CRYSTAL RIVER ARCHAEOLOGICAL STATE PARK

Park Chapter

GULF COAST REGION

CRYSTAL RIVER ARCHAEOLOGICAL STATE PARK

CITRUS COUNTY, FLORIDA

0 300 600 Feet

N W E S

TO CRYSTAL RIVER/
US 19/98

PARK FEATURES
- Park Boundary
- Structures
- Parking Lots
- Paved Park Roads
- Stabilized Park Roads
- Unstabilized Park Roads
- Walkways
- Paddling Trail

SURROUNDING LAND COVER
- Salt Marsh

CRYSTAL RIVER PRESERVE STATE PARK BOUNDARY

SAILBOAT AVE

Mullet Hole

N MUSEUM POINT

Support Area

HYDRIC HAMMOCK

PARK BOUNDARY

Museum/ Visitor Center

SHELL MOUND

Pole Barn

Stelae Shelter

Staff Residence

Observation Platform

TEMPLE MOUND

Seawall

BOAT BASIN

Crystal River

Florida Circumnavigational Saltwater Paddling Trail

CRYSTAL RIVER PRESERVE STATE PARK

Dock

Staff Residence

ROBERTS ISLAND

Roberts Island Tract - Crystal River Archaeological State Park

PARK BOUNDARY

SHELL MOUND

PARK BOUNDARY

HYDRIC HAMMOCK

HYDRIC HAMMOCK

CRYSTAL RIVER PRESERVE STATE PARK BOUNDARY

Mullet Hole

Crystal River

Florida Circumnavigational Saltwater Paddling Trail

Salt River

CRYSTAL RIVER PRESERVE STATE PARK

INTRODUCTION

LOCATION AND ACQUISITION HISTORY

Crystal River Archaeological State Park is located in Citrus County, a portion of which lies within the Crystal River city limits (see Vicinity Map). Access to the park from the north or south is via U.S. Highway 19/98 then west on State Park Road and south on Museum Point Drive. The Vicinity Map also reflects significant land and water resources existing near the park.

Crystal River Archaeological State Park was initially acquired on Aug. 6, 1962, through a donation of 14.5 acres. Since the donation, additional parcels were acquired and incorporated into the park. Currently, the park comprises 61.48 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on Jan. 23, 1968, the Trustees leased (Lease No. 2324) the property to the Division of Recreation and Parks (DRP) under a 99-year lease. On Dec. 21, 1984, the term of this lease was amended to 50 years, commencing on the same date as the lease amendment. In 1988, the Trustees assigned a new lease number to the park without making any changes to the terms and conditions of Lease No. 2324. DRP manages the park under Lease No. 3614. The lease will expire on Dec. 20, 2034.

Crystal River Archaeological State Park is designated single-use to provide public outdoor recreation and conservation. There are no legislative or executive directives that constrain the use of this property (see Addendum 1). A legal description of the park property can be made available upon request to the Florida Department of Environmental Protection (DEP).

SECONDARY AND INCOMPATIBLE USES

In accordance with 253.034(5) F.S., 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 resource values. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. 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.

DRP has determined that uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those management activities specifically identified in this plan) would not be consistent with the management purposes of the park.

In accordance with 253.034(5) F.S., 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 no additional revenue generating activities are appropriate during this planning cycle. Generating revenue from consumptive uses or from activities that are not expressly related to resource management and conservation is not considered in this management plan.

PURPOSE AND SIGNIFICANCE OF THE PARK

Park Purpose

The purpose of Crystal River Archaeological State Park is to preserve and interpret the mound structures, burial areas and the lifeways of the coastal dwellers who used the area in ancient times.

Park Significance

- The park protects a complex ceremonial center and burial site consisting of temple, burial, shell and sand mounds, The site is believed to be one of the longest continuously occupied pre-Columbian sites in Florida, representing approximately 2,000 years of human settlement during the Deptford, Weeden Island and Safety Harbor prehistoric periods.

- The visitor center showcases the collection of artifacts representing the Native Americans gathering at this destination to trade, mourn and celebrate along the fertile shores of the Crystal River.

- The park was designated a National Historic Landmark in 1990

Central Park Theme

The mound complex at Crystal River Archaeological State Park was once a flourishing destination where Native American cultures gathered to trade, mourn, and celebrate along the fertile shores of the Crystal River.

Crystal River Archaeological State Park is classified as a state special feature site in the DRP unit classification system. A special feature is a discrete and well-defined object or condition that attracts public interest and provides recreational enjoyment through visitation, observation and study. A state special feature site is an area that contains such a feature, and which is set aside for controlled public enjoyment. Special feature sites for the most part are either historical or archaeological by type, but they may also have a geological, botanical, zoological, or other basis. State special feature sites must be of unusual or exceptional character or have statewide or broad regional significance. Management of special feature sites places primary emphasis on protection and maintenance of the special feature for long-term public enjoyment. Permitted uses are almost exclusively passive in nature and program emphasis is on interpretation of the special feature. Development at special feature sites is focused on protection and maintenance of the site, public access, safety, and user convenience.

OTHER DESIGNATIONS

The unit is not within an Area of Critical State Concern as defined in section 380.05; Florida Statutes and is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the DEP Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the Department. The park is not adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes). St. Martins Marsh Aquatic Preserve is located about half a mile southwest of Roberts Island.

PARK ACCOMPLISHMENTS

- Developed new interpretive video for the visitor center.
- Completed redevelopment of ADA accessible pathways.
- Continued feral hog removal efforts.
- Continued maintenance treatment of Brazilian pepper.
- Managed invasive species within the park to maintenance condition.
- Restored seawall/riprap and small living shoreline area to prevent erosion and impacts from wave energy from Crystal River.
- Replaced one culvert on limerock road behind shop to restore hydrological continuity.

RESOURCE MANAGEMENT COMPONENT

Crystal River Archaeological State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Cultural Resources**
CRA-A1	17.098	N	Y
CRA-A2	7.3489	N	Y
CRA-A3	35.0571	N	Y
CRA-A4	1.9805	N	Y

TOPOGRAPHY

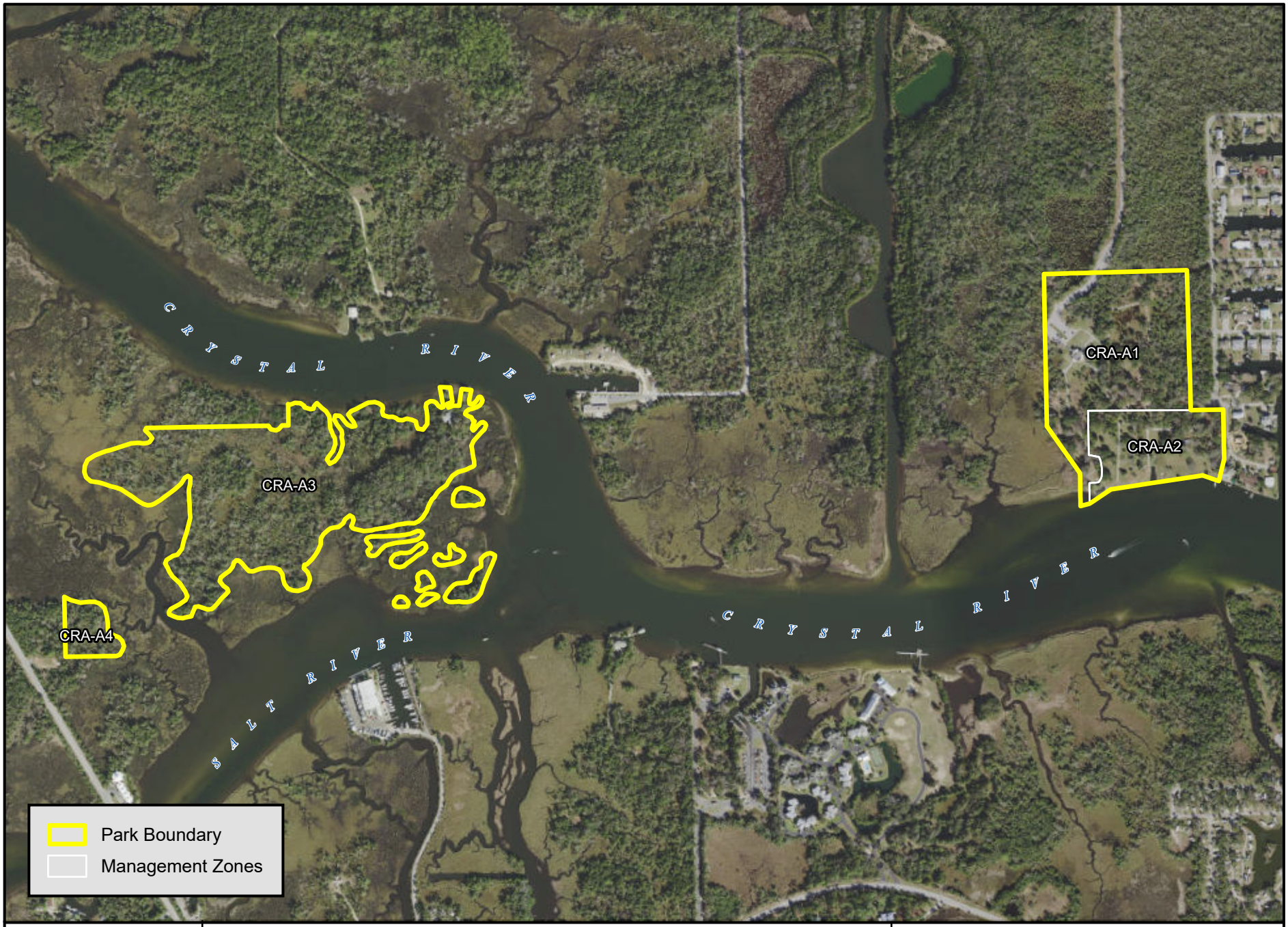
Crystal River Archaeological State Park is situated in the physiographic province known as the Gulf Coastal Lowlands, which includes most of the broad coastal plain between the Brooksville Ridge and the Gulf of Mexico. The lowlands generally are level, although ancient dunes of higher elevation occasionally provide some relief. In the lowlands, there are coastal swamps and marine terraces of Pleistocene age (10,000 to 1.6 million years ago). The marine terraces are gently sloping features with escarpments that face seaward. These features formed when sedimentary materials were alternately deposited and eroded as sea levels rose and fell.

Most of the park lies at five feet above sea level or less, with the lowest points occurring along the Crystal and Salt Rivers. The topography of the area was significantly altered by aboriginal Americans, who created temple mounds, middens, and burial mounds over the course of a millennium or more. The highest elevation in the park, 29 feet above sea level, occurs at the flattened top of Mound A, the southern temple mound.

SOILS

Eight soil types have been recorded at Crystal River Archaeological State Park (see Soils Map, Pilney et al. 1988). A complete description of these soils is found in Addendum 3. Most soils at the park are characterized as poorly drained to very poorly drained. The origins of two of the soils, namely Quartzipsamments and Matlacha, limestone substratum-Urban land complex, have been attributed to earthmoving operations at the site (Pilney et al.1988). Although that interpretation may be partially accurate, soils on higher portions of the site were certainly influenced, and perhaps created, by the activities of prehistoric humans. The exact soil profiles of structures created by prehistoric humans at the site are not well understood. It is known, however, that the soils in some of the structures have definitely been altered by heavy machinery. For example, a portion of temple mound A was used as fill on the former White property when it was developed into a trailer park in the 1960s. The Soil Survey of Citrus County (Pilney et al. 1988) describes the Hallandale-Rock Outcrop complex as the only soil type in the uplands of Roberts Island. On the island, however, are also areas of soil that owe their origins to the activities of prehistoric humans.

Soil erosion at the park occurs on the slopes of certain shell mounds and along shorelines exposed to wave action from boat wakes. Managing visitor access and maintaining grasses or herbaceous plants on the mound slopes should suffice to control erosion in these areas. The significant erosion-impacting Mound A will be addressed later in this plan. Boat wakes are affecting cultural deposits and undermining

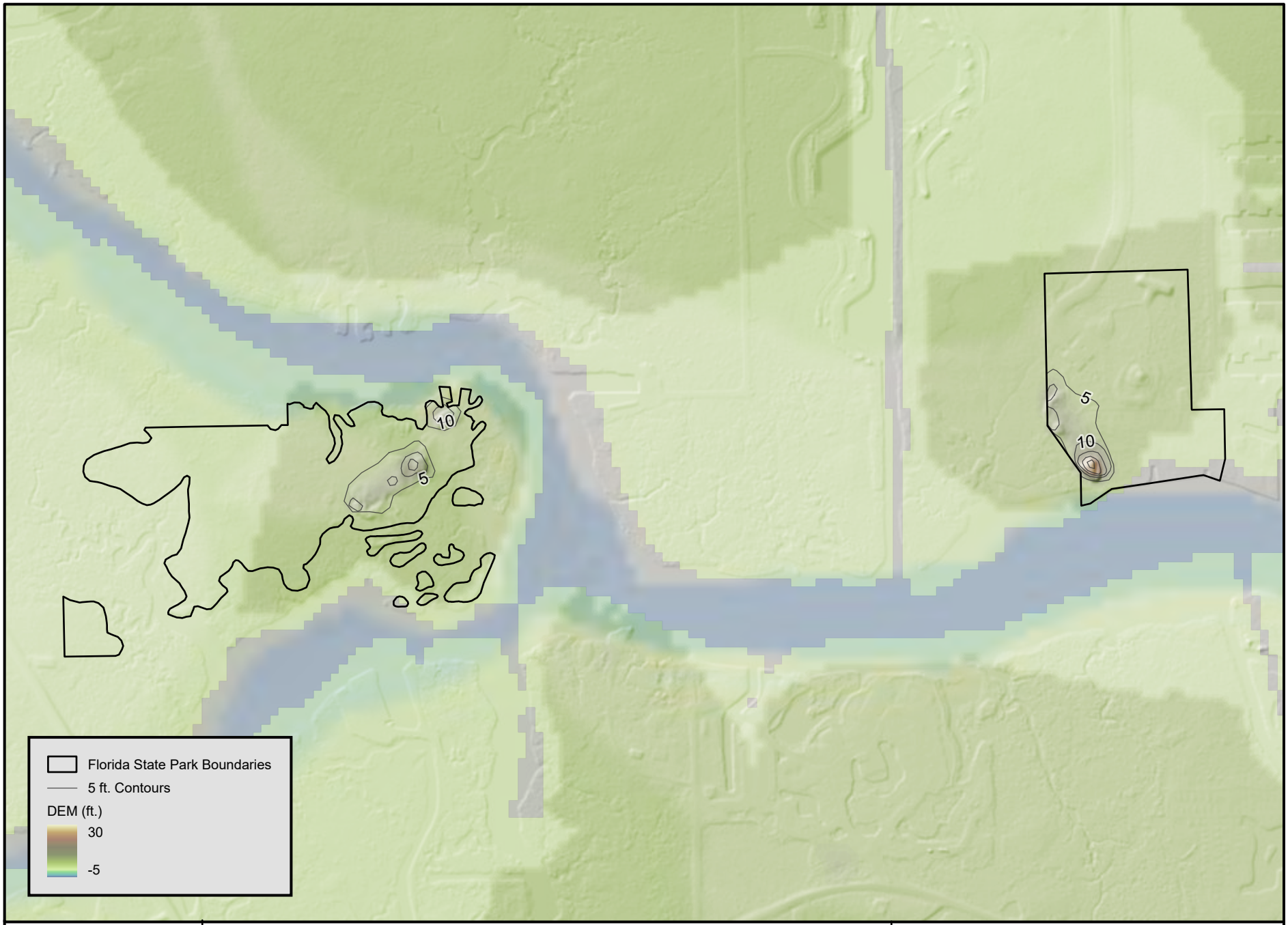


CRYSTAL RIVER ARCHAEOLOGICAL STATE PARK
Management Zones

N

0 500 1,000 Feet

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.



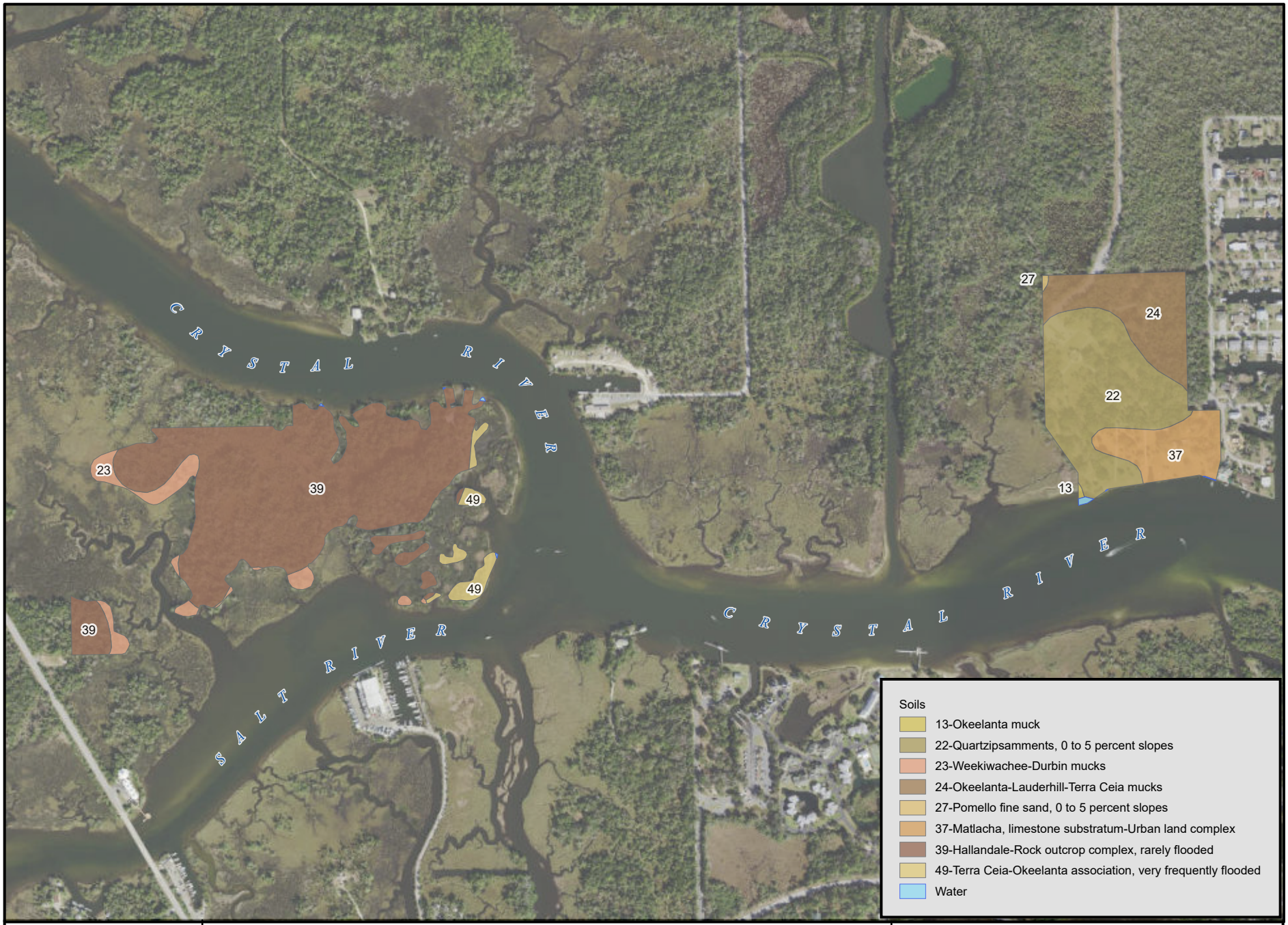
CRYSTAL RIVER ARCHAEOLOGICAL STATE PARK
Topography

N

0 500 Feet 1,000

Sources: ESRI; Florida Department of Environmental Protection

This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.



CRYSTAL RIVER ARCHAEOLOGICAL STATE PARK
Soils

N

0 500 Feet 1,000

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

seawalls on Roberts Island and on the former White property. Management activities will follow generally accepted best management practices to prevent soil erosion.

HYDROLOGY

Crystal River Archaeological State Park lies within the Crystal River-St. Petersburg Beach basin. This coastal watershed contains many short meandering streams, including the Crystal River and Salt River, both of which skirt the boundaries of the park. The Crystal River originates southeast of the park at a series of springs in Kings Bay. It then flows northwest for approximately 5 miles before emptying into the Gulf of Mexico. The Salt River diverges from the Crystal River at the eastern end of Roberts Island and connects to the Gulf of Mexico. Both rivers exhibit tidal characteristics. Water quality in the watershed is generally good (Hand et al. 1996). Nitrates in the springs at Kings Bays, however, have been increasing in recent years (Jones and Upchurch 1994).

For the most part, drainage at Crystal River Archaeological State Park ranges from moderate to poor, although soils having a cultural origin are generally well drained. During high water events, much of the site may flood, and saltwater may persist long enough to kill some types of vegetation. Twice a day, the Crystal River rises with the tide and low areas throughout the site have standing fresh water. In the main parcel of the park, several culverts located along the interpretive trail were installed to improve the drainage of rainwater from the site. The culverts connect low areas in the park to the Crystal River and prevent the park from holding water for extended periods. The marshes and hydric hammocks of the park should naturally serve to attenuate the drainage of surface water into the Crystal River and associated estuary, thus acting to slowly filter sediments and impurities. These culverts now expediate drainage into the river and estuary and conversely allow tidewater to enter. Conditions at the site now appear to be wetter than in recent history, perhaps the result of sea level rise. Marsh vegetation is now becoming established in low areas within the developed portion of the site.

Objective A: Assess the park's hydrological restoration needs.

- Action 1 - Conduct an assessment and evaluate hydrological impacts in the park including drainage ditches and areas where natural sheetflow has been interrupted.
- Action 2 - Continue to cooperate with other agencies and independent researchers in hydrological research and monitoring programs.
- Action 3 - Continue to monitor and track surface and groundwater quality issues within the region, especially concerning natural and cultural resource impacts associated with sea level rise.
- Action 4 - Continue to monitor land use or zoning changes in the region and offer comments as appropriate.

DRP will continue its tradition of close cooperation with state and federal agencies and independent researchers engaged in hydrological research and monitoring programs within the park and the adjacent Crystal River, and it will encourage and facilitate additional research in those areas. Agencies such as the Southwest Florida Water Management District (SWFMD), U.S. Geological Survey (USGS) and DEP will be relied upon to keep it apprised of any declines in surface water quality or any suspected contamination of groundwater in the region. District 2 staff will continue to monitor Environmental Resource Permit (ERP) and Water Use Permit (WUP) requests for the region in order to provide timely and constructive

comments that promote protection of the park's water resources. Additional cooperative efforts may include facilitating the review and approval of research permits and providing researchers with assistance in the field. Recommendations derived from the monitoring and research activities will be essential to the decision-making process during management planning.

NATURAL COMMUNITIES

The park contains three distinct natural communities (see Natural Communities Map) in addition to developed areas. Park-specific assessments of the existing natural communities are provided in the narrative below. A list of plants and animals occurring in the unit is contained in Addendum 4.

Shell mound

The shell mound natural community occurs in several disjunct locations in the park. Shell mound communities are anthropogenic in origin and occur on cultural soils in areas that have experienced human activity for thousands of years. The shell mounds at Crystal River and Roberts Island were probably created within pre-existing hydric hammock that had limestone outcrops or piled on top of prehistoric river marsh to facilitate access to the adjacent rivers.

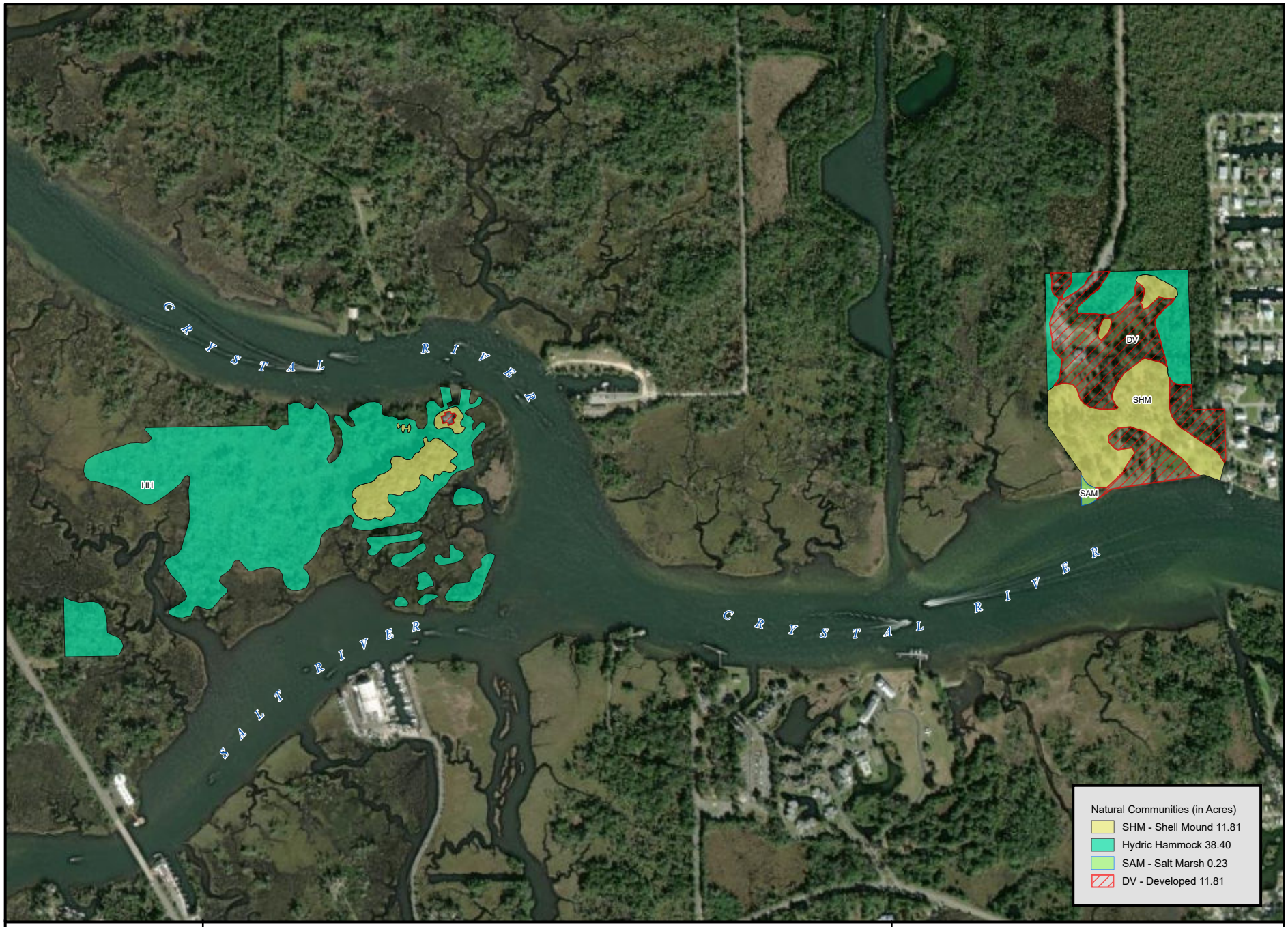
Most of the shell mound community in the main part of the park has been cleared of native vegetation. This clearing began during the earliest archaeological excavations and continues to the present day as part of regular maintenance of the mounds. The mounds in the main part of the park are kept largely clear of small to medium-sized woody vegetation in order to minimize possible adverse impacts from growing and expanding root systems. Most of the cleared mounds are now carpeted with turf grasses such as St. Augustine grass.

Before the development of the adjacent White property as a mobile home park, Temple Mound A and other shell mound structures in the park extended across the boundary onto the private property. Portions of Temple Mound A that existed on the White property when it was developed were used as fill material, but it is thought that portions of other shell mound structures may have been left undisturbed. While the White addition today has the appearance of a developed tract, soil profiles below the developed surface may still be relatively intact. Consequently, the former shell mounds on the White addition have been mapped as such on the Natural Communities Map, distinguishing them from the developed portions of the property.

The shell mound community on Roberts Island is entirely different from that on the main parcel, having a beginning deposition date of over 400 years later (Pluckhahn et al. 2015a) It is largely a closed canopy forest over the shell substrate and is in good condition. The two modern dwellings that are located on the shell mounds of Roberts Island are designated as developed areas.

Hydric hammock

Hydric hammock lines the boundaries of the main part of the park. The coastal hydric hammock variant occurs on Roberts Island. Both are in very good condition, only requiring regular treatment and removal of invasive plants. Hydric hammock is now expanding into developed areas of the park where mowing has been discontinued. Extensive tracts of hydric hammock also occur on properties adjacent to the park. Much of this land is currently under state ownership and is managed by DRP.



CRYSTAL RIVER ARCHAEOLOGICAL STATE PARK
Natural Communities - Existing Conditions

N

0 500 1,000 Feet

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

Salt Marsh

A small fringe of estuarine tidal marsh occurs in the southwest corner of the main parcel, along the Crystal River. A much larger area of tidal marsh is associated with the Roberts Island parcel but lies outside the boundary of the park in the adjacent aquatic preserve. Presently, this community is in very good condition though the marsh system could be affected if water quality within the Crystal River deteriorates over time.

In general, salt marsh is quite resilient and requires little active management. Law enforcement agencies should be made aware of the long-term detrimental effect of airboats that take short cuts and create trails across the salt marsh, and they should be encouraged to maintain enough presence to keep this damage from occurring on a regular basis.

Developed

Developed areas within the park include the parking lot, visitor center, interpretive trail and plaza area between the shell mounds. Most of the White addition is considered developed, as are the park shop and residence areas, including the residence located on Roberts Island.

Objective A: Restore and maintain the natural communities of the park.

- Action 1: - Protect and stabilize shell mound areas from looting and storm damage.
- Action 2: - Document changes to sections of hydric hammock as they become affected by sea level rise.
- Action 3: - Coordinate with appropriate stakeholders to consider design and planning for seawall removal and living shoreline restoration. Develop plans contingent on stakeholder consensus.

IMPERILED SPECIES

Manatees occur in both the Crystal and Salt rivers, and a large population over-winters in the Kings Bay region of the Crystal River. Park staff should exercise caution when operating watercraft in Crystal River and Salt River and should report violations of the no wake and speed limit zones to the Florida Fish and Wildlife Conservation Commission (FWC) Marine Patrol. Crystal River Archaeological State Park has occurrence records for the eastern indigo snake, bald eagle and several wading bird species, but the park's limited size means that only a small fraction of the habitat needed by local individuals of these species is available there. The gopher tortoise, also observed at the park, seems to occur only as a transient.

The two listed plant species recorded in the park to date occur mainly on Roberts Island. These do not appear to be threatened by either park development or human activity. More detailed plant surveys in the park, especially on Roberts Island, may discover additional listed species.

Table 1: Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
PLANTS						
Giant leather fern *Acrostichum danaeifolium*			LT		4	Tier 1
Godfrey's swampprivet *Forestiera godfreyi*			LE	G2,S2	10	Tier 1
BIRDS						
Little blue heron *Egretta caerulea*	ST			G5,S4	4,9	Tier 1
Tricolored heron *Egretta tricolor*	ST			G5,S4	4,9	Tier 1
Wood stork *Mycteria americana*	FT	LT		G4,S2	4	Tier 1
Roseate spoonbill *Platalea ajaja*	ST			G5,S2	4	Tier 1

Management Actions:

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

Monitoring Level:

Tier 1.

Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of Wildlife Observation Forms, or other district specific methods used to communicate observations.

Tier 2.

Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3.

Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.

Tier 4.

Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.
Tier 5.
Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

Objective A: Update baseline imperiled species occurrence list.

- Action 1 - Create a survey plan with the goal of having a comprehensive plant and animal occurrence list for Roberts Island.

INVASIVE SPECIES

As expected, this park shares some of the invasive plant challenges of the adjacent Crystal River Preserve State Park. Areas that are maintained among the mound complex have turfgrasses maintained via mowing and thus show little invasion by other species. The surrounding hammocks, both on the perimeter of the main park and the more coastal variant on Roberts Island, have had infestations of Brazilian pepper (*Schinus terebinthifolius*), Chinese tallow tree (*Sapium sebiferum*), and skunk vine (*Paederia foetida*). These areas are treated regularly by staff that are specialized in this work. The park sets goals within an annual plan each year.

The occurrence of feral hogs on park property is occasional. Due to the large movements of these animals from the adjacent Crystal River Preserve State Park, control efforts there suffice to keep damage under control at this park.

Species Name **Scientific Name - Common Name**	**FLEPPC Category**	**Distribution**	**Zone ID**
Paederia foetida - Skunk vine	I	Scattered Plants or Clumps	CRA-A1
Sapium sebiferum - Chinese tallow tree	I	Scattered Plants or Clumps	CRA-A1
Species Name **Scientific Name - Common Name**	**FLEPPC Category**	**Distribution**	**Zone ID**
Schinus terebinthifolius - Brazilian pepper	I	Scattered Plants or Clumps	CRA-A3

Objective A: Annually treat 20 acres of invasive plant species.

- Action 1 - Annually develop invasive plant management work plan.
- Action 2 - Implement annual work plan by treating 20 gross acres with up to 7 infested acres in park annually.
- Action 3 - Continue maintenance and follow-up treatments as needed.

CULTURAL RESOURCES

The Florida Department of State maintains the master inventory of cultural resources through the Florida Master Site File (FMSF). The FMSF lists seven recorded archaeological sites for Crystal River Archaeological State Park, including 8Ci00001 in the main part of the park and 8Ci00036, 8Ci00037,

8Ci00039, 8Ci00040, 8Ci00041 and 8Ci00576 on Roberts Island. Of these resources, the best known and most completely documented are the 10 large features (mounds, middens and shell embankments) that comprise the multi-acre site 8Ci00001. Professional and avocational archaeologists have studied the components of 8Ci00001, generally known as the Crystal River site or the Crystal River (Indian) Mounds, for more than 100 years. The significance of the site led to national recognition in September 1970 when it achieved listing on the National Register of Historic Places. In June 1990, it was also designated a National Historic Landmark for its role as an arena in which archaeological methods and theory were advanced and for its contributions to the understanding of burial mound cultures in the southernmost portion of the Hopewellian Interaction Sphere. The geographic limits of both listings at that time were the boundaries of the park, which did not change between 1970 and 1990.

Unsurveyed and unrecorded cultural resources exist on the White property, a former mobile home community that was added to the park in 1997. The White addition abuts the original park along its east and south sides. Other recorded and unrecorded resources in the park are located on Roberts Island, which was added to the park in 1996, or in waters adjacent to Roberts Island. Two stone stelae of uncertain origin are located in the original part of the park. A third stele is located on the White addition, and there may even be another one there.

The White addition once contained important elements of the Crystal River Mounds, including the ramp and about one-half of a temple mound (Mound A), and a shell embankment or ridge. This shell ridge was a continuation of the midden deposit that underlies the present park trail to Mound A, south and east of midden mounds J and K.

When the White property was developed, elevated mound elements on the site were redistributed to provide an area suitable for the placement of mobile homes, creating a flat aspect that contrasted sharply with the mound complex still in existence on park property to the west.

Of the six recorded sites on Roberts Island, Ripley and Adelaide Bullen first described five of them (8Ci00036, -37, -39, -40, -41, and -576) in the 1950s (Bullen 1953). Gary Ellis recorded site 8Ci00576 in 1993. The Bullens described the Roberts Island resources as part of a series of sites encountered along the Crystal River. 8Ci00036, formerly known as Crystal River 2 or CR-2, is a 75-foot diameter shell midden that has not yet been examined systematically. 8Ci00037, formerly CR-3, is a shell midden, 150 feet in diameter, that contains aboriginal pottery from the Weeden Island and Safety Harbor periods (400-1600 A.D.). 8Ci00039, formerly CR-5, is a narrow shell ridge that contains Deptford, Weeden Island and Safety Harbor pottery, including some of the following types: Deptford Check Stamped, Wakulla Check Stamped, Little Manatee Zoned Stamped, Carrabelle Punctated and St. Johns Check Stamped. This resource is outside the park boundaries and therefore addressed within the St. Martin's Marsh Aquatic Preserve Management Plan. 8Ci00040, formerly CR-6, is a temple mound that the Bullens described as well preserved with steep, straight sides and a top measuring 40 feet by 60 feet. The Bullens did not make any diagnostic collections there. 8Ci00041, formerly CR-7, is a large shell mound area containing several mounds that protrude above the general mound elevation. The Bullens' limited collecting at this site produced several artifacts from the Weeden Island period. Ellis' description of site 8Ci00576 (Ellis 1993) was based on an inspection of exposed shoreline along the north side of Roberts Island. Ellis did not collect any materials but conducted an on-site evaluation that yielded ceramic and lithic artifacts from the Deptford and Weeden Island periods.

Brent Weisman of the Florida Bureau of Archaeological Research revisited these resources in a 1994 CARL survey, producing a report for the FMSF in July 1995 (Weisman 1995). Weisman proposed that the

Roberts Island site complex might have had dual functions, both as a ceremonial center and as a village. Weisman was enthusiastic about the preservation quality of the sites but indicated the need for a comprehensive survey to increase our understanding of them.

A functioning predictive model for Crystal River Archaeological State Park was completed in 2012. As part of the modeling project, a team from the University of South Florida's Alliance for Integrated Spatial Technologies used LIDAR remote sensing imagery, historic aerial photographs, historic survey maps and existing archaeological research maps to develop a map of the park showing areas of high, medium, and low sensitivity for archaeological resources (Collins 2012). This map will be consulted whenever any ground disturbing activities or archaeological studies are planned for the park. The modeling team calculated that approximately 31.31 acres (50.85%) of the park should be considered as areas of high sensitivity for archaeological resources, 0.97 acres (1.57%) as areas of medium sensitivity and 29.29 acres (47.58%) as areas of low sensitivity. Although no actual ground-truthing took place, analysis of various types of imagery enabled the team to correct the spatial boundaries for four sites previously recorded in the park (i.e., 8CI0001, 8CI0036, 8CI0040 and 8CI0041).

The remaining cultural resources in the park consist of a collection of objects located in the visitor center (museum). The majority of the objects are artifacts or reproductions of artifacts recovered at Crystal River or nearby during the course of archaeological work. Most of these are objects that have been on loan from the Florida Museum of Natural History (formerly the Florida State Museum) since the mid-1960s, but some are the property of DRP. Most of the objects are housed within exhibit cases and are used to interpret prehistoric and historic cultures of the area to visitors. A few objects are reserved for use in hands-on interpretive programs.

The visitor center was constructed in 1965 and will be evaluated for status as an historic resource during the period of the approved plan. The building will be managed as an historic resource for the purposes of this plan and will require a review by the Florida Division of Historical Resources. The building is architecturally significant as an example of mid-century modern architecture, designed by Dan P. Branch and David Reaves of Gainesville in cooperation with DRP architect Warren Dixon.

The resources of the original park, 8CI0001, are generally in fair condition. Nevertheless, a few management problems exist. The condition of Mound A is poor. The most serious degradation of Mound A occurred when a large portion of it was used as fill on the White property prior to its acquisition by the state. Subsequently, visitors' ascents of the mound from the White addition may have caused accelerated deterioration of exposed slopes. More recently, however, fencing designed to redirect visitors to stairs that climb the mound may have mitigated the problem. Unfortunately, the southern slope of Mound A, the side that heavy machinery had cut into, continues to deteriorate due to uneven weathering of exposed layers in the mound (G. Ellis personal communication). Past measures to protect this large temple mound have included the construction of stairs to facilitate visitors' ascents of the mound, provision of a wooden platform at the summit and management of vegetation on the slopes. These measures, however, may be insufficient to halt further long-term deterioration of the mound.

The condition of the ramp and top areas of Mound H, a lozenge-shaped temple mound in the northeast portion of the park, has been rated as poor in the past. Steady foot traffic has compacted surface materials in some areas of the mound and loosened them in others. Vegetative cover on the sloped sides of Mound H is sparse even today, reflecting the high shell content of the soil and the steep angle of the slopes. Thinness of vegetative cover had once been an issue in areas where a few informal pathways had appeared. More recently, however, vegetation has increased, and the condition of Mound H has

been upgraded to fair. Mound H is a delicate resource, and a significant decrease in vegetative cover or increase in active erosion on the mound could lead to a reassessment of its condition.

Mounds C, D, E and F are currently considered to be in fair condition. Interpretive paths or trails through the mound complex are paved with asphalt. This material has worn well and has protected the resources traversed by the trails. Several culverts along the trails apparently function to facilitate drainage. In recent years, surface water has begun to pool on site. There may be natural reasons for on-site pooling or trapping of water, including a slow rise in the water table or a rise in sea level. On the other hand, the drainage culverts themselves may be contributing to the problem in that they may be too small, their placement may not be optimal, or they may be clogged with debris. Although the culverts and trails are modern site intrusions, their condition has a direct bearing on the condition of mounds C-F. If the pooling of water continues, it will eventually affect those mounds.

The two stelae in the original part of the park are in poor condition. Stele 1, the easternmost of the two stelae, has been "protected" by a roofed shelter. Despite the shelter, or possibly because of the shelter, the condition of the stele continues to decline.

The unknown cultural resources of the White addition are in fair condition. They may be threatened by the very cleanup that was intended to protect them. Until completion of a comprehensive survey, any resources that may have survived the placement of the mobile home park atop them are considered highly endangered. Recent investigations associated with the repair of a collapsed seawall at the park's boat slip have revealed that intact cultural deposits exist at the shoreline of the White addition and that these deposits extend into the river (Ellis 1999). The deposits lie below fill materials that were extracted from other cultural deposits, likely Mound A. These intact strata are only in fair condition due to their endangerment from boat wakes and the structural instability of some segments of the seawall. In 2003, Ellis and Gulf Archaeology Research Institute colleagues performed an emergency processing of the spoil pile produced during the dredging of the boat slip. Their recovery operations revealed the presence of intact but horizontally displaced midden soils containing cultural material and associated flora and fauna (Ellis, Dean and Martin 2003).

The cultural resources of Roberts Island are currently rated as good. They appear to be only slightly disturbed,. Achieving a better understanding of the Roberts Island resources has lead to a modification of our interpretation of the original Crystal River site and its relationship to the Roberts Island sites, Crystal River was occupied before Roberts Island, and in 4 different phases of occupation/ abandonment ranging from roughly 480 to 1070 AD (Citation). Site 8Ci576 is in poor condition. It is eroding into the Crystal River and vessels passing at even slow speed cause additional washing. The site is located along a beach, which makes it accessible to visitors who come ashore to picnic or hike. The mid-20th century dwelling that once sat here was removed in 2006 for safety reasons, as its condition had deteriorated to the point of being unsalvageable. There may be no practical solution to the erosive washing or to souvenir hunting at the site, but the removal of the structure and installation of signage has decreased the incidence of visitation. Planning decisions that determine the extent of public access, however, should consider the potential degree of endangerment to Roberts Island resources.

Collection objects in the visitor center are in good condition, with the exception of a few reproduction metal artifacts with copper components. These consistently deteriorate and must be replaced. The exhibits in which the artifacts are displayed are physically in fair condition.

Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture/Period**	**Description**	**Significance**	**Condition**	**Treatment**
8CI00001 Crystal River Indian Mounds	Prehistoric/ Deptford	Archaeological Site	NRL NHL	F	P
8CI00036 Crystal River 2	Prehistoric	Archaeological Site	NE	G	P
8CI00037 Crystal River 3	Prehistoric/ Safety Harbor	Archaeological Site	NE	G	P
8CI00040 Crystal River 6 Temple Mound	Prehistoric	Archaeological Site	NE	F	P
8CI00041 Crystal River 7 Christian's Shell Mounds	Prehistoric	Archaeological Site	NE	G	P
8CI00576 Opposite the Rocks	Prehistoric	Archaeological Site	NE	F	P
8CI1588 Visitor Center	1965	Historic Structure	NE	G	P

Objective A: Assess/evaluate seven of seven recorded cultural resources in the park.

- Action 1 - Complete two assessments/evaluations of archaeological sites every two years.
- Action 2 - Complete one Historic Structures Report (HSR) for historic buildings and cultural landscape. Prioritize stabilization, restoration and rehabilitation projects.

Much of the resource is stable at the main mound complex near the museum, but a long-term plan for stabilization and protection from ongoing sea level rise and stochastic events such as hurricane storm surge must be drafted.

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

- Action 1 - Ensure all known sites are recorded or updated in the Florida Master Site File.
- Action 2 - Submit the Museum at Crystal River for review as a historic building, gathering all available information for the application.
- Action 3 - Complete a Phase 1 survey for all Roberts Island resources.

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Objective C: Prevent further degradation to six of seven cultural resources.

- Action 1 - Design and implement regular monitoring programs for seven cultural sites.
- Action 2 – Create and implement a cyclical maintenance program for each cultural resource.

Resources at the three sites on the outskirts of Roberts Island must be monitored more frequently and stabilized if possible.

Much of the resource is stable at the main mound complex near the museum, but a long-term plan for stabilization and protection from ongoing sea level rise and stochastic events such as hurricane storm surge must be drafted. In addition, the current sea wall near 8C00001 is failing and must be replaced with something more long-term viable that protects the resources from wave action while also providing a more natural shoreline. Discussions with FWC and the SWFWMD about design and funding of a living shoreline project at this site are ongoing.

LAND USE COMPONENT

VISITATION

Crystal River Archaeological State Park is acclaimed for its rich cultural and archaeological significance. The 61-acre park consists of burial mounds, temple/platform mounds, a plaza area and many middens. The six-mound complex is one of Florida's longest continuously active sites, revealing some 2,000 years of human settlement. Archaeologists estimate that as many as 7,500 Native Americans may have visited the site annually. On June 21, 1990, the park received a National Historic Landmark designation.

Educational and recreational opportunities at the park include cultural resource interpretation, fishing, picnicking, hiking, birding and nature study. Anglers can expect to reel in both salt and freshwater species from the Crystal River, including largemouth bass and redfish. The Crystal River and surrounding area is a designated stop on the west section of the Great Florida Birding Trail, which is sure to produce ample viewing opportunities for a variety of wading birds and other estuarine species.

The park provides a wedding venue as well, with the picturesque Crystal River as the backdrop. Boat tours of the Crystal River, which offer a perspective of the Crystal River mound complex from the water, are available through the nearby Crystal River Preserve State Park boat basin.

Trends

Compared to other DRP units, Crystal River Archaeological State Park experiences relatively low attendance, with peak visitation in the cooler months. The park's riverfront sees more anglers in the fall, corresponding with the cooler weather and fishing conditions. Additionally, visitors are more likely to catch a glimpse of the state's iconic Florida Manatee when large aggregations make their way into the Crystal River to seek refuge from the cool winter waters of the Gulf of Mexico.

EXISTING FACILITIES AND INFRASTRUCTURE

The facilities at Crystal River Archaeological State Park are found in two separate parcels, the mainland parcel and Roberts Island. Upon entering the mainland parcel, there is a 28-space paved parking area next to the visitor center. The park's visitor center provides a comprehensive overview of the site's history, as well as insight into the culture of the people who constructed and utilized the ceremonial complex. An interpretive trail also meanders through the site, including a stairway to the top of Temple Mound A, providing phenomenal views of the Crystal River and the surrounding area. Two benches are provided on the platform on top of Mound A. The area adjacent to Mound A offers amphitheater-style seating which is commonly used as a wedding venue. Additionally, there are two shop buildings, a small boat basin, one staff residence and one seawall at the mainland parcel.

On the Roberts Island parcel, there is a staff residence, boat basin and dock, and the remains of an old cabin that was once used as a fish camp.

Facilities Inventory

Mainland Parcel	
Visitor Center/Museum (Restrooms attached)	1
Paved Parking Area (28-spaces)	1
Paved Interpretive Trail (0.75 mi.)	1
Observation Platform and Wooden Steps (Mound A)	1

Amphitheater-style seating area	1
Shop building	1
Flammable Storage building	1
Staff Residence	1
Pole Barn	1
Seawall	1
Boat Basin	1
Roberts Island	
Staff Residence	1
Old Fish-Camp Structure/Cabin	1
Boat Basin/Dock	1

CONCEPTUAL LAND USE PLAN

Detailed Conceptual Land Use Plan Objectives

Four use areas at Crystal River Archaeological State Park are listed below for improvements to be implemented within the 10-year planning cycle. Specific plan details are available in the next section.

State Park Street/Museum Point

Objective: Create a unified entrance station for Crystal River Preserve and Crystal River Archeological State Parks.

Action:

- *Construct an entrance station, pending land acquisition.*

There is a great need for a unified entrance station that serves both Crystal River Preserve State Park and Crystal River Archaeological State Park. Entrance stations provide a critical and necessary first point of contact between the visitor and park staff, as well as fee collection. The entrance station would be constructed on State Park Street just before it reaches Museum Point to provide access to both parks. This would be contingent upon annexing portions of State Park Street and Museum Point from Citrus County, as well as the acquisition of parcels north of State Park Street identified in the Optimum Boundary Map.

Seawall

Objective: Promote living shoreline conditions to increase protection of the mounds.

Action:

- *Coordinate with the Office of Resilience and Coastal Protection and FWC.*
- *Develop a plan to restore the area to a living shoreline along with a small fishing platform.*

There is currently a seawall along the stretch of the Crystal River in front of Mound A. Ideally, the failing seawall should be removed and naturalized to a living shoreline. A living shoreline would restore a significant stretch of riparian habitat and provide more sustainable protection from boat wakes and resiliency to storm surge. The area does see a reasonable volume of anglers, so the addition of a small fishing wharf would provide for the continuation of this established recreational use.

Mound A

Objective: Stabilize observation and platform structure.

Action:

- *Replace the steps and platform on the large mound utilizing resilient materials.*

The platform and wooden steps leading up to Mound A are showing signs of deterioration and need to be replaced. A more resilient material would be a better option, such as "Trex" composite decking. This material would be more durable, especially in the coastal environment. If it is determined that the posts and stringers are no longer structurally sound, more resource-sensitive alternatives should include the abandonment of the mound stairway. Such an alternative should provide for an observation tower of similar height to the current platform to preserve the viewing experience offered from the top of the mound.

Visitors Center/Museum

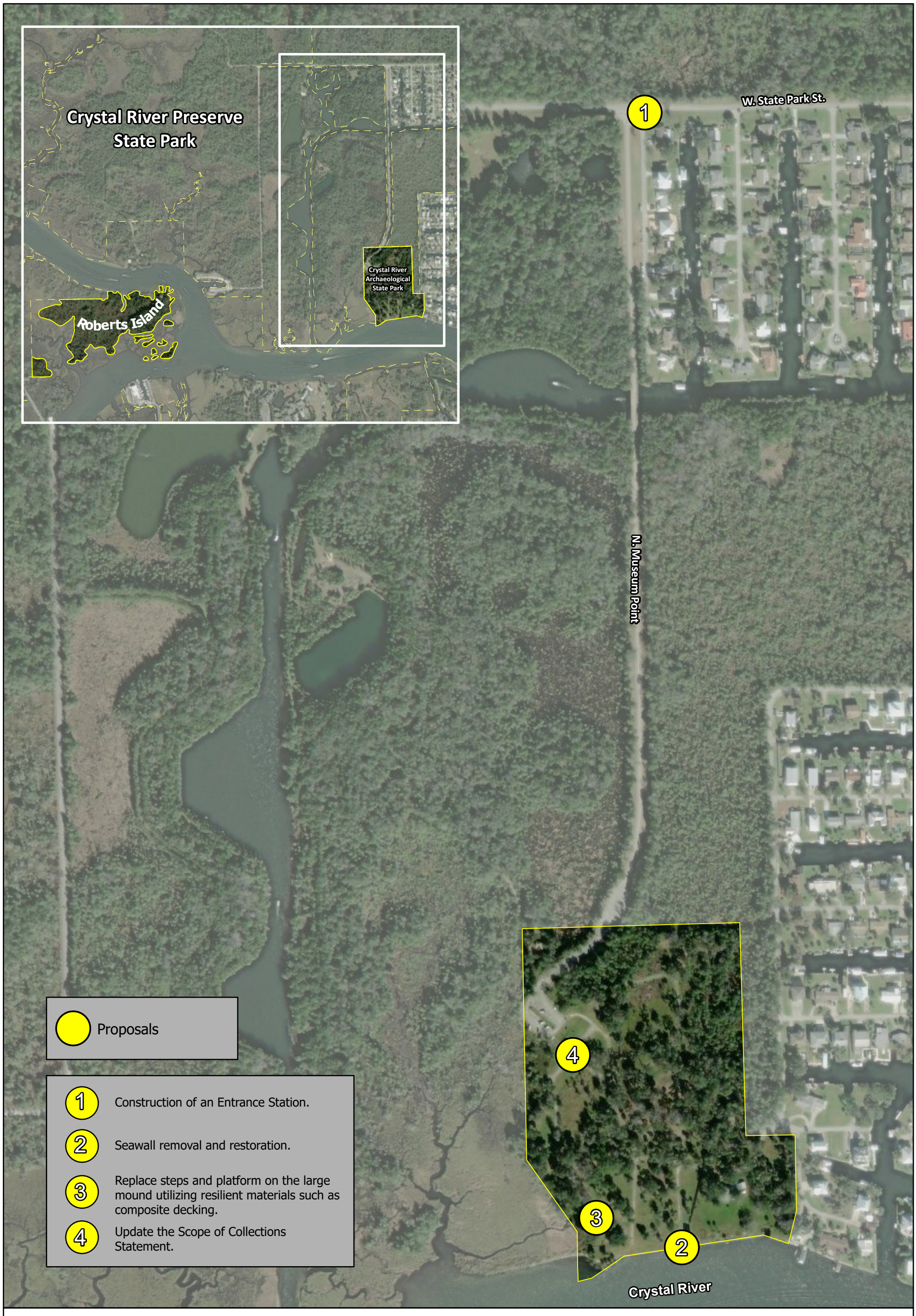
Objective: Ensure the Scope of Collections statement is reviewed and updated.

Action:

Plan and implement upgrades to the interpretive exhibits in the visitor center to modern, professional standards.

Collections and exhibits should be reviewed and updated as necessary. Periodic reviews serve to reinforce and enhance the knowledge of interpretive materials. This process should also include revisiting the Scope of Collections Statement for the park. This will help determine if items are contextually appropriate for display at the park.

Comprehensive interpreting planning is recommended for the visitor center to determine the most effective way to connect visitors to the meaningful collection and significance of the park. The type, quantity and design of interpretive elements to deepen understanding will be specified during this additional planning process.



Crystal River Archaeological State Park

Conceptual Land Use Plan

0 500 1,000 Feet

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OPTIMUM BOUNDARY

The park's optimum boundary includes submerged lands surrounding Roberts Island. These lands contain cultural resources that are a continuation of the prehistoric culture represented at the park. They are also ecologically significant as estuarine wildlife habitat and natural buffering between land and water environments.

Optimum Boundary (ARC-Approved)
Florida Forever BOT Projects

Existing Park Boundary
Other Existing Conservation Lands

Crystal River Archaeological State Park

Optimum Boundary Map

0 1,000 2,000 Feet

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