



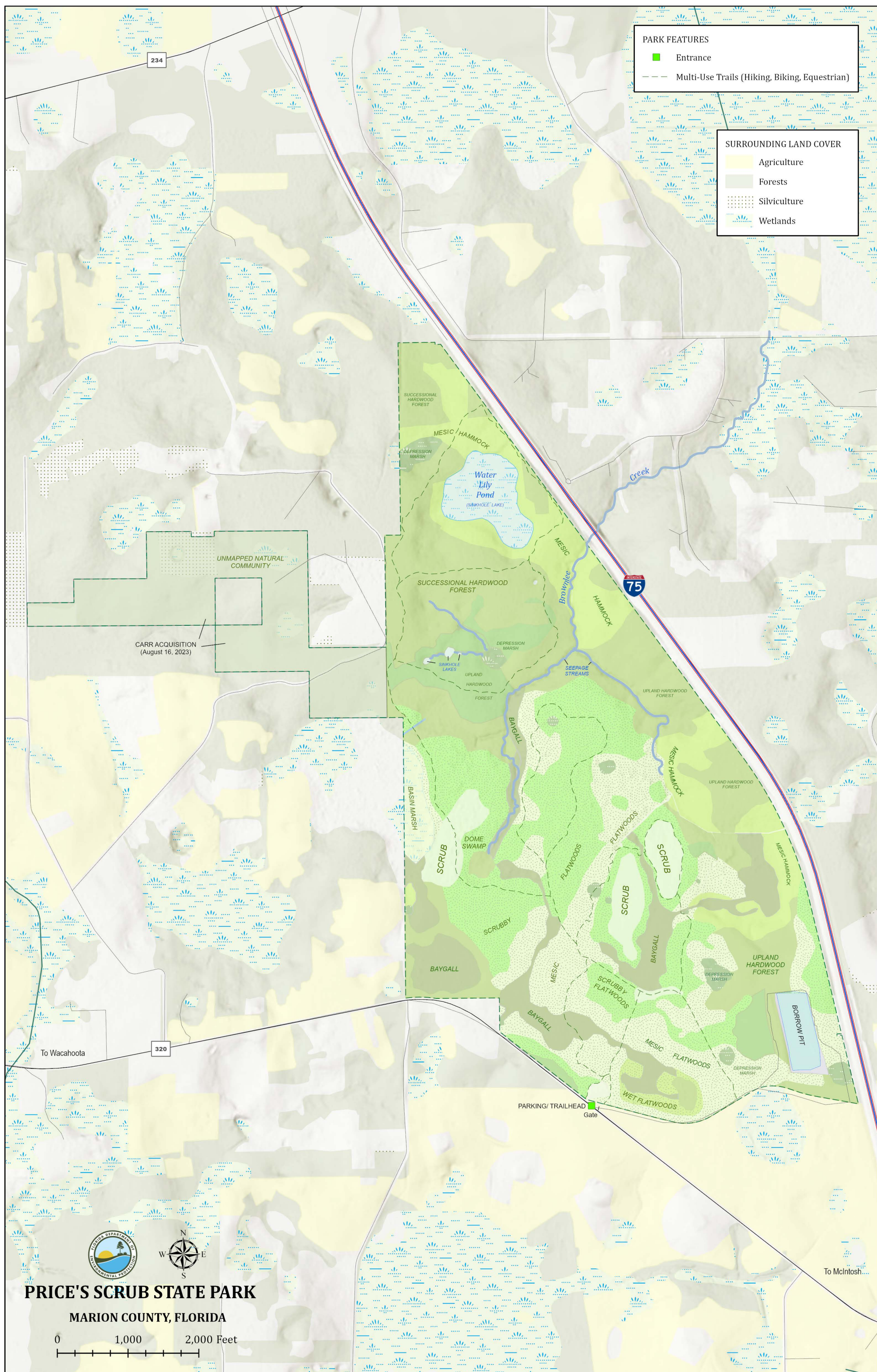
# **PRICE'S SCRUB STATE PARK**

## Park Chapter

NORTH FLORIDA HIGHLANDS REGION













## **INTRODUCTION**

### **LOCATION AND ACQUISITION HISTORY**

Price's Scrub State Park is located in northwest Marion County, adjacent to the Alachua County line (see Vicinity Map). Interstate 75 contours the eastern part of the property and County Road 320 borders the southwestern part of the property. The park contains one entrance point at its southern boundary, accessible through County Road 320. The Vicinity Map also reflects significant land and water resources existing near the park.

Price's Scrub State Park was initially acquired on Nov. 23, 2002, with funds from the Greenways and Trails Florida Forever Program. Currently, the park comprises 962.31 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on May 29, 2003, the Trustees leased (Lease No. 4425) the property to the Division of Recreation and Parks (DRP) under a 50-year lease. The current lease will expire on May 28, 2053.

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

### **SECONDARY AND INCOMPATIBLE USES**

In accordance with 253.034(5) F.S., the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of DRP's statutory responsibilities and resource values. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation, and visitor experiences. It was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purposes of resource-based outdoor recreation and conservation.

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

In accordance with 253.034(5) F.S., the potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that multiple-use management activities would not be appropriate as a means of generating revenues for land management. Instead, techniques such as entrance fees, concessions, and similar measures will be employed on a case-by-case basis as a means of supplementing park management funding. Generating revenue from consumptive uses or from activities that are not expressly related to resource management and conservation is not under consideration.

## **PURPOSE AND SIGNIFICANCE OF THE PARK**

### **Park Purpose**

The purpose of Price's Scrub State Park is to provide resource-based public outdoor recreation activities that are compatible with the conservation and protection of the park's diverse assemblage of natural communities.

### **Park Significance**

- The park has at least 14 natural communities, including scrub, upland mixed woodland, scrubby flatwoods and sinkhole lake – all of which are vital elements of regional aquifer recharge. The scrub is one of the northernmost occurrences of this community in north-central peninsular Florida.
- The park has one of the highest biodiversity ratings in Marion County due to the mosaic of upland mixed woodlands with ridges of scrub among mesic and scrubby flatwoods.
- The property plays a pivotal role in the proposed connection of regionally valuable conservation lands including the Marjorie Harris Carr Cross Florida Greenway, Paynes Prairie Preserve State Park, Lochloosa Wildlife Conservation Area and Goethe State Forest.

### **Central Park Theme**

Sunny, sandy trails wind through the quiet charm of Price's Scrub State Park, a critical connection between vital Central Florida habitats for rare and imperiled wildlife.

Price's Scrub State Park is classified as a state park in the DRP unit classification system. In the management of a state park, balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation of the park's natural, aesthetic and educational attributes.

## **OTHER DESIGNATIONS**

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

The park is not adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

### **PARK ACCOMPLISHMENTS**

- Complete western perimeter holding line for fire operations achieved through use of Marsh Master equipment in basin marsh and reworking degraded perimeter roads as fire lines (1.7 miles).
- 15.4 infested acres (85 gross acres) of exotic plants treated.
- 21.7-acre mowing project for zone perimeter fuels reduction in flatwoods completed in 2019.
- Four plant species and three insect species added to park inventory.
- Over 9 miles of trails widened to allow better access and fire protection.



## RESOURCE MANAGEMENT COMPONENT

Price's Scrub State Park Management Zones			
Management Zone	Acreage	Managed with Prescribed Fire	Contains Cultural Resources
PRS-1A	39.16	Y	Y
PRS-1B	79.06	Y	Y
PRS-1C	72.35	Y	Y
PRS-1D	8.05	Y	Y
PRS-2A	132.44	Y	Y
PRS-2B	132.33	Y	Y
PRS-2C	27.89	Y	Y
PRS-2D	52.66	Y	Y
PRS-3	359	Y	Y
PRS-3A	59.36	Y	Y

### **TOPOGRAPHY**

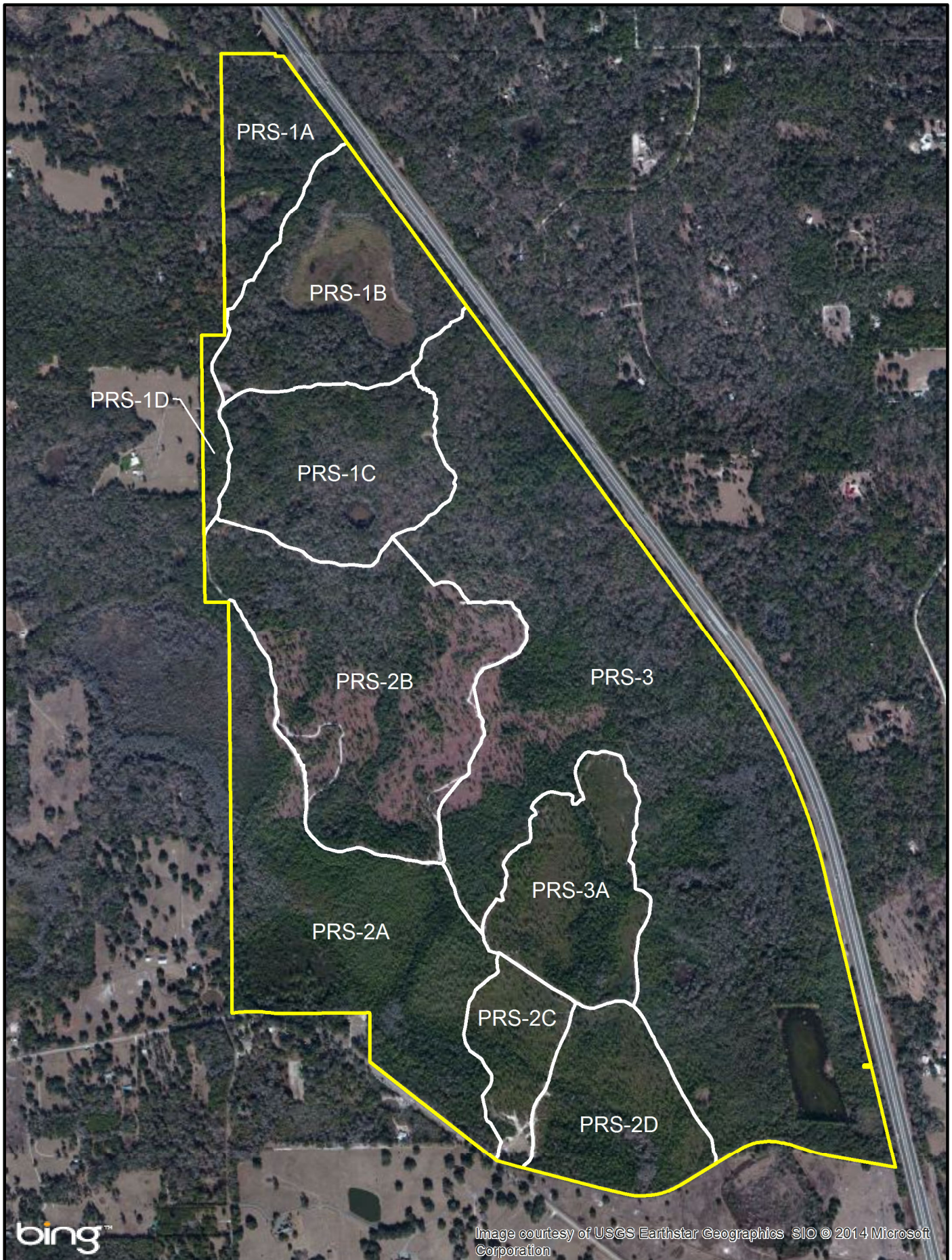
Price's Scrub State Park is located in the Central Highlands region of Florida within the Mid-Peninsula Zone of the state. More specifically, it is in the Fairfield Hills physiographic province just south of the Alachua Lake-Cross Valley province (Scott 1992). The Fairfield Hills constitute one of the larger expanses of higher ground in the area. Fairfield Hills is a Pleistocene-age sand ridge that overlies the less permeable Miocene-age sediments of the Hawthorn Group. It is believed to be a beach ridge, a relict Atlantic coastal feature (White 1970).

The southern half of Price's Scrub State Park is generally higher than the northern half. Elevations gradually decrease from a maximum of about 280 feet above mean sea level (msl) in the southeast part of the park to 150 feet above msl in the center of the park at the upper edge of a steep-sided ravine known locally as Brownlee Creek Ravine. The lowest elevations (78-90 feet msl) occur in the northern third of the park at a large sinkhole lake and along the north boundary. Though the northern part of the park is generally lower in elevation, it has a rolling topography and contains a finger of higher land (190 feet msl) that projects into the park from the west (see Topographic Map). Topographic alterations in the park are few, with the most notable being the large borrow pit in the southeastern corner of the property. Other alterations include a short drainage ditch located near the midpoint of the western boundary of the park and some moderately deep firelines that were constructed during the January 2003 wildfire at the southern end of the property.

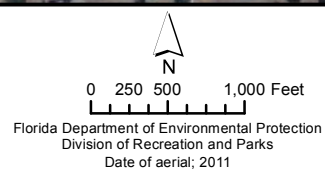
### **SOILS**

According to the general soils map of Marion County, Florida, about 14 different soil types are present in Price's Scrub State Park (see Soils Map). Detailed descriptions of these soils are provided in Appendix. Electra sand strongly correlates with the occurrence of scrub in the park, while Pomona sand correlates with scrubby flatwoods (U.S. Department of Agriculture, Soil Conservation Service 1979).

The soils in the park are organized into three soil associations: Sparr-Lochloosa-Tavares, Lynne-Pomona-Pompano, and Blichton-Flemington-Kanapaha. The Sparr-Lochloosa-Tavares association consists of



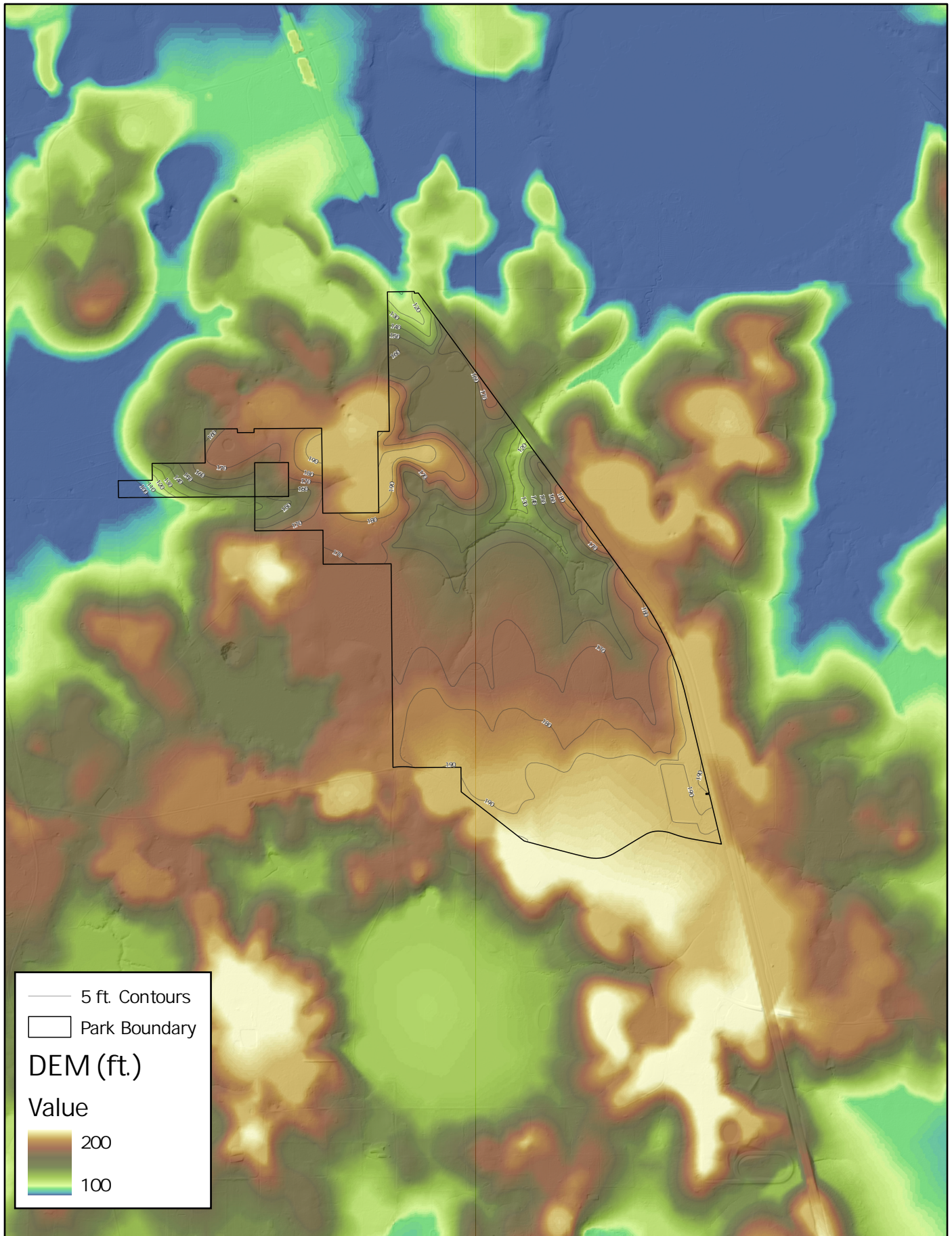
PRICE'S SCRUB



MANAGEMENT ZONES  
MAP







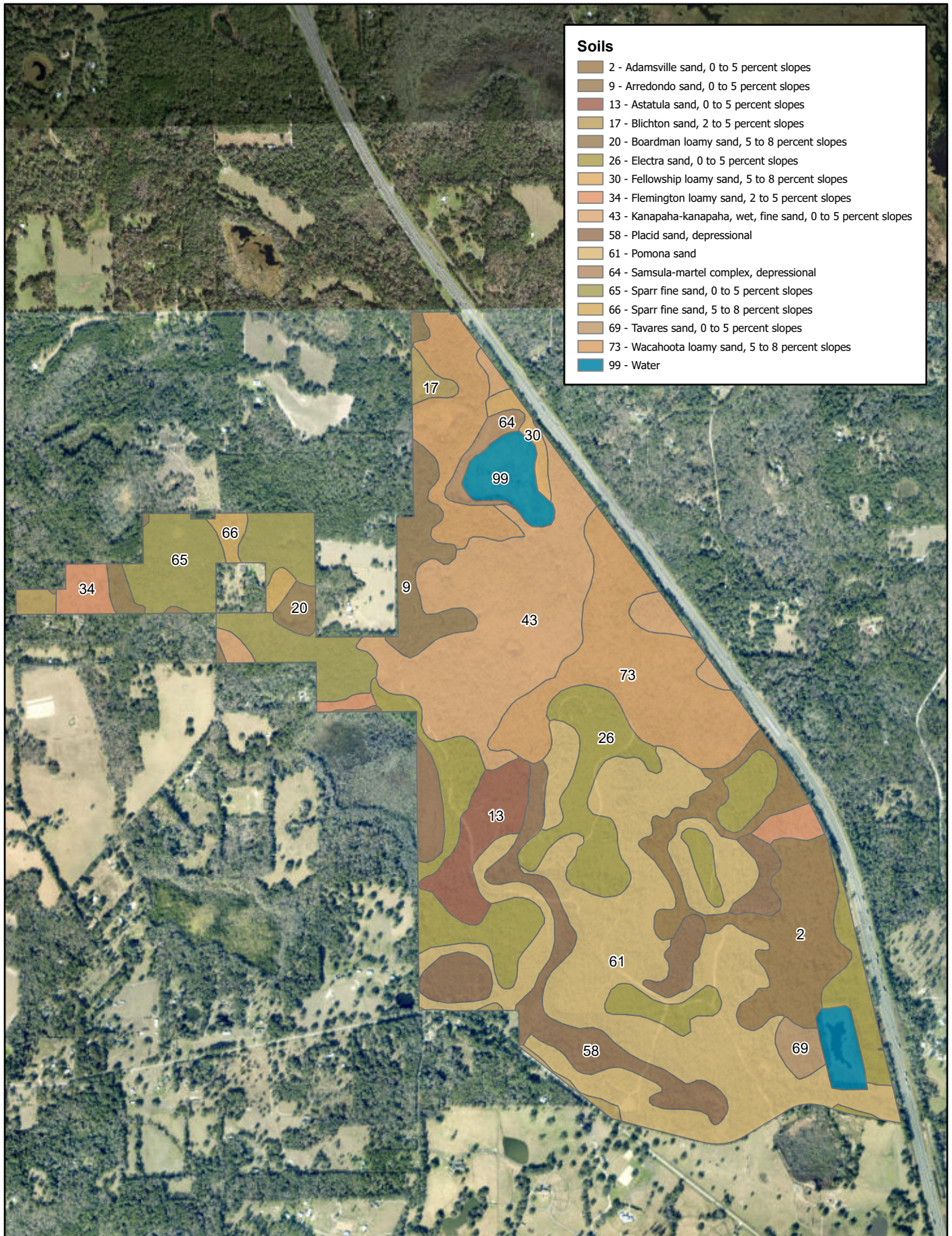
## PRICE'S SCRUB STATE PARK Topography



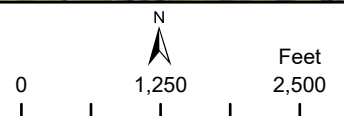
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## PRICE'S SCRUB STATE PARK Soils



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nearly level to sloping, somewhat poorly drained and moderately well drained soils. Some of the soils are sandy to a depth of 20 to 40 inches and are loamy below that, while others are sandy throughout. These soils are typical of upland forests and mesic flatwoods. This soil association occurs in the northern portion of Price's Scrub, especially along Brownlee Creek.

The Lynne-Pomona-Pompano association is prevalent in the southern portion of the park. This association has nearly level, poorly drained soils, some sandy to a depth of 22 to 80 inches and weakly cemented within a depth of 30 inches. Some soils are loamy and clayey in the lower layers, and others are sandy throughout. These soils typically support flatwoods. The Blichton-Flemington-Kanapaha association occurs in the extreme northern and mid-eastern portions of Price's Scrub. This association occurs on nearly level to strongly sloping lands and contains poorly drained soils that are sandy to a depth of less than 20 to more than 40 inches. The soils are loamy or clayey below and are characteristic of uplands in the area.

## **HYDROLOGY**

Price's Scrub State Park contains one moderately large sinkhole lake, known locally as Water Lily Pond, in the northern part of the park, several smaller sinkhole lakes, and a large borrow pit in the southeast corner near Interstate 75 (I-75). The borrow pit may be spring-fed. Seepage streams drain the property, generally from south to north. Smaller, unnamed seepage streams eventually coalesce to form Brownlee Creek, which flows northeasterly through a deep ravine to I-75, then exits the park via a culvert system underneath I-75 and wends its way to Tusawilla Lake near Micanopy.

Water Lily Pond and several small sinkhole lakes are in the northern part of the park. At least 10 depression marshes and several dome swamps are scattered about the property. Other wetlands include baygalls of varying sizes and shapes and a small portion of a large basin swamp that extends onto private property to the west.

Other than the borrow pit, hydrological resources within Price's Scrub State Park are largely intact. Historic aerial photographs indicate that the borrow pit was excavated during construction of I-75 in the 1960s. A culvert reportedly extends from the borrow pit south under Old Hickman Road, which forms the southeastern boundary of the property. A short, east-west oriented drainage ditch is located on the western side of the property, near the north-south midpoint. Based on interpretation of historic aerial photographs, the ditch has probably been in place since at least the late 1930s. Trees now grow along the sides and bottom of the ditch.

Price's Scrub is situated within the Silver Springs Groundwater Basin, but seasonally there may be partial overlap with the Rainbow Springs Basin (Phelps 1994; Lane and Hoenstine 1991). Groundwater resources in the park include the surficial aquifer and the Floridan aquifer. The potentiometric surface for the Upper Floridan aquifer in the park is in the 50 to 55-foot range. Technically, the groundwater and surface waters within Price's Scrub State Park fall under the jurisdiction of the Southwest Florida Water Management District (SWFWMD), the eastern boundary of which follows I-75, a convenient albeit artificial reference line. However, the park's main hydrologic feature, Brownlee Creek, flows easterly beneath I-75 to Tusawilla Lake near Micanopy, which is under jurisdiction of the St. Johns River Water Management District (SJRWMD). Consequently, the park's strongest hydrologic ties are to lands lying within the SJRWMD.

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

- Action 1 – Assess hydrological impairments within the park, including the following: east-west running ditch connected to privately owned wetland on western boundary,
- Action 2 – Assess hydrological erosion on the historic buggy road along the northwest boundary and any topographic alterations caused by heavy equipment use (i.e., road and fire line installation).
- Action 3 - Assess hydrological impacts from historic land use practices on the west side of Water Lily Pond.
- Action 4 – Continue coordination with Florida Department of Transportation (FDOT) to assess any I-75 impacts on the park wetlands.

Price's Scrub State Park is part of the Florida Ridge Watershed and is located on the boundary between SJRWMD and SWFWMD jurisdictions. The property falls within the eastern edge of the SWFWMD, the boundary of which follows I-75 as a convenient jurisdictional boundary. Because the park's main hydrologic feature, Brownlee Creek, feeds into Tuscawill Lake to the northeast, its strongest hydrologic connection is to lands in the SJRWMD.

The Brownlee Creek ravine system and its associated topography within Price's Scrub State Park are the primary features requiring hydrological assessment, protection and restoration. In the drier elevated plateau at the southern end of the property, the hydrologic impairments are associated with historic fire management and public access. Parallel firelines from wildfire management have altered hydrology in localized areas of the scrubby flatwoods, and establishment of the trail/service road/fireline system has resulted in linear spoil piles, erosion and impoundments, which in some places have impacted surface flow. DRP will conduct assessments of these hydrologic impairments to rank and prioritize restoration needs.

In the northern part of the park, the steep ravines of Brownlee Creek and the dramatic change in elevation along the historic buggy road have generated specific hydrologic and erosion concerns that will be assessed by park staff. Aerial photographs from 1949 reveal that the land between Water Lily Pond and the depression marsh to its northwest had once been entirely cleared for agricultural purposes. Additionally, there is photographic evidence that the banks of Water Lily Pond were compromised during construction of I-75, possibly for drainage purposes. These areas will be surveyed and mapped with a specific emphasis on determining possible hydrologic impacts.

The FDOT construction of I-75 in the 1960s adversely affected the hydrology of Price's Scrub, most notably on the east side of the property. In at least two locations, significant erosion and sedimentation are occurring from stormwater runoff discharging from the interstate right-of-way and flowing into mesic hammock and streamlets in the park. DRP staff will review and assess these impacts that resulted from the construction of I-75, as well as probable past impacts of interstate construction on the borrow pit, the adjacent depression marsh, and a referenced spring in that general location. Assessment targets will include stormwater runoff generated along the east side of the park, streamlets contributing to the Brownlee Creek system, and the borrow pit pond located in the southeast corner

**Objective B:** Restore natural hydrological conditions and functions to approximately 15 acres of baygall, depression marsh, mesic flatwoods, and scrubby flatwoods natural communities.

- Action 1 - Install three low-water crossings and one culvert system.



- Action 2 – Rehabilitate to natural grade 0.3 miles of historic fire plow lines.
- Action 3 - Continue to work with FDOT to manage stormwater issues such as erosion and resultant sedimentation from I-75 into the park.
- Action 4 - Protect the northwestern depression marsh from impacts of erosion along Old Buggy Road and resultant sedimentation in the marsh.

DRP will review the footprint of the road/trail/fireline system within the park for possible impacts on hydrology, including obstruction or alteration of surface drainage. The current footprint of this system has three mapped locations that will require hydrologically transparent stabilization to provide continued access for management vehicles, particularly wildland fire engines. In these locations, low water crossings comprised of geo-web and inert materials (e.g., granite gravel) need to be installed to reduce damage to waterways where vehicular access crossings are required. In addition, an eroded streamlet crossing located on a closed road in the park requires culvert installation. This will serve the dual purpose of preventing future erosion and providing access to the dead-end road as a contingency line for fire management. Appropriate actions for restoring topographic and soil disturbances may include closing roads, filling ditches, reshaping contours, rerouting foot traffic and planting native vegetation as needed.

The depression marshes in the park are experiencing encroachment by woody vegetation due to lack of fire and possibly also due to altered hydrology. Offsite trees that are invading the depression marshes should be girdled or felled. The vegetated perimeters of these wetlands may require hand-girdling or felling of trees, or mechanical treatment to lower vegetation height and enable fires to penetrate further into the depression marsh ecotone. Treatments should be planned to prevent or minimize impacts on soils and topography.

## **NATURAL COMMUNITIES**

### **Limestone Outcrop** (not depicted on Natural Communities Map)

Scattered limestone exposures occur in the upland hardwood forest and mesic hammock areas in Price's Scrub State Park. These occur as medium-sized boulders in the uplands and scattered exposures on the banks of Brownlee Creek. Due to the limited size and distribution of the limestone outcrops, they are not depicted on the natural community map for the park. No listed species or non-native invasive species have been found in direct association with the limestone outcrops in the park.

Measures must be taken to prevent runoff and erosion from degrading limestone outcrops, particularly along Brownlee Creek. Mapping limestone outcrops and surveying for any associated imperiled plants will be necessary to ensure their protection.

### **Mesic Flatwoods**

The mesic flatwoods natural community occurs in the southern part of Price's Scrub State Park in association with scrubby flatwoods, scrub, wet flatwoods and baygall. The canopy is dominated by loblolly pine (*Pinus taeda*), slash pine (*Pinus elliottii*) and pond pine (*Pinus serotina*). Scattered sand pines (*Pinus clausa*) grow in the ecotone between the scrubby flatwoods and mesic flatwoods. To date, no longleaf pines have been located in the mesic flatwoods. In some areas, particularly along the southeast boundary (formerly known as Hickman Road), the mesic, scrubby and wet flatwoods have become heavily invaded by oaks, with an expanding canopy of laurel oak (*Quercus laurifolia*) and water oak (*Quercus nigra*). Red maple (*Acer rubrum*), loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia*

*virginiana*) and other tree and shrub species have expanded outward from baygall and wet flatwoods margins into the mesic flatwoods, further reducing light penetration to the groundcover in places. The understory is composed of a mixture of saw palmetto and other species typical of mesic flatwoods in this area of the state, including gallberry, fetterbush, rusty staggerbush (*Lyonia ferruginea*) and wax myrtle (*Myrica cerifera*). Herbaceous cover is sparse but increases along the park trails due to edge effect. The condition of the mesic flatwoods is generally good except for loss of the longleaf pine overstory and overall reduced diversity in the groundcover.

Historical aerial photographs indicate that in 1937 and 1949, the mesic flatwoods were largely intact but with an extremely open canopy. Evidence of cattle grazing in the understory was discernible, but no clearing for concentrated agricultural production was apparent. In the late 1990s, a 400-acre timber harvest removed some of the pine overstory in the mesic flatwoods, but the harvest primarily affected the scrubby flatwoods and scrub. In 2003, a wildfire killed much of the older pine overstory in the mesic flatwoods and resulted in suppression operations which produced moderately deep plow lines in many areas within the mesic flatwoods. Once the state acquired the property in 2002, preparations were made for introducing prescribed fire to the mesic, scrubby and wet flatwoods. A prescribed fire program was initiated at the park in 2012 but has only conducted fires on a few units near the south entrance due to ongoing fuels treatment needs. As conditions improve with additional fuels treatments and fire, longleaf pine will be reestablished in this natural community with planting projects.

#### Mesic Hammock

At Price's Scrub State Park, mesic hammock occurs in close association with upland hardwood forest, sinkhole lake, depression marsh, seepage stream and successional hardwood forest in the north part of the property, and with upland mixed woodland, mesic flatwoods and successional hardwood forest on the east side of the property. In some areas, it is difficult to distinguish among these communities due to decades of fire suppression and previous agricultural clearing. Aerial photographs from 1949 show that approximately 25 acres associated with mesic hammock at the north end of the park were cleared for intensive agricultural operations across four locations. Those areas are now occupied by successional hardwood forest. Condition of the mesic hammock ranges from good in the intact areas to fair in the previously cleared areas.

The mesic hammock canopy in the park is diverse, with large live oaks, swamp chestnut oaks (*Quercus michauxii*), water oaks and sweetgum among the tree species. Drier sites in the mesic hammock also have pignut hickory and southern magnolia in the canopy. The subcanopy contains the aforementioned species, as well as sugarberry (*Celtis laevigata*), loblolly pine, eastern hophornbeam (*Ostrya virginiana*), bluebeech (*Carpinus caroliniana*) and red maple. Shrub strata include subcanopy species as well as dogwoods (*Cornus* spp.), Carolina basswood (*Tilia americana* var. *caroliniana*), buckeye (*Aesculus pavia*) and others. Herbaceous diversity is highest in the moister edges. Species include jack-in-the-pulpit (*Arisaema triphyllum*), birdbill woodoats (*Chasmanthium ornithorhynchum*), woodsgrass (*Oplismenus hirtellus*), ebony spleenwort (*Asplenium platyneuron*) and Cherokee bean (*Erythrina herbacea*). Several vines, including two rare species, angle-pod (*Gonolobus suberosus*) and Florida spiny pod (*Matelea floridana*), have been documented in the mesic hammock as well.

Management of the mesic hammock is closely tied to protection of the seepage stream system. Park staff will work to maintain the quality of the seepage stream system through regular monitoring and stabilization of any erosion problems originating in the mesic hammock. Ground disturbing activities that would affect the populations of angle-pod and Florida spiny pod will be avoided. Several of the non-native invasive plants documented in the park occur in the mesic hammock. These include coral ardisia

(*Ardisia crenata*) and Japanese climbing fern dispersed in the interior of management zones, and Caesarweed, tropical soda apple (*Solanum viarum*) and showy croton found along the road/trail system. The Japanese climbing fern is well established around the margins of the sinkhole lake and depression marsh at the north end of the property. Infestations there are treated regularly to prevent further spread into the mesic hammock. Staff will continue to monitor and treat these species annually to prevent additional dispersal. Areas of successional hardwood forest that were historically mesic hammock will be monitored for recovery of mesic hammock components.

### Scrub

In Price's Scrub State Park, three north/south oriented stands of scrub occur on slightly higher ridges located within the broader landscape of scrubby flatwoods, mesic flatwoods and baygall swales in the southern portion of the property. The most prevalent pine canopy contains a mixture of loblolly pine, sand pine and occasionally longleaf pine. The dense shrub layer includes myrtle oak, sand live oak and Chapman's oak, as well as saw palmetto, fetterbush, rusty staggerbush and Florida rosemary (*Ceratiola ericoides*). Groundcover species are limited in number and distribution, with the greatest concentration occurring along service roads. Species include sandyfield beaksedge (*Rhychospora megalocarpa*), coastalplain chaffhead (*Carphephorus corymbosus*) and several lichens (*Cladonia evansii*, *Cladonia subtenuis*, and *Cladonia leporina*).

Human disturbance of the scrub community is evident in 1949 aerial photographs, with a visible footprint that is likely much older. In 1949, the network of flatwoods and scrub in the southern portion of the park had a distinctly open canopy, with scattered pines at very low density and the appearance of historic or ongoing cattle grazing, which was also verified by longtime local residents. The pine overstory was harvested from the scrub and surrounding areas in the early 1990s (Muller and Associates 2004). Prior to the harvest, aerial photographs indicated that a 30-40% canopy cover existed in both the scrub and wet flatwoods. Following the harvest, loblolly pine and sand pine naturally seeded in, producing an abnormally high density in the scrub canopy. The westernmost stand was especially thick with sand pine. Numerous linear disturbances are apparent in the scrub, ranging from historic trails to more recent Off-road vehicle (ORV) trails and wildfire suppression lines. In January 2003, a wildfire burned through the scrub and surrounding flatwoods. The wildfire was followed in 2008 by a roller chopping operation that treated the westernmost scrub stand and the surrounding scrubby flatwoods. In the fall of 2021, 28 acres of sand pine dominant overstory was harvested to facilitate future fire introduction to the scrub. The isolated patches of scrub in the park are too small and discontinuous to support many scrub endemics. The general condition of the scrub is good to fair.

Mechanical treatment of the shrub layer in the scrub will be necessary to facilitate application of prescribed fire in this community in a manageable way, given the proximity of I-75. In addition, removal of loblolly pine from the overstory through a combination of mechanical treatment and prescribed fire will be necessary.

Further timber management may be appropriate in this community. A service road/trail is already established on a significant portion of the ecotone between the scrub and scrubby flatwoods. This trail system will be assessed for possible relocation to reduce impacts on that highly sensitive transition zone and to allow for more effective application of prescribed fire to the scrub. Management of non- native invasive species in the scrub will occur annually to prevent expansion of the known populations and detect any new occurrences.

### Scrubby Flatwoods

Scrubby flatwoods is the dominant natural community type in the southern half of the park. It is flanked by ridges of scrub on the east and west sides and an area of mesic flatwoods at the south end. This network of flatwoods is bordered primarily by upland hardwood forest and mesic hammock on the north and east sides, and baygall and upland mixed woodland on the south and west sides. The canopy in the scrubby flatwoods consists of scattered loblolly pines and remnant sand pines. A limited number of remnant longleaf pines are also present at a few sites. The highly diverse shrub layer includes scrub oaks such as Chapman's oak, sand live oak and myrtle oak, as well as saw palmetto, wild olive (*Cartrema americana*), gallberry, red bay (*Persea borbonia*), red chokeberry (*Photinia pyrifolia*), fetterbush, rusty staggerbush, tarflower and others. The groundcover is limited in diversity and coverage, but includes bracken fern (*Pteridium aquilinum*), sandyfield beaksedge, bottlebrush threeawn (*Aristida spiciformis*), candyroot (*Polygala nana*), yellow hatpins (*Syngonanthus flavidulus*), broomsedge (*Andropogon virginicus*), coastalplain chaffhead and several lichens (*Cladonia* spp.).

The condition of the scrubby flatwoods ranges from good to fair. As with the scrub, human disturbance in the scrubby flatwoods is evident in the 1949 aerial photographs, with a visible footprint that is likely much older. In 1949, the network of flatwoods and scrub in the southern portion of the park had a distinctly open canopy, with scattered pines at very low density and the appearance of historic or ongoing cattle grazing, which was also indicated by longtime residents. An 18-acre area in the center of the scrubby flatwoods appears to have been used for more intensive agricultural purposes, based on the 1949 aerial photos that show it as having a distinctly different appearance than the surrounding area. The pine overstory was harvested from the scrubby flatwoods and surrounding areas in the early 1990s (Muller and Associates 2004). Following the harvest, loblolly pine naturally seeded into areas of the scrubby flatwoods, giving it an abnormally high density in the canopy.

Numerous linear disturbances are visible in the scrubby flatwoods, ranging from historic trails to more recent ORV trails and wildfire suppression lines. In January 2003, a wildfire burned through the scrub and surrounding flatwoods, causing additional mortality in the remnant pine overstory. Mechanical treatment (roller chopping) of the northernmost 100 acres of scrubby flatwoods was conducted in 2008. An additional roller chopping project was conducted in 2021 on 95 acres of scrubby and mesic flatwoods.

Because the proximity of I-75 makes the use of prescribed fire more challenging than in a less smoke sensitive area, it will be necessary to mechanically treat overgrown sites to lower the fuel structure and open the closed canopy before initiating prescribed burns. The preferred fire return interval for the scrubby flatwoods at Price's Scrub State Park is 6-12 years.

Mechanical treatment to facilitate prescribed fire application has been completed in some areas, and regular use of both these techniques will continue in management of this system. Selective timber management may also be appropriate in this community. Ongoing monitoring and management of feral hogs (*Sus scrofa*), and annual monitoring and treatment of non-native invasive plants including showy crocalaria, rose natalgrass, Caesarweed, and others will occur as they are detected. The imperiled blue butterfly (*Pinguicula caerulea*) has been recorded at one location along a service road through the scrubby flatwoods. This location should be monitored and any management of that section of service road, including disking or widening it as a fireline, should include consideration of that species.

#### Upland Hardwood Forest

The upland hardwood forest is in the northern and eastern areas of the park, typically occurring with mesic hammock, seepage stream and successional hardwood forest. Topographic relief in the northern

areas of upland hardwood forest is extreme in the seepage stream, Brownlee Creek. In this area, the upland hardwood forest resembles that which might be seen in northwestern Florida. The canopy of the upland hardwood forest at Price's Scrub is characterized by live oak, swamp chestnut oak, pignut hickory, sweetgum, southern magnolia and cabbage palm. The shrub layer includes red bay, southern red cedar (*Juniperus virginiana*), sugarberry, bluebeech, sparkleberry, American holly, devil's walkingstick (*Aralia spinosa*), American beautyberry and others. Understory diversity in the upland hardwood forest is highest in wetter areas near the depression marsh sites. Understory species include spring cleavers (*Galium aparine*), variable witchgrass (*Dichanthelium commutatum*), birdbill woodoats, chain ferns (*Woodwardia* spp.), and others.

Numerous vines also occur, including Carolina jessamine (*Gelsemium sempervirens*), smilax species and muscadine grape (*Vitis rotundifolia*). An imperiled species, angle pod, has also been found at multiple locations in the upland hardwood forest.

For the most part, the upland hardwood forest at Price's Scrub is in good to fair condition, with the primary exception being a 50-plus acre historic farm site with intensive agricultural alterations visible on the landscape in the 1949 aerial photograph of the area. That site, originally either upland hardwood forest, upland mixed woodland, or possibly upland pine, is now a successional hardwood area that needs significant restoration activity to return it to a more natural condition. While the other sites cleared for agricultural fields farther north and east in Price's Scrub were visibly returning to a forested cover type in the 1964 aerial photographs, the farm site was still in active agricultural use.

One major concern in managing upland hardwood forest at the park will be to prevent impacts such as erosion from initiating there and spreading downslope and affecting the seepage stream as well. If erosion becomes problematic, corrective measures, including stabilization of disturbed areas, will be needed. Management of non-native invasive plants within this natural community is an ongoing priority. Together, the upland hardwood forest and mesic hammock are the two most heavily invaded natural communities within the park. Coral ardisia, Caesarweed, tropical soda apple, showy rattlebox and others have all become established in the upland hardwood forest at varying levels. In addition, a population of cogongrass (*Imperata cylindrica*) occurs in the upland hardwood forest along I-75. Annual monitoring and treatment of these populations will continue in order to prevent further spread. Feral hogs remain a potential threat to this natural community as well. If a feral hog presence becomes evident, removal efforts will be implemented.

#### Upland Mixed Woodland

The upland mixed woodland community often serves as a transition zone between upland pine or sandhill and adjacent upland hardwood forest or mesic hammock. Like upland pine, it is fire-adapted, has longleaf pine as the dominant pine species, and has a strong presence of southern red oak and mockernut hickory in the canopy, along with scattered sand post oaks. However, upland mixed woodland typically lacks wiregrass as a dominant groundcover, and the oaks and hickories may be co-dominant with the longleaf pines. Being a transitional community, upland mixed woodland is very susceptible to succession to upland hardwood forest when there is a lack of frequent fire. As a result of fire suppression and targeted development, very few intact examples of this community remain in north-central Florida.

Relying on mapped locations of key species such as mockernut hickory and southern red oak, it is evident that at least three areas of upland mixed woodland either occur now or once occurred in the northern and eastern areas of Price's Scrub. Long-term fire exclusion has resulted in the upland mixed



woodland being in generally poor condition and difficult to distinguish from successional hardwood forest and upland hardwood forest without additional extensive survey. At least one location of remnant upland mixed woodland in the park falls within a site that had once been cleared for agricultural purposes, as referenced in an 1895 United States Geological Survey topographic map (Williston quadrangle). This location is also visible in 1937 and 1949 aerial photographs, illustrating the lasting impact of human land use on this natural community type.

When accurate maps of upland mixed woodland occurrence are developed, restoration will commence. Restoration and improvement of the upland mixed woodland community will entail the reintroduction of frequent fire (2-5 year return interval) and the removal of offsite hardwood species. The park will postpone the planting of longleaf pines until the canopy is sufficiently open to allow longleaf seedlings to survive. Annual monitoring and treatment of non-native invasive plants, including coral ardisia, Caesarweed and mimosa (*Albizia julibrissin*), will continue in an effort to prevent further spread. Feral hogs have been documented in the upland mixed woodlands in the southeastern corner of the park. Removal of these animals will continue as they are detected.

#### Wet Flatwoods

The wet flatwoods community occurs in the southeast corner of the park, where it is surrounded by mesic flatwoods and a narrow baygall. As a result of timber harvesting in the early 1990s and a destructive wildfire in 2003, the canopy is relatively open, consisting of slash pine, pond pine and loblolly pine. The shrub layer includes red maple, laurel oak, sweetgum, loblolly bay, sweetbay, gallberry, dahoon holly (*Ilex cassine*), wax myrtle and others. Dominant herbs include netted chain fern, Virginia chain fern (*Woodwardia virginica*), marsh fern (*Thelypteris palustris*), false nettle (*Boehmeria cylindrica*) and maidencane (*Panicum hemitomon*). With the recent reintroduction of prescribed fire, the wet flatwoods community is now in good condition.

DRP is working actively with the Florida Forest Service (FFS) and the Florida Highway Patrol (FHP) to minimize impacts from prescribed fire operations on the adjacent I-75. Regular prescribed fire will initially determine the distribution and relative abundance of currently established pine species.

#### Xeric Hammock

A small area of xeric hammock, approximately 1 acre in size, occurs on the northwestern boundary of the park. This area likely would have been scrub or scrubby flatwoods historically, but it is isolated by a road and cannot be burned safely due to the lack of a boundary fireline in the area and the impracticality of installing one at that location. The area has a canopy of scrub oaks, mainly sand live oak, and there are some sand pines in the overstory. The condition of the xeric hammock is fair.

Due to its small size and position along the park boundary (rather than within the park interior), the xeric hammock will be impractical to attempt restoration to scrub or scrubby flatwoods.

#### Basin Marsh

A basin marsh of 48 acres straddles the west boundary of Price's Scrub State Park. The basin marsh occurs primarily on private property adjacent to the park, but over 10 acres of marsh extend across the boundary line into the park. The condition of the basin marsh is fair.

Historical aerial photographs from 1937 to 1949 show the basin marsh as an open herbaceous wetland, subject to intermittent periods of high water and fire. On the adjacent property, the basin marsh was historically divided by fence lines, but that wasn't evident for the portion lying within park boundaries. A

ditch/canal that was installed in the basin marsh crosses over onto park property and connects to a western streamlet of the Brownlee Creek ravine system. This ditch may have been excavated to help drain the basin marsh for agricultural purposes, and it probably is having an impact on present day hydrological function and woody plant encroachment. The basin marsh has become invaded by hardwoods and pines over the past 60 years, including slash pine, loblolly, coastalplain willow, black gum (*Nyssa sylvatica*), sweetgum and red maple.

DRP will assess the function and extent of the canal/ditch within the basin marsh. DRP will also discuss with adjacent landowners and the FFS the contingency plans concerning fire escaping into the basin marsh and across property boundaries. Initial contact has already been made with the adjacent landowners regarding this topic.

### Baygall

Small pockets and stringers of baygall are scattered through the southern part of the park, associated with seepage streams, mesic flatwoods, scrubby flatwoods, wet flatwoods and swales between the scrub ridges. Baygall canopy species in the park include loblolly bay, swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple and sweetgum. The shrub layer includes canopy species as well as sweetbay, dahoon holly, large gallberry, Virginia willow (*Itea virginica*) and swamp bay. The herbaceous layer is somewhat limited, with lizard's tail (*Saururus cernuus*), chain ferns (*Woodwardia* spp.) and cinnamon fern (*Osmunda cinnamomea*) occurring in most locations. Thick brambles of laurel greenbrier (*Smilax laurifolia*) and muscadine grape are common. A small dome swamp is located at the southern terminus of the southernmost baygall. The baygalls are generally in good condition, but they require more frequent fire to improve overall condition.

Prescribed fires will be allowed to burn into the edges of the baygalls to maintain a natural and diverse ecotone. Non-native invasive plants in the baygalls, including Japanese climbing fern and mimosa, will be monitored and treated annually to prevent further spread.

### Depression Marsh

Depression marshes occur in mesic hammock, scrubby flatwoods and mesic flatwoods. Two types of depression marshes have been found: herbaceous dominated marshes with concentric bands of vegetation and open water bodies resembling small ponds with vegetation only around the outer rim. The largest depression marsh is in the north end of the property, northwest of the large sinkhole lake. The karstic terrain in the northern portion of Price's Scrub indicates that the depression marshes in that area probably originated from sinkholes. Outer bands of vegetation may include a perimeter canopy of sweetgum, red maple, swamp tupelo and water oak, followed by a shrub band of buttonbush, coastalplain willow, elderberry (*Sambucus canadensis*), sawtooth blackberry (*Rubus argutus*) and the imperiled pondspice (*Litsea aestivalis*). Species in the herbaceous layer range from maidencane, blue maidencane (*Amphicarpum muhlenbergianum*) and chalky bluestem (*Andropogon virginicus* var. *glaucus*) to soft rush (*Juncus effusus*) and floating bladderwort (*Utricularia inflata*). Floating aquatic plants occurring in open water areas of some of the depression marshes include duckweed (*Lemna* spp.), Pacific mosquitofern (*Azolla filiculoides*) and water spangles (*Salvinia minima*). Overall, the depression marshes are in fair to good condition, but all require the restoration of fire to improve their condition.

Where possible, the depression marshes should be treated with prescribed fire often enough to restore the natural fire return interval and prevent succession to forested wetlands. The secondary management strategy is to control and eradicate the feral hog population within Price's Scrub. In

addition, the park's one population of pondspice, an imperiled species, occurs along the margin of a depression marsh located in the southeastern part of the park. This marsh needs additional management focus to protect and maintain the pondspice plants in place and to promote recruitment.

#### Dome Swamp

Price's Scrub State Park contains several dome swamps. One is in the southeastern part of the park just north of Old Hickman Road, and two others are associated with drainages on the east and west sides of the park. Relatively small and dominated by an even-aged canopy of swamp tupelo and sweetgum, the southeastern dome swamp is currently in good condition. A second dome swamp is associated with a small seepage stream system that feeds into Brownlee Creek, and a third is in an area of mesic hammock on the east side of the property. Their canopies consist of swamp tupelo, red maple, sweetgum and Carolina ash (*Fraxinus caroliniana*).

Prescribed fires in adjacent fire-maintained natural communities will be allowed to burn through the ecotone into the dome swamps periodically, under conditions appropriate for restoring the natural transition zone and maintaining the natural fire regime essential to dome management. Removal of offsite hardwoods in the dome swamp may be necessary, depending on water level fluctuations and the results of future prescribed burns. Park staff will regularly monitor the dome for the appearance of invasive plant species and remove any found.

#### Sinkhole Lake

A sizable sinkhole lake known as Water Lily Pond (Muller and Associates 2004) is in the northern part of Price's Scrub State Park. This area has karstic features that include the sinkhole lake, some depression marshes that may have originated from sinkholes, and a significant topographic relief associated with the sinkhole lake and seepage stream drainages. Water Lily Pond has concentric bands of vegetation like those around some of the depression marshes within the park. An outer band of shrubs, located in an area subject to alternating periods of inundation, includes red maple, sweetgum, swamp tupelo, dahoon holly, buttonbush, wax myrtle and others. An interior band of emergent and submersed vegetation consists of maidencane, blue maidencane, cattail (*Typha latifolia*), marsh marigold (*Bidens* sp.), floating bladderwort, Pacific mosquitofern and duckweed. A band of sphagnum moss overlying a deep, submerged organic layer separates the vegetative bands from the open water in the center of the sinkhole lake. Several smaller sinkhole lakes are distributed in the northern half of the park within areas of upland hardwood forest, upland mixed woodland and successional hardwood forest. Areas around two of these lakes were largely cleared during the intensive agricultural modifications that were discernible in the 1937 and 1949 aerial photographs.

It is apparent from the aerial photographs that the large sinkhole lake was then dominated by open water. In 2014, that condition had changed dramatically to one in which a mix of low shrubs and herbaceous vegetation had become dominant. It is possible that the hydrology of the lake was altered prior to 1949. An agricultural clearing is visible in aerial photographs taken at that time.

The clearing occupied the entire western border of the sinkhole lake and extended to the large depression marsh just northwest of the lake. It is also possible that construction of Interstate 75 in the 1960s somehow affected the natural hydrology of the lake. Aerial photographs from 1964 reveal that a large cleared area of exposed sand connected the edge of I-75 with the northeast corner of the sinkhole lake at that time. Also, locations along the western and southern edges of the lake appear to have been scooped out or altered, possibly to facilitate drainage away from the interstate. The northern edge of

the lake has a distinct bank which is experiencing erosion. Overall, the condition of the sinkhole lakes ranges from good to fair.

The edges of Water Lily Pond need to be protected from impacts that could accelerate erosion and sedimentation. Increased erosion, particularly on the north bank, could cause a decline in water quality, especially if a karst window is present. Access to most of the sinkhole lakes in the park is currently limited due to trail locations and low public visitation. Protection of the quality and quantity of groundwater and surface water feeding the sinkhole lakes is an additional management consideration. It is possible that, after further assessment, some of the depression marshes at the north end of the park may be reclassified as sinkhole lakes.

Removal of non-native invasive plants from the sinkhole lakes, particularly Peruvian primrosewillow (*Ludwigia peruviana*), should be initiated, with annual follow-up treatment.

### Seepage Stream

The park contains a seepage stream system known locally as Brownlee Creek. Located in the central and northern parts of the property, the system includes several smaller streamlets which drain from south to north and feed into the two main arms of Brownlee Creek. Brownlee Creek eventually passes through a culvert under I-75, then northeast to the southwestern end of Tuscawill Lake. The seepage stream system consists of narrow, mostly clear, tannic-colored streams with sandy bottoms. It follows a twisting, turning course through karst terrain, producing deep cuts that create steep ravines. At the northern end of the park, Brownlee Creek passes through upland hardwood forest and mesic hammock, which are some of the highest quality communities on the property. Based on interpretation of 1949 aerial photographs, the uplands immediately surrounding Brownlee Creek remain largely intact, with agricultural clearing concentrated mainly west of the stream system.

The overall condition of the seepage stream in the park is good. The course of the seepage stream is devoid of vegetation on much of the lower and upper streambanks due to dense shade from the surrounding forests and the rapid flow of water in the stream. The streambanks are fragile and are experiencing erosion in some areas. In one location, it appears that a historic crossing or access point for the stream has resulted in erosion of the western bank. In another location, an old service road crosses one of the streamlets feeding the eastern arm of Brownlee Creek, causing serious bank erosion. Several populations of angle-pod, an imperiled species, occur along the streambank.

In the case of Brownlee Creek, the primary management need is to protect the quality and quantity of water not only entering the seepage stream but also exiting it at Tuscawill Lake. Another key management need is stabilization and protection of the fragile and eroding locations on the streambanks. Streambanks will be surveyed for populations of imperiled plant species, and protective measures will be taken as needed.

### Borrow Area

As clearly seen in 1964 aerial photographs, a large borrow pit was created in the southeast corner of Price's Scrub during construction of I-75. This borrow area evolved into an artificial pond which, according to residents, had open water with a sandy bottom in the 1970s and 1980s and was used for swimming and fishing. By 2014, the borrow area pond had vegetation established around its edges and extending into the interior, and its vegetative cover resembled that of a depression marsh. A shrub band of wax myrtle, buttonbush, coastalplain willow and Peruvian primrosewillow rings the pond, and dense stands of maidencane, blue maidencane, cattail and marsh marigold cover much of the interior. One of

the imperiled bird species documented in the park, little blue heron (*Egretta caerulea*), has been observed at the borrow area pond. Proximity of the pond to the public parking area makes it a convenient destination for some park visitors, and littering has increased in the area.

Populations of Peruvian primrosewillow are known to occur along the pond edges, and those plants will be removed. Feral hogs have been found around the margins of the pond, and ongoing removal efforts will focus on that area.

#### Canal/Ditch

An east-west running ditch on the west side of the park apparently connects basin marsh located on adjacent private property to the west with the seepage stream system to the east that feeds into Brownlee Creek and eventually Tuscahulla Lake. The ditch has been in place for several decades, based on the size of the trees growing from its banks and the fact that it appears on the 1937 aerial photographs. The total length of the ditch is unknown and the portion on the adjacent private property has not yet been explored. In the aerial photographs, the ditch appears to extend well into the central-northern section of the basin marsh, but recent improved LIDAR coverage shows the ditch clearly and it appears on this view to only extend several meters into the adjacent property.

#### Developed

Price's Scrub State Park contains one developed area, which includes a grassy parking lot with a pump house, non-potable water, picnic tables, a kiosk and a single portable restroom. The developed area is bounded by a split-rail fence and is accessible from Highway 320.

Resource management in this developed area will focus on removal of all priority invasive plant species (see Florida Exotic Pest Plant Council Category I and II species: Table 3 in the *Exotic and Nuisance Species* section of this plan). Of particular concern are species that could possibly be introduced through equestrian use (feed, manure, grooming), given the extent of that type of recreational activity in the park. Thus far cogongrass and natalgrass have both been found and controlled adjacent to the trailhead. Ongoing maintenance of the site and all future considerations for developed areas within the park will prioritize proper stormwater and wastewater management and evaluate compatibility of the developed site with prescribed fire management in adjacent natural areas.

#### Road (not depicted on Natural Communities Map)

Price's Scrub State Park contains one main, northwesterly running, unpaved road along with several smaller side trails that serve as multiuse recreational trails and service roads/firelines. The primary road, Trail A, has been augmented with offsite fill material taken from coastal spoil piles in central Florida. This has resulted in the introduction of offsite shell material along the road corridor. A total of 8.7 miles of road/trail/fireline are established. A historic stagecoach road, located along the northwest boundary of the park, is heavily eroded in places. Only a portion of the stagecoach road extends onto park property. It has been closed to public use, though it continues to be a powerline right of way and easement for adjacent landowners. It will require significant stabilization and restoration for service road access to resume there. However, since the trail has been interrupted by a pond that has held water consistently since 2017, this section will continue to be a service road and easement but has been removed from the trail coverage.

The south boundary of the park east of the visitor parking area partially follows the centerline of an old, abandoned paved road. DRP does not have any plans to maintain that road as anything other than a mowed firebreak and service road.

Road management will take into consideration the designation of the road as multiuse recreational trails. The ownership of the old stagecoach road will be reviewed and verified, and consideration will be given to implementing stabilization measures for the portion located within the park.

#### Successional Hardwood Forest

The successional hardwood forest areas in the park are all the result of clearing for agricultural purposes prior to 1937. Six distinct areas in the northern part of the park, ranging in size from six acres to 50-plus acres, were fully or partially cleared of native vegetation. Three of the areas were clearly used as cropland sites, the largest of these being a historic farmstead whose footprint was apparent on an 1895 United States Geological Survey topographic map, the Williston quadrangle.

The purpose of the other three clearings seems to have been either for cropland or for intensive cattle grazing, with some plantation pine establishment possible as well. By 1964, only the 50-acre site was still in agricultural production, and the other five appeared to be reverting to forested cover types. By 2011, all six sites contained fully established closed-canopy forests dominated by fast growing pioneer hardwoods such as laurel oak, water oak and/or sweetgum, with some remnant pines as well. These woodlands are either natural habitats (i.e., upland mixed woodland, upland pine or mesic hammock) that have been invaded due to lengthy fire suppression, or old fields that have succeeded to hardwood forest. The subcanopy and shrub layers of these forests are often dense and dominated by smaller individuals of the canopy species. Successional hardwood forests can contain remnant species of the former natural community such as beautyberry, muscadine, sparkleberry and others. Restoration of these forests will require mechanical tree removal and the reintroduction of fire. Where characteristic herbaceous species have been extirpated, reintroduction via seed or containerized plants may be necessary to restore natural species composition and community function.

Substantial effort will be required to restore pyrogenic natural communities in areas that were converted to agricultural use and later succeeded to successional hardwood forest. These areas will not be targeted for restoration until a more extensive survey has been completed to determine the original natural community type in each location. There are indications that restoration of the mesic hammock and upland hardwood forest canopy and shrub layers has been occurring naturally over time. However, at least two of the successional hardwood forest areas originally contained some amount of upland mixed woodland species. Achieving the desired future condition of upland mixed woodland in these two areas will require a significant amount of additional thinning, planting and restoration effort. Selective timber management may be appropriate in this altered land cover type. Additional plant surveys will be conducted in the park, mainly targeting key indicator species that may help determine what natural communities were originally in the various successional hardwood forest sites.

**Objective A:** Complete a comprehensive floral and faunal survey and update the park's baseline plant and animal list.

- Action 1 - Update the park's animal list using targeted surveys, with special emphasis on invertebrates, fish, reptiles and amphibians.
- Action 2 - Update the park's plant list through ongoing survey efforts.

A significant number of floral and faunal species have been added to the park list since approval of the park's previous management plan, but additional work is needed, particularly for fauna. DRP staff will



cooperate with other agencies and volunteer groups in completing surveys designed to target under-documented taxa.

**Objective B:** Within 10 years, have 450 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 67 and 207 acres annually.
- Action 3 - Conduct mechanical fuel treatment activities on 225 acres of fire-type habitat (mesic flatwoods, scrubby flatwoods, scrub, successional hardwood forest).

Price's Scrub State Park contains 584 acres of fire-type natural community, including scrub, flatwoods and upland mixed woodland natural communities that require burning for long-term maintenance of biodiversity and ecological health. Several wetland communities such as baygall, dome swamp and depression marsh are influenced by fire in the landscape. Fire is particularly important along ecotones with fire-dependent communities. The maintenance of natural ecotones between these communities is important for plant and animal species that are adapted to those transitional areas. The use of hard firebreaks such as roads and disked lines along ecotones is discouraged for this reason, and some sections of road along scrub ecotones may require rerouting or abandonment and restoration to restore seamless connections and natural conditions.

Snags (dead standing trees) provide important habitat for a variety of wildlife species in fire-type communities. Woodpeckers use snags for nesting and roosting purposes, and the cavities created by woodpeckers provide homes for other birds (e.g., southeastern kestrel, eastern bluebird, and screech owl) and for some mammals as well (e.g., flying squirrel). Snags that do not pose a hazard to facilities or visitors should be left standing as wildlife habitat. Prescribed burners should identify snags that would likely provide suitable habitat for cavity nesters and protect those snags from igniting during fires to the extent possible. Snags that are smoldering after a fire should be extinguished without delay. That management approach would enhance fireline security and lessen the likelihood that snags near the fireline would torch and have to be felled. The protection of snags in parks demonstrates a high degree of sensitivity toward natural resource management.

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.

Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Wet Flatwoods	8.58	3-5
Mesic Flatwoods	162.17	2-5
Scrubby Flatwoods	190.94	3-10
Upland Mixed Woodland	49.83	2-10
Scrub	37.02	7-15
Basin Marsh	11.41	2-20
Depression Marsh	14.97	3-5
Baygall	83.85	25-100
Successional Hardwood Forest	25.17	2-10

Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Annual Target Acreage	67.66 to 206.95 acres/year	

The park is divided into zones primarily based on existing firebreaks and roads. Pre-burn preparation is an important consideration when applying fire to areas that have had fire excluded for long periods. This is particularly true at Price's Scrub State Park due to the fuel types, the history of fire exclusion and the proximity of Interstate 75. Perimeter and internal firebreaks should be maintained and established according to agency policy. They should provide for adequate park protection and safe prescribed fire application. The complexity of the burn unit, including the structure and height of the fuel within the zone and the receptiveness of fuels adjacent to the zone, should be considered when preparing firebreaks. Installation of new firebreaks will be in accordance with agency standards and policy as written in the Fire Management Standard.

Mechanical treatment of fuels adjacent to the fireline may be needed in order to burn a zone safely, particularly in scrub and flatwoods. Perimeter and primary contingency lines need to be wide enough for defense and to allow a type-6 fire engine to move safely down the line. When installing or widening firebreaks, vegetation along the boundary/fence line should generally be removed first to allow the perimeter break to function as such. An exception to this may be where wetlands, large native trees or protected plant species are present along the line but pose no threat to line defense. If any additional widening of a fireline is needed, it can be done on the zone side of the firebreak.

Fire season and fire-return intervals are both critical components of a fire regime. In most cases, the goal is for all fires to be conducted during the natural lightning season, given staffing and weather constraints. However, dormant season fires are favorable for initial fuel reduction, when values at risk require highly specific wind directions, and as a last resort to prevent the zone from going into backlog status. The scrub and scrubby flatwoods should ideally be burned in the growing season, but dormant season burning may be required for fuel reduction and desired fire weather conditions. Humidity and live fuel moisture content may need to be in the lower range to ensure that fire carries well and there is combustion of the shrub layer in scrub, successional hardwood forest and fire-excluded, oak-invaded natural communities. To achieve a successful scrub or scrubby flatwoods burn, it may also be necessary to mow the woody vegetation to decrease fuel heights and reduce shading of fuels beneath the canopy.

Consideration of duff moisture content in wet flatwoods, mesic flatwoods and baygall ecotones is important. Field checks of moisture content in duff layers throughout the zone should be conducted prior to a burn to ensure moisture content is adequate. This is critical for prevention of overstory pine loss due to smoldering of deep duff, as well as for smoke management on the adjacent I-75. Accumulated duff should be burned off gradually, not exceeding an average of 1-2 inches of depth with each burn. When possible, the mesic and wet flatwoods zones at the park should be burned during the growing season after initial fuel reduction burns have been completed in each zone. The depression marshes should be incorporated into prescribed fires with the surrounding natural communities, but only under conditions which prevent muck and duff deposits from igniting, to reduce risks of prolonged smoke production.

Fire management within upland mixed woodland in the park will focus on reducing the total amount of successional and offsite hardwood cover, encouraging native herbaceous groundcover and restoring the community to an earlier successional stage. Girdling, tree-cutter mowing and herbiciding of invading oaks may be required to facilitate restoration of this community. To avoid any potential nontarget impacts on critical remnant non-target species including post oak, southern red oak and mockernut hickory, it is recommended that soil-active herbicides not be used in upland mixed woodlands. It is important that the results of management practices be monitored. Post-burn evaluations that include review of established photo points should be conducted to assess progress toward restoration goals and to determine if adaptations to management practices are needed.

Based upon the fire return intervals and acreage figures for the natural communities within the park, optimally at least 67 acres should be burned each year to maintain the natural communities within their target fire return intervals. Park staffing, funding and weather conditions will influence the ability of the park to keep natural communities within their optimal intervals. Not all zones will be burned within the maximum recommended fire return intervals, while others may be burned more frequently. Some fire-type acres will be unavailable for burning until conditions within the management zone allow.

**Objective C:** Conduct natural community/habitat restoration activities on 50 acres of upland mixed woodland natural community.

- Action 1 - Develop/update a site-specific restoration plan.
- Action 2 - Implement the restoration plan.
- Action 3 - Remove offsite hardwoods in upland mixed woodland sites through a combination of chemical and mechanical means.
- Action 4 - Initiate groundcover restoration by introducing prescribed fire and following up with seeding or planting of appropriate species.

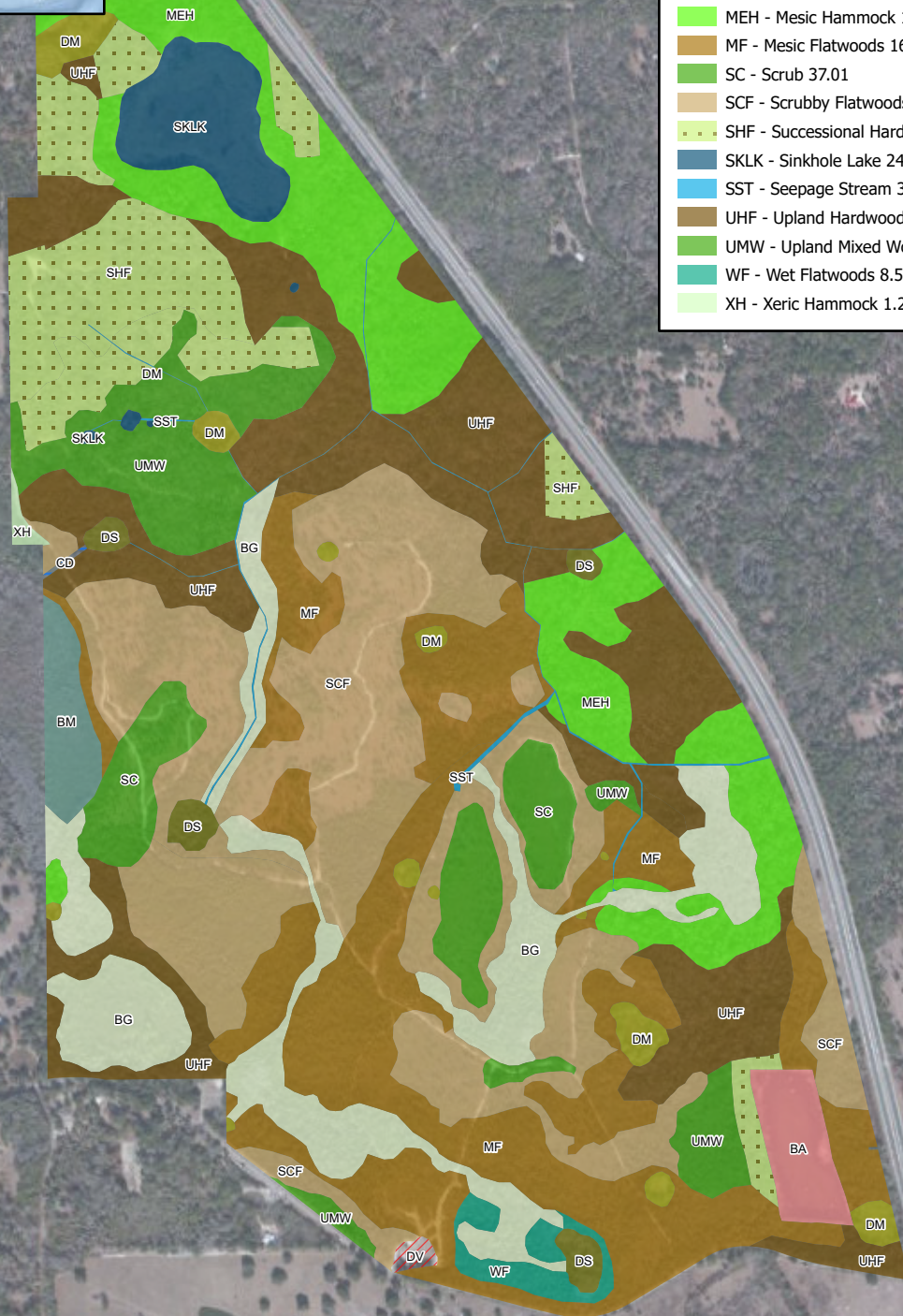
An upland mixed woodland restoration plan will be developed for the park to guide yearly restoration work. Surveys of remnant vegetation and the locations of key indicator species indicate that several upland mixed woodland sites may have been cleared for production agriculture prior to 1949. These areas have been heavily invaded by offsite hardwoods. Boundaries of historic upland mixed woodland will be mapped through intensive survey and ground-truthing. Once remnant areas are mapped, aggressive removal of water oak, laurel oak, sweetgum and other offsite and/or invading tree species will begin.

Laurel oak and water oak now occur in such thick densities that the groundcover has become completely shaded. Historic agricultural practices also significantly impacted groundcover diversity and distribution. These areas will require special focus to restore a natural fire regime and to recover the remnant groundcover species that are being suppressed. In some areas, a tree cutter or girdling may be useful in reducing the stems of offsite hardwoods. Herbicide treatments may be needed to control resprouting from rootstocks. Options for removal include contract treatments of large areas or small-scale treatments using park staff and volunteers. The selected option will depend upon mapped community boundaries and future funding levels and will influence the number of acres removed on an annual basis. A removal plan for these areas will be developed and implemented as part of the annual work plan. Following hardwood removal, groundcover plantings will be required to augment the very sparse native ground cover already existing. Maintenance of the restored areas will require application of prescribed fire within the recommended fire return interval. Long-term monitoring will be accomplished as part of the burn photo point process.

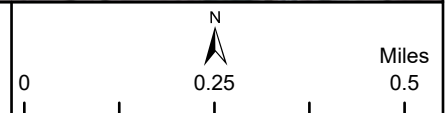


### Natural Communities (in Acres)

BA	- Borrow Area	12.85
BG	- Baygall	83.85
BM	- Basin Marsh	11.41
CD	- Canal/ditch	0.28
DM	- Depression Marsh	14.98
DS	- Dome Swamp	7.77
DV	- Developed	1.45
MEH	- Mesic Hammock	108.73
MF	- Mesic Flatwoods	162.19
SC	- Scrub	37.01
SCF	- Scrubby Flatwoods	190.93
SHF	- Successional Hardwood Forest	92.76
SKLK	- Sinkhole Lake	24.87
SST	- Seepage Stream	3.23
UHF	- Upland Hardwood Forest	150.40
UMW	- Upland Mixed Woodland	49.83
WF	- Wet Flatwoods	8.57
XH	- Xeric Hammock	1.21



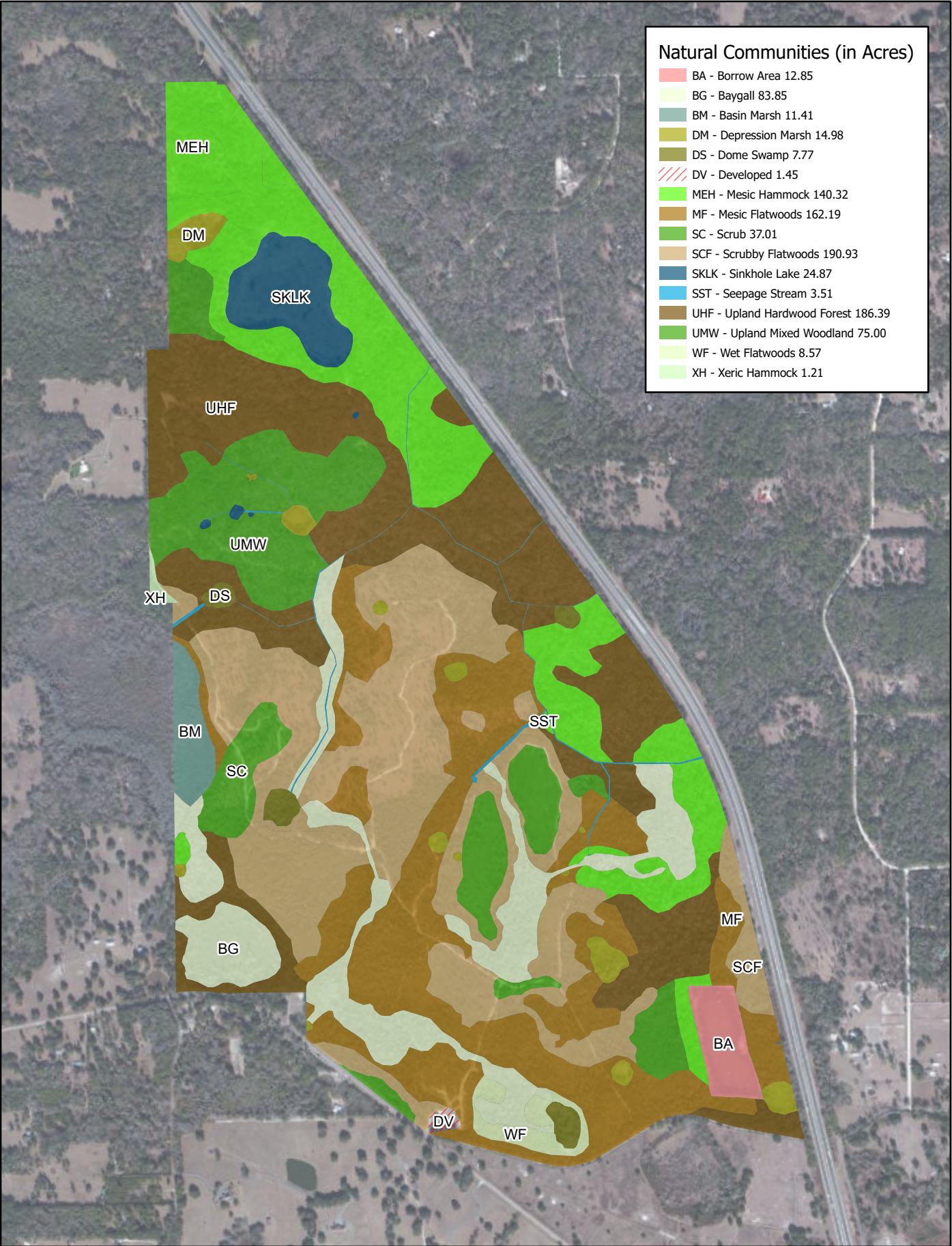
## PRICE'S SCRUB STATE PARK Natural Communities - Existing Conditions



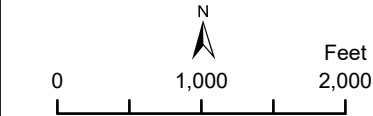
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PRICE'S SCRUB STATE PARK  
 Natural Communities - Desired Future Conditions



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



**Objective D:** Conduct natural community/habitat improvement activities on 75 acres of mesic flatwoods and scrubby flatwoods natural communities.

- Action 1 – Develop/update a site-specific restoration plan.
- Action 2 – Manage competing understory vegetation to allow for successful establishment of longleaf pine tubelings.
- Action 3 – Under-plant longleaf pine tubelings in natural densities in 75 acres of mesic and scrubby flatwoods.

Portions of the mesic flatwoods and scrubby flatwoods in the south part of the park could be improved by under-planting with longleaf pine tubelings at low densities (100 to 200 trees per acre). Appropriate initial measures to manage competing understory vegetation should be considered to ensure seedling survival. The longleaf pine canopy has been almost entirely lost there because of historic human activities in the flatwoods, including apparent cattle grazing, broad scale thinning, localized clearing, previous timber harvests, and wildfires. The pond pine, loblolly pine, sand pine and slash pine that have replaced the longleaf pine now form a mixed canopy. Photo points will be established in the project area to monitor project success over time.

### **IMPERILED SPECIES**

Pondspice, an endangered shrub, occurs in one depression marsh on the southeast side of the park. In 2016, over 150 individuals were documented on the outer rim of the depression marsh and on the ecotone extending into the adjoining flatwoods. This represents an increase from the 80 individuals documented in 2005. Pondspice is known to be affected by laurel wilt disease. In 2008-09, the Florida Natural Areas Inventory (FNAI) conducted a survey in the park and found 68 individual plants with evidence of laurel wilt disease in 20% of the population (Surdick and Jenkins 2009). This population of pondspice has also been affected by feral hog rooting in the past. Ongoing management of feral hogs and careful application of prescribed fire in the depression marsh and surrounding flatwoods will be critical to protection of this population.

Blueflower butterwort, a perennial carnivorous herb that is listed as threatened, occurs in one known location in the park. In 2005, three individuals were located on a ruderal wet service road bordering the scrub and scrubby flatwoods in the southwestern part of the park. Surveys in 2012 and 2016 were unable to locate the population again. Additional surveys should be conducted to determine if the species is still present at that location, and if more individuals occur in other areas of the park. Preservation of blue butterwort in the park will require restoration of fire to the scrub and scrubby flatwoods and protection of the known site along the road from disturbance during road maintenance or during fireline widening or maintenance.

Two species in the milkweed family, Florida spiny pod and angle pod, have been recorded in the park. Eight individuals of the endangered Florida spiny pod have been located in the mesic hammock in the northeastern part of the property. Plants were detected while in flower, allowing species confirmation. Multiple individuals (100-plus) of the threatened angle pod were discovered in the upland hardwood forest and mesic hammock communities, close to the seepage stream and within the ravine system. Management of these species will require maintaining the quality of the upland hardwood forest and

seepage stream communities by preventing erosion and by conducting additional surveys to map their distribution on the property.

One imperiled reptile, the threatened gopher tortoise (*Gopherus polyphemus*), has been documented within the park. Burrows have been recorded in scrubby flatwoods and mesic flatwoods, mainly along the road/trail system where the habitat is more open. Any future surveys for gopher tortoise should be conducted utilizing the line transect distance sampling methodology adopted by the Florida Fish and Wildlife Conservation Commission (FWC)(Smith et al 2009).

Two imperiled bird species have been documented in the park: little blue heron (*Egretta caerulea*) at the borrow pit in the southeastern corner of the property and swallow-tailed kite (*Elanoides forficatus*) foraging over the pine flatwoods.

Additional surveys for imperiled invertebrates should be conducted to determine if any are present on the property.

Imperiled Species Inventory						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Tiers
	FWC	USFWS	FDACS	FNAI		
Angle pod <i>Gonolobus suberosus</i> (= <i>Matelea gonocarpus</i> )			LT		2, 10	Tier 1
Pondspice <i>Litsea aestivalis</i>			LE	G3?, S2	1, 4, 7, 10	Tier 2
Florida spiny pod <i>Matelea floridana</i>			LE	G2, S2	1, 10	Tier 1
Blueflower butterwort <i>Pinguicula caerulea</i>			LT		1, 4, 10	Tier 2
<b>REPTILES</b>						

Imperiled Species Inventory						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Tiers
	FWC	USFWS	FDACS	FNAI		
Gopher tortoise <i>Gopherus polyphemus</i>	ST	C		G3, S3	1,6,7,10,13	Tier 1
<b>BIRDS</b>						
Little blue heron <i>Egretta caerulea</i>	ST			G5, S4	4	Tier 1
Swallow- tailed kite <i>Elanoides forficatus</i>				G5, S2	1	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.

**Objective A:** Update baseline imperiled species occurrence list.

- Action 1 - Implement annual bird survey at Price's Scrub State Park.
- Action 2 - Monitor invertebrate and groundcover species in restoration areas annually.

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

- Action 1 - Monitor gopher tortoise, using the line transect distance sampling method to first establish baseline population numbers.
- Action 2 - Monitor two imperiled bird species at the tier 1 level, the little blue heron and swallow-tailed kite, which have been documented at the park during regular management activities and seasonal bird count surveys.

Initial surveys that identified locations of gopher tortoise burrows along park trails were conducted in 2005. Anecdotal observations of burrow locations were made from 2005 to 2015, but a full survey has not been completed. Additional surveys of suitable habitat will be conducted using line transect distance sampling methodology currently identified by FWC as the appropriate method for obtaining accurate population measurements.

Ongoing bird surveys by staff and volunteers may expand the list of imperiled birds observed at the park. Efforts will focus on recording observations of known imperiled species while expanding the park's bird list.

Local residents have submitted occasional reports of Florida black bear (*Ursus americanus floridanus*) sightings in the park. Park staff will follow up on bear reports as they are received and attempt to gather additional documentation.

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

- Action 1 - Develop monitoring protocols for two selected imperiled plant species, including pondspice and Florida spiny pod.
- Action 2 - Implement monitoring protocols for four imperiled plant species, including the two listed in Action 1 above as well as blueflower butterwort and angle pod.

Pondspice has been documented in one location in the park, bordering a depression marsh in the southeast corner of the property. In 2016, approximately 150 individuals were observed. A written protocol will be developed to monitor population status. The protocol will include census of individual plants, reproduction, feral hog damage and response to the initiation of prescribed fire in the surrounding mesic and scrubby flatwoods.

Florida spiny pod has been observed at one location in upland hardwood forest in the northeastern part of the park. In May 2005, eight individual plants were observed in flower. Surveys will be conducted to look for additional individuals and further document the population extent. A written monitoring protocol will be developed for this species.

One population of blueflower butterwort was observed in the park in 2005. At that time, three individual plants were recorded on the edge of a woods trail/service road bordering the scrubby



flatwoods and scrub in the southwestern part of the park. Follow-up surveys in 2012 and 2016 were unable to relocate those individual plants. Additional surveys will be conducted to search for this species in the known location and in other similar locations. It is possible the individual plants were impacted by trail maintenance or recreational or management use, varying microsite hydrology, or ongoing fire suppression that has altered site suitability to support the species. In order to avoid potential impacts on remnant plants, additional intensive survey will be conducted before reintroducing fire to the site or conducting any fireline preparations.

Angle pod has been documented in the northeastern part of the park, associated with upland hardwood forest and mesic hammock areas around Brownlee Creek and associated streamlets. These sites need protection from disturbance and erosion. A survey of the Brownlee Creek ravine and streamlet system will be conducted, and, concurrent with that, there will be additional survey for angle pod and other possible site-appropriate listed plants. In 2005, over 100 individual angle pod plants were observed across seven different locations. Additional locations were mapped between 2005 and 2015. Ongoing surveys for this species will occur concurrently with other land management activities.

## **INVASIVE SPECIES**

Price's Scrub State Park has a moderately low population of non-native invasive plants. However, the species that are known to occur on the property are among the more challenging to manage due to prolific reproduction, vectoring by wildlife and recreational users, and other dispersal mechanisms. A comprehensive invasive plant survey was first conducted in 2012. Annual monitoring, treatment of all known infestations and additional survey work have all taken place since then and will continue.

The most widespread invasive plant in the park is Caesarweed. With populations concentrated along the road/trail system, Caesarweed is undoubtedly being spread within the park by equipment, wildlife and equestrian users due to the tendency of its seeds to adhere to clothing, hair and equipment. Other non-native invasive species concentrated along the road/trail system include showy crotalaria and tropical soda apple.

Several invasive species are spreading from the road/trail system farther into the natural communities of the park. This is particularly true in the northern end of the property, which has had a long history of human presence and associated disturbance. Coral ardisia (*Ardisia crenata*) and Japanese climbing fern (*Lygodium japonicum*) occur in multiple locations within the northern management zones. Japanese climbing fern also continues to be detected in wet drainages throughout the park, including in scrubby flatwoods and scrub areas.

Non-native invasive trees including Chinese tallowtree (*Triadica sebifera*), mimosa (*Albizia julibrissin*), Chinaberrytree (*Melia azedarach*), camphortree (*Cinnamomum camphora*) and wild citrus (*Citrus* spp.) occur in scattered locations in the park, all likely introduced through the historic human presence in the area.

Cogongrass (*Imperata cylindrica*) has become established on the eastern boundary of the property, adjacent to an infestation on the I-75 right-of-way. Rose natalgrass occurs along the edge of a trail in the mesic flatwoods. Bahiagrass (*Paspalum notatum*) has been utilized as groundcover in the road/trail system and in the grass parking lot at the south end of the park. It has been monitored and treated on trails to prevent possible spread into intact natural habitat. Peruvian primrose willow is well established around the artificial pond at the southeast corner of the property.

Treatment of ardisia in the northern portion of the park should be a priority, as well as annual treatment of cogongrass. Treatment focus should be on Category I and II species as recognized by the Florida Invasive Species Council. Previous control efforts included treatment of hairy indigo (*Indigofera hirsuta*). This species should not be treated except perhaps in specific situations such as during restoration projects. This species is not a Category I or II, and, in addition, seeds in the soil seed bank can continue to germinate for many years, possibly decades, making control almost impossible.

Feral hogs have been managed at Price's Scrub State Park since 2006. Trapping and removal of hogs has been conducted by volunteers and staff and, more recently, by contractors. The hog population in the park has been kept at a low level, but constant vigilance is necessary to prevent population growth and the accompanying threat to native and imperiled species. Pondspice (*Litsea aestivalis*) has been directly impacted by feral hog rooting in the past, and it should be protected from any future impacts if at all possible.

In 2002, the red bay ambrosia beetle (*Xyloborus glabratus*) was first detected in the United States in southeast Georgia. The beetle carries the fungal pathogen (*Raffaelea lauricola*), which it transmits to red bay trees (*Persea borbonia*) and other species in the Lauraceae family, causing laurel wilt disease and death. The beetle and its associated pathogen spread rapidly, and by 2005 it had appeared in Duval County. In 2009, the disease was discovered in Marion County and it began to kill red bays throughout the county. Since 2009, red bay ambrosia beetles (and laurel wilt disease) have spread throughout most of Florida and into many of the neighboring states.

The pattern of infection in Florida is for trees to be top-killed. Many trees continue to re-sprout from their roots afterwards. It may be that members of the Lauraceae family will continue to survive in shrub form as the remnant root systems continue to re-sprout. At this point, much remains unknown about the long-term impacts of this disease on red bays and other members of the Lauraceae family.

Invasive Plants			
Species Name Scientific Name - Common Name	FLEPPC Category	Distribution	Zone ID
Ardisia crenata - Coral ardisia	I	Scattered Dense Patches	PRS-2A
Cinnamomum camphora - Camphor-tree	I	Single Plant or Clump, Scattered Plants or Clumps	PRS-1A, PRS-3
Imperata cylindrica - Cogon grass	I	Scattered Plants or Clumps	PRS-2C, PRS-3
Ludwigia peruviana - Peruvian primrosewillow	I	Scattered Plants or Clumps	PRS-3
Lygodium japonicum - Japanese climbing fern	I	Single Plant or Clump	PRS-3
Melinis repens - Natal grass	I	Linearly Scattered	PRS-3
Solanum viarum - Tropical soda apple	I	Scattered Plants or Clumps	PRS-1A
Urena lobata - Caesar's weed	I	Scattered Plants or Clumps	PRS-1A, PRS-1B, PRS- 1C, PRS-1D, PRS-2B

**Objective A:** Annually treat 42 gross acres of invasive plants.

- Action 1 - Annually develop/update an invasive plant management work plan.
- Action 2 - Implement annual work plan by treating 42 gross acres in the park annually and by continuing maintenance and follow-up treatments as needed.

An initial survey for non-native, invasive plants at Price's Scrub State Park was conducted in 2004 and 2005. At that time, cogongrass, coral ardisia, Caesarweed and mimosa were the invasive species identified in the park. From 2005 to 2016, additional targeted surveys identified eight more FLEPPC-listed category I and II species at Price's Scrub. Each year, all known locations are treated through in-house efforts. Each year, however, additional locations of those species have been discovered through survey work and land management activities.

DRP staff will develop a management plan for non-native invasive plants at Price's Scrub. This plan will formalize the management actions that have been in place on the ground from 2012 through 2016. The plan will include maps of infested areas by management zone and will determine priorities for treatment. The plan will provide guidance for subsequent annual work plans. The number of acres of invasive plants treated per year is likely to vary depending on the status of established infestations and any new infestations that might occur or be detected during the management plan period. It is more important to keep this relatively non-impacted property free of expanding invasive plant populations than it is to put efforts into densely infested properties elsewhere.

Priority should be given to Florida Exotic Pest Plant Council (FLEPPC) Category I and II species when treating invasive plant species in the park. Non-invasive non-native plants that occur within the park will be removed whenever possible (e.g., century plant (*Agave americana*)). A plan and schedule should be developed that complies with DRP standards for scouting and mapping invasive plants in every zone within the park. Areas that have sources of particularly aggressive species such as ardisia will need to be scouted more frequently. Finding new populations of invasive plants before they become established will help prevent larger infestations from occurring and reduce the cost and effort needed to control them. All known and newly detected locations of invasive plants should be GPS located and mapped. Established, up-to-date control technologies will be utilized for each species treated.

**Objective B:** Develop and implement measures to prevent the introduction and spread of invasive plants into the park.

- Action 1 - Develop signage for the trailhead that educates users about the ability for horses and people to spread Caesarweed and other invasives while using the park.
- Action 2 - Continue to inspect and clean all equipment that is brought into the park to implement both day-to-day and project-based restoration and improvement efforts.

Invasive plants are often introduced or spread to natural areas by equipment, within fill dirt or mulch, and in ornamental plantings. DRP has implemented a protocol to inspect equipment and fill dirt and ensure that whatever equipment or materials enter the park are free of any reproductive parts of non-native invasive plants. In addition, the park should ensure that equipment does not move from an infested area within the park to a non-infested park area without thoroughly cleaning the equipment.

Given that the primary recreational use of the park is equestrian, a targeted educational campaign should be developed to help this user group reduce their contribution to the spread of species along the trails, particularly Caesarweed and tropical soda apple.

**Objective C:** Implement control measures on one nuisance and invasive animal species in the park.

- Action 1 - Remove feral hogs as needed when populations are detected.

The two primary non-native animal species of concern at Price's Scrub State Park are feral hogs and nine-banded armadillos (*Dasypus novemcinctus*). Control activities will focus on areas where feral hogs and nine-banded armadillos are causing the most damage. One of the areas of greatest concern is the depression marsh that has the only known population of pondspice in the park. This location has been impacted by feral hog rooting in the past, and it should be closely monitored for this type of damage in the future. Park staff, volunteers and contractors will actively remove feral hogs and armadillos from the property. Beginning in 2005, feral hogs have been trapped and removed from the park whenever populations are located. There have been previous reports of feral dogs and feral cats on the property. When these animals are located, they will be captured and removed, if possible, and deposited with the county animal control facility.

## **CULTURAL RESOURCES**

### **Prehistoric and Historic Archaeological Sites**

Price's Scrub State Park lies within the north-central Florida archaeological area (Milanich 1994). Twenty-one archaeological sites and one resource group are recorded in the Florida Master Site File (FMSF) for the park, ranging from the Paleoindian period (10,000-8,000 B.C.) to the early 20<sup>th</sup> century. Twenty-one of the sites have prehistoric components, one has a historic component, and one has both prehistoric and historic components (Dunbar and Newman 2005). The majority of the sites appear to be from the Archaic period (8,500-1,000 B.C.) and most consist of lithic scatter.

During the Spanish colonial period, the Price's Scrub property would have been in borderland wilderness along the Spanish mission chain. However, it would have also been near some of the significant frontier sites of the First Spanish Period, including the Richardson site and Rancho de la Chua, and it was in the vicinity of the DeSoto expedition route. The greatest amount of historical activity in Price's Scrub likely took place during and following the Second Seminole War in 1835. Located between two Seminole War forts, Fort Micanopy and Fort Drane, Price's Scrub may have been the site of a military road connecting the two (Dunbar and Newman 2005). In addition, the 1895 Williston quadrangle map depicted a farmstead within Price's Scrub, which is likely the site of a 50-plus acre agricultural field still visible in aerial photographs from 1937-64.

Sixteen of the known sites at Price's Scrub were identified in an archaeological survey conducted in 1974 (Milanich 1974). Of the 16 sites, the most extensive was MR00189, which is located at the north end of the property. Milanich noted that this site was significant because of the density of scatter, the expansive period of site occupation and the intactness of strata, the combination of which would provide a rare opportunity for possible further elucidation of artifact sequencing in the Archaic period in north-central Florida. Milanich recommended further archaeological investigation at the site. However, when archaeologists from the Conservation and Recreational Lands (CARL) Archaeological Program,

Bureau of Archaeological Research, conducted an inspection of the site in 2005, they concluded that further testing was unnecessary (Dunbar and Newman 2005).

Three co-located sites (MR00184, MR00185, and MR00186) are associated with a highly disturbed area within the park, the borrow pit site. However, an area adjacent to the borrow pit has been identified as a possible site of in situ Paleoindian occupation and was recommended for additional survey and testing for that reason (Milanich 1974).

The prehistoric/historic site (MR00193) was initially reported by Milanich as lacking a house, but the 2005 survey of the property by CARL archaeologists identified scattered remnants (red brick and limestone cobbles) of a structure depicted on the 1895 Williston 15-minute quadrangle map of the area (Dunbar and Newman 2005).

Six additional sites were identified during the 2005 archaeological survey of Price's Scrub State Park (Dunbar and Newman 2005). However, portions of the property (central and west-central areas) were inaccessible during the survey period due to significant hurricane damage and wind-throw. An additional survey may be needed in those areas.

Prehistoric site MR03283 has some ceramic components among the lithic scatter found in a road cut and along a powerline corridor through the park. CARL archaeologists postulated that the pottery sherds were most likely representative of the Alachua culture but could also be of Woodland origin (Dunbar and Newman 2005). Collectively, the prehistoric sites within the park may be eligible contributors to a National Register district. Significant additional exploration, however, would be needed to confirm.

Resource Group MR03289, Old Buggy Road, is a late 19<sup>th</sup>-century road that is depicted on the 1895 quadrangle map of the area. Portions of this road are still in use. The road lies partially within Price's Scrub State Park and partially on adjacent private property. Archaeologists have noted similarities between the Old Buggy Road as it cuts through steeply sloping terrain on the property and old tram roads that were constructed in the late 1800s in phosphate mining areas just west of Price's Scrub (Dunbar and Newman 2005).

Most of the sites are currently in fair to good condition. Some looting apparently occurred historically, and, in 2017, looting activity was observed by park staff. Many of the prehistoric sites at the park are relatively undisturbed. However, a borrow pit created during construction of Interstate 75 appears to have caused significant disturbance to one group of sites (MR00184, MR00185 and MR00186), and historic road and fireline construction has caused additional disturbance to some other sites. Site MR00189, for example, has a history of disturbance but retains intact strata below the disturbance layer. Therefore, protection from further disturbance is highly important. In addition, significant erosion is occurring on Old Buggy Road (MR03289).

Currently, the primary threats to archaeological sites in the park are disturbances associated with roads/firebreaks and feral hog rooting, as well as incidental collection by park visitors as they encounter exposed artifacts.

Immediate management recommendations will focus on protection and preservation of the cultural sites. All sites should be visited on a regular basis to ensure protection from looting, feral hog damage, erosion and trail impacts. Although the feral hog population in the park has been kept at a low level, even single hogs can cause significant damage to archaeological sites, so constant vigilance is warranted.



Park staff will devise and implement a protocol for scheduling site visits and for monitoring and documenting any changes in the condition of the cultural sites. Attempts should be made to secure funding for additional archaeological surveys in the park. Meanwhile, park staff should be aware of the possibility of encountering undocumented sites when exploring less visited parts of the property. As vegetation changes over time in response to management practices, additional cultural resources may become exposed.

Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
MR00184 Hickman Prairie Northeast #22	Prehistoric/possible Paleoindian and Early Archaic	Archaeological Site	NE	F	P
MR00185 Hickman Prairie Northeast #23	Prehistoric/possible Paleoindian and Early Archaic	Archaeological Site	NE	F	P
MR00186 Hickman Prairie Northeast #24	Prehistoric/Middle Archaic - possible Paleoindian and Early Archaic	Archaeological Site	NE	F	P
MR00187 Simonton Ridge #25	Prehistoric/believed to be Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	F	P
MR00188 Simonton Ridge #26	Prehistoric/believed to be Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	F	P
MR00189 Simonton Ridge #27	Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	G	P
MR00190 Simonton Ridge #28	Prehistoric/probably Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	F	P
MR00191 Simonton Ridge #29	Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	F	P
MR00192 Simonton Ridge #30	Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	F	P
MR00193 Simonton Ridge #31	Prehistoric/Historic	Archaeological Site	NE	G	P
MR00194 Simonton Ridge #32	Prehistoric/Unspecified	Archaeological Site	NE	F	P
MR00195 Simonton Ridge #33	Prehistoric/Unspecified	Archaeological Site	NE	F	P

Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
MR00196 Simonton Ridge #34	Prehistoric/believed to be Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	G	P
MR00197 Simonton Ridge #35	Archaic, 8500 B.C.-1000 B.C.	Archaeological Site	NE	F	P
MR00198 Simonton Ridge #36	Prehistoric/Unspecified	Archaeological Site	NE	P	P
MR00199 Simonton Ridge #37	Prehistoric/Unspecified	Archaeological Site	NE	P	P
MR03279 Prices Scrub 1	Prehistoric/Probably Middle Archaic or later	Archaeological Site	NE	F	P
MR03280 Prices Scrub 2	Prehistoric/Probably Middle Archaic or later	Archaeological Site	NE	F	P
MR03281 Prices Scrub 3	Prehistoric/probably Middle Archaic or later	Archaeological Site	NE	F	P
MR03282 Prices Scrub 4	Prehistoric/probably Middle Archaic or later	Archaeological Site	NE	F	P
MR03283 Prices Scrub 5	Prehistoric/possibly Woodland or Alachua A.D. 1250 - A.D. 1600	Archaeological Site	NE	F	P
MR03289 Old Buggy Road/ Stagecoach Road	Nineteenth century American, 1821-1899; Twentieth century American, 1900-present	Resource Group	NE	F	P

**Objective A:** Assess and evaluate all recorded cultural resources in the park.

- Action 1 - Complete 22 assessments/evaluations of archaeological sites and the resource group.

The primary threats to archaeological sites in the park include ground disturbance along roads and firebreaks, erosion, feral hog rooting and incidental collection by park visitors as they encounter

exposed artifacts. Excavation of the borrow pit during construction of I-75 appears to have caused significant disturbance to one group of sites (MR00184, MR00185, and MR00186).

If a comprehensive evaluation is required at any site, it will be conducted by a professional archaeologist. There are no historic structures in the park.

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

- Action 1 - Ensure all known sites and groups are recorded or updated in the Florida Master Site File.
- Action 2 - Conduct Phase 1 archaeological survey for one priority area identified by predictive model or other previous study.
- Action 3 - Develop and adopt a Scope of Collections Statement.

Although no predictive model has been completed for Price's Scrub State Park, the property has received relatively extensive scrutiny from archaeologists, including Milanich (1974) and Dunbar and Newman (2005). All known cultural sites are currently recorded with the FMSF. If additional sites are found, they will be documented and submitted to the FSMF as well.

Milanich has recommended that site MR00189, located at the north end of the park, receive additional archaeological investigation. However, archaeologists Dunbar and Newman had a different opinion when they evaluated the site in 2005 and concluded that further testing was unnecessary. Nevertheless, since Milanich considered the site to be significant, an additional survey of MR00189 may be in order. Other sites may also warrant additional investigation, particularly those that Dunbar and Newman were unable to access in 2005 due to post-hurricane impacts such as toppled trees and debris.

Attempts should be made to secure funding for additional archaeological surveying in the park. Meanwhile, park staff should be aware of the possibility of encountering undocumented sites when exploring less visited parts of the property.

Currently, Price's Scrub State Park does not maintain any collections. Nevertheless, the park should develop a Scope of Collections Statement. This statement should describe the focus of the park and establish clear guidelines for acquisition or acceptance of collection items if the decision is eventually made to have a collection. Having a Scope of Collections does not mean that the park must acquire or accept items for a collection. It merely guides the development of any collection and the acceptance of donations to the park.

**Objective C:** Bring 3 of 22 recorded cultural resources into good condition.

- Action 1 - Design and implement regular monitoring programs for 22 cultural sites.
- Action 2 - Create and implement a cyclical maintenance program for each cultural resource.

Park personnel occasionally visit cultural sites in Price's Scrub State Park during the normal course of operations. Establishment of a formal monitoring process, however, would generate baseline information that could be used as a standard of comparison in guiding future management of sites. To that end, park staff will develop a simple, repeatable protocol for tracking changes at the 22 sites, including a procedure for recording concerns and needed actions. Baseline photographs to be used for comparison purposes should be part of the protocol. Photographs would need to be retaken only if it

became apparent that conditions had changed at any of the sites. Sites should be monitored at least once annually.

Most of the known sites in the park are in fair condition with the exception of MR00189 and MR00193, which are in good condition, and MR00198 and MR00199, which are in poor condition. To elevate the condition of MR00198 and MR00199 from poor to fair, each site will need to be stabilized to prevent further deterioration from erosion. In addition, the Old Buggy Road (MR03289) is experiencing increased erosion and measures to stabilize the road should be identified and considered. A portion of Old Buggy Road is located outside park property, and any action taken to stabilize the site will require coordination with property owners along the west boundary. Protection of all sites from additional disturbance or looting is very important.



## LAND USE COMPONENT

### VISITATION

Price's Scrub State Park, situated in a scenic area of gently rolling hills and woodlands under rural preservation zoning by Marion County, preserves one of the northernmost occurrences of scrub natural communities in Florida and one of the most biodiverse areas in the county. These unique natural features attract hikers, cyclists and equestrians to the park's 9.5-mile-long trail system. The trails wind through sandy flats in the southern portion of the park and rolling topography in the northern half, providing visitors with the opportunity to explore a changing landscape. The park also represents an important part of proposed future connections between other conservation lands in the region, including the Marjorie Harris Carr Cross Florida Greenway, Paynes Prairie Preserve State Park, Lochloosa Wildlife Conservation Area and Goethe State Forest. The park is ideally suited for day-use hiking, cross-country bicycling and equestrianism. With major restoration needs, it is years from realizing its potential for offering a well-curated network of trails. The significance of the park as a biodiverse aquifer recharge site, although already apparent, will become much more pronounced as the scrub and scrubby flatwoods restoration progresses.

#### **Trends**

Attendance at Price's Scrub State Park is typically highest in the late winter and spring, with peak visitation occurring in March and April. Attendance is lowest during the late summer between August and September. Heat, humidity, late summer insects and comparatively mild winter weather are most likely responsible for this visitation pattern.

### EXISTING FACILITIES AND INFRASTRUCTURE

Price's Scrub State Park has one access point, located off County Road 320 on the southwest boundary of the property. The park's main trailhead, which consists of a portable toilet and a 1-acre grass parking lot, is located at this access point.

#### **Facilities Inventory**

<i>Main Trailhead</i>	
Portable Toilet	1
Unpaved parking area	1
<i>Trails</i>	
Multi-Use Trails (mileage)	9.5

### CONCEPTUAL LAND USE PLAN

#### **Detailed Conceptual Land Use Plan Objectives**

Two use areas at Price's Scrub State Park are listed below for improvements to be implemented within the 10-year planning cycle. Specific plan details are available in the next section.

### **Entrance/Southside Trailhead**

**Objective: Enhance trailhead entrance through infrastructure additions and improvements.**

**Actions:**

- Construct two new picnic pavilions.
- Replace existing portable restroom with a small permanent facility.
- Redesign parking area.

Currently, facilities at the trailhead are limited to an unpaved grass parking area and a portable restroom. To better serve visitors, a small permanent restroom facility with potable water should be constructed at approximately the same location as the existing portable restroom and kiosk; sufficiently separated from both County Road 320 and the edge of the natural tree line. The parking area should be stabilized and organized for space efficiency, avoidance of erosion and separation of user groups (i.e., hikers/cyclists from equestrians) to minimize the occurrence of user conflicts at staging areas. For example, one portion of the parking area may be reserved and designed for horse trailers while another portion for hikers/cyclists.

In addition to the formalization of parking and construction of a permanent restroom and picnic pavilions, general aesthetic enhancements are recommended for the entrance and trailhead.

### **Trail Improvements**

**Objective: Maximize the visitor experience by providing better trail connectivity and interpretation.**

**Actions:**

- Design a parkwide network of trails.
- Include interpretive information at the trailhead and designated points along proposed trails.
- Create and implement a sign plan for upgraded wayfinding markers and interpretation along 9 miles of existing shared-use trail.

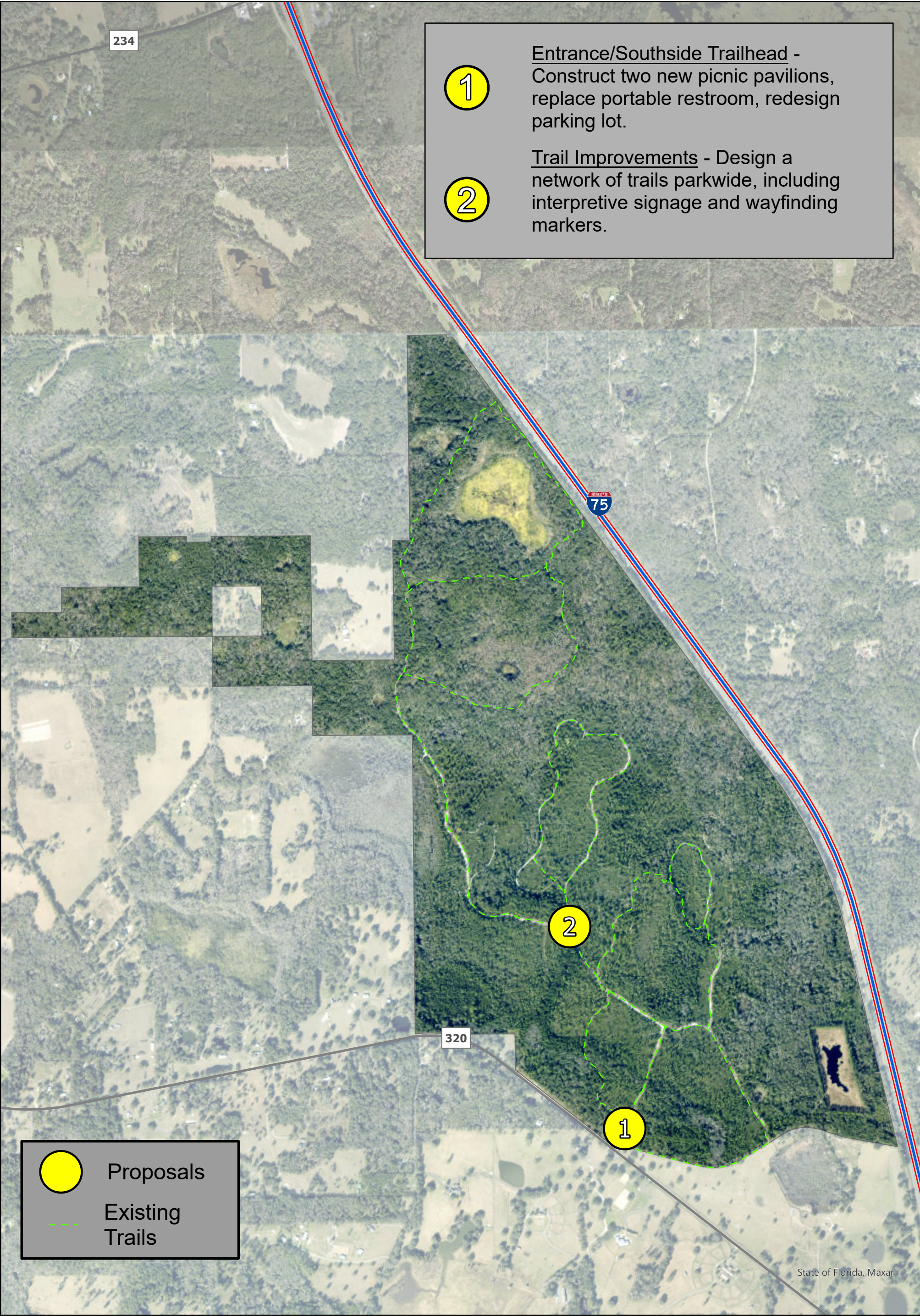
The existing trail network at Price's Scrub State Park requires aesthetic and experiential improvement, as several trails lead to dead ends rather than forming loops and other trails adhere to management roads and firebreaks. In its current condition, primary emphasis of the park is on intensive restoration of the scrub and scrubby flatwoods. For the purposes of effective and safe fire management, the management roads, which are used as firelines, are especially wide and frequently disked, characteristics that are phase-appropriate but poorly suited for the visitor experience. Upon reaching natural community maintenance conditions, the width and management impacts of many of the service roads can be reduced while still providing safe and effective fireline criteria and better serve equestrian preference. Clear delineation and separation of meandering single-track hiking and bicycling trails should be developed accordingly. Such trails should traverse the diverse natural communities of the park, reach topographic points of interest and amount to multiple interconnected miles. Wayfinding and interpretation are also needed to orient visitors at the trailhead and along trails.

Discrete shade shelters may be incorporated into the trail system. In some cases, natural shade – especially with restoration of canopy – may be preferable to constructed amenities. Such sites may be paired with subtle interpretive signage. Interpretive content should address and contextualize the extensive restoration of the park, diversity of natural communities within the relatively small acreage of the unit, and the role of this sandy substrate landscape in aquifer recharge.

### **OPTIMUM BOUNDARY**

The optimum boundary includes the Florida Forever Carr Farm project to the northwest. Additional Carr family parcels have been included to the west of the park. Acquisition of these properties will protect additional natural and cultural resources, provide additional recreation opportunities, provide connectivity for wildlife and improve park operations and management.





**1** Entrance/Southside Trailhead - Construct two new picnic pavilions, replace portable restroom, redesign parking lot.

**2** Trail Improvements - Design a network of trails parkwide, including interpretive signage and wayfinding markers.

 Proposals

 Existing Trails



# Price's Scrub State Park

## Conceptual Land Use Plan

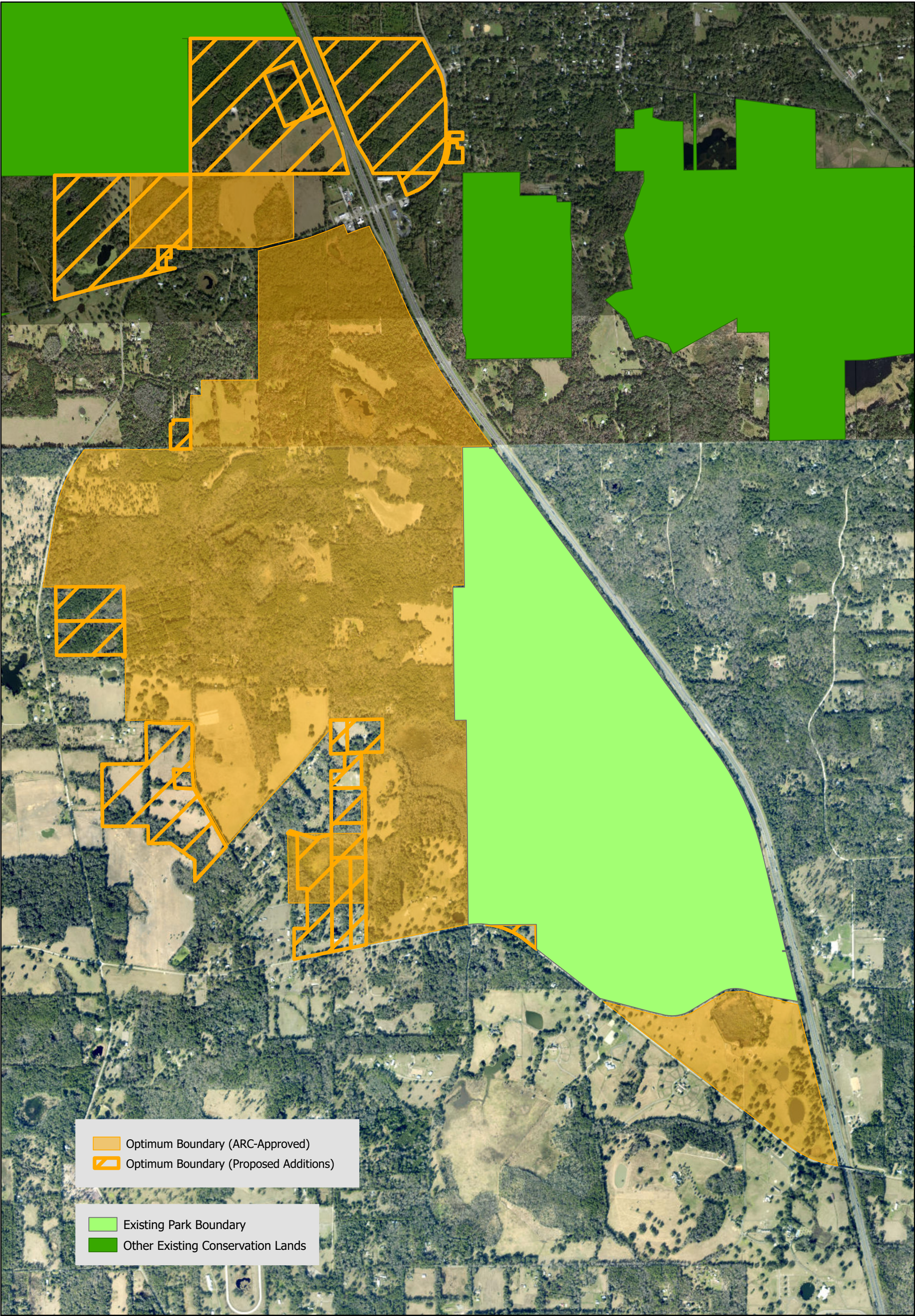
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 Optimum Boundary (ARC-Approved)

 Optimum Boundary (Proposed Additions)

 Existing Park Boundary

 Other Existing Conservation Lands



**Price's Scrub State Park**  
Optimum Boundary Map

