to recover cargo and rescue survivors. The 13 vessels that could not be re-floated and returned to Havana were burned to the water line to prevent discovery and salvage by other wreckers. Over the course of several years most of the cargo was recovered including far more gold and silver than was recorded on the ship's manifest. Coins were salvaged from the San Pedro as recent as the 1960s.

The wreck of the San Pedro consists of an anchor and a pile of ballast stones 90 feet long and 30 feet wide including river rock and galley stone tiles that covers a portion of the timbers of the ship's hull. Prior to the dedication as an archaeological preserve in 1989, replica cannons were placed at the site to simulate what the wreck most likely looked like prior to human disturbance. A historic plaque mounted on a cement monument was placed at the bow of the wreck and five mooring buoys were installed around the site to allow for safe anchorage.

The presence of the structures of the San Pedro provide suitable substrate for several species of coral growth including maze coral, boulder star coral and symmetrical brain coral, as well as supporting numerous species of marine life such as fish, turtles and dolphin.

Condition Assessment: The San Pedro is delineated by a spar buoy marking the site as a State Park, and by five mooring buoys, that prevents the use of anchors at the site. The shallow depth of the wreck previously enabled easy access by salvage collectors. Although the wreck has been subjected to human disturbance, it is in good condition. Shifting sand from storm events has resulted in the partial burial and emergence of portions of the wreck.

Due to the depth of the wreck and its proximity to shore, the San Pedro is not subjected to vessel grounding events and is therefore protected from physical impact. However, these factors do make it more susceptible to potential looting or vandalism. Regular monitoring by park staff can help to prevent any damage to the site.

Level of Significance: The San Pedro shipwreck is listed on the National Register of Historic Places. It is considered significant under National Register Criterion D as a site that has the potential to yield substantial information about 18th century merchant vessels, galleon-type ships, the Spanish *flota* (convoy) system and trans-Atlantic maritime culture.

General management measures: Regular monitoring will be conducted at the San Pedro in order to preserve this archaeological feature, protect it from looting, and determine if further stabilization will be needed as weather conditions alter sand distribution on the features. These will ensure that the desired future conditions of the site are met.

Detailed management goals, objectives and actions for management of cultural resources in this park are discussed in the Resource Management Program section of this component. Table 2 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 2: Cultural Sites Listed in the Florida Master Site File

Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
San Pedro MO104	First Spanish Period, 1513- 1763	Archaeological Site	NRL	G	Р

Significance

NRL National Register listed NR National Register eligible

NE Not evaluated NS Not significant

Condition

G Good F Fair P Poor

Recommended Treatment:

RS Restoration RH Rehabilitation ST Stabilization P Preservation

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of DRP's management goals for San Pedro Underwater Archaeological Preserve 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 uses 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 Chapters 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. 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.

Water quality at the San Pedro site is affected by run-off from the Florida Keys, water flow from Florida Bay, water flow from the Gulf of Mexico and water flow from the Gulfstream. Increased turbidity will affect the natural resources at this site, particularly the species of stony coral that are attached to the wreck of the San Pedro. Restoration of hydrological systems affecting this park is beyond the reach of DRP.

Objective: Monitor water clarity at the San Pedro.

Water clarity at the park will be monitored biannually.

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.

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

The natural communities at the San Pedro Underwater Archaeological Preserve State Park do not need restoration in order to maintain their desired future condition.

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

Aside from continued monitoring and appropriate responses to manmade or natural impacts in the future, the natural communities at the San Pedro Underwater Archaeological Preserve State Park do not need improvement in order to maintain their desired future condition.

Objective: Continue to monitor the effects of public use and storm events on the natural communities of the state park.

Imperiled Species Management

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

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

In the preparation of this management plan, DRP staff consulted with staff of the FFWCC's Imperiled Species Management Section or its 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 FFWCC, USFWS,

FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed by park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet 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: Regularly monitor the five coral species that are attached to the wreck of the San Pedro.

- 1. Five species of coral *Diplora strigosa*, *D. labyrinthiformis*, *Montastraea annularis*, *Meandrina meandrites* and *Siderastrea siderea*, are listed as globally important. However all coral species at this site will be monitored bi-annually for presence/absence, overall condition, disease, physical impacts, and bleaching.
- 2. Park staff conducts coral monitoring in John Pennekamp Coral Reef State Park as part of the park's coral reef survey project and as part of the Nature Conservancy's Florida Reef Resilience Project. Established survey protocols for these projects will be modified to survey this site since the suitable substrate provided by the wreck for the establishment of coral species is spatially limited.
- 3. Monitoring will be conducted by park staff knowledgeable in the identification of Caribbean coral species and their diseases.

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 ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective: Monitor for the presence of invasive marine species, particularly lionfish, at the San Pedro and surrounding waters.

Marine fish species have become increasingly prevalent in the Atlantic waters off the east coast of the United States. Invasion of these species poses a serious threat to the native species found throughout the region. Lionfish pose a significant threat to the

recreationally and commercially important species in the waters surrounding the Florida Keys, and need to be removed to prevent the depletion of fish populations.

Special Management Considerations

Arthropod Control Plan

All Division lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111. If a local mosquito control district proposes a treatment plan, the Division responds within the allotted time and reaches consensus with the mosquito control district. By policy of the Department since 1987, no aerial adulticiding is allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. The Division 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.

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 San Pedro Underwater Archaeological Preserve 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. Managers of state lands must coordinate any land clearing or ground disturbing activities with the DHR to allow for review and comment on the proposed project. Recommendations may include, but are not limited to approval of the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects. Projects such as additions, exterior alterations or related new construction regarding historic structures eligible for listing in the National Register of Historic Places must also be submitted to DHR for review and comment.

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

1. The wreck of the San Pedro has been evaluated, and all features have been documented. This site is vulnerable to storm activity and will be regularly monitored to ensure that the wooden hull remains covered by sand. It will also be necessary to evaluate the effects of shifting sand on the other features of this site in order to continue to interpret the cultural significance of the wreck.

- **2.** Destruction of the wreck site by any method of attempted salvage must be prevented. This can be achieved by regular patrols of the site and monitoring.
- 3. The anchor has a piece of zinc strapped to its shaft to reduce electrolysis on the anchor. This will need to be monitored to ensure that the strap does not corrode. Management will notify the DHR, Bureau of Archaeological Research when this piece needs to be replaced.

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

- 1. Monitoring will be conducted on a biannual schedule at the wreck of the San Pedro. This will include monitoring for structural integrity of the features, submergence/emergence of the features by shifting sand, and the potential destruction of features from attempted salvage.
- 2. The wreck of the San Pedro is located in the east side of the submerged land that encompasses the San Pedro Underwater Archaeological Preserve State Park. Due to fluctuations in sea level, the submerged land surrounding the Florida Keys at one time was dry land and Native Americans did utilize these coastal areas. Since there are other known archeological sites in the nearby-submerged land of Lignumvitae Key Botanical State Park, a predictive modeling of site probability within this state park boundary should be conducted.

Objective: Bring zero of one recorded cultural resource into good condition.

- 1. The wreck of the San Pedro is currently in good condition. However, impacts from storm events pose the most threat to the features of this site. Site evaluations will be conducted post tropical storm and hurricane events to determine what management measures need to be taken to stabilize the wreck features.
- **2.** Continue to maintain the mooring buoys in order to provide safe anchorage at the site.
- **3.** Continue to maintain the Spar buoy and the interpretive plaque.

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

The San Pedro Underwater Archaeological Preserve State Park has not had a land management review conducted, it is located in Hawk Channel in eighteen feet of water.

LAND USE COMPONENT

INTRODUCTION

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

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan 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.

San Pedro State Underwater Archaeological Preserve is located within Monroe County, about 1.25 nautical miles south of Indian Key, in Hawk Channel in the southern part of the state.

Existing Use of Adjacent Lands

Upper Matecumbe Key is heavily developed with mixed commercial and residential uses. Lower Matecumbe Key is less developed, with a greater proportion of land in residential use. Intensive recreational boating and fishing activities occur in the waters surrounding the underwater archaeological preserve.

Planned Use of Adjacent Lands

Continued development is anticipated on the uplands north of the preserve, especially on the undeveloped portions of Lower and Upper Matecumbe Key. Potential effects of future population growth in the Middle Keys include increased visitation, increased boating activities around the preserve, and increased traffic congestion on U.S. Highway 1. Potential concerns associated with additional boating in the area include increased water pollution and destruction of natural features.

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.

Situated in 18 feet of water, the underwater archaeological preserve allows snorkeling and SCUBA diving visitors to view the sunken remains of one of the state's most famous maritime disasters. The preserve contains submerged land, within a circular boundary, extending 1,000 yards from the wreck site.

Natural resources are abundant on the site, and include corals, crustaceans, mollusks, and many types of fish. The wreck site is surrounded by a ring of sandy sediment, which in turn is surrounded by the normal turtle grass beds at the bottom of the channel.

Archaeological and Historical Features

The historic wreck site consists of a large pile of ballast stones that cover portions of the ship's lower hull timbers. The vessel's cargo, hardware and armament were salvaged long ago. Of the 1733 wreck sites, the San Pedro is among the most picturesque, due to its situation in a white sand pocket surrounded by turtle grass, and the prolific amount of active marine life that inhabits her grave.

Assessment of Use

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

Past Uses

Florida has one of the longest coastlines in the nation and one of the longest histories of maritime activities along its shores. The Florida Keys especially was, and still is, a natural trap for unlucky ships.

After the San Pedro sunk in 1733, the Spaniards mounted a salvage operation that recovered most of the gold, silver, and other valuables on the ship. Her discovery in recent times was rewarded by thousands of silver coins in small denominations, dated 1731 to 1733. Consequently, the San Pedro was dug repeatedly over a period of years by weekend treasure seekers, damaging the site's cultural and natural resources.

Current Recreational Use and Visitor Programs

The San Pedro State Underwater Archaeological Preserve offers a combination of historical and natural resources together on one site. The site provides a unique opportunity for visitors to experience first-hand Florida's history in a natural setting. Recreational use of the preserve is limited to snorkeling and SCUBA diving activities, as well as glass bottom boat tours. Visitors are encouraged to behave in a responsible manner, as they do in other designated areas such as John Pennekamp Coral Reef State Park.

San Pedro Underwater Archaeological Preserve State Park recorded 3,393 visitors in FY 2010/2011. By Division estimates, the FY 2010/2011 visitors contributed \$145,125 in direct economic impact and the equivalent of 2.9 jobs to the local economy (Florida Department of Environmental Protection, 2011).

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 San Pedro Underwater Archaeological Preserve State Park, the entire submerged land management lease area has been designated as a protected zone.

Existing Facilities

The underwater wreck site has been enhanced with seven replica cannons and an information plaque. The plaque provides written information about the site's natural and cultural resources, as well as regulations for public use. Five mooring buoys have been installed to protect the site and surrounding natural communities from anchor damage.

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.

The conceptual land use plan described here is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape and social setting. The development plan will be reassessed during the next update of the park management plan, and modified to address new conditions, as needed.

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. No new facilities are proposed.

Objective: Maintain the park's current recreational carrying capacity of 80 users per day.

The park will continue to provide opportunities for visitor access to the underwater archaeological preserve.

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

Self-guided tours are currently available at San Pedro Underwater Archaeological Preserve. There are no plans for expanding the repertoire of interpretive or educational programs.

Proposed Facilities

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

Objective: Maintain all public facilities in the park.

As a state underwater archaeological preserve, the primary emphasis is placed on protection and maintenance of the archaeological feature. The existing approved public use of the preserve is appropriate and should continue. The preserve is considered optimally developed, and no additional facilities or activities are proposed

Existing Use and 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 3).

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 3.

Table 3Existing	Use and	Recreational	Carrying	Capacity

	Exist Capa	O	Addi	oosed tional acity	Estim Recrea Capa	tional
Activity/Facility	One Time	Daily	One Time	Daily	One Time	Daily
Site Visitation	20	80			20	80
TOTAL	20	80			20	80

Optimum Boundary

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

No parcels are identified for acquisition at this park, and no land is considered to be surplus to the purposes of the park.

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's 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 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 4) 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 period 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 Division'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 Division 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 Division's annual legislative budget requests. When preparing these annual requests, the Division 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

Division pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The Division'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 4 may need to be adjusted during the ten-year management planning cycle.

Table 4 San Pedro Underwater Archaeological Preserve State Park Ten-Year Implementation Schedule and Cost Estimates Sheet 1 of 2

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. Planning Estimated Mannower at the property of t

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	С	\$24,774
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 Monitor water clarity at San Pedro Underwater Archaeological Preserve State Park.	Assessment conducted	С	\$1,120
Goal III: Restore and maintain the natural communities/habitats of the park.	Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
The natural communities at this park do not require restoration in order to maintain their desired future condition.			
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 Monitor the coral species that are attached to the wreck of the San Pedro.	# Species Monitored	С	\$4,420
Action 1 Implement monitoring protocols for six selected imperiled coral species including maze coral, symmetrical brain coral, grooved brain coral, boulder star coral and massive starlet coral annually.	# Species Monitored	С	\$4,420
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintaince-control.	Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A Monitor for invasive marine species, particularly lionfish, at the San Pedro ship wreck site and the surrounding waters.	# Acres Monitored	С	\$4,420

Table 4 San Pedro Underwater Archaeological Preserve State Park Ten-Year Implementation Schedule and Cost Estimates Sheet 2 of 2

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 the condition of the ship wreck remains.	Documentation complete	LT	\$4,420
Action 1	Update condition of ship wreck remains when significant events occur such as a tropical storm or hurricane, which	h # of Updates Completed	С	\$0
	would potentially impact the cultural resource for future interpretation.			
Action 2	Periodically monitor anchor and zinc strap for corrosion	Anchor Monitored	С	\$0
Objective B	Compile reliable documentation for all recorded historic and archaeological sites.	Documentation complete	UFN	\$15,860
Action 1	Develop/Imprement bi-annual schedule for monitoring the ship wreck remains for structure integrity, emergance	Schedule	C	\$8,840
	of features and destruction of features from attempted salvage	Developed/Implemented		
Action 2	Complete a predictive model for high, medium and low probability of locating archaeological sites within the parboundary.	Probability Map completed	UFN	\$7,020
Objective C	Maintain the shipwreck remains in good condition.	Site evaluated as Good	LT	\$9,470
		Condition		
Action 1	Update condition of ship wreck remains when significant events occur such as a tropical storm or hurricane, which	h Condition Updated	С	\$2,270
	would potentially impact the cultural resource for future interpretation.			
Action 2	Maintain mooring buoys to provide safe anchorage at the site.	# Buoys Maintained	С	\$7,200
Goal VII: Provid	e 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 80 users per day.	# Recreation/visitor	С	\$820
,		opportunities per day		
Goal VIII: Devel	op and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this	Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain all public and support facilities in the park.	Facilities maintained	С	\$7,200
Summary of Esti				4.7=
J	Management Categoric	es		Total Estimated Manpower and Expense Cost* (10- years)
	Resource Managemen	nt		\$39,710
	Administration and Suppo	rt		\$24,774
	Capital Improvemen	ts		\$7,200
	Recreation Visitor Service	es		\$820
	Law Enforcement Activitie	s^1		\$0
				e Parks are conducted by the local law enforcement

 * 2011 Dollars ST = actions within 2 years LT = actions within 10 years C = long term or short term actions that are continuous or cyclical UFN = currently unfunded need



Purpose of Management

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP), and the Florida Department of State (FDOS), Division of Historical Resources (DHR), manage San Pedro State Underwater Archaeological Preserve State Park to protect, preserve, and enhance natural and cultural resources of said property without interfering with the maintenance of public navigation and other public projects.

Sequence of Acquisition

On March 28, 1989, the Board of Trustees of the Internal Improvement Trustee Fund (Trustees) conveyed management authority of San Pedro State Underwater Archaeological Preserve State Park to the co-management of the DRP and DHR, under Management Agreement for Sovereignty Submerged Lands No. MA-44-012 for a period of twenty-five (25) years and will expire on March 27, 2014. San Pedro State Underwater Archaeological Preserve State Park contains approximately 644 submerged acres.

Title Interest

The Trustees hold fee simple title to San Pedro State Underwater Archaeological Preserve State Park.

Special Conditions On Use

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

Outstanding Reservations

The DRP and DHR's management agreement from the Trustees stipulates that San Pedro State Underwater Archaeological Preserve be managed for conservation, protection and enhancement of natural and cultural resources. Following is a listing of outstanding rights, reservations, and encumbrances which apply to the preserve.

San Pedro State Underwater Archaeological Preserve State Park Acquisition History

Instrument: Management Agreement

Instrument Holder: The Board of Trustees of the Internal

Improvement Trust Fund

Beginning Date:March 28, 1989

Outstanding Rights, Uses, Etc.:Should the grantee fail to keep any of its

covenants in the agreement, the Trustees shall have the right to terminate the agreement.



Elected Officials

Honorable Michael Reckwerdt, Mayor Islamorada Village Council 86800 Overseas Highway Islamorada, FL 33036

> Represented by: Honorable Ted Blackburn Islamorada Village Council 86800 Overseas Highway Islamorada, FL 33036

Honorable Heather Carruthers, Mayor Monroe County Board of County Commissioners 530 Whitehead Street Key West, FL 33040

Agency Representatives

Melba Nezbed, Park Manager 77200 Overseas Highway Islamorada, Florida 33036

Sean Morton, Superintendent Florida Keys National Marine Sanctuary Upper Keys Region Office 95230 Overseas Highway Key Largo, Fl. 33037

> Represented by: John Halas Florida Keys National Marine Sanctuary Upper Keys Region Office 95230 Overseas Highway Key Largo, Fl. 33037

Mark Torok Department of Agriculture and Consumer Services Florida Forest Service 3315 S.W. College Ave Davie, FL 33314 Randal T. Grau Florida Fish and Wildlife Conservation Commission P.O. Box 430541 Big Pine Key, FL 33043

> Represented by: Ricardo Zambrano Florida Fish and Wildlife Conservation Commission 8535 Northlake Boulevard West Palm Beach, FL 33412

Mike Wisenbaker Florida Division of Historical Resources 500 South Bronough Street, Mail Station 8 Tallahassee, Florida 32399-0250

S. Cooper McMillan, Chair South Dade Soil And Water Conservation District 1450 N. Krome Avenue, Suite 104 Florida City, FL 33034

> Represented by: L.T. "Sonny" Clayton South Dade Soil And Water Conservation District 1450 N. Krome Avenue, Suite 104 Florida City, FL 33034

Environmental Representatives

Peter Frezza Audubon of Florida 115 Indian Mound Trail Tavernier, FL 33070

Volunteers

Karen Sunderland-Strobel Friends of Islamorada Parks 168 Plantation Drive Plantation Key, Fl 33070

User Group Representatives

Frank Woll 104050 Overseas Highway Key Largo, Florida 33037

Historical Preservation Society

Representative

Jerry Wilkenson 38 East Beach Road Tavernier, Florida 33070

Adjacent Landowners

Nick Tagliareni 32 Park Road Islamorada, FL 33035

Sue Miller 151 Columbus Drive Islamorada, Fl 33036

The Advisory Group meeting to review the proposed land management plan for the Islamorada Area State Parks was held at the Allison Fahrer Environmental Education Center at Windley Key Fossil Reef Geological State Park on October 27, 2011 at 9:00 AM.

The Honorable Michael Reckwerdt of the Village Council of the Islamorada Village of Islands was represented by The Honorable Ted Blackburn. Mr. Sean Morton of the Florida Keys National Marine Sanctuary was represented by Mr. John Halas. Mr. S. Cooper McMillan of the South Dade South and Water Conservation District was represented by Mr. L.T. "Sonny" Clayton. The Honorable Heather Carruthers (Monroe County Board of County Commissioners), Mr. Randal Grau (Florida Fish and Wildlife Conservation Commission), Mr. Mike Wisenbaker (Florida Division of Historical Resources), Mr. Frank Woll, and Mr. Jerry Wilkinson (Historical Preservation Society of the Upper Keys) were not in attendance. Attending staff were Mr. Paul Rice, Mr. Lew Scruggs, Mr. Ernest Cowan, Ms. Melba Nezbed, Ms. Janice Duquesnel, and Mr. Joe Blazina. All other Advisory Group members were in attendance.

Mr. Blazina began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. He provided a brief overview of the Division's planning process and summarized public comments received during the previous evening's public workshop. He then asked each member of the advisory group to express his or her comments on the plans.

Summary of Advisory Group Comments

Mr. Frezza addressed the unimproved boat ramp on Indian Key Fill. He recommended that the ramp needs to be addressed, and was glad to see it in the management plan. Mr. Frezza stated that he did not know the ramp was managed by the Division of Recreation and Parks, adding that as a local user, he has seen the operational issues that it presents, and recommended that the Division assess a fee if the ramp is improved. He said that if the ramp cannot be improved, it should be closed to motorized boats and used for paddling access due to its location and access to Lignumvitae Key. He discussed Horseshoe Key, recommending that the nearshore area around it be closed to fishers due to heavy use by nesting shorebirds and frigate birds. Mr. Frezza concluded by commending the Park Staff on their work to protect the parks' shallow water habitats and seagrass beds, adding that their signage and outreach programs are a model for other submerged land managers.

Mr. Halas began his comments adding to Mr. Frezza's concerns regarding the boat launching facilities on Indian Key Fill. He agreed that the ramp should definitely be renovated and managed with better rule enforcement, adding that with a better boat ramp will come even more traffic; as a result the parking should be reconfigured and improved as well. Mr. Halas concluded his comments commending the plans for being very well written and comprehensive.

Mr. Tagliareni addressed the entrance to Windley Key Fossil Reef Geological State Park. He suggested that the Division should work with DOT in the future to establish a right turn lane into the park, since a lot of people do not realize where the entrance to the park is until they drive past it. Mr. Tagliareni asked about paddling access to Indian Key, as the current dock is difficult to access from a kayak. Melba Nezbed responded that both Indian Key and Lignumvitae Key now have kayak landings.

Mr. Blackburn said that he was thrilled with all four of the parks, and what the park staff do to to manage them. He added to the Indian Key Fill boat ramp comments, discussing the traffic issues along US 1 with trucks and boat trailers stopping traffic to enter and exit the boat launching area. Mr. Blackburn added to Mr. Tagliareni's comments, letting Division Staff know that DOT had recently conducted public hearings regarding widening the shoulder of US 1 on Upper Matecumbe Key, suggesting the Division work with DOT to get a right turn lane into Windley Key Fossil Reef Geological State Park included in that project. Mr. Blackburn discussed the Village of Islamorada's progress in establishing wastewater treatment in the area.

Mr Blackburn also asked about the status of the proposed dinosaur theme park development at Windley Key Fossil Reef Geological State Park. Mr. Scruggs responded that division staff met with the interested parties to discuss the idea, and requested a detailed business plan and specific site plans to further explain the proposal. He explained that no formal proposal has been received by the Division to date. He explained if any such proposal is received in the future, and if the Division were interested in exploring the idea, then a public workshop would be held in the local area to ensure the involvement of local residents and stakeholders, and that an amendment to the park's management plan would be required.

Ms. Miller agreed that there should be a fee to use the boat ramp on Indian Key Fill, adding that the traffic congestion in the area is a safety hazard. She commented that there needs to be more signs in Robbie's Marina, pointing visitors to where they are supposed to go to buy tickets to gain access to Indian Key and Lignumvitae Key. Ms. Miller commended the park staff on their terrific job with educational outreach and interpretation of the parks, and encouraged them to expand their efforts further so that future generations understand the significance of the state parks in their area. She suggested establishing a kayak trail in the canal system near the land base, noting that the mangrove-lined canals are fantastic, and people should be able to enjoy them. Ms.

Miller noted that allowing visitors to kayak in the waters surrounding the islands would not have a negative impact on the sensitive resources on the islands themselves. Ms. Miller concluded her comments discussing the Choate Tract and the DOT picnic area adjacent to it. She suggested the Division work with DOT to establish a restroom, or fence the park boundary to manage access to the property.

Ms. Sunderland Strobel began her discussion asking if Robbie's Marina had a formal concession contract with the Division, adding that Robbie's should be required to provide better signage so that visitors know where to go to purchase tickets to gain access to the islands. She continued her comments discussing the option to rent kayaks, adding that the rentals provide income to the Parks. Ms. Sunderland Strobel agreed with Ms. Miller that there should be a restroom located at the Choate Tract if people are going to be allowed to picnic adjacent to it. She also said that the boat ramp area on Indian Key Fill should have a restroom, especially with the potential for sewer to come in the future. Ms. Sunderland Strobel concluded her comments stating that the plans are excellent and very well written.

Mr. Clayton began his comments stating that he grew up in the Islamorada area, and that the State Parks are very important to him. He added that the South Dade Soil and Water Conservation District provides education outreach to local schools, agreeing that education of young people is very important. Mr. Clayton concluded his comments stating that the plans are very well done, and he will continue to review them and submit further comments following the Advisory Group Meeting.

Mr. Torok commented that the plans are well written, adding that he is familiar with the parks through the Champion Tree Program. He asked park staff if the Champion Trees located on Lignumvitae Key are signed or interpreted to visitors. Janice Duquesnel responded that the Champion Trees are deep within the hammock of the island, and not accessible from the main trail that goes around the island, so signing the trees is not necessary.

Summary of Written Comments

Mr. Wisenbaker was not able to attend the advisory group meeting, but did submit written comments regarding the plans. His comments included typographical and editorial changes to the plans, as well as discussion. Mr. Wisenbaker commended the Division of Recreation and Parks in its efforts to preserve and protect Florida's irreplaceable historical resources. He recommended the Division to continue its efforts to nominate Windley Key Fossil Reef Geological State Park to the National Register of Historic Places. He also added that staff at the Division of Historical Resources who may be able to assist with the nomination process, as well as treating and restoring the historic quarrying machinery. He asked if a cyclical maintenance plan has been developed for the historical machinery found on Lignumvitae Key, and what the

schedule was. Mr. Wisenbaker commended the Division for their continued work to preserve, protect, and interpret Indian Key Historic State Park, and the work to develop a cyclic maintenance plan for the ruins there. He concluded by suggesting the mention of San Pedro Underwater Archaeological Preserve State Park as 1 of 11 archaeological preserves in the State of Florida, and commended the plan for being well researched and written.

Mr. Wilkinson was not able to attend the advisory group meeting, but did submit written comments regarding the plans. Mr. Wilkinson's comments included discussion regarding the origin of the names of the quarries and the names discussed in the management plan. Mr. Wilkinson recommended that whichever names are used in the management plan and interpretation at the park should be labeled on a map so that anyone reading the plan can understand their locations, uses and significance.

Staff Recommendations

Suggestions received from the Advisory Group meeting resulted in revisions to the draft management plan. The Resource Management Component has been updated to include the most recent natural and cultural resource management. Division staff will continue to monitor impacts of nearshore fishing activities around Horseshoe Key, and consider Mr. Frezza's comments. In the Land Use Component, additional language was included regarding the coordination of the appropriate managing agencies to determine what level of parking and road improvements are feasible in the boat launch area on Indian Key Fill. Division staff also considered the feasibility of restroom facilities on the Choate Tract and Indian Key Fill, but determined it would be unable to properly manage them. The Division will continue to work to protect the boundaries of all park lands to manage access. Minor cartographic, typographical and grammatical changes and corrections were also completed as a result of the public workshop and Advisory Group review.

With these changes, DRP staff recommends approval of the proposed management plans for the following State Parks:
Indian Key Historic State Park
Lignumvitae Key Botanical State park
San Pedro Underwater Archaeological Preserve State park
Windley Key Fossil Reef Geological State Park

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, comanaging entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

State park management plans are reviewed by advisory groups that are composed in compliance with these requirements. 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. Additional members may be appointed if special issues or conditions exist that require a broader representation for adequate review of the management plan. The Division'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 Division of Recreation and Parks staff.

November 2, 2011



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Common Name

Scientific Name

Primary Habitat Codes (for designated species)

ANGIOSPERMS

Mermaids wine cup	.Acetabularia calyculus
Fan algae	.Avrainvillea spp.
	.Batophora oerstedii
Fern algae	.Caulerpa spp.
Oatmeal algae	.Halimeda incrassata
Shoal grass	.Halodule wrightii
Shaving brush algae	.Penicillus capitatus
Shaving brush algae	.Penicillus dumetosus
Turtle grass	.Thalassia testudinum
Stiff fan algae	.Udotea flabellum

Common Name

Scientific Name

Primary Habitat Codes (for all species)

MOLLUSKS

Mossy ark	.Arca imbricata69	
Zebra ark	.Arca zebra69	
Calico scallop	.Argopecten gibbus69	
American star shell	.Astraea americana69	
Long-spined star shell	.Astraea phoebia69	
Red-brown ark	.Barbatia cancellaria69	
Atlantic bubble	.Bulla striata69	
Lightening whelk	.Busycon contratrium69,7	1
King helmet	.Cassis tuberose69	
C	.Cerithium atratum69	
Stocky cerith	.Cerithium litteratum69	
Leafy jewel box	.Chama macerophylla69	
• 1	.Chlamys imbricatus69	
2 2	.Chlamys sentis69	
American tiger lucine	.Codakia orbicularis69	
	.Columbella mercatoria69	
Sozon's cone	.Conus delesserti69	
	.Conus jaspidius69	
-	.Conus spurious69	
	.Crepidula aculeata69	
	.Crepidula fornicata69	
	.Cyphoma gibbosum69	
	.Cypraea cervus69	
	.Diodora cayensis69	
	.Fasciolaria hunteria69,7	
	.Fasciolaria tulipa69,7	
	.Pseudopterogorgia spp69	
	.Lima scabra69,7	
Thick lucine	.Lucina pectinata69	
	.Mactra fragilis69	
Tulip mussel	.Modiolus americanus69	
Atlantic modulus	.Modulus modulus69	
Atlantic morum	.Morum oniscus69	
Ponderous ark	.Noetia ponderosa69	
	.Pecten ziczac69	
-	.Periglypta listeri69	
	.Pleuroploca gigantean69,7	
	.Princtada sp69	

Common Name	Scientific Name	Primary Habitat Codes (for all species)		
A 1	D1 11 (60		
Apple murex	Phyllonotus pomum	69		
White Atlantic semele	Semele proficua	69		
	Siphonaria pectinata			
	Strombus gigas			
	Strombus raninus			
	Tegula fasciata			
Rose petal telling	Tellina lineata	69		
Speckled telling	Tellina similia	69		
	Tonna maculosa			
Cockle	Trachycardium sp	69		
Caribbean vase shell	Vasum muricatus	69		
FISH				
Sergeant major	Abudefduf saxatilis	69,71		
	Acanthurus chirurgus			
	Acanthurus coeruleus			
	Adioryx coruscus			
	Aetobatus narinari			
	Anisotremus virginicus			
	Apogon maculates			
	Apogon pseudomaculatus			
	Aulostomus maculates			
	Caranx crysos			
	Caranx rubber			
	Carcharhinus springeru			
	Centropomus undecimalis			
	Chaetodipterus faber			
	Chaetondon capistratus			
-	Chaetodon ocellatus			
_	Chaetodon striatus			
	Chromis multilineatus			
	Coryphopterus dicurs			
	Coryphopterus glaucofraenum .			
	Dasyatis Americana			
	Diodon hystris			
*	Epinephelus adscensionis			
	Epinephelus striatus			
	Equetus acuminatus			
	Equetus lanceolatus			

Common Name	Scientific Name	Primary Habitat Codes (for all species)
Spotted drum	Equetus punctatus	69
	Eupomacentrus dorsopunicans	
	Deupomacentrus variabilis	
	Gerres cinereus	
	Ginglymostoma cirratum	
	Gobiosoma louisae	
	Gobiosoma oceanops	
	Gramma loreto'	
	Gymnothorax funebris	
	Gymnothorax moringa	
	Haemulon flavolineatum	
	Haemulon plumieri	
	Haemulon sciurus	
	Holacanthus bermudensis	
Queen angelfish	Holocanthus ciliaris	68,69,71
	Holocentrus rufus	
_	Kyphosus sectartrix	
	Lachnolaimus maximus	
	Lactophrys bicaudalis	
	Lactophrys polygonia	
	Megalops atlanticus	
Yellowtail snapper	Ocyrurs chrysurus	69,71
	Pomacanthus arcuatus	
	Pomacanthus paru	
Midnight parrotfish	Scarus coelestinus	69
Queen parrotfish	Scarus vetula	69
Stoplight parrotfish	Sparisoma viride	69
Great barracuda	Sphyraena barracuda	68,69,71
Bluehead	Thalassoma bifasciatum	69
Yellow stingray	Urolophus jamaicensis	68,69,71
	INVERTEBRATES	
Annelida		
Spotted feather duster worm	Branchioma nigromaculata	69
Bristle worm	Hemodice caruneulate	69,71
Red fan worm	Pomastegus stellatus	69
	Sabella melanostignoa	
Giant feather duster worm	Sabellastarte magnifica	69
Feather duster	Sabellid sp	69

Common Name	Scientific Name	Primary Habitat Codes (for all species)
Horned Christmas tree worm	Spirobranchus grandis	69
Cnidarians		
Corkscrew anemone		
Encrusting gorgonian		
Elliptical star coral	Dichocoenia stokesii	69
Grooved brain coral	Diploria labyrinthiformis	69
Smooth brain coral		
Golfball coral	Favia fragum	69,71
Branching anemone	Lebrunia danae	69
Maze coral	Meandrina meandrites	69
Encrusting fire coral	Millipora alcicornis	69
Common star coral	Montastrea annularis	69
Star coral	Montastrea faveolata	69
Ivory brush coral		
Ivory brush coral	Oculina robusta	69,71
Mustard hill coral	Porites astreoides	69
Lesser starlet coral	Siderastrea radians	69
Greater starlet coral	Siderastrea siderea	69
Smooth star coral	Solenastrea bournoni	69
Blushing starlet coral	Stephanocoenia intersepta	69
Crustacea		
Star-eyed hermit crab	Datdanus venosus	69,71
Spiny lobster	Panulirus argus	69,71
Pederson's cleaning shrimp		
Common mantis shrimp		
Banded coral shrimp		
Arrow crab		
Echinodea		
Reef urchin	Echinometra viridis	69
Red heart urchin	Meoma ventricosa	69
Porifera		
Sponges	Porifera spp	69,71

Common Name	Scientific Name	Primary Habitat Codes (for all species)		
REPTILES				
Atlantic loggerhead	Caretta caretta	68,69,71		
Green turtle	Chelonia mydas	68,69,71		
Hawksbill	Eretmochelys imbricata	68,69,71		
MAMMALS				
Atlantic bottle-nosed dolph	ninTursiops truncates	68,69,71		



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

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

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

FNAI GLOBAL RANK DEFINITIONS

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

Imperiled Species Ranking Definitions

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

LEGAL STATUS

FEDERAL

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

LEListed as Endangered Species in the List of Endangered and Threatened
Wildlife and Plants under the provisions of the Endangered Species Act.
Defined as any species that is in danger of extinction throughout all or a
significant portion of its range.
PEProposed for addition to the List of Endangered and Threatened Wildlife
and Plants as Endangered Species.LTListed as Threatened Species.
Defined as any species that is likely to become an endangered species
within the near future throughout all or a significant portion of its range.

Imperiled Species Ranking Definitions

PT.......Proposed for listing as Threatened Species.

CCandidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.

E(S/A).....Endangered due to similarity of appearance.

T(S/A).....Threatened due to similarity of appearance.

STATE

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

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

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

- LE.....Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.
- LT.....Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.



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

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

Chapter 253, F.S. - State Lands

Chapter 267, F.S. – Historical Resources

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

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

Other helpful citations and references:

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

Other helpful citations and references:

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

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

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

D. Management Implementation

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

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

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

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

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

E. Minimum Review Documentation Requirements

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

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

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

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

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

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

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

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

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

Phone: (850) 245-6333 Fax: (850) 245-6438

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

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.
- 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

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

- 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.

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.