Letchworth-Love Mounds Archaeological State Park

Advisory Group Draft
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
June 2018

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INTRODUCTION

Letchworth-Love Mounds Archaeological State Park is located in Jefferson County (see Vicinity Map). Access to the park is from Sunray Road directly off U.S. Highway 90 (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Letchworth-Love Mounds Archaeological State Park was initially acquired on June 30, 1992 with funds from the P2000/CARL program. Currently, the park comprises 188.20 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on October 21, 1996, the Trustees leased (Lease Number 4089) the property to DRP under a fifty-year lease. The current lease will expire on October 20, 2046.

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

Purpose and Significance of the Park

The purpose of Letchworth-Love Mounds Archaeological State Park is to protect and interpret a major mound complex which includes the tallest Native American ceremonial mound in Florida, and conserve natural, historical, and archaeological resources in a manner that encourages resource-based public recreation activities.

Park Significance

- Officially listed on the National Register of Historic Places in 2010, the park preserves an archaeological mound complex that includes at least 7 earth mounds and Florida's tallest Native American ceremonial mound, which stands at approximately 50 feet.

- Artifacts recovered from the park date back as far as 12,000 years, and archaeological research indicates the mounds were built between 200-900 AD by members of the Swift Creek and Weeden Island Native American cultures.

- The park preserves native hardwood forests and wetlands that are crucial habitats for imperiled species such as the gopher tortoise (*Gopherus polyphemus*) and little blue heron (*Egretta caerulea*).

- Through preservation of blackwater streams and wetlands, the park protects surface water quality of the watershed that drains into Lake Miccosukee, a vital source for recharging the Floridan Aquifer.

- The park offers several resource-based public recreation activities including bird and wildlife viewing, picnicking, and hiking on an interpretative trail through the mound complex.

Letchworth-Love Mound Archaeological State Park is classified as a Special Feature Site in the DRP's unit classification system. In the management of a Special Feature Site, primary emphasis on protection and maintenance of the special feature for long-term public enjoyment. Permitted uses are almost exclusively passive in nature and program emphasis is on interpretation of the special feature. Development at special feature sites is focused on protection and maintenance of the site, public access, safety and the convenience of the user.

Purpose and Scope of the Plan

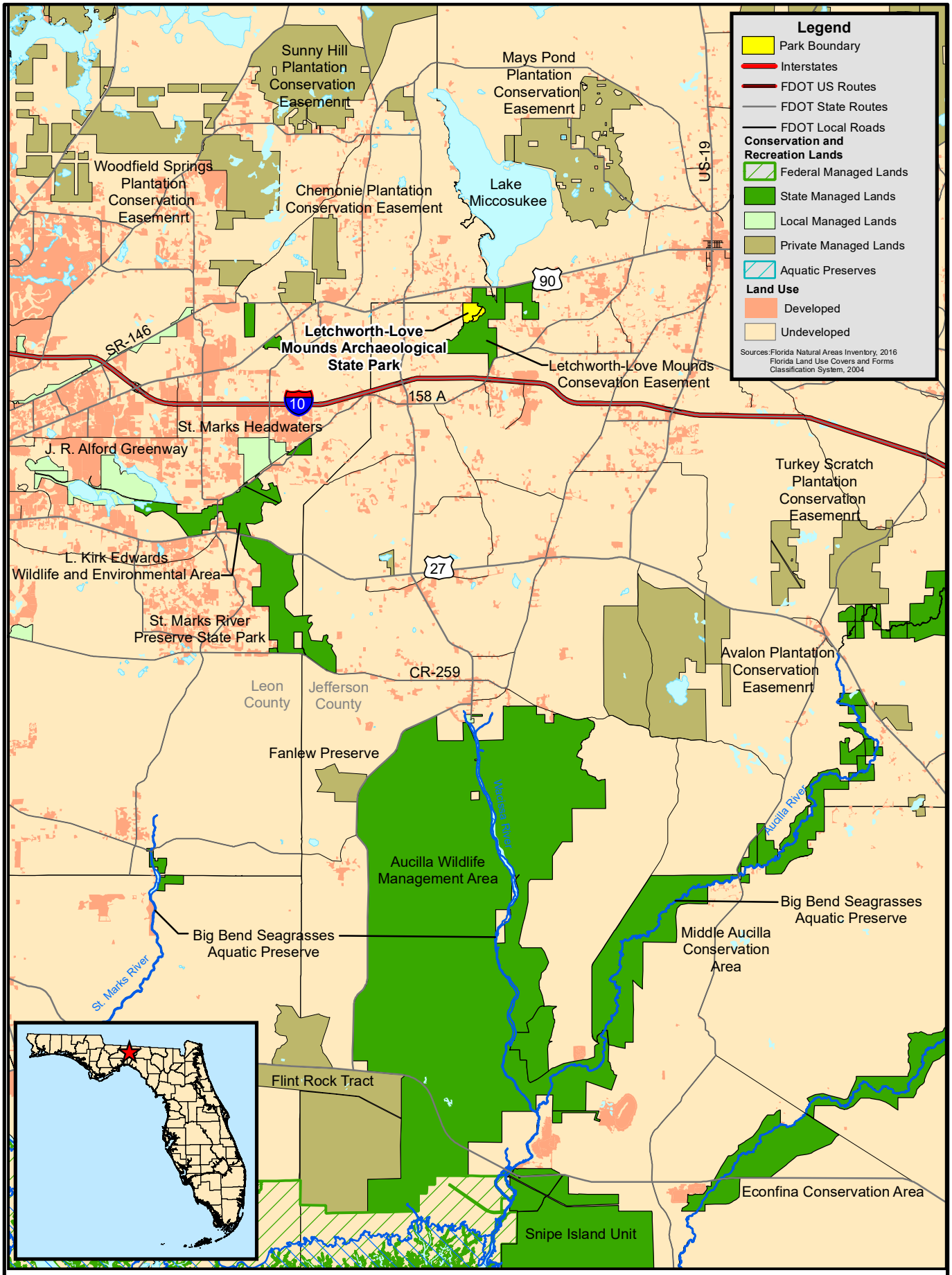
This plan serves as the basic statement of policy and direction for the management of Letchworth-Love Mounds Archaeological State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the 2006 approved plan.

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

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

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

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies.



LETCHWORTH-LOVE MOUNDS ARCHAEOLOGICAL STATE PARK

N

0 1.25 2.5 5 Miles

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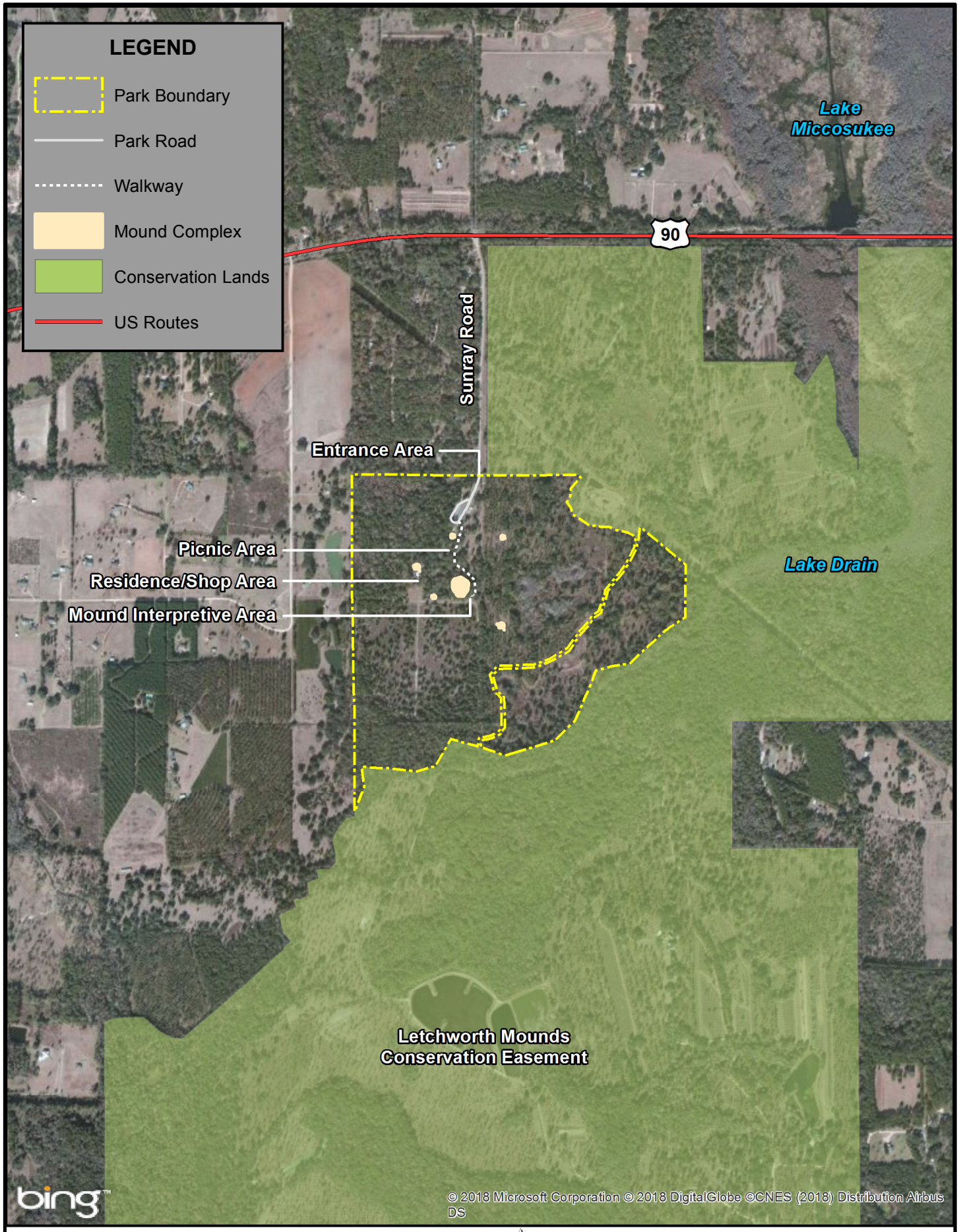
VICINITY MAP



LETCHWORTH-LOVE MOUNDS ARCHAEOLOGICAL STATE PARK

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0 0.125 0.25 0.5 Miles

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REFERENCE MAP

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

Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

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.

DRP may provide the services and facilities outlined in this plan either with its own funds and staff or through an outsourcing contract. Private contractors may provide assistance with natural resource management and restoration activities or a concessionaire may provide services to park visitors in order to enhance the visitor experience. For example, a concessionaire could be authorized to sell merchandise and food and to rent recreational equipment for use in the park. A concessionaire may also be authorized to provide specialized services, such as interpretive tours, or overnight accommodations when the required capital investment exceeds that which DRP can elect to incur. Decisions regarding outsourcing, contracting with the private sector, the use of concessionaires, etc. are made on a case-by-case basis in accordance with the policies set forth in DRP's Operations Manual (OM).

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

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

Park Management Goals

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

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

Management Coordination

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

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FWC aids DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites.

Public Participation

DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on [INSERT Dates], respectively. Meeting notices were published in the Florida Administrative Register, [INSERT publication date, VOL/ISSUE], included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

Other Designations

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

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

RESOURCE MANAGEMENT COMPONENT

Introduction

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

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

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

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

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

Table 1. Letchworth-Love Mounds State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Known Cultural Resources**
LE-A	30.20	Y	Y
LE-B	11.00	Y	Y
LE-C	35.66	Y	Y
LE-D	57.99	Y	Y
LE-E	39.37	Y	Y
LE-F	15.89	Y	Y

Resource Description and Assessment

Natural Resources

Topography

Jefferson County is divided into two major physiographic divisions: the Northern Highlands and the Coastal Lowlands. The latter generally occurs in the southern two-thirds of the county, and the Cody Scarp represents the boundary between the two. Letchworth-Love Mounds is located in the Northern Highlands within the Tallahassee Hills. This physiographic region is characterized by rolling hills of distinctive red clay. Although the park is immediately surrounded by the Tallahassee Hills, it is located on a topographically subtle, sandy ridge near the southwestern side of Lake Miccosukee, within the lake's flat drainage corridor.

The major topographic feature within the park is the ceremonial mound (Mound 1) which reaches a height of approximately 50 feet from its base (see Topographic Map). The approximate elevation of the park is 80 feet above sea level.

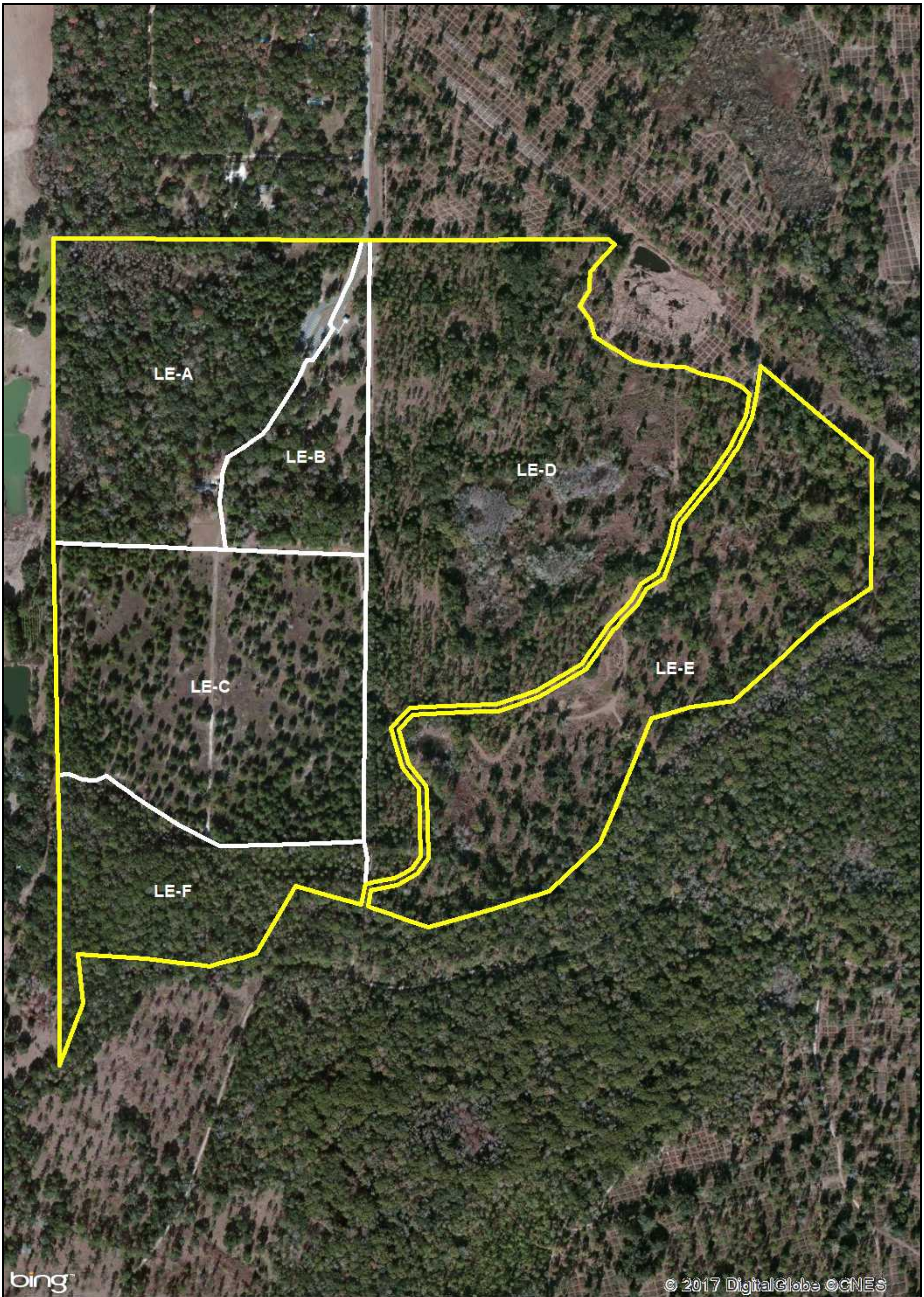
Geology

Jefferson County encompasses a transitional geologic area that separates the thick Tertiary carbonate sediment characteristic of the Florida peninsula from the predominant age-equivalent clastic sediment of western Florida. This area is underlain by thick limestone, dolomites, sands, and clays in the northern half of the county.

The red clay soil of the Tallahassee Hills overlays the Upper Miocene Miccosukee Formation underlain by the Middle Miocene Hawthorn Formation, and by the Lower Miocene St. Marks Formation.

Soils

Seven different soil types have been identified in the park (see Soils Map). Lucy loamy fine sand and Orangeburg sandy loam extend into the park from the northwest. These relatively rich well-drained soils support upland mixed woodlands.



LETCHWORTH-LOVE MOUNDS
ARCHAEOLOGICAL STATE PARK

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0 100 200 400 Feet

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MANAGEMENT ZONE MAP

LETCHWORTH-LOVE MOUNDS
ARCHAEOLOGICAL STATE PARK

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0 100 200 400 Feet

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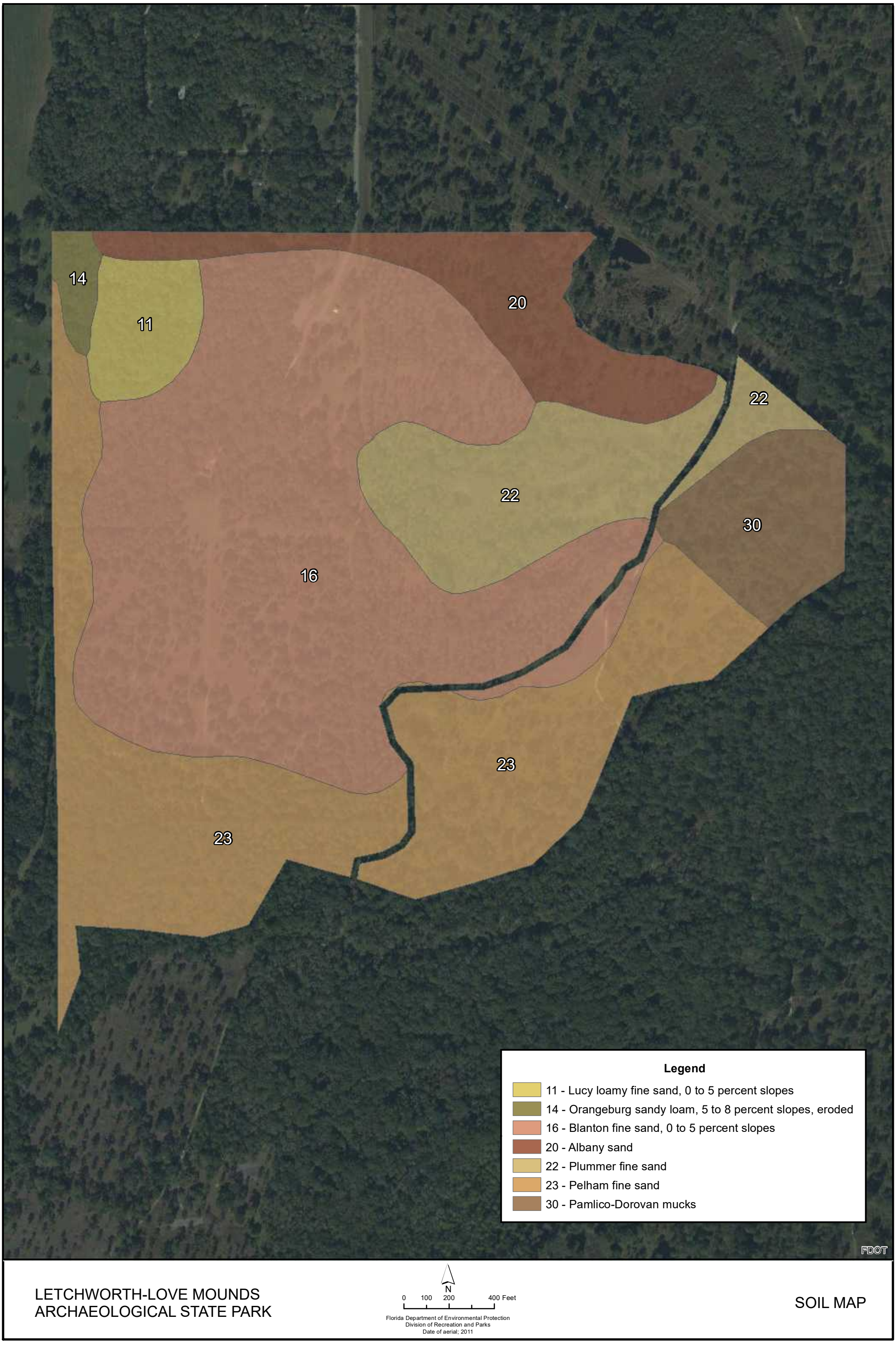
TOPOGRAPHIC MAP



LETCHWORTH-LOVE MOUNDS
ARCHAEOLOGICAL STATE PARK

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0 100 200 400 Feet

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SOIL MAP

Blanton fine sand is a moderately well drained soil with a subsoil of sandy clay loam. This soil type spreads across the center of the park and coincides with past agricultural land use. Historically, this soil type supported upland mixed woodland and upland hardwood forest.

Albany sands occur along the park's northern rim. This poorly drained soil supports an early successional, mesic, upland hardwood forest, with components of upland mixed woodland.

Plummer fine sands, Pelham fine sands, and Pamlico-Dorovan mucks occur on broad low-lying flats and shallow depressions closer to the Lake Miccosukee Drain. Generally, these soils range from slightly to extremely acidic, are poorly drained and rather level. They support wetland forests including basin swamp and bottomland forest.

The park will provide for the conservation of soil resources by avoiding ground disturbance events unrelated to professional archaeological investigation or approved natural community restoration. The park will adopt management measures such as prescribed burning, selective removal of off-site hardwoods and site specific revegetation projects that promote herbaceous understory vegetation.

Minerals

The park has no minerals of commercial value.

Hydrology

The Floridan Aquifer is the principal water-bearing unit in Jefferson County. It includes all of the Middle Eocene to Early Miocene Formations. This aquifer is believed to be recharged by nearby Lake Miccosukee through sinkholes in addition to recharge along the Aucilla River. In the northeastern part of the county, leakage occurs from swamps through the overlying sediment of the Hawthorne and Miccosukee formations.

Secondary artesian aquifers are found in northern Jefferson County. These aquifers occur within discontinuous units of limestone, dolomite, and sand that formed the Hawthorne formation. The amount of water obtained from the secondary aquifers is minimal in comparison to the underlying Floridan Aquifer.

The entire park property, with exception of the mounds, is relatively flat. Therefore, significant sheet flow at ground surface is usually limited to the far southern edge of the property. Here, surface hydrology is generally in the form of small ephemeral streamlets and more permanent seepage areas that flow into the Lake Miccosukee drainage. This is a blackwater stream named Lake Drain.

There are three shallow wetlands within management zone LE-E that have, at least ephemeral, connections to Lake Drain. All of these wetlands are imbedded within upland hardwood forest.

The southernmost wetland is ringed by mature live oaks (*Quercus virginiana*) with buttonbush (*Cephalanthos occidentalis*) at the deep-water center. Mosquito fish (*Gambusia* spp.), cricket frogs (*Acris gryllus*) and spring peepers (*Pseudacris crucifer*) have been observed here.

The two northernmost wetlands, located nearer the power line right-of-way are rimmed by St. John's wort (*Hypericum* spp.) with more open, herbaceous growth towards the interiors. Plant species observed include: sedges (*Carex* spp.), mermaid weed (*Proserpinaca palustris*), maidencane (*Panicum hemitomon),* soft rush *(Juncus effuses),* Primrose willow (*Ludwigia* spp.), Smartweed (*Polygonum* spp.), Carolina willow *(Salix caroliniana)* and scattered sweetgum trees (*Liquidambar styraciflua).* Observed fauna include: mosquito fish, water beetles (*Notonecta glauca*), bronze frog (*Rana clamitans clamitans*), cricket frog, little blue heron *Egretta caerulea*), great egret (*Ardea alba*), pileated woodpecker (*Dryocopus pileatus*), and marsh rabbit (*Sylvilagus palustris*).

A much larger wetland occurs within management zone LE-D. Habitat conditions range from shallow marshy depressions to a dense, closed canopy hardwood swamp of swamp tupelo (*Nyssa biflora*). Cricket frogs, bronze frogs, southern leopard frogs (*Lithobates sphenocephala*) and spring peepers were either observed or heard, as well as large numbers of mosquito fish. There is a small area of open water within the blackgum swamp fringed with Virginia chain fern (*Woodwardia virginica*).

An expanse of bottomland forest associated with Lake Drain occurs in the far southern portion of management zone LE-F. This forested wetland extends well beyond the park boundary. All water flow within this area is directed towards Lake Drain. All of the park's wetlands are in good condition with no significant hydrological alterations.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes the Desired Future Condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its Desired Future Condition. Specific management objectives and actions for natural community management, exotic species management, imperiled species management, and population restoration, are discussed in the Resource Management Program section of this component.

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology, and fire frequency generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions.

DV

BF

UHF

DM

DM

BS

UMW

DM

UHF

BF

Legend

- BF - Bottomland Forest - 16.16 ac.
- BS - Basin Swamp - 7.14 ac.
- DM - Depression Marsh - 3.11 ac.
- DV - Developed - 1.31 ac.
- UHF - Upland Hardwood Forest - 49.83 ac.
- UMW - Upland Mixed Woodland - 112.57 ac.

LETCHWORTH-LOVE MOUNDS
ARCHAEOLOGICAL STATE PARK

N

0 100 200 400 Feet

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NATURAL COMMUNITIES MAP

In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub, 2 communities with similar species compositions, generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

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

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

Upland Hardwood Forest

Desired Future Condition: A mature hardwood forest with mesic conditions. Overstory tree species will consist of southern magnolia (*Magnolia grandiflora*), sweetgum, live oak, laurel oak, and white oak. Scattered loblolly pine and spruce pine may also occur. Understory species will include trees and shrubs such as American holly (*Ilex opaca*), flowering dogwood, eastern redbud (*Cercis canadensis*), horse sugar (*Symplocos tinctoria*), and beautyberry (*Callicarpa americana*). Ground cover will be comprised of shade tolerant herbaceous species, sedges, and vines (FNAI 2010a). The park's upland hardwood forest will not be excluded from prescribed fires applied every 2 to 5 years in the adjacent upland mixed woodland. This natural community will have the same 2- to 5-year FRI for at least the duration of this unit plan. The fire return interval can and should be revisited during the next scheduled UMP update.

Description and Assessment: Areas of the park identified as upland hardwood forest occur on relatively poorly-drained upland soils. The density and distribution of overstory hardwoods, chiefly live oak and southern magnolia, has been altered due to past management measures aimed at promoting quail habitat. As a result, this area is more open, grasses are more prevalent, and early successional hardwoods more numerous.

General Management Measures: Measures will include exposure to routine prescribed fire associated with the FRI of adjacent upland mixed woodland.

Upland Mixed Woodland

Desired Future Condition: Dominant tree species within the upland mixed woodland at this site will include shortleaf pine (*Pinus echinata*), southern red oak (*Quercus*

falcata), live oak, laurel oak (*Quercus hemisphaerica*), post oak (*Quercus stellata*), mockernut hickory (*Carya glabra*), bitternut hickory (*Carya cordiformis*) and white oak (*Quercus alba*). Hardwood tree species are frequently dominant or co-dominant with pines (*Pinus* spp.). Flowering dogwoods (*Cornus florida*), hop-hornbeam (*Ostrya virginiana*), cherry laurel (*Prunus caroliniana*), and blackjack oak (*Quercus marilandica*) will also be present. Typical ground layer species will include New Jersey tea (*Ceanothus americanus*), yellow Indiangrass (*Sorghastrum nutans*), silver plumegrass (*Saccharum alopecuroides*), and broomsedge *(Andropogon virginicus*). In old-growth conditions, oaks and hickories are commonly 150-200 years old (FNAI 2010b). The optimal FRI for this community is 2 to 5 years.

Description and Assessment: A large portion of the park is best described as upland mixed woodland. While all of this natural community map unit has been altered by at least 2,000 years of human occupation, key vegetative components have persisted. The portion of this natural community within management zone LE-C was most recently altered by modern agricultural use. Early successional species such as laurel oak and sweetgum are currently dominant here.

The portion of this natural community within management zone LE-D has been used in modern times as improved pasture and for timber production. The planted slash pine (*Pinus elliotii*) in this area was thinned prior to State acquisition. While considered an off-site species, the contribution of needle cast is desirable in support of prescribed burning and long-term natural community restoration. The most common on-site hardwood species in this area is live oak.

The most intact portions of this natural community occur within management zones LE-A and LE-B, where large canopy-producing southern red oaks, hickories, and white oaks are common. Post oaks, spruce pines and large live oaks also occur within management zone LE-A. Groundcover species and densities vary throughout this map unit, but consist primarily of broomsedge, silver plumegrass, and yellow Indiangrass.

There are no significant, lasting hydrological alterations attributed to modern agricultural use of the property. Hydrological regimes associated with the Lake Miccosukee Drain and its adjacent bottomland forest are largely unaltered.

General Management Measures: The primary management concern for all areas of the park will be the protection and preservation of this archaeologically rich landscape. Resource management measures will be low impact, and sensitive to known cultural resources and the potential for undiscovered resources. Natural community restoration efforts will be limited to non-ground disturbing measures such as mechanical treatment of early successional woody species and prescribed burning. Restoration of this acreage is discussed again in the Resource Management Program section of this component.

<u>Depression Marsh</u>
Desired Future Condition: The 3 small wetlands located within management zone LE-E will remain protected from any hydrological disturbance associated with

natural resource management of the surrounding upland hardwood forest. These oval or elliptic-shaped wetlands will be rimmed by hydrophytic shrubs such as St. John's-wort or mature hardwoods such as live oak. The interior will consist of either standing water or herbaceous growth such as water-tolerant sedges and grasses. Smaller shrubs or trees such as buttonbush, Carolina willow, and swamp cyrilla may also be present.

Description and Assessment: The southernmost depression within LE-E is ringed by mature live oaks with buttonbush at the deep-water center. Mosquito fish, cricket frogs, and spring peepers have been observed here. St. John's-wort and sedges (*Carex* sp.) occur at the south end.

The 2 northernmost wetlands, located nearer the power line right-of-way, are rimmed by St. John's-wort with more open, herbaceous growth towards the interiors. Plant species observed include: sedges, mermaid weed, maidencane, soft rush, primrose, smartweed, Carolina willow, and scattered sweetgum trees. Observed fauna include: mosquito fish, water beetles, bronze frog, cricket frog, little blue heron, great egret, pileated woodpecker, and marsh rabbit.

The FRI for this community will match the 2 to 5-year recommended interval for the surrounding upland hardwood forest.

General Management Measures: Management measures will focus on habitat protection, survey, removal of exotic plants and exposure to routine prescribed fire in association with the surrounding community's FRI.

Basin Swamp

Desired Future Condition: The park's basin swamp is a mostly forested wetland with some areas holding water most days of the year. The dominant tree is swamp tupelo. Other canopy species can include bald cypress, slash pine, red maple, and sweetgum. Depending upon fire history and hydroperiod, the understory is open with just a few scattered woody shrubs. Shrub species found along the ecotonal periphery can include Virginia willow (*Itea virginica*), swamp dogwood (*Cornus foemina*), wax myrtle (*Myrica cerifera*), and titi (*Cyrilla racemiflora*). Herbaceous growth within the forested areas is limited by the extended hydroperiod. In other more open portions of this map unit, herbaceous growth may consist of a wide variety of species such as maidencane, ferns, arrowheads (*Sagittaria* spp.), lizard's tail (*Saururus cernuus*), false nettle (*Boehmeria cylindrica*), and sphagnum moss (*Sphagnum* spp.). Soils will be typically acidic, nutrient-poor peat often overlying a clay lens or other impervious layer.

Description and Assessment: In regard to vegetation, the park's basin swamp is identical to the above description. Animal species commonly observed within this natural community include pileated woodpecker, wood duck (*Aix sponsa*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*) and marsh rabbit (*Sylvilagus palustris*).

General Management Measures: Resource management measures for the park's basin swamp will focus on habitat protection. The ecotonal periphery will be exposed to routine prescribed fire as determined by the FRI of the surrounding uplands.

Bottomland Forest

Desired Future Condition: Bottomland forest is a fairly low-lying, mesic to hydric community prone to periodic flooding. Vegetation will consist of a mature closed canopy of deciduous and evergreen trees. Overstory may consist of species such as sweetgum, swamp laurel oak, water oak (*Quercus nigra*), live oak, loblolly pine (*Pinus taeda*), and spruce pine (*Pinus glabra*). Red maple (*Acer rubrum*) and bald cypress (*Taxodium distichum*) will also be present but are generally restricted to the portion of bottomland forest nearer the Lake Miccosukee Drain. The understory is largely void of groundcover accept for occasional sedges (*Carex* spp.) which may occur on slightly elevated ground that has been raised up around the buttressed bases of large trees. The forest floor is open and covered with deciduous leaf litter (FNAI 2010c).

Description and Assessment: The park's bottomland forest is identical to the above description.

General Management Measures: Management measures for bottomland forest will include habitat protection, and routine patrolling to deter poaching and identify any new exotic plant threats.

Imperiled Species

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

Elevations and soil conditions are suitable for gopher tortoises within portions of management zones LE-A, LE-B, LE-C, and LE-D. A small number of abandoned gopher tortoise burrows have been identified within the northern portions of management zones LE-C and LE-D. Currently, there are no active burrows within the park boundary. Habitat conditions within the park continue to improve as a result of routine prescribed burning, lending to the possible recruitment of tortoises from adjacent agricultural lands and properties managed for game. Tortoise surveys are conducted shortly after prescribed burns and follow established FWC guidelines.

Lake Miccosukee, located just a short distance to the north, supports a wide array of wading birds. One imperiled species, the little blue heron, periodically occurs within the park's wetlands. This species is also a common fly-over. There are no specific management measures for this species or other wading birds, other than habitat protection.

Table 2 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by DRP staff or others, and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

Table 2. Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
REPTILES						
Gopher tortoise *Gopherus polyphemus*	ST	C		G3,S3	1,2,6,8	Tier 1
BIRDS						
Little blue heron *Egretta caerulea*	ST			G5,S4	4,10	Tier 1

Management Actions:

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

Monitoring Level:

Tier 1. Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of Wildlife Observation Forms, or other district specific methods used to communicate observations.

Tier 2. Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3. Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.

Tier 4. Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.

Tier 5. Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

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

Exotic and Nuisance Species

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

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

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include venomous snakes, raccoons, and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis in accordance with the DRP's Nuisance and Exotic Animal Removal Standard.

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

Exotic plants that have been documented within the park are listed in table 3 below. Four of these species have been eradicated, and another 4 species have been reduced to scattered individuals. Park staff coordinate with District environmental staff to perform annual surveys of known infestation sites and carry out control measures as necessary. Approximately 3 acres have been treated for exotic plants since the approval of the last management plan. All survey and control efforts are documented in the Division's Exotic Plant Database.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC 2015). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone(s)**
PLANTS			
Mimosa *Albizia julibrissin*	I	0	LE-A
Camphor tree *Cinnamomum camphora*	I	0	LE-A
Silverthorn *Eleagnus pungens*	II	0	LE-A
		0	LE-B
Glossy privet *Ligustrum lucidum*	I	0	LE-A
Chinese privet *Ligustrum sinense*	I	2	LE-A
Japanese honeysuckle *Lonicera japonica*	I	2	LE-A
Japanese climbing fern *Lygodium japonicum*	I	2	LE-A
Torpedo grass *Panicum repens*	I	2	LE-A
Chinese tallow *Sapium sebiferum*	I	1	LE-E

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

Special Natural Features

There are no special natural features within the park.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes, and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled

properties; the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (preservation, rehabilitation, restoration, reconstruction). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

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

Level of Significance

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

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

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

Prehistoric and Historic Archaeological Sites

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

Description: The park contains one archaeological site. FMSF record JE337 is a large archaeological complex covering an area of approximately 114 acres. JE337 was listed on the National Register of Historic Places in December 2010. The site is made up of at least seven standing mounds, a plaza, a village, and at least one pond or possible borrow pit from which soil was removed for earthen construction. While artifacts recovered from the park span a period of some 12,000 years, the mound complex is believed to have been built and occupied from ca. AD 200 to AD 900, a period associated with the Swift Creek and Weeden Island cultures.

During the height of its occupation, Letchworth Mounds served as a major cultural complex with the big mound opening onto the large plaza and surrounded by smaller residence and burial mounds, located within the Lake Miccosukee floodplain. Beyond the center's core were outlying homesteads, farmland, and forests for hunting and gathering food. Its proximity to Lake Miccosukee would have provided access to lacustrine resources and facilitated trade and travel between other settlements to the north. What distinguishes Letchworth Mounds from other Weeden Island complexes is that it is centrally located in the Weeden Island culture area. The few other known Weeden Island complexes are found at the culture area peripheries, such as the McKeithen site in Columbia County, Florida, Kolomoki in Early County, Georgia, and perhaps the Crystal River site in Citrus County, Florida. Located at the heart of the Weeden Island region, Letchworth Mounds likely served as a key center of sociocultural, political, and religious activity.

JE133, Sunray Road Mound, is part of the JE337 mound complex. It was originally recorded in 1972 by Florida Division of Archives, History, and Records Management (FDAHRM) archaeologist, Jim Miller. It was described as a small sand burial mound approximately 1.5 meters high by 16 meters in diameter. Artifacts identified from this mound included shell and bone fragments.

A cultural sensitivity model has been developed for the park through the University of South Florida, Alliance for Integrated Spatial Technologies. In addition to developing a cultural sensitivity map of the park, this project identified the location of a seventh mound located east of Mound 6.

JE337 Letchworth Mounds Complex

Mound 1 is believed to have been a ceremonial mound. It is a truncated pyramid with a ramp that extends from its north face, rectangular aprons that drape from its east and west sides, and a platform projecting from its south face. The mound measures 15 meters in height, making it the tallest prehistoric earthen construction in Florida.

Sometime in the late 1950s, Hale Smith of Florida State University dug several shovel tests on Mound 1, but no report was generated. Otherwise, no professional archaeological investigations have been conducted of the mound. In the 1930s, looters dug an area approximately 2.5 square meters and 1.5 meters deep at the crest but did not recover any artifacts.

The mound is currently forested by various native hardwood trees. Under the direction of the Bureau of Natural and Cultural Resources, DRP staff began to gradually remove smaller diameter trees from the mound in 1999. All stumps and below-ground portions are left intact to avoid any soil disturbance. The long term objective is to transition from woody to herbaceous growth on the mound proper.

Some minor erosion has occurred probably within the past fifty years, most notably along the mound's northern aspect. This surface erosion has been arrested by the establishment of dense woody shrubs and to a lesser extent herbaceous growth. Despite the past looting and impacts of time, Mound 1 is considered to be in fair condition.

Mound 2 is roughly rectangular, measuring approximately 20 meters north-south by 25 meters east-west, with a height of slightly less than one meter above its surroundings. Its shape suggests that it served as a platform for residences. The mound is considered to be in good condition.

Mound 3 is a conical mound with a diameter of approximately 10 meters and a height of less than 1 meter. A large live oak is located on its crest and land clearing in the past has somewhat modified its perimeter slope. The mound is considered to be in fair condition.

Mound 4 is an oval shaped mound with a diameter of roughly 10 meters and a height of less than 1 meter. With no apparent modern impacts, the mound is considered to be in good condition.

Mound 5 is oval in shape with a diameter measuring 50 meters and a height of 2 meters. The mound has been impacted by modern agricultural plowing and is considered to be in fair condition.

Mound 6 is oval in shape with a diameter of 60 meters and a height of 1.5 meters. This mound served in a mortuary capacity. It has been impacted by modern agriculture and silviculture and is considered to be in fair condition.

Mound 7 was recently identified during the Archaeological Resource Sensitivity Modeling conducted by the University of South Florida. This is a low sand mound that was located following a prescribed burn that served to clear away the dense shrubby cover of young oaks. No artifacts were observed at the surface. The mound does not appear to have been impacted by agricultural equipment. Furthermore, there are no signs of accelerated erosion or looting. Mound 7 is considered to be in good condition.

JE133 Sunray Road Mound
The Sunray Road Mound was first delineated by State Archaeologist, Jim Miller, in 1972. He described it as a well preserved yellow sand burial mound. Since that time, the mound has been plowed over. The recorded location was visited by archaeologists during the Archaeological Resource Sensitivity Modeling project. The mound appears to have been leveled at some time prior to State acquisition and no artifacts were observed on the surface. For this reason, the mound's condition is considered poor.

General Management Measures: The Letchworth-Love Mounds complex will be protected from damage from natural resource management, natural causes, construction, or human damage including looting. Above ground portions of trees will continue to be gradually removed from Mound 1 over the next several decades and replaced with native, on-site grasses, such as broomsedge *(Andropogon virginicus),* Arrowfeather threeawn *(Aristida purpurescens),* and yellow Indian grass. Understory vegetation growing on the mound may be included in prescribed burns in order to improve habitat conditions for herbaceous growth. The Desired Future Condition will include mounds that are free of trees of all sizes. The mounds will have a dense cover of native grasses, forbs, herbaceous plants and low growing shrubs that serve to stabilize and armor the earthworks from weather related erosion. The mounds will also be free of any burrowing animals.

Likewise, the plaza area, located north of Mound 1, shall be kept relatively open to demarcate and interpret this integral component of the site. Any reforestation of this established interpretive area will be discouraged by routine mowing and/or prescribed burning. Recommended treatments are indicated in the table for each site listed as NRL, NR, or NE.

Historic Structures
There are currently no historic structures on the park.

Collections
The park does not maintain any collections of archaeological artifacts or materials.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program section of this component. Table 4 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.

Table 4. Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture/Period**	**Description**	**Significance**	**Condition**	**Treatment**
JE337 Letchworth Mounds	Swift Creek-Weeden Island/AD 200-900	Archaeological Site	NRL	F	P
JE133 Sunray Road Mound	Swift Creek-Weeden Island/AD 200-900	Archaeological Site	NRL	P	P

Significance:

NRL	National Register listed
NR eligible	National Register
NE	not evaluated
NS	not significant

Condition:

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

Recommended Treatment:

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

Resource Management Program

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Letchworth-Love Mounds. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

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

The work plans are reviewed and updated annually. Through this process, the DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine

techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Sections 253.034 and 259.037, Florida Statutes.

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

Natural Resource Management

Hydrological Management

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

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water "sheet flow," installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

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

Action 1 Assess the hydrological conditions of the park;

Action 2 Identify any alterations to the natural surface hydrology and delineate those areas where restoration would not be in conflict with the preservation of cultural resources.

Park and District staff will review the sites hydrology, identify any significant alterations, and determine if restoration actions are compatible with cultural resource management.

Objective: Restore natural hydrological conditions and function, within the park's watershed wherever compatible with cultural resource protection.

Action 1 Restore any identified modern alterations, where compatible with cultural resource management, to natural contour;

Action 2 Remove any identified modern barriers to ephemeral surface waters, as appropriate and in coordination with the protection of cultural resources.

Park and District staff will correct any identified modern hydrological alterations, such as plow lines and ditching, within the park's watershed, if the actions are determined to be compatible with the management of cultural resources.

Natural Communities Management

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

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

Prescribed Fire Management

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

All prescribed burns in the Florida state park system are conducted with authorization from the FDACS, Florida Forest Service (FFS). Wildfire suppression activities in the park are coordinated with the FFS.

Objective: Within 10 years, have 168 acres of the park maintained within the optimum fire return interval.

Action 1 Update annual burn plan;

Action 2 Manage fire dependent communities by burning between 34 and 84 acres annually.

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

Table 5. Prescribed Fire Management		
Natural Community	**Acres**	**Optimal Fire Return Interval (Years)**
Upland Mixed Woodland	113	2-5
Upland Hardwood Forest	52	2-5
Depression Marsh	3	2-5
Annual Target Acreage	34-84	

Prescribed fire is planned for each burn zone on the appropriate interval. The park's burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

The park's fire dependent natural communities include Upland Mixed Woodland, Upland Hardwood Forest, and Depression Marsh. Prescribed burning is the primary tool to manage for fire adapted wildlife species such as gopher tortoise, northern bobwhite quail *(Colinus virginianus),* wild turkey *(Meleagris gallopavo)* and white-tailed deer *(Odocoileus virginianus)* among others. All of the park's management zones containing fire dependent communities are delineated by perimeter fire lines. While not all portions of every fire maintained management zone may carry fire, the entire zone is usually included in the burn prescription and functionally treated as the "burn zone." All fire lines are inspected annually and perimeter vegetation mowed in order to maintain proper width. The fire lines for management zones scheduled to be burned in a given year may also be lightly disked along certain segments in order to add the necessary mineral soil component where necessary for fire containment. Any ground disturbance is coordinated with archaeological monitoring by ARM-trained staff. The park shares a common boundary with the Letchworth-Love Mounds Conservation Easement. In order to minimize ground disturbance, park staff coordinates with the adjacent Conservation Easement in order to use the Lake Miccosukee Drain as a natural firebreak.

The US 90 corridor just north of the park is delineated as a "critical smoke sensitive area" by the Florida Forest Service. In coordination with local FFS staff, the park has established acceptable weather parameters and contingency measures under which to conduct prescribed burns within various portions of the park, based on proximity to nearby roads and development.

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

Natural Community Restoration

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

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

There are no major natural community restoration needs at this park.

Natural Community Improvement

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

Objective: Conduct natural community/habitat improvement activities on 5 acres of upland mixed woodland natural community.

Action 1 conduct mechanical fuel reduction to augment or improve the effectiveness of prescribed burning.

DRP staff will conduct mechanical fuel reduction on a minimum of 5 acres of early successional hardwood growth prior to the regularly scheduled application of prescribed fire to augment or improve the effectiveness of prescribed burning. This work should be timed so that mowed materials have adequate curing time prior to the next scheduled prescribed burn.

Imperiled Species Management

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

The DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due

to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

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

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

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

Action 1	Conduct a botanical survey of the park and update the park's plant list;
Action 2	Survey the park's various wetlands in order to update and expand the park's inventory of herpetofauna.

DRP District 1 Environmental Specialists will conduct botanical surveys consisting of multiple site visits throughout the spring, summer and fall seasons. District 1 Environmental Specialists will either conduct or coordinate with FWC in order to conduct herpetological surveys of select wetlands within the park.

Objective: Monitor and document 2 selected imperiled animal species in the park.

Action 1	Develop monitoring protocols for 2 selected imperiled animal species including gopher tortoise, and little blue heron;
Action 2	Implement monitoring protocols for the 2 imperiled animal species listed above.

Gopher tortoises are monitored at the tier 2 level. Relatively high dry soils suitable for gopher tortoise habitat, are limited to portions of management zones LE-A, LE-

B, LE-C, and LE-D. A small number of burrows have been identified in a few of these areas, all of which are currently inactive. All suitable habitats within the park are surveyed shortly following regularly scheduled prescribed burns. The current FWC monitoring protocol for burrow survey is followed.

Imperiled wading birds documented within the park include the little blue heron. This species is monitored at the tier 1 level, through incidental wildlife observation.

Exotic Species Management

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

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

Objective: Annually treat 3 acres of exotic plant species in the park.

Action 1 Annually develop/update exotic plant management work plan;
Action 2 Implement annual work plan by surveying and/or treating 3 acres in the park, annually, and continuing maintenance and follow-up treatments, as needed.

Park staff in coordination with District Environmental staff will annually survey all known areas of current or past infestation. Control measures will be carried out for any exotic plants identified during the survey.

Cultural Resource Management

Cultural resources are individually unique, and collectively, very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. The DRP will implement the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found at Letchworth-Love Mounds Archaeological State Park.

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

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any

demolition or substantial alteration to any historic structure or resource must be submitted to the DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of the DHR.

Objective: Assess and evaluate 2 of 2 recorded cultural resources in the park.

Action 1 Complete 2 assessments/evaluations of archaeological sites.

Park staff will conduct an assessment/evaluation of the known archaeological sites. The annual assessment/evaluation will include an examination of each site component with a discussion of any threats to the site's condition such as natural erosion, vandalism, looting, natural resource management impacts including damage from firebreak construction, animal damage, plant or root damage or other factors that might cause deterioration of the site features. This evaluation should attempt to compare the current condition with previous evaluations using photo points. Any early successional woody growth noted on any of the mounds will be removed by methods established and approved by the Bureau of Natural & Cultural Resources in coordination with the Division of Historical Resources.

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

Action 1 Ensure all known sites are recorded or updated in the Florida Master Site File.

Assessment/evaluation of the park's archaeological resources will be forwarded to DHR as an update to the FMSF.

Current data only hints at the research potential of the site. Sampling of the larger site area and mound features will be necessary to collect data to answer many of the site's interpretive questions. Weeden Island period questions that could be answered by further research at Letchworth-Love Mounds concern subsistence, settlement, regional exchange, disposal of the dead, and so forth. The ceramic data collected in the site's village area date primarily to the Weeden Island period. These suggest that the site's mounds may be contemporary with those at the Kolomoki and McKeithen mound centers.

Mound 1 is the largest known earthen mound in Florida. Its east and west aprons and southward projecting platform give the primary truncated pyramidal structure with its north-facing ramp a unique shape among Florida mounds. The artifact sample, thus far, suggests the presence of mound building people primarily during late Swift Creek through middle Weeden Island times. Radiocarbon dates from various portions of the main mound and smaller mounds, as well as diagnostic artifacts found in mound features (as opposed to mound fill containing relic

material) could answer mound construction chronology and cultural activity questions. The research potential of the Letchworths Mounds site is extraordinary.

Objective C: Bring 1 of 2 recorded cultural resources into good condition.

Action 1 Design and implement a regular monitoring program for JE337.

Action 2 Create and implement a cyclical maintenance program for this cultural resource.

Park and District staff will develop a cyclical maintenance program for each cultural resource. This will consist of the preservation/protection actions identified during the assessment/evaluation. Actions may include, removal of early successional woody growth from the mounds, continued gradual removal of larger trees from Mound 1, seeding of on-site native grasses/forbs as a means of erosion armoring, removal of burrowing animals, update of FMSF as necessary to report any notable signs of natural erosion, looting, or documentation of surface finds.

Special Management Considerations

Timber Management Analysis

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

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

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388.4111, Florida Statutes. If a local mosquito control district proposes treatment, the DRP works with them to adopt a mutually agreeable plan. By policy of the DEP since 1987, treatment plans may not include aerial adulticiding but typically allow larviciding. DRP policy also allows park managers to request typical truck spraying (adulticide fogging) in public use areas even in the absence of a treatment plan. The DRP does not authorize new physical alterations of marshes through ditching or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation.

A formal mosquito control plan has not been developed for this park. The park should not require routine larval or adult mosquito surveillance. While permanent and ephemeral wetlands occur within the park, they are not located adjacent to residential areas. Overall, the park is relatively well drained via the Lake Miccosukee Lake Drain blackwater stream that occurs just south of the property.

Surveillance by Jefferson County Mosquito Control may be requested by the Park Manager during any medical emergency associated with mosquito populations in the area. Any recommendation regarding ground adulticiding or larviciding would be coordinated with District 1 Environmental staff.

Resource Management Schedule

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

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation, and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. Letchworth-Love Mounds has not been subject to 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 Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management. Additional input is received through public workshops, and through environmental and recreational-user groups. With this approach, the DRP 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 resources of the park. Any new facilities needed to support the proposed activities are expressed in general terms.

External Conditions

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

Letchworth-Love Mounds Archaeological State Park is located within Jefferson County, about 8 miles to the west of Monticello and 12 miles to the east of Tallahassee in the Florida panhandle. Approximately 323,150 Floridians reside within 30 miles of the park (U.S. Census, 2010). The populations of Jefferson County and the adjacent Leon, Wakulla, Madison, and Taylor Counties are projected to grow by 21% by 2040, from 372,600 to 450,400 (University of

Florida, 2014). According to the U.S. Census Data, approximately 36.3% of residents in the county identify as black, Hispanic or Latino, or another minority group and 62.1% identified as white (U.S. Census, 2014). Over one-third (37.6%) of residents can be described as youth or seniors (U.S. Census, 2014). 48.5% of the population is of working age (16 to 65) (U.S. Census, 2014). Jefferson County ranked 39th statewide in per capita personal income at $31,183 (below the statewide average of $41,497) (U.S. Bureau of Economic Analysis 2014).

The table below identifies significant resource-based recreation opportunities within 15 miles of Letchworth-Love Mounds Archaeological State Park.

Table 6. Resource-Based Recreational Opportunities Near Letchworth-Love Mounds Archaeological State Park

Name	Biking	Hiking	Swim / Beach Access	Boating / Paddling	Fishing	Wildlife Viewing	Overnight Stay
Miccosukee Canopy Road Greenway (Leon County)	✓	✓				✓	
L. Kirk Edwards Wildlife and Environmental Area (FWC)	✓	✓		✓	✓	✓	
St. Marks River Preserve State Park (FDEP)	✓	✓				✓	
J.R. Alford Greenway (Leon County)	✓	✓				✓	
Lafayette Heritage Trail Park (City of Tallahassee)	✓	✓		✓	✓	✓	
Tom Brown Park (City of Tallahassee)	✓	✓			✓	✓	
A.J. Henry Park (City of Tallahassee)		✓				✓	
Alfred B. Maclay Gardens State Park (FDEP)	✓	✓	✓	✓	✓	✓	

Table 6. Resource-Based Recreational Opportunities Near Letchworth-Love Mounds Archaeological State Park							
Name	**Biking**	**Hiking**	**Swim / Beach Access**	**Boating / Paddling**	**Fishing**	**Wildlife Viewing**	**Overnight Stay**
Aucilla Wildlife Management Area (FWC)	✓	✓		✓	✓	✓	✓
Headwaters of the Wacissa River (Jefferson County)			✓	✓	✓	✓	

The park is located in the North Central Vacation Region, which includes Alachua, Bradford, Columbia, Dixie, Gadsden, Gilchrist, Hamilton, Jefferson, Lafayette, Leon, Levy, Madison, Suwanee, Taylor, Union, and Wakulla counties (Visit Florida 2013). According to the 2013 Florida Visitor Survey, approximately 2% of domestic visitors to Florida visited this region. Roughly 95% visitors to the region traveled to the North Central Region for leisure purposes. The top activities for domestic visitors were visiting friends or relatives and shopping. Summer was the most popular travel season, but visitation was generally spread throughout the year. Most visitors traveled by non-air (85%), reporting an average of 3 nights and spending an average of $79 per person per day (Visit Florida 2013).

Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that participation rates in the North Central region for freshwater beach activities, saltwater boat fishing, saltwater and freshwater boat ramp use, freshwater fishing, canoeing/kayaking, visiting archaeological and historic sites, wildlife viewing, picnicking, hiking, camping, off-highway vehicle riding, horseback riding, and hunting are higher than the state average with demand for additional facilities increasing through 2020 (FDEP 2013).

Existing Use of Adjacent Lands

The park is in Jefferson County adjacent to the border with Leon County to the north. The southern tip of Lake Miccosukee is less than one mile northeast of the park. The area to the east, south, and northeast of the park was acquired by the state in the form of a dedicated conservation easement to protect the environmentally sensitive and culturally significant area surrounding the park.

The remaining land uses to the northwest and west include relatively low-impact rural residential and agricultural uses.

Planned Use of Adjacent Lands

Land adjacent to the east and south border of the park is designated "Conservation" on the Jefferson County Future Land Use Map (Jefferson County, 2012). In accordance with this designation, passive recreation is appropriate if consistent with the protection of the area. The conservation easement will help preserve adjacent environmentally and culturally sensitive lands to the east and south of the park. Lands to the west and north are designated as "Agriculture 5" (Jefferson County, 2012). These land use designations serve to maintain a rural landscape that is compatible with the maintenance of natural resources and a quality visitor experience at the park. Development is limited to low-density single-family homes and associated accessory farm buildings with a maximum density of one dwelling per five acres within Jefferson County. Some additional low-density residential development is expected for this area in the future.

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.

Recreational Resource Elements

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

Land Area

The park protects one of the state's most important archaeological sites. Most of the land is in various stages of early succession following centuries of agrarian land uses. Appropriate recreational uses include interpretation, hiking, and picnicking.

Water Area

The park protects a basin swamp and stream, known as Lake Drain, that runs along the eastern and southern borders of the park. The stream is not considered navigable but does provide a relatively interesting viewshed along the deep ravine that has formed around it.

Natural Scenery

The scenic resources of the park are centered around human alterations to the landscape but do include pleasant vistas around Lake Drain and basin swamp. Hiking trails through the upland area of the park allow for attractive views of upland mixed woodland and bottomland forest.

Archaeological and Historical Features

The park contains the largest single and, arguably, most significant eastern ceremonial mound built by prehistoric native inhabitants of Florida. This 50-foot mound is relatively undisturbed and is considered to have high archaeological value. Nearly all visits to the park are focused on this large earthen mound and the interpretation of the prehistoric culture(s) that constructed it.

Results from recent archaeological surveys demonstrate that humans may have visited this site as early as 10,000 years ago, however, the primary human occupation and most significant time period at this site appears to be during the Late Swift Creek and Early Weeden Island times, circa A.D. 200-900 (Tesar *et al.*, 2003). Therefore, this site predates the occupation of Lake Jackson Mounds located in nearby Tallahassee. It is anticipated that other archaeological features will be discovered through additional research. According to a report by archaeologist Calvin Jones, the area around the large mound once contained numerous smaller mounds, but many of these have probably been destroyed by agriculture or looting. In 2005, in an effort to protect the remaining known extent of the cultural site, the state acquired 109 acres adjacent to the east and south boundary of the park as well as a conservation easement on an additional 1,281 acres.

This park offers the opportunity to provide a glimpse into the life of the Weeden Island Culture and protects the mounds from development.

Assessment of Use

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

Past Uses

The majority of the property was previously used for agricultural purposes, including livestock production. The previous owners constructed a modern residence, hog farming structures, metal silos, and miscellaneous sheds. The silos and hog farming structures were removed in the summer of 2006. The property was also divided into grazing areas with wire fencing. Past agricultural uses have negatively impacted the site's natural and cultural resources.

Future Land Use and Zoning

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

The park has been designated Conservation on the Jefferson County Future Land Use Map (Jefferson County, 2012). In accordance with this designation, passive recreation is appropriate if consistent with the protection of the area. This designation is not expected to change.

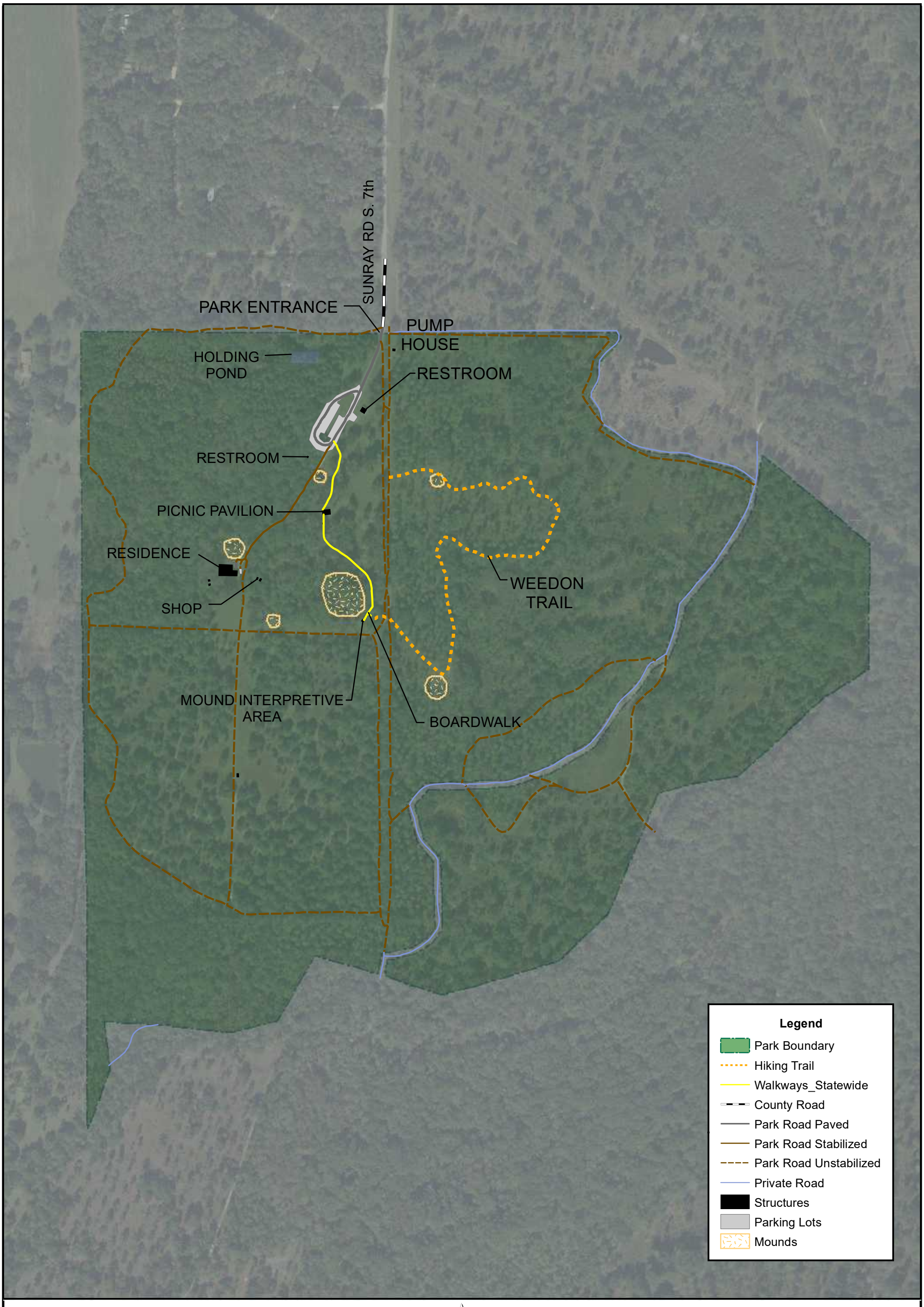
Current Recreational Use and Visitor Programs

Visitors to the park are greeted by the large mound complex at the end of a short walkway, which takes visitors through a covered pavilion with a large interpretive diorama and scale model of the mound. All visitors to the park pass through this area. In addition, a short trail takes visitors around the park and winds through the remains of a number of smaller mounds. Visitor programming includes opportunities for picnicking, historic/cultural interpretation, and hiking.

Letchworth-Love Mounds Archaeological State Park recorded 5,841 visitors in FY 2016/2017. By DRP estimates, the FY 2016/2017 visitors contributed $596,009 in direct economic impact, the equivalent of adding 10 jobs to the local economy (FDEP 2015).

Other Uses

A conservation easement on 1,281 acres that border the park to the east and south contains the remaining known extent of the cultural site and includes an occupation area, a quarry site, and possibly a Spanish mission. This easement protects the property from future development and allows year-round research and guided tours from June through September. A power line passes through the park adjacent to the large mound. DRP will coordinate with the utility



LETCHWORTH-LOVE MOUNDS
ARCHAEOLOGICAL STATE PARK

N

0 100 200 400 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

BASE MAP

company to ensure maintenance of the power lines will not harm the natural and cultural resources of the park.

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.

Due to the archaeological significance of the site, the entire park is treated as a protected zone. The Division will coordinate all “moderate” and “major” ground disturbing activities with the DHR in accordance with established archaeological resource compliance review procedures. The park’s current protected zone is delineated on the Conceptual Land Use Plan.

Existing Facilities

The main day use areas at Letchworth-Love Mounds Archaeological State Park include the Mound Interpretive Area, Entrance Area, Picnic Area, and Residence/Shop Area. The Mound Interpretive Area contains an interpretive trail, boardwalk, and picnic pavilion that also houses an interpretive panel and scale model of the large mound. The Entrance Area contains restroom facilities, an interpretive panel, and a parking area for 28 cars plus bus/van parking. The Residence Area contains two sheds, a shop building, and staff residence (see Base Map).

Existing facilities are listed by Use Area below:

Mound Interpretive Area
Boardwalk
Interpretive Trail

Entrance Area
Parking Area (28 spaces)
Pump House
Restroom (2)

Picnic Area
Medium Picnic Pavilion

Residence/Shop Area
Staff Residence
Shed (2)
Shop

Parkwide
Hiking Trail
Pump House

Conceptual Land Use Plan

The following narrative represents the current conceptual land use proposal for this park. The conceptual land use plan is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape and social setting (see Conceptual Land Use Plan). The conceptual land use plan is modified or amended, as new information becomes available regarding the park's natural and cultural resources or trends in recreational uses, in order to adapt to changing conditions. Additionally, the acquisition of new parkland may provide opportunities for alternative or expanded land uses. The DRP develops a detailed development plan for the park and a site plan for specific facilities based on this conceptual land use plan, as funding becomes available.

During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources and applied that analysis to determine the future physical plan of the park as well as the scale and character of proposed development. Potential resource impacts are also identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are investigated in greater detail. Municipal sewer connections, advanced wastewater treatment, or best available technology systems are applied for on-site sewage disposal. Creation of impervious surfaces is minimized to the greatest extent feasible in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state and local permit and regulatory requirements are addressed during facility development. 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, park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses

Public Access and Recreational Opportunities

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

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and improved activities and programs are also recommended and discussed below.

Visitor Center

Medium Picnic Pavilion

Residence/Shop Area
3-Bay Shop
Equipment Shelter
Flammable Storage

Legend

- Park Boundary
- Park Road
- Parking Lot
- Walkways
- Existing Trail
- Proposed Trail
- Proposed Facilities
- Mounds
- Wetlands

LETCHWORTH-LOVE MOUNDS ARCHAEOLOGICAL STATE PARK

N

0 100 200 400 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

CONCEPTUAL LAND USE PLAN

Objective: Maintain the park's current recreational carrying capacity of 128 users per day.

Existing opportunities for recreation include picnicking at the pavilion, hiking along a 0.5-mile nature trail, wildlife viewing, and interpretation of the mound complex along an interpretive path and boardwalk. These opportunities will be maintained in the future management of the park.

Objective: Expand the park's recreational carrying capacity by 424 users per day.

A small visitor center is proposed for the park that will provide additional interpretive programming for the proposed increase in carrying capacity. The visitor center will provide a climate-controlled area for the display of artifacts and other displays that will explain the importance of the site in a regional context. In addition, picnicking should be expanded by adding an additional pavilion. Hiking opportunities are proposed to be expanded through the development of a 1-mile long hiking trail that loops around the Mound Interpretive Area to the west and generally follows the park boundary.

Objective: Continue to provide 1 interpretive program on a regular basis.

Ranger-led tours will continue to be provided at the park. The subjects and amount of detail incorporated into a Ranger-guided tour can be tailored to fit the needs and interests of a group and can be made to accommodate various ages and sizes. Ranger-guided tours showcase not only the large central mound, but also help visitors identify the smaller mounds laid out around the park and are a great way to appreciate the size of the site and understand how the original inhabitants lived along the shores of Lake Miccosukee.

Objective: Develop 2 new interpretive programs

Efforts to improve the interpretation of the park's archaeological and cultural significance to park visitors will be ongoing into the future as this is integral to the original purpose of park acquisition by the State of Florida.

Significant progress has been made in an effort to return the site's original natural communities to their previous extent in light of the extensive disturbance from agricultural activities and thus provide a unique opportunity to interpret the park's natural resources to visitors. A visitor's center will provide a climate-controlled space to display artifacts uncovered from the site and allow for additional interpretive programming that will highlight the parks cultural significance.

To entice visitors passing the park along I10 to make a stop, an effort should be made to collaborate with the local tourist development council and Monticello Chamber of Commerce to develop an interpretive display along the I10 corridor. The interpretive display would act as a marketing tool to draw motorists off the road and into the park as a reststop. Display content would emphasize the unique features of the park and archaeological significance. A simple tool such as this display can draw visitors into the park who otherwise may not be aware of the site.

Proposed Facilities

Capital Facilities and Infrastructure

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

The primary management goal of Letchworth-Love Mounds Archaeological State Park is to preserve its archaeological features. In light of the recent state acquisition of the property and management as a state park, existing facilities and infrastructure are relatively sparse and new. The unique and culturally significant resources of the park require greater focus on the interpretation of the mound complex to allow visitors the opportunity to appreciate and value the important history of the area's first inhabitants.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of new facilities needed to implement the conceptual land use plan for Letchworth-Love Mounds Archaeological State Park:

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

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

Objective: Improve 4 existing facilities.

Major repair projects for park facilities may be accomplished within the ten-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by

DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

Entrance Area

A visitor center is recommended to anchor the interpretive programming at the park. The proposed visitor center would provide a central location to educate park visitors about the mound complex, display artifacts found at the site, host a variety of interpretive programs, and support ongoing research at the park. The recommended location for this proposed visitor center is east of the existing parking lot and north of the existing picnic area. The exact location and size of this facility will depend on the results of future research and archaeological monitoring. The alignment of the access road as well as the size and location of the parking area will be reevaluated during this process in order to find a location that best supports the proposed visitor center while being sensitive to the cultural site. This new facility should meet the standards established by the ADA. The design of the building and the development of ideas for exhibits and programming will be determined through future meetings between appropriate Division staff and outside consultants.

Picnic Area

An additional medium picnic pavilion is proposed in order to accommodate groups.

Parkwide

A new nature trail is proposed to roughly follow the park boundary to the south, west, and north. This trail will be around 1 mile in length and extend off the existing Weeden Trail near the base of the large mound.

Residence/Shop Area

In the main support area in the park, an equipment storage shed, flammable storage shed, and a 3-bay shop are proposed to assist with park management efforts.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 7) located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist DRP in budgeting future park improvements and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

Entrance Area
Visitor Center

Residence/Shop Area
3-Bay Shop
Equipment Storage
Flammable Storage

Picnic Area
Medium Picnic Pavilion

Parkwide
Nature Trail (1 mile)

Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

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

Table 7. Recreational Carrying Capacity

	Existing Capacity*		Proposed Additional Capacity		Estimated Recreational Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Picnicking	16	32	16	32	32	64
Interpretive Programs						
Visitor Center			50	200	50	200
Trails						
Interpretive	8	32	8	32	8	32
Hiking	16	64	40	160	56	224
TOTAL	**40**	**128**	**114**	**424**	**146**	**520**

*Existing capacity revised from approved plan according to DRP guidelines.

Optimum Boundary

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

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purposes. Any party or governmental entity should not use a property's identification on the optimum boundary map to reduce or restrict the lawful rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis for permit denial or the imposition of permit conditions.

At this time, no lands are considered surplus to the needs of the park. Lands included in the conservation easements to the south and east of the park are within the optimum boundary due to the potential presence of additional cultural resources

IMPLEMENTATION COMPONENT

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

MANAGEMENT PROGRESS

Since the approval of the last management plan for Bald Point State Park in 2005, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and the DRP.

Resource Management

Natural Resources

- Established an exotic plant control plan and brought all 6 management zones into maintenance condition.
- Implemented the burn program and brought burnable acres into maintenance condition.
- Conducted a native plant survey throughout the park.

Cultural Resources

- Over 50 trees removed from the large mound in efforts to continue removing trees from the mound complex.
- Archaeological survey conducted in the mound complex.

Recreation and Visitor Services

- New interpretive signs/panels installed along historical walk in the picnic area.
- Weeden Trail (Interpretive Trail) installed to guide visitors through the mound complex and through the natural areas of the park.
- Interpretive and event program developed and implemented for the park.

Park Facilities

- New restroom facilities built
- Clivus Multrum abandoned.

MANAGEMENT PLAN IMPLEMENTATION

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 7) summarizes the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement

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

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the ten-year management planning cycle.

Table 8
Letchworth-Love Mounds Archaeological State Park
Ten-Year Implementation Schedule and Cost Estimates

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal I: Provide administrative support for all park functions.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Continue day-to-day administrative support at current levels.**	Administrative support ongoing	C	**$160,700**
Objective B	**Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.**	Administrative support expanded	C	**$532,500**
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Conduct/obtain an assessment of the park's hydrological needs.**	Assessment conducted	ST/LT	**$2,900**
Objective B	**Restore natural hydrological conditions and functions to approximately all of the park's watershed.**	# Acres restored or with restoration underway	UFN	**$0**
Goal III: Restore and maintain the natural communities/habitats of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Within 10 years, have 168 acres of the park maintained within the optimum fire return interval.**	# Acres within fire return interval target	LT	**$20,150**
Objective B	**Conduct natural community/habitat improvement activities on 5 acres of Upland Mixed Woodland natural community.**	# Acres restored or with restoration underway	ST/LT	**$9,100**
Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Develop/Update baseline imperiled species occurrence inventory lists for plants and animals.**	List updated	C	**$7,450**
Objective B	**Monitor and document 2 selected imperiled animal species in the park.**			**$2,950**
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**

* 2017 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 8
Letchworth-Love Mounds Archaeological State Park
Ten-Year Implementation Schedule and Cost Estimates

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Objective A	**Annually treat 3 acres of exotic plant species in the park.**	# Acres treated	C	**$10,750**
Goal VI: Protect, preserve and maintain the cultural resources of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Assess and evaluate 2 of 2 recorded cultural resources in the park.**	Documentation complete	LT	**$2,250**
Objective B	**Compile reliable documentation for all recorded historic and archaeological sites.**	Documentation complete	LT	**$1,250**
Objective C	**Bring 1 of 2 recorded cultural resources into good condition.**	# Sites in good condition	LT	**$138,000**
Goal VII: Provide public access and recreational opportunities in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Maintain the park's current recreational carrying capacity of 128 users per day.**	# Recreation/visitor	C	**$160,700**
Objective B	**Expand the park's recreational carrying capacity by 424 users per day.**	# Recreation/visitor	ST/LT	**$532,500**
Objective C	**Continue to provide the current repertoire of 1 interpretive program on a regular basis.**	# Interpretive/education programs	C	**$5,000**
Objective D	**Develop 2 new interpretive, educational and recreational programs.**	# Interpretive/education programs	ST	**$10,000**
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Maintain all public and support facilities in the park.**	Facilities maintained	C	**$180,000**
Objective B	**Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.**	Plan implemented	ST	**$20,000**
Objective C	**Improve 4 existing facilities.**	# Facilities/Miles of Trail/Miles of Road	LT	**$1,043,000**
Objective E	**Expand maintenance activities as existing facilities are improved and new facilities are developed.**	Facilities maintained	C	**$596,250**

* 2017 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 8
Letchworth-Love Mounds Archaeological State Park
Ten-Year Implementation Schedule and Cost Estimates

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

Summary of Estimated Costs

Management Categories		Total Estimated Manpower and Expense Cost* (10-years)
Resource Management		**$225,850**
Administration and Support		**$693,200**
Capital Improvements		**$1,839,250**
Recreation Visitor Services		**$708,200**
Law Enforcement Activities	Note: Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.	

* 2017 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Addendum 1—Acquisition History

LAND ACQUISITION HISTORY REPORT

Park Name	Letchworth - Love Mounds Archaeological State Park
Date Updated	7/26/2016
County	Jefferson County, Florida
Trustees Lease Number	Lease No. 4089
Current Park Size	188.20 acres
Purpose of Acquisition	The State of Florida acquired Letworth - Love Mounds Archaeological State Park to protect the archaeological resources in the area for scientific Interepretation.

Acquisition History

Parcel Name or Parcel DM-ID	Date Acquired	Initial Seller	Initial Purchaser	Size in acres	Instrument Type
MDID 340879	8/29/2005	Hurley H. Booth	The Board of Trusteees of the Internal Improvement Trust Fund of the State of Florida (Trustees)	109.138	Warranty Deed
MDID 879	6/30/1992	Larry R. Letchworth and Rosa C. Letworth	Trustees	81.198	Warranty Deed

Management Lease

Parcel Name or Lease Number	Date Leased	Initial Lessor	Initial Lessee	Current Term	Expiration Date
Lease No. 4089	10/21/1996	The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida	The Florida Department of Environmental Protection , Division of Recreation and Parks.	50 years	10/20/2046

Outstanding Issue	Type of Instrument	Brief Description of the Outstanding Issue	Term of the Outstanding Issue
There is no known deed-related outstanding issue that affect use of Letworth-Love Mounds Archaeological State Park.			

Addendum 2—Advisory Group Members and Report

List

Report

Addendum 3—References Cited

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Addendum 4—Soil Descriptions

11 – Lucy loamy fine sand, 0 to 5 percent slopes: This soil is well drained and nearly level to gently undulating. It is on summits and foot slopes of uplands. Individual areas of this soil are irregular in shape and range from 5 to 150 acres.

Typically, the surface layer is dark grayish brown and brown loamy fine sand about 13 inches thick. The subsurface layer is yellowish brown, strong brown, and yellowish red loamy fine sand to a depth of about 34 inches. The subsoil extends to a depth of at least 80 inches. It is yellowish red fine sandy loam to a depth of 42 inches and red sandy clay loam below that.

Included in mappin are small areas of Albany, Orangeburg, and Troup soils. Also included are areas of soils that have a thicker surface layer. The included soils make up less than 15 percent of the map unit.

This Lucy soil does not have a high water table within a depth of 80 inches. The available water capacity is low in the surface and subsurface layers and moderate in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The natural vegetation consists of slash pine, longleaf pine, live oak, post oak, red oak, and dogwood. The understory consists of native shrubs and grasses including huckleberry, sourthern dewberry, smilax, Virginia creeper, American beautyberry, muscadine grape, and sparse pineland threeawn (aka wiregrass).

14 – Orangeburg sandy loam, 5 to 8 percent slopes: This soil is well drained and gently rolling. It is on shoulders and back slopes of uplands. Individual areas of this soil are elongated or irregular in shape and range from 5 to 200 acres.

Typically, the surface layer is dark grayish brown and dark brown sandy loam about 9 inches thick. The subsurface layer is strong brown sandy clay loam to a depth of about 16 inches. The subsoil extends to a depth of at least 80 inches. It is yellowish red sandy clay loam to a depth of about 34 inches and red sandy clay below that.

Included in mapping are small areas of Cowarts, Dothan, Lucy, and Troup soils. The included soils make up less than 15 percent of the map unit. This Orangeburg soil does not have a high water table within a depth of 80 inches. The available water capacity is low in the surface layer and moderate in the subsurface layer and the subsoil. Permeability is moderately rapid in the surface and moderate in the subsurface layer and the subsoil. Natural fertility is low.

The natural vegetation is longleaf, slash, and loblolly pines and mixed hardwoods, such as water oak, red oak, beech, black cherry, sweetgum, and hickory. The understory is native grasses and shrubs including huckleberry, briers, and pineland threeawn (aka wiregrass). Many areas of this soil have been cleared and are used for crops or pasture.

16 Blanton fine sand, 0 to 5 percent slopes: This soil is moderately well drained and nearly level to gently sloping. It is on low knolls, foot slopes, and toe slopes on uplands. Individual areas of this soil are elongated or irregular in shape and range from 5 to 100 acres.

Typically, the surface layer is very dark grayish brown fine sand about 7 inches thick. The subsurface layer is fine sand to a depth of 63 inches. It is yellowish brown, light yellowish brown, brownish yellow, and very pale brown. The subsoil is sandy clay loam and sandy clay to a depth of at least 80 inches. To a depth of 74 inches, it is brownish yellow with strong brown mottles, and below that it is light gray with brownish yellow, strong brown, and yellowish red mottles.

Included in mapping are small areas of Albany, Chipley, Leefield, and Troup soils. The included soils make up less than 15 percent of the map unit.

The Blanton soil has a perched high water table above the subsoil during wet seasons, but it is generally at a depth of more than 72 inches. The available water capacity is very low in the surface and subsurface layers and moderate in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The natural vegetation is dominantly slash pine, loblolly pine, longleaf pine, bluejack oak, red oak, and live oak with an understory of dwarf huckleberry and pineland threeawn (aka wiregrass).

20 – Albany sand: This soil is somewhat poorly drained and nearly level. It is on low knolls on uplands and flatwoods. Individual areas of this soil are irregular in shape and range from 5 to 80 acres.

Typically, the surface layer is dark gray sand about 8 inches thick. The subsurface layer is sand to a depth of 55 inches. It is brown and pale brown in the upper part and white in the lower part. It has mottles in shades of brown and yellow below a depth of 21 inches. The subsoil extends to a depth of at least 80 inches. It is very pale brown sandy loam to a depth of 60 inches. The subsoil extends to a depth of at least 80 inches. It is very pale brown sandy loam to a depth of 60 inches and light brownish gray sandy clay

loam below that. The subsoil has mottles in shades of brown, yellow, and gray.

Included in mapping are small areas of Blanton, Leefield, Pelman, and Plummer soils. The included soils make up less than 15 percent of the map unit.

The Albany soil has a seasonal high water table within a depth of 12 to 30 inches for 2 to 4 months in most years. The available water capacity is very low in the surface and subsurface layers and moderate in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The natural vegetation is loblolly, longleaf, and slash pines and mixed hardwoods including water oak, red oak, sweetgum, and hickory. The understory is native grasses and shrubs including huckleberry, briers, and pineland threeawn.

22 – Plummer fine sand: This soil is poorly drained and nearly level. It is in poorly defined drainageways on uplands and flatwoods. Individual areas of this soil are elongated or irregular in shape and range from 20 to 800 acres. Slopes range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 69 inches. It is grayish brown to a depth of 18 inches, gray to a depth of 43 inches, and light gray below that. The subsoil extends to a depth of at least 80 inches. It is light gray sandy loam in the upper part and light gray sandy clay loam in the lwer part. The subsoil has few to common mottles in shades of yellow and brown.

Included in mapping are small areas of Leefield, Pelham, Sapelo, and Surrency soils. the included soils make up less than 15 percent of the map unit.

This Plummer soil has a seasonal high water table at the surface or within 15 inches of the surface for 3 to 6 months in most years. The available water capacity is low to very low in the surface and subsurface layers and moderate in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The natural vegetation on this soil is mainly water oak, loblolly pine, slash pine, sweetgum, and blackgum. The understory is inkberry, waxmyrtle, ferns, and pineland threeawn (aka wiregrass).

23 – Pelham fine sand: This soil is poorly drained and nearly level. It is on broad flats, and in drainageways on uplands and flatwoods. Individual areas of this soil are irregular or elongated in shape and range from 5 to 600 acres. Slopes range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 8 inches thick. The subsurface layer is dark grayish brown and grayish brown fine sand to a depth of about 34 inches. The subsoil extends to a depth of at least 80 inches. To a depth of 49 inches, it is light gray fine sandy loam that has strong brown mottles, and below that it is light gray sandy clay loam that has strong brown and red mottles.

Included in mapping are small areas of Leefield, Plummer, Rains, and Surrency soils. The included soils make up less than 15 percent of the map unit.
This Pelham soil has a seasonal high water table within 15 inches of the surface for 3 to 6 months in most years. This soil is subject to brief flooding after heavy rains. The available water capacity is low in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The natural vegetation is slash pine, loblolly pine, sweetgum, blackgum, and water oak. The understory includes greenbriers, waxmyrtle, and inkberry.

This soil has severe limitations for cultivation and development because of wetness.

30 – Pamlico-Dorovan mucks: The Pamlico and Dorovan soils are very poorly drained and nearly level. The individual areas of these soils are too mixed to conform to the scale used for soil survey maps. These soils are on the flatwoods, along some flood plains, and along the edges of gently sloping to sloping uplands. Individual areas are irregular in shape and range from 20 to 200 acres. Slopes range from 0 to 1 percent.

Pamlico muck makes up about 40 to 60 percent of the map unit. Typically, this soil is very dark brown muck to a depth of about 4 inches and black muck to a depth of 27 inches. The underlying material is dark grayish brown sand to a depth of at least 80 inches.

Pamlico soils have a high water table within a depth of 15 inches throughout most years and at or above the surface for 5 to 8 months in some years. The available water capacity is very high in the organic layers and low in the underlying material. Permeability is moderate in the organic layers and rapid in the underlying material.

Dorovan muck makes up about 20 to 50 percent of the map unit. Typically, this soil is very dark brown muck to a depth of about 4 inches and black and dark grayish brown muck to a depth of about 65 inches. The underlying material is dark grayish brown sand to a depth of at least 80 inches.

Dorovan soils have a high water table within a depth of 10 inches throughout most years and at or above the surface for 5 to 8 months in some years. Permeability is moderate, and the available water capacity is very high. Natural fertility is low.

Included in mapping are small areas of Pelham, Plummer, Surrency, Plummer flooded, and Chaires depressional soils. The included soils make up less than 25 percent of the map unit.

The natural vegetation is mainly cypress and an understory of ferns, various shrubs, and vines.

The Pamlico and Dorovan soils have severe limitations for cultivation and development because of wetness.

Addendum 5—Plant and Animal List

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

VASCULAR PLANTS

Pteridophytes

Polypodiaceae

Ebony spleenwort	*Asplenium platyneuron*
Japanese climbing fern	*Lygodium japonicum**
Resurrection fern	*Polypodium polypodioides*
Bracken fern	*Pteridium aquilinum*
Virginia chain fern	*Woodwardia virginica*

Salviniaceae

Mosquito fern	*Azolla caroliniana*

Gymnosperms

Pinaceae

Southern red cedar	*Juniperus silicicola*
Shortleaf pine	*Pinus echinata*
Loblolly pine	*Pinus taeda*
Spruce pine	*Pinus glabra*
Slash pine	*Pinus elliottii*

Angiosperms

Monocots

Alismataceae

Lance-leaved arrowhead	*Sagittaria lancifolia*

Bromeliaceae

Spanish moss	*Tillandsia usneoides*

Commelinaceae (Day Flower Family)

Common spiderwort	*Tradescantia ohiensis*

Cyperaceae (Sedge Family)

Hop sedge	*Carex lupulina*
Shallow sedge	*Carex lurida*

Juncaceae (Rush Family)

Soft rush	*Juncus effusus*

Liliaceae (Lily Family)

False garlic	*Allium bivalve*

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Orchidaceae (Orchid Family)		
Green-fly orchid	*Epidendrum conopseum*	
Palmae (Palm Family)		
Saw-palmetto	*Serenoa repens*	
Smilacaceae		
Catbrier	*Smilax bona-nox*	
Wild Sarsaparilla	*Smilax glauca*	
Bamboo-vine	*Smilax laurifolia*	
Wild Sarsaparilla	*Smilax pumila*	
Greenbrier	*Smilax rotundifolia*	
Hogbrier	*Smilax tamnoides*	
Poaceae		
Common broomsedge	*Andropogon virginicus*	
Bushy beardgrass	*Andropogon glomeratus*	
Arrowfeather threeawn	*Aristida purpurescens*	
Maidencane	*Panicum hemitomon*	
Torpedo grass	*Panicum repens**	
Silver plumegrass	*Saccharum alopecuroides*	
Sugarcane plumegrass	*Saccharum giganteum*	
Slender bluestem	*Schizachyrium tenerum*	
Yellow Indiangrass	*Sorghastrum nutans*	
Lopside Indiangrass	*Sorghastrum secundum*	
Dicots		
Acanthaceae		
Water-willow	*Justicia ovata*	
Aceraceae (Maple Family)		
Red maple	*Acer rubrum*	
Anacardiaceae (Cashew Family)		
Winged sumac	*Rhus copallina*	
Poison Ivy	*Toxicodendron radicans*	
Annonaceae (Custard Apple Family)		
Pawpaw	*Asimina longifolia*	
Apiaceae (Carrot Family)		
Water-dropwort	*Oxypolis filiformis*	
Black snakeroot	*Sanicula canadensis*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Aquifoliaceae (Holly Family)		
Gallberry, inkberry	*Ilex glabra*	
American holly	*Ilex opaca*	
Yaupon holly	*Ilex vomitoria*	
Asclepiadaceae (Milkweed Family)		
Butterfly weed	*Asclepias tuberosa*	
Asteraceae (Sunflower Family)		
Groundsel tree	*Baccharis glomeruliflora*	
Elephant's foot	*Elephantopos carolinianus*	
Dog fennel	*Eupatorium compositifolium*	
Hawk's beard	*Hieracium gronovii*	
Youngia	*Youngia japonica**	
Betulaceae (Birch Family)		
Ironwood	*Carpinus caroliniana*	
Hop-hornbeam	*Ostrya virginiana*	
Bignoniaceae		
Cross-vine	*Bignonia capreolata*	
Campanulaceae (Bellflower Family)		
Cardinal flower	*Lobelia cardinalis*	
Venus' looking-glass	*Triodanis perfoliata*	
Caprifoliaceae (Honeysuckle Family)		
Elderberry	*Sambucus canadensis*	
Japanese honeysuckle	*Lonicera japonica**	
Southern arrow-wood	*Viburnum dentatum*	
Cornaceae (Dogwood Family)		
Flowering dogwood	*Cornus florida*	
Swamp dogwood	*Cornus foemina*	
Cyrillaceae (Titi Family)		
Swamp cyrilla, Titi	*Cyrilla racemiflora*	
Ebenaceae		
Persimmon	*Diospyros virginiana*	
Elaeagnaceae		
Silverthorn	*Elaeagnus pungens**	
Ericaceae (Blueberry, Heath Family)		
Sourwood	*Oxydendron arboretum*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Sweet pinxter azalea	*Rhododendron canescens*	
Sparkleberry	*Vaccinium arboretum*	
Elliot's blueberry	*Vaccinium elliottii*	
Euphorbiaceae (Spurge Family)		
Sebastian bush	*Sebastiania fruticosa*	
Leaf-flower	*Phyllanthus tenellus*	
Chinese tallow	*Sapium sebiferum**	
Fabaceae		
Mimosa	*Albizia julibrissin**	
Clover	*Trifolium* spp.	
Vetch	*Vicia sativa*	
Fagaceae (Oak or Beech Family)		
White oak	*Quercus alba*	
Southern red oak	*Quercus falcata*	
Laurel oak	*Quercus laurifolia*	
Diamond-leaf oak	*Quercus hemisphaerica*	
Water oak	*Quercus nigra*	
Post oak	*Quercus stellata*	
Black oak	*Quercus velutina*	
Live oak	*Quercus virginiana*	
Geraniaceae		
Cranesbill	*Geranium carolinianum*	
Haloragaceae		
Mermaid-weed	*Proserpinaca palustris*	
Hamamelidaceae (Witch-hazel Family)		
Sweetgum	*Liquidambar styraciflua*	
Hippocastanaceae		
Red Buckeye	*Aesculus pavia*	
Hypericaceae (St. John's-wort Family)		
St. John's-wort	*Hypericum brachyphyllum*	
St. John's-wort	*Hypericum galioides*	
St. Andrew's-cross	*Hypericum hypericoides*	
Juglandaceae (Walnut Family)		
Bitternut hickory	*Carya cordiformis*	
Mockernut hickory	*Carya tomentosa*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Lauraceae		
Camphor tree	Cinnamomum camphora*	
Redbay	*Persea borbonia*	
Sassafras	*Sassafras albidum*	
Loganiaceae		
Yellow jessamine	*Gelsemium sempervirens*	
Loranthaceae		
Mistletoe	*Phoradendron serotinum*	
Lythraceae (Loosestrife Family)		
Crepe myrtle	*Lagerstroemia indica*	
Magnoliaceae (Magnolia Family)		
Southern magnolia	*Magnolia grandiflora*	
Malvaceae (Mallow Family)		
Rose mallow	*Hibiscus moscheutos*	
Myricaceae		
Wax myrtle	*Myrica cerifera*	
Nyssaceae		
Swamp tupelo, Blackgum	*Nyssa biflora*	
Sour gum	*Nyssa sylvatica*	
Oleaceae (Olive Family)		
Glossy privet	*Ligustrum lucidum**	
Chinese privet	*Ligustrum sinense**	
Wild olive	*Osmanthus americanus*	
Onagraceae (Evening-primrose Family)		
Primrose	*Ludwigia* spp.	
Oxalidaceae (Wood-sorrel Family)		
Lady's wood-sorrel	*Oxalis corniculata*	
Oxalis	*Oxalis rubra*	
Passifloraceae (Passionflower Family)		
Maypops	*Passiflora incarnata*	
Phytolaccaceae (Pokeweed Family)		
Pokeweed	*Phytolacca americana*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Plantaginacea		
Plantain	*Plantago virginica*	
Polemoniaceae (Phlox Family)		
Annual garden phlox	*Phlox drummondii*	
Polygonaceae		
Smartweed	*Polygonum punctatum*	
Dock	*Rumex* spp.	
Pyrolaceae		
Indian pipe	*Monotropa uniflora*	
Ranunculaceae (Buttercup Family)		
Virgin's Bower	*Clematis catesbyana*	
Rhamnaceae (Buckthorn Family)		
New Jersey tea	*Rhamnus caroliniana*	
Rosaceae (Rose Family)		
Hawthorne	*Crataegus pulcherrima*	
Crab apple	*Malus angustifolia*	
Cherry laurel	*Prunus caroliniana*	
Black cherry	*Prunus serotina*	
Highbush blackberry	*Rubus argutus*	
Sand blackberry	*Rubus cuneifolius*	
Dewberry	*Rubus trivialis*	
Rubiaceae (Madder Family)		
Buttonbush	*Cephalanthus occidentalis*	
Innocence	*Hedyotis procumbens*	
Partridge berry	*Mitchella repens*	
Rutaceae (Rue family)		
Hercules'-club	*Zanthoxylum clava-herculis*	
Saxifragaceae		
Virginia willow	*Itea virginica*	
Salicaceae		
Coastal Plain Willow	*Salix caroliniana*	
Dwarf gray-willow	*Salix humilis*	
Saururaceae		
Lizard's tail	*Saururus cernuus*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Scrophulariaceae (Snapdragon Family)		
Yellow foxglove	*Aureolaria flava*	
Black senna	Seymeria cassioides	
Symplocaceae		
Horse sugar, sweetleaf	*Symplocos tinctoria*	
Ulmaceae (Elm Family)		
Hackberry	*Celtis laevigata*	
Urticaceae (Nettle Family)		
False nettle	*Boehmeria cylindrica*	
Verbenaceae		
Beautyberry	*Callicarpa americana*	
Vervain	*Verbena brasiliensis*	
Violaceae		
Primrose-leaved violet	*Viola primulifolia*	
Violet	*Viola villosa*	
Vitaceae		
Virginia creeper	*Parthenocissus quinquefolia*	
Muscadine	*Vitis rotundifolia*	
FISH		
Poeciliidae		
Mosquito fish	*Gambusia spp.*	BS, DM
AMPHIBIANS		
Frogs and Toads		
Cricket frog	*Acris gryllus*	BS, DM
Southern toad	*Anaxyrus terrestris*	MTC
Squirrel treefrog	*Hyla squirella*	MTC
Green treefrog	*Hyla cinerea*	BS,DM,BF
Bronze frog	Lithobates clamitans clamitans	BS, DM
Southern leopard frog	*Lithobates sphenocephala*	BS, DM
Spring peeper	*Pseudacris crucifer*	BS, DM
Salamanders		
Slimy salamander	*Plethodon glutinosus*	BF
REPTILES		

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Crocodilians		
American alligator	*Alligator mississippiensis*	BS
Turtles		
Gopher tortoise	*Gopherus polyphemus*	UMW
Alligator snapping turtle	*Macroclemys temminckii*	Lake Drain
Common musk turtle	*Sternotherus odoratus*	Lake Drain
Box turtle	*Terrapene carolina*	MTC
Lizards		
Green anole	*Anolis carolinensis carolinensis*	MTC
Southeastern five-lined skink	*Eumeces inexpectatus*	MTC
Eastern glass lizard	*Ophisaurus ventralis*	MTC
Eastern fence lizard	*Scleroporus undulatus*	MTC
Snakes		
Florida cottonmouth	*Agkistrodon piscivorus floridanus*	BS, DM, BF
Southern black racer	*Coluber constrictor priapus*	MTC
Eastern diamondback	*Crotalus adamanteus*	UMW
Yellow rat snake	*Elaphe obsoleta quadrivittata*	MTC
Eastern coachwhip	*Masticophis flagellum flagellum*	UMW, UHF
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*	UMW
BIRDS		
Ducks, Geese, Swans		
Wood duck	*Aix sponsa*	OF
Canada goose	*Branta canadensis*	OF
Storks		
Wood stork	*Mycteria americana*	OF
Herons, Egrets		
Great egret	*Ardea alba*	BS, DM
Great blue heron	*Ardea herodias*	BS, DM
Cattle egret	*Bubulcus ibis*	BS, DM
Green heron	*Butorides virescens*	BS, DM
Little blue heron	*Egretta caerulea*	BS, DM
Ibises		
White ibis	*Eudocimus albus*	BS, DM
Vultures		
Turkey vulture	*Cathartes aura*	OF

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Black vulture	*Coragyps atratus*	OF
Ospreys		
Osprey	*Pandion haliaetus*	OF
Kites, Eagles, Hawks		
Cooper's hawk	*Accipiter cooperii*	OF
Sharp-shinned hawk	*Accipiter striatus*	OF
Red-tailed hawk	*Buteo jamaicensis*	OF
Red-shouldered hawk	*Buteo lineatus*	OF
Broad-winged hawk	*Buteo platypterus*	OF
Northern harrier	*Circus cyaneus*	OF
Bald eagle	*Haliaeetus leucocephalus*	OF
Caracaras, Falcons		
Merlin	*Falco columbarius*	OF
American kestrel	*Falco sparverius*	OF
Pheasants, Turkeys, Quail		
Northern bobwhite	*Colinus virginianus*	UMW, UHF
Wild turkey	*Meleagris galopavo*	MTC
Sandpipers		
Wilson's snipe	*Gallinago gallinago*	BS, DM, UHF
Lesser yellowlegs	*Tringa flavipes*	MTC
Greater yellowlegs	*Tringa melanoleuca*	MTC
Pigeons, Doves		
Common ground-dove	*Columbina passerina*	DV
Mourning dove	*Zenaida macroura*	MTC
Cuckoos		
Yellow-billed cuckoo	*Coccyzus americanus*	BF
Typical owls		
Great horned owl	*Bubo virginianus*	MTC
Eastern screech-owl	*Otus asio*	MTC
Barred owl	*Strix varia*	BF
Nightjars		
Chuck-will's-widow	*Caprimulgus carolinensis*	UMW, UHF
Common nighthawk	*Chordeiles minor*	UMW
Hummingbirds		
Ruby-throated hummingbird	*Archilochus colubris*	MTC

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Woodpeckers		
Northern flicker	*Colaptes auratus*	MTC
Pileated woodpecker	*Dryocopus pileatus*	BS, BF
Red-bellied woodpecker	*Melanerpes carolinus*	MTC
Red-headed woodpecker	*Melanerpes erythrocephalus*	MTC
Downy woodpecker	*Picoides pubescens*	MTC
Yellow-bellied sapsucker	*Sphyrapicus varius*	MTC
Tyrant Flycatchers		
Eastern wood-pewee	*Contopus virens*	MTC
Great crested flycatcher	*Myiarchus crinitus*	BF
Eastern phoebe	*Sayornis phoebe*	MTC
Eastern kingbird	*Tyrannus tyrannus*	MTC
Vireos		
Yellow-throated vireo	*Vireo flavifrons*	BF, UHF
White-eyed vireo	*Vireo griseus*	BF, UHF
Red-eyed vireo	*Vireo olivaceus*	BF, UHF
Solitary vireo	*Vireo solitarius*	BF, UHF
Jays, Crows		
American crow	*Corvus brachyrhynchos*	MTC
Fish crow	*Corvus ossifragus*	OF
Blue Jay	*Cyanocitta cristata*	MTC
Swallows		
Barn swallow	*Hirundo rustica*	OF
Purple martin	*Progne subis*	OF
Northern rough-winged swallow	*Stelgidopteryx serripennis*	MTC
Tree swallow	*Tachycineta bicolor*	OF
Titmice and Chickadees		
Tufted titmouse	*Baeolophus bicolor*	MTC
Carolina chickadee	*Poecile carolinensis*	MTC
Nuthatches		
White-breasted nuthatch	*Sitta carolinensis*	MTC
Brown-headed nuthatch	*Sitta pusilla*	UMW
Wrens		
Marsh wren	*Cistothorus palustris*	DM
Sedge wren	*Cistothorus platensis*	MTC
Carolina wren	*Thryothorus ludovicianus*	MTC
House wren	*Troglodytes aedon*	MTC
Winter wren	*Troglodytes troglodytes*	MTC

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Gnatcatchers		
Blue-gray gnatcatcher	*Polioptila caerulea*	MTC
Old world flycatchers		
Ruby-crowned kinglet	*Regulus calendula*	MTC
Golden-crowned kinglet	*Regulus satrapa*	MTC
Thrushes		
Hermit thrush	*Catharus guttatus*	MTC
Wood thrush	*Hylocichla mustelina*	MTC
Eastern bluebird	*Sialia sialis*	MTC
American robin	*Turdus migratorius*	MTC
Mimic Thrushes		
Gray catbird	*Dumetella carolinensis*	MTC
Northern mockingbird	*Mimus polyglottos*	MTC
Brown thrasher	*Toxostoma rufum*	MTC
Starlings		
European starling	*Sturnus vulgaris*	MTC
Warblers		
Common yellowthroat	*Geothlypis trichas*	MTC
Worm-eating warbler	*Helmitheros vermivorum*	MTC
Black-and-white warbler	*Mniotilta varia*	MTC
Orange-crowned warbler	*Oreothlypis celata*	MTC
Tennessee warbler	*Oreothlypis peregrina*	MTC
Louisiana waterthrush	*Parkesia motacilla*	MTC
Ovenbird	*Seiurus aurocapilla*	MTC
Northern parula	*Setophaga americana*	MTC
Cerulean warbler	*Setophaga cerulea*	MTC
Yellow-rumped warbler	*Setophaga coronata*	MTC
Prairie warbler	*Setophaga discolor*	MTC
Yellow-throated warbler	*Setophaga dominica*	MTC
Palm warbler	*Setophaga palmarum*	UHF
Chestnut-sided warbler	*Setophaga pensylvanica*	MTC
Pine warbler	*Setophaga pinus*	MTC
American redstart	*Setophaga ruticilla*	MTC
Sparrows		
Swamp sparrow	*Melospiza georgiana*	MTC
Song sparrow	*Melospiza melodia*	MTC
Bachman's sparrow	*Peucaea aestivalis*	UMW
Eastern towhee	*Pipilo erythrophthalmus*	MTC
Chipping sparrow	*Spizella passerina*	MTC
White-throated sparrow	*Zonotrichia albicollis*	MTC

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Cardinals, Tanagers		
Northern cardinal	*Cardinalis cardinalis*	MTC
Scarlet tanager	*Piranga olivacea*	MTC
Summer tanager	*Piranga rubra*	MTC
Blue grosbeak		
Blackbirds		
Red-winged blackbird	*Agelaius phoeniceus*	MTC
Northern oriole	*Icterus galbula*	MTC
Orchard oriole	*Icterus spurius*	MTC
Brown-headed cowbird	*Molothrus ater*	DV
Common grackle	*Quiscalus quiscula*	OF, DV
Eastern meadowlark	*Sturnella magna*	MTC
Finches		
House finch	*Carpodacus mexicanus*	MTC
American goldfinch	*Carduelis tristis*	MTC
	MAMMALS	
Marsupials		
Virginia oppossum	*Didelphis virginiana*	MTC
Edentates		
Nine-banded armadillo	*Dasypus novemcinctus* *****	MTC
Lagomorphs		
Eastern cottontail	*Sylvilagus floridanus*	MTC
Marsh rabbit	*Sylvilagus palustris*	BS, DM
Rodents		
House mouse	*Mus musculus* *****	DV
Gray squirrel	*Sciurus carolinensis*	MTC
Hispid cotton rat	*Sigmodon hispidus*	MTC
Artiodactyla (Ungulates)		
White-tailed deer	*Odocoileus virginianus*	MTC
Carnivores		
Coyote	*Canis latrans**	MTC
Bobcat	*Lynx rufus*	MTC
Raccoon	*Procyon lotor*	MTC
Gray fox	*Urocyon cinereoargenteus*	MTC
Red fox	*Vulpes vulpes*	MTC

TERRESTRIAL

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

PALUSTRINE

Alluvial Forest....AF
Basin Marsh....BM
Basin Swamp....BS
Baygall....BG
Bottomland Forest....BF
Coastal Interdunal Swale....CIS
Depression Marsh....DM
Dome Swamp....DS
Floodplain Marsh....FM
Floodplain Swamp....FS
Glades Marsh....GM
Hydric Hammock....HH
Keys Tidal Rock Barren....KTRB
Mangrove Swamp....MS
Marl Prairie....MP
Salt Marsh....SAM
Seepage Slope....SSL
Shrub Bog....SHB
Slough....SLO
Slough Marsh....SLM
Strand Swamp....STS

Wet Prairie ..... WP

LACUSTRINE

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

RIVERINE

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

SUBTERRANEAN

Aquatic Cave ..... ACV
Terrestrial Cave ..... TCV

ESTUARINE

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

MARINE

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

ALTERED LANDCOVER TYPES

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

MISCELLANEOUS

Many Types of Communities	MTC
Overflying	OF

Addendum 6—Imperiled Species Ranking Definitions

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 Fish and Wildlife Conservation 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 fabricated 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 or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.

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 or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.

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

SU ..... due to lack of information, no rank or range can be assigned (e.g., SUT2).

S? ..... Not yet ranked (temporary)

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

LEGAL STATUS

FEDERAL

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

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

PE ..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

LT ..... Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

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

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

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

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

EXPE, XE..... Experimental essential population. A species listed as experimental and essential.

EXPN, XN .... Experimental non-essential population. A species listed as experimental and non-essential. Experimental, nonessential populations of endangered species are treated as threatened species on public land, for consultation purposes.

STATE

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

FE ..... Federally-designated Endangered

FT ..... Federally-designated Threatened

FXN ..... Federally-designated Threatened Nonessential Experimental Population

FT(S/A) ..... Federally-designated Threatened species due to similarity of appearance

ST ..... Listed as Threatened Species by the FWC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.

SSC ..... Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species.

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

LE ..... Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973,as amended.

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

Addendum 7—Cultural Information

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

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

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

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

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at: http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

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

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

Phone: (850) 245-6425
Toll Free: (800) 847-7278
Fax: (850) 245-6435

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

1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- **a)** are associated with events that have made a significant contribution to the broad patterns of our history; and/or
- **b)** are associated with the lives of persons significant in our past; and/or
- **c)** embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
- **d)** have yielded, or may be likely to yield, information important in prehistory or history.

2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- **a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
- **b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- **c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
- **d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- **e)** a property achieving significance within the past 50 years, if it is of exceptional importance.

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

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

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

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