Falling Waters State Park

Approved
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
December 2017

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

December 18, 2017

Steven Cutshaw
Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 525
Tallahassee, Florida 32399-3000

RE: Falling Waters State Park - Lease #3616

Dear Mr. Cutshaw:

On **December 15, 2017**, the Acquisition and Restoration Council recommended approval of the **Falling Waters State Park** management plan. Therefore, the Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the **Falling Waters State Park** management plan. The next management plan update is due December 18, 2027.

Approval of this land management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

Raymond V. Spaulding
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

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INTRODUCTION

Falling Waters State Park is located in Washington County (see Vicinity Map). Access to the park is from I-10 take exit 120 south on State Road 77 for 1 mile, then go east on State Park Road and follow the signs to the park (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Falling Waters State Park was initially acquired on March 26, 1962 by the Florida Board of Parks and Historic Memorials. Currently, the park comprises 173.34 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on January 23, 1968, the Trustees leased (Lease Number 3616) the property to DRP under a 99-year lease. The current lease will expire on January 22, 2067.

Falling Waters State Park is designated single-use to provide public outdoor recreation and conservation. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

Purpose and Significance of the Park

The purpose of Falling Waters State Park is to protect a series of sinkholes, particularly the chimney sinkhole that Florida's highest waterfall cascades into before disappearing into the park's network of terrestrial caves. The park also highlights the historical legacy of the region due to its ideal location and resources while providing resource-based outdoor recreation and preserving the unique natural features.

Park Significance

- At a height of 100 feet from the higher observation deck, the park showcases Florida's highest waterfall and the only such water feature in the state. The waterfall descends into a 100-foot deep and 20-foot wide cylindrical sinkhole.
- Situated among the upland pine and upland hardwood forest natural communities, the park protects patches of biologically diverse and species-rich seepage slope, a natural community that sustains carnivorous pitcher plants and terrestrial orchids.
- Native American archaeological sites dating back as far as 5000 years are preserved at the park, in addition to historic period sites including a Civil War-era grist mill and early oil well drilling site.
- In addition to interpretive opportunities, the park offers resource-based recreational activities that include camping, swimming and fishing at Turtle Lake, hiking, and wildlife viewing.

Falling Waters State Park is classified as a State Recreation Area in the DRP's unit classification system. In the management of a state recreation area, major emphasis is placed on maximizing the recreational potential of the unit. However, preservation of the park's natural and cultural resources remains important. Depletion of a resource by any recreational activity is not permitted. In order to realize the park's recreational potential, the development of appropriate park facilities is undertaken with the goal to provide facilities that are accessible, convenient and safe, to support public recreational use or appreciation of the park's natural aesthetics and educational attributes.

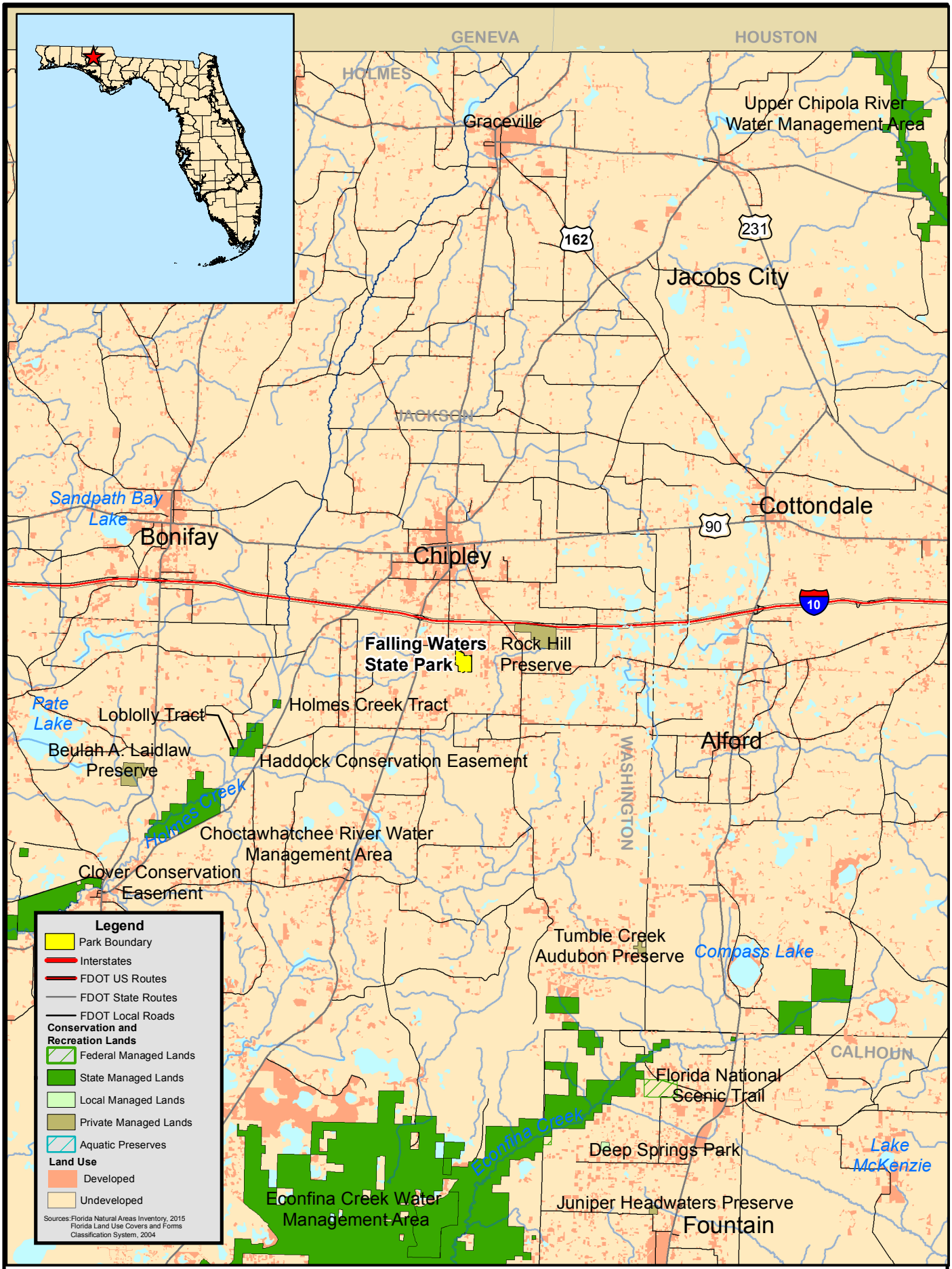
Purpose and Scope of the Plan

This plan serves as the basic statement of policy and direction for the management of Falling Waters 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 2007 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.



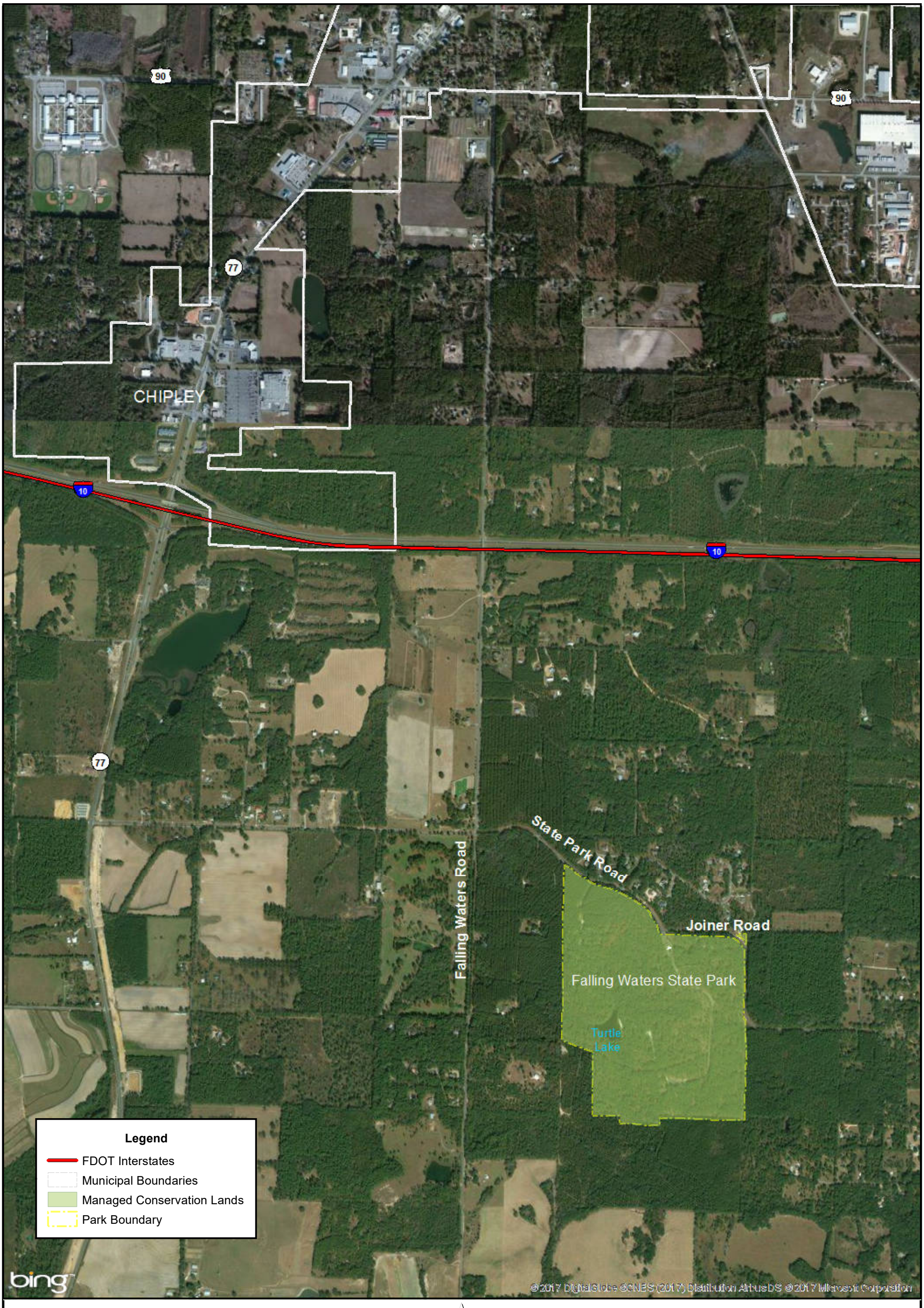
FALLING WATERS
STATE PARK

N

0 1.25 2.5 5 Miles

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2014

VICINITY MAP



FALLING WATERS STATE PARK

N

0 375 750 1,500 Feet

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

REFERENCE MAP

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.

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that timber management could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that timber management would be appropriate at this park as additional sources of revenue for land management since they are compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

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.

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 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) and the Florida Forest Service (FFS) assist 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) and the Division of Historical Resources (DHR) assist 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 April 19th and April 20th, respectively. Meeting notices were published in the Florida Administrative Register, Vol. 43, issue 69, 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

Falling Waters 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. Falling Waters State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Known Cultural Resources**
FW-A	46.4	YES	YES
FW-B	56.14	YES	YES
FW-C	30.98	YES	YES
FW-D	15.12	YES	YES
FW-E	17.82	NO	NO

Resource Description and Assessment

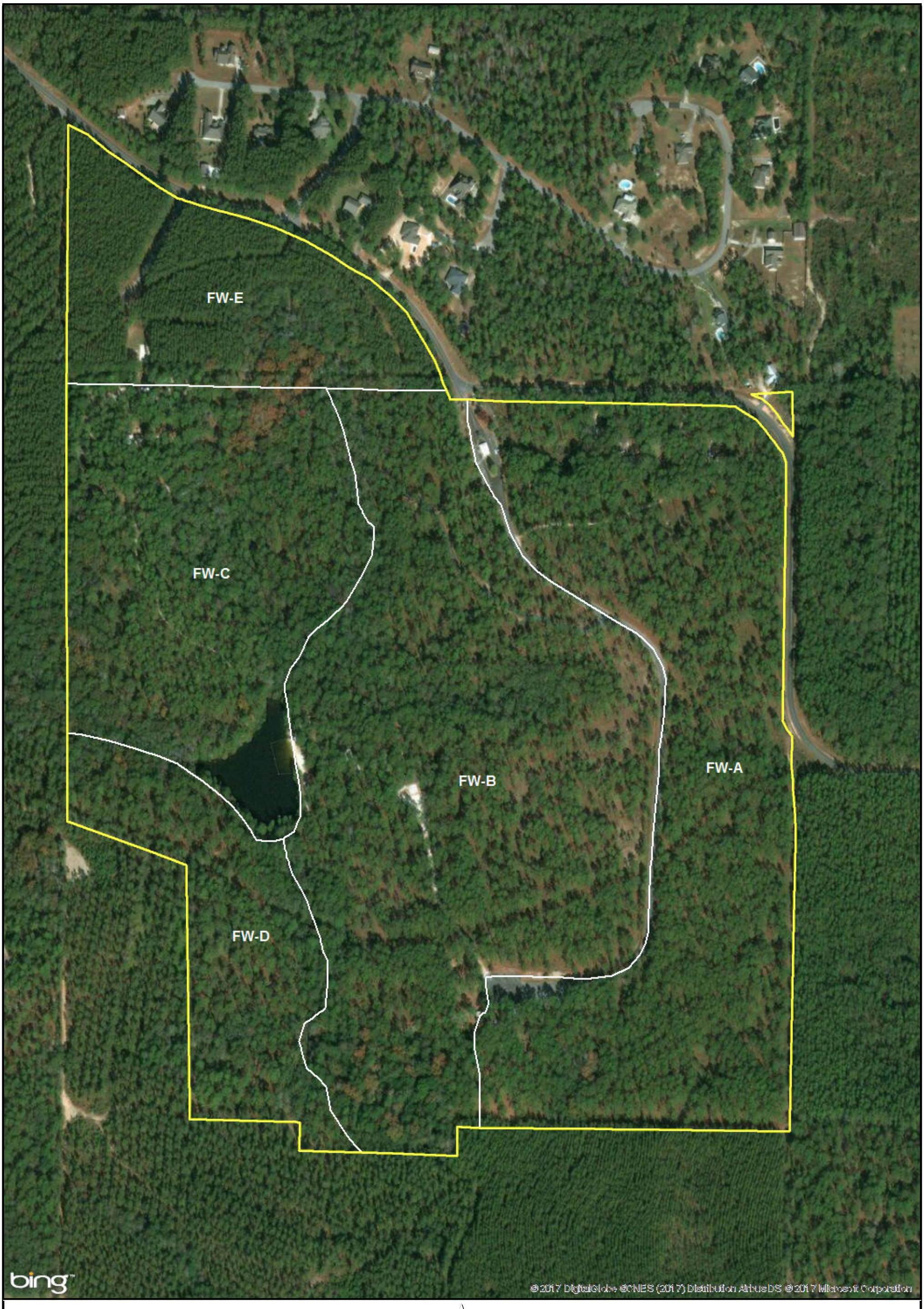
Natural Resources

Topography

The topographic relief at Falling Waters State Park is quite striking, even considering that this park is situated in a region of the state characterized by rolling hills and occasional steep ridges. The local topography results from its origin as a coastal plain terrace that has been transformed over the years by a variety of physical and chemical processes (Vernon 1942). From its highest altitude on the crest of Falling Waters Hill in management zone E located just north of the campground, the elevation varies from about 310 feet above sea level to a nadir of less than 160 feet in the vicinity of the sinkholes near the southern boundary of the park. The immediate slopes of Falling Waters Hill attain a very significant grade that forms three steephead ravines and several discrete seepage slope communities along its margins. In fact, earlier in its recorded history when the upland pine forests were widespread and the landscape was more open, this hill was a local landmark that could be seen for a long distance all around. A lower ridge extends from this hill's eastern extent near the park entrance, rising slightly to about 275 feet before descending along a moderate slope to the sinkholes area and the waterfall; the main park road and parking lot partially follow the course of this ridgeline. Just to the west of this ridge, the steep hill slopes transition to alluvial streams and the artificial lake where the surface gradually levels for a short distance before descending again to the sinkholes area.

Geology

The geology of Falling Waters State Park is characterized in part by a karst terrain of limestone bedrock, sinks, and terrestrial caves. Percolating rainwater contributes a weak carbonic acid that prompts the dissolution of limestone over the long term and creates the distinctive geological features of the park. The ultimate destination of most of the park's drainage is the Falling Waters Sink, which is a cylindrical sinkhole about 100 feet deep and with a diameter of about 20 feet. The base of the Falling Waters Sink penetrates Suwannee Limestone, an ancient marine derived stratum deposited approximately 30 million years ago during the Oligocene Epoch.



FALLING WATERS STATE PARK

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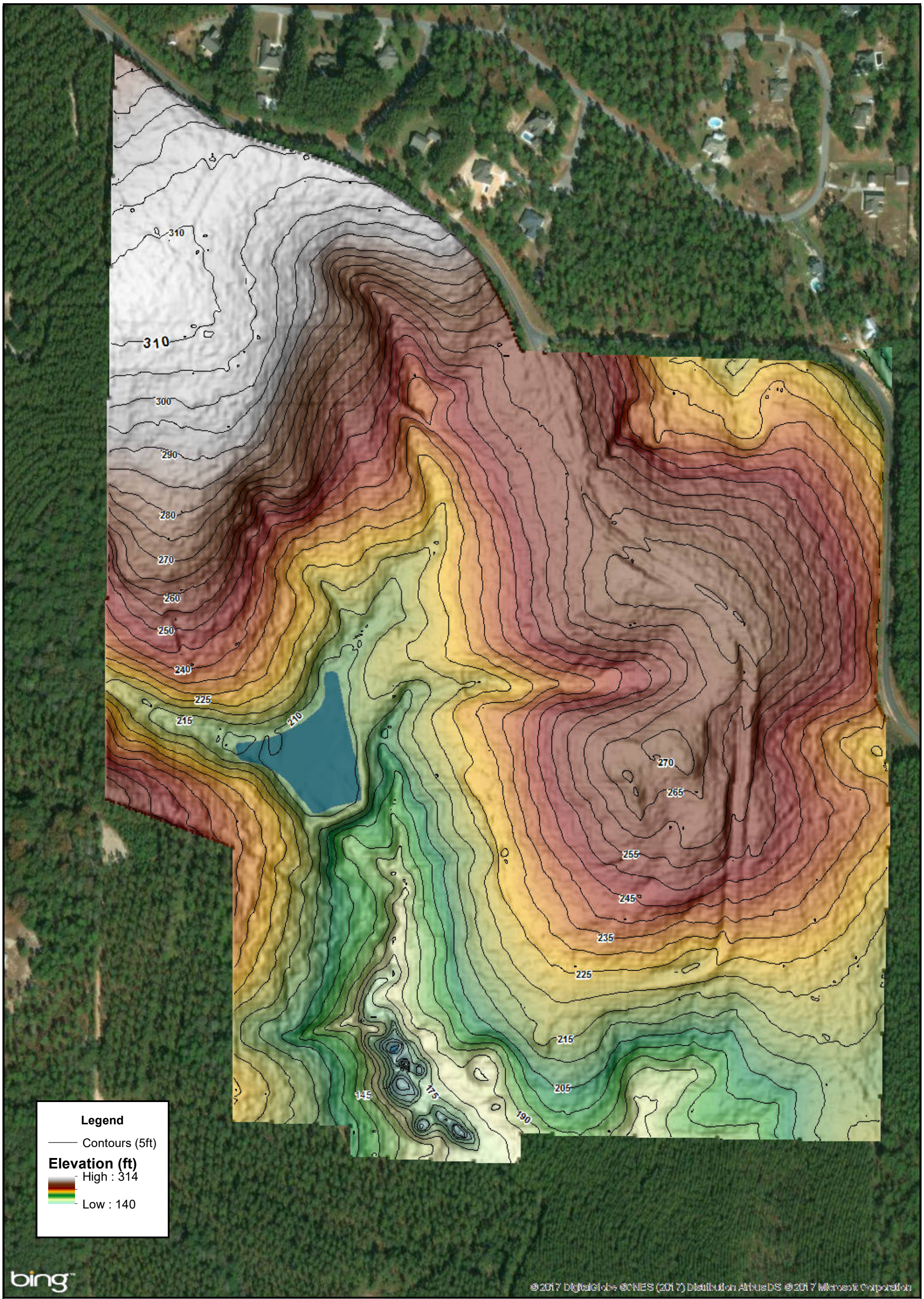
Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

MANAGEMENT ZONES MAP



FALLING WATERS STATE PARK

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

TOPOGRAPHIC MAP

This stratum is overlayed by the Chattahoochee Formation formed during the Miocene Epoch. The Alum Bluff group is another class of Miocene Epoch sediments found on the higher elevations of Falling Waters Hill. Falling Waters Sink was created when the underlying limestone dissolved and collapsed to form a large solution pipe open to the ground surface. A series of streams converge to a single water course that cascades over a waterfall into the deep sink. Two terrestrial caves have been surveyed under the network of boardwalks leading to a viewing platform in the vicinity of the waterfall.

Soils

Soils on the park property are all identified as being characterized by varying degrees of slope with most in the 0 to 8 percent range, including the Bowie loamy sand, Cuthbert sandy clay loam, Cuthbert soils, Eustis sand, and Lakeland source sand classes (see Soils Map). The most dramatic topography is constituted by the Lakeland-Cuthbert-Shubuta soils that range from 5 to 45 percent slopes, which can attain an exceptionally steep slope in a state so associated with flat expanses of the Southeastern Coastal Plain. For a detailed description of the specific soil types that occur at the park, see Addendum 4. These soils are excessively to moderately well drained. The uplands are generally underlain by sandy clay to clay subsoils (USDA 1965). Erosive forces over millions of years have played a major role in the formation of these soils. In contrast to the alkaline limestone bedrock of in the park, the soils are predominantly acidic.

Management practices that protect and promote native understory vegetation should help provide for the conservation of soil resources and for the control and prevention of soil erosion. Given the dramatic topography of the park, erosion is always a concern that should be monitored for. Particularly erosion sensitive areas such as steephead ravines and seepage slope should be protected from unnecessary human disturbances. Natural accumulation of leaf litter in the upland hardwood forest and the protection of herbaceous plants along the seepage slopes should help to prevent significant soil loss that would degrade sensitive habitats.

Minerals

There are no mineral deposits of commercial value known to occur within this park.

Hydrology

Much of Washington County's surface is composed of long, gentle slopes and broad, nearly level ridgetops. The park terrain and immediate neighborhood consists of a higher set of hills and ridges than is observed in the general vicinity. Numerous potholes ranging from shallow depressions to deep sinks are commonly encountered in the karst substrate that underlies this area. The undulating topography is significantly structured by the differential solution by groundwater of the subterranean limestone and subsequent collapse of the surficial deposits. The entire karst plain is a significant recharge region for the Floridan Aquifer. Rain showers falling on the park and surrounding areas percolate through upper layers of the porous limestone strata, which then flows toward the south and southwest as

it follows the contour of the limestone formations and descends along the hydrologic pressure gradient.

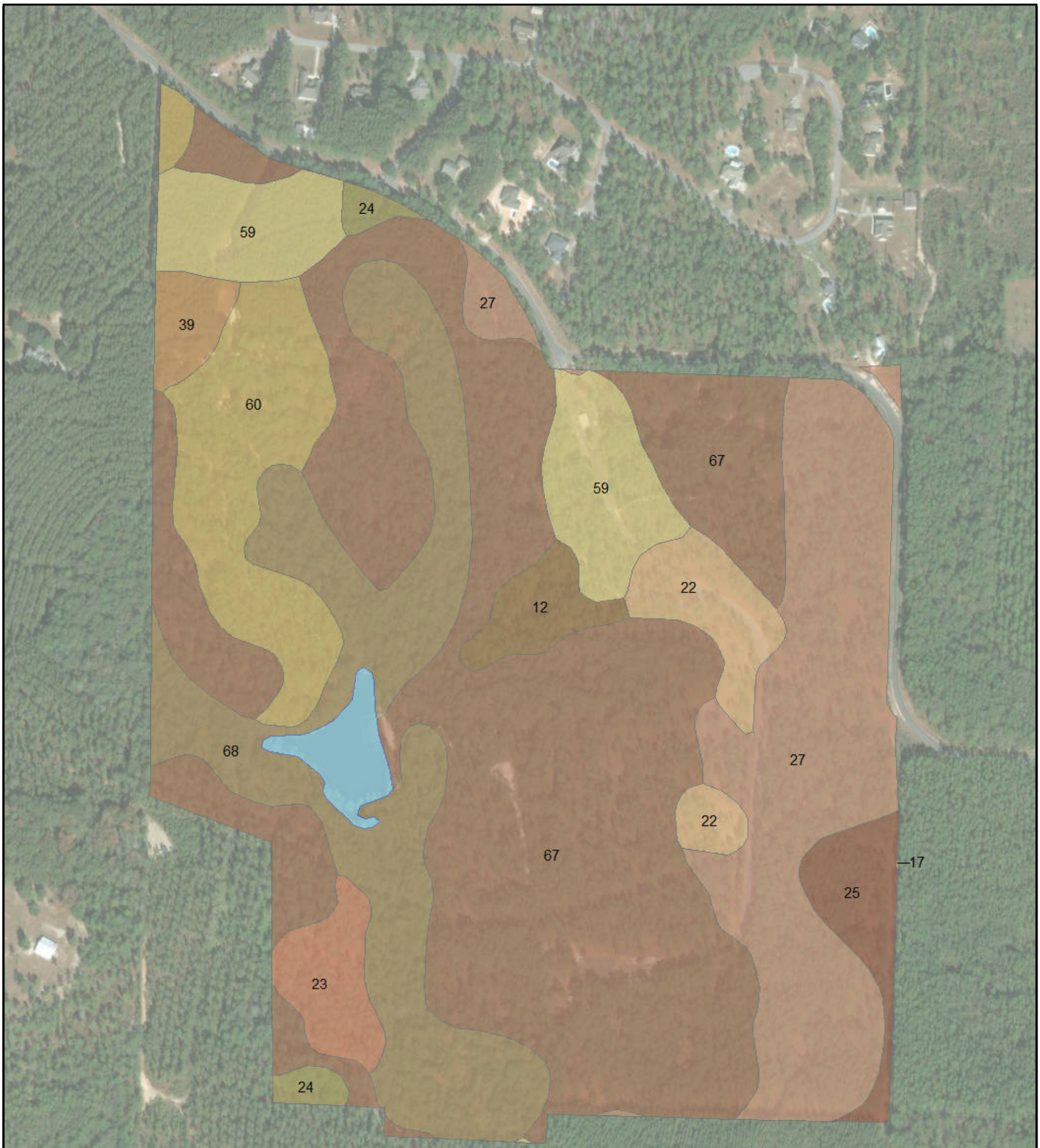
Natural stream and sheet flow at the park has been modified by the addition of a two-acre man-made impoundment and narrow channel built in 1965, resulting in the formation of an artificial pond that is now a focal recreational attraction for park visitors. Water level in this pond is controlled by a weir mechanism located in the southern portion of the water body that functions somewhat similarly to a drain plug. Prior to 1965, four seepage streams converged into a natural spillway to form one major stream flowing in a southerly direction past the current pond site to ultimately cascade over the rocky streambed and empty into a deep smooth-walled sink near the park boundary, thus forming the famous waterfall after which the park is named. The individual seepage streams originate from steephead ravines located upslope from various locations on Falling Waters Hill and its associated ridges; the sources of three of these streams lie within the park boundary. As this hill is the highest point in the immediate area, the park is distinctive for having the source and finally sink of these impressive surface water flow systems mostly confined inside a parcel (about 173 acres) with a relatively limited extent. As such, water flow is closely correlated with recent rainfall quantities so that stream flow markedly decreases in drier weather conditions and the waterfall usually only flows for a period following rain events.

Good water quality is important for the continued persistence of rare plant and animal species and to maintain the high conservation value of the park habitats, which will apply to any state park. For Falling Waters State Park, it is even more crucial given the karstic quality of the underlying substrate and the significant quantities of water that are recharged into the aquifer via the sinkholes below the waterfall. The DRP should remain aware of how different land use practices in the properties surrounding the park may impact this water quality so that any issues can be identified and ultimately resolved. Since the artificial pond is used as a park visitor swimming area, its waters are routinely tested to primarily ensure they are conducive to human health, though this emphasis also benefits the biological and geological resource conditions as well.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, 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



FALLING WATERS STATE PARK

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0 125 250 500 Feet

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

SOIL MAP

generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub--two communities with similar species compositions--generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

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

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

SINKHOLE

Desired future condition: Sinkholes are characterized by cylindrical or conical depressions with walls primarily composed of limestone or sand. Sinkholes do not contain standing water for extended periods of time as do sinkhole lakes. Depending upon the age of the sinkhole, the vegetation of sandy sinkholes may represent a well-developed forest including southern magnolia (*Magnolia grandiflora*), sweetgum (*Liquidambar styraciflua*), American beech (*Fagus grandifolia*), sparkleberry (*Vaccinium arboreum*), Virginia creeper (*Parthenocissus quinquefolia*), water oak (*Quercus nigra*) and pignut hickory (*Carya glabra*). Sinkholes with vertical limestone walls generally offer moist habitats at least part of the time and are often covered by a variety of mosses, liverworts, ferns, and small herbs. These wet microclimates are commonly supported by seepage and evaporation is buffered by the lower elevation of the landform relative to the surrounding landscape and the overlying tree canopy. Desired future conditions include limiting unnatural erosion and protecting the microclimate from disturbance.

Description and assessment: Near the park's south central boundary line, a series of sinkholes lie just downslope from the waterfall. In fact, the most significant of this assemblage, the Falling Waters Sink, receives the water flow that falls from the waterfall. This sink is a cylindrical feature with vertical walls extended about 100 feet deep and 20 feet wide. The entrance to the northerly cave system (see description below) opens into this sink from about midway up from the sink bottom. Along with being visually quite impressive in its own right, this large sinkhole receives the bulk of the surface water flow that passes from Falling Waters Hill and

through the seepage streams of the park; the water then descends into the aquifer and out of sight. There are other smaller sinkholes located roughly in an arc veering toward the southeast. These other sinkholes are much shallower and they open into the southerly cave system, formed several entrances that are capable of allowing people to enter via climbing rope and equipment. Along with the seeping drainage that moistens the limestone wall surfaces in many places, the surrounding canopy of hardwood trees and shrubs shades the sinkholes to retard evaporation and create a wet, cool microclimate supporting an assemblage of mosses, liverworts, and ferns. This habitat also sustains salamanders, invertebrates, and bats (that use the sinkholes to enter and exit the caves).

General management measures: Since the sinkholes are extremely dangerous to enter or skirt around, the public is prohibited from entering or approaching them, which also benefits the habitat quality and conserves the plant and animal species thriving in their midst. Litter is very difficult to remove when park visitors throw cans or other trash into these sinkholes, which unfortunately does happen occasionally. Local trained spelunkers assist the park staff with removing this trash when they enter the caves to monitor the bat populations with official authorization. Since the sinkholes are a conduit into the aquifer groundwater, which is an important resource for drinking water for many people, it is even more crucial to protect water quality of the surface waters as they flow through the park and over the waterfall. Since this sinkhole area is close to the southern park boundary, development occurring on the adjacent private property would risk the ecological health and aesthetic quality of these features; for these reasons, eventually acquiring this land for inclusion in the park would be a very positive step for preventing encroachment.

UPLAND HARDWOOD FOREST

Desired future condition: This community type is a mature, closed canopy hardwood forest typically occurring on slopes and rolling hills with generally mesic conditions. Overstory tree species may consist of southern magnolia (*Magnolia grandiflora*), sweetgum (*Liquidambar styraciflua*), live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*), Florida maple (*Acer saccharum* subsp. *floridanum*), white oak (*Quercus alba*), swamp chestnut oak (*Quercus michauxii*) and American beech (*Fagus grandifolia*). Understory species will include trees and shrubs such as American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), eastern redbud (*Cercis canadensis*), red bay (*Persea borbonia*), horse sugar (*Symplocos tinctoria*), and beautyberry (*Callicarpa americana*). Shade tolerant forbs, grasses, sedges, and vines dominate the ground cover.

Description and assessment: Many of the mesic habitats in the park are sustained by seepage from steep slopes, clay-bearing soils that more effectively retain moisture compared to the porous sandy soils, and wetter soils along the fringes of the seepage streams; these mesic habitats support upland hardwood forests. These habitats are generally too moist to effectively carry fire and so do not support a pyric natural community like the upland pine woodlands. As such, they support hardwood canopy trees and shade tolerant understory plants. Recruitment of new individuals generally occurs via gap dynamics whereby a large tree fall opens up a

PP
DV
UHF
CLR
CLR
SSL
SSL
UP
SST
UHF
AP
UP
SST
CLR
SSL
DV
UP
TCV
SK
SST
SST
UHF

Legend

- SK - Sinkhole 0.1 ac.
- UHF - Upland Hardwood Forest 15.8 ac.
- UP - Upland Pine 113.6 ac.
- SSL - Seepage Slope 4.9 ac.
- SST - Seepage Stream 2.2 ac.
- TCV - Terrestrial Cave 0.02 ac.
- AP - Artificial Pond 2.8 ac.
- CLR - Clearing 3.2 ac.
- DV - Developed 10.5 ac.
- PP - Pine Plantation 13.3 ac.

FALLING WATERS STATE PARK

N

0 125 250 500 Feet

Florida Department of Environmental Protection
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Date of aerial; 2011

NATURAL COMMUNITIES MAP
EXISTING CONDITIONS

space in the forest for the underlying subdominant plants to exploit until they too can grow into the canopy and replace the fallen tree. The largest concentrations of upland hardwood forest stands occur along the seepage streams, in the steephead ravines, and downstream from the artificial pond in the vicinity of the waterfall and sinkholes. Common species in this natural community include American beech (*Fagus grandifolia*), southern magnolia, mockernut hickory, sweet bay (*Magnolia virginiana*), sweetgum, tuliptree (*Liriodendron*), basswood, white oak, anise tree (*Illicium floridana*), high bush blueberry, beauty berry, coastal sweet pepperbush (*Clethra alnifolia*), deer berry (*Vaccinium stamineum*), sarsaparilla vine, giant cane (*Arundinaria gigantea*), cinnamon fern (*Osmunda cinnamomea*), slender wood oats (*Chasmanthium laxum*), sedge (*Carex* sp.), and witchgrass (*Dichanthelium* sp.).

General management measures: Since the upland hardwood forests are not subject to prescribed fire, the natural resource management imperatives for this community are to monitor for and treat exotic plant infestations, monitor for erosion, and ensure that these areas are buffered from disturbance resulting from foot traffic.

UPLAND PINE

Desired future condition: Dominant tree species will usually be longleaf pine (*Pinus palustris*) with shortleaf pine (*Pinus echinata*) occasionally interspersed among the widely scattered pine canopy. Herbaceous cover will be low growing and comparable to sandhill but may have a higher density of understory shrubs and saplings. While there can be considerable overlap in species composition between sandhill and upland pine, sandhill generally has higher occupancies of turkey oak (*Quercus laevis*), prickly pear (*Opuntia humifusa*), and dogtongue wild buckwheat (*Eriogonum tomentosum*) whereas mature hardwood trees will typically be scattered throughout the upland pine stand, including southern red oak (*Quercus falcata*), post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), sand post oak (*Quercus margaretta*), mockernut hickory (*Carya alba*), flowering dogwood (*Cornus florida*), and sassafras (*Sassafras albidum*). In old growth conditions, oak trees and hickories are commonly 150-200 years old. The Optimal Fire Return Interval for this community is 1-3 years.

Description and assessment: Following decades of successful application of prescribed fire, the upland pine forest is of an exceptional quality in terms of species composition and vegetative structure. It is in maintenance condition for burning at present after a long period of fire suppression in the mid-20th century. While slash and loblolly pine do contribute to the scattered canopy, there are also numerous longleaf pine present in this community type. As in other regularly burned pine-dominated stands, the overstory is relatively sparse compared with other forested community types with the very high light penetration to the abundant groundcover, though the stands at this park generally contain a higher than average pine density than upland pine communities elsewhere. Since upland pine communities do generally contain a higher clay content in the soils, water retention is higher than the deep sands typical of sandhill communities. As a result, this community will usually contain a higher abundance of burn-tolerant hardwood species, though they do not dominate the canopy and are often well represented by

trees that are pruned by the fires so that they attain heights of several meters. Wiregrass and other pyric herbaceous species cover a large proportion of the groundcover area and their tissues promote the spread of fire as an adaptation to this environment. Some of the species that may be observed in this community type include longleaf pine (*Pinus palustris*), slash pine (*Pinus elliotii*), loblolly pine (*Pinus taeda*), wiregrass (*Aristida stricta*), post oak (*Quercus stellata*), gallberry (*Ilex glabra*), common persimmon (*Diospyros virginiana*), Adam's needle (*Yucca filamentosa*), shiny blueberry (*Vaccinium myrsinites*), white thoroughwort (*Eupatorium album*), blazing star (*Liatris* spp.), yankee weed (*Eupatorium compositifolium*), tall elephant's foot (*Elephantopus elatus*), sensitive brier (*Mimosa quadrivalvis*), sand blackberry (*Rubus cuneifolius*), bracken fern (*Pteridium aquilinum*), bluestem (*Andropogon* sp.), narrowleaf silkgrass (*Pityopsis graminifolia*), partridge pea (*Chamaecrista fasciculata*), dog fennel (*Eupatorium capillifolium*), romerillo (*Bidens alba*), greenbrier (*Smilax* sp.), Atlantic pigeonwings (*Clitoria mariana*), scarlet creeper (*Ipomoea hederifolia*), and poor joe (*Diodia teres*).

General management measures: The most important measure to maintain the good ecological quality of the upland pine community is to continue with the prescribed burning program, which will be one of the park's highest natural resource management priorities. Now that it is in a maintenance condition, the risk of wildfires veering out of control during acceptable prescribed burn conditions is decreased compared with other stands not yet burned as often or at all. As part of continuing this program, the fire infrastructure is well maintained and usually only needs a mowing treatment prior to burning. Also, many years of rigorous treatment of exotic plants has minimized their occupancy; there remains the need to survey for and treat those scattered exotic plants that happen to have established after being transported into the park from nearby properties where these pest plants are not yet under control. Park staffers should continue to monitor for erosion, particularly on the steeper slopes.

SEEPAGE SLOPE

Desired future condition: True to the name, seepage slopes usually offer vegetation a higher degree of soil moisture from groundwater seepage descending from higher elevations. These areas are typically distributed among the drier, sandy habitats of upland pine and sandhill communities and are underlain by clay lenses that prevent water from percolating into the deeper soil layers. Within seepage slopes, trees will be few to absent and groundcover will be dense and exceptionally species-rich. Dominant species will be wiregrass and/or sedges with varying contributions from maidencane (*Panicum hemitomon*) and Curtiss' dropseed (*Sporobolus curtissii*). Pitcherplants (*Sarracenia* spp.), other carnivorous plants, and terrestrial orchids may be abundant in some areas. The Optimal Fire Return Interval for this community is 1-3 years.

Description and assessment: There are several seepage slopes distributed in patches within the park: the largest is located on the very steep southeast-facing slope just downslope from the campground (CAMP), another occupies an intermediately-sized patch along the western park boundary on a south-facing

slope also down from the campground (EDGE), a third is a small patch a short distance northwest of the main parking lot (PARK), and a fourth is also a small patch adjacent to the campground road just east of the seepage stream originating in the management zone E steephead ravine (ROAD). Years of past fire suppression had degraded their habitat quality, though they still retain a number of rare plants adapted to thriving in seepage slope environments; newly observed species are continually being documented in these patches that had likely been tenaciously persisting under suboptimal conditions until burning had continued. Despite the resumption of periodic burning that benefits these communities, reducing the coverage of hardwood shrubs in these area still remains to be an issue. Seepage slopes in good maintenance condition are herbaceous plant dominated communities, and woody shrubs threaten to overtop and out compete them for sunlight. In order to prevent the rare plants from being shaded out, park staffers must occasionally perform mechanical hardwood reduction. In general, the habitat quality differs between the patches with PARK being in the best condition, EDGE and ROAD being in a marginal condition, and CAMP being intermediate between the extremes. Pitcher plants had apparently been extirpated from these patches over the years, however, parrot and yellow pitcher plants are still present in a lower elevation site on private property off from the park's southeastern corner. In 2006, DRP staffers endeavored to collect seed from these populations, germinate and rear them off site, and transplant them back onto the site; a portion of these plants have survived to the present. Some of the common plants observed in these patches include maiden cane (*Panicum hemitomon*), loblolly bay (*Gordonia lasianthus*), bracken fern (*Pteridium aquilinum*), coastal sweet pepperbush (*Clethra alnifolia*), cinnamon fern (*Osmunda cinnamomum*), pipewort (*Eriocaulon* sp.), St. John's wort (*Hypericum* sp.), muscadine grape (*Vitis rotundifolia*), and Virginia creeper (*Parthenocissus quinquefolia*). Some of the herbaceous plants documented within PARK during summer 2015 by local botanist Floyd Griffith include coastal false asphodel (*Tofieldia facemosa*), yellow meadow beauty (*Rhexia lutea*), and Carolina milkweed (*Asclepias cinearea*).

General management measures: Continued prescribed burning is one of the most important measures that the park staffers perform to improve the habitat quality of the seepage slopes. When this is not sufficient to check the growth of woody shrubs in this ideally herbaceous-dominated community, park staffers perform mechanical hardwood reduction to prevent the rare herbaceous plants from being shaded out. Controlling exotic plant infestations and continuing to inventory the flora in these patches throughout the year are priorities for this community type. Additional transplantation of yellow and parrot pitcher plants, and other species if possible, from the off-site location with permission should also continue in order to restore the populations of these rare plants to a viable state. One interesting issue was discussed at the recent June 2015 Land Management Review (LMR) between the participants and DRP staffers. It was noted that the rare plants endemic to seepage slopes and other similar wetland communities are adapted to the acidic, nutrient-poor soil conditions typical of healthy examples of these ecosystems. If there may be an issue with the leaching of waste water from the upslope campground, this could serve to change the soil chemistry and add nutrients that favor the growth of other species, especially generalist shrubs, over the specialized herbaceous plants

in the seepage slopes. It is unknown if this may be contributing to the shrub growth in these patches, but this is an interesting possibility that should be explored. If this does represent a significant impact to the seepage slopes, approaches to ameliorate this problem should be developed.

SEEPAGE STREAM

Desired future condition: A seepage stream can be characterized as a narrow, relatively short perennial or intermittent stream formed by percolating water from adjacent uplands. As they are typically sheltered by a dense overstory of broad-leaved hardwoods which block out much of the sunlight, the flora within seepage streams is often depauperate but may include filamentous algae, ferns, and liverworts growing in clumps at the streams edge. Water color will be clear to slightly colored, with a fairly slow flow rate and fairly constant temperature. The bottom substrate is typically sandy, but may include gravel or limestone. They may be differentiated from other stream communities in Florida by a lack of a deep aquifer water source, their small magnitude, and their headwaters not confined within extensive swamp communities.

Description and assessment: There are several seepage streams that originate from the soils underlying different portions of the Falling Waters Hill and its associated ridges. Three principal streams that ultimately flow through the length of the park and terminate over the waterfall and into Falling Waters Sink are contained wholly on park property; one other principal stream originates from private property just a very short distance beyond the western park boundary. At the point that three of the major streams naturally converge, an artificial pond was created by an earthen dam in 1962; a drain-style weir allows for the continuation of water flow to the waterfall with a controllable volume. The fourth major stream joins the flow at a point just south of the dam. Three smaller streams emerge from the soil on the eastern and southeastern portions of the park on the opposite side of the ridge underlying the main park road from the waterfall drainage area and pass out of the park after a very short distance. Since all streams are supplied by shallow groundwater fed by local rainfall rather than a deeper aquifer derived source, all streams are ephemeral in nature and subject to periodic drawdowns with the smaller watercourses more often dry. As a result, the waterfall is only flowing for a relatively short time immediately following significant rain events. Since the streams arise from subterranean sources and are mostly overtopped by the shade of the upland hardwood forest canopy, they have a fairly moderate water temperature during the warmer months. Some of the plants that may be observed within and along the banks of these seepage streams include maiden cane (*Panicum hemitomon*), red maple (*Acer rubrum*), large gallberry (*Ilex coriacea*), fetterbush (*Lyonia lucinda*), netted chain fern (*Woodwardia areolata*), cinnamon fern, royal fern (*Osmunda regalis*), greenbrier, (*Smilax* spp.), various mosses and other bryophytes.

General management measures: The most important management measure is to maintain good water quality in the seepage streams. Not only does this benefit the stream habitats themselves for the biota dependent on them, but it also helps to keep the aquifer groundwater clean since the surface water will flow into the Falling

Waters Sinkhole near the southern boundary. Also, since the artificial pond is a popular swimming area for park visitors, good water quality in the streams will ensure that the pond water is healthy to enjoy. Preventing development impacts inside and outside the park is instrumental to preserving water quality. Since the campground is located on a lofty height of Falling Waters Hill and would drain toward one of these principal streams, it is important to ensure that septic waste water from the campground is not adversely affecting the surface water quality.

TERRESTRIAL CAVE

Desired future condition: Aquatic and terrestrial caves are characterized as cavities below the ground surface in karst areas. A cave system may contain portions classified as terrestrial caves and portions classified as aquatic caves. The latter will vary from shallow pools highly susceptible to disturbance, to more stable, totally submerged systems. Because all caves develop under aquatic conditions, terrestrial caves can be considered essentially dry aquatic caves. Near the cave entrance, the vegetation may be typical of the surrounding natural community. Within the cave, illumination levels and therefore vegetation densities will drop rapidly. Species of mosses, algae, liverworts, may be present. Plants may be absent or limited to a few inconspicuous species of fungi that grow on guano or other organic debris. Cave systems are extremely fragile. Desired future conditions include protecting against alterations that may affect light penetration, air circulation, microclimate, or increase pollution in aquatic systems.

Description and assessment: In the vicinity of the sinkholes and the waterfall, there are two separate air-filled cave systems penetrating the limestone bedrock. One system extends to the north from an entrance in the vertical wall of the Falling Waters Sink and contains an 80 foot high dome cavern at its extremity a relatively short horizontal distance in. The other system connects multiple smaller sinkhole entrances as it features zig zag turns, domes, pits, large rocks, loop passages, and sharp drops along its length. Both cave systems are isolated from each other as no linkages have been discovered. The southerly cave is frequently occupied by eastern pipistrelle bats (*Pipistrellus subflatus*) and cave crickets; in addition, a small maternal colony of southeastern bats (*Myotis austroriparius*) has been documented in this cave.

General management measures: In order to protect the conservation value of these cave systems, park visitors are prohibited from entering these passages, which also prevents significant risk of injury or death to the untrained person. At the same time, the cave entrances should be kept clear of metal gates or other barriers to allow for the free exchange of air flow and movement of bats as they leave overnight to forage for prey and return in the morning to roost during the day. The park staffers have not encountered significant problems maintaining this balance. FWC personnel carry out an annual census of the bat colony to monitor the species present, population size, and possible disease infection (especially for the white nose fungus that is currently ravaging bat colonies in states further to the north); any visitors to the caves observe strict contamination procedures developed by FWC to prevent transmission. Another benefit to prohibiting unauthorized access is to prevent vandalism and deterioration of cave walls; authorized spelunkers

conducting a cultural survey of the caves failed to find any evidence of indigenous petroglyphs or other markings, but faded modern day graffiti was observed at multiple locations in the southerly cave system (Phillips et al. 2008). Finally, it is crucial that a cave management plan be drafted to codify rules and guidelines for the purpose of preserving this natural feature; the cave management plan implemented for Florida Caverns State Park can be used as a guide to tailor policies appropriate for the Falling Waters cave systems.

Altered Landcover Types

ARTIFICIAL LAKE, CLEARING, DEVELOPED, PINE PLANTATION

Desired future condition: The altered landscover types within the park will be managed to minimize the effect of these areas on adjacent natural areas. Priority invasive plant species (FLEPPC Category I and II species) will be removed from these areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

Description and assessment: The two acre artificial lake is the most notable of the altered landcover types. It was created at the convergence of three seepage streams by constructing an earthen dam complete with a drain-style weir system to regulate its outflow in 1962. In addition to being an important public recreation feature of the park (the swimming area), it also provides habitat and a foraging area for turtles and birds, including a number of transient wading bird species classified as being of special concern by FWC (see Imperiled Species table below). One of its original purposes was to provide a more stable water source for the waterfall, though it is still a feature with ephemeral water flows.

The pine plantation is located in management zone E, which was acquired in the 1990s. Composed of rows of planted loblolly pines, the 12 acres stand is planned to be a target of a future ecological restoration effort to return this area to an upland pine natural community. Suggested approaches to this restoration effort and a species list are described in the Timber Analysis addendum.

Developed areas include the ranger station/ office, park shop building, campground, group campground, picnic shelter, boardwalk/ picnic parking lot, paved roads to the picnic shelter and campground, and the bathhouse adjacent to the impoundment. There are two linearly cleared areas in the park, including a set of mowed grass-covered strips along the entrance road between the ranger station and the gate and an open corridor running along a gentle arc between the east and west park boundaries that crosses the seepage stream just north of the waterfall. This corridor was the site of a historic road that crossed the park at this location and is no longer in use.

General management measures: Park staffers regularly monitor these areas for terrestrial and aquatic exotic plant species. Since these areas are subject to disturbance both incidental (foot traffic by park visitors) and intentional (mowing to maintain public use areas), they are more vulnerable to establishment of exotic

plant infestations that may be accidentally transported from outside the park. If not controlled, mature infestations could encroach upon the natural communities. In order to maintain the swimming area, water quality is regularly monitored to protect the health of bathers. The floor of the pond is lined with sand brought up from the Gulf coast to provide a comfortable footing; the pond must be drained once per year and this sand redistributed into an even distribution. Finally, all public use areas and other altered landcover types are monitored for erosion to prevent soil loss.

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.

As mentioned above, the seepage slopes are exceptional habitats that are currently very limited in distribution within the state of Florida. The unique ecological conditions of this community type support plant species with very specialized adaptations not often found in other more widespread habitats. Maintaining the prescribed burning regime is instrumental in preserving the vegetative structure inherent in these communities toward the herbaceous flora by preventing the encroachment of woody plants that would shade out and outcompete the rare forbs. As these seepage slopes are embedded within a matrix of upland pine forests that are regularly burned, the two community types are burned on a similar rotation every two to five years that usually works out to be done about every three or four years in practice. If the shrub encroachment continues to be an issue despite the burning, the park staffers will mechanically remove the hardwood plants as needed. Over many years of land use changes from the natural regime, these seepage slopes had been in decline before prescribed fire efforts and yellow pitcher plants (*Sarracenia flava*; no imperiled status) were believed to have been lost from these habitats within the park. However, an adjacent landowner to the east did still have yellow pitcher plants present and this property served as a donor site for reintroduction efforts back into the park. Eric Johnson of the Bureau of Natural and Cultural Resources (BNCR) harvested seeds from these species about ten years ago, germinated them and cared for the seedlings at an off-site location, and ultimately replanted them onto park property at two patches: just northeast of the main parking lot and along the western boundary of zone C. A portion of these have survived, but the low density remaining in these seepage slopes suggest that another transplantation project would be beneficial. A Resource Management Evaluation report (Johnson 2001) indicated that the parrot pitcher plant (*Sarracenia psittacina*, Florida-threatened) population was stable though only observed occupying the limited area of the seepage slope patch in zone B; 58 individuals were observed and about 100 individuals were estimated to constitute the remaining population size. The DRP should initiate a formal survey of these communities to monitor the pitcher plants and other rare species, and then proceed to drafting a plan for transplantation if it is determined to be feasible and

appropriate. It should be noted that two other Florida-threatened plant species have been identified so far in the seepage slopes, including the snowy orchid (*Habenaria nivea*) and the yellow fringed orchid (*Platanthera ciliaris*).

The other fire maintained community type in the park, upland pine, forming the majority of acreage, also supports multiple imperiled species. The Florida-threatened orchid, little ladies tresses (*Spiranthes tuberosa*), may be observed blooming in this community during the spring and summer. The Florida pine snake, listed by FWC as being of special concern, has been sighted in the groundcover of this habitat. Gopher tortoises are an important keystone species (those taxa with a disproportionately significant effect on the ecosystem relative to their abundance) that have become fairly common in the park's upland pine community as it has been returned to a maintenance condition via regular application of prescribed fire. Gopher tortoises construct one or more large burrows in the soil that potentially serve as crucial habitats for multiple animal species; this digging also transports soil up from subterranean layers and so distributes minerals and nutrients that may have leached from the surface. A monitoring program should be developed that would seek to census the population every one to several years and, if possible, map burrow entrances to track through time. If it is determined that the population is under the carrying capacity of the available habitat, then the park can potentially serve as a recipient site for gopher tortoises that had to be moved from a different location, however, these tortoises should only come from the local area (< 50 miles away) in order to preserve the genetic integrity of the park's population.

Two of the unburned terrestrial habitats also have been documented supporting imperiled plant species. The Florida-endangered southern lip fern (*Cheilanthes microphylla*) naturally occurs in shell middens and in rocky calcareous soils of hardwood hammocks (Wunderlin and Hansen 2003), and so may be observed in the moist habitat of the sinkholes in the southern fringe of the park. Also state-endangered, the Florida flame azalea (*Rhododendron austrinum*) has been recorded in the Upland Hardwood Forest habitat. Within these hardwood stands but generally further upslope in the drier, often calcareous, soils, the southern crabapple (*Malus angustifolia*) has been observed in the park. Given their proclivity for hammocks, it would be best to avoid directly burning these individuals in locations where they are known to occur.

The aquatic habitats in the park, including the seepage streams and the artificial pond, support visitations by various imperiled bird species, including the little blue heron, snowy egret, tricolored heron, white ibis, and the wood stork. The previous four species are considered to be of special concern by the FWC, while the wood stork is listed by both state and federal agencies as being endangered. The Louisiana waterthrush is not listed as imperiled by either governmental entity, but it is categorized as an S2 species, which its viability is considered to be at risk as a result of rarity (6 to 20 occurrences or less than 3000 individuals) or as a result of another natural or anthropogenic factor; when observed, it was likely in the process of migrating with the seasons and was drawn to the water for a temporary stop over. Also drawn to the water would be the American alligator, which has been observed periodically at the park. Since the artificial pond is limited in size and

regularly used by park visitor for swimming, any sizeable alligators should be removed by FWC in order to protect the park visitors from dangerous incidents.

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		
PLANTS						
Southern lip fern *Cheilanthes microphylla*			LE	G5,S3	2,10	Tier 3
Snowy orchid *Habenaria nivea*			LT		1,2,10	Tier 1
Southern crabapple *Malus angustifolia*			LT		2,10	Tier 3
Yellow fringed orchid *Platanthera ciliaris*			LT		1,2,10	Tier 1
Florida flame azalea *Rhododendron austrinum*			LE	G3,S3	2,10	Tier 3
Parrot pitcher-plant *Sarracenia psittacina*			LT		1,2,3,10	Tier 3
Little ladies' tresses *Spiranthes tuberosa*			LT		1,2,10	Tier 1
REPTILES						
American alligator *Alligator mississippiensis*	LS	T(S/A)		G5,S4	2,10,13	Tier 1
Gopher tortoise *Gopherus polyphemus*	LT			G3,S3	1,2,10,13	Tier 4
Florida pine snake *Pituophis melanoleucus mugitus*	LS			G4T3,S3	1,2,10	Tier 1
BIRDS						

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
Little blue heron *Egretta caerulea*	LS			G5,S4	2,10	Tier 1
Snowy egret *Egretta thula*	LS			G5,S3	2,10	Tier 1
Tricolored heron *Egretta tricolor*	LS			G5,S4	2,10	Tier 1
White ibis *Eudocimus albus*	LS			G5,S4	2,10	Tier 1
Wood stork *Mycteria americana*	LE	LE		G4,S2	2,10	Tier 1
Louisiana waterthrush *Seiurus motacilla*				G5,S2	2,10	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
14. Other

Monitoring Level:

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

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

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

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

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

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

Exotic and Nuisance Species

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

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 or 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.

Owing to the exemplary efforts of the park staff, exotic plant infestations have been controlled over years of consistent surveillance, targeting, and treatment so that the park is considered to now be in a maintenance condition in terms of exotic plant control. Multiple times per year, staffers fan out off the roads and trails to track down any exotic plants growing among the native vegetation. As the properties in the vicinity of the park often harbor populations of these pest plants, propagule (seeds, spores, fragments) dispersal through wind, water, or animal vectors will continue to bring new migrants into the park and there is an ongoing need to survey for recently established exotic plants and treat them before viable populations can gain a foothold. Some of the species that are common in the neighborhood that must be treated throughout the year as encountered include Japanese climbing fern, cogon grass, Chinese privet, and Japanese honeysuckle; Chinese tallow tree and mimosa are less common species that are infrequently observed in the park but that must be watched for on an ongoing basis. Several cogon grass patches were recently discovered along the park boundary at management zone A, which were noticed following a county road improvement

project on Joiner Road that runs along the northeastern corner at the bottom of a steep slope to the shoulder; this area will be closely surveyed for further infestations. A utility corridor expansion through a section of management zone E was completed in 2015 and is also patrolled regularly to ensure that exotic plants, especially Japanese climbing fern, do not take advantage of the disturbed habitat to establish in this location.

Over the past few years, there have been four species of exotic animal removed from the park. This includes 25 armadillos, 5 feral cats, 1 Norway rat, and three Mediterranean geckos. Of these, the cats and armadillos represent the more significant potential threats to the natural resources as the former is capable of decimating the bird community and other small wildlife species while the latter often causes disturbance to the surficial soil layers as it roots for insects, reptiles, amphibians, and similarly sized prey items; this digging can disrupt the soil integrity and kill small herbs and grasses uprooted while it forages. The rats and geckos should also be controlled but represent less of a significant threat compared to the other two species given the lower numbers, though these species and any other exotic taxa should be removed when the opportunity presents itself.

Eastern diamondback rattlesnakes and American alligators are occasionally encountered at the park. Park visitors are warned of the hazards associated with these animals through interpretive efforts, warning signs, and outdoor displays. Problem alligators in public use areas should be dealt with according to Division policy. When encountered in public use areas, eastern diamondback rattlesnakes should be relocated to more remote areas of the park.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC, 2011). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone (s)**
PLANTS			
Mimosa *Albizia julibrissin*	I	0	
Cogon grass *Imperata cylindrica*	I	2	A
Chinese privet *Ligustrum sinense*	I	2	B
Japanese honeysuckle *Lonicera japonica*	I	2	A
Japanese climbing fern *Lygodium japonicum*	I	2	A,B,C,D,E
Chinese tallow tree *Sapium sebiferum*	I	0	

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

One of the main purposes of establishing this property as a state park was to preserve and protect the unique system of geological and hydrological species features closer to the southern boundary: the waterfall, the limestone-walled sinkholes, and the underlying terrestrial cave system. This waterfall is the tallest one in Florida, which is a state not commonly associated with topographic drop-offs and exposed rock substrates. On May 30, 1980, the Governor and Cabinet designated the Falling Waters' sinkholes as a State Natural Feature Site, which bear inherent scientific, aesthetic, and educational importance. The focus of the park is a unique disappearing waterfall and a series of sinkhole entrances leading into limestone caverns.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires

that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled properties; the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

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

Level of Significance

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

There are no criteria for 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 property encompasses a parcel of land with an interesting cultural history that complements its geological distinction. The first possible reference describes an alleged account dating from the Spanish colonial period in which a settler is taken by the indigenous people to a site of a spectacular fire consuming an oil deposit (Carwsell 1968); it is a sensational story and its authenticity cannot be corroborated. It was claimed to have been found in an attic with its origin unknown and, given that it dovetails quite well with later oil drilling speculation, one must retain a healthy dose of skepticism in regard to this account.

The nearby town of Chipley developed as a local population center due to its location along the Pensacola and Atlantic Railroad, constructed in the early 1880s. Prior to the arrival of the railroad, difficulty in transporting goods from the interior to ports and cities along the Gulf of Mexico limited development of this area. These railroads spurred a timber boom in the late 19th century, but the mass harvest and unsustainable practices brought this bonanza to an end several decades later and the local community sought to diversify its economy, mostly through agricultural means. Possibly from this need to diversify and encouraged by the above account, an oil well (WS00475) was drilled in a location just upstream from the waterfall in 1919. As contemporary photos can attest, a towering drilling structure was erected with various elements constructed nearby to support this endeavor. In the course of the next two years, these exploratory efforts failed to discover any oil deposits and the structures were dismantled shortly thereafter. All that currently remains at the site of the drilling operation today is the capped oil well shaft (concrete-filled metal pipe top measuring about one foot in diameter and fringed by a protective wooden encasing) and the excavated ditch comprising the sludge pit that shunted waste material into the drainage leading to the sinkholes. There are other low concrete and metal structures located a short distance from this drilling site that may have been associated with the attempted oil extraction (e.g. a concrete-lined open rectangular box that actually resembles a crypt, square concrete foundations), but this attribution cannot be definitively ascribed to this operation and their identities and uses are currently unknown.

Another significant archaeological site is hypothesized to be a grist mill site. There is a sculpted limestone block located about 200 feet upstream from the waterfall that may have been the actual mill site, though years of erosion and exposure have obscured any definitive foundation and scattered remnant materials. Significantly, two large timbers, complete with notches, grooves, and auger holes, were recovered from the sinkhole below the waterfall soon after the park was established

in 1962 that may have originally been components of this mill. These timbers are currently on public display near the main parking lot. Local accounts suggest that this mill structure may have been built by Duke Horne and been in operation during the 1860s. Phillips et al. (2008) examined the site and questioned whether these features may have been derived from a Civil War era grist mill for grinding corn given the sporadic availability of water power dependent on streams fed by recent local rainfall and subject to periodic drying, evidence observed in an associated dam structure indicated a more recent origin (a vehicle fragment embedded near the base of the dam), and the fact that it appears too small for a grist mill operation. Rather, the authors speculate that the dam may have been used to impound water for the oil well or a former plant nursery located in the park in the late 1920s.

The Glen St. Mary's Nursery, also possibly established to diversify the local economy, was an expansion project initiated by the main GSM nursery operation in Baker County and occupied 600 acres and was centered on Falling Waters Hill, which included the present-day state park. A victim of unfortunate timing, the nursery had only operated for several years before the onset of the Great Depression and it was forced to close down. Buildings to house nursery personnel were located about 300 meters WNW of the waterfall, which were demolished long ago and left little trace. However, visual elements of the nursery era are still evident in the present day, most notably with a surviving scattering of ornamental plants in various off-trail locations (especially mature pindo palms [*Butia capitata*]), but also old fencelines and terracing on some of the slopes. Interestingly, local anecdotal accounts also describe the park or its immediate surroundings to have included a distillery facility / whiskey still and a small schoolhouse in historical times, but these features have not yet been discovered.

The park was recently the subject of a Phase I survey by Phillips et al. (2008), which included a systematic ground-based field survey. Modeling the landscape into high, medium, and low probability areas in terms of the likelihood to contain cultural resources (also Collins et al. 2012), subsurface shovel testing excavated small pits (50 cm diameter and at least 1 meter deep, unless bedrock prevented further progress) for subsequent filtering of the fill material along transects at intervals of 30 meters and 50-75 meters for high and medium probability areas, respectively. Visual sight surveys of surface features were also conducted across a wider area. Artifacts were analyzed, documented, and shipped to the Florida Bureau of Archaeological Research for curation and storage. These experts identified four new cultural sites and evaluated the previously documented sites; three isolated finds were also discovered, but their contents did not reach the threshold of being sufficiently significant for a full FMSF listing. The four new FMSF sites (WS1059 through WS1062) contained primarily indigenous artifacts originating from the Weeden Island period (450-1000 AD) and were generally located at the campground, on the south-facing slope near the artificial pond, in the group camp area, and parallel to the main park drive.

Condition Assessment: The oil drilling site can be described as being in good condition at the present. However, as Phillips et al. (2008) note, the metal pipe that lines the shaft (extending almost 5000 feet into the earth) is inevitably subject to

corrosion over time and so will unavoidably deteriorate eventually. The sludge pit, being an excavated ditch that drains surface runoff to a stream, is also subject to continual erosion and will eventually lose its integrity. Efforts to arrest deterioration to the accessible features can be carried out, but halting these processes is likely not possible over the long term. The grist mill site is also subject to continual erosion given its location along a stream course, and may be said to be in fair condition at present. As for the substrate at the four newly designated cultural sites, they would likely retain their good condition as long as vegetative cover is maintained, though steeper slopes would be at a greater risk for soil loss and possible uncovering of submerged artifacts.

General Management Measures: Public access is restricted from sensitive areas of these sites as foot traffic would surely hasten deterioration. If erosion is observed to be rapidly degrading a cultural site, then immediate measures to retard the soil loss should be initiated (e.g. planting of native groundcover, water diversion bars, jute matting). Specific measures would depend on the erosive characteristics, topographic position, and proximity to buildings, roads or trails, and public use areas. Also, large trees adjacent to ground features or steep slopes may imperil the integrity of the substrate if they topple and expose their root systems in a tip up mound; if the risk is imminent, DRP personnel should determine if the tree should be preemptively removed to preserve the structure.

Historic Structures

Desired future condition: All significant historic structures and landscapes that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: While there have been a variety of structures present on the park property since at least the mid-19th century, all of them that date from before the state park was established in 1962 are no longer standing. As noted above, tangible traces of multiple buildings that local knowledge suggests were present have not been located (e.g. small schoolhouse, whiskey distillery). However, there is currently one DRP constructed building that has now attained a historic status, being older than 50 years, the picnic shelter (internally listed as BL021003; const. 1963). It will need to have a FMSF document prepared for it. Over the next planning cycle of ten years, there is a variety of DRP buildings that will also attain historic status and will need FMSF documents completed, including the Residence (BL021004; const. 1967), Entrance Station (BL021005; const. 1968), Shelter / Shop (BL021006; const. 1968), Subcenter / Restroom (BL021007; const. 1968), Storage (BL021008; const. 1968), Pumphouse – Camp (BL021012; const. 1968), Privy – Scout Area (BL021011; const. 1969), Shelter – Picnic (BL021010; const. 1970), Shelter – Equipment (BL021013; const. 1974), Residence 3BR – Ashburn MH (BL047005; const. 1974), and Utility (BL021014; const. 1977). The earthen dam built to form the artificial lake was constructed in 1962, thus also a historic structure, and will need FMSF documents completed for it.

Condition Assessment: The picnic shelter (BL021003) listed above is in good condition. As it is a prominent structure that is frequently used by the public, the park staff works to keep it in maintenance condition and with a presentable appearance. The earthen dam is also in good condition and continues to serve its purpose to sequester the stream water flow behind it in the lake.

General Management Measures: The recommended measures to be continued are those that are fairly standard across the DRP. It should be inspected to ensure that it retains stability and will not collapse, it should be painted if its coating is in disrepair, and the ground around it should be monitored against any significant loss of substrate to erosion. The earthen dam and its associated drain system is inspected regularly for signs of erosion or deterioration to maintain it in adequate working order.

Collections

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

Description: The park has several different types of items that constitute its cultural collection objects. The most significant archaeological artifacts are the two timbers salvaged from the sinkhole draining the waterfall when the park was established. As noted previously, these display evidence of past carpentry techniques and are believed to have been originally associated with a historic grist mill or other water diversion structure. They are now on public display near the main parking lot. In the course of the phase I cultural survey, Phillips et al. (2008) uncovered multiple archaeological artifacts both historic and indigenous. After the team had analyzed and catalogued these objects, they were submitted to the Florida Bureau of Archaeological Research for curation and storage; these objects are now housed in the state collection facility. In recent years, park staffers had submitted paper documents associated with the earlier history of the park to BNCR personnel for storage in a DRP cultural facility, where they remain at the present time. The only other type of significant historic object housed at the park consists of a multitude of slides dating from the 1960s, 1970s, and 1980s.

Condition Assessment: The timbers on display are in fair condition. Phillips et al. (2008) notes that they do not appear to have been treated in recent times and so should have a preservative applied to their surfaces in order to prevent deterioration. This is especially important since they are outside and thus are exposed to the elements. The slides are in fair condition as a result of normal aging that happens with photographic materials; they are stored in several boxes at the park office, where they are sheltered from extremes of temperature and humidity as a result of indoor climate control.

General Management Measures: Phillips et al. (2008) recommends that an economical preservative treatment for the timbers could consist of applying a

mixture of boiled linseed oil and turpentine. DRP staffers, including BNCR cultural experts with outside consultation as needed, should investigate the best treatment for these timbers that can ensure their preservation, and if possible represent a cost effective approach.

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
WS00475 Historic oil well	20th century American	Archaeological site	NE	G	P
WS00476 Falling Waters gristmill	19-20th century American	Archaeological Site	NE	UNK	P
WS01059 Falling Waters Hill	Weeden Island period (450-1000 AD)	Archaeological site	NS	NE	P
WS01060 Cannon's Elbow	Weeden Island period (450-1000 AD)	Archaeological site	NS	NE	P
WS01061 Nottingham site	Weeden Island period (450-1000 AD)	Archaeological site	NS	NE	P
WS01062 Heritage Terrace	Late Archaic period	Archaeological site	NS	NE	P
BL021003 Picnic shelter	20th century American (const. 1963)	Historic shelter	NS	G	P
[# pending] Earthen dam	20th century American (const. 1962)	Historic structure	NE	G	P

Significance:

NRL National Register listed

NR National Register eligible
NE not evaluated
NS not significant

Condition

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

Recommended Treatment:

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

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

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

While 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.

There are no hydrological restoration measures proposed for the park in this plan. While the pond is an artificial structure, it is an important recreational resource for visitors to use and as it was constructed in the 1960s, it will be a historic feature older than 50 years during the next planning interval.

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 A: Within 10 years, have 12 acres of the park maintained within the optimum fire return interval.

Action 1 Develop/update annual burn plan

Action 2 Manage fire dependent communities by burning between 29 - 72 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 Pine Forest	139	2-5
Seepage Slope	5	2-5
Annual Target Acreage	29 - 72	

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.

As this property was one of the first Florida state parks to initiate a prescribed fire program in 1971, repeated burns over the years have returned the upland pine and seepage slope communities into a maintenance condition. Historic photos of the waterfall area of the park, taken during the oil drilling operations of 1919 to 1921, display a very open pine-dominated canopy with scattered low to mid-story hardwood species that is typical of an upland pine stand. Fire suppression in succeeding decades, including during the period when the property operated as a nursery business, had resulted in a secondary successional forest with denser concentrations of hardwood trees distributed throughout the vertical profile, and not conducive to burning. Now that the majority of the upland pine's vegetative structure is closer to an optimal pyric condition, the park staffers can proceed with maintenance burning that presents a reduced risk of wildfire, using an established fire infrastructure, within the fire return interval of 2 to 5 years. Most burns are completed every 3 to 4 years, which generally corresponds to the Annual Target Acreage of about 29 to 72 acres. The main step undertaken to prepare for the burning itself is the mowing of the firelines surrounding the targeted zone. At this park, the focus of the burning program is to achieve ecological objectives for the pyric communities, including the stimulation of blooming / seeding of wiregrass and other warm season grasses as well as maintaining a favorable balance between the stands' herbaceous and woody components. Contingent on the ecological restoration of the pine plantation in management zone E, prescribed fire preparation and operations would need to be planned and executed in the years

following the removal of the off-site pine trees and planting of the native groundcover and longleaf pines.

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. Each quarter the database is updated and reports are produced that track progress towards meeting annual burn objectives.

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 and require 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.

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the Upland Pine community (see Desired Future Conditions Map).

Objective A: Conduct habitat/natural community restoration activities on 12 acres of Upland Pine natural community.

Action 1 Develop/update site specific restoration plan
Action 2 Implement restoration plan

The majority of management zone E on the northwest corner of the park currently supports a pine plantation covering about 12 acres that was planted before this parcel was added to the park. With the exception of several acres of Upland Hardwood Forest covering the steep slope of a steephead ravine on the eastern end of this zone, the rest of this area consists of this pine plantation. This area forms the apex of Falling Waters Hill and is fairly level in comparison to the rest of the park's landscape. This stand is currently well penetrated by access roads, one of these is paved with asphalt from Joiner Road to its termination in a cul-de-sac within the interior of the plantation; this tract was planned for residential

development before it was acquired by the state of Florida. This cul-de-sac would be an effective staging area for heavy equipment and transport vehicles to be used in the course of the restoration.

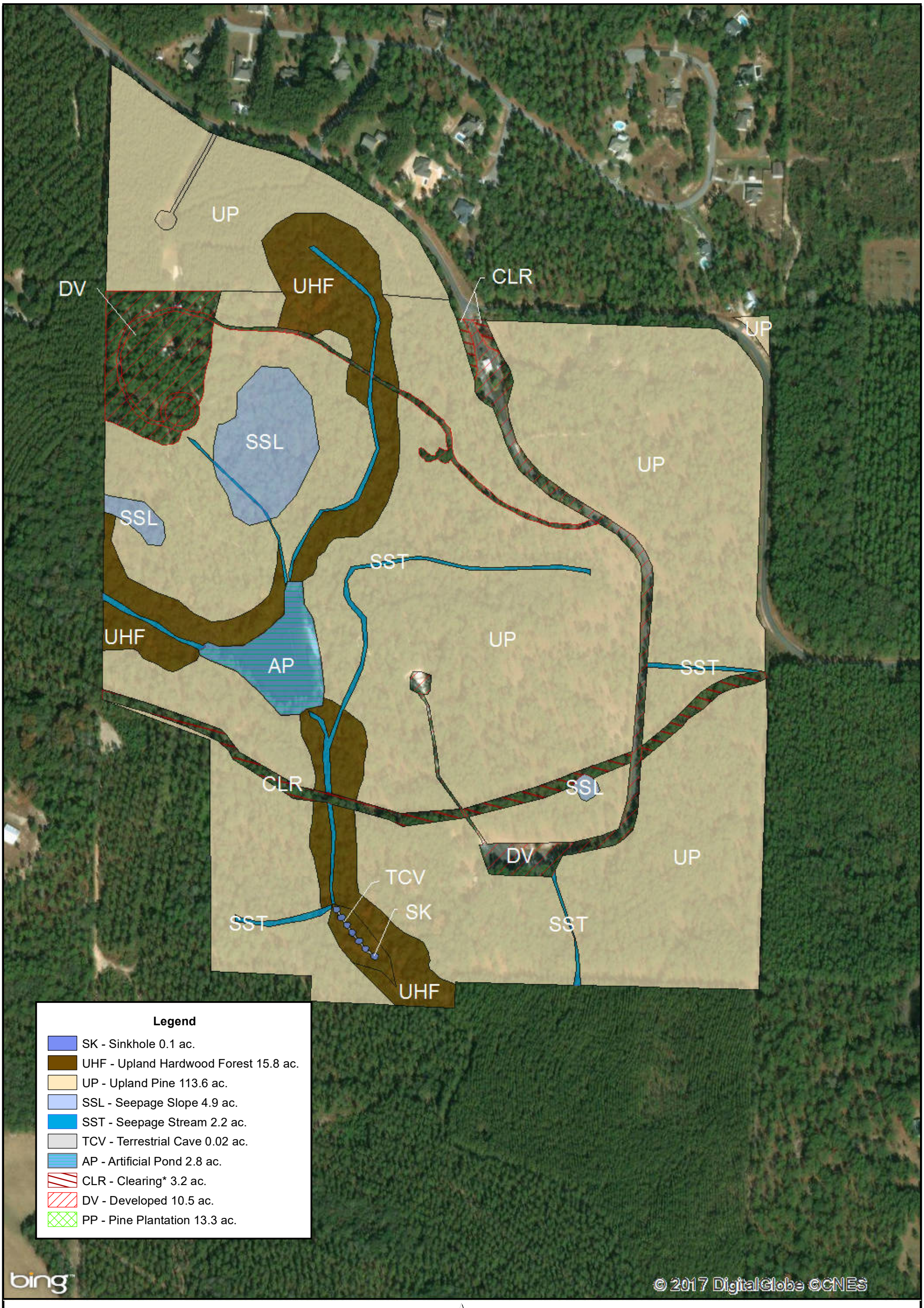
Restoration of this area would seek to reestablish an Upland Pine community comparable to the stands that form most of the park. The first major step would be for a contractor to clearcut all the off-site loblolly pines and other secondary-growth woody plants growing beneath the pine canopy. In order to prepare the substrate for later planting with native plant species using a Grasslander seed drill, the soil between the rows would be root raked to remove woody debris from the timbering and the root mats underground. This root raking step should also functionally level the surface for these purposes, which had been moderately bedded with windrows when the plantation was established. Since the park itself supports a healthy population of wiregrass that produces abundant seed following fire, the seed stock for this species could be collected from the existing Upland Pine acreage, which would lower restoration costs and effectively preserve the population's genetic integrity; if this intra-park collection is not possible, seed should be harvested from a comparable stand no more than 50 miles from the park. Other groundcover species could be opportunistically hand-collected from within the park for later dispersal inside the restoration zone if the natural migration of propagules is not significant to reestablish this component of the natural community. A possible scenario would be to collect and plant the wiregrass seed in November to December of Year 1, then subsequently plant longleaf pine seedlings during the following January to February.

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.



FALLING WATERS STATE PARK

N

0 125 250 500 Feet

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

NATURAL COMMUNITIES MAP
DESIRED FUTURE CONDITIONS

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

There is an ongoing need to survey for and document plant and animal species present in the park. Despite the park's limited size, new species are continually being identified. For example, a local botanist was able to observe five uncommon plant species during scouting trips during the summer of 2015, including one Florida-threatened taxon, the yellow fringed orchid (*Platanthera ciliaris*). The seepage slope communities on the park represent examples of a rare community type that is now very limited in distribution in Florida following many years of natural resource extraction and fire exclusion. As such, it is especially important to fully categorize the species comprising this community.

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

Action 1	Develop monitoring protocols for one selected imperiled animal species, the gopher tortoise.
Action 2	Implement monitoring protocols for one selected imperiled animal species, the gopher tortoise.
Action 3	Use the data collected from Action 2 population censuses to generate a demographic analysis.

Since the park's upland pine community is in maintenance condition for prescribed fire, it presents an excellent set of habitat conditions for gopher tortoises. While the park is limited in terms of acreage, park visitors do not usually venture beyond the designated public use areas, campgrounds, and trail network so that tortoises outside these higher traffic areas would be generally unnoticed and left alone as they forage through the abundant groundcover. Regular application of fire allows for a ready availability of fresh herbaceous foliage for a food source following burns as the tougher green vegetative matter and woody tissues are consumed by the fire. Additionally, the small trees and shrubs are sparse enough, and the open patches sufficiently common, to allow for an abundance of nesting opportunities in the sandy soils. In order to better inventory this important species, a formal monitoring program should be developed in concert with FWC personnel. Since FWC staffers already monitor gopher tortoise burrows in a variety of locations around the

state, tailoring a program suited to this park should be a very approachable endeavor. This would include a foot survey across all potential nesting habitat to count burrow entrances and any of the tortoises themselves observed in the course of the survey to take place at least every three years. Burrows determined to be in active use based on a record of diagnostic signs should be scoped out with a flexible "gopher camera" apparatus to search for the tortoises as well as identifiable commensal species that are sharing the burrow. This program would ideally seek to provide a complete population census enabling a demographic analysis (e.g. mortality, reproduction, emigration, immigration) if possible, which corresponds to monitoring at a Tier 4 level.

Objective C: Monitor and document three selected imperiled plant species in the park.

Action 1 Develop monitoring protocols for three selected imperiled plant species including the Southern lip fern, Florida flame azalea, and parrot pitcher-plant.

Action 2 Implement monitoring protocols for the three imperiled plant species listed in Action 1 above.

Action 3 Determine the need for transplanting pitcher-plants to the seepage slopes, draft plan, and execute action.

Two Florida-endangered plant species had been observed in this park in past surveys, though definitive information on their specific locations and population estimates is not available. The Southern lip fern (*Cheilanthes microphylla*) is indicated by Wunderlin and Hansen (2003) to be characteristic of "shell middens and rocky calcareous soils of hammocks" with Weaver and Anderson (2010) also noting the species to be found in "upland mixed forest". The Florida flame azalea (*Rhododendron austrinum*) is noted by Wunderlin and Hansen (2003) to be found in "hammocks and floodplain forests", and Weaver and Anderson (2010) add "bluffs" to that list of habitats. Thus, in this park, both species would be found in the upland hardwood forest that occurs in the steephead ravines, follows the seepage streams, and surrounds the sinkholes near the waterfall. In order to better categorize the frequency and abundance of these very rare plants to expand the information available on them and track potential population declines, a survey for individuals (if sparse and/or relatively large) or concentrations (if locally more numerous and/or diminutive) within these habitats should be initiated and a periodic monitoring protocol developed for these species. Biologists working in the imperiled plant section of FDACS could be consulted for the design of an effective strategy that would seek population estimate at least every three years; this would correspond to monitoring at a Tier 3 level and should include a photographic and geographic record of notable concentrations or individuals.

Pitcher plants are an important component of healthy seepage slope communities. As noted previously, these plants were lost from the park in preceding decades but were reintroduced in 2006 from a population of the Florida-threatened parrot pitcher-plant (*Sarracenia psittacina*) located on private land off the park's southeastern corner; individuals of the non-imperiled yellow pitcher plants were also included in this transplantation effort (*Sarracenia flava*). Some individuals are

known to have survived over the past decade, but survival and population status information for these species has not been collected. Thus, a formal monitoring project (Tier 3) should be designed and initiated to record individual numbers, abundance relative to other vegetation on the seepage slopes, and location within particular patches of this community type. Subsequent to this endeavor, it should be determined whether these patches contain sufficient habitat not occupied by other rare plant species adapted to this community and what measures may be needed to prepare the soil surface for their survival (e.g. recent prescribed fire, mechanical removal of hardwoods). If habitat is available, then a plan should be drafted to transplant other plants or rear seedlings from seeds collected from the adjacent parcel to augment the existent population against disruptions. Once the population can be established as stable, the state park could provide a refuge for these rare species against changes in land use or ownership of the adjacent property.

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 A: Annually treat one acre of exotic plant species in the park.

Action 1 Annually develop/update exotic plant management work plan.

Action 2 Implement annual work plan by treating one acre in park, annually, and continuing maintenance and follow-up treatments, as needed.

Since this park is in a maintenance condition for exotic plant species, this is a very difficult site at which to set a predictive value for acreage to be treated in the future. The park staffers survey for and treat every exotic plant that is observed both in public use areas and on trails as well as in the backcountry of the natural communities. While some individuals may be regrown from previous treatments that have not yet been exhausted of their energy stores and so need to be reduced over time, most pest plants are those arising from propagules (seeds, spores, vegetative fragments) that have been transported from active infestations outside the park boundary on nearby parcels and roadsides. Thus, there will be a continual need to locate and treat exotic plants arriving from outside in the indefinite future in order to maintain the natural communities in good health.

Objective B: Implement control measures on two exotic animal species in the park.

Action 1 Remove feral cats and armadillos from the park as they are encountered.

Feral cats and armadillos should be removed as park staffers observe them in the park or are alerted to their presence by visitors' reports. Cats may decimate the bird, reptiles, amphibians, and small mammals in a natural area as they forage, thus potentially causing trophic disturbance to a community's food web. Armadillos may disturb the soil, consume small animal species, and damage herbaceous vegetation as they root through the substrate. While these two species have been the most problematic, any other exotic animals found in the park should be targeted when the opportunity arises.

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 in Falling Waters 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 A: Assess and evaluate 8 of 8 recorded cultural resources in the park.

Action 1	Complete 7 assessments/evaluations of archaeological sites / historic earthen dam.
Action 2	Complete 1 Historic Structures Reports (HSR's) for historic buildings if it is deemed necessary for the survival of the picnic shelter. Prioritize stabilization, restoration and rehabilitation projects.

In order to accurately characterize the present condition of and potential threats to cultural sites in the park, the park staffers should complete a detailed assessment / evaluation of each archaeological site and the earthen dam as listed in the table above. Particularly in an area possessing the steep slopes of its dramatic topography, erosion would present the most significant challenge to preserving its cultural heritage. Any apparent threats should be remedied by corrective actions as soon as signs are observed. Other issues to prevent include evidence of looting, trampling by park visitors walking off-trail, large trees particularly liable to tip over and tear up a portion of the soil surface, and rooting by armadillos or feral hogs. If the historic picnic shelter is observed to be vulnerable to collapse or other structural damage, then a Historic Structures Report (HSR) should be written to evaluate these threats and propose effective remedies. Photo points should be established and retained as a long-term record against deterioration that may not be apparent with visitation at a single point in time.

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

Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.
Action 2	Commission a phase II survey to fully characterize known historic sites and locate unknown sites.
Action 3	Conduct oral history interviews.
Action 4	Compile a park administrative history.

As noted above, the earthen dam and the picnic shelter (internal coding BL21003), built by the DRP in 1962 and 1963, respectively, are now considered to be historic structures and should be described with FMSF documents. Other DRP structures will assumed historic status during the next planning cycle and will need FMSF documents completed, including the Residence (BL021004; const. 1967), Entrance Station (BL021005; const. 1968), Shelter / Shop (BL021006; const. 1968), Subcenter / Restroom (BL021007; const. 1968), Storage (BL021008; const. 1968), Pumphouse – Camp (BL021012; const. 1968), Privy – Scout Area (BL021011; const. 1969), Shelter – Picnic (BL021010; const. 1970), Shelter – Equipment (BL021013; const. 1974), Residence 3BR – Ashburn MH (BL047005; const. 1974), and Utility (BL021014; const. 1977).

Phillips et al. (2008) provided a very useful baseline for understanding the cultural heritage of the park, however, some questions remain unresolved that a more targeted follow up phase II survey could address. Local knowledge suggests that there were at least two other structures present in or immediately near the park, including a small schoolhouse (believed to be on or near the crest of Falling Waters Hill) and a whiskey distillery; the locations of these and other possible buildings are not currently known. Also, there are several foundational structures apparent in the sinkhole area with unknown functions that may have been associated with the oil drilling operations, past grist mill or other water diversions, or the Glen St. Mary's Nursery. The layout and buildings of the nursery is also not well characterized and could be elucidated by further study. Phillips et al. (2008) suggests that the human dimension of past economic uses (e.g. ethnicity, gender, social hierarchy,

organization) is an area that warrants investigation; they recommend that historical documents (e.g. property transactions, company records, tax records, articles of incorporation) could be delved into to provide more information on these aspects. Finally, oral history interviews with people that had worked or lived on park property in past decades could assist with further understanding the past land uses and the park's administrative history.

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.

The parcel on the northeastern corner of the park, now referred to as management zone E, was acquired about 15 years ago and contains a majority of loblolly pine plantation with a smaller section of upland hardwood forest at a steephead ravine. This plantation, measuring about 12 acres in extent, currently occupies the crest of Falling Waters Hill and is planned to be restored to an upland pine natural community in the future. As part of this restoration project once initiated, the planted pines and associated midstory trees and shrubs, would need to be removed. A stand description of the plantation site and recommendations are contained in Addendum 8.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, the DRP works with the local mosquito control district to achieve consensus. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. 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.

There is not currently an Arthropod Control Plan in effect for this park; if it is determined that mosquito control operations are necessary for this park, a plan will be drafted and approved with consultation between the DRP and the local mosquito control district office.

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

Falling Waters State Park was subject to a land management review on June 2, 2015. In the course of this review, the team determined that the land management practices were compatible with the following purposes:

- The land is being managed for the purpose for which it was acquired.
- The actual management practices, including public access, complied with the management plan for this site.

LAND USE COMPONENT

Introduction

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the 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 resource base 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.

Falling Waters State Park is located within Washington County about 85 miles west of Tallahassee and 45 miles north of Panama City in the northwest part of the state. Approximately 112,000 people live within 30 miles of the park (U.S. Census 2010).

According to the U.S. Census Data (2014), approximately 20% of residents in Washington County identify as black, Hispanic or Latino, or another minority group. Approximately 37% of residents in Washington County can be described as youth or seniors (U.S. Census 2010). 66% of the population in Washington County are of working age (16 to 65) (U.S. Census Bureau 2010). Washington

County's per capita personal income was $25,727 in 2014 (U.S. Bureau of Economic Analysis 2014).

Table 6. Resource-Based Recreational Opportunities Near Falling Waters State Park

Name	Biking	Boating/Paddling	Camping	Fishing	Hiking	Horseback Riding	Hunting	Swimming	Wildlife Viewing
Choctawhatchee River Water Management Area (FWC/NWFWMD)		✓	✓	✓	✓		✓		✓
Econfina Creek Water Management Area (FWC/NWFWMD)		✓	✓	✓	✓	✓	✓	✓	✓
Juniper Headwaters Preserve (Bay County Conservancy)					✓				✓

This area includes a variety of preserves, management areas, and conservation lands managed by state, local and private entities. This area also has federally managed lands which are part of the Florida National Scenic Trail.

Several parks and preserves managed by neighboring counties and state and private parties are located in the vicinity of the park. Deep Springs Park, managed by Bay County, offers ball fields, nature trails, pavilions and picnic areas. Juniper Headwaters Preserve offers hiking. Many of the preserves under private ownership are not open to the public.

The park is located in the Northwest Vacation Region, which includes Bay, Calhoun, Escambia, Franklin, Gulf, Holmes, Jackson, Liberty, Okaloosa, Santa Rosa, Walton, and Washington counties (Visit Florida 2014). According to the 2014 Florida Visitor Survey, approximately 10.1% of domestic visitors to Florida visited this region. Roughly 95% of visitors to the region traveled to Northwest Florida for leisure purposes. The top activities for domestic visitors were vacations and visiting friends or relatives. Summer was the most popular travel season with nearly half of the visitors arriving between June and August. Most visitors traveled by non-air (94%), reporting an average of 4.2 nights in the region and spending an average of $131 per person per day including transportation (Visit Florida 2014).

Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that participation rates in this region for saltwater beach activities, freshwater beach activities, saltwater boat fishing, saltwater non-boat fishing, saltwater boat-ramp use, freshwater boat-ramp use, nature study, hiking, tent camping, off-highway vehicle riding, and hunting are higher than the state average with demand for additional facilities increasing through 2020 (FDEP 2013).

Existing Use of Adjacent Lands

Adjacent lands to the south, west, and east of the park are zoned for agriculture and silviculture. Adjacent lands directly to the north of the park are zoned for low density residential but most parcels are vacant residential (residential lots which are undeveloped).

Planned Use of Adjacent Lands

Surrounding property in Washington County changes significantly from the existing land use map to the future land use map. Areas directly to the west of the park are still designated agriculture and silviculture but across Falling Waters Rd the future land use is low to medium residential. Land directly south of the park boundary is also slated to be low to medium density residential in the future land use map. Land north of the park boundary is now designated agricultural and silviculture lands whereas in the existing land use this area is low density residential. Lands east of the park are designated low density residential (Washington County Comprehensive Plan 2005). Potential future land use changes, such as conversion of adjacent land to more intensive uses, could produce adverse impacts to the park.

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
Falling Waters State Park is small in size but offers a large variety of recreational opportunities. The upland pines, upland hardwoods, and the sinkholes provide interesting trails for hikers to explore and observe a variety of natural communities and geologic features. The developed areas of the park are appropriate for activities such as picnicking and camping.

Water Area
Falling Waters State Park contains a small lake perfect for swimming and its lakeshore can support sunbathing. In addition to swimming, this lake is a great place for fishing and nature study.

Natural Scenery
The lake, sinkholes, waterfall, and wooded areas provide for a variety of beautiful vistas throughout the park.

Significant Habitat
Falling Waters State Park is home to a variety of wildlife and provide for ample viewing opportunities along the lake and trails. Visitors may glimpse redheaded woodpecker, Sherman's fox squirrel, gopher tortoises and a variety of other species enjoying the undisturbed natural habitats.

Natural Features
Falling Waters State Park is home to Florida's highest waterfall. The 100-foot waterfall is a unique feature and is a natural attraction everyone can appreciate. The beautiful waterfall cascades down into a 100-foot deep, 20-foot wide cylindrical sinkhole and disappear into a cave below the sinkhole. This incredible natural feature is a large draw for visitors to this park.

Archaeological and Historical Features
Falling Waters State Park has a rich history, including one of the first oil wells in Florida. Drilling began in 1919 although no oil of commercial quantity was found and the 4,912 foot well was capped in 1921 This bit of history, among others, provides visitors with multiple interpretive opportunities to explore the region's diverse history.

Florida Greenways and Trails System (FGTS)
The Florida Greenways and Trails System (FGTS) is made up of existing, planned and conceptual non-motorized trails and ecological greenways that form a connected, integrated statewide network. The FGTS serves as a green infrastructure plan for Florida, tying together the greenways and trails plans and planning activities of communities, agencies and non-profit organizations throughout Florida. Trail types include paddling, hiking, biking, multi-use and equestrian trails. The Office of Greenways and Trails maintains the data for the FGTS and has developed a Priority map that assists with focusing resources on key gaps to complete the system.

In some cases, existing or planned priority trails run through or are adjacent to state parks, or they may be in close proximity and can be connected by a spur trail. State parks can often serve as trailheads, points-of-interest, and offer amenities such as camping, showers and laundry, providing valuable services for trail users while increasing state park visitation.

Falling Waters State Park was designated through the Florida Greenways and Trails Designation Program on January 22, 2002(OGT- DA0003). The park is in close proximity to SR 77 which is an opportunity corridor within the Florida Greenways and Trails System. The Department of Transportation is currently designing a road widening project along SR 77 and will be incorporating a community trail segment into the design. This project is scheduled to be let for construction in December of 2016. Another sidewalk project is also in design and will begin where the previous leaves off. It will extend on SR 77 from south of 5th Street to CR 273 South Boulevard. This project is scheduled to be let for construction in 2020. A trail connection from the entrance of the park, along State Park Road to the SR 77 trail segment will provide direct access from the State Park to the local downtown community which will provide a direct benefit to the local economy.

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

Lands including and surrounding Falling Waters State Park were part of the timber boom of the late 19th century spurred by railroad construction to move timber from the interior to Gulf of Mexico ports. Unsustainable practices led the area to diversify and attempt oil drilling. The park hosted Florida's first oil drilling operation in the early 20th century. In addition, the 600-acre Glen St. Mary's Nursery opened on lands including current park properties. This nursery only operated from 1924 to 1929 before closing due to the Great Depression.

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 existing land use designation for the park property is conservation and recreation purposes. Future land use designation moves the park into public or semi-public land use. This should have minimal effect on the park management within the Washington County Comprehensive Plan.

Current Recreational Use and Visitor Programs

Recreational activities at the park include birding, camping, fishing, hiking, swimming, wildlife viewing, as well as cultural resource interpretation. Interpretive exhibits are placed around the park and include the grist mill, and information relating to the oil well, butterfly garden, bats, birding, prescribed fire, waterfall and seasonal kiosk exhibits. The campground is very popular for visitors throughout the year. The day use area contains pavilions, which are reservable and often used for family reunions and other gatherings. The day use area also has playgrounds and restroom facilities. Weddings occur at the waterfall overlook occasionally and receptions are often held at the pavilions.

Falling Waters State Park is part of the Great Florida Birding and Wildlife Trail.

Falling Waters State Park recorded 72,606 visitors in FY 2014/2015. By DRP estimates, the FY 2014/2015 visitors contributed $6.7 million in direct economic impact, the equivalent of adding 108 jobs to the local economy (FDEP 2014).

Other Uses

There are no other uses at Falling Waters State 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.

At Falling Waters State Park all wetlands and floodplains, as well as sinkholes, seepage streams, upland hardwood forests, upland pines, seepage slopes, terrestrial caves, and known imperiled species habitats, have been designated as protected zones. The park's current protected zone is delineated on the Conceptual Land Use Plan.

Existing Facilities

The park's current facilities include those needed for camping, hiking, swimming, picnicking, and interpretive programs. Such facilities include pavilions, campgrounds, campfire pits, a lake, and ample trails. The primary attraction is the waterfall which requires facilities such as boardwalks. (see Base Map)

<u>Recreation Facilities</u>

Camping Area

ADA Bathhouse
Bathhouse
Camp Sites (24)

Campfire Pit
Volleyball Court

Lake Area
Swimming Area
Fishing Dock
Restroom
Group Camp

Picnic Area
Picnic Areas (2)
Picnic Pavilions (2)
Interpretive Exhibits

Waterfall Area
Overlook (2)

Support Facilities
Residences (2)
Equipment Shops (2)
Storage Sheds (3)
Pole Barn
Wood Rack

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/or improved activities and programs are also recommended and discussed below.

Objective: Maintain the park's current recreational carrying capacity of 1,212 users per day.

The current variety of recreational activities offered at Falling Waters State Park is appropriate for the resources of the park and should continue.

Objective: Expand the park's recreational carrying capacity by 596 users per day.

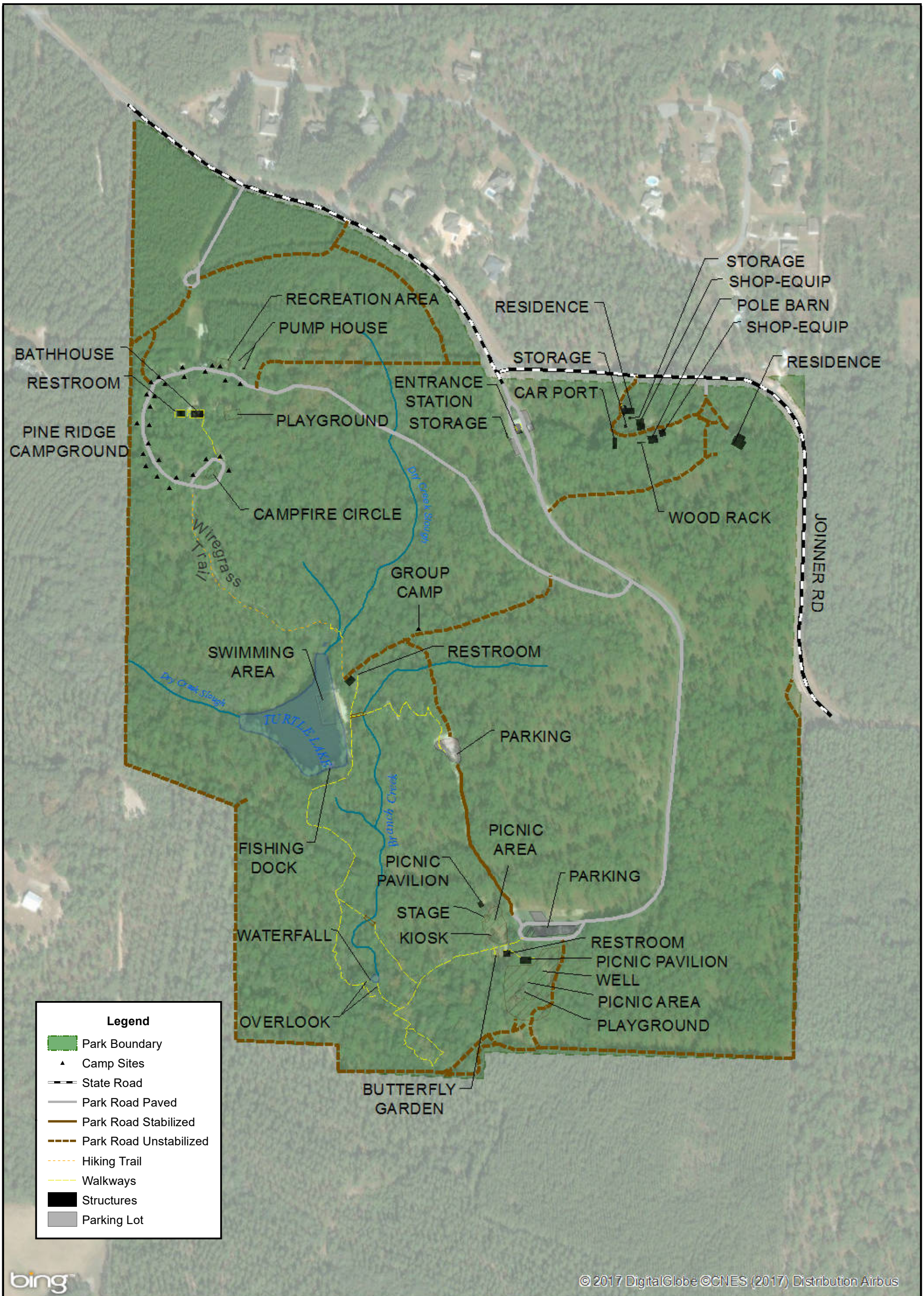
The primary methods of increasing the carrying capacity will be through expanding the trail system, adding an additional campground loop, and adding a second fishing platform. Each of these activities is very popular at the park. Expanding these activities will maintain the natural environment while providing for additional recreational opportunities.

Objective: Continue to provide the current repertoire of 14 interpretive, educational and recreational programs on a regular basis.

There are many programs offered at Falling Waters State Park. Among the most popular are The History of Falling Waters, Falling Water Geology, How to Catch a Fish, Outdoor Cooking 101 and several education programs relating to the species of the park and park management.

Objective: Develop 1 new interpretive, educational and recreational program.

Falling Waters State Park should implement a web cam live feed of the water fall. This will assist those with disabilities to be able to view and experience the waterfall as well as aid park staff in monitoring the falls.



FALLING WATERS STATE PARK

N

0 125 250 500 Feet

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

BASE MAP

Proposed Facilities

Capital Facilities and Infrastructure

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

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of improved and/or new facilities needed to implement the conceptual land use plan for Falling Waters 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/repair 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.

Camping Area
Camping is very popular at Falling Waters State Park. In order to meet this demand, a new campground loop should be constructed which will contain a total of up to 30 sites and a bathhouse. The existing campground sites need repair and mitigation concerning erosion. The sites, including host sites, need to be leveled and delineated. Interpretive programming should be updated and expanded in this use area. The current interpretive panel should be updated to include general park information, a map, and a wayfinding passage. Other opportunities could include the history of turpentine harvesting in the park and the pine restoration efforts underway. Lastly, the existing playground in this use area is in disrepair and needs replacing.

Lake Area
The lake use area is very popular among visitors for swimming and fishing. The swimming and beach areas should be expanded to accommodate more visitors. The beach should be expanded outwards on both sides of the current beach area and the swimming area should be expanded to coincide with the beach. The existing shoreline can support a beach area, so clearing of shoreline will be sufficient and additional sand is not needed. However, the lake is man-made

and constantly requires maintenance. Sand used on the beaches is brought up from the bottom of the lake. Over time, this sand becomes less visually appealing to visitors and white sand is supplemented to the existing shoreline. The area has an existing fishing platform that does not meet the demand so a second fishing platform of similar size should be constructed in an area which currently experiences heavy fishing traffic. This will create a formal fishing area to reduce safety risks. There are limited picnic opportunities for those enjoying the lake activities, so two small picnic pavilions should also be constructed in this use area.

Picnic Area
The picnic area houses the bulk of the pavilions and serves as the entrance point to the park. In order to better facilitate park programming, an interpretive pavilion should be constructed in the area. The pavilion should be large and could be used for event space as well. Potential interpretive programming includes educational materials on how the waterfall, karst features, and hydrology of the park are interrelated and a live feed of the waterfall should be considered.

Residence / Shop Area
The ranger residence and flammable storage facility have extensive termite damage and need to be replaced. The shop building also has extensive termite damage, but if renovations can make the building structurally sound and up to county building codes, it does not need replacing. An additional storage facility should be constructed near the park manager residence as well.

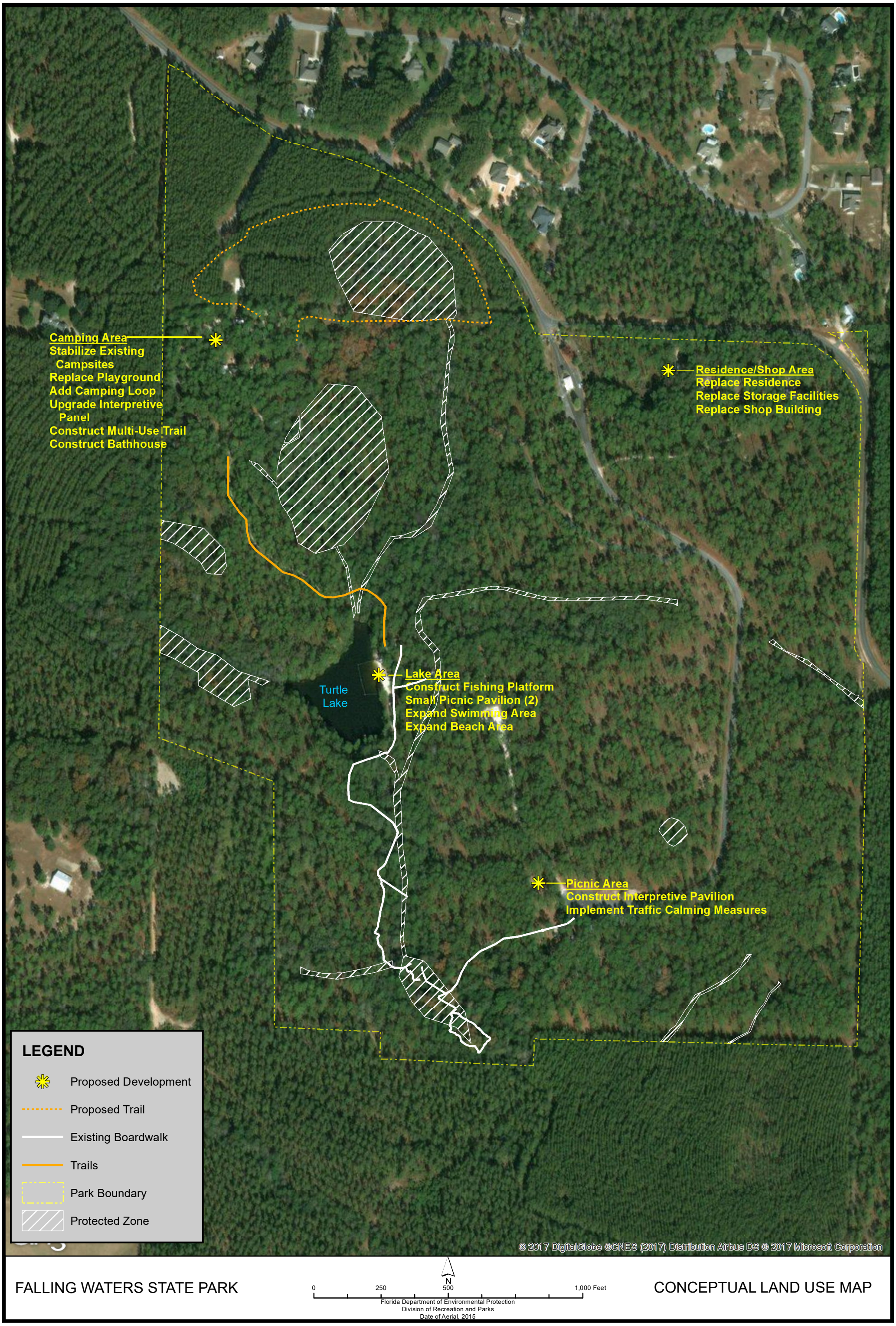
Objective: Construct 0.5 miles of trail.

A new multi-use trail should be constructed following the path of unstabilized roads north of the campground. This loop would provide campground visitors with a lovely trail which is separated from the bulk of the recreational activities at the park. The loop also expands the trail system by approximately 50% making the system more appealing.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 8) 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:

Campground Area
Stabilize existing campsites
Replace playground



FALLING WATERS STATE PARK

N

0 250 500 1,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of Aerial, 2015

CONCEPTUAL LAND USE MAP

Add camping loop
Upgrade interpretive panel
Construct multi-use trail
Construct restroom

Lake Area
Construct fishing platform
Construct small picnic pavilion (2)
Expand swimming area
Expand beach area

Picnic Area
Construct interpretive pavilion
Implement traffic control methods

Residence/Shop Area
Replace ranger residence
Replace storage facility
Repair shop building
Expand storage facility

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 7).

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.

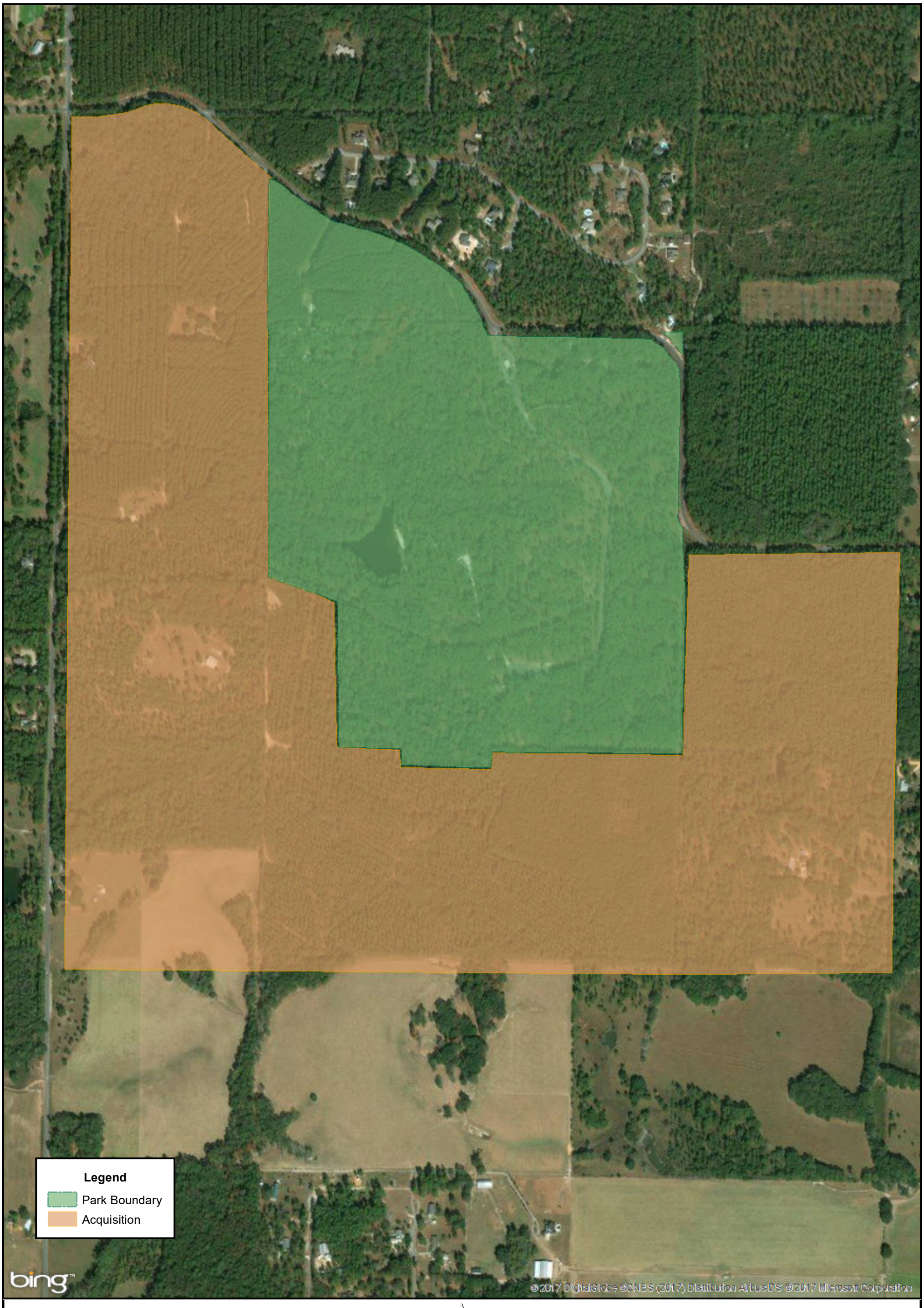
Table 7. Recreational Carrying Capacity							
	Existing		Proposed		Estimated		
Activity / Facility	One Time	Daily	One Time	Daily	One Time	Daily	
Trails							
Nature Trail	40	160	20	80	60	240	
Picnicking	120	240	16	32	136	272	
Swimming	161	322	60	120	221	442	
Fishing							
Pier	2	4	2	4	4	8	
Shoreline	69	138			69	138	
Camping							
Tent	30	30			30	30	
Standard Facility	192	192	240	240	432	432	
Groups	30	30			30	30	
Campfire Circle	96	96	120	120	216	216	
TOTAL	**740**	**1212**	**458**	**596**	**1198**	**1808**	
*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.

Several parcels to the west, east, and south of the park have been identified for optimum boundary expansion. The southwestern adjacent property is slated to be developed into a golf course and residential housing which would detrimentally affect the aesthetics associated with the park experience. Acquiring these bordering properties would assist park staff in the protection of karst features and water quality, as well as preserve natural habitat for imperiled species.



FALLING WATERS STATE PARK

N

0 250 500 1,000 Feet

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

OPTIMUM BOUNDARY MAP

IMPLEMENTATION COMPONENT

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

MANAGEMENT PROGRESS

Since the approval of the last management plan for Falling Waters State Park in 2007, 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.

Park Administration and Operations

- During the last ten years, park volunteers contributed over 48,000 hours of volunteer service.
- Five Eagle Scout projects completed within the park.
- The park's Citizen Support Organization (CSO), Friends of Falling Waters, Inc., has provided the park with funding for education, research, publications and a new website, as well as specialized equipment for park operations/resource management, including computer equipment, firefighting equipment, mowers and other needed equipment; and Golf carts.
- The CSO has also held numerous nature classes and special events at the park to raise funds for some of the items listed above.

Resource Management

Natural Resources

- Prescribed fire management goals met annually at 100%.
- Have been able to keep the park acreage in a "maintenance" level in reference to keeping Invasive exotics from improving their abundance.
- Falling waters has been listed as a FNAI prime example longleaf pine stand.

Cultural Resources

- Completion of a Phase One Archaeological Survey 2008
- Added two sites to the Master Site File (FMSF), 8WS475 is an early 20th century oil well & 8WS476 was a Civil War era water powered grist mill.
- Produced culturally significant interpretive programs based on the information from archaeological survey.

Recreation and Visitor Services

- The park does several community outreach programs for organizations which include, Kiwanis, Washington County Historical Society, the school systems of Washington, Jackson and Holmes County which include 1000's of students annually, Washington County Public Library, various Garden Clubs.
- The park organizes and offers a major event annually at the park. The event known as Legends and Lore has been renamed the Washington County Heritage Festival which offers a closer look at the cultural and natural history of the park and the surrounding area. Visitation averages 3000 plus visitors.
- A self-guided park tours have been improved through numerous trail makers and interpretive displays.
- The 50th anniversary of Falling Waters State Park was celebrated with a monthly interpretive program including the Legends & Lore Festival in April 2012.
- The park participates in the National Public Lands Day event annually.
- On weekends, weather permitted interpretive programs/ campfire chats on a wide range of subject matter are presented to campers.
- The park is listed as a site on the Great Florida Birding Trail.

Park Facilities

- ADA accessibility to Turtle Lake which incorporated a 140 foot cover bridge for aesthetic beauty and a safety shelter in case of inclement weather.
- With the addition of the new multi-use family bathrooms in the campground, all three use areas within the park have ADA accessible bathrooms.
- Sidewalk added around lake to improve accessibility that connects to the Wiregrass Trail system.
- Built event stage for concerts
- Replaced five roof buildings
- Upgraded Pine Ridge Campground facilities which included 3 ADA campsites, improvements to all the other sites including new water and electric service and a new septic system to handle increase in visitation, including a new ADA Bathhouse.
- New wooden boardwalk that gives accessibility to the oil well site.
- New accessible fishing / overlook at Lake
- Renovated Waterfall lower observation platform
- New Accessible lake parking lot.
- Renovated Accessible wiregrass trail from accessible lake parking to lake use area.
- New accessible parking at picnic use area.

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

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 8 may need to be adjusted during the ten-year management planning cycle.

Table 6
Falling Waters 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	**$382,517**
Objective B	**Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.**	Administrative support expanded	C	**$494,873**
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 or LT	**$0**
Objective B	**Restore natural hydrological conditions and function to approximately 0 acres of natural communities.**	# 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 12 acres of the park maintained within optimal fire return interval.**	# Acres within fire return interval target	LT	**$42,616**
Action 1	Develop/update annual burn plan.	Plan updated	C	$1,600
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 29 - 72acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	$36,000
Action 3	Establish 0.5 miles of new fire breaks around zone E when upland pine restoration is complete.	# Miles established	ST or LT	$5,016
Objective B	**Conduct habitat/natural community restoration activities on 12 acres of upland pine natural community.**	# Acres restored or with restoration underway	ST or LT	**$11,600**
Action 1	Develop/update site specific restoration plan	Plan developed/updated	ST	$1,600
Action 2	Implement restoration plan by removing timber, root raking, and planting native pines/groundcover.	# Acres with restoration underway	LT	$20,000
Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.**	List updated	C	**$4,000**
Objective B	**Monitor and document 1 selected imperiled animal species in the park.**	# Species monitored	C	**$7,200**

* 2015 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 6
Falling Waters 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.				
Action 1	Develop monitoring protocols for 1 selected imperiled animal species including the gopher tortoise	# Protocols developed	ST	$1,600
Action 2	Implement monitoring protocols for 1 imperiled animal species including those listed in Action 1 above	# Species monitored	C	$4,000
Action 3	Use the date collected from action 2 population censuses to generate a demographic analysis			**$1,600**
Objective C	**Monitor and document 3 selected imperiled plant species in the park.**	# Species monitored	C	**$9,600**
Action 1	Develop monitoring protocols for 3 selected imperiled plant species including the Southern lip fern, Florida flame azalea, and parrot pitcher-plant	# Protocols developed	ST	$1,600
Action 2	Implement monitoring protocols for the 3 imperiled plant species including those listed in Action 1 above	# Species monitored	C	$4,000
Action 3	Determine the need for transplanting pitcher-plants to the seepage slopes, draft plan, and execute action			**$4,000**
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Annually treat 1 acre of exotic plant species in the park.**	# Acres treated	C	**$9,500**
Action 1	Annually develop/update exotic plant management work plan.	Plan developed/updated	C	$2,000
Action 2	Implement annual work plan by treating 1 acre in park, annually, and continuing maintenance and follow-up treatments, as needed.	Plan implemented		$9,000
Objective B	**Implement control measures on 2 exotic and nuisance animal species in the park.**	# Species for which control measures implemented	C	**$1,000**
Action 1	Remove feral cats and armadillos from the park as they are encountered			$1,000
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 8 of 8 recorded cultural resources in the park.**	Documentation complete	LT	**$15,557**
Action 1	Complete 6 assessments/evaluations of archaeological sites/the earten dam. Prioritize preservation and stabilization projects.	Assessments complete	LT, ST	$557
Action 2	Complete 1 Historic Structures Report (HSR) for historic buildings and cultural landscape. Prioritize stabilization, restoration and rehabilitation projects.	Reports and priority lists completed	LT	$15,000
Objective B	**Compile reliable documentation for all recorded historic and archaeological sites.**	Documentation complete	LT	**$32,710**
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	$500

* 2015 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 6
Falling Waters 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.				
Action 2	Commission a phase II survey to fully characterize known historic sites and locate unknown sites	Probability Map completed	ST	$30,710
Action 4	Conduct oral history interviews.	Interviews complete	LT	$0
Action 5	Compile a park administrative history.	Report completed	ST	$1,000
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 1212 users per day.**	# Recreation/visitor	C	**$969,043**
Objective B	**Expand the park's recreational carrying capacity by 596 users per day.**	# Recreation/visitor	ST or LT	**$1,445,569**
Objective C	**Continue to provide the current repertoire of 14 interpretive, educational and recreational programs on a regular basis.**	# Interpretive/education programs	C	**$70,000**
Objective D	**Develop 1 new interpretive, educational and recreational programs.**	# Interpretive/education programs	ST or LT	**$7,000**
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	**$765,034**
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 or LT	**$2,325,000**
Objective C	**Improve and/or repair 4 existing facilities.**	# Facilities/Miles of Trail/Miles of Road	LT	**$1,262,319**
Objective D	**Construct 0.5 miles of trails as identified in the Land Use Component.**	# Facilities/Miles of Trail/Miles of Road	LT	**$82,283**
Objective E	**Expand maintenance activities as existing facilities are improved and new facilities are developed.**	Facilities maintained	C	**$989,747**

* 2015 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 6
Falling Waters 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		**$133,783**
Administration and Support		**$877,390**
Capital Improvements		**$2,334,348**
Recreation Visitor Services		**$2,414,612**
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.	

* 2015 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	Falling Waters State Park
Date Updated	7/13/2016
County	Washington County, Florida
Trustees Lease Number	Lease No. 3616 (Original Lease No. 2324)
Current Park Size	173.34 acres
Purpose of Acquisition	The State of Florida acquired Falling Waters State Park to operate and maintain the property as a state park.

Acquisition History

Parcel Name or Parcel DM-ID	Date Acquired	Initial Seller	Initial Purchaser	Size in acres	Instrument Type
MDID 4531	3/26/1962	Washington County, Florida	Florida Board of Parks and Historic Memorials	152.83	County Deed
MDID 338364	5/12/2000	Brickyard Investments, Inc.	Board of Trustees of the Internal Improvement Trust Fund of the State of Florida	16.581	Warranty Deed

Management Lease

Parcel Name or Lease Number	Date Leased	Initial Lessor	Initial Lessee	Current Term	Expiration Date
Lease No. 3616 (Originally Lease No. 2324)	1/23/1968	The Trustees of the Internal Improvement Fund of the State of Florida	The Florida Board of Parks and Historic Memorials	99 years	1/22/2067

Outstanding Issue	Type of Instrument	Brief Description of the Outstanding Issue	Term of the Outstanding Issue
There are no known deed-related outstanding issue such as reservations and restrictions on use of Falling Waters State Park			

Addendum 2—Advisory Group Members and Report

Local Government Representatives

The Honorable Alan Bush
County Commissioner
Washington County

Agency Representatives

Jacob Strickland, Park Manager
Falling Waters State Park
Division of Recreation and Parks

Jeff Gore, Wildlife Biologist
Florida Fish and Wildlife
Conservation Committee

John Gilbert, Chairman
Orange Hill Soil and Water
Conservation District

Tyler Macmillan, land manager
Northwest Florida Water
Management District

Mike Mathis, Operations Manager
Chipola River Forestry Center
Florida Forest Service

Mike Wisenbaker, Archaeologist
Florida Department of State
Division of Historical Resources

Local Private Property Owner

Gerald Ritcher, Local Resident
Adjacent Property Owner

Recreational User Group Representative

Eric Lewis, FNST Liason
Florida Trail Association

Debbie Mitchell, President
Chipley Garden Club

Cultural Resource Organization Representative

Dorothy Odom, President
Washington County
Historical Society

Tourism and Economic Development Representative

Heather Lopez, Director
Washington County Tourism
Development Council

Environmental and Conservation Representative

Vann Brock, Vice Chairman
Washington County School Board

Brian Lee, Assistant Director
Florida Panhandle Technical College

Ron Houser, President
Bay County Audubon Society

The advisory group meeting to review the proposed unit management plan (UMP) for Falling Waters State Park was held at the Washington County Agricultural Center in the East Wing Conference Room on Thursday, April 20, 2017 at 9:00 AM.

Todd Abbott represented the Washington County Board of County Commissioners. Aaron Kincaid represented John Sabo for the Florida Forest Service. Ron Houser represented the Bay County Audubon Society. Jennifer Manis represented Florida Fish and Wildlife Conservation Commission. Tom Lancaster represented Gerald Richter who is an adjacent landowner. Heather Lopez represented the Washington County Tourist Development Council. Debbie Mitchell represented the Chipley Garden Club. Matt Whitfield represented Sean Creel for the Northwest Florida Water Management District. Alex Stigliano represented the Florida Trail Association. Susan Roberts represented Vann Brock for the Washington County School Board. Bryan Lee represented the Florida Panhandle Technical College. Kim Pallero represented Dorothy Odom for the Washington County Historical Society. John Gilbert (Orange Hill Soil and Water Conservation District) and Mike Weisenbaker (Division of Historic Resources) were not in attendance. All other appointed advisory group members were present. Gweneth Collins attended with Debbie Mitchell for the Chipley Garden Club.

Attending Division of Recreation and Parks (DRP) staff members included Jacob Strickland, Benjamin Faure, Arthur Stiles, Daniel Alsentzer and Ashley Killough.

Ms. Killough began the meeting by explaining the purpose of the advisory group and reviewing the meeting agenda. She provided a brief overview of the DRP's planning process. Ms. Killough then asked each member of the advisory group to express his or her comments on the draft plan. After all comments were shared, Ms. Killough described the next steps for drafting the plan and the meeting was adjourned.

Summary of Advisory Group Comments

Tom Lancaster (represented Adjacent Landowner) addressed a few concerns but was overall in agreement with the plan and felt the changes were for the better. He inquired into whether the DRP would consider expanding parking, especially near the swimming area to better accommodate visitors. Mr. Lancaster also expressed concern about handicap parking during special events and how to better handle that. He expressed the shuttle system is a fantastic way to get people into the park during special events. Mr. Lancaster also had concerns regarding the expansion of the campground such as the impacts from wastewater, sewer, land use and ecologically. Lastly, Mr. Lancaster addressed public safety concerns and encourages other law enforcement agencies to drive through the park regularly to increase presence and security.

Ron Houser (Bay County Audubon Society) expressed concerns regarding the ecological impact of expanding the park and park events. Mr. Houser

acknowledged not all forested areas are functionally forests and commends Falling Waters State Park as a great example of a healthy forest in an area with mostly planted pine. Mr. Houser advises the DRP to continually consider the impacts of expanding use areas as well as pursue acquiring adjacent parcels. He feels the festival should adjust to meet the limitations of the park rather than the park adjust to meet the needs of the festivals. Full written comments are attached.

Todd Abbott (Washington County Board of County Commissioners) agreed with the management plan resource management and land use proposals. He acknowledged the need for a balance between recreation, development, and natural communities. He also suggested constructing a sidewalk to connect the park to a municipal or city-managed paved trail.

Jennifer Manis (Florida Fish and Wildlife Conservation Commission) expressed concern with cave or subterranean access and stated that no cavern tours should be offered without a cavern plan. She also commended the park on a successful history of prescribed fire which has reduced exotic infestations.

Alex Stigliano (Florida Trail Association) inquired about the location of the proposed trail and described a recent visit to park. After additional discussion, Mr. Stigliano inquired about the DRP's project prioritization methods.

Aaron Kincaid (Florida Forest Service) agreed with the resource management goals and objectives. He found no inconsistencies with or concerns over forest management as proposed. Mr. Kincaid also inquired about staffing (Ashley Killough and Benjamin Faure responded) as well as outsourcing and volunteer work.

Susan Roberts (Washington County School Board) expressed that the park is a beautiful asset and commended park staff for their interpretive knowledge and customer service.

Bryan Lee (Florida Panhandle Technical College) commended the increase of public access and has held several events at the park such as End-of-Year Picnic. He has seen the park evolve over the years but expressed concern with additional stormwater runoff due to increased development.

Matt Whitfield (Northwest Florida Water Management District) encouraged increased access to public lands and agreed with the management plan proposals.

Debbie Mitchell (Chipley Garden Club) spoke about the butterfly garden that the Garden Club developed using native flowers to attract native species. Ms. Mitchell discussed that most visitor find the falls to be worth hiking. Ms. Mitchell also described the Falling Waters Restoration Fund (how best to donate funds/equipment directly to the park).

Heather Lopez (Washington County Tourist Development Council) discussed using the park for special events but noted parking limitations citing Heritage Day Festival, which brought over 4,500 visitors in a two-day period resulting in vehicle stacking to the road. Ms. Lopez considered parking expansion trade-off with natural communities with offsite parking. Ms. Lopez also discussed the benefits of guided hikes and commented that a CSO would be an asset to the park in the future.

Kim Pallero (Washington County Historical Society) recognized the value of the park's cultural resources and encouraged additional interpretive planning.

Staff Recommendations

The staff recommends approval of the proposed management plans for Dade Battlefield Historic State Park as presented, with the following significant changes:

- The DRP will consider revisions regarding additional parking.
- The DRP will review proposed development in relation to natural community disturbance.

Notes on Composition of the Advisory Group

Florida Statutes Chapter 259.032 Paragraph 10(b) establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an advisory group:

> "Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an advisory group. Members of this advisory group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

Advisory groups that are composed in compliance with these requirements complete the review of State park management plans. Additional members may be appointed to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. The Division's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by Division of Recreation and Parks staff.

Addendum 3—References Cited

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Addendum 4—Soil Descriptions

12 - Bowie Loamy sand, 2 to 5 percent slopes - This well-drained soil on the uplands has a loamy surface layer and clayey subsoil. The plow layer ranges from brown to dark-gray loamy sand and is underlain by a very pale brown to yellowish-brown layer. Sandy loam to sandy clay loam extends from a depth of about 18 inches to a depth of 25 to 30 inches. Below this depth, the subsoil is heavy sandy clay loam to sandy clay. Below the very pale brown to yellowish-brown layer, the subsoil ranges from yellow to yellowish brown and is normally mottled at a depth of about 28 inches. Depth to mottling, however, ranges from 20 inches to as much as 34 inches. The underlying material is sandy clay loam to clay and occurs at a depth of 36 to 42 inches.

The soil is strongly acid and has moderately low natural fertility and organic-matter content. It is sufficiently loamy to have good tilth and moderately high available moisture capacity. Permeability is rapid to moderately rapid in the surface layer and is moderately rapid in the subsoil. Surface drainage is good, and internal drainage is medium. This soil retains plant nutrients well, has moderate cation-exchange capacity, and responds well to fertilizer. It has a deep, moderately well aerated root zone, but deep-rooted crops may be damaged during wet periods because drainage is restricted in the lower part of the subsoil. The available moisture capacity is low in the surface layer and high in the subsoil. This soil is well suited to many kinds of locally grown crops. It is also well suited to improved pasture or to trees and as a habitat for wildlife.

17 - Bowie Loamy sand, thick surface, 2 to 5 percent slopes – This well drained soil of the uplands has a sandy surface layer that is 18 to 30 inches thick. The upper part of the subsoil is yellowish-brown sandy loam to sandy clay loam. The lower part is mottled and finer textured. Representative profile in a wooded area: 0 to 5 inches, very friable, dark-gray loamy sand; 5 to 21 inches, very friable, yellowish-brown loamy sand; 21 to 28 inches, friable, yellowish-brown sandy clay loam; 28 to 43 inches, friable, yellowish-brown, heavy sandy clay loam mottled with strong brown and red; 43 to 70 inches +, mottled yellowish-brown, strong-brown, red, light-gray, and very pale brown sandy clay loam.

Included with this soil are a few areas that have a loamy fine sand surface layer. In a few areas, the sandy layer is slightly less than 18 inches thick or is slightly more than 30 inches. This soil is strongly acid and is low in natural fertility and in organic-matter content. Permeability is rapid in the surface layer and moderate in the subsoil. Surface drainage is good, and internal drainage is medium. The soil retains plant nutrients well, has a moderate cation-exchange capacity,

and responds well to fertilizer. Because of restricted drainage in the lower subsoil, deep-rooted crops are sometimes damaged during periods of very high rainfall. The available moisture capacity is low in the surface layer and high in the subsoil. This soil is well suited to most locally grown crops. It is also well suited to improved pasture and trees and as a habitat for wildlife.

22 - Cuthbert sandy clay loam, 2 to 5 percent slopes, severely eroded - Although this soil is less sloping than Cuthbert soils, 5 to 8 percent slopes, it is much more eroded and has a much thinner surface layer. Nearly all of the surface soil has been removed by erosion, and only 1 to 3 inches remain in most areas. Consequently, subsoil material has been mixed with the remaining surface layer, and the plow layer is yellowish-brown to strong-brown sandy clay loam. In many areas small spots of subsoil are exposed, and there are many shallow gullies and a few deep ones.

Most areas of this soil are no longer cultivated and have returned to native vegetation. This soil is not suited to cultivated crops or improved pasture. It is best suited as woodland and for wildlife habitats.

23 - Cuthbert sandy clay loam, 5 to 8 percent slopes, severely eroded - This severely eroded soil has a much thinner surface soil than Cuthbert soils, 5 to 8 percent slopes. Only 1 to 3 inches of the original surface soil remains in most areas. It has been mixed with material from the subsoil, and the plow layer is yellowish-brown to strong-brown sandy clay loam. In many areas small spots of the subsoil material are exposed, and there are many shallow gullies and a few deep ones.

Most areas of this soil are no longer cultivated and have returned to native vegetation. This soil is not suited to cultivated crops or improved pasture. It is best suited as woodland and for wildlife habitats.

24 - Cuthbert soils, 2 to 5 percent slopes - These gently sloping soils are less susceptible to erosion than Cuthbert soils, 5 to 8 percent slopes. Included with these soils are a few scattered areas that are moderately sheet eroded and have a few shallow gullies. The surface layer is thinner in these eroded areas and ranges from 3 to 7 inches in thickness. Also included with these soils are a few areas on slopes of 0 to 2 percent and some coarser textured areas that have numerous quartz pebbles throughout.

Cultivation on these soils is severely limited, but if cultivated the soils are best suited to shallow-rooted, close-growing crops. They are

moderately well suited to improved pasture of bermudagrass and bahiagrass and are well suited as woodland and for wildlife habitats.

25 - Cuthbert soils, 2 to 5 percent slopes, eroded – Although these soils are less sloping and more eroded than Cuthbert soils, 5 to 8 percent slopes, they are slightly less susceptible to further erosion. In most areas, the surface layer is uniformly sheet eroded. The surface layer ranges from 3 to 7 inches in thickness but is generally about 5 inches thick. A few deep gullies occur in some areas. Included with these soils are a few that are severely eroded. These soils have severe limitations for cultivated crops and, if cultivated, require intensive management that includes control of erosion. They can grow moderately good improved pasture, and they are well suited as woodland and for wildlife habitats.

27 – Cuthbert soils, 5 to 8 percent slopes, eroded – These eroded soils generally have a thinner surface layer than Cuthbert soils, 5 to 8 percent slopes. In most areas, the surface layer is uniformly sheet eroded, but there are some shallow gullies and a few deep ones. The surface layer is generally 5 inches thick, but the range is from 3 to 7 inches. Included with these soils are a few scattered areas that are severely eroded. These soils are not suitable for cultivation. Under good management that provides intensive practices of erosion control, moderately good improved pasture can be grown. These soils are best suited to pines, and they make good habitats for wildlife.

39 – Eustis sand, 0 to 5 percent slopes – This well-drained to excessively drained soil of the uplands is deep and rapidly permeable. Representative profile of a woody area: 0 to 5 inches, loose, very dark grayish-brown coarse sand; 5 to 15 inches, loose, brown to dark-brown coarse sand; 15 to 96 inches +, loose, yellowish-red coarse sand. The plow layer ranges from dark-gray to very dark grayish-brown coarse sand, and that, in turn, by strong-brown to yellowish-red coarse sand. Mottles normally occur below a depth of 60 inches, but in some areas they are as shallow as 48 inches. The finer textured material is generally at a depth of slightly more than 72 inches, but in some areas it is at 60 inches. It is normally yellowish-red to red. Included with this soil are a few small areas of sand and very coarse sand. In a few places, water and wind have removed some of the surface soil.

This soil is droughty and very rapidly permeable. It is very low in content of organic matter, natural fertility, cation-exchange capacity, and available moisture capacity. It does not hold plant nutrients well. Because of poor soil qualities, this soil has severe limitations in producing general farm crops. Except for watermelons and a few other

special crops, this soil is not suitable for cultivated crops. It is only moderately well suited to improved pasture. Most areas are only suited to trees.

59 – Lakeland coarse sand, 0 to 5 percent slopes - This well-drained to excessively drained soil of the uplands is deep and very rapidly permeable. Coarse sand extends from the surface to a depth that ranges from 60 inches to many feet. The plow layer is gray or dark gray to grayish brown and is underlain by layers of light yellowish brown or yellow to brownish yellow. Generally, the light yellowish brown occurs in only the upper few inches. Mottles normally occur below a depth of 42 inches, but in the southwestern and northern parts of the county, splotches of pale brown, very pale brown, or yellowish brown are at a depth of 30 inches in some places. Fine-textured material is generally at a depth of many feet, but is as shallow as 60 inches in some places. Included with this soil are small, scattered areas of sand or very coarse sand.

This soil is droughty and very rapidly permeable throughout. It is very low in organic-matter content, natural fertility, cation-exchange capacity, and available moisture capacity. It does not retain plant nutrients well. Because of these poor qualities, this soil is severely limited in its production of general farm crops. Except for watermelons and a few other special crops, the soil is not suitable for cultivation. It is only moderately well suited to improved pasture. Most areas are best suited to trees.

60 – Lakeland coarse sand, 5 to 8 percent sloped - This soil is steeper than Lakeland coarse sand, 0 to 5 percent slopes, and is more susceptible to erosion. It has slightly lower available moisture capacity, organic-matter content, and natural fertility. A few shallow or deep gullies occur in a few scattered areas.

This soil is too droughty and too low in fertility for cultivation. Fair to good yield of bahiagrass and other drought-resistant grasses can be obtained under good management. Although natural reproduction of pines is poor on this soil, the best use for most areas is trees.

67 – Lakeland, Cuthbert, and Shubuta soils, 5 to 12 percent slopes - One or more of these soils make up a least 75 percent of the areas, but the proportion of each soil varies considerably from place to place. Most areas contain lesser, highly variable amounts of the Eustis, Bowie, Ruston, Norfolk, and Faceville soils. There are also scattered, small areas of the Blanton, Klej, Lynchburg, Plummer, Rains, Rutlege, and Goldsboro soils, most of which are more poorly drained than the

Lakeland, Cuthbert, or Shubuta soils. These more poorly drained soils generally occur on the crests of slopes, on toe slopes, along small drainageways, and in seepage spots on long slopes that have slowly permeable material near the surface. In many places these soils slope to drainageways. The dominant soils are in such intricate patterns that it is impractical to map them separately.

The native vegetation consists mainly of longleaf pine, slash pine, various oaks, low shrubs, and native grasses. Most areas that have been cleared are no longer cultivated and are almost entirely trees.

These soils occur mainly in the northern half of the county. They are mainly on and somewhat north of the highly dissected north-facing escarpment that extends in an east-west direction between the higher, deep sandy soils to the south and the dominantly finer textured soils to the north. However, small, scattered areas occur in the southern part of the county.

Surface drainage is medium or rapid, and internal drainage ranges from very rapid to slow. Both surface drainage and internal drainage vary according to the various soils.

These soils generally are not suitable for cultivation, but scattered areas on gentle slopes can be cultivated occasionally. Use for pasture is limited. Because slopes are highly irregular; good pasture management is difficult, but the less sloping areas are moderately well suited to improved pasture. The best uses are for woodlands.

68 – Lakeland, Cuthbert, and Shubuta soils, 12 to 45 percent slopes - Included are areas of steep soils where slopes are as steep as 55 percent. Also included are moderately sheet eroded areas, areas that have shallow and deep gullies, and a very few severely eroded areas.

These highly dissected, steep soils are not suited to cultivated crops, but if erosion is controlled, some areas may be suited to pasture. The best uses are for woodland or wildlife habitats.

Addendum 5—Plant and Animal List

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
LICHENS		
Evans reindeer lichen	Cladina evansii	
Cup lichen	Cladonia leporina	
Prostrate cup lichen	Cladonia protrata	
PTERIDOPHYTES		
Maidenhair fern	*Adiantum capillus-veneris*	
Ebony spleenwort	*Asplenium platyneuron*	
Southern grape fern	*Botrychium biternatum*	
Southern lip fern	*Cheilanthes microphylla*	UHF
Japanese climbing fern *	*Lygodium japonicum*	
Sensitive fern	*Onoclea sensibilis*	
Bulbous adder's tongue	*Ophioglossum crotalophoroides*	
Cinnamon fern	*Osmunda cinnamomea*	UHF
Royal fern	*Osmunda regalis*	UHF
Resurrection fern	*Pleopeltis polypodioides*	
Christmas fern	*Polystichum achrostichoides*	
Bracken fern	*Pteridium aquilinum*	
Southern shield fern	*Thelypteris kunthii*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	
GYMNOSPERMS		
Atlantic white cedar	*Chamaecyparis thyoides* (planted)	
Southern red cedar	*Juniperus silicicola*	
Shortleaf pine	*Pinus echinata*	
Slash pine	*Pinus elliottii*	
Spruce pine	*Pinus glabra*	
Longleaf pine	*Pinus palustris*	
Loblolly pine	*Pinus taeda*	
Torreya tree	*Torreya taxifolia* (planted)	
ANGIOSPERMS		
Common three seed mercury	*Acalypha rhomboidea*	
Box elder	*Acer negundo*	
Red maple	*Acer rubrum*	
Florida maple	*Acer saccharum* var. *floridanum*	
Red buckeye	*Aesculus pavia*	
St. Marks false foxglove	*Agalinis pulchella*	
Small fruit agrimony	*Agrimonia microcarpa*	
Mimosa *	*Albizia julibrissin*	

*** Non-native Species**

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Hazel alder	*Alnus serrulata*	
Service berry	*Amelanchier arborea*	
Fly poison	*Amianthium muscaetoxicum*	
False indigo	*Amorpha fruticosa*	
Elliot's bluestem	*Andropogon gyrans*	
Split beard bluestem	*Andropogon ternarius*	
Broomsedge	*Andropogon virginicus var. virginicus*	
Devil's walking stick	*Aralia spinosa*	
Wiregrass	*Aristida stricta*	
Georgia Indian plantain	*Arnoglossum sulcatum*	
Giant cane	*Arundinaria gigantea*	
Carolina milkweed	*Asclepias cinerea*	
Longleaf milkweed	*Asclepias longifolia*	
Michauxii milkweed	*Asclepias michauxii*	
Butterfly weed	*Asclepias tuberosa*	
Redring milkweed	*Asclepias variegata*	
Common pawpaw	*Asimina triloba*	
Slimleaf paw paw	*Asimina angustifolia*	
Smooth yellow false foxglove	*Aureolaria flava*	
Sea myrtle	*Baccharis halimifolia*	
White wild indigo	*Baptisia alba*	
Gopherweed	*Baptisia lanceolata*	
Soft greeneyes	*Berlandiera pumila*	
Lindley's butterfly bush*	*Buddleja lindleyana*	
Pindar palm *	*Butia capitata*	
Beauty berry	*Callicarpa americana*	
Pale grass pink	*Calopogon pallidus*	
Camellia *	*Camellia japonica (planted)*	
Cypress swamp sedge	*Carex joorii*	
Lined sedge	*Carex striatula*	
Deer tongue	*Carphephorus odoratissimus*	
Pignut hickory	*Carya glabra*	
Mockernut hickory	*Carya tomentosa*	
New Jersey tea	*Ceanothus americanus*	
Centella	*Centella asiatica*	
Spurred butterfly pea	*Centrosema virginianum*	
Sticky chickweed *	*Cerastium glomeratum*	
Partridge-pea	*Chamaecrista fasciculata*	
Sand mat	*Chamaesyce* spp.	
Wooly sun bonnets	*Chaptalia tomentosa*	
Longleaf woodoats	*Chasmanthium laxum* var. *sessiliflorum*	
Woody goldenrod	*Chrysoma pauciflosculosa*	
Cottony golden aster	*Chrysopsis gossypina*	
Lynn Haven golden aster	*Chrysopsis lanuginosa*	
Maryland golden aster	*Chrysopsis mariana*	
White fringe tree	*Chionanthus virginicus*	

*** Non-native Species**

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Purple thistle	*Cirsium horridulum*	
Netleaf leather flower	*Clematis reticulata*	
Sweet pepperbush	*Clethra alnifolia*	
Blue Ridge horse balm	*Collinsonia serotina*	
Whitemouth dayflower	*Commelina erecta*	
Blue mist flower	*Conoclinium coelestinum*	
Coastalplain tickseed	*Coreopsis gladiata*	
Flowering dogwood	*Cornus florida*	
Swamp dogwood	*Cornus foemina*	
May haw	*Crataegus aestivalis*	
Carolina frostweed	*Crocanthemum carolinianum*	
Pine barren frostweed	*Crocanthemum corymbosum*	
Slender scratch daisy	*Croptilon divaricatum*	
Rabbit-bells	*Crotalaria rotundifolia*	
Silver croton	*Croton argyranthemus*	
Toothache grass	*Ctenium aromaticum*	
Haspan flatsedge	*Cyperus haspan*	
Titi	*Cyrilla racemiflora*	
Summer farewell	*Dalea pinnata*	
Climbing hydrangea	*Decumaria barbara*	
Sand tricktrefoil	*Desmodium lineatum*	
Dixie ticktrefoil	*Desmodium tortuosum*	
Bosc's witchgrass	*Dichanthelium boscii*	
Variable witchgrass	*Dichanthelium cummutatum*	
Velvet witchgrass	*Dichanthelium scoparium*	
Carolina pony's foot	*Dichondra carolinensis*	
Rough buttonweed	*Diodia teres*	
Florida yam	*Dioscorea floridana*	
Common persimmon	*Diospyros virginiana*	
Gulf sebastian bush	*Ditrysinia fruticosa*	
Dwarf sundew	*Drosera brevifolia*	
Pink sundew	*Drosera capillaris*	
Silverthorn *	*Elaeagnus pungens*	
Road grass	*Eleocharis baldwinii*	
Devil's grandmother	*Elephantopus tomentosus*	
Green-fly orchid	*Epidendrum conopseum*	
Fireweed	*Erechtites hieraciifolius*	
Centipede grass *	*Eremochloa ophiuroides*	
Daisy fleabane	*Erigeron strigosus*	
Ten angle pipewort	*Eriocaulon decangulare*	
Dogtongue wild buckwheat	*Eriogonum tomentosum*	
Blueflower eryngo	*Eryngium integrifolium*	
Button rattlesnake master	*Eryngium yuccifolium*	
White thoroughwort	*Eupatorium album*	
Dog fennel	*Eupatorium capillifolium*	
Yankee weed	*Eupatorium compositifolium*	

*** Non-native Species**

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
False fennel	*Eupatorium leptophyllum*	
Common boneset	*Eupatorium perfoliatum*	
Rough boneset	*Eupatorium pilosum*	
False horehound	*Eupatorium rotundifolium*	
Summer spurge	*Euphorbia discoidalis*	
Slender flat-topped goldenrod	*Euthamia minor*	
Annual trampweed*	*Facelis vetusa*	
American beech	*Fagus grandifolia*	
Chinese parasol tree *	*Firmania simplex (planted)*	
Licorice bedstraw	*Galium circaezans*	
Coastal bedstraw	*Galium hispidulum*	
Hairy bedstraw	*Galium pilosum*	
One flower bedstraw	*Galium uniflorum*	
Delicate everlasting	*Gamochaeta antillana*	
Elegant cudweed	*Gamochaeta coarctata*	
Pennsylvania cudweed	*Gamochaeta pensylvanica*	
Spoonleaf cudweed	*Gamochaeta purpureum*	
Beeblossom	*Guara* spp.	
Dwarf huckleberry	*Gaylussacia dumosa*	
Yellow jessamine	*Gelsemium sempervirens*	
Striped gentian	*Gentiana villosa*	
Carolina cranesbill	*Geranium carolinianum*	
Snowy orchid	*Habenaria nivea*	SSL,SK
Two wing silverbell	*Halesia diptera*	
Witch hazel	*Hamamelis virginiana*	
Stiff sunflower	*Helianthus radula*	
Queen devil	*Hieracium gronovii*	
Little barley	*Hordeum pusillum*	
Innocence	*Houstonia procumbens*	
Tiny bluet	*Houstonia pusilla*	
Oak leaf hydrangea	*Hydrangea quercifolia*	
Naked flower ticktrefoil	*Hylodesmum nudiflorum*	
Sandweed	*Hypericum fasciculatum*	
Pineweed	*Hypericum gentianoides*	
St. Andrew's cross	*Hypericum hypericoides*	
Flatwoods St. John's wort	*Hypericum microsepalum*	
Pineland St. John's wort	*Hypericum suffruticosum*	
Tweed's catsear *	*Hypochaeris chillensis*	
Hairy catsear	*Hypochaeris radicata*	
Common yellow stargrass	*Hypoxis curtissii*	
Fringed yellow stargrass	*Hypoxis juncea*	
Large gallberry	*Ilex coriacea*	
Gallberry	*Ilex glabra*	
American Holly	*Ilex opaca*	
Yaupon holly	*Ilex vomitoria*	
Flaxleaf aster	*Ionactis linariifolia*	

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Virginia willow	*Itea virginica*	
Hairy clustervine	*Jacquemontia tamnifolia*	
Japanese jasmine*	*Jasminum mesnyi*	
Leathery rush	*Juncus coriaceus*	
Soft rush	*Juncus effusus*	
Many head rush	*Juncus polycephalus*	
Lesser creeping rush	*Juncus repens*	
Virginia dwarf dandelion	*Krigia virginica*	
Canada lettuce	*Lactuca canadensis*	
Hairy lespedeza	*Lespedeza hirta*	
Creeping lespedeza	*Lespedeza repens*	
Slender blazing star	*Liatris gracilis*	
Gopher apple	*Licania michauxii*	
Japanese privet *	*Ligustrum japonicum*	
Glossy privet*	*Ligustrum lucidum*	
Chinese privet*	*Ligustrum sinense*	
Canadian toad-flax	*Linaria canadensis*	
Sweet gum	*Liquidambar styraciflua*	
Yellow poplar	*Liriodendron tulififera*	
Tuberous gromwell	*Lithospermum tuberosum*	
False gromwell	*Lithospermum virginianum*	
Japanese honeysuckle *	*Lonicera japonica*	
Coral honeysuckle	*Lonicera sempervirens*	
Seedbox	*Ludwigia alternifolia*	
Primrose willow	*Ludwigia octovalvis*	
Taperleaf waterhorehound	*Lycopus rubellus*	
Japanese climbing fern *	*Lygodium japonicum*	
Fetterbush	*Lyonia lucida*	
Southern magnolia	*Magnolia grandiflora*	
Sweet bay	*Magnolia virginiana*	
Southern crabapple	*Malus angustifolia*	UHF
Rattlesnake master	*Manfreda virginica*	
Two flower melic grass	*Melica mutica*	
Partridge berry	*Mitchella repens*	
Nandina *	*Nandina domestica*	
Indian pipe	*Monotropa uniflora*	
Red mulberry	*Morus rubra*	
Wax myrtle	*Myrica cerifera*	
Bayberry	*Myrica heterophylla*	
Oderless bayberry	*Myrica inodora*	
Lion's foot	*Nabalus serpentaria*	
Black gum	*Nyssa sylvatica*	
Swamp tupelo	*Nyssa sylvatica var. biflora*	
Windowbox wood-sorrel *	*Oxalis articulata*	
Common yellow wood-sorrel	*Oxalis corniculata*	
Violet wood-sorrel *	*Oxalis violacea*	

*** Non-native Species**

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Sourwood	*Oxydendrum arboreum*	
Stiff cowbane	*Oxypolis rigidior*	
Redtop panic grass	*Panicum rigidulum*	
Switch grass	*Panicum virgatum*	
Virginia creeper	*Parthenocissus quinquefolia*	
Bahiagrass *	*Paspalum notatum*	
Eustis Lake beard tongue	*Penstemon australis*	
Many flower beard tongue	*Penstemon multiflorus*	
Mascarene island leafflower *	*Phyllanthus tenellus*	
Florida phlox	*Phlox floridana*	
Red chokeberry	*Photinia pyrifolia*	
Small butterwort	*Pinguicula pumila*	
Blackseed needlegrass	*Piptochaetium avenaceum*	
Narrowleaf silkgrass	*Pityopsis graminifolia*	
Yellow fringed orchid	*Platanthera ciliaris*	
Annual bluegrass *	*Poa annua*	
Candy root	*Polygala nana*	
Procession flower	*Polygala incarnata*	
Rust weed	*Polypremum procumbens*	
Carolina laurel cherry	*Prunus caroliniana*	
Black cherry	*Prunus serotina*	
Sweet everlasting	*Pseudognaphalium obtusifolium*	
Black root	*Pterocaulon pycnostachyum*	
Mock bishop's weed	*Ptilimnium capillaceum*	
Mountain mint	*Pycnanthemum* spp.	
Carolina desert chicory	*Pyrrhopappus carolinianus*	
White oak	*Quercus alba*	
Southern red oak	*Quercus falcata*	
Sand live oak	*Quercus geminata*	
Bluejack oak	*Quercus incana*	
Turkey oak	*Quercus laevis*	
Laurel oak	*Quercus laurifolia*	
Sand post oak	*Quercus margarettae*	
Blackjack oak	*Quercus marlandica*	
Water oak	*Quercus nigra*	
Running oak	*Quercus pumila*	
Prairie buttercup *	*Ranunculus platensis*	
Yellow meadow beauty	*Rhexia lutea*	
Pale meadow beauty	*Rhexia mariana*	
Orange azalea	*Rhododendron austrinum*	UHF, SK
Sweet pinxter azalea	*Rhododendron canescens*	
Hybrid azalea *	*Rhododendron indica* (planted)	
Winged sumac	*Rhus copallina*	
Sand blackberry	*Rubus cuneifolius*	
Sawtooth blackberry	*Rubus pensylvanicus*	
Black-eyed susan	*Rudbeckia hirta*	

*** Non-native Species**

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Brown-eyed susan	*Rudbeckia triloba*	
Wild petunia	*Ruellia* sp.	
Heartwing dock	*Rumex hastatulus*	
Bluestem palmetto	*Sabal minor*	
Rosepink	*Sabatia angularis*	
Largeleaf rosegentian	*Sabatia macrophylla*	
Trailing pearlwort	*Sagina decumbens*	
Lyre-leaved sage	*Salvia lyrata*	
Pineland pimpernel	*Samolus valerandi* subsp. *parviflorus*	
Maryland blacksnake root	*Sanicula marilandica*	
Chinese tallow *	*Sapium sebiferum*	
Yellow pitcher plant	*Sarracenia flava*	
Parrot pitcher plant	*Sarracenia psittacina*	SSL
Little bluestem	*Schizachyrium scoparium*	
Slender bluestem	*Schizachyrium tenerum*	
Nutrush	*Scleria* spp.	
Hairy skullcap	*Scutellaria elliptica*	
Hoary skullcap	*Scutellaria incana*	
Saw palmetto	*Serenoa repens*	
Dixie aster	*Sericocarpus tortifolius*	
Black senna	*Seymeria cassioides*	
Indian hemp	*Sida rhombifolia*	
Gum bumelia	*Sideroxylon lanuginosa*	
Saw greenbrier	*Smilax bona-nox*	
Cat greenbrier	*Smilax glauca*	
Bamboo vine	*Smilax laurifolia*	
Sarsaparilla vine	*Smilax pumila*	
Roundleaf greenbrier	*Smilax rotundifolia*	
Lanceleaf greenbrier	*Smilax smallii*	
Hogbrier	*Smilax tamnoides*	
Goldenrod	*Solidago arguta*	
Bluestem goldenrod	*Solidago caesia*	
Canada goldenrod	*Solidago canadensis*	
Pinebarren goldenrod	*Solidago fistulosa*	
Leavenworth's goldenrod	*Solidago leavenworthii*	
Dyersweed goldenrod	*Solidago nemoralis*	
Sweet goldenrod	*Solidago odora*	
Downy goldenrod	*Solidago puberula*	
Field burrweed *	*Soliva sessilis*	
Spiny sow thistle *	*Sonchus asper*	
Lopside indiangrass	*Sorghastrum secundum*	
Little ladies' tresses	*Spiranthes tuberosa*	UP
Smutgrass *	*Sporobolus indicus*	
Seashore dropseed	*Sporobolus virginicus*	
Common chickweed *	*Stellaria media*	
Crow-poison	*Stenanthium densum*	

*** Non-native Species**

Falling Waters State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Diamond flower	*Stenaria nigricans*	
Silky camellia	*Stewartia malacodendron (planted 1967)*	
Sidebeak pencil flower	*Stylosanthes biflora*	
Scale leaf aster	*Symphyotrichum adnatum*	
Eastern silver aster	*Symphyotrichum concolor*	
Rice button aster	*Symphyotrichum dumosum*	
White arrow leaf aster	*Symphyotrichum urophyllum*	
Horse sugar	*Symplocos tinctoria*	
Carolina basswood	*Tilia americana* var. *caroliniana*	
Coastal false asphodel	*Tofieldia racemosa*	
Poison ivy	*Toxicodendron radicans*	
Carolina clover	*Trifolium carolinianum*	
Purple sandgrass	*Triplasis purpurea*	
Winged elm	*Ulmus alata*	
Perfoliate bellwort	*Uvularia perfoliata*	
Sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Darrow's blueberry	*Vaccinium darrowii*	
Shiny blueberry	*Vaccinium myrsinites*	
Brazilian vervain *	*Verbena brasiliensis*	
Tall ironweed	*Vernonia angustifolia*	
Speedwell	*Veronica* spp.	
Possum haw	*Viburnum nudum*	
Bog white violet	*Viola lanceolata*	
Early blue violet	*Viola palmata*	
Primrose-leaf violet	*Viola primulifolia*	
Common blue violet	*Viola sororia*	
Summer grape	*Vitis aestivalis*	
Muscadine grape	*Vitis rotundifolia*	
Southern rockbell *	*Wahlenbergia marginata*	
Chinese wisteria *	*Wisteria sinensis*	
Yellow-eyed grass	*Xyris laxifolia* var. *iridifolia*	
Adam's needle	*Yucca filamentosa*	

*** Non-native Species**

Falling Waters State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
FISH		
Warmouth	*Lepomis gulosus*	
Bluegill	*Lepomis macrochirus*	
Red-ear sunfish	*Lepomis microlophus*	
Largemouth bass	*Micropterus salmoides*	
AMPHIBIANS		
Salamanders		
Eastern tiger salamander	*Ambystoma tigrinum tigrinum*	
Southern dusky salamander	*Desmognathus auriculatus*	
Southern two-lined salamander	*Eurycea cirrigera*	
Slimy salamander	*Plethodon grabmani*	
Frogs and Toads		
Southern cricket frog	*Acris gryllus dorsalis*	
Oak toad	*Anaxyrus quercicus*	
Southern toad	*Anaxyrus terrestris*	
Green treefrog	*Anaxyrus cinerea*	
Pinewoods treefrog	*Anaxyrus femoralis*	
Squirrel treefrog	*Anaxyrus squirella*	
Bullfrog	*Lithobates catesbeiana*	
Bronze frog	*Lithobates climitans*	
Southern leopard frog	*Lithobates utricularia*	
Southern spring peeper	*Pseudacris crucifer*	
Southern chorus frog	*Pseudacris nigrita*	
REPTILES		
Crocodilians		
American alligator	*Alligator mississippiensis*	AL,SST
Turtles		
Common snapping turtle	*Chelydra serpentina*	
Gopher tortoise	*Gopherus polyphemus*	UP
Striped mud turtle	*Kinosternon subrubrum*	
Alligator snapping turtle	*Macrochelys apalachicolae*	AL,SST
Florida redbelly turtle	*Pseudemys nelsoni*	
Common musk turtle	*Sternotherus odoratus*	
Eastern box turtle	*Terrapene carolina*	
Florida softshell turtle	*Trionyx ferox*	
Lizards		
Green anole	*Anolis carolinensis*	
Six-lined racerunner	*Aspidoscelis sexlineatus*	

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Eastern glass lizard	*Ophisaurus ventralis*	
Southeastern five-lined skink	*Plestiodon inexpectatus*	
Broadhead skink	*Plestiodon laticeps*	
Southern fence lizard	*Sceloporus undulatus undulatus*	
Ground skink	*Scinella laterale*	
Snakes		
Florida cottonmouth	*Agkistrodon piscivorus conanti*	
Southern black racer	*Coluber constrictor priapus*	
Eastern diamondback rattlesnake	*Crotalus adamanteus*	
Southern ringneck snake	*Diadophis punctatus*	
Yellow rat snake	*Elaphe obsoleta quadrivittata*	
Gray rat snake	*Elaphe obsoleta spiloides*	
Eastern hognose snake	*Heterodon platyrhinos*	
Eastern kingsnake	*Lampropeltis getulus*	
Eastern coral snake	*Micrurus fulvius*	
Banded water snake	*Nerodia fasciata*	
Brown water snake	*Nerodia taxispilota*	
Florida pine snake	*Pituophis melanoleucus mugitus*	UP
Corn snake	*Pantherophis guttatus*	
Dusky Pigmy Rattlesnake	*Sistrurus miliarius barbouri*	
Eastern garter snake	*Thamnophis sirtalis sirtalis*	
BIRDS		
Grebes		
Pied-billed Grebe	*Podilymbus podiceps*	
Cormorants		
Double-crested Cormorant	*Phalocrocorax auritus*	
Darters		
Anhinga	*Anhinga anhinga*	
Herons and Bitterns		
Great Egret	*Ardea alba*	
Great Blue Heron	*Ardea herodias*	
Cattle Egret	*Bubulcus ibis*	
Green Heron	*Butorides virescens*	
Great egret	*Casmerodius albus*	
Little Blue Heron	*Egretta caerulea*	AL
Snowy Egret	*Egretta thula*	AL
Tricolored Heron	*Egretta tricolor*	AL
White ibis	*Eudocimus albus*	AL

*** Non-native Species**

Falling Waters State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Storks		
Wood Stork	*Mycteria americana*	AL
Ducks and Geese		
Wood Duck	*Aix sponsa*	
Hooded Merganser	*Lophodytes cucullatus*	
Hawks, Eagles and Kites		
Cooper's Hawk	*Accipiter cooperii*	
Sharp-shinned Hawk	*Accipiter striatus*	
Red-tailed Hawk	*Buteo jamaicensis*	
Red-shouldered Hawk	*Buteo lineatus*	
Broad-winged Hawk	*Buteo platypterus*	
Northern Harrier	*Circus cyaneus*	
Swallow-tailed Kite	*Elanoides forficatus*	
American Kestrel	*Falco sparverius*	
Merlin	*Falco columbarius*	
Bald Eagle	*Haliaeetus leucocephalus*	
Mississippi Kite	*Ictinia mississippiensis*	
Osprey	*Pandion haliaetus*	
Vultures		
Turkey Vulture	*Cathartes aura*	
Black Vulture	*Coragyps atratus*	
Turkey and Quail		
Northern Bobwhite	*Colinus virginianus*	
Wild Turkey	*Meleagris gallopavo*	
Snipes and Sandpipers		
American Woodcock	*Scolopax minor*	
Killdeer	*Charadrius vociferus*	
Doves		
Rock Dove*	*Columba livia*	
Common Ground-Dove	*Columbina passerina*	
Mourning Dove	*Zenaida macroura*	
Owls		
Great Horned Owl	*Bubo virginianus*	
Eastern Screech Owl	*Megascops asio*	
Barred Owl	*Strix varia*	
Goatsuckers		
Chuck-will's-willow	*Caprimulgus carolinensis*	
Common Nighthawk	*Chordeiles minor*	

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Swifts		
Chimney Swift	*Chaetura pelagica*	
Hummingbirds		
Ruby-throated Hummingbird	*Archilochus colubris*	
Kingfishers		
Belted Kingfisher	*Megaceryle alcyon*	
Woodpeckers		
Northern Flicker	*Colaptes auratus*	
Pileated Woodpecker	*Dryocopus pileatus*	
Red-bellied Woodpecker	*Melanerpes carolinus*	
Red-headed Woodpecker	*Melanerpes erythrocephalus*	
Downy Woodpecker	*Picoides pubescens*	
Hairy Woodpecker	*Picoides villosus*	
Yellow-bellied Sapsucker	*Sphyrapicus varius*	
Flycatchers		
Eastern Wood-Pewee	*Contopus virens*	
Acadian Flycatcher	*Empidonax virescens*	
Eastern Phoebe	*Sayornis phoebe*	
Eastern Kingbird	*Tyrannus tyrannus*	
Shrikes		
Loggerhead Shrike	*Lanius ludovicianus*	
Vireos		
White-eyed Vireo	*Vireo griseus*	
Solitary Vireo	*Vireo solitarius*	
Jays and Crows		
American Crow	*Corvus brachyrhynchos*	
Blue Jay	*Cyanocitta cristata*	
Martins		
Purple Martin	*Progne subis*	
Swallows		
Barn Swallow	*Hirundo rustica*	
Titmice		
Tufted Titmouse	*Baeolophus bicolor*	
Carolina Chickadee	*Poecile carolinensis*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Nuthatches		
Red-breasted Nuthatch	*Sitta canadensis*	
Brown-headed Nuthatch	*Sitta pusilla*	
Wrens		
Carolina Wren	*Thryothorus ludovicianus*	
House Wren	*Troglodytes aedon*	
Gnatcatchers and Kinglets		
Blue-gray Gnatcatcher	*Polioptila caerulea*	
Thrushes		
Hermit Thrush	*Catharus guttatus*	
Gray-cheeked Thrush	*Catharus minimus*	
Eastern Bluebird	*Sialia sialis*	
American Robin	*Turdus migratorius*	
Thrashers		
Northern Mockingbird	*Mimus polyglottos*	
Brown Thrasher	*Toxostoma rufum*	
Starlings		
European Starling *	*Sturnus vulgaris*	
Waxwings		
Cedar Waxwing	*Bombycilla cedrorum*	
Warblers		
Yellow-rumped Warbler	*Dendroica coronata*	
Yellow-throated Warbler	*Dendroica dominica*	
Palm Warbler	*Dendroica palmarum*	
Yellow Warbler	*Dendroica petechia*	
Pine Warbler	*Dendroica pinus*	
Common Yellowthroat	*Geothlypis trichas*	
Yellow-breasted Chat	*Icteria virens*	
Black-and-white Warbler	*Mniotilta varia*	
Northern Parula	*Parula americana*	
Prothonotary Warbler	*Protonotaria citrea*	
Louisiana Waterthrush	*Seiurus motacilla*	OF
Orange-crowned Warbler	*Vermivora celata*	
Hooded Warbler	*Wilsonia citrina*	
Tanagers		
Scarlet Tanager	*Piranga olivacea*	
Summer Tanager	*Piranga rubra*	

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Sparrows		
Bachman's Sparrow	*Aimophila aestivalis*	
House Sparrow *	*Passer domesticus*	
Eastern Towhee	*Pipilo erythrophthalmus*	
White-throated Sparrow	*Zonotrichia albicollis*	
Meadowlarks, Blackbirds and Orioles		
Red-winged Blackbird	*Agelaius phoeniceus*	
Orchard Oriole	*Icterus spurius*	
Brown-headed Cowbird *	*Molothrus ater*	
Common Grackle	*Quiscalus quiscula*	
Eastern Meadowlark	*Sturnella magna*	
Cardinals, Grosbeaks, and Buntings		
Northern Cardinal	*Cardinalis cardinalis*	
Blue Grosbeak	*Guiraca caerulea*	
Painted Bunting	*Passerina ciris*	
Indigo Bunting	*Passerina cyanea*	
Finches		
Pine siskin	*Spinus pinus*	
American Goldfinch	*Spinus tristis*	
Purple Finch	*Carpodocus purpureus*	
MAMMALS		
Didelphids		
Opossum	*Didelphis virginiana*	
Moles		
Eastern mole	*Scalopus aquaticus*	
Bats		
Big brown bat	*Eptesicus fuscus*	
Southeastern bat	*Myotis austroriparus*	
Eastern pipestrelle	*Pipistrellus subflavus*	
Edentates		
Nine-banded armadillo *	*Dasypus novemcinctus*	
Lagomorphs		
Eastern cottontail	*Sylvilagus floridanus*	
Marsh rabbit	*Sylvilagus palustris*	
Rodents		
Beaver	*Castor canadensis*	

*** Non-native Species**

Falling Waters State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Southeastern pocket gopher	*Geomys pinetis*	
Southern flying squirrel	*Glaucomys volans*	
Eastern woodrat	*Neotoma floridana*	
Golden mouse	*Ochrotomys nuttalli*	
Cotton mouse	*Peromyscus gossypinus*	
Gray squirrel	*Sciurus carolinensis*	
Fox squirrel	*Sciurus niger*	
Hispid cotton rat	*Sigmodon hispidus*	
Carnivores		
Coyote *	*Canis latrans*	
Bobcat	*Felis rufus*	
River otter	*Lutra canadensis*	
Striped skunk	*Mephitis mephitis*	
Raccoon	*Procyon lotor*	
Gray fox	*Urocyon cinereoargenteus*	
Red fox	*Vulpes fulva*	
Artiodactyls		
White-tailed deer	*Odocoileus virginianus*	

*** Non-native Species**

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
Artificial lake ..... AL
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

Eligibility Criteria for National Register of Historic Places

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

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

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

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

- **a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
- **b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- **c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
- **d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or

e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

f) a property achieving significance within the past 50 years, if it is of exceptional importance.

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

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

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

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

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

Addendum 8—Timber Management Analysis

The following timber management analysis was prepared by Scott Savery (Park Biologist, Wakulla Springs State Park) and John McKenzie (Biologist, District 1) in cooperation with the Florida Forest Service in 2000. As the same stand is still targeted for a future restoration project, their assessment was updated by Arthur Stiles (Biologist, District 1) using observations in the field in August 2015 for the revision of the Falling Waters Unit Management Plan.

Timber Stand 1

Stand 1 is a 12 acre, site-prepped stand of planted loblolly pines. The average density is between 500 to 600 stems per acre and with an average diameter of 6 to 7 inch diameter at breast height (DBH) with a relatively high variance (measurements of sampled pines generally ranged from 4 to 9 inches). The average tree height is approximately 35 to 40 feet. Fusiform rust was evident on many of the trees during initial the site visit in August 2015.

Since the initial assessment found that undergrowth was minimal with a scattering of blueberry species, blackberry, persimmon, beauty berry, winged sumac, and poison ivy, subsequent understory and midstory vegetative growth has been considerable. Along with a density that has produced patches of difficult to penetrate thickets in many areas, the following species have appeared in addition to those listed previously: laurel oak, water oak, southern red oak, red maple, southern red cedar, yaupon, wax myrtle, pokeweed, purple passionflower, yellow jessamine, slender-leaf pawpaw, sarsaparilla vine, dog fennel, and Vasey grass. Soils consist of deep loamy clays. The stand is immediately adjacent to a steephead stream which flows into the park and ultimately into the Falling Waters Sink. The terrain near the steephead ravine on the eastern end of zone E is roughly a five percent slope. Portions of the stand represent the park's northern boundary. Access to the stand will be from a paved cul-de-sac road off Falling Waters Road that is gated at its entrance; other unpaved access roads penetrate other parts of this stand.

Recommendations

All timber removal activities are intended to be carried out for the sole purpose of natural community restoration. It is recommended that the zone be heavily thinned or clear cut. Trees most severely afflicted by Fusiform rust should especially be targeted for removal. DRP staffers at the park and district office will develop a natural community restoration plan appropriate that seeks to return the area to upland pine, which is the predominant community type existing in this locality under a regularly applied prescribed fire program. This restoration plan should delineate an appropriate harvest schedule to achieve restoration goals. Root raking to remove root systems and woody debris in the soils between the loblolly pine stump rows will serve to moderately smooth out the substrate bedding of the stand and prepare it for the planting of wiregrass seed using a Grasslander seed drill. Upland pine stands within the park contain sufficient quantities of wiregrass seed following burns to supply this restoration area with locally sourced seed. A subsequent step would involve the planting of containerized longleaf pines from a

local seed source not to exceed 50 miles from the target site if possible. Longleaf pines should be planted in the open “patches” created by the harvest of loblolly pines. No mechanical harvesting should be done on any moderate to steep slopes in order to prevent erosion. Prior to timber harvest, a gopher tortoise survey should be conducted in order to determine the location of any active burrows, which are expected to be sparse if present at all given the density of the midstory vegetation. The park may request assistance from the Florida Fish & Wildlife Conservation Commission for the gopher tortoise survey and to make appropriate recommendations. Once the longleaf pines become established, the stand should return to a 2-3 year burn rotation with burning being conducted during the growing season. At that time, any remaining loblolly pines should be removed. Efforts to replant longleaf pines should focus on the eventual reestablishment of a more natural tree density roughly corresponding to that present in other upland pine stands in the park. A possible scenario would involve the planting of wiregrass during November to December with longleaf pine planting during January to February; the estimated time from initial loblolly pine harvest to the first burn would be about 36 to 40 months in total.

Addendum 9 —Land Management Review

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMORANDUM

TO: Aric Larson, Governmental Operations Consultant III
Division of State Lands

FROM: Parks Small, Chief, Bureau of Natural and Cultural Resources
Division of Recreation and Parks

Sine Murray, Chief, Office of Park Planning
Division of Recreation and Parks

SUBJECT: Response to Draft Land Management Review (LMR)
Falling Waters State Park

DATE: September 11, 2015

The Land Management Review draft report provided to DRP determined that management of Falling Waters State Park by the Division of Recreation and Parks met the two tests prescribed by law. Namely, the review team concluded that the land is being managed for the purposes for which it was acquired and in accordance with the land management plan.

Below are Additional Recommendations and Checklist Findings (items the LMR determined should be further addressed in the Management Plan update) of the draft LMR report, with our Manager's Response to each. The responses were prepared via a coordinated effort of the park, district office, and our offices.

CONSENSUS RECOMMENDATIONS

1. **The team recommends that park staff reach out to local groups (Audubon chapters, herpetological society, Florida Native Plant Society, etc.) as a means to increase listed species survey efforts, beyond just collecting incidental observations.**

   Managing Agency Response: *Agree. Park staff will contact local and regional conservation organizations to garner credible and knowledgeable assistance in an effort to improve the park's species inventory.*

FIELD REVIEW

1. **Management Resources, specifically staff and funding, received a below average scores. The review team is asked to evaluate, based on information provided by the managing agency, whether management resources are sufficient.**

   Managing Agency Response: *Division funding is appropriated annually by the Florida Legislature. This funding is allocated at the Division and District levels in order to best meet annual operational and resource management needs. Any deemed increase in Division Budget/staffing will follow the established legislative budget request process.*

PLAN REVIEW

No low scores were identified on the management plan review portion of the checklist.

Thank you for your attention.

/ca

cc: Danny Jones, Chief, Bureau of Parks District 1
Tony Tindell, Assistant Chief, Bureau of Parks District 1
Jacob Strickland, Park Manager, Falling Waters State Park
Raya Pruner, Environmental Specialist, Bureau of Parks District 1