

MADIRA BICKEL MOUND
STATE ARCHAEOLOGICAL SITE
UNIT MANAGEMENT PLAN

APPROVED

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Recreation and Parks

AUGUST 9, 2002



Department of Environmental Protection

Jeb Bush
Governor

Marjorie Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

August 9, 2002

Ms. BryAnne White
Office of Park Planning
Division of Recreation & Parks
3900 Commonwealth Blvd., M.S. 525
Tallahassee, Florida 32399-3000

Re: Madira Bickel Mound State Archaeological Site

Lease # 3633

Dear Ms. White:

On August 9, 2002, the Acquisition and Restoration Council recommended approval of the Land Management Plan for Madira Bickel Mound State Archaeological Site. Therefore, the Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund approves this plan. Pursuant to Section 253.034 and 259.032, Florida Statutes, and Chapter 18-2, Florida Administrative Code the plan's five-year update will be due in August 2007.

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.

Sincerely,

Delmas T. Barber

Delmas T. Barber, OMC Manager
Office of Environmental Services
Division of State Lands

"More Protection, Less Process"

Printed on recycled paper.

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INTRODUCTION

Madira Bickel Mound State Archaeological Site is located in Manatee County about 1.5 miles from U.S. Highway 41 (see Vicinity Map). Access to the park is from U.S. Highway 41. Turn west on Bayshore Drive and drive approximately 1.5 miles. The Vicinity Map also reflects significant land and water resources that exist near the park.

The State of Florida acquired Madira Bickel Mound State Archaeological Site to develop, operate, and maintain the property for outdoor recreational, park, conservation, historic and related purposes. It was the first State Archaeological Site designated. The park is 10 acres in size, consisting of 2.86 upland acres and 7.14 wetland—submerged acres.

According to the lease agreement, the park will manage for the specific purposes of resource-based public outdoor recreational, park, conservation, historic and related purposes. Madira Bickel State Archaeological Site is designated single-use to provide resource-based public outdoor recreation and other related uses. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

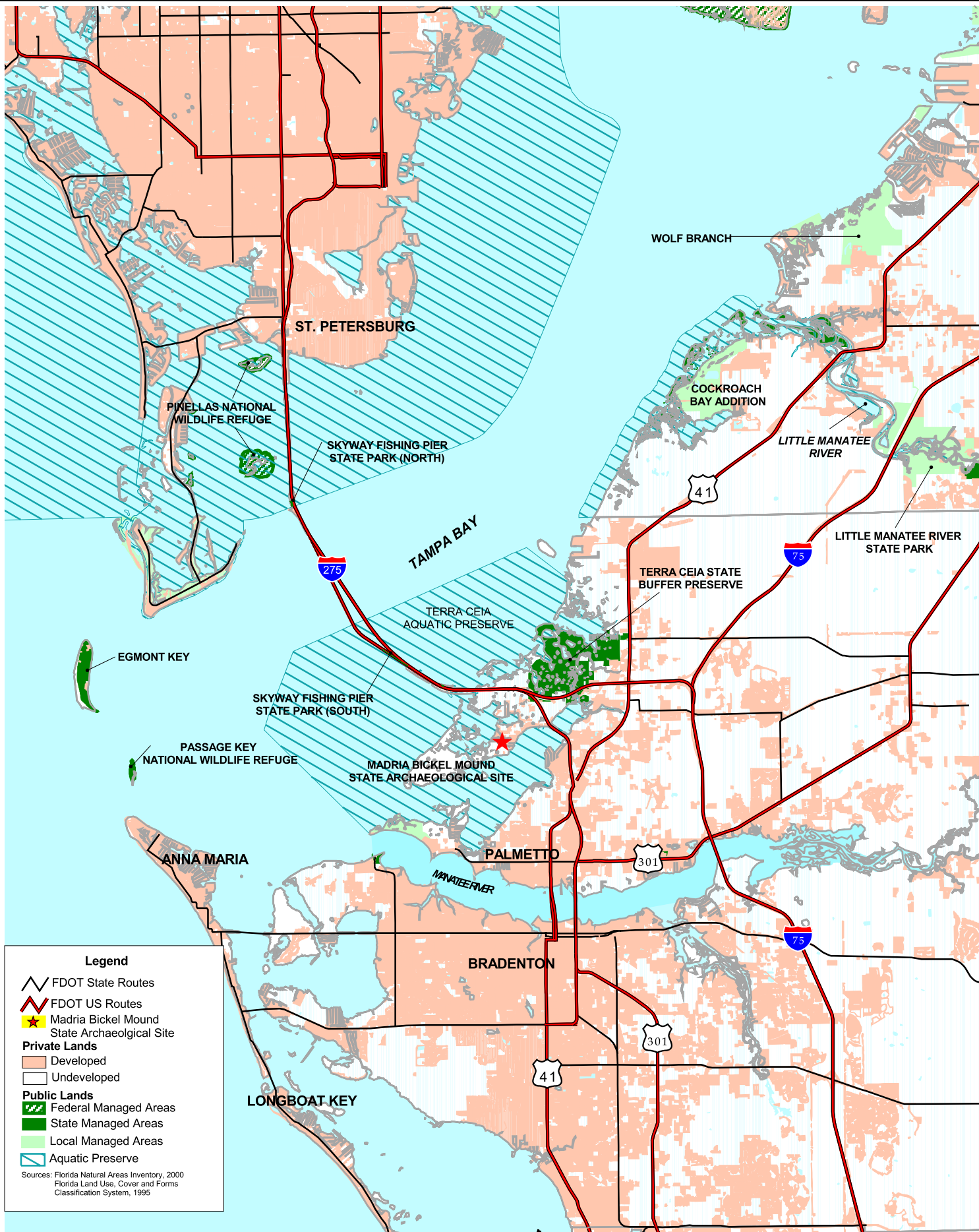
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Madira Bickel Mound State Archaeological Site as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will supercede and replace the current approved plan of June 22, 1998. All development and resource alteration encompassed 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.

The plan consists of two interrelated components. Each component corresponds to a particular aspect of the administration of the park. The resource management component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management problems and needs are identified, and specific management objectives are established for each resource type. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, and restoration of natural conditions.

The land use component is the recreational resource allocation plan for the unit. Based on considerations such as access, population, and adjacent land uses, an optimum allocation of the physical space of the park is made, locating use areas and proposing types of facilities and volume of use to be provided.

In the development of this plan, the potential of the park to accommodate secondary management purposes (“multiple uses”) was analyzed. These secondary purposes were considered within the context of the Division’s statutory responsibilities and an analysis of 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.



Legend

- FDOT State Routes
- FDOT US Routes
- Madira Bickel Mound State Archaeological Site
- Private Lands**
- Developed
- Undeveloped
- Public Lands**
- Federal Managed Areas
- State Managed Areas
- Local Managed Areas
- Aquatic Preserve

Sources: Florida Natural Areas Inventory, 2000
 Florida Land Use, Cover and Forms Classification System, 1995

**VICINITY MAP
 MADIRA BICKEL MOUND
 STATE ARCHAEOLOGICAL SITE**



PREPARED BY:
 FL DEPARTMENT OF ENVIRONMENTAL PROTECTION
 DIVISION OF RECREATION AND PARKS
 OFFICE OF PARK PLANNING

For Madira Bickel Mound State Archaeological Site, 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 and should be discouraged.

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

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

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

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

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

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the DRP Operations Procedures Manual (OPM) and cover such areas as personnel management, uniforms and personal appearance, training, signs, communications,

fiscal procedures, interpretation, concessions, camping regulations, resource management, law enforcement, protection, safety and maintenance. All Parks have a copy of OPM.

In the management of Madira Bickel Mound State Archaeological Site primary emphasis is placed on protection and maintenance of the archaeological site for long-term public enjoyment. Accordingly, in the case of conflicts, resource considerations prevail over user considerations. In addition, it is important to provide suitable buffer areas and areas with which an appropriate outdoor setting is maintained.

Uses permitted for the state archaeological site itself are of a passive nature. Other resource-based uses of the site are permitted provided those uses are compatible with the natural and cultural resources of the site. Program emphasis is directed toward the interpretation of the archaeological site for public enjoyment. Development of the state archaeological site is geared toward protection and maintenance, interpretation, access, safety and convenience of the user.

Park Goals and Objectives

The following park goals and objectives express the DRP's long-term intent in managing the state park. At the beginning of the process to update this management plan, the DRP reviewed the goals and objectives of the previous plan to determine if they remain meaningful and practical and should be included in the updated plan. This process ensures that the goals and objectives for the park remain relevant over time.

Estimates are developed for the funding and staff resources needed to implement the management plan based on these goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the DRP's legislative budget process. The DRP prepares an annual legislative budget request based on the priorities established for the entire state park system. The DRP also aggressively pursues a wide range of other funds and staffing resources, such as grants, volunteers, and partnerships with agencies, local governments and the private sector, for supplementing normal legislative appropriations to address unmet needs. The ability of the DRP to implement the specific goals, objectives and priority actions identified in this plan will be determined by the availability of funding resources for these purposes.

Natural Resources and Cultural Resources

1. To manage the site so that there is no further disturbance to the substrate.
 - A. To prevent unauthorized digging in the mounds.
 - B. To prevent foot traffic on the slope of the large mound except where steps are provided for that purpose.
 - C. Conduct ground disturbing activities in accordance with the Department of State, Division of Historical Resources (DHR) standards and policies.
 - D. To regularly assess the condition of cultural resources.
 - E. To patrol the site to prevent vandalism.
 - F. To assess relocation of the parking lot.
2. To keep the site free of exotic plants
 - A. To prevent the reestablishment of Brazilian pepper.
 - B. To eliminate Guinea grass, Cape leadwort, and climbing tibisee.

Recreational Goals

3. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.
 - A. Maintain existing facilities for pedestrian access.

4. Seek funding to expand recreational and interpretive opportunities through the improvement of programs and the development of new use areas and facilities, as outlined in this management plan.
 - A. Provide interpretive materials and upgrade existing interpretive signage.
 - B. Replace the existing steps and modify the existing enclosed area at the top of the mound to improve visitor safety, mound aesthetics and reduce erosion.
 - C. Expand the existing trail to provide a universally accessible trail that encircles the mound.

Park Administration/Operations

5. Provide efficient and effective management of park resources and facilities while maintaining a high level of visitor service.
 - A. Pursue funding for the upgrade of existing facilities to improve universal accessibility.
 - B. Assure that appropriate training is provided to all staff in visitor services, park information, and emergency procedures.
 - C. Maintain high maintenance standards and conduct routine safety inspections to provide clean and safe facilities and use areas.
 - D. Periodically evaluate park interpretive programs and tours to ensure up-to-date quality programming.
 - E. Recruit and maintain volunteer support to assist park staff with the maintenance of park facilities, protection of park resources and implementation of park programs.
 - F. Pursue adequate funding to meet park operations needs, such as corrective maintenance, visitor protection, resource management and visitor services. These efforts should include partnerships and other alternatives to the Legislative appropriation process.
 - G. Assure compliance with Division, state and federal safety guidelines and training requirements.

Management Coordination

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

The Department of Agriculture and Consumer Services, Division of Forestry (DOF), assists park staff in the development of wildfire emergency plans and furnishes permits required for prescribed burning. 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 park boundaries. In addition, the FFWCC aids the DRP with wildlife management programs, including the development and management of Watchable Wildlife programs. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. The Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Coastal Systems aids staff in planning and construction activities seaward of the Coastal Construction Line. In addition, the Bureau of Beaches and Coastal Systems aids the staff in the development of erosion control projects. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

Public Participation

A public workshop was conducted on October 23, 2001. The purpose of this meeting will be to present this proposed management plan to the public.

A DEP Advisory Group meeting was held on October 24, 2001. The purpose of this meeting

is to provide the Advisory Group members the opportunity to review and discuss this proposed management plan.

Other Designations

Madira Bickel Mound State Archaeological Site is not within an Area Of Critical State Concern as defined in section 380.05, Florida Statutes. Currently it is not under study for such designation.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in the adjacent Terra Ceia Aquatic Preserve are classified as Class II waters by DEP. This unit is adjacent to Cockroach Bay Aquatic Preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

Several other significant land and water resources exist near the archaeological site. These include Cockroach Bay Aquatic Preserve, Judah P. Benjamin Confederate Memorial at Gamble Plantation Historic State Park, Terra Ceia State Buffer Preserve, Florida Coastal Islands Sanctuaries, DeSoto National Monument and Lake Manatee State Park.

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Division of Recreation and Parks 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 stated management measures in this plan are consistent with the Department's overall mission in ecosystem management. Cited references are contained in Addendum 2.

The Division's philosophy of resource management is natural systems management. Primary emphasis is on restoring and maintaining, to the degree practicable, the natural processes that shape the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management may be implemented when the recovery or persistence of a species is problematic provided it is compatible with natural systems management.

The management goal of cultural resources is to preserve sites and objects that represent all of Florida's cultural periods as well as significant historic events or persons. This goal may entail 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 is often affected by conditions and occurrences beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program (to assess resource conditions, evaluate management activities, and refine management actions), review of local comprehensive plans, and review of permit applications for park/ecosystem impacts.

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

This site is near the coast where most of the land is less than five feet above sea level. Sharp relief is provided by the ceremonial mound which rises to a height of 20 feet.

Geology

The upper limestone formation is the Charlton, a division of the Choctawhatchee stage, part of a Miocene series of limestone. The park is near the western edge of a geomorphological feature known as the Gulf Coastal Lowlands - - an area of muted topography which extends inland several miles from the coast.

Soils

Two soil types were identified at the scale of mapping used during the most recent survey in 1983 (see Soils Map). Chobee loamy fine sand is characteristic of seasonally flooded fresh water wetlands. The Wulfert-Kesson association is a soil of the mangrove zone. A complete description of these types are found in Addendum 3. There are no soil conservation issues at this park. There are no erosion issues aside from occasional foot traffic on the slope of the mound—a man-made structure.

Minerals

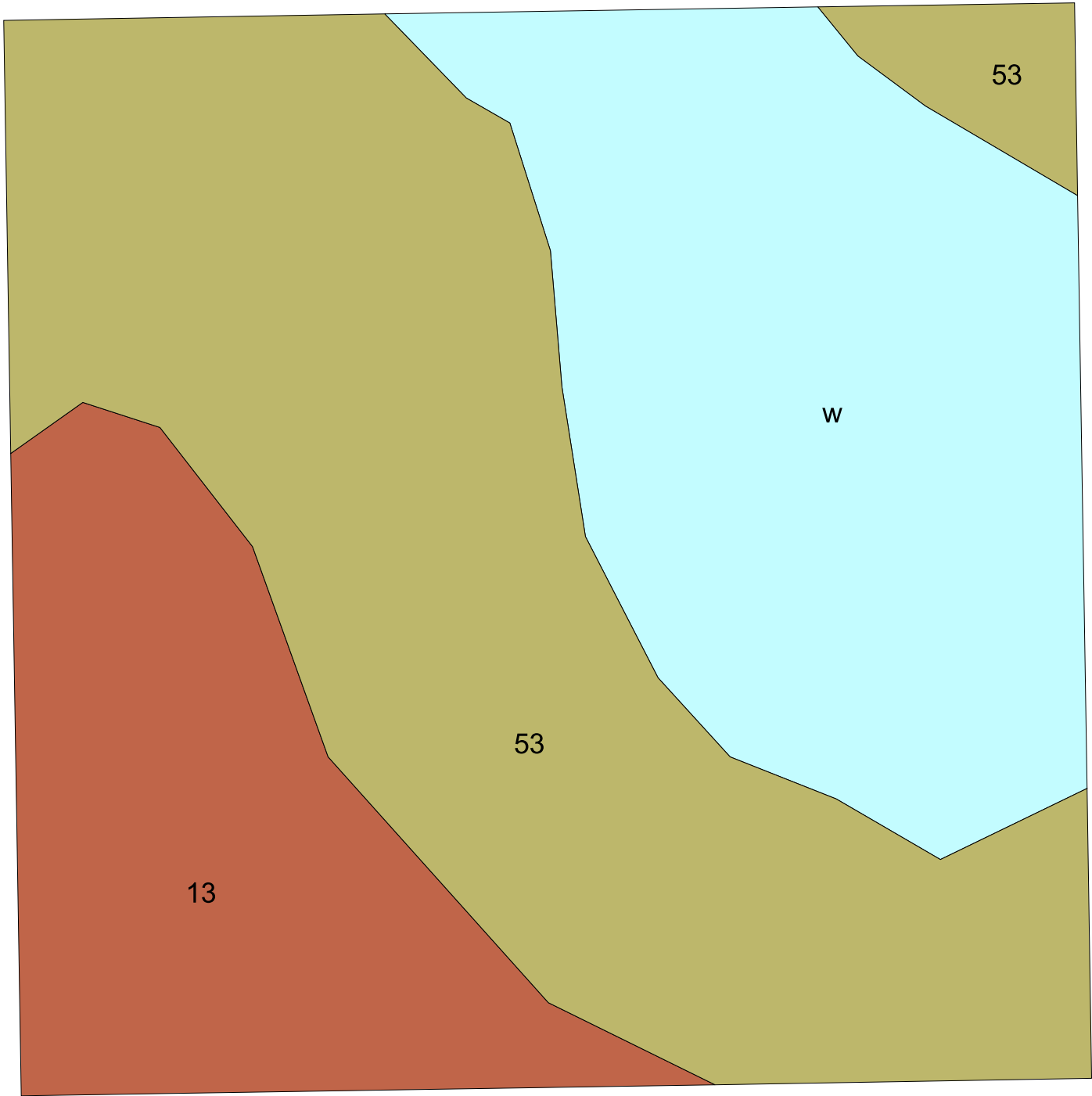
There are no known minerals.

Hydrology

No data are available. This is a very small site on flat land which is slightly elevated above sea level. Most fresh water drainage is internal, via percolation of ground water through the shell mound. Hydrology is not a management concern.

Natural Communities

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 which are similar with respect to these factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, despite similar physical conditions. In other instances, physical factors are substantially different, yet the



LEGEND

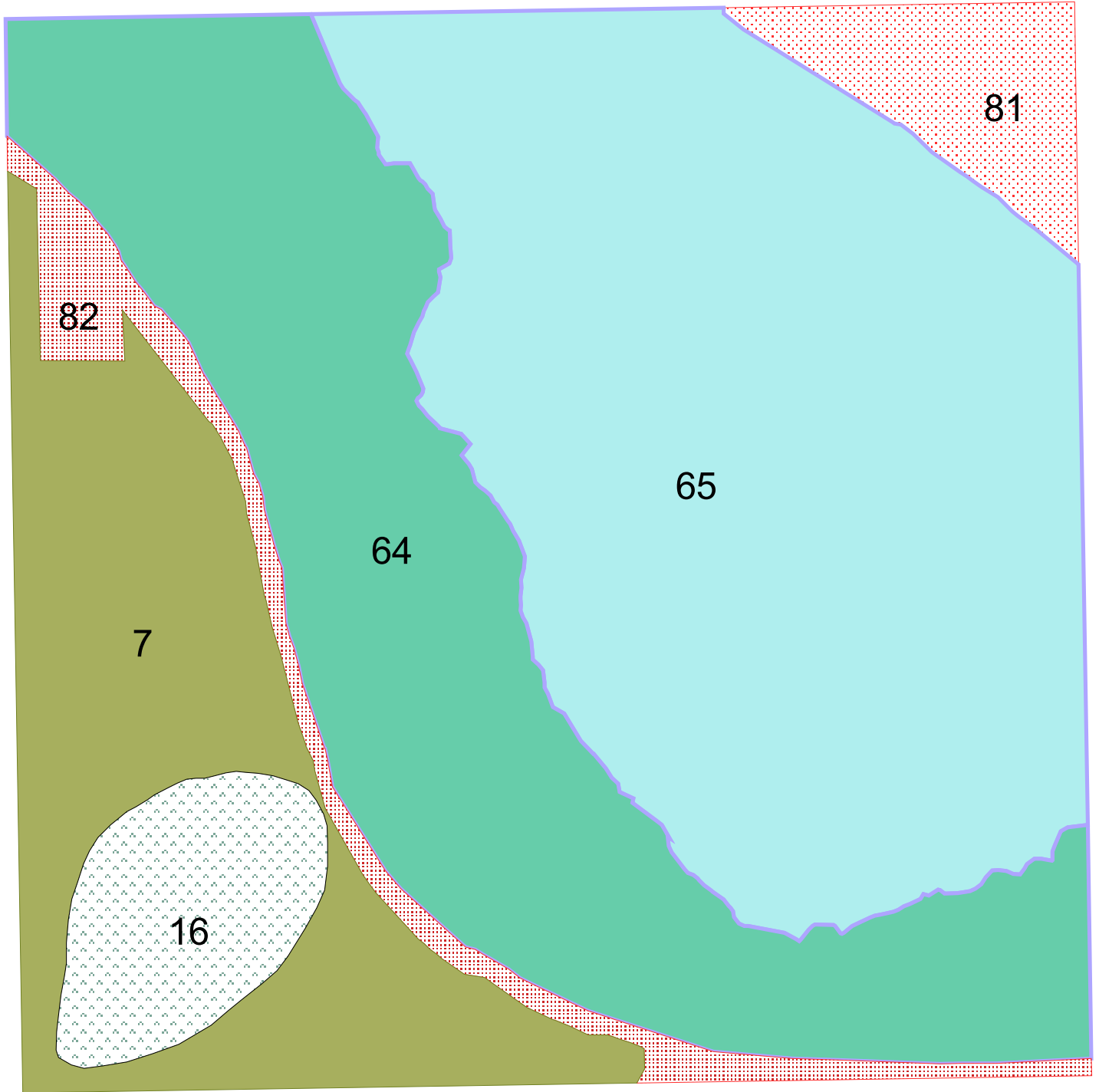
- 13-Chobee loamy fine sand
- 53-Wulfert-Kesson association
- Water



**MADIRA BICKEL MOUND
STATE ARCHAEOLOGICAL SITE**

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

**SOILS
MAP**



Natural communities.shp

- 07 - Maritime Hammock - 1.59 ac.
- 16 - Shell Mound - 0.50 ac.
- 64 - Estuarine Tidal Swamp - 2.90 ac.
- 65 - Estuarine Unconsolidated Substrate - 4.24 ac.
- 81 - Ruderal - 0.39
- 82 - Developed - 0.38 ac.



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NATURAL COMMUNITIES
MAP

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.

The unit contains four distinct natural communities in addition to ruderal and developed areas (see Natural Communities Map). The acreage for each natural community is reflected on the Natural Communities Map. Park specific assessments of the existing natural communities are provided. FNAI descriptions of these natural communities are contained in Addendum 4. A list of plants and animals occurring in the unit is contained in Addendum 5.

- **Maritime hammock.** On the flat terrain around the base of the shell mound, grow remnant trees of what appears to have once been a maritime hammock.
- **Shell mound.** The large shell mound which was once used for ceremonial purposes is covered with shell mound vegetation characteristic of the hardwood forests of a more southerly latitude in Florida. There are some large and impressive gumbo limbo and strangler fig trees.
- **Estuarine tidal swamp.** Community consists of a fringe of mangrove trees on the edge of a lagoon.
- **Estuarine unconsolidated substrate.** This community is the bottom of the shallow lagoon which is sometimes exposed at low tide.
- **Ruderal.** This is filled land which encroached on the park during the 1970s. It is presently part of someone's back yard.
- **Developed.** The developed land within the park boundary consists of a parking lot and a hard-surface road.

Designated Species

Designated species are those which are listed by the Florida Natural Areas Inventory (FNAI), U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), and the Florida Department of Agriculture and Consumer Services (FDA) as endangered, threatened or of special concern. Addendum 6 contains a list of the designated species and their designated status for this park. Management measures will be addressed later in this plan.

Three epiphytic plants, one orchid and two bromeliads, have been identified. They do not appear to be threatened here.

Special Natural Features

There are no special natural features at this park.

Cultural Resources

Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair, poor. These terms describe the present state of affairs, rather than comparing what exists against the ideal, a newly constructed component. 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 judgment is cause for concern. Poor describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action to reestablish physical stability.

Madira Bickel Mound (8MA83A-C), a National Register site, consists of two major features. The larger of the two is a raised, oblong mass, made of shell, sand and village debris (from the former surrounding village of ancient times). This flat-topped ceremonial mound is 20-feet high with basal dimensions of 170 feet northeast-southwest and 100 to 115 feet northwest-southeast (Bullen 1951:18). From the center of the flat top, which was originally about 70 x 25 feet in size, a sloping ramp approximately ten feet wide extends west-northwestward in the direction of the extensive shell midden along the Miguel Bay shoreline. Two holes in the top of the mound, one small one in the center, and a larger one southwest in the center, indicate modern disturbance by treasure seekers or pot hunters (Bullen 1951:18). A much smaller sand feature, a prehistoric burial mound, located a short distance north of the Madira Bickel Mound (now known as the Bickel Ceremonial Mound) is approximately

100 feet in diameter and only about 18-inches high. It has been considerably disturbed over the years, not only by amateur digging, but also with road construction when the sand was used for road fill (Bullen 1951:20-21). In 1950 Archaeologist Ripley Bullen excavated a large portion of it, uncovering over 30 burials representing different archaeological time periods.

These two mounds have been combined with another burial mound (Johnson Bickel Mound), located nearby (but not within the park boundaries) , and the extensive shell midden along the bay shoreline to form the Terra Ceia site (Bullen 1951).

Archaeologically, the Madira Bickel Mound site (including the smaller burial mound nearby) represents aboriginal occupation from pre-Weeden Island times (before ca. A.D. 600-1300) suggesting a long, perhaps intermittent, period of occupation. The Madira Bickel Mound (or Bickel Ceremonial Mound) is a ceremonial substructure mound of the later Safety Harbor Period. It expresses the central west coast of Florida Temple Mound tradition which dominated much of the southeast in late prehistoric times (prior to and during early European contact) . Clearly its continued preservation and presentation to the public is warranted.

There has been some speculation by historians and early archaeologists about the possibility of the Madira Bickel Mound site being the village Utica, where DeSoto moved his forces immediately after landing in 1539. However, evidence is lacking. A few other questionable Spanish artifacts have reportedly come from the vicinity, but according to Bullen, "these finds are not well substantiated". The considerable excavations carried out at here by Bullen in 1950 should have uncovered more Spanish material if the Spanish were in residence for any length of time. However, since none was found Bullen was led to conclude, "that the large site at Terra Ceia is not the Utica of the DeSoto narratives" (Bullen 1951).

RESOURCE MANAGEMENT PROGRAM

Special Management Considerations

Timber Management Analysis

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

A timber management analysis was not conducted for this park. The total acreage for the unit is below the 1,000-acre threshold established pursuant to Florida Statutes.

Attention must be paid to culverts and drainage ditches associated with county roads at this site. These features become nonfunctional from time to time, causing water to be held around the base of the temple mound. Appropriate county authorities must be notified when problems arise.

Management Needs and Problems

The most pressing resource management challenge is keeping the site free of Brazilian pepper. This exotic plant is aggressive and invades continually, however the maintenance program initiated following exotic plant removal in 1973 has been successful. Three other exotic plant species are becoming noticeable and require attention. Guinea grass (*Panicum maximim*) is growing on flat ground within the fenced portion of the site; Cape leadwort (*Plumbago auriculata*) and climbing tibisee (*Lasiacis ruscifolia*) are spreading on the mound itself. Another recurring problem of the past has been physical damage to the mound in the form of foot (and occasionally trail bike) traffic. The construction of a fence around the park has eliminated trail bikes. Foot traffic is an occasional problem especially during summer when school is out. The mound can then become a temporary playground. Digging has occurred in the past but has not been a problem in recent years. Mosquito control ditches were incised into the substrate near the mounds years ago.

In July, 2000, staff expressed concerns that the trail and steps leading to the top of the platform mound was in need of improvement. The existing trail is constructed of wooden laths along the face of the

mound; “stairs” are formed with shell fill. It was observed that some of the boards appeared to be buckling or bowing from erosion and/or slumpage shell material; however, this condition did not warrant replacement of the entire structure. Rather, it was suggested that the placement of additional shell material constitutes a sufficient stabilization measure.

Management Objectives

The resources administered by the Division of Recreation and Parks are divided into two principal categories: natural resources and cultural resources. The Division's primary objective in natural resource management is to maintain and restore, to the extent possible, to the conditions that existed before the ecological disruptions caused by man. The objective for managing cultural resources is to protect these resources from human-related and natural threats. This will arrest deterioration and help preserve the cultural resources for future generations to enjoy.

Threats include unauthorized digging, artifact collecting, water or wind damage, and animal or plant damage. Equally important is to restore the appearance of these resources, to the extent possible, to the time of their most significant cultural period. When properly interpreted, period restoration enhances the visitor's understanding of the events and conditions that characterized the site. In all matters relating to cultural resource management, the Division works closely with the Department of State, Division of Historical Resources. The management objective for Madira Bickel Mound is simply to manage the two mounds with a minimum of physical disturbance. The immediate management objective is to prevent physical damage at the mounds and to keep the site free of exotic plants. A long-term management objective should be to fill the mosquito control ditches.

Management Measures for Natural Resources

Hydrology

Hydrology is not a management consideration at this small site.

Prescribed Burning

The objectives of prescribed burning are to create those conditions that are most natural for a particular community, and to maintain ecological diversity within the unit's natural communities. To meet these objectives, the unit is partitioned into burn zones, and burn programs are implemented for each zone. These programs are periodically reviewed and maintained in the unit's burn plan. All prescribed burns are conducted under permit from the Department of Agriculture and Consumer Services, Division of Forestry (DOF). Wildfire suppression activities will be coordinated between staff of the DRP and the DOF.

Prescribed burning is not a management consideration at this site.

Designated Species Protection

The welfare of designated species is an important concern of the Division. In many cases, these species will benefit most from proper management of their natural communities. At times, however, additional management measures are needed because of the poor condition of some communities, or because of unusual circumstances which aggravate the particular problems of a species.

There is no vertebrate list for this park and only a partial list of vascular plants. Compiling a list of animals for such a small cultural site is not a priority since the management of wildlife species is not a concern here. Several species of designated epiphytes are evident in the large live oak trees.

Exotic Species Control

Exotic species are those plants or animals that are not native to Florida, but were introduced as a result of human-related activities. Exotics have fewer natural enemies and may have a higher survival rate than do native species, as well. They may also harbor diseases or parasites that significantly impact non-resistant native species. Thus, the policy of the Division is to remove exotic species from native natural communities.

Control of exotic plants at this site is a maintenance activity. Lantana (*Lantana camara*) and other exotics occasionally are found and controlled by pulling. The exotic plant of primary concern is Brazilian pepper (*Schinus terebenthifolius*). An infestation of this species was removed in 1973. Since then, control has been maintained by pulling seedlings which continuously attempt to re-establish. The three species of plants mentioned above – Guinea grass, Cape leadwort, and climbing tibisee will be eliminated.

No exotic animals have been identified.

Problem Species

Problem species are defined as native species whose habits create specific management problems or concerns. Occasionally, problem species are also a designated species, such as alligators. The Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species that are considered a threat or problem.

Management Measures for Cultural Resources

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. Approval from Department of State, Division of Historical Resources (DHR) must be obtained before taking any actions, such as development or site improvements, that could affect or disturb the cultural resources on state lands. A statement of DHR's policies and procedures for the management and protection of cultural resources is contained in Addendum 7.

During a public meeting held to receive input on this revision of the Unit Management Plan, an archaeologist opined that the parking lot and portions of a wooden fence were situated on the burial mound. Assistance will be requested from the Division of Historic Resources in establishing the accuracy of this opinion, and in relocating the parking lot and fence if necessary.

Actions that require permits or approval from DHR include development, site excavations or surveys, disturbances of sites or structures, disturbances of the substrate, and any other actions that may affect the integrity of the cultural resources. These actions could damage evidence that would someday be useful to researchers attempting to interpret the past.

1. Regularly monitor the property's cultural resources.
 - A. Ground disturbing activities, if conducted must be in accordance with Division policy.
 - B. Regularly assess the condition of recorded and unrecorded cultural resources.
 - C. Monitor the condition of old looter pits through the use of photopoints.
 - D. Patrol for signs of vandalism and discourage casual trails appropriate means.
 - E. To assess relocation of the parking lot.

Research Needs

Natural Resources

Any research or other activity that involves the collection of plant or animal species on park lands requires a collecting permit from the Department of Environmental Protection. Additional permits from the Florida Fish and Wildlife Conservation Commission, the Department of Agriculture and Consumer Services, or the U.S. Fish and Wildlife Service may also be required.

A reference collection of vascular plants will be collected and stored at the district office. A duplicate set of plants will be provided to the herbarium at the University of South Florida.

Cultural Resources

Ripley Bullen excavated the site during the 1950s and there has been no other archaeological work conducted since that time. A Phase I cultural resources assessment is needed, particularly in view of questions about the parking lot mentioned above. The site could be further protected through the implementation of qualified research projects and measures for further study and interpretation. For example, there is currently exists interpretive signage about the site and its significance. The parking area near the burial mound presents an ideal locus for a series of interpretive panels that could serve to educate the public and provide an alternate experience for disabled visitors.

Resource Management Schedule

A priority schedule for conducting all management activities which is based on the purposes for which these lands were acquired, and to enhance the resource values, is contained in Addendum 8. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available (see Addendum 8).

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation, and recreation lands titled in the name of the Board of Trustees of the

Internal Improvement Trust Fund (board) are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to s. 259.032, the board of trustees, acting through the Department of Environmental Protection (department). The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required 5-year update of its management plan.

Madira Bickel Mound State Archaeological Site has not been the subject of a land management review.

LAND USE COMPONENT

INTRODUCTION

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

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, 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 DRP's 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, adjacent land uses, and the park interaction with other facilities.

Existing Use of Adjacent Lands

Madira Bickel Mound State Archaeological Site is located on Terra Ceia Island, about two miles west of Rubonia, in Manatee County. Low-density residential development is the primary land use surrounding the park. Some of the adjacent land is in agricultural production. The Sunshine Skyway Bridge and the Skyway State Fishing Pier are located less than a mile and a half to the north.

Planned Use of Adjacent Lands

Additional residential development is anticipated on surrounding uplands. The additional residential development may pose the problem of increased stormwater runoff degrading the surrounding water quality.

PROPERTY ANALYSIS

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

Recreation Resource Elements

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

Madira Bickel Mound State Archaeological Site supports an interesting mixture of both temperate and tropical plant species. The site features two prehistoric mounds. The larger ceremonial mound supports healthy tropical hardwood vegetation. Most of the site is less than five feet above sea level, typical of land in close proximity to the coast. The ceremonial mound provides impressive topographic relief, with a height of about 20 feet. Two secondary roads traverse the site. One road runs east and west adjacent to the southern boundary of the site, and is intersected by another road which cuts across the southwestern corner of the site near the ceremonial mound. Approximately four acres of the small

site is occupied by tidal lagoon. Mangroves occur around the perimeter of the lagoon.

Archaeological and Historical Features

The most prominent feature is a flat-topped temple or ceremonial mound located on the southwest corner of the site. The mound is composed of sand, shell, and village debris and measures 100 by 170 feet at the base and 20 feet in height. The other mound is a small burial mound approximately 100 feet in diameter and about 18 inches high. The site along with other neighboring mounds provides evidence of Native American life and culture as it progressed from a primarily hunting and fishing society to larger villages with an increased emphasis on agriculture. The later period included the building of the temple and burial mounds, and is the era in which the first Spanish explorers arrived. This park was the first archaeological site in Florida to become a State Historic Memorial. More detailed information regarding the cultural resources of the unit is described in the resource management component. There are no known historic features.

Assessment of Use

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

Past Uses

The smaller burial mound has been severely disturbed by amateur digging and when sand was used as road fill during road construction. The site was named for Mrs. Madira Bickel of Sarasota, who with her husband Karl donated the five acres on which the mound stands to the state in 1948. Vandalism, litter, and motorized vehicles traversing the larger mound were common occurrences before the installation of boundary fencing in the 1980s

Recreational Uses

The primary use of the site is visiting the prehistoric mounds.

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 Madira Bickel Mound State Archaeological Site, the entire property has been designated as a protected zone because of the significant cultural resources and the sensitivity of the remaining natural communities.

Existing Facilities

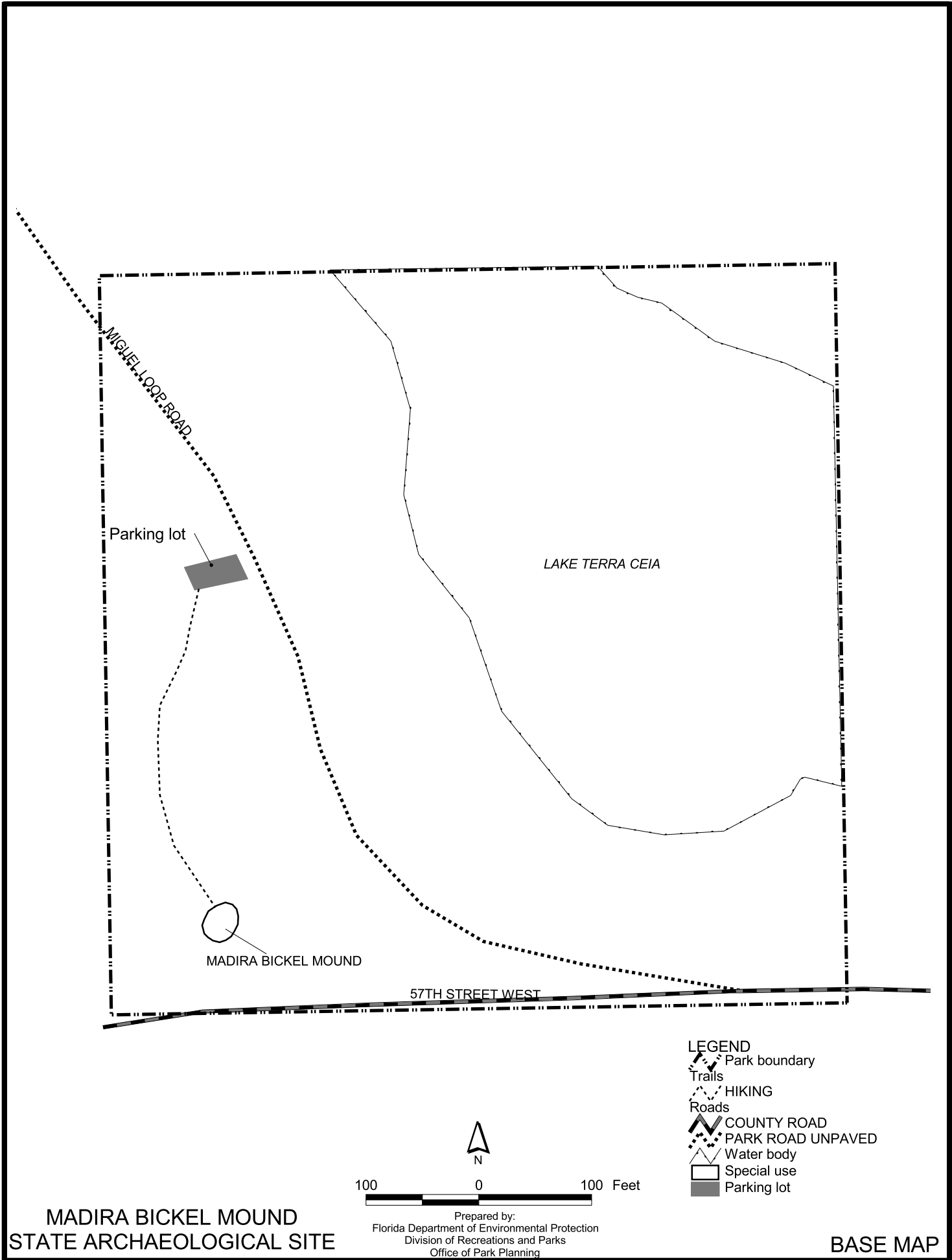
The site contains an informal, unpaved parking area that can accommodate about ten vehicles at one time. A short trail of about 50 yards in length provides access from the parking area to the temple mound. A wooden stairway of about 80 feet in length provides access to the top of the mound. Interpretive signs are located at each of the mounds, describing the cultural significance of the site. There are no other facilities of any kind.

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for Madira Bickel Mound State Archaeological Site. As new information is provided regarding the park environment, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions. A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

During the development of the unit management plan, the DRP assesses potential impacts of proposed uses on the resources of the property. Uses that could result in unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed through the site planning process once funding is available for the development project.

At that stage, design elements, such as sewage disposal and stormwater management, and design constraints, such as designated species or cultural site locations, are more thoroughly investigated.



MIGUEL LOOP ROAD

Parking lot

LAKE TERRA CEIA

MADIRA BICKEL MOUND

57TH STREET WEST

- LEGEND**
- Park boundary
 - Trails
 - HIKING
 - Roads
 - COUNTY ROAD
 - PARK ROAD UNPAVED
 - Water body
 - Special use
 - Parking lot



100 0 100 Feet

MADIRA BICKEL MOUND
STATE ARCHAEOLOGICAL SITE

Prepared by:
Florida Department of Environmental Protection
Division of Recreations and Parks
Office of Park Planning

BASE MAP

Advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the projects. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses and Proposed Facilities

At Madira Bickel Mound State Archaeological Site, the primary emphasis is placed on protection of the cultural resources, while allowing the public an opportunity to experience these archaeological features. The current low-level public use of the site is appropriate and should continue.

Existing interpretive signage is insufficient, dated and in need of upgrading. Two interpretive panels are recommended—one at ground level and another on top of the mound to properly interpret the site's significance and its relation to the larger cultural context. Written interpretive materials should also be made available on site. The existing trail should be improved and expanded so that a universally accessible trail encircles the mound. These interpretive improvements are also important since providing universal access to the top of the mound is not practical given the limited size of the site and presence of subsurface cultural resources.

The mound provides a unique vantage point to visualize the former connections between the mound and surrounding cultural sites. The existing steps are recommended for replacement to improve visitor safety and address erosion problems. The enclosure at the top of the mound should be modified to present a more open and aesthetically pleasing setting. Consideration should be given to the selective removal of some vegetation to create a vista from the top of the mound. Vegetation management will need to consider impacts to the mound and the presence of rare tropical flora.

Non-invasive archaeological investigations are recommended to determine the extent of the burial mound and its relation to the existing parking area and trail. Based on the results of this work, consideration will be given to moving the parking lot and rerouting the trail if unacceptable impacts to other cultural resources can be avoided and sufficient uplands are available. A universally accessible parking space and fee collection station are also recommended at the site.

Existing Use and Optimum 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 1).

The optimum 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 1.

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. At this time, no lands are considered surplus to the needs of the park. No additional lands are identified for acquisition.

Table 1—Existing Use And Optimum Carrying Capacity

Activity/Facility	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
	Archaeological Site Grounds	20	80			20
TOTALS	20	80			20	80

Addendum 1—Acquisition History

Madira Bickel Mound State Archaeological Site
Acquisition History

Sequence of Acquisition

The State of Florida has acquired Madira Bickel Mound State Archaeological Site to develop, operate, and maintain the property for outdoor recreational, park, conservation, historic and related purposes.

On April 16, 1948, the State obtained title to a 5-acre property which later became Madira Bickel Mound State Archaeological Site. Karl A. Bickel and Madira Bickel donated the property to the State. On May 7, 1948, the State acquired another 5-acre property and added it to Madira Bickel Mound State Archaeological Site. Presently the archaeological site comprises 10 acres.

On January 23, 1968, the State conveyed its management authority of Madira Bickel Mound State Archaeological Site to the Department of Environmental Protection, Division of Recreation and Parks (DRP) under Lease No. 2324. The lease is for a period of ninety-nine (99) years, and it expires on January 23, 2067. In 1988, the State assigned a new lease number, Lease No. 3633, to Madira Bickel State Archaeological Site without making any changes to the terms and conditions of Lease No. 2324. A copy of the lease is available upon request.

According to the lease agreement, the DRP will manage the property for the specific purposes of resource-based public outdoor recreational, park, conservation, historic and related purposes.

Title Interest

The Trustees hold fee simple title to Madira Bickel State Archaeological Site.

Special Conditions on Use

Madira Bickel State Archaeological Site is designated single-use to provide resource-based public outdoor recreation and other related uses.

Outstanding Reservations

Following is a listing of outstanding rights, reservations, and encumbrances which apply to Madira Bickel State Archaeological Site.

Instrument:	Indenture
Instrument Holder:	Karl A. Bickel and Madira Bickel
Beginning Date:	April 16, 1948
Ending Date:	There is no specific ending date given.
Outstanding Rights, Uses, Etc.:	The property was conveyed to the State to be used as a state park archaeological monument and be named "Madira Bickel Mound State Monument". If the property ceases to be used for state park archaeological monument, the title and interest shall revert to the instrument holders.
Instrument:	Warranty Deed
Instrument Holder:	R. H. Prine and Sula G. Prine
Beginning Date:	May 7, 1948
Ending Date:	There is no specific ending date given.
Outstanding Rights, Uses, Etc.:	The property was conveyed to the state for addition to Madira Bickel Mound State Monument and to be used as a state park archaeological monument. If the property ceases to be used for state park archaeological monument, the title and interest shall revert to the instrument holders.

**Madira Bickel Mound State Archaeological Site
Advisory Group Member List**

The Honorable Joe McClash
Chair
Manatee Board of County Commissioners
1112 Manatee Avenue West
Bradenton, Florida 34205

Represented by:
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Ah-tah-thi-ki Museum
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John Trevethan, President
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Martha (Marty) Ardren, Co-Director
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Ronald L. Lehrke
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Terra Ceia, Florida 34250

**Madira Bickel Mound State Archaeological Site
Advisory Group Staff Report**

The Advisory Group appointed to review the proposed land management plan for Madira Bickel Mound State Archaeological Site met at Gamble Plantation Historic State Park Visitor Center on October 24, 2001. Mr. Charlie Hunsicker represented Commissioner McClash. Mr. Larry White, Mr. Steve Black, Mr. John Trevethan and Ms. Marty Ardren did not attend. All other appointed advisory group members were present. Attending staff were Mr. Mike Murphy, Mr. Scott Robinson, Mr. Ken Alvarez, Mr. Mickey Bryant, Mr. Robert Perry, and Mr. Michael Kinnison.

Summary Of Advisory Group Comments

Mr. Larry Campbell commended staff on what he thought was a well-prepared plan. He thought the plan addressed land management issues appropriately given the small size of the park.

Mr. Doug Voltalino agreed that the plan was well prepared.

Mr. John O'Connor thought the resource cost estimates were low. He suggested including an aerial photo of the map in the plan. He asked if the Division needed to apply for permits for activities on site. **Mr. Kinnison** explained that the Division is bound by state and local permitting processes. Mr. O'Connor asked if fees were required to visit the site and asked for clarification of the term Trustees. Staff explained that no fees were currently being collected and that the Trustees referred to the Governor and Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund. He urged staff to consider incorporating goals and objectives related to accessibility. He asked if the plan was consistent with the local comprehensive plan. **Mr. Kinnison** explained that all plans are sent to local governments to check for consistency. Mr. O'Connor asked about erosion problems at the park. **Mr. Alvarez** explained that there used to be problems from social trails but that they had been addressed. He also indicated that the need for additional fill and stabilization would be considered. **Mr. Bryant** explained that he did not see any major problems upon visiting the site earlier in the day. He explained that the mound is heavily vegetated and that erosion problems were primarily from the adjacent county roads. Mr. O'Connor suggested that the park's status as the state's first designated archeological site is significant enough that the plan should make mention of this fact earlier in the text. He asked about the role of funding in completing needs identified in the plan. **Mr. Bryant** explained the Division's budgeting process and the effects of fiscal constraints on meeting all of a needs of a park. **Mr. Alvarez** emphasized that the size of the site and limited uplands means that improvements will be modest in scale. Mr. O'Connor asked about improving accessibility at the mound. **Mr. Kinnison** explained that the plan calls for additional interpretive signage so that those unable to access the top of the mound can still learn of its significance. **Mr. Bryant** explained that there are practical limits to meeting ADA requirements at the site. Mr. O'Connor asked for clarification on the term "protected zones" and reference to surplus lands. **Mr. Kinnison** explained what types of facilities were acceptable within protected zones and that no lands were identified as surplus to the needs of the park.

Mr. Ronald Lehrke expressed disappointment in the way the site has been maintained and was concerned that the concentration of dead palm fronds at the park could contribute to a fire. **Mr. Murphy** expressed the District's commitment to improving conditions at the park and stated that there would be a renewed interest in making improvements at this site. He was supportive of addressing drainage problems on site to help reduce mosquito populations and recommended placing an iron ranger onsite to collect fees. Mr. Lehrke proposed the Division construct a boardwalk through the mangrove community to provide access to the pond. **Mr. Alvarez** expressed concern that this would present a safety problem by encouraging pedestrian traffic across the county road. **Mr. Bryant** discussed several problems that indicated this site was not an ideal location for recreation facilities. **Mr. Voltolina** asked if consideration had been given to having the road bisecting the park closed. **Mr. Kinnison** explained that this was a county maintained road and that closing it would cause impacts to surrounding property owners.

Mr. O'Connor suggested staff approach the local homeowner's association for assistance in

Madira Bickel Mound State Archaeological Site Advisory Group Staff Report

maintaining the park. **Mr. Lehrke** explained that homeowners conduct biannual cleanup days at the park. **Mr. Bryant** suggested that the association could fill a role similar to a citizen support organization. **Mr. Perry** indicated that volunteer support was important given the decline in available community service workers. He acknowledged that there was room for improvement and explained the roles of CSO's and the Partnership in Parks Program.

Mr. Charlie Hunsicker suggested staff request assistance from the county in writing to deal with roadway drainage problems. He urged the Division to consider addressing the larger cultural context when addressing interpretation at Madira Bickel.

Mr. Billy Cypress explained that his interest largely focused on the issue of human remains and asked for clarification as to their whereabouts. **Staff** explained that the site files indicated that they were removed, but that Mr. Bill Burger, a local archaeologist, believes that they may still be onsite. **Mr. Perry** agreed to facilitate communication with Mr. Burger and Mr. Cypress to help clarify this issue. Mr. Cypress indicated that there would be interest in the Native American community in returning remains to the site if they have been removed.

Summary Of Public Comments

The following is a summary of substantive comments submitted in writing by **Mr. Bill Burger**. Mr. Burger has offered his time and expertise in making a number of recommended improvements.

- **Hydrology.** Mr. Burger recommends several actions regarding hydrology, including cleaning our existing culverts and improving drainage associated with adjacent county roadways, filling the mosquito ditch within the park boundary and adding fill to areas that collect rainwater. He believes that these hydrological improvements would help reduce the number of mosquitoes at the park.
- **Natural Resource Management.** Mr. Burger proposes that no additional trees be allowed to grow on either of the mounds to avoid additional disturbance to the archaeological context.
- **Cultural Resources.** Mr. Burger offered some editorial corrections to content in the plan related to adjacent land use, the base map and cultural resources. He recommends erosional features in the temple mound be manually filled and stabilized. He believes there is a clear need for additional research and that this need should be identified in the plan. He made several recommendations regarding interpretation, including updating and expanding existing interpretive signage and the park brochure. He proposed the site be subject to a Phase I cultural resource assessment. Mr. Burger points out that the existing parking area is located on a portion of the burial mound and that his research indicates there may still be human remains there. He recommends moving the existing parking area away from the mound and reconstructing the mound to a semblance of its original appearance. He suggests restoring the looters' pit and ravine in the top of the temple mound and creating an interpretive exhibit at this location. He proposes establishing a trail around the mound linked to a window exhibit on its west side and a boardwalk through the mangrove community east of Bayshore Drive. He also recommends the construction of a faux Indian hut for use as a picnic facility and gathering point for groups visiting the park.

Advisory Group Recommendations

Following the public comments, the Advisory Group members were asked if they approved the draft unit management plan for Madira Bickel Mound State Archaeological Site. All members present agreed that the draft plan was appropriate and should be approved.

The meeting was then adjourned.

Staff Recommendations

Staff recommends approval of the proposed management plan for Madira Bickel Mound State

Madira Bickel Mound State Archaeological Site
Advisory Group Staff Report

Archaeological Site as presented. The following recommendations and/or comments are in response to issues raised by the Advisory Group.

1. Issue: Editorial comments

- Staff Recommendation: Factual errors and needed editorial changes will be addressed as per public and Advisory Group recommendations.

2. Issue: Universal accessibility

- Staff Recommendation: An operations goal will be added to the plan that addresses universal accessibility. While full accessibility of the mound is not practical given the small size of the site and presence of subsurface cultural resources, interpretive improvements will provide an understanding of the site's significance without the need to ascend the mound.

3. Issue: Hydrology

- Staff Recommendation: The Division will coordinate with Manatee County to address needed improvements to culverts on adjacent county roadways. Staff concurs that the mosquito ditch needs filling. The Division will consult with Manatee County Mosquito Control to assess the mosquito problem at the park. Filling of low areas will be considered only as a last resort and if supported by professional opinion relative to public health concerns. The existing problems related to hydrology will be discussed under Special Management Considerations.

4. Issue: Natural and cultural resource management

- **Staff Recommendation:** The Bureau of Natural and Cultural Resources will coordinate an onsite meeting with the Division of Historic Resources to identify appropriate mound vegetation management procedures and discuss non-invasive archaeological investigations to determine the extent of the burial mound and its relation to the existing parking area and trail. Based on the results of this work, consideration will be given to moving the parking lot and rerouting the trail if unacceptable impacts to other cultural resources can be avoided and sufficient uplands are available.

Onsite evaluation after the Advisory Group meeting indicates that previous erosion problems on the mound have been resolved and that no further measures are necessary at this time.

Language will be added that discusses the need for additional research.

Staff concurs that improvements to interpretation are needed, including new interpretive signs and updating the park brochure. Additional language will be added that underscores the importance of interpretation at this site and makes specific suggestions regarding ways to improve. Given the pressing need for improvements at the mounds, a boardwalk through the mangroves is not recommended at this time.

The need for a Phase I archeological survey will be identified in the plan.

The Division does not recommend construction of a permanent shelter of any kind due to the small size of the area and concerns for impacts to the cultural context. Scattered picnic tables will remain to provide some seating to visitors.

5. Issue: Maps

- Staff Recommendation: The base map of The park will be revised. A conceptual land use plan with an aerial photo will be added to the plan.

6. Issue: Fee collection

- Staff Recommendation: Language will be added that recommends placement of an iron ranger at the site in conjunction with other planned improvements.

Addendum 2—References Cited

Madira Bickel Mound State Archaeological Site
References Cited

Bullen, Ripley P. "The Terra Ceia Site Manatee County, Florida", Florida Anthropological Society Publications, No. 3. Gainesville, 1951.

Addendum 3—Soil Descriptions

Madira Bickel Mound State Archaeological Site
Soil Descriptions

(13) Chobee loamy fine sand - This is a nearly level, very poorly drained soil that is in small to large depressions, poorly defined drainageways, and on broad, low flats. Slopes are smooth to concave and range from 0 to 2 percent.

Typically, the surface layer is black loamy fine sand about 8 inches thick. The subsoil is sandy clay loam 43 inches thick. In the upper part it is very dark gray to a depth of 44 inches, and below that, it is dark gray. The substratum to a depth of 80 inches or more is calcareous gray loamy fine sand and fine sand.

Included with this soil in mapping are small areas of Floridana, Gator, Delray, Manatee, and Felda soils. Also included are small areas of soils that are similar to the Chobee soils except that organic material 6 to 16 inches thick is on the surface and a few areas where the surface layer is loamy fine sand or sandy loam.

In most years, the water table is above the surface or within a depth of 10 inches for 6 to 9 months or more out of the year. It is at a depth of 10 to 30 inches for short periods during dry seasons. The available water capacity is medium in all layers. Permeability is moderately rapid in the surface layer and slow or very slow in the subsoil and substratum. Natural fertility is medium.

(53)Wulfert-Kesson association - This map unit consists of nearly level, very poorly drained Wulfert and Kesson soils. It is about 45 percent Wulfert soils, 35 percent Kesson soils, and 20 percent other soils. These soils occur in a regular and repeating pattern in mangrove swamps along the Gulf Coast and on coastal islands. Generally, Kesson soils are in the outer parts of areas of this complex near the water's edge, and Wulfert soils are in the inner parts. Areas of the individual soils are large enough to map separately, but in considering the present and predicted use they are mapped as one unit. Slopes are less than 1 percent.

The composition of this map unit is more variable than that of most other map units in the county; nevertheless, valid interpretations for the expected uses of the soils can still be made.

Typically, the surface layer of Wulfert soils is dark reddish brown and dark brown muck, that extends to a depth of about 36 inches. Below that, there is gray fine sand to a depth of 60 inches or more.

Wulfert soils are flooded daily by high tides. Permeability is rapid throughout. The available water capacity is medium to high in the muck layers and very low to low in the sandy layers.

Typically, the surface layer of Kesson soils is black fine sand 6 inches thick. Below the surface layer there is pale brown, light gray, and white fine sand to a depth of 80 inches or more. Shell fragments are few to common in these layers.

Kesson soils are flooded daily by high tides. Permeability is moderately rapid to rapid throughout. The available water capacity is medium in the surface layer and low to medium in the other layers.

The natural vegetation consists mostly of mangrove, but in some places it also consists of seashore saltgrass, batis, and oxeye daisy. Some places are bare.

Addendum 4—FNAI Natural Communities Descriptions

Madira Bickel Mound State Archaeological Site
FNAI Natural Community Descriptions

(7) Maritime Hammock - (synonyms: coastal hammock, maritime forest, tropical hammock). Maritime Hammock is characterized as a narrow band of hardwood forest lying just inland of the Coastal Strand community. Live oak, cabbage palm, and redbay generally combine to form a dense, wind-pruned canopy whose streamlined profile deflects winds and generally prevents hurricanes from uprooting the trees. Other typical plants include American holly, southern magnolia, red cedar, sea grape, false mastic, paradise tree, lancewood, gumbo-limbo, strangler fig, poisonwood, wild olive, saw palmetto, beautyberry, poison ivy, coral bean, coontie, prickly ash, wild coffee, snowberry, myrsine, caper tree, marlberry, rouge-plant, and ferns. Typical animals include squirrel treefrogs, ring-necked snake, rat snakes, and gray squirrel. Migrating birds rely on these forests for food and shelter following trans-oceanic or trans-gulf migrations.

Maritime Hammock occurs on old coastal dunes that have been stabilized long enough for the growth of a forest. Tree growth often begins in swales between old dune ridges where a higher moisture gradient exists. The isolated strips of tree growth gradually coalesce into a continuous forest. Humus buildup contributes to moisture retention, while the dense canopy minimizes temperature fluctuations by reducing soil warming during the day and heat loss at night. Soils of Maritime Hammock are generally well-drained because of the underlying deep sands.

The generally mesic conditions and insular locations of well-developed Maritime Hammock communities inhibit natural fires, which occur no more frequently than once every 26 to 100 years. In mature Maritime Hammock, fire may alter the original appearance, obscuring former beach ridge vegetation patterns and creating a diversity of plant sub-associations. Nutrient recycling is generally accomplished by detrital organisms instead of by fire.

Maritime Hammock is closely associated with and often grades into Coastal Strand, Scrub, Hydric Hammock, or Prairie Hammock. Because of species overlap, Maritime Hammock may also be confused with Shell Mound, Coastal Berm, Xeric Hammock, and Rockland Hammock. Maritime Hammock is the terminal stage of succession in coastal areas.

Maritime Hammock is prime resort and residential property because of its relatively protected location along the coast. Although it originally occurred in virtually continuous bands with Coastal Strand, Maritime Hammock is now dissected into short strips by development and is rapidly disappearing. Maritime Hammock is reasonably resilient so long as the canopy remains intact and the landform stable. Removal of large exotic species should be conducted in phases to minimize canopy disruptions.

(16) Shell Mound - (synonyms: midden, Indian mound, tropical hammock, maritime hammock, coastal hammock). Shell Mound is unusual among the biological communities in that it is largely a result of the activities of Indians, instead of natural physical factors. Shell Mound is generally characterized as an elevated mound of mollusk shells and aboriginal garbage on which a hardwood, closed-canopy forest develops. In some cases, a sparse shrubby community, sometimes with cactus, may develop in lieu of hammock vegetation. Typical plants include gumbo-limbo, cabbage palm, mastic, red cedar, hackberry, live oak, forestiera, coral bean, marlberry, saffron plum, sagaretia, coontie, and others.

Shell Mound soils are composed of shells and shell fragments with an organic component derived from forest litter. The soil generally is circumneutral to slightly alkaline (pH = 7-8) and contains 1-20% organic materials. The loose collection of shells allows water to drain extremely rapidly. The calcareous substrate, in combination with their coastal location, often permits tropical or subtropical species of plants to grow much further north on Shell Mounds than their normal ranges on other substrates. Their coastal, usually insular, location generally protects Shell Mounds from fire, but subjects them to marine influences, including high winds, salt spray, high insolation, and storm surge.

Shell Mound is often associated with and grades into Rockland Hammock, Coastal Berm, or Maritime Hammock. It is often so similar in species composition to these communities that it may be difficult to differentiate. Some Shell Mounds may also be very similar to Coastal Rock Barren communities.

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Because they are constructed of archaeological remains, Shell Mounds are vulnerable to damage by artifact-seekers and archaeological excavations. Sites where visitor use is not monitored should not be publicized. Archaeological investigations should be conducted with care to protect important botanical features.

(64/76) Estuarine And Marine Tidal Swamp - (synonyms: mangrove forest, mangrove swamp, mangrove islands). Marine and Estuarine Tidal Swamps are Floral Based Natural Communities characterized as dense, low forests occurring along relatively flat, intertidal and supratidal shorelines of low wave energy along southern Florida. The dominant plants of Tidal Swamp Natural Communities are red mangrove, black mangrove, white mangrove and buttonwood. These four species occasionally occur in zones which are defined by varying water levels, with red mangrove occupying the lowest zone, black mangrove the intermediate zone, and white mangrove and buttonbush the highest zone. Other vascular plants associated with Tidal Swamps include salt grass, black needlerush, spike rush, glasswort, Gulf cordgrass, sea purslane, saltwort and sea oxeye. Typical animals of the Tidal Swamp include mangrove water snake, brown pelican, white ibis, osprey, bald eagle, and a variety of shorebirds, herons, egrets, and raccoon. Also included are sponges, oysters, marine worms, barnacles, mangrove tree crabs, fiddler crabs, mosquitos, and numerous other invertebrates. Fishes are likewise diverse in this community. Those most frequently occurring include black-tipped shark, lemon shark, nurse shark, bonnet-head shark, rays, tarpon, ladyfish, bonefish, menhaden, sardines, lookdown, permit, snapper, sheepshead, porgies, pinfish, and mullet.

Several variations of Tidal Swamps are generally recognized. These include (1) overwash swamps found on islands which are frequently inundated by the tides; (2) narrow fringe swamps located along waterways; (3) riverine swamps found in floodplains; (4) basin swamps growing in depressions slightly inland from the water; (5) hammock swamps, similar to basin swamps but growing at a slightly higher elevation; and (6) scrub swamp growing over hard substrates such as limestone marl.

Tidal Swamps occur in flat coastal areas. The soils are generally saturated with brackish water at all times, and at high tides these same soils are usually inundated with standing water. Mangroves grow on a wide variety of soils ranging from sands to muds. In older Tidal Swamps the sands and muds are usually covered by a layer of peat which has built up from detritus (decaying plant material).

The prop roots of red mangroves, the extensive pneumatophores (aerial roots) of black mangroves and the dense root mats of the white mangrove serve to entrap sediments and recycle nutrients from upland areas and from tidal import. This process serves in "island formation" and is a part of the successional process involved in land formation in south Florida. These root structures also provide substrate for the attachment of and shelter for numerous marine and estuarine organisms.

Temperature, salinity, tidal fluctuation, substrate and wave energy are five physical factors influencing the size and extent of Tidal Swamps. Mangroves require an annual average water temperature above 19°C (66°F) to survive. They do not tolerate temperatures below freezing or temperatures which fluctuate widely over the course of a year. Salt water is a key element in reducing competition from other plants and allowing mangroves to flourish. In addition, mangroves have adapted to the salt water environment by either excluding or excreting salt from plant tissues. Mangroves can survive in freshwater but are usually not found in large stands under such conditions in nature because they succumb to competition.

Tidal Swamps are closely associated with and often grade into Seagrass Beds, Unconsolidated Substrates, Tidal Marshes, Shell Mounds, Coastal Berms, Maritime Hammocks, and other coastal communities. Seagrass Beds and Unconsolidated Substrates are usually found in the subtidal regions surrounding Tidal Swamps. Tidal Marshes are often found along the inland boundary of the Tidal Swamps. Tropical hardwood species occupy Coastal Berm and Shell Mound communities which are often surrounded by mangroves. In Florida, Tidal Swamps occur along both coasts, buffered by barrier island formations. Tidal Swamps are most extensive from Cedar Key southward

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along the Gulf coast and from Ponce de Leon Inlet southward along the east coast. The most luxuriant growth occurs in the Ten-Thousand Island areas of southwest Florida.

The Marine and Estuarine Tidal Swamp communities are significant because they function as nursery grounds for most of the state's commercially and recreationally important fish and shellfish. These Natural Communities are also the breeding grounds for substantial populations of wading birds, shorebirds, and other animals. The continuous shedding of mangrove leaves and other plant components produce as much as 80% of the total organic material available in the aquatic food web. Additionally, Tidal Swamps help protect other inland communities by absorbing the brunt of tropical storms and hurricanes.

Tidal Swamps have been and continue to be areas of environmental concern because many acres were destroyed through diking and flooding, ditching for mosquito control, and dredging and filling activities. Fortunately, specific legal protection for mangrove swamps was adopted by the state in 1985. Today, mangroves continue to face such problems as destruction from oil spills and changes in the quantity, quality and timing of the fresh water input as the adjacent uplands are developed or otherwise altered. Reducing estuarine salinity and flushing chemical pollutants from adjacent uplands have resulted in the destruction of some Tidal Swamp areas and the invasion of non-mangrove species.

The combination of these factors has resulted in a decrease in the number of acres of Tidal Swamps and a reduction in available nursery grounds and valuable habitat for native wildlife. Mangrove swamps can be replanted by man; however, long term monitoring has not been conducted to determine if restored sites function as the original community did. The best management practice is to prevent further destruction of existing Tidal Swamps and maintain a natural flow of fresh water into these areas.

(65/77) Estuarine And Marine Unconsolidated Substrate - (synonyms: beach, shore, sand bottom, shell bottom, sand bar, mud flat, tidal flat, soft bottom, coralgal substrate, marl, gravel, pebble, calcareous clay). Marine and Estuarine Unconsolidated Substrates are Mineral Based Natural Communities generally characterized as expansive, relatively open areas of subtidal, intertidal, and supratidal zones which lack dense populations of sessile plant and animal species. Unconsolidated Substrates are unconsolidated material and include coralgal, 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 (e.g., tube worms, sand dollars, mollusks, isopods, amphipods, burrowing shrimp, and an assortment of crabs).

In general, Marine and Estuarine Unconsolidated Substrate Communities are the most widespread communities in the world. However, Unconsolidated Substrates vary greatly throughout Florida, based on surrounding parent material. Unconsolidated sediments can originate from organic sources, such as decaying plant tissues (e.g., mud) or from calcium carbonate depositions of plants or animals (e.g., coralgal, marl and shell substrates). Marl and coralgal substrates are primarily restricted to the southern portion of the state. The remaining four kinds of Unconsolidated Substrate, mud, mud/sand, sand, and shell, are found throughout the coastal areas of Florida. While these areas may seem relatively barren, the densities of infaunal organisms in subtidal zones can reach the tens of thousands per meter square, making these areas important feeding grounds for many bottom feeding fish, such as redfish, flounder, spot, and sheepshead. The intertidal and supratidal zones are extremely important feeding grounds for many shorebirds and invertebrates.

Unconsolidated Substrates are important in that they form the foundation for the development of other Marine and Estuarine Natural Communities when conditions become appropriate. Unconsolidated Substrate Communities are associated with and often grade into Beach Dunes, Tidal Marshes, Tidal Swamps, Grass Beds, Coral Reefs, Mollusk Reefs, Worm Reefs, Octocoral Beds, Sponge Beds, and Algal Beds.

Unconsolidated Substrate Communities which are composed chiefly of sand (e.g., sand beaches) are the most important recreational areas in Florida, attracting millions of residents and tourists annually. This community is resilient and may recover from recreational disturbances. However,

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this community is vulnerable to compaction associated with vehicular traffic on beaches and disturbances from dredging activities and low dissolved oxygen levels, all of which can cause infaunal organisms to be destroyed or to migrate out of the area. Generally these areas are easily recolonized either by the same organisms or a series of organisms which eventually results in the community returning to its original state once the disturbance has ceased. In extreme examples, such as significant alterations of elevation, there is potential for serious long-term impacts from this type of disturbance.

Another type of disturbance involves the accumulation of toxic levels of heavy metals, oils, and pesticides within Unconsolidated Substrates. Significant amounts of these compounds in the sediments will kill the infaunal organisms, thereby eliminating a food source for certain fishes, birds, and other organisms. Such problems occur in some of the major port cities, in areas where there is heavy industrial development, and along major shipping channels where oil spills are likely to occur.

(81/82) Ruderal And Developed - Ruderal areas are characterized by having the natural substrate or the natural community overwhelmingly altered as a result of human activity. Native vegetation is sparse and is often replaced by weedy or exotic species. These areas require a long-term restoration effort.

Developed areas consist of natural biological communities that have been replaced or nearly replaced by structures or permanently cleared areas such as roads, visitor facilities, campgrounds, recreation areas, parking lots or concessions.

Addendum 5—Plant And Animal List

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Plants

Common Name	Scientific Name	Primary Habitat (for designated species)
Rosary Pea*	<i>Abrus precatorius</i>	
Leather Fern	<i>Acrostichum danaeifolium</i>	76
Ragweed	<i>Ambrosia artemisifolia</i>	
Marlberry	<i>Ardisia escallonioides</i>	
Black Mangrove	<i>Avicennia germinans</i>	
Saltbush	<i>Baccharis</i> sp.	
Spanish Needle	<i>Bidens pilosa</i>	
Sea Oxeye	<i>Borrchia frutescens</i>	
Gumbo Limbo	<i>Bursera simaruba</i>	
Gray Nicker	<i>Caesalpinia bonduc</i>	
Canna	<i>Canna flaccida</i>	
Sugar Hackberry	<i>Celtis laevigata</i>	
Snowberry	<i>Chiococca alba</i>	
Citrus Sp.*	<i>Citrus</i> sp.	
Sea Grape	<i>Coccoloba uvifera</i>	
Buttonwood	<i>Conocarpus erectus</i>	
Sedge	<i>Cyperus ligularis</i>	
Butterfly Orchid	<i>Encyclia tampensis</i>	16
White Stopper	<i>Eugenia axillaris</i>	
Spanish Stopper	<i>Eugenia foetida</i>	
Dog Fennel	<i>Eupatorium</i> sp.	
Strangler Fig	<i>Ficus aurea</i>	
Florida Privet	<i>Forestiera segregata</i>	
Yaupon	<i>Ilex vomitoria</i>	
Morning Glory	<i>Ipomea</i> sp,	
Southern Red Cedar	<i>Juniperus Virginia</i>	
White Mangrove	<i>Languncularia racemosa</i>	
Lantana*	<i>Lantana camara</i>	
Wax Myrtle	<i>Myrica cerifera</i>	
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	
Passion Flower	<i>Passiflora suberosa</i>	
Red Bay	<i>Persea borbonia</i>	
Golden Polypody	<i>Phlebodium aureum</i>	
Cat's Claw	<i>Pithecellobium unguis-cati</i>	
Marsh Fleabane	<i>Pluchea rosea</i>	
Wild Poinsetta	<i>Poinsettia</i> sp.	
Resurrection Fern	<i>Polypodium Polypodioides</i> var. <i>michauxianum</i>	
Wild Coffee	<i>Psychotria nervosa</i>	
Laurel Oak	<i>Quercus laurifolia</i>	
Water Oak	<i>Quercus nigra</i>	
Live Oak	<i>Quercus Virginiana</i>	
Myrsine	<i>Rapanea punctata</i>	
Red Mangrove	<i>Rhizophora mangle</i>	
Winged Sumac	<i>Rhus copallina</i>	
Cabbage Palm	<i>Sabal palmetto</i>	
Brazilian Pepper*	<i>Schinus terebinthifolius</i>	
Greenbriar	<i>Smilax</i> sp.	
Goldenrod	<i>Solidago</i> sp.	
St. Augustine Grass*	<i>Stenotaphrum secundatum</i>	

* Non-native Species

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Plants

Common Name	Scientific Name	Primary Habitat (for designated species)
Common Air Plant	<i>Tillandsia fasciculata</i>	
Ball Moss	<i>Tillandsia recurvata</i>	
Giant Air Plant	<i>Tillandsia utriculata</i>	16
Poison ivy	<i>Toxicodendron radicans</i>	
Ironweed	<i>Vernonia</i> sp.	
Cow Pea	<i>Vigna luteola</i>	
Grape Sp.	<i>vitis</i> sp.	
Spanish Bayonet	<i>Yucca aloifolia</i>	
Hercules Club	<i>Zanthoxylum clava-herculis</i>	

Natural Community Habitat Designation Codes

Terrestrial

1. Beach Dune
2. Bluff
3. Coastal Berm
4. Coastal Rock Barren
5. Coastal Strand
6. Dry Prairie
7. Maritime Hammock
8. Mesic Flatwoods
9. Coastal Grasslands
10. Pine Rockland
11. Prairie Hammock
12. Rockland Hammock
13. Sandhill
14. Scrub
15. Scrubby Flatwoods
16. Shell Mound
17. Sinkhole
18. Slope Forest
19. Upland Glade
20. Upland Hardwood Forest
21. Upland Mixed Forest
22. Upland Pine Forest
23. Xeric Hammock

Palustrine

24. Basin Marsh
25. Basin Swamp
26. Baygall
27. Bog
28. Bottomland Forest
29. Depression Marsh
30. Dome
31. Floodplain Forest
32. Floodplain Marsh
33. Floodplain Swamp
34. Freshwater Tidal Swamp
35. Hydric Hammock
36. Marl Prairie
37. Seepage Slope
38. Slough
39. Strand Swamp
40. Swale
41. Wet Flatwoods
42. Wet Prairie

Lacustrine

43. Clastic Upland Lake
44. Coastal Dune Lake
45. Coastal Rockland Lake

Lacustrine—Continued

46. Flatwood/Prairie Lake
47. Marsh Lake
48. River Floodplain Lake
49. Sandhill Upland Lake
50. Sinkhole Lake
51. Swamp Lake

Riverine

52. Alluvial Stream
53. Blackwater Stream
54. Seepage Stream
55. Spring-Run Stream

Estuarine

56. Estuarine Composite Substrate
57. Estuarine Consolidated Substrate
58. Estuarine Coral Reef
59. Estuarine Grass Bed
60. Estuarine Mollusk Reef
61. Estuarine Octocoral Bed
62. Estuarine Sponge Bed
63. Estuarine Tidal Marsh
64. Estuarine Tidal Swamp
65. Estuarine Unconsolidated Substrate
66. Estuarine Worm Reef

Marine

67. Marine Algal Bed
68. Marine Composite Substrate
69. Marine Consolidated Substrate
70. Marine Coral Reef
71. Marine Grass Bed
72. Marine Mollusk Reef
73. Marine Octocoral Bed
74. Marine Sponge Bed
75. Marine Tidal Marsh
76. Marine Tidal Swamp
77. Marine Unconsolidated Substrate
78. Marine Worm Reef

Subterranean

79. Aquatic Cave
80. Terrestrial Cave

Miscellaneous

81. Ruderal
82. Developed

MTC Many Types Of Communities

OF Overflying

Addendum 6—Designated Species List

**Rank Explanations
For FNAI Global Rank, FNAI State Rank, Federal Status
And State Status**

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

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

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

FNAI GLOBAL RANK DEFINITIONS

- G1 = Critically 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 man-made factor.
- G2 = Imperiled 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.
- G3 = Either very rare and 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.
- G4 = apparently secure globally (may be rare in parts of range)
- G5 = demonstrably secure globally
- GH = of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- GX = believed to be extinct throughout range
- GXC = extirpated from the wild but still known from captivity or cultivation
- G#? = tentative rank (e.g., G2?)
- G#G# = range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T# = rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)
- G#Q = rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q = same as above, but validity as subspecies or variety is questioned.
- GU = due to lack of information, no rank or range can be assigned (e.g., GUT2).
- G? = not yet ranked (temporary)
- S1 = Critically 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.
- S2 = Imperiled 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.
- S3 = Either very rare and 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.
- S4 = apparently secure in Florida (may be rare in parts of range)
- S5 = demonstrably secure in Florida
- SH = of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SX = believed to be extinct throughout range
- SA = accidental in Florida, i.e., not part of the established biota
- SE = an exotic species established in Florida may be native elsewhere in North America
- SN = regularly occurring, but widely and unreliably distributed; sites for conservation hard to determine

**Rank Explanations
For FNAI Global Rank, FNAI State Rank, Federal Status
And State Status**

- SU = due to lack of information, no rank or range can be assigned (e.g., SUT2).
S? = not yet ranked (temporary)

LEGAL STATUS

- N = Not currently listed, nor currently being considered for listing, by state or federal agencies.

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

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

STATE

Animals

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

- LE = Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.
LT = Listed as Threatened Species by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable 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 which, in the foreseeable 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.

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Designated Species

Plants

Common Name/ <i>Scientific Name</i>	Designated Species Status		
	FDA	USFWS	FNAI
Giant leather fern <i>Acrostichum danaeifolium</i>		C	
Butterfly orchid <i>Encyclia tampensis</i>		C	
Common wild pine; Common air plant <i>Tillandsia fasciculata</i>		E	
Giant wild pine; Giant air plant <i>Tillandsia utriculata</i>		E	

Addendum 7—DHR Cultural Management Statement

**Management Procedures For
Archaeological And Historical Sites And Properties
On State -- Owned Or Controlled Lands
(Revised August, 1995)**

A. General Discussion

Archaeological and historic sites are defined collectively in 267.021(3), F.S., as "historic properties" or "historic resources." They have several essential characteristics that must be recognized in a management program.

First of all, they are a finite and non-renewable resource. Once destroyed, presently existing resources, including buildings, other structures, shipwreck remains, archaeological sites and other objects of antiquity, cannot be renewed or revived. Today, sites in the State of Florida are being destroyed by all kinds of land development, inappropriate land management practices, erosion, looting, and to a minor extent even by well-intentioned professional scientific research (e.g., archaeological excavation). Measures must be taken to ensure that some of these resources will be preserved for future study and appreciation.

Secondly, sites are unique because individually they represent the tangible remains of events that occurred at a specific time and place.

Thirdly, while sites uniquely reflect localized events, these events and the origin of particular sites are related to conditions and events in other times and places. Sites can be understood properly only in relation to their natural surroundings and the activities of inhabitants of other sites. Managers must be aware of this "systemic" character of historic and archaeological sites. Also, it should be recognized that archaeological sites are time capsules for more than cultural history; they preserve traces of past biotic communities, climate, and other elements of the environment that may be of interest to other scientific disciplines.

Finally, the significance of sites, particularly archaeological ones, derives not only from the individual artifacts within them, but equally from the spatial arrangement of those artifacts in both horizontal and vertical planes. When archaeologists excavate, they recover, not merely objects, but also a record of the positions of these objects in relation to one another and their containing matrix (e.g., soil strata). Much information is sacrificed if the so-called "context" of archaeological objects is destroyed or not recovered, and this is what archaeologists are most concerned about when a site is threatened with destruction or damage. The artifacts themselves can be recovered even after a site is heavily disturbed, but the context -- the vertical and horizontal relationships -- cannot. Historic structures also contain a wealth of cultural (socio-economic) data that can be lost if historically sensitive maintenance, restoration or rehabilitation procedures are not implemented, or if they are demolished or extensively altered without appropriate documentation. Lastly, it should not be forgotten that historic structures often have associated potentially significant historic archaeological features that must be considered in land management decisions.

B. Statutory Authority

Chapter 253, Florida Statutes ("State Lands") directs the preparation of "single-use" or "multiple-use" land management plans for all state-owned lands and state-owned sovereignty submerged lands. In this document, 253.034(4), F.S., specifically requires that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites, as well as other fragile resources..."

Chapter 267, Florida Statutes is the primary historic preservation authority of the state. The importance of protecting and interpreting archaeological and historic sites is recognized in 267.061(1)(a), F.S.:The rich and unique heritage of historic properties in this state, representing

**Management Procedures For
Archaeological And Historical Sites And Properties
On State -- Owned Or Controlled Lands
(Revised August, 1995)**

more than 10,000 years of human presence, is an important legacy to be valued and conserved for present and future generations. The destruction of these nonrenewable historic resources will engender a significant loss to the state's quality of life, economy, and cultural environment. It is therefore declared to be state policy to:

1. Provide leadership in the preservation of the state's historic resources; [and]
2. Administer state-owned or state-controlled historic resources in a spirit of stewardship and trusteeship;...

Responsibilities of the Division of Historical Resources in the Department of State pursuant to 267.061(3), F.S., include the following:

1. Cooperate with federal and state agencies, local Governments, and private organizations and individuals to direct and conduct a comprehensive statewide survey of historic resources and to maintain an inventory of such responses.
2. Develop a comprehensive statewide historic preservation plan.
3. Identify and nominate eligible properties to the National Register of Historic Places and otherwise administer applications for listing properties in the National Register of Historic Places.
4. Cooperate with federal and state agencies, local governments, and organizations and individuals to ensure that historic resources are taken into consideration at all levels of planning and development.
5. Advise and assist, as appropriate, federal and state agencies and local governments in carrying out their historic preservation responsibilities and programs.
6. Carry out on behalf of the state the programs of the National Historic Preservation Act of 1966, as amended, and to establish, maintain, and administer a state historic preservation program meeting the requirements of an approved program and fulfilling the responsibilities of state historic preservation programs as provided in subsection 101(b) of that act.
7. Take such other actions necessary or appropriate to locate, acquire, protect, preserve, operate, interpret, and promote the location, acquisition, protection, preservation, operation, and interpretation of historic resources to foster an appreciation of Florida history and culture. Prior to the acquisition, preservation, interpretation, or operation of a historic property by a state agency, the Division shall be provided a reasonable opportunity to review and comment on the proposed undertaking and shall determine that there exists historic authenticity and a feasible means of providing for the preservation, interpretation and operation of such property.
8. Establish professional standards for the preservation, exclusive of acquisition, of historic resources in state ownership or control.
9. Establish guidelines for state agency responsibilities under subsection (2).

Responsibilities of other state agencies of the executive branch, pursuant to 267.061(2), F.S., include:

1. Each state agency of the executive branch having direct or indirect jurisdiction over a proposed state or state-assisted undertaking shall, in accordance with state policy and prior to the approval of expenditure of any state funds on the undertaking, consider the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the National Register of Historic Places. Each such agency shall afford the division a reasonable opportunity to comment with regard to such an undertaking.
2. Each state agency of the executive branch shall initiate measures in consultation with the division to assure that where, as a result of state action or assistance carried out by such agency, a historic property is to be demolished or substantially altered in a way that adversely

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- affects the character, form, integrity, or other qualities that contribute to [the] historical, architectural, or archaeological value of the property, timely steps are taken to determine that no feasible and prudent alternative to the proposed demolition or alteration exists, and, where no such alternative is determined to exist, to assure that timely steps are taken either to avoid or mitigate the adverse effects, or to undertake an appropriate archaeological salvage excavation or other recovery action to document the property as it existed prior to demolition or alteration.
3. In consultation with the division [of Historical Resources], each state agency of the executive branch shall establish a program to locate, inventory, and evaluate all historic properties under the agency's ownership or control that appear to qualify for the National Register. Each such agency shall exercise caution to assure that any such historic property is not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly.
 4. Each state agency of the executive branch shall assume responsibility for the preservation of historic resources that are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for the purpose of carrying out agency responsibilities, the agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with preservation of such properties, the mission of the agency, and the professional standards established pursuant to paragraph (3)(k), any preservation actions necessary to carry out the intent of this paragraph.
 5. Each state agency of the executive branch, in seeking to acquire additional space through new construction or lease, shall give preference to the acquisition or use of historic properties when such acquisition or use is determined to be feasible and prudent compared with available alternatives. The acquisition or use of historic properties is considered feasible and prudent if the cost of purchase or lease, the cost of rehabilitation, remodeling, or altering the building to meet compliance standards and the agency's needs, and the projected costs of maintaining the building and providing utilities and other services is less than or equal to the same costs for available alternatives. The agency shall request the division to assist in determining if the acquisition or use of a historic property is feasible and prudent. Within 60 days after making a determination that additional space is needed, the agency shall request the division to assist in identifying buildings within the appropriate geographic area that are historic properties suitable for acquisition or lease by the agency, whether or not such properties are in need of repair, alteration, or addition.
 6. Consistent with the agency's mission and authority, all state agencies of the executive branch shall carry out agency programs and projects, including those under which any state assistance is provided, in a manner which is generally sensitive to the preservation of historic properties and shall give consideration to programs and projects which will further the purposes of this section.

Section 267.12 authorizes the Division to establish procedures for the granting of research permits for archaeological and historic site survey or excavation on state-owned or controlled lands, while Section 267.13 establishes penalties for the conduct of such work without first obtaining written permission from the Division of Historical Resources. The Rules of the Department of State, Division of Historical Resources, for research permits for archaeological sites of significance are contained in Chapter 1A-32, F.A.C.

Another Florida Statute affecting land management decisions is Chapter 872, F.S. Section 872.02, F.S., pertains to marked grave sites, regardless of age. Many state-owned properties contain old family and other cemeteries with tombstones, crypts, etc. Section 872.05, F.S., pertains to unmarked human burial sites, including prehistoric and historic Indian burial sites. Unauthorized disturbance of both marked and unmarked human burial site is a felony.

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C. Management Policy

The choice of a management policy for archaeological and historic sites within state-owned or controlled land obviously depends upon a detailed evaluation of the characteristics and conditions of the individual sites and groups of sites within those tracts. This includes an interpretation of the significance (or potential significance) of these sites, in terms of social and political factors, as well as environmental factors. Furthermore, for historic structures architectural significance must be considered, as well as any associated historic landscapes.

Sites on privately owned lands are especially vulnerable to destruction, since often times the economic incentives for preservation are low compared to other uses of the land areas involved. Hence, sites in public ownership have a magnified importance, since they are the ones with the best chance of survival over the long run. This is particularly true of sites that are state-owned or controlled, where the basis of management is to provide for land uses that are minimally destructive of resource values.

It should be noted that while many archaeological and historical sites are already recorded within state--owned or controlled--lands, the majority of the uplands areas and nearly all of the inundated areas have not been surveyed to locate and assess the significance of such resources. The known sites are, thus, only an incomplete sample of the actual resources - i.e., the number, density, distribution, age, character and condition of archaeological and historic sites - on these tracts. Unfortunately, the lack of specific knowledge of the actual resources prevents formulation of any sort of detailed management or use plan involving decisions about the relative historic value of individual sites. For this reason, a generalized policy of conservation is recommended until the resources have been better addressed.

The generalized management policy recommended by the Division of Historical Resources includes the following:

1. State land managers shall coordinate all planned activities involving known archaeological or historic sites or potential site areas closely with the Division of Historical Resources in order to prevent any kind of disturbance to significant archaeological or historic sites that may exist on the tract. Under 267.061(1)(b), F.S., the Division of Historical Resources is vested with title to archaeological and historic resources abandoned on state lands and is responsible for administration and protection of such resources. The Division will cooperate with the land manager in the management of these resources. Furthermore, provisions of 267.061(2) and 267.13, F.S., combined with those in 267.061(3) and 253.034(4), F.S., require that other managing (or permitting) agencies coordinate their plans with the Division of Historical Resources at a sufficiently early stage to preclude inadvertent damage or destruction to known or potentially occurring, presently unknown archaeological and historic sites. The provisions pertaining to human burial sites must also be followed by state land managers when such remains are known or suspected to be present (see 872.02 and 872.05, F.S., and 1A-44, F.A.C.)
2. Since the actual resources are so poorly known, the potential impact of the managing agency's activities on historic archaeological sites may not be immediately apparent. Special field survey for such sites may be required to identify the potential endangerment as a result of particular management or permitting activities. The Division may perform surveys, as its resources permit, to aid the planning of other state agencies in their management activities, but outside archaeological consultants may have to be retained by the managing agency. This would be especially necessary in the cases of activities contemplating ground disturbance over large areas and unexpected occurrences. It should be noted, however, that in most instances Division staff's knowledge of known and expected site distribution is such that actual field surveys may not be necessary, and the project may be reviewed by submitting a project location map (preferably a 7.5

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minute U.S.G.S. Quadrangle map or portion thereof) and project descriptive data, including detailed construction plans. To avoid delays, Division staff should be contacted to discuss specific project documentation review needs.

3. In the case of known significant sites, which may be affected by proposed project activities, the managing agency will generally be expected to alter proposed management or development plans, as necessary, or else make special provisions to minimize or mitigate damage to such sites.
4. If in the course of management activities, or as a result of development or the permitting of dredge activities (see 403.918(2)(6)a, F.S.), it is determined that valuable historic or archaeological sites will be damaged or destroyed, the Division reserves the right, pursuant to 267.061(1)(b), F.S., to require salvage measures to mitigate the destructive impact of such activities to such sites. Such salvage measures would be accomplished before the Division would grant permission for destruction of the affected site areas. The funding needed to implement salvage measures would be the responsibility of the managing agency planning the site destructive activity. Mitigation of historic structures at a minimum involves the preparation of measured drawings and documentary photographs. Mitigation of archaeological resources involves the excavation, analysis and reporting of the project findings and must be planned to occur sufficiently in advance to avoid project construction delays. If these services are to be contracted by the state agency, the selected consultant will need to obtain an Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research (see 267.12, F.S. and Rules 1A-32 and 1A-46 F.A.C.).
5. For the near future, excavation of non-endangered (i.e., sites not being lost to erosion or development) archaeological site is discouraged. There are many endangered sites in Florida (on both private and public lands) in need of excavation because of the threat of development or other factors. Those within state-owned or controlled lands should be left undisturbed for the present - with particular attention devoted to preventing site looting by "treasure hunters". On the other hand, the archaeological and historic survey of these tracts is encouraged in order to build an inventory of the resources present, and to assess their scientific research potential and historic or architectural significance.
6. The cooperation of land managers in reporting sites to the Division that their field personnel may discover is encouraged. The Division will help inform field personnel from other resource managing agencies about the characteristics and appearance of sites. The Division has initiated a cultural resource management training program to help accomplish this. Upon request the Division will also provide to other agencies archaeological and historical summaries of the known and potentially occurring resources so that information may be incorporated into management plans and public awareness programs (See Management Implementation).
7. Any discovery of instances of looting or unauthorized destruction of sites must be reported to the agent for the Board of Trustees of the Internal Improvement Trust Fund and the Division so that appropriate action may be initiated. When human burial sites are involved, the provisions of 872.02 and 872.05, F. S. and Rule 1A-44, F.A.C., as applicable, must also be followed. Any state agent with law enforcement authority observing individuals or groups clearly and incontrovertibly vandalizing, looting or destroying archaeological or historic sites within state-owned or controlled lands without demonstrable permission from the Division will make arrests and detain those individuals or groups under the provisions of 267.13, 901.15, and 901.21, F.S., and related statutory authority pertaining to such illegal activities on state-owned or controlled lands. County Sheriffs' officers are urged to assist in efforts to stop and/or prevent site looting and destruction.
8. In addition to the above management policy for archaeological and historic sites on state-owned land, special attention shall be given to those properties listed in the National Register of Historic Places and other significant buildings. The Division recommends that the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Revised 1990) be followed for such sites.

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9. The following general standards apply to all treatments undertaken on historically significant properties.
10. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
11. The historic character of a property shall be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property shall be avoided.
12. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
13. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
14. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
15. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
16. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
17. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
18. New additions, exterior alterations, or related new construction shall not destroy materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
19. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (see Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings [Revised 1990]).

Divisions of Historical Resources staff are available for technical assistance for any of the above listed topics. It is encouraged that such assistance be sought as early as possible in the project planning.

D. Management Implementation

As noted earlier, 253.034(4), F.S., states that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites..." The following guidelines should help to fulfill that requirement.

1. All land managing agencies should contact the Division and send U.S.G.S. 7.5 minute quadrangle maps outlining the boundaries of their various properties.
2. The Division will in turn identify site locations on those maps and provide descriptions for known archaeological and historical sites to the managing agency.
3. Further, the Division may also identify on the maps areas of high archaeological and historic site location probability within the subject tract. These are only probability zones, and sites may be found outside of these areas. Therefore, actual ground inspections of project areas may still be necessary.

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4. The Division will send archaeological field recording forms and historic structure field recording forms to representatives of the agency to facilitate the recording of information on such resources.
5. Land managers will update information on recorded sites and properties.
6. Land managers will supply the Division with new information as it becomes available on previously unrecorded sites that their staff locate. The following details the kind of information the Division wishes to obtain for any new sites or structures that the land managers may report:

A. Historic Sites

- (1) Type of structure (dwelling, church, factory, etc.).
- (2) Known or estimated age or construction date for each structure and addition.
- (3) Location of building (identify location on a map of the property, and building placement, i.e., detached, row, etc.).
- (4) General Characteristics: (include photographs if possible) overall shape of plan (rectangle, "L" "T" "H" "U", etc.); number of stories; number of vertical divisions of bays; construction materials (brick, frame, stone, etc.); wall finish (kind of bond, coursing, shingle, etc.); roof shape.
- (5) Specific features including location, number and appearance of:
 - (a) Important decorative elements;
 - (b) Interior features contributing to the character of the building;
 - (c) Number, type, and location of outbuildings, as well as date(s) of construction;
 - (d) Notation if property has been moved;
 - (e) Notation of known alterations to building.

B. Archaeological Sites

- (1) Site location (written narrative and mapped location).
 - (2) Cultural affiliation and period.
 - (3) Site type (midden, burial mound, artifact scatter, building rubble, etc.).
 - (4) Threats to site (deterioration, vandalism, etc.).
 - (5) Site size (acreage, square meters, etc.).
 - (6) Artifacts observed on ground surface (pottery, bone, glass, etc.).
 - (7) Description of surrounding environment.
1. No land disturbing activities should be undertaken in areas of known archaeological or historic sites or areas of high site probability without prior review by the Division early in the project planning.
 2. Ground disturbing activities may proceed elsewhere but land managers should stop disturbance in the immediate vicinity of artifact finds and notifies the Division if previously unknown archaeological or historic remains are uncovered. The provisions of Chapter 872, F.S., must be followed when human remains are encountered.
 3. Excavation and collection of archaeological and historic sites on state lands without a permit from the Division are a violation of state law and shall be reported to a law enforcement officer. The use of metal detectors to search for historic artifacts shall be prohibited on state lands except when authorized in a 1A-32, F.A.C., research permit from the Division.
 4. Interpretation and visitation which will increase public understanding and enjoyment of archaeological and historic sites without site destruction or vandalism is strongly encouraged.
 5. Development of interpretive programs including trails, signage, kiosks, and exhibits is encouraged and should be coordinated with the Division.
 6. Artifacts found or collected on state lands are by law the property of the Division. Land managers shall contact the Division whenever such material is found so that arrangements may be made for

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recording and conservation. This material, if taken to Tallahassee, can be returned for public display on a long term loan.

E. Administering Agency

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

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

Contact Person:

Susan M. Harp
Historic Preservation Planner
Telephone (904) 487-2333
Suncom 277-2333
FAX (904) 922-0496

Addendum 8—Priority Schedule And Cost Estimates

**Madira Bickel Mound State Archaeological Site
Priority Schedule And Cost Estimates**

Estimates are developed for the funding and staff resources needed to implement the management plan based on goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the Division's legislative budget process. The Division prepares an annual legislative budget request based on the priorities established for the entire state park system. The Division also aggressively pursues a wide range of other funds and staffing resources, such as grants, volunteers, and partnerships with agencies, local governments and the private sector for supplementing normal legislative appropriations to address unmet needs. The ability of the Division to implement the specific goals, objectives and priority actions identified in this plan will be determined by the availability of funding resources for these purposes.

1. Exotic plant removal throughout Madira Bickel Mound State Archaeological Site, for the period of five years. Primary target: Brazilian pepper; Secondary target: Lantana. **Estimated Cost: \$1,200.**
2. Back fill the abandon mosquito ditches on site as outlined in Goals of Management Plan. **Estimated Cost: \$2,500.**
3. Replacement of boundary fencing around site to reduce/stop entry to site through sites other than designated trail and steps. **Estimated Cost: \$8,500.**
4. Repair existing trail and steps to provide safe walk area without causing erosion problems on mound. **Estimated Cost: \$1,800.**

TOTAL ESTIMATED COST: \$14,000.

**Madira Bickel Mound State Archaeological Site
Priority Schedule And Cost Estimates**

Item	Quantity	Unit	Unit Price	Multiplier	Amount
Interpretive Signs	2.000	ea.	\$5,000.00		\$12,500.00
Interpretive Trail	300.000	LF	\$2.00		\$750.00
Steps and Enclosure	1.000	ea.	\$10,000.00		\$12,500.00
				Sub-Total	<u>\$25,750.00</u>
				20 Percent Contingency Costs	<u>\$5,150.00</u>
				Total	\$30,900.00