FANNING SPRINGS STATE PARK
Park Chapter

SUWANNEE RIVER REGION

Suwannee River

WANNEE CONSERVATION AREA

YELLOW JACKET CONSERVATION AREA

NATURE COAST STATE TRAIL

19 27 98

WAYSIDE PICNIC AREA ENTRANCE

MAIN ENTRANCE

WAYSIDE PICNIC AREA

Restroom

Storage

Dock

Pavilions

EVENT AREA

Stage

Entrance Station

Staff Residences

Cabins

Cabins

SUCCESSIONAL HARDWOOD FOREST

UPLAND MIXED WOODLAND

Pier

Concession Bldg.

Restroom

Fanning Spring

PICNIC AREA

Floating Dock

Education Bldg.

OLD FANNIN RD

UPLAND HARDWOOD FOREST

ALLUVIAL FOREST

Little Fanning Spring

FLOODPLAIN SWAMP

Nature Trail

Log Cabin

MESIC HAMMOCK

ALLUVIAL FOREST

FLOODPLAIN SWAMP

UPLAND HARDWOOD FOREST

SUCCESSIONAL HARDWOOD FOREST

TO OLD TOWN/ CROSS CITY

TO CHIEFLAND

Shop (Nature Coast State Trail)

PARK FEATURES
- Park Boundary
- Structures
- Paved Park Roads
- Stabilized Park Roads
- Unstabilized Park Roads
- Parking Lots
- Walkways
- Entrances
- Trails

SURROUNDING LAND COVER
- Forests
- Wetlands
- Agriculture
- Trails

N W E S

FANNING SPRINGS STATE PARK

LEVY COUNTY, FLORIDA

0 300 600 Feet

INTRODUCTION

LOCATION AND ACQUISITION HISTORY

Fanning Springs State Park is located in Levy County (see Vicinity Map). Access to the park is from U.S. Highway 19/98/27. The Vicinity Map also reflects significant land and water resources existing near the park.

Fanning Springs State Park was initially acquired on Dec. 3, 1993, with funds from the Conservation and Recreation Lands (CARL) program. Currently, the park comprises 198.37 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on March 10, 1997, the Trustees leased (Lease No. 4142) the property to the Division of Recreation and Parks (DRP) under a 50-year lease. The current lease will expire on March 9, 2047.

Fanning Springs 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 multiple-use management activities would not be appropriate as a means of generating revenues for land management.

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. 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 Fanning Springs State Park is to conserve and protect the natural value of Fanning Springs for the benefit of the people of Florida. The park was acquired to protect the water quality of these first-

and second-magnitude springs and to provide Floridians and visitors with opportunities for exceptional public resource-based outdoor recreation.

Park Significance

- Fanning Springs and Little Fanning Springs, first- and second-magnitude springs respectively, and the Suwannee River, an Outstanding Florida Water. Approximately two-thirds of a mile of Suwannee River shoreline is contained within the park.

- Nine natural communities exist within the park, providing important habitat for a variety of imperiled species. The springs and river provide habitat for the West Indian manatee, Gulf sturgeon and Suwannee cooter, while the uplands support gopher tortoise.

- The park contains an abundance of archaeological sites, representing periods of Florida's prehistory and history from Paleoindian, the Seminole Wars and the Civil War to agriculture and recreational activities during the late 19th and early 20th centuries.

- The park serves as a recreational hub for residents, visitors and users of the Suwannee River Wilderness Trail and the Nature Coast State Trail. It provides exceptional opportunities for swimming, picnicking, boating, cabin lodging, primitive camping and wildlife viewing.

Central Park Theme

Beyond the dark edge of a cypress swamp, electric blue waters of Fanning Springs State Park lead to scenic vistas along the historic Suwannee River.

Fanning Springs State Park is classified as a state recreation area in the DRP unit classification system. In the management of a state recreation area, major emphasis is placed on maximizing the recreational potential of the unit. Preservation of the park's natural and cultural resources, however, remains important. Depletion of a resource by any recreational activity is not permitted. In order to realize the park's recreational potential, the development of appropriate park facilities is undertaken with the goal of providing facilities that are accessible, convenient and safe to support public recreational use or appreciation 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 the DEP Office of Greenways and Trails.

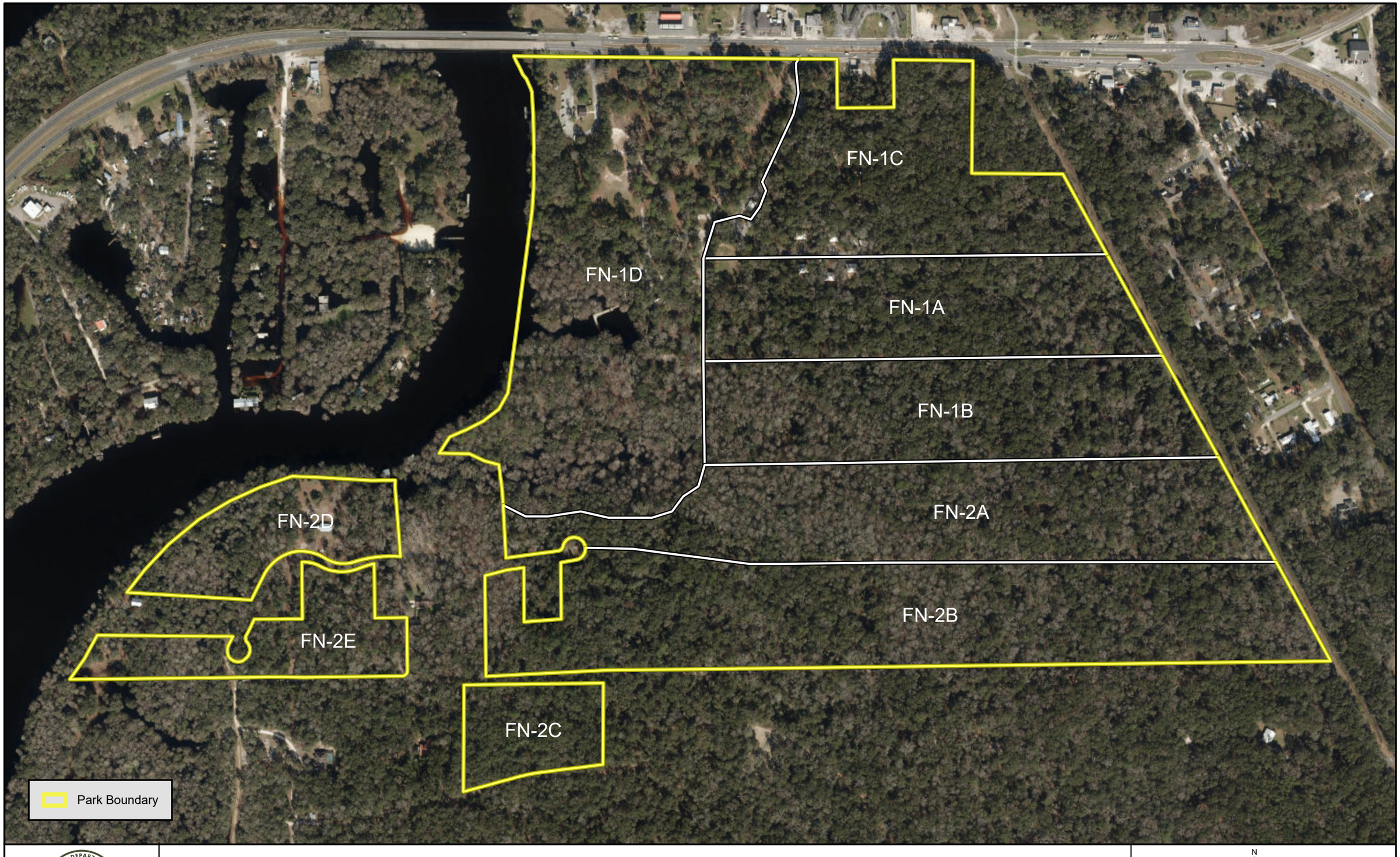
All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by DEP. The park is adjacent to the Big Bend Seagrass Aquatic Preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

PARK ACCOMPLISHMENTS

- Met all annual burn goals.
- Met invasive plant removal goals.
- Actively and successfully removed feral hogs and continues to do so.
- Improved ADA accessibility in the main picnic area.
- Refreshed cabins annually. Futons are being added to improve accommodation.

RESOURCE MANAGEMENT COMPONENT

Fanning Springs State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Known Cultural Resources**
FS-1A	19.8	Y	Y
FS-1B	22.46	Y	Y
FS-1C	21.05	Y	N
FS-1D	44.04	N	Y
FS-2A	28.22	Y	Y
FS-2B	37.81	Y	Y
FS-2C	5.72	Y	Y
FS-2D	8.85	N	Y
FS-2E	8.69	N	Y



FANNING SPRINGS STATE PARK
Management Zones

N

0 200 400 Feet 800

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

FANNING SPRINGS STATE PARK

0 200 400 800 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
DEM Courtesy of USGS

TOPOGRAPHIC MAP

TOPOGRAPHY

Fanning Springs State Park lies within the Gulf Coastal Lowlands, a physiographic division of the Northern Geomorphic Zone of Florida. Characteristic features of the Gulf Coastal Lowlands include Pleistocene era marine terraces of variable thickness, limestone exposures, and remarkable karst topography (Fernald and Purdum 1998). Stream valleys that cut through the lowlands contain alluvial deposits formed during the late Pleistocene. Tertiary age limestone may be exposed along the stream channels. Lower reaches of the valleys probably have been entrenched in limestone bedrock since the last significant rise in sea level. Further from the river, the lowlands mature into a karst plain heavily laden with numerous large sinkholes that capture and rapidly transport surface runoff directly into the Upper Floridan aquifer.

Two geomorphic zones located just east of the Gulf Coastal Lowlands, namely Bell Ridge and Waccasassa Flats, are both of some importance to the Fanning Springshed, a description of which appears in the Hydrology section below.
Waccasassa Flats is a high elevation plateau with low permeability, a characteristic that gives rise to numerous wetlands and streams whose waters flow westward off the flats, often funneling into the Upper Floridan through numerous small swallets. Bell Ridge is a Pleistocene-age beach ridge consisting of sandy overburden underlain with clastic Miocene sediments (Puri and Vernon 1964), with an elevation of about 70 feet above mean sea level (msl) and with very little surface drainage.

Fanning Springs State Park is situated on the Pamlico Terrace, which is of Pleistocene origin. Topographic relief within the park is slight and slopes are gradual. Elevations range from less than five feet msl in the floodplain swamp along the Suwannee River to a maximum of about 32 feet msl at the eastern boundary of the park. The park contains numerous karst features including springs, limestone outcrops, solution pipes and sinkholes.

Prior to state acquisition of Fanning Springs in 1993, the natural terrain on the property had experienced numerous alterations. The steep slopes above the main spring and spring run had become seriously eroded due to intense recreational use, which eventually caused an unnaturally high accumulation of sediments within the spring and spring–run stream. Significant topographic alterations had also occurred near the second major spring on the property, Little Fanning Spring, in the form of limestone excavations at two different sites. One of the sites, a pit approximately 20 feet deep and 15 feet wide, lies immediately above Little Fanning. The other site, located west of the Little Fanning headspring and north of its spring run, consists of a series of pits as deep as the previously described one but covering a much larger area. Apparently, the pits were dug during the Civil War period to extract a low grade of iron ore from the limestone. Refinement of this “bog iron” took place at an offsite location.

Alterations of natural topography also took place in an area south of Little Fanning Spring where several small home sites had been cleared on the primary levee of the Suwannee River before the state acquired portions of the property. To provide reliable access to the sites, developers had to construct several short causeways across floodways of the Suwannee River. Other intrusions included raised drain fields, underground electrical cables, and at least three aboveground electrical service panels. Several small culverts provided for limited drainage through the causeways. Nevertheless, causeway fill materials and other infrastructure elements continue to modify surface hydrology within the floodway. Less obvious topographic disturbances in the park exist in the form of roads and firebreaks, a few of which are now obsolete.

FANNING SPRINGS STATE PARK
Soils

N

0 200 400 800 Feet

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

SOILS

Four soil types exist within Fanning Springs State Park (see Soils Map). Addendum 3 contains complete soils descriptions. The upland soils found in the park are generally well drained to excessively drained, whereas soils within the floodplain of the Suwannee River tend to be poorly drained. The Levy County soil survey characterizes most of the soils found within the park as very deep, except for the Seaboard soils in the Jonesville-Otela-Seaboard complex. In these soils, limestone underlies the sand at a relatively shallow depth (Slabaugh et al. 1996).

Limestone outcrops are frequent in the area south of Fanning Spring and north of the Little Fanning Spring-run. As previously mentioned, these outcrops are probably associated with a period of small-scale limestone mining at the site. Soils overlying the outcrops are thin or nonexistent, suggesting that either they were removed during the mining process or that they were never present there.

Before the state assumed management of Fanning Spring, heavy recreational use of the headspring had caused extensive erosion on the steep banks above the feature, resulting in an unnaturally large buildup of sediments in the spring and spring run. Frequent disturbance of the sediments by swimmers exacerbated the situation by encouraging sediment migration into the spring vent itself. Once the state acquired the property, mitigation of the erosion and sedimentation issues at the headspring began. Projects designed to reduce erosion, particularly in the day use area east of the headspring, included construction of a system of terraces on slopes above the spring, re-vegetation of the slopes, and installation of concrete walkways and wooden boardwalks that provided structured access to the spring. The sediment buildup in the spring itself was addressed through the dredging of accumulated sands.

The dredging of Fanning Spring took place in two separate projects, in 2002 and 2011. FDEP and the Suwannee River Water Management District (SRWMD) jointly funded the 2002 project. The 2011 Fanning Springs Sediment Removal & Dock Modification project was sponsored by multiple agencies including FWC, United States Fish and Wildlife Service (USFWS), SRWMD, The Nature Conservancy (TNC), and FDEP. The various agencies cooperated in a restoration dredge designed to remove excess sediments from the spring and spring run, restore the spring's natural contours and depths, and ensure open access to the spring bowl for West Indian manatees (*Trichechus manatus*) and other wildlife at all river stages.

Prior to commencement of each project, extensive geological and archaeological soil analyses were conducted in order to accurately determine historic sediment depths. During both projects, expert divers used hand-held suction devices to remove a total of nearly 1000 cubic yards (cy) of sand and debris from the system (i.e., > 400 cy in 2002 and > 500 cy in 2010). Disturbance of the spring-run stream community was minimal using this device, especially during the 2011 project, given that there were no intact beds of submerged aquatic vegetation (SAV) present within the entire spring system at the time of either dredge.

The DRP also implemented a floating buoy system at Fanning Spring that better defined the limits of the public swimming area in order to distinguish it from areas of ecologically sensitive shoreline where severe erosion was still taking place. As of 2012, protected shorelines were the only locations within Fanning Spring and its spring run that still harbored remnant populations of SAV. Additional protective measures for Fanning Spring included construction of a boardwalk and platform system through the swamp along the north edge of the spring run west to the Suwannee River and installation of a large "L-shaped" floating dock along the north side of the spring run to accommodate swimmers and sunbathers. These measures helped

reduce recreational impacts while improving public access to the Suwannee River and the headspring.

One erosion issue that remains unresolved is the canoe launch site on the Suwannee River just north of the spring run. Historically, a partially paved road connected the canoe launch with a large open field to the northeast at the top of a steep slope. Most of the crumbling asphalt debris along the road has since been removed and native vegetation has been planted in the road trace. Those efforts have partially succeeded in reducing soil erosion on the slope. However, there is still a need to establish an alternative, well-stabilized pathway there that will provide canoeists with safe reliable access to the launch from uplands in the park. Any design changes that are proposed for the canoe launch and its access route should take into consideration the extreme fluctuations in river stage that occur frequently along the Suwannee.

An additional area of erosion worthy of mention is along the spring run of Little Fanning, where rooting by feral hogs has at times caused significant damage in the alluvial forest. Other areas of concern where there is a potential for undesirable erosion, sedimentation, and runoff include roads, firebreaks, and the visitor use area above the main headspring. Park and district staffs will monitor these areas carefully and follow generally accepted best management practices to prevent soil erosion and to conserve soil and water resources on site.

HYDROLOGY

Fanning Springs State Park is located in northwestern Levy County within the fourth reach of the lower Suwannee River basin (SRWMD 2005). This basin occupies an area of about 700 square miles, encompassing nearly 7% of the entire Suwannee watershed (Suwannee River Water Management District (SRWMD0 2006). As a whole, the Suwannee basin drains approximately 10,000 square miles of the Florida/Georgia region and ultimately discharges into the Gulf of Mexico about 40 miles southwest of the park through Florida's largest publicly managed estuary, Big Bend Seagrasses Aquatic Preserve (DEP 2012a).

The Suwannee River, Fanning Spring and Little Fanning Spring are the three most prominent hydrological features in the park. The Suwannee's average flow is 7,100 million gallons per day. The river has been designated an Outstanding Florida Water (OFW) and is a Class III water body. Average annual rainfall for the lower Suwannee region approaches 60 inches per year (Fernald and Purdum 1998).

Water scientists have identified approximately 300 natural springs, including Fanning Spring, within the Florida portion of the Suwannee River system (Harrington and Wang 2011). The large areas of exposed, unconfined karst aquifer that occur in the middle and lower Suwannee basins and along the Santa Fe River give rise to numerous individual springs that significantly augment the Suwannee's base flow. The springs are more abundant within the central region of the Suwannee than in any other area of the entire Suwannee basin (Scott et al. 2004). In fact, during periods of low surface water flows, groundwater from the central region is the source of nearly all inflow to the Suwannee River (Pittman et al. 1997).

Fanning Springshed and its Major Springs

The two major spring vents in the park are Big Fanning, a historic first-magnitude spring, and Little Fanning, a second-magnitude spring. These two spring-run streams are completely separated from each other on the surface, and both flow directly into the Suwannee River. The main vent of Big Fanning Spring, located in the southeast portion of the headspring, is funnel-shaped and may be over 18 feet deep, depending on river stage. No known cave exploration has occurred at Fanning Springs because of the small size of the vent openings into the aquatic cave system. The spring run of Big Fanning, which heads briefly northward before turning west to the Suwannee River, is approximately 450 feet long, 200 feet wide, and one to 10 feet deep. There are multiple seeps and boils on the south side of the main vent pool that emerge from the karstic shoreline. Just north of the headspring, several small seepage springs drain from the floodplain swamp/alluvial forest into the spring run. Little Fanning Spring is located approximately 500 feet south of Big Fanning. It has several nearly horizontal openings and multiple vents that are situated below a previously disturbed limestone hillside Little Fanning's spring run, which is 10 to 40 feet wide and flows approximately 1,000 feet southwesterly to the Suwannee River. There has been no work to determine any interconnection between Big and Little Fanning Springs.

Delineation of the Fanning springshed began in the early 2000s (Upchurch et al. 2005). Water managers now know a considerable amount about the surface water and groundwater basins that contribute to the overall discharge of the two major springs in the park (Scott et al. 2004; Upchurch and Champion 2004). However, it is important to realize that determining the exact size of the groundwater basin for the Fanning springshed is complicated because of its proximity to the adjacent Manatee springshed to the south. The groundwater divide between the two is not distinct, so hydrologists often treat the Fanning and Manatee springsheds as one. At its greatest distance from east to west, the Fanning

springshed measures over 15 miles, whereas the Manatee springshed measures nearly 18 miles. Together, the surface watersheds and groundwater basins that comprise the Fanning-Manatee springshed encompass up to 450 square miles. Of that figure, approximately 250 square miles are considered of major importance to Fanning Springs.

One unfortunate consequence of grouping the Fanning and Manatee springsheds as one unit is that this can perpetuate a misperception that flow properties of these two spring systems are the same. To the contrary, Fanning Spring and its associated floodplain wetlands function ecologically as non-tidal wetlands, whereas tidal cycles significantly influence spring discharge and flooding of wetlands at Manatee Spring (Light et al. 2002). While tides do influence Fanning Spring, their effects are much reduced in comparison with Manatee.

One prominent feature that defines groundwater characteristics of Fanning Springs State Park is an unnamed transitional karst region situated between the Fanning springshed and the Waccasassa Flats to the east (Upchurch et al. 2005). This karst plain behaves very much like areas along the Cody Scarp to the north, where high groundwater recharging directly into numerous large sinkholes is a prominent characteristic (Upchurch 2002). The Cody Scarp is an outfacing, relict marine feature that constitutes the most persistent topographic break in the state (New Geomorphology paper citation White 1970). The many incidences of subsidence and sinkhole collapse that occur along the Cody Scarp are also a common feature in other transitional karst areas, strongly influencing hydrologic characteristics of the region (Upchurch and Champion 2002). In the Fanning springshed, a large proportion of surface runoff, including that from Waccasassa Flats, drains across this unnamed transitional scarp, eventually disappearing into sinkholes and rapidly infiltrating the subsurface limestone conduits of the Upper Floridan aquifer (Upchurch and Champion 2004).

Groundwater within the Fanning-Manatee springshed moves through a complex matrix of disjointed and sometimes linked underground conduits that may return the water to the surface through spring vents. Exploration of major conduits by cave divers can add to knowledge about the workings of the underground conduit matrix. Unlike Manatee Springs, however, no records of aquatic cave exploration exist for Fanning Springs, probably because historic alterations of the main spring vent had blocked entry to the system. Given the absence of data from cave exploration, a better understanding of the nature of the conduit connections within the Fanning springshed will require additional research, particularly dye trace studies.

Dye trace research is an important tool in establishing the locations of definitive groundwater connections between surface water bodies (Aley 1999; Skiles et al. 1991). The only dye trace work completed in the Fanning-Manatee springshed to date occurred in 2009. Dye placed in a sinkhole 7 miles east in Chiefland, Florida, appeared in less than six days at the Manatee headspring (Karst Environmental Sciences 2009). The dye trace work, in conjunction with cave mapping, supports the premise that surface runoff entering the Upper Floridan aquifer within the Fanning-Manatee springshed can travel through conduits as fast as 1.5 miles per day. Comparable studies, such as in the Ichetucknee springshed, have demonstrated even faster travel times (Champion and Upchurch 2003). These and other dye trace studies have revealed a direct link between surface/groundwater connectivity and rapid transport of surface runoff through karst features to exit points at springs (Hisert 1994; Hirth 1995; Karst Environmental Services 1997; Kincaid 1998; Butt and Murphy 2003; Butt 2005; Butt et al. 2006). The studies have also provided scientists with a better understanding of how surface contaminants can move through the Floridan aquifer (Macesich 1988; Martin and Gordon 2000).

Water quantity

The U.S. Geological Survey (USGS) first measured discharge at Big Fanning in 1930 and at Little Fanning in 1972. In recent years, the USGS has worked with the SRWMD to track discharges (USGS 2012; SRWMD 2012). Daily discharge data for Fanning Spring's Station 02323502 are available from 2001 to present, but the actual period of record (POR) for data gathering, albeit only sporadic in nature, goes back to 1930. The average total discharge for this first-magnitude spring from 1930 to 1998 (23 samples) was 107.5 cubic feet per second. However, from 1999 to 2008 (2,428 samples) the average dropped significantly to 73.5 cubic feet per second (Greenhalgh 2008; Copeland et al. 2011). If one includes all available data for the entire POR, however, the median daily discharge is 73 cubic feet per second (USGS 2012). The minimum instantaneous flow ever recorded for the spring was negative-108 cubic feet per second on April 10, 2003, while the maximum was 247 cubic feet per second on Sept. 5, 2004 (USGS 2012). The negative velocities for minimum flow at Fanning Spring indicate potential flow reversals in this system (USGS 2012).

The POR for Little Fanning, which extends from 1972 to 2022, is represented by only 21 sporadic discharge measurements. During that period, the average total discharge of this second-magnitude spring was 10.1 cubic feet per second. The maximum instantaneous flow ever recorded was 29.9 cubic feet per second on April 25, 1972 (Rosenau 1977). At the other extreme, Little Fanning has completely stopped flowing numerous times for extended periods, sometimes for months (DRP District 2 files). The park has also documented flow observations for this spring sporadically.

Tidal fluctuation and flooding along the Suwannee River are two major factors that complicate the measurement of discharge at Fanning Springs' two major springs. Either factor, whether individually or in combination with the other, can affect water quantity and quality at Fanning Springs. The impact of tides and flooding on discharge is critical to the discussion about water quantity because they can significantly influence the velocity of groundwater flow.

Even though Fanning is located in a supposedly non-tidal portion of the Suwannee River, water scientists know that the river can indeed be tidal at the Wilcox gage immediately upstream of Fanning Spring when flows are low. Typical tidal range at the gage is about 30 centimeters at low flow and 15 centimeters at median flow. Tides do not influence flow measurements at this gage when river flows are high or during significant flood events (Light et al. 2002). When the Suwannee is experiencing periods of low flow, falling tides have little effect on the Fanning discharge and essentially allow springs to flow unconstrained. When tides are rising, however, they can affect the Fanning discharge by decreasing spring flow and increasing the odds of back-flooding in associated floodplain wetlands (Light et al. 2002). Back-flooding is especially important to the ecology of all Suwannee basin floodplain communities (Pringle 1997; Diehl 2000; Garza and Mirti 2003).

Based on overall discharge, the Suwannee River is the second largest river in Florida (Berndt et al. 1998), and since there are no dams along its entire length, natural flood events are commonplace within the system (Garza and Mirti 2003). The likelihood of the Suwannee flooding is directly proportional to the amount of rainfall within its basin. Numerous gages along the Suwannee track both discharge and stage for the entire river (USGS 2012; Verdi et al. 2006). Typical high flows in the lower Suwannee River occur during March and April (Light et al. 2002).

When the Suwannee floods, the high river stage at spring tributaries such as Fanning gradually "pushes back" the head pressure in the Floridan aquifer. As the Suwannee back-floods into the Fanning spring

runs during high tides or upstream flooding, river and spring waters begin to mix (Katz et al. 1999). A helpful tool in documenting changes in groundwater discharge in spring systems is to monitor water clarity in springs (Anastasiou 2006; District 2 files). Depending on the clarity of the Suwannee River (i.e., tannic or clear) and on downstream tidal influences and river stage, marked changes in water clarity can be observed within the Fanning system. Partial or complete "brownouts" of the Fanning system may result. A complete brownout is considered to have occurred when tannic river water covers the entire headspring and spring run and water clarity is reduced to less than 4 feet of visibility. If the surface water pressure exceeds the groundwater head pressure, the springs at Fanning may even undergo a partial flow reversal and function as a "siphon" or inflow point into the Upper Floridan aquifer (Gulley et al. 2011). In that respect, Fanning and Little Fanning are estavelles, a type of spring whose fluctuations in discharge reflect the direct relationship between groundwater potential and stream stage (Copeland 2003).

The park has documented all significant brownouts at Big Fanning since 1997, and it began to monitor spring clarity in 2009. From this data, Big Fanning has rarely reversed its direction of flow. From 1997 to 2012, however, partial flow reversals may have occurred as many as 15 times judging from tidal or flood induced brownouts (District 2 files). During the 15-year period from 1997 to 2012, complete brownouts at Big Fanning have occurred nearly 13% (i.e. total brownout days/total days multiplied by 100) of the time (District 2 files). There seems to be a significant positive linear relationship between the average number of brownout days at Fanning Springs and the spring flood frequency when calculations use a conservative water level measurement at the Wilcox gage (e.g., Wilcox = 9.0) as an indicator (District 2 files). During the period from 1993 to 2012 (i.e. using Wilcox gage indicator), there have been as many as 32 brownout events, with 66% the result of flooding and the remaining 34% due to tidal influence. Additionally, from 1997 to 2012 a slightly negative relationship existed, with a decreased river stage observed at brownout during those years. One curious phenomenon at Little Fanning is that after the 2010-12 drought period in the Suwannee basin, this spring system appeared to not undergo brownouts as easily as Big Fanning. Often when water levels are high in the Suwannee River, Little Fanning will be completely flooded but clear with 100% underwater visibility, while Big Fanning is completely browned out with zero visibility (District 2 files). This may or not be relative to a broadly intact submerged aquatic vegetation (SAV) in Little Fanning.

This cursory evidence suggests that brownouts at Big Fanning have become more frequent since the park was acquired (District 2 files, various sources). Whether the evidence indicates that the groundwater fluctuations are natural (i.e., due to Atlantic multi-decadal oscillation) or anthropogenic (i.e., due to water supply withdrawals) is still unclear (Kelly 2004; Williams et al. 2011). Nonetheless, many water managers worry about the unsustainable depletion of groundwater resources in the Floridan aquifer (Bush and Johnston 1988; Grubbs and Crandall 2007; Copeland et al. 2011). Concerns over decreased water supplies heightened during the recent droughts of 1998-2002 and 2011, as water scientists documented significant declines in spring discharge at nearly all of Florida's first-magnitude springs, including Fanning (Copeland et al. 2011; Pittman 2012). From 1942 to 2012, nine major droughts and 14 significant flood periods were recorded for north peninsular Florida (Verdi et al. 2006; Verdi and Tomlinson 2009). Three of the worst droughts in history in the Suwannee River basin occurred in 1954-56, 1998-2002, and 2010-2012 (SRWMD 2012; Verdi et al. 2006). During the 2010-12 drought, there was no artesian groundwater discharge coming from any of the vents from Little Fanning and the entire spring run was completely dried up.

The discharge of Fanning Spring at base flow consists primarily of older groundwater ranging from 15 to 30 years in age (Katz et al. 1999). This older, deeper groundwater contains higher levels of limestone-

based analytes (e.g., calcium, bicarbonate) than the younger, shallower Upper Floridan or surficial aquifer because it has been in the aquifer longer. Water experts use these limestone-based analytes, as well as saline indictors such as chloride, strontium and conductivity, as diagnostic tools to ascertain the presence of saltwater encroachment (Neuendorf et al. 2005). The significance of saltwater encroachment at Fanning Spring will be addressed in the section below.

Many water management experts acknowledge that the two most recent long-term droughts and increased consumptive use of groundwater have combined to cause a significant lowering of water tables and decreased spring flows across the entire state (Mirti 2001; Swihart 2011; Still 2010; Copeland et al. 2011). As many as seven springs within the Southwest Florida Water Management District (SWFWMD) no longer flow (Champion and Starks 2001). Additionally, water managers can now correlate specific regional drawdowns of the aquifer with shrinking springsheds and declining spring flows (Mirti 2001; Grubbs and Crandall 2007; Grubbs 2011). Given the projected water supply needs for the area, the USGS predicts that groundwater levels throughout Florida, including those in the Fanning springshed, will continue to decline (Sepulveda 2002).

One additional concern of water management experts is the cumulative effect of lowered aquifer levels and sea level rise to changes in natural communities such as floodplain swamps (Williams et al. 1999; Light et al. 2002). The rate of forest retreat in floodplain swamps (e.g. bald cypress: *Taxodium disticum*) along the Suwannee River has been documented, but it is not known how rapid these effects will proceed under cumulative stressors (Geselbracht et al. 2015).

An accurate understanding of Florida's freshwater budget, especially within the Fanning/Manatee springshed, is integral to restoring historic groundwater flow to the Fanning spring ecosystem.

Water Quality

The three main water quality issues affecting Fanning Springs State Park are 1) erosion/sedimentation on slopes above the Suwannee River and the headspring, 2) localized and regional groundwater contamination, and 3) the significant decline in ecological health of the springs and spring-run streams. There is a vast amount of water quality data available for Fanning Spring (SRWMD 2012; Hornsby and Ceryak 1998; Scott et al. 2004; USGS 2012). Many water management agencies collect, store and manage hydrological information that is accessible by all through a variety of web-based databases (USGS 2012; SRWMD 2012; DEP 2012b; DEP 2012e).

Most of the erosion that once contributed excessive sediment loads to surface waters in the park has been mitigated successfully. However, there are still some areas on the steep banks of Fanning and Little Fanning springs and along the Suwannee River where additional erosion control measures may be needed. Because the Floridan aquifer in the area is unconfined, surface waters have the potential to funnel contaminants through karst features directly into high quality groundwater resources below (Cichon et al. 2004). That is one reason why DRP staff is ever-watchful for signs of increased erosion, stormwater runoff and sedimentation inside the park.

Deterioration of groundwater quality in the Fanning springshed will ultimately threaten water resources within the park itself. There are numerous non-point sources of groundwater pollution in the region outside the park. Rural agriculture, primarily consisting of row crops and dairies, is the predominant land use in the Fanning Springshed (SRWMD 2005).

Scientists conducting nitrogen-15 isotope research at Fanning Spring have confirmed that heavy fertilizer use and the numerous large dairy operations in the region are the primary sources of the inorganic/organic nitrogen contamination of groundwater in the Fanning springshed (Katz et al. 1999; Albertin et al. 2007).

Nitrate levels in the Floridan aquifer in north Florida have increased by an order of magnitude or more over the past 50 years (Cohen et al. 2007; Upchurch et al. 2007). Human activity, especially the use of inorganic fertilizer, has long been the leading cause of this enrichment. Even though certain agricultural activities pose the most significant threat to groundwater and surface water resources at Fanning, two small cities in the Fanning springshed, Trenton and Chiefland, have an equally crucial influence on water quality in the park.

For the past 25 years, water managers have monitored groundwater quality and levels in numerous types of wells in the state. Over 250 different wells that are scattered throughout the Fanning-Manatee springshed are used to track changes in groundwater quality within the basin (DEP 2012e). Some of these wells have the specific purpose of documenting changes associated with known contamination sites including two near the park (Maddox et al. 1998; Environmental Consulting and Technology Incorporated 2002; DEP 2012e). Past sampling at these wells has shown that some parameters, particularly nitrate concentrations, have significantly exceeded the state's primary drinking water standards for maximum contaminant levels (DEP 2012b). Of 188 wells in the Fanning Springshed that had nitrate data available, over 57% had nitrate concentrations higher than 1 milligram per liter, and over 5% had nitrate concentrations higher than the 10 milligrams per liter groundwater standard (Harrington and Wang 2011). The highest nitrate concentration measured in a well within the springshed was 62 milligram per liter. Naturally occurring background levels for nitrates in groundwater should be less than 0.01 milligram per liter (Cohen et al. 2007).

There are eight facilities in the region that discharge treated wastewater into the groundwater. The two largest facilities are in Chiefland, which produces 0.475 million gallons per day, and in Trenton, which produces 0.2 million gallons per day. In Fanning Springs, Trenton and Chiefland, there are at least 13 waste cleanup sites equipped with monitoring wells and 100 other wells used to monitor aquifer contamination (DEP 2012e). An additional 50 monitoring wells in the region provide background data about the Upper Floridan aquifer. DEP, in cooperation with the SRWMD, conducts long-term trend analyses on some of these groundwater wells. There is also a permanent surface water site, Station SUW 160, located just upstream of Fanning Spring on the Suwannee River. This station is part of the Temporal Variability Network program (DEP 2012f, Jenkins et al. 2010).

From 2000-06, quarterly monitoring of surface water quality took place in 18 important springs in Florida, including Fanning Spring (DEP 2008). Reports from this work, published by DEP as Ecosummaries, contain quarterly ecosystem health assessments. During the six-year Ecosummary monitoring period, nitrate-nitrite levels were consistently high at Fanning Springs, ranging from 3.7 to 6.3 milligrams per liter (Harrington and Wang 2011). Of the 18 springs monitored, Fanning Spring had by far the poorest water quality based on the nitrate-nitrite parameter. The occurrence of elevated nitrogen levels at Fanning Spring during this brief period is not particularly surprising given the record for the 1946-2012 period during which nitrate-nitrite levels averaged just over 4.5 milligrams per liter (District 2 files, various sources).

Unfortunately, elevated groundwater nutrients have contributed to significant declines in the ecological health of spring systems all across Florida, including Fanning (Jones et al. 1996; Munch et al. 2006;

Cohen et al. 2007; Albertin 2007; Wetland Solutions Inc. 2010). Studies suggest that the visible presence of nuisance algal biomass in a spring ecosystem is an indicator of an imbalanced distribution of aquatic flora (i.e., Rule 62-302.500 (48) (b) F.A.C.). The U.S. Environmental Protection Agency (EPA) states that water bodies with periphyton levels exceeding 150 milligrams per meter squared may be biologically impaired and may experience a decline in ecosystem health. There is now widespread recognition that periphyton levels, in response to nutrient enrichment, are increasing in nearly all of Florida's springs, and that this is a symptom of the declining ecological health of springs (Kolasa and Pickett 1992; Hornsby et al. 2000; Stevenson et al. 2007; Brown et al. 2008).

Submerged Aquatic Vegetation

There is an extremely important submerged aquatic vegetation (SAV) phenomena occurring at Fanning Springs that has historically not been properly documented, and our knowledge has rapidly expanded since the last major north-central Florida drought that occurred from 2010-12. Specifically, the SAV at Big and Little Fanning has been undergoing two very different trajectories concerning their ecological health. Historical narratives and photographic records of Big and Little Fanning springs illustrate that a high diversity (at least 14 species) of native SAV once covered significant areas of spring bottom in each of these two separate systems (District 2 files, various sources).

Inland freshwater Florida spring ecosystems like Big and Little Fanning were characterized by thick beds of five dominant submerged aquatic plants, including spring-tape (*Sagittaria kurziana*), American eelgrass (*Vallisneria americana*), southern waternymph (*Najas guadalupensis*), creeping primrosewillow (*Ludwigia repens*) and muskgrass (*Chara* sp.) (Whitford 1956). The presence of these five dominant SAV taxa have long characterized a healthy "underwater forest" within Florida's spring ecosystems (Odum 1957; Wetland Solutions Incorporated 2010; Heffernan et al. 2010).

Ecologist Howard Odum recorded a high diversity of SAV at Fanning Spring in 1953 (Odum et al. 1953). Shortly after, Fanning Springs was considered an ecologically healthy, hard-mineral freshwater system containing both algal and SAV components (Whitford 1956). It is noteworthy that in the mid-1900s, a diverse assemblage of "attached" and "unattached" algae comprised over 50% of the aquatic plant growth at Fanning Spring (Whitford 1956). In other words, a healthy Fanning Spring ecosystem should include a biologically diverse assemblage of algae and microscopic diatoms, as well as a rich diversity of SAV.

Subsequent documentation of the SAV community at Big Fanning indicates that the spring ecosystem remained intact and healthy through the 1980s (Rosenau 1977; District 2 records). The first observed decline in SAV diversity at Big Fanning occurred from 1995-2001, during which period the park documented a decline of SAV cover in the spring and spring run from about 50% in 1995 to less than 1% in 2001. Although the specific causes of the SAV decline in Big Fanning are still unclear, DRP staff suspect that increased recreational pressures from swimmers and boaters, especially during low water levels (major drought from 2000-02), were at least partially responsible. After the completion of facility improvements at Big Fanning in 1999, the park initiated a small-scale SAV restoration effort by planting SAV along the eastern slope of the spring boil with only limited success (District 2 files). As of 2023, only a few small patches of SAV persisted in isolated areas around the perimeter of Big Fanning (limited to non-natives and creeping primrosewillow), covering less than 1% of the entire spring bottom. Species diversity was poor, with possibly two native and one non-native species present. Both eelgrass and springtape were absent within Big Fanning. In addition, 99% of the spring bottom at Big Fanning was either bare sand or covered by nuisance filamentous algae.

On the other hand, given the limited number of historic SAV records available for Little Fanning, it is difficult to characterize any aquatic vegetation changes within this second-magnitude spring. Nonetheless, as of 2023, it is extremely apparent that the ecological health of SAV in Little Fanning is in excellent condition when considering that there are at least 14 native species present, including all five dominants described above. This diverse aquatic flora is even more surprising considering that this spring ceased flowing for up to a year during the 2010-12 drought. During that drought, a majority of the Little Fanning spring-run stream became highly vegetated throughout with a variety of wetland plants dominating, not the typical spring run stream SAV such as American eelgrass or springtape, which were absent. This drought period was the first recorded time that no groundwater outflow was documented for Little Fanning (District 2 records). Subsequent SAV recovery at Little Fanning following this drought was first observed in late 2017, with the presence of eelgrass and two-leaf watermilfoil as co-dominants. Since Little Fanning is an isolated spring separate from Big Fanning and has been protected from recreational use, the SAV in this system appears to have remained highly resilient to other outside pressures. Suwannee River brownouts and herbivory of the SAV (Florida manatees and turtles) have been two consistent pressures in this spring ecosystem.

Water managers will continue to debate the causes of the dramatic ecological shift at Big Fanning from the highly diverse SAV/algae-dominated system of the 1980s to the low diversity monoculture of benthic algae prevalent today. It is clear that the ecological health of the Big Fanning ecosystem is in marked decline (Harrington and Wang 2011; Copeland et al. 2011). However, it is very encouraging to observe the strong SAV resiliency and ecologically healthy Little Fanning ecosystem.

Scientists say that water quantity variables such as spring discharge velocity and nitrate concentration are necessary parameters for understanding trends in the health of groundwater resources (Brown et al. 2006). Springs are considered excellent indicators of changes in groundwater quantity and quality over time. Indeed, Florida's springs act as the proverbial "canary in the coal mine," giving us early warning about declines in health of the Floridan aquifer. The quality of spring water is extremely dependent on spring flow rates and groundwater levels, and it is very sensitive to changes in those parameters (Copeland et al. 2011; Wetland Solutions Inc. 2010). Even early researchers in the ecology of spring systems realized that the velocity of spring discharge is one of the most important factors in maintaining healthy, diverse spring ecosystems (Odum et al. 1953; Whitford 1956).

A recent statewide analysis of water quantity and quality variables compared groundwater and spring water parameters from 1991 to 2003 (Copeland et al. 2011). Specifically during that period, analysis of rock-matrix and saline analytes indicated that the Floridan's freshwater "lens" had decreased significantly in volume and that significant saltwater encroachment had occurred throughout most of the state (Copeland et al. 2011; Hydrogeologic Inc. 2011). Coastal springs such as Fanning also experienced lateral saline encroachment (Neuendorf et al. 2005; Marella and Berndt 2005; Verdi et al. 2006; Copeland et al. 2011). The major conclusion was that the drought of 1999-2001 had precipitated significant negative health trends in all spring systems in the state, including Fanning, because of lowered groundwater levels, significant saline encroachment and simultaneous increases in groundwater use during one of Florida's worst droughts on record (Verdi et al. 2006).

In 1996, DEP initiated a formal statewide program for monitoring surface waters and groundwater, including those within the lower Suwannee River basin (Maddox et al. 1992; DEP 2009). This Integrated Water Resource Monitoring Program (IWRMP) took a comprehensive watershed approach based on natural hydrologic units. The 52 hydrologic basins in Florida were placed on a five-year rotating

schedule, which allows water resource issues to be addressed at different geographic scales (Livingston 2003). In addition, the IWRMP assigned a water body identification number (WBID) to each water body. The WBID for Fanning Spring is 3422S. This watershed approach provides a framework for implementing Total Maximum Daily Load (TMDL) requirements that will attempt to restore and protect water bodies that have been declared impaired (Clark and DeBusk 2008).

According to DEP basin status and water quality reports for north Florida, several springs, including Fanning, as well as sections of the lower Suwannee River basin all became potentially impaired water bodies in 2003 because of excessive nutrients, total coliform bacteria, high mercury levels or low dissolved oxygen (Copeland et al. 1999; Silvanima et al. 2008; DEP 2001; DEP 2003). Based on the Impaired Waters Rule (IWR), the EPA in 2003 verified that those water bodies were impaired, which meant that their surface water quality did not meet applicable state water quality standards (IWR, Chapter 62-303 F.A.C). This designation triggered a long chain of mandatory requirements that Florida would have to accomplish to achieve compliance with EPA regulations concerning polluted water bodies. For Fanning Springs, the compliance process started in 2008 with the assignment of a TMDL (Hallas and Magley 2008) and a Basin Management Action Planning (BMAP) in 2018. Fanning Springs lies within the Suwannee River Basin Management Action Planning (BMAP) region and a Springs Priority Focus Area (PFA), both regulated by DEP (DEP 2023).

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

- Action 1 - Continue to cooperate with other agencies and independent researchers regarding hydrological research and monitoring programs.
- Action 2 - Continue monitoring of surface and groundwater quality at Fanning Springs and tracking of water quality changes within this natural spring system.
- Action 3 - Continue to seek expertise and funding opportunities within the Fanning springshed for dye trace studies to determine the groundwater sources for the spring and karst systems in the park.
- Action 4 - Perform dye trace studies to determine the groundwater sources for the spring and karst systems in the park as funding becomes available.
- Action 5 - Continue to monitor land-use or zoning changes around the park's resources.
- Action 6 - Continue to cooperate with the SRWMD to ensure MFLs for Fanning Spring are monitored for compliance to maintain historic river flows.

The most significant hydrological features in the park include a first-magnitude spring (Big Fanning), a second-magnitude spring (Little Fanning) and the Suwannee River. Since 1997, multiple factors including extreme drought, saltwater encroachment and increased groundwater consumption have combined to cause a rapid deterioration in ecological health of Fanning Spring. Regulatory agencies have determined that the waters of Fanning Spring are impaired because of high levels of nitrogen and mercury and low levels of oxygen. During the period of record for Big Fanning, the spring has consistently had the poorest water quality of all the first-magnitude springs in Florida. Submerged aquatic vegetation, once dominant in the spring and spring run, now covers less than 1% of the spring bottom, with the remaining 99% either bare or blanketed with nuisance filamentous algae. The mitigation of erosion and sedimentation sites in the park, restoration of Big Fanning Springs, and protection of the Fanning springshed should remain top priorities for DRP. Although the water quantity/quality issues at Fanning Springs are complex, genuine improvements are still achievable, as evidenced by the excellent health attributes of Little Fanning Spring. The following are hydrological assessment actions recommended for the park.

DRP will continue its tradition of close cooperation with state and federal agencies and independent researchers engaged in hydrological research and monitoring in the park and on the Suwannee River, and it will encourage and facilitate additional research in those areas. DRP will rely upon agencies such as the SRWMD, USGS and DEP to keep it apprised of any declines in surface water quality or any suspected contamination of groundwater in the region.

District staff will continue to monitor Environmental Resource Permit and Water Use Permit requests for the region to provide timely and constructive comments that promote protection of the park's water resources. Additional cooperative efforts may include facilitating the review and approval of research permits and providing multiple researchers with assistance in the field, including orientation to park resources. Recommendations derived from these monitoring and research activities will be essential to the decision-making process during management planning.

Two activities worthy of DRP support are continued brownout monitoring and clarity tracking in the park's two major spring systems as part of the documentation of ecological responses to decreased spring discharge, Suwannee River flooding and tidal fluctuations. Additionally, SAV monitoring for Little Fanning Spring should be supported and continued to understand any long-term changes to this currently healthy ecosystem.

The proximal sources of groundwater flow from the Floridan aquifer to spring vents in the park are still unknown. For water managers to be able to protect water quality and potentially restore spring flows to their historic levels, they will need to know the extent of the springshed. To facilitate that process, DRP should seek funding for dye trace studies to determine the groundwater sources for spring systems in the park. Previous dye trace studies in the region (e.g., delineation of the Chiefland Sink connection to Manatee Spring) have provided park staff with invaluable information about the various sources of spring water and the timing of surface water/groundwater interactions that potentially affect spring water quality.

Staff will continue to monitor land-use or zoning changes within lands bordering the park. Major ground disturbances on neighboring properties or inadequate treatment of runoff into local streams could ultimately cause significant degradation of park resources. When appropriate, District 2 staff will provide comments to other agencies regarding proposed changes in land use or zoning that may affect the park. In addition, district staff will closely monitor any mining operations or large consumptive use permits in the Suwannee basin or Fanning-Manatee springshed for significant changes that may adversely affect park resources.

DRP will continue to work closely with the SRWMD to ensure that MFLs developed for the Lower Suwannee River, including that for Big Fanning Spring, are monitored conscientiously and that historic river flows are protected or restored if there is noncompliance with the MFL.

Objective B: Restore natural hydrology to approximately 2 acres of spring-run stream and 7 acres of floodplain swamp/alluvial forest natural communities.

- Action 1 - Implement SAV replanting within Big Fanning Spring.
- Action 2 - Remove elevated causeways and spoil piles that impact the floodplain swamp/alluvial forest.
- Action 3 - Evaluate and assess alterations to natural hydrology and initiate corrective actions if appropriate.
- Action 4 - Annually survey the Big Fanning and Little Fanning spring-run stream for submerged aquatic vegetation.

Erosion on steep slopes above Fanning Spring has contributed to an accumulation of sediments in the spring over the years. In addition, causeways and spoil piles interrupt natural sheetflow through wetlands in the southern portion of the park. The following hydrological restoration actions are recommended for the park.

DRP will use adaptive management to determine any on-site threats to Big and Little Fanning springs and mitigate or reconfigure to improve for erosion control around the spring, protect water quality, mitigate recreational pressures and conserve the site as a warm-water refugium for the federally endangered Florida manatee (*Trichechus manatus lasirostris*).

DRP will implement SAV restoration in Big Fanning Spring. Little Fanning Spring SAV may play an important role during the revegetation restoration of Big Fanning.

DRP will also develop and implement a restoration plan for the removal of elevated causeways and spoil piles that impact the floodplain swamp/alluvial forest in the southern portion of the park. Park staff will comply with best management practices to maintain the existing water quality on site and will take appropriate action to prevent soil erosion or other impacts to water resources.

DRP staff will evaluate other alterations in the park that may have negatively affected natural hydrology. If necessary, staff will initiate corrective actions such as the installation of low water crossings or culverts in appropriate locations.

Objective C: Evaluate and mitigate the impacts of soil erosion in the park.

- Action 1 - Investigate options for erosion mitigation in public access areas.
- Action 2 - Develop and implement a restoration plan for the canoe launch area.
- Action 3 - Monitor areas prone to erosion.
- Action 4 - Implement corrective measures to reduce impacts of soil erosion on water resources.

Several areas in the park continue to have erosion issues despite past corrective measures. The following are erosion control actions recommended for the park.

DRP staff will investigate best management options for additional mitigation of erosion in public access areas such as the slopes above Fanning Spring, Little Fanning Spring and the canoe launch area along the Suwannee River. DRP will develop and implement a restoration plan for the canoe launch area. In

addition, the park will continue to remove feral hogs from the Little Fanning Spring area to decrease soil disturbance there.

Staff will regularly monitor areas of the park that are prone to erosion. Additional water bars may need to be installed to minimize erosion during strong storm events by diverting stormwater into surrounding woodlands and encouraging natural infiltration. Wherever necessary, the park will adopt corrective measures to reduce the impacts of soil erosion on water resources.

NATURAL COMMUNITIES

Upland Hardwood Forest

Upland hardwood forest at Fanning Springs State Park occupies a large portion of the natural area of the park, extending south and east of the spring-run streams. The upland hardwood forest is found at slightly lower elevations than the surrounding upland mixed woodland and successional hardwood forest. The upland hardwood forest likely developed in the fire shadow created by the Suwannee River and the spring-run streams. The boundary between upland hardwood forest and adjacent uplands is blurred due to long-term fire exclusion in the upland mixed woodland.

The upland hardwood forest is dominated by mature southern magnolia and pignut hickory. The canopy is estimated to be at least 70-80 feet tall. The core of this area, east of Little Fanning Spring, is in excellent condition and should be afforded a high level of protection. Areas that were selectively logged in the past or were otherwise disturbed are in fair to good condition.

Mesic Hammock

Mesic hammock is associated with slopes and levees above the alluvial forest in the southwest corner of the park. The dominant species in the canopy are live oak and laurel oak. Slender woodoats (*Chasmanthium laxum*) is a common species in the groundcover. Infrequent inundation by floodwaters of the Suwannee River undoubtedly affects the species composition of the mesic hammock in this area.

Mesic hammocks may also contain scattered loblolly pines, particularly where there have been past disturbances. Mesic hammocks typically lack the high diversity of canopy tree species seen in the upland hardwood forest. Most of the mesic hammock in the park is in good condition with the exception of limited spoil areas. It is likely that the intermittent flood events along the Suwannee contribute to the differentiation of mesic hammock from adjacent upland hardwood forests.

Upland Mixed Woodland

Upland mixed woodland often serves as a transition zone between upland pine and adjacent upland hardwood forests or mesic hammocks. As with upland pine, upland mixed woodland is a fire-adapted community with longleaf pine dominant and with scattered southern red oaks and mockernut hickories. However, upland mixed woodland typically lacks wiregrass as a dominant groundcover, and the oaks and hickories may be co-dominate with longleaf pines. Being a transitional community, upland mixed woodland is very susceptible to succession toward upland hardwood forest when there is a lack of fire. As a result, very few intact examples of upland mixed woodland exist in north central Florida.

Field notes from the 1847 survey describe the uplands just east of Fanning Springs as a “mixed growth of pine, oak, hickory” (Volume 158, page 403 of 1847 survey of the west boundary of Sec. 28 T10S, R14E). This is in contrast to areas further east that are described as pinelands. Based on this information, it is

likely that the pine, oak and hickory areas described in the survey notes were upland mixed woodland, and the lands further to the east, well outside the park boundary, were sandhills.
Some of the uplands to the south in the Andrews Wildlife Management Area and in Manatee Springs State Park are similar but in better condition, and they also appear to lack wiregrass, which is a characteristic of upland mixed woodland.

It is likely that all of the longleaf pines were cut from the park prior to 1900 due to the close proximity to the Suwannee River and sawmills. Some areas were converted to agriculture (1848 plat map for T10S, R14E) and are now either within the developed area of the park or are successional hardwood forest. In those areas not completely cleared, fire suppression has caused the majority of the herbaceous species to be shaded out by off-site hardwoods such as laurel oak and sweetgum.

The dense hardwood growth and a lack of fire make it difficult to distinguish many of these areas from upland hardwood forest. The areas mapped as existing upland mixed woodland are those areas where restoration efforts have been initiated and where current fuel conditions are more amenable to supporting prescribed fires.

These areas are considered to be in poor condition and retain only scattered southern red oaks, mockernut hickories and longleaf pines. The majority of what was once upland mixed woodland is currently classified as successional hardwood forest.

Restoration of the upland mixed woodland will require an expansion of prescribed fire efforts and removal of off-site hardwood species. Planting of longleaf pines will be postponed until the canopy is sufficiently open to allow longleaf seedlings to survive. Staff will need to conduct additional field surveys to verify the extent of the upland mixed woodland and to determine priorities for restoration efforts.

Alluvial Forest

Alluvial forest occurs within the park in association with the Suwannee River floodplain. Located upslope from adjacent floodplain swamps, the alluvial forests typically are relatively narrow, linear areas that parallel the Suwannee River and the spring-run streams within the park.

In most cases, the alluvial forest in the park is in relatively good condition. However, the alluvial forest in the southwest portion of the park has been impacted by a housing development project (Fort Fanning subdivision). In this area, causeways were built across the alluvial forest and floodplain swamp to access lots along the river levee. At least one of these causeways is located within the park.

Although culverts allow drainage under most of the causeways, these culverts are not sufficient to prevent impoundment of water in the floodplain. Other impacts resulted from the installation of several raised drain fields and septic systems, along with underground electrical service in the floodplain. Although these utilities were never actually used, they remain as disturbances within the floodplain and mesic hammock.

Additional historical disturbances include an archaeological site where limestone was extracted to obtain a low grade of iron ore during the Civil War period. This “bog iron” was refined at an off-site location to produce iron. The disturbed area, which contains exposed limestone bedrock, numerous holes, rubble piles and berms, is located near the ecotone between the alluvial forest and adjacent upland hardwood forest.

Restoration of the spoil areas and causeway in the southern end of the park will be initiated with development of a restoration plan.

Legend

- MEH - Mesic Hammock 3.48 ac.
- UHF - Upland Hardwood Forest 68.9 ac.
- UMW - Upland Mixed Woodland 8.7 ac.
- AF - Alluvial Forest 6.61 ac.
- FS - Floodplain Swamp 5.41 ac.
- BST - Blackwater Stream 0.52 ac.
- SRST - Spring-Run Stream 3.2 ac.
- ACV - Aquatic Cave 0.017 ac.
- DV - Developed 27.46 ac.
- SA - Spoil Area 0.19 ac.
- SHF - Successional Hardwood Forest 72.17 ac.

19

DV
SHF
UHF
BST
FS
SRST
UMW
ACV
FS
UHF
AF
SA
AF
DV
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FANNING SPRINGS STATE PARK

N

0 200 400 800 Feet

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

NATURAL COMMUNITIES
EXISTING CONDITIONS MAP

Legend

- MEH - Mesic Hammock 3.75 ac.
- UHF - Upland Hardwood Forest 70.56 ac.
- UMW - Upland Mixed Woodland 71.84 ac.
- AF - Alluvial Forest 6.61 ac.
- FS - Floodplain Swamp 5.41 ac.
- BST - Blackwater Stream 0.52 ac.
- SRST - Spring-Run Stream 3.2 ac.
- ACV - Aquatic Cave 0.017 ac.
- DV - Developed 25.71 ac.
- SHF - Successional Hardwood Forest 9.03 ac.

19

DV
SHF
UHF
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FANNING SPRINGS STATE PARK

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0 200 400 800 Feet

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

NATURAL COMMUNITIES
DESIRED FUTURE CONDITIONS
MAP

Floodplain Swamp

Floodplain swamp occurs adjacent to both spring-run streams in the park and within the floodplain of the Suwannee River in the southwest portion of the park. It is located down-slope of the alluvial forest, predominantly in backwaters and low areas behind the primary river levee. These areas are frequently flooded by the river and may actually funnel river flow during high water events if connections to the river exist at more than one location.

As with the alluvial forest, causeways and other intrusive elements of the failed Fort Fanning subdivision have impacted the floodplain swamp in the southwest corner of the park. The floodplain swamps adjacent to the spring-run streams have undoubtedly experienced some side effects from the intensive recreational use that is occurring along the streams. Floodplain swamp is relatively resilient, however, and other than removing the causeway and preventing/mitigating erosion around the springs, little additional management will be necessary for it to recover from these impacts. The floodplain swamps in the park are generally in good condition.

Staff will monitor river access points and visitor use areas within the floodplain swamp for erosion issues and will mitigate impacts as needed. Staff should also monitor bald cypress stands in the park for any significant changes or die-offs.

Blackwater Stream

The Suwannee River is a typical blackwater stream and is renowned worldwide, having both scenic and historic significance. There is about two-thirds of a mile of river frontage along the western boundary of the park. Nitrates are of particular concern in the river since a significant increase in nitrate levels has been detected throughout the Suwannee River basin. Maintenance of historic flows and levels in the river is another top concern.

Hydrilla (*Hydrilla verticillata*), a noxious invasive plant, is established in the Suwannee River. Fortunately, it does not flourish in the dark, tannin-stained waters as well as it does in clearer waters. The hydrilla in the Suwannee, however, is almost impossible to eradicate completely, and the possibility of it spreading into the clear spring runs is a constant threat. The blackwater stream is considered to be in fair to good condition.

Regular monitoring of water quality and quantity in the Suwannee River is an important management measure. This will be accomplished in cooperation with DEP and the SRWMD. Monitoring and mitigation of riverbank erosion will also be a priority.

Spring-Run Stream

Two spring-run streams are in the park, Big Fanning Spring and Little Fanning Spring. These are fed by several large spring vents, as well as by numerous smaller springs emerging from the sides and bottom of the spring-run streams. The *Hydrology* section above describes the relatively denuded condition of Big Fanning Spring and its run and the various factors that may negatively influence it. However, Little Fanning Spring has a much more diverse SAV assemblage than Big Fanning. Little Fanning has been affected by brownouts during higher Suwannee River water levels and herbivory from turtles and manatees at times, but the system appears more resilient and can serve as a source of SAV propagules to replant Big Fanning Spring.

Based on these factors, plus the recently declining flows, the Big Fanning spring-run stream is in poor condition. However, Little Fanning, with its broadly intact SAV community, is in good to excellent condition. Restoration efforts have included the suction dredging of sediments in Fanning Spring to restore the natural contours and improve access for manatees. Future restoration plans include replanting SAV in Big Fanning Spring.

Before the state assumed management of the park, heavy recreational use of the Big Fanning headspring had caused extensive erosion on the steep banks above the feature, resulting in an unnaturally large buildup of sediments in the spring and spring run. Frequent disturbance of the sediments by swimmers exacerbated the situation by encouraging sediment migration into the spring vent itself. Once the state acquired the property, mitigation of the erosion and sedimentation issues at the headspring began. Projects designed to reduce erosion, particularly in the day-use area east of the headspring, included construction of a system of terraces on slopes above the spring, revegetation of the slopes and installation of concrete walkways and wooden boardwalks that provided structured access to the spring. The sediment buildup in the spring itself was addressed through the dredging of accumulated sands.

The dredging of Big Fanning Spring took place in two separate projects, in 2002 and 2011. DEP and the Suwannee River Water Management District (SRWMD) jointly funded the 2002 project. The 2011 Fanning Springs Sediment Removal and Dock Modification project was sponsored by multiple agencies including the Florida Fish and Wildlife Conservation Commission (FWC), the U.S. Fish and Wildlife Service (USFWS), the SRWMD, The Nature Conservancy (TNC) and DEP. The various agencies cooperated in a restoration dredge designed to remove excess sediments from the spring and spring run, restore the spring's natural contours and depths, and ensure open access to the spring bowl for West Indian manatees (*Trichechus manatus*) and other wildlife at all river stages.

Prior to each project, extensive geological and archaeological soil analyses were conducted to accurately determine historic sediment depths. During both projects, expert divers used hand-held suction devices to remove a total of nearly 1000 cubic yardsof sand and debris from the system (more than 400 cubic yards in 2002 and more than 500 cubic yards in 2010). Disturbance of the spring-run stream community using this device was minimal, especially during the 2011 project, given that there were no intact SAV beds present within the entire spring system at the time of either dredge.

DRP also implemented a floating buoy system at Big Fanning Spring that better defined the limits of the public swimming area in order to distinguish it from areas of ecologically sensitive shoreline where severe erosion was still taking place. As of 2022, protected shorelines were the only locations within Big Fanning and its spring run that still harbored remnant populations of SAV. Additional protective measures for Big Fanning Spring included construction of a boardwalk and platform system through the swamp along the north edge of the spring run west to the Suwannee River and installation of a large L-shaped floating dock along the north side of the spring run to accommodate swimmers and sunbathers. These measures helped reduce recreational impacts while improving public access to the Suwannee River and Big Fanning headspring.

One erosion issue that remains unresolved is the canoe launch site on the Suwannee River just north of the spring run. Historically, a partially paved road connected the canoe launch with a large open field to the northeast at the top of a steep slope. Most of the crumbling asphalt debris along the road has since been removed and native vegetation has been planted in the road trace. Those efforts have partially succeeded in reducing soil erosion on the slope. However, there is still a need to establish an alternative,

well-stabilized pathway there that will provide paddlers with safe, reliable access to the launch from uplands in the park. Any design changes that are proposed for the paddling launch and its access route should take into consideration the extreme fluctuations in river stage that occur frequently along the Suwannee.

DRP will continue to work with appropriate state and federal agencies such as the SRWMD and the DEP Northeast District in seeking ways to restore the ecological health of the spring systems in the park. Park staff will monitor and mitigate any erosion occurring on slopes above the springs and in communities adjacent to the springs.

Aquatic Cave

Aquatic caves of undetermined size and extent occur in the park. These aquatic caves exist in association with the Floridan aquifer, the supplier of groundwater to Fanning Spring and Little Fanning Spring. Although the caves are not accessible to humans, they may provide habitat for troglobitic species of crustaceans such as those found within the Manatee Springs cave system to the south. At this time, no detailed information is available about the condition or extent of the cave system.

Management of the aquatic caves will mainly entail protecting cave entrances from excessive erosion and continuing to monitor water quality and quantity within the Fanning springshed. Future dye trace work may be necessary.

Developed

Developed areas within the park include the swimming facilities and boardwalks at Fanning Spring, along with a parking area, buildings and associated recreation areas in the uplands north of Fanning Spring.

Spoil Area

Limited areas of spoil are found in the mesic hammock, alluvial forest and floodplain swamp communities in the southwestern end of the park in association with a former housing development site. The spoil piles and a causeway within the floodplain will either be removed or breached as needed to restore natural hydrological patterns. The long-term goal for the spoil areas should be to restore them to whatever natural community existed there before alterations took place, whether mesic hammock, alluvial forest or floodplain swamp.

Successional Hardwood Forest

The successional hardwood forests within the park are probably derived from former upland mixed woodlands that were subjected to the harvesting of longleaf pines and selected hardwoods in the distant past. Laurel oaks and other invasive off-site species that typically colonize disturbed, fire-excluded areas, now dominate much of this area. The long-term goal for the successional hardwood forest is to restore it to upland mixed woodland with a species mix as representative of the original natural community as possible.

Although remnant longleaf pines and southern red oaks are scattered through the successional hardwood forest, they occur at far below natural density. Decades of fire exclusion and shading by hardwoods have caused the loss of herbaceous groundcover, so restoration to the original natural community would be very difficult. Initial restoration efforts will focus on areas adjacent to current restoration sites in upland mixed woodland near the east boundary of the park. Additional surveys may be able to locate other groups of longleaf pines in the successional hardwood forest that would benefit

from prescribed fires. These areas will be included in the prescribed fire program if appropriate, but the majority of the successional hardwood forest would require large-scale restoration efforts before prescribed fire could be used effectively. The optimal fire return interval for any areas of successional hardwood forest that are included in the prescribed fire program should be two to five years.

Objective A: Maintain 65 acres within the optimum fire return interval.

- Action 1 - Develop annual prescribed fire plan.
- Action 2 - Burn 6-40 acres annually, as identified in annual prescribed fire plan.

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)**
Upland Mixed Woodland	8.7	2-4
Successional Hardwood Forest	72	2-20
Annual Target Acreage*	6 – 40	
*Annual Target Acreage Range is based on the fire return interval assigned to each fire zone. Each zone may include multiple natural communities.		

Most of the fire-type natural communities within the park have disappeared due to previous human impacts and fire suppression. Much of what was once upland mixed woodland is now mapped as successional hardwood forest. Scattered remnants of longleaf pine and southern red oak remain, however, located within patches of upland mixed woodland in poor condition. These areas are mapped as upland mixed woodland and have received limited prescribed fire as part of restoration efforts. Application of prescribed fire to portions of the successional hardwood forest is planned in an effort to increase habitat diversity and reduce fuel loads, and to help determine if future restoration of the upland mixed woodland community is feasible at these sites. Selective removal of off-site hardwoods such as laurel and water oaks will be used to complement and enhance prescribed fires in the upland mixed woodland and in selected portions of the successional hardwood forest. Both mechanical removal and selective herbiciding may be used on a case-by-case basis to speed the restoration process in the vicinity of remnant longleaf pines. Restoration of fire-type natural communities within the park could potentially provide habitat for species such as the gopher tortoise that have been displaced by the succession of upland mixed woodland to closed-canopy successional hardwood forest. The annual target prescribed fire acreage for Fanning Springs State Park is 6 to 40 acres.

***Objective B*:** Conduct natural community restoration activities on 8.7 acres of upland mixed woodland.

- Action 1 - Develop a site-specific restoration plan.
- Action 2 - Implement restoration plan.

Fanning Springs State Park contains remnants of the upland mixed woodland natural community. That community is currently in poor condition because off-site hardwoods such as laurel oaks and sweetgums have invaded it to the extent that they now dominate the community. DRP staff will develop a restoration plan to guide the broad-scale restoration of the park's upland mixed woodland over the long term. Park staff has already begun to remove off-site hardwoods in areas mapped as upland mixed woodland, particularly around longleaf pines, to improve conditions for subsequent prescribed fires. Removal of off-site hardwoods will be expanded to areas around southern red oaks, sand post oaks, and mockernut hickories using a combination of chemical and mechanical treatment. The park should apple prescribed fire to the restoration areas more frequently during this restoration phase. More frequent fires will help prevent an accumulation of excessive fuels, reduce fire intensity and control the re-sprouting of hardwoods. This is the highest priority natural community restoration project in the park.

***Objective C*:** Conduct natural community improvement activities on 63 acres upland mixed woodland.

- Action 1 - Survey successional hardwood forest to locate patches of remnant upland mixed woodland.
- Action 2 - Remove off-site hardwoods in the vicinity of remnant patches of upland mixed woodland.
- Action 3 - Apply prescribed fire with adequate fuels.

The historical extent of upland mixed woodland at Fanning Springs State Park is not completely known. Remnant species from this rare natural community are scattered through the successional hardwood forest in the park and need to be mapped more thoroughly to guide future restoration efforts. Therefore, DRP biological staff will survey areas currently identified as successional hardwood forest and will map locations of remnant longleaf pines, southern red oaks, mockernut hickories, sand post oaks and other plant species typical of upland mixed woodland. Park staff will then begin the long-term process of removing off-site hardwoods from the immediate surroundings of remnant upland mixed woodland species, using a combination of chemical and mechanical treatments. Prescribed fire will be reintroduced to those areas if adequate fuels are present.

IMPERILED SPECIES

Perhaps the most significant imperiled species that occurs at Fanning Springs is the Florida manatee. Manatees are regularly sighted in the Suwannee River and in the spring and spring run, especially during cold weather. Manatees avoid becoming hypothermic in the cold river waters by seeking refuge in the springs, which are often warmer and more constant in temperature. The West Indian manatee must be protected from impacts due to park development and recreational use.

Harassment of manatees is not tolerated, and park staff will continue to provide visitors with interpretive information to inform them about manatees and their protection. Staff will also keep records of manatee use of the spring runs and document interactions with park visitors. All incidents of manatee harassment by park visitors are recorded on a standard incident report as required for all

incidents involving negative impacts on imperiled species. Use of the spring run by motorized vessels has the potential to discourage manatee use of the spring run or possibly injure manatees. Conflicts between manatees and motorized vessels are of greatest concern during the winter months when manatees need access to warm water refugia.

The dredging of Fanning Spring and spring run in 2002 and 2011 has restored a more natural bottom contour by removing unnatural accumulated sediments. One goal of this project was to improve access for manatees, particularly during low water periods. The second phase of the Fanning Springs Sediment Removal and Dock Modification project was completed in 2014 with the removal of one section of floating dock to further improve access for manatees. The gap in the floating dock also created an opening for surface flow and movement of floating plant materials.

Another imperiled species that occurs within the Suwannee River adjacent to Fanning Springs State Park is the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), a federally threatened subspecies of the Atlantic sturgeon. At certain times of the year, sturgeons are readily apparent at the park, leaping into the air as they navigate the river.

Gopher tortoises (*Gopherus polyphemus*) also occur within the park. The tortoise and other species common to upland mixed woodland have suffered from long-term fire suppression and community alterations within the park. Because of the loss of the open upland mixed woodland and its replacement by a closed-canopy successional hardwood forest, the remaining gopher tortoises at Fanning Springs State Park have relocated to the developed area of the park south of U.S. Highway 19/98.

Several large and active gopher burrows occur in this open field. These represent the only known significant population of gopher tortoises within the park. A gopher tortoise population also occurs along the Nature Coast State Trail that runs east of the park boundary, but unsuitable habitat separates the two populations. Gopher tortoises should be protected from future development impacts. A long-term and intensive prescribed fire and planting program will be necessary to restore sufficient upland mixed woodland onsite to support the current gopher tortoise population. As more experience is gained in restoring remnants of upland mixed woodland in the park, consideration will be given to restoring larger areas that could better support the gopher tortoise population.

As is the case with the gopher tortoise, the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*) and Suwannee cooter (*Pseudemys suwanniensis*) were once harvested for human consumption. Park staff should be particularly vigilant to protect these species from poaching within the park. The Suwannee cooter and other aquatic turtles require relatively open and sunny upland areas in which to lay their eggs to ensure proper incubation temperatures. Maintenance of open spots within the developed areas will benefit these species.

The spiked crested coralroot (*Hexalectris spicata*) is the only naturally occurring imperiled plant species known at the park at this time. The star anise (*Illicium parviflorum*) was introduced to the park during past landscaping efforts and does not naturally occur at Fanning Springs State Park.

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

Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
PLANTS						
Spiked crested coralroot *Hexalectris spicata*			LE		10	Tier 1
Star anise * *Illicium parviflorum*			LE	G2,S2	10	Tier 1
*introduced as landscape plant						
FISH						
Gulf sturgeon *Acipenser oxyrinchus desotoi*	FT	LT		G3T2T3 S2?	4,9,13	Tier 1
REPTILES						
American alligator *Alligator mississippiensis*	FT(S/A)	T(S/A)		G5,S4	4,10, 13	Tier 1
Eastern indigo snake *Drymarchon couperi*	FT	LT		G3,S2?	1,6,7	Tier 1
Gopher tortoise *Gopherus polyphemus*	ST			G3,S3	1,6,7,8, 10, 13	Tier 2
Suwannee alligator snapping turtle *Macrochelys suwanniensis*	ST	PT		G2,S2	4,9	Tier 1
BIRDS						
Little blue heron *Egretta caerulea*	ST			G5,S4	4,13	Tier 1
Tricolored heron *Egretta tricolor*	ST			G5,S4	4,13	Tier 1
Swallow-tailed kite *Elanoides forficatus*				G5,S2	13	Tier 1
MAMMALS						
Florida manatee *Trichechus manatus lasirostris*	FT	LT		G2G3T2, S2S3	4,10, 12,13	Tier 2

Management Actions:

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

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.

Additional surveys for imperiled plant and animal species are needed at Fanning Springs State Park to ensure that all imperiled species are documented. DRP will enlist the assistance of academic researchers and staff from other agencies during development of species occurrence inventory lists, especially where necessary for certain taxonomic groups.

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

- Action 1 - Develop monitoring protocols for the imperiled Florida manatee.
- Action 2 - Implement monitoring protocol for the Florida manatee.

DRP staff will develop a manatee protection plan to provide guidelines for the monitoring and management of manatees within the park. This plan will be an adaptive guidance document with specific protocols to modify visitor use of the main swimming area when a manatee enters.

Park staff cooperates with FWC the USFWS and USGS when reporting unusual manatee behavior and assists with manatee rescues or research (e.g., satellite tracking) on an as-needed basis. The park actively monitors manatee numbers in the spring run year-round to ensure that visitors do not disrupt normal manatee behavior. Data collected include human/manatee interactions, as well as changes in water levels and water clarity in the spring system.

DRP will continue to coordinate and cooperate with its partners in the Fanning Springs Sediment Removal ans Dock Modification project to implement the best strategies for continuing manage the Fanning Springs manatee population.

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

- Action 1 - Develop monitoring protocols for imperiled spiked crested coralroot.
- Action 2 - Implement monitoring protocol for the imperiled spiked crested coralroot.

Populations of spiked crested coralroot (*Hexalectris spicata*) occur in the upland hardwood forest. These populations need to be surveyed and documented, biennially if possible, to assess their condition and to detect the presence of any new populations that may have appeared in the park.

INVASIVE SPECIES

Fanning Springs State Park is fortunate to have few invasive plants occur there. The staff routinely treats all known invasive infestations in the park. Staff members survey the park every two years to find new invasive plant infestations and to assess the effectiveness of previous treatments of known populations.

Small amounts of Japanese climbing fern (*Lygodium japonicum*) occur in the park along the banks of the Suwannee River. This is currently the species of greatest concern in the park. Staff should be diligent in scouting for and eradicating new populations of this species. Water lettuce (*Pistia stratiodes*) occurs in the spring run and should be removed by hand. Heavenly bamboo (*Nandina domestica*), camphor-tree (*Cinnamomum camphora*) and lantana (*Lantana camara*) previously occurred in the park but have been extirpated. Park staff should still be familiar with the appearance of these species in case they return.

Two other horticultural plants in the park have the capability of spreading or persisting. While the Florida Invasive Species Council does not currently list these species as Category I or II invasive plants, park staff should remove them. Border grass (*Liriope spicata*) has been observed invading natural areas in Alachua County. The other species, Purple Queen (*Tradescantia pallida*), can persist for years and slowly expand the perimeter of its population.

The invasive animals of most concern at Fanning Springs are feral hogs (*Sus scrofa*), feral cats (*Felis catus*) and feral dogs (*Canis familiaris*). Most of the hogs observed in the park appear to be in transit along the floodplain of the Suwannee River. When signs of hog rooting become evident, park staff makes a concerted effort to remove the hogs in accordance with DRP policy. Feral cats and dogs are also removed when they are discovered.

In January 2013, red bay trees (*Persia borbonia*) in the park were observed to be dying from laurel wilt disease. This disease, first observed in the United States in 2002 and in Florida in 2005, is caused by the fungus *Raffaelea lauricola*, which is transmitted by the invasive red bay ambrosia beetle (*Xyleborus glabratus*). The disease now occurs throughout Florida. There is no known cure for the disease, although the lives of individual infected trees may be prolonged by injecting fungicide into the cambium. To slow the spread of the disease, Fanning Springs State Park does not permit wood from dead red bay trees to be transported into or out of the park. It is estimated that the beetle has a rate of spread of about 20 miles per year on its own, without the aid of humans.

Species Name Scientific Name - Common Name	FLEPPC Category	Distribution	Zone ID
Cinnamomum camphora - Camphor-tree	I	Single Plant or Clump, Scattered Plants or Clumps	FN-2A, FN-1B
Dioscorea bulbifera – Air potato	I	Linearly Scattered	FN-1A
Lygodium japonicum - Japanese climbing fern	I	Scattered Plants or Clumps	FN-2D
Pteris vittata - Chinese brake fern	II	Scattered Plants or Clumps	FN-1D
Sapium sebiferum - Chinese tallow tree	I	Scattered Plants or Clumps	FN-1B, FN-2B
Solanum viarum - Tropical soda apple	I	Single Plant or Clump, Scattered Dense Patches	FN-1B, FN-1C, FN-2A, FN-1D

Objective A: Annually treat all acres of invasive plant species in the park.

- Action 1 - Annually develop and update invasive plant management work plan.
- Action 2 - Implement the annual work plan by treating 3 infested acres dispersed over about 39 gross acres in the park and continuing maintenance and follow-up treatments as needed.

The park will treat all known infestations of invasive plants on an annual basis. Because the park currently has very few infestations, it will be extremely important to maintain this invasive-free condition. Surveying for new invasive plant infestations becomes very important in a park that has achieved maintenance condition. Therefore, the entire park will be surveyed every five years. If new invasive plant infestations are found, they should be treated immediately. Floodplain areas must be thoroughly surveyed to detect any new populations of Japanese climbing fern that might have taken hold and treatment should be initiated before the fern becomes well established.

***Objective B*:** Control three nuisance animal species in the park.

- Action 1 - Continue control activities on feral hogs.
- Action 2 - Relocate feral cats and stray dogs to the county animal control facility as necessary.

The park will continue to remove nuisance and invasive animals on an as-needed basis. To date, the main problem species have been feral hogs, feral cats and feral dogs.

CULTURAL RESOURCES

Prehistoric and Historic Archaeological Sites

Fanning Springs State Park has a rich cultural history concentrated within less than 200 acres. The park has 13 archaeological sites, one historic cemetery and one resource group recorded with the FMSF.

LV00537 contains components dating from the early Archaic period (6500 B.C.), the Deptford and Weeden Island periods (500 B.C.-700 A.D.), and the Alachua period (700-1565 A.D.). It is possible that there are also some much earlier components from the Paleoindian period (12,000-6500 B.C.). Some

historic artifacts recovered in the park likely date from the Seminole War period (1817-1842) (Weisman and Newman 1995; Wheeler 1997). Twentieth-century components are also present (Weisman and Newman 1995). Two new FMSF additions to the park since the last plan update are lithic scatter sites associated with the Suwannee Motel (LV00828) and ranger residence (LV00829).

An underwater archaeological site thought to be a sunken gun boat (i.e., Civil War-era shipwreck, LV00113) is located in the Suwannee River near the mouth of Fanning spring-run. It has not been observed for several years (Stokes and Faught 1996).

The Shelby Mound (LV00538) is a prehistoric site that was disturbed by looters prior to state acquisition. Little is known about the site. It needs further investigation to determine if it is eligible for the National Register of Historic Places. DRP also should determine if actions are needed to improve its condition. The McGrew Family Cemetery (LV00539) consists of an unknown number of family graves, identified through bibliographic and interview research. The exact boundaries of the cemetery are unknown.

The 1920s-era Fanning Sawmill (LV00818) and the Bog Iron Mine (LV00821) are more recently recorded sites dating from the 19th and 20th centuries. The Bog Iron Mine is a 19th-century extractive site where hydrous iron oxide that had formed in local swamps and springs was mined during the Civil War era (Verrill 1976). The Fanning Sawmill site contains an area of debris from an early 20th-century sawmill and late 19th-century storehouse owned by the Barrow family. A portion of the site may have been graded in the past to create a ball field.

Twenty-one surveys have been conducted within the park over the years (Weisman and Newman 1995; Stokes and Faught 1996; Wheeler 1997; Johnson and Scafidi 1998; Newman and Memory 2000; Hendryx 2001; Hendryx and Ferrell 2001; Davenport 2001a; Davenport 2001b; Bland and Chance 2002; Ellis and Martin 2002; Dickinson and Wayne 2003; Hendryx and Nash 2003; Davenport 2005a; Davenport 2005b; Davenport 2007; Ditullio and Moody 2009; Davenport et al. 2010; Davenport 2011; Price and Smith 2012; Collins et al. 2012).

All known sites have been submitted to the FMSF. A predictive model has been completed (Collins et al. 2012).

The condition of most of the sites at Fanning Springs State Park is good. The exception is a portion of LV00537.

The exact location of site LV00035 is unknown, but based on previous observations it is no longer classified as a mound site. LV00538 was damaged by looting prior to being acquired by the state and is in fair condition. The condition of LV00539 has not been evaluated yet because the extent and location of the cemetery is difficult to determine.

Looting is a concern at all sites. Erosion from foot traffic is a concern for sites within the more heavily used areas of the park.

The Shelby Mound (LV00538) has not been determined eligible for listing in the National Register of Historic Places due to insufficient information. Fanning Springs State Recreation Area Site (LV00537) and log cabin site (LV00506) are eligible for listing in the National Register of Historic Places (Bland and Chance 2000) under Criterion D of Criteria for Listing in the National Register.

Sites should be checked regularly for signs of looting and erosion. If heavy foot traffic has caused significant erosion in use areas, protective measures may need to be implemented.

Historic Structures

Fanning Springs has one historic structure, a log cabin (LV00625) built in 1947.

The log cabin is in good condition.

The cabin (LV00625) has not been evaluated for its eligibility for listing in the National Register of Historic Places, mainly because there is insufficient research to determine the history and architectural significance of the structure. In addition, it is undetermined which Criteria for Listing in the National Register would apply.

The cabin (LV00625) should be inspected annually. Maintenance will be conducted on an as-needed basis to keep the structure in good condition. Staff should document information on the history of the Cabin.

Collections

Fanning Springs has an informal collection of items that have been found within the park. The majority of these are cultural resource objects rather than natural resource objects.

The collection items represent the span of human occupation of the area. Items include Native American stone tools and pottery, Fort Fanning and Second Seminole War material, and farming and logging artifacts from the settlement period in the late 19th and early 20th centuries. There are also items from the early period of recreational development around the spring, and even a partial segment of an important Pratt truss highway bridge, the Fanning Springs Bridge, that formerly crossed the Suwannee River and had once been part of DI00077. The bridge span is on display in the former Florida Department of Transportation (FDOT) wayside park that is now part of Fanning Springs State Park.

The natural resources portion of the collection consists of field records, data and reports.

The condition of the collection is generally good. However, a maintenance plan is needed to keep the bridge span in good condition. Lichens are beginning to grow on the structure.

Most of the collection is not on display but is stored in a locked cabinet in climate-controlled conditions. A few items are displayed in a glass cabinet in the ranger station. Collection items are used as needed for interpretive programs.

All items except the bridge span were found within the park. They represent a broad spectrum of human history, as well as the local history of Fanning Springs, the surrounding community and the Suwannee River. They are significant because they are the material expression of the local history.

The park has a Scope of Collections Statement. It needs to develop a plan for management of the bridge segment. No collection management assessments have been made.

Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture/Period**	**Description**	**Significance**	**Condition**	**Treatment**
LV00035 Fanning Springs Mound	Prehistoric	Archaeological Site	NE	F	P
LV00079 FANNING SPRINGS	Prehistoric	Archaeological Site	NE	G	P
LV00113 NN (SHIPWRECK)	19th Century	Archaeological Site	NE	G	P
LV00505 BIG FANNING	Prehistoric	Archaeological Site	NE	G	P
LV00506 LOG CABIN	Prehistoric	Archaeological Site	NR	G	P
LV00511 GINGER	Historic	Archaeological Site	NE	G	P
LV00512 Maryann	Prehistoric	Archaeological Site	NE	G	P

LV00524 Old Dock Pilings	Historic	Archaeological Site	NE	G	P
Fanning Springs Recreation Area LV00537	Archaic – 20th Century	Resource Group	NE	G	P
Shelby Mound LV00538	Pre-historic	Archaeological Site	NE	F	P
McGrew Family Cemetery LV00539	Late 19th Century	Historic Cemetery	NE	NE	P
Fort Fanning -Cedar Key Road LV00618	Second Seminole War	Archaeological Site, Road Segment	NR	G	P
Cabin LV00625	Mid-20th Century, 1947	Historic Structure	NE	G	RH
1920's Fanning Sawmill LV00818	Early 20th Century	Archaeological Site	NE	G	P
Bog Iron Mine LV00821	19th Century	Archaeological Site	NE	G	P
Suwannee Motel LV00828	Historic	Archaeological Site	NE	NE	P
Ranger Residence LV00829	Pre-historic and historic	Archaeological Site	NE	NE	P

Objective A: Assess and evaluate 10 of 10 recorded cultural resources in the park.

- Action 1 - Complete 10 assessments and evaluations of archaeological sites. Prioritize preservation and stabilization projects.

DRP will evaluate for significance any cultural site in the park that has not yet received an evaluation. Park staff will monitor all cultural sites periodically to ensure that they remain undisturbed.

The park will preserve the footprint of the Fort Fanning-Cedar Key Road (LV00618) by controlling vegetation that threatens to obliterate it and by protecting it from ground disturbance. No Historic Structures Report is needed.

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

- Action 1 - Update and record all known sites within the Florida Master Site File.
- Action 2 - Conduct Level I archaeological survey for priority areas identified by predictive modeling when funds become available.
- Action 3 - Conduct oral history interviews.

Park staff has compiled some very interesting oral history and written documentation pertaining to the history of the area. Staff needs to determine what important gaps in history remain undocumented and attempt to obtain that information, particularly through oral interviews.

A predictive model and a Scope of Collections Statement have been completed for the park. All the current information should be organized so that it is available to future park staff.

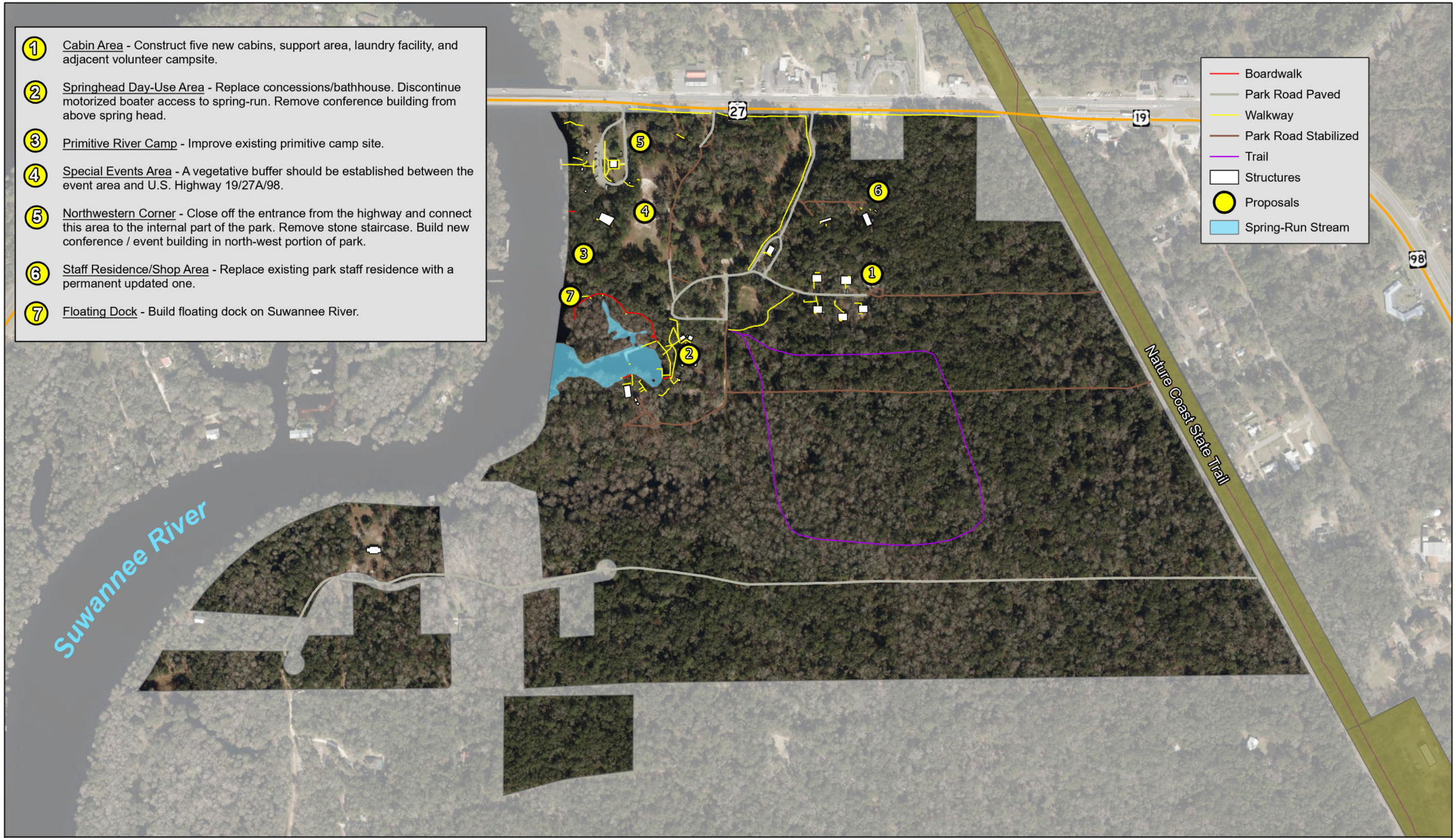
***Objective C*:** Bring one of 10 recorded cultural resources into good condition through site delineation and protection.

- Action 1 - Design and implement regular monitoring programs for seven cultural sites.
- Action 2 - Create and implement a cyclical maintenance program for each cultural resource.
- Action 3 - Bring the McGrew Family Cemetery into good condition.
- Action 4 - Maintain the Fort Fanning-Cedar Key Road in good condition.

DRP will bring the McGrew Family Cemetery (LV00539) into good condition. Because the boundaries of the cemetery are poorly defined, it is difficult to protect the site from ground disturbance. Therefore, determining the exact boundaries of the site will be a priority. Accomplishing this will probably require methods such as ground penetrating radar.

In consultation with FDOT and DRP's Bureau of Natural and Cultural Resources, the park should develop a cyclical maintenance plan to keep the bridge span in good condition, free of lichens and other vegetative growth.

1. Cabin Area - Construct five new cabins, support area, laundry facility, and adjacent volunteer campsite.
2. Springhead Day-Use Area - Replace concessions/bathhouse. Discontinue motorized boater access to spring-run. Remove conference building from above spring head.
3. Primitive River Camp - Improve existing primitive camp site.
4. Special Events Area - A vegetative buffer should be established between the event area and U.S. Highway 19/27A/98.
5. Northwestern Corner - Close off the entrance from the highway and connect this area to the internal part of the park. Remove stone staircase. Build new conference / event building in north-west portion of park.
6. Staff Residence/Shop Area - Replace existing park staff residence with a permanent updated one.
7. Floating Dock - Build floating dock on Suwannee River.



Fanning Springs State Park

Conceptual Land Use Plan

0 500 1,000 Feet

N

LAND USE COMPONENT

VISITATION

Fanning Springs State Park protects first-magnitude Fanning Springs, second-magnitude Little Fanning Springs and roughly three-quarters of a mile of Suwannee riverfront. The park is a premier Nature Coast swimming destination that includes recreational activities such as wildlife viewing, boating, kayaking, canoeing and hiking. Several archaeological sites have also been documented within park boundaries.

The spring runs, along with the Suwannee River into which they drain, are home to the endangered West Indian manatee and Gulf sturgeon. The upland stretches of the park support the endangered gopher tortoise. Visitors are drawn to the park in the summer for swimming and in the winter for manatee observation. Overnight accommodations are available in the park, as five popular cabins are available for booking year-round.

Trends

Like other spring parks in the area where swimming is the primary attraction, Fanning Springs State Park sees a significant increase in visitation in the summer. Visitation remains strong during the early fall but decreases in tandem with the temperatures in the area. The presence of manatees in the spring run is a driver for steady winter visitation.

EXISTING FACILITIES AND INFRASTRUCTURE

Existing facilities at Fanning Springs State Park are primarily concentrated in two areas. The springhead day-use area is the centerpiece of the park and accessible via the main park entrance. This area includes restrooms, a concession building, a floating dock, a diving platform, an education building and small storage structures. At one point, there was a boardwalk extending from the springhead to the Suwannee River, which has been removed due to erosion issues.

The wayside park area provides direct access to U.S. Highway 19/27A/98 and includes restrooms, a boat dock on the Suwannee River, three picnic pavilions, a covered stage and a storage building.

Outlying structures are found in the northeastern and southwestern corners of the park. The park residences accompany a storage facility in this area, and a cluster of five cabins is located just south of the residential complex. An unoccupied log cabin is located in the isolated and relatively unimproved southwestern corner of the park. A hiking and bicycling loop trail allows visitors to explore the upland hardwood and successional hardwood forests in the center of the park, just east and south of the springhead day-use area.

Facilities Inventory

Springhead Day-Use Area	
Pavilion – Medium	1
Pavilion – Small	5
Covered Stage	1
Playgrounds	1
Volleyball Court	1
Shower Station	1
Concession Building	1
Education Center	1

Parking Area	1
Boardwalk (Feet)	715
Wayside Picnic Area	
Covered Stage	1
Picnic Pavilions	3
Storage Buildings	2
Restroom	1
Docks	2
Parking Area	1
Semi-Primitive Group Camp Area	
Canoe/Kayak Launch	1
Semi-Primitive Group Campsite	1
Trails and Roads	
Trail Mileage	1
Paved Road Mileage	1.64
Stabilized Road Mileage	1.10
Unstabilized Road Mileage	0.52
Cabins	
Guest Cabins	5
Open-Air Log Cabin	1
Administrative Support Facilities	
Park Residences	2
Shed (Electric)	1
Storage Structures	2
Ranger Station – Park Entrance	1
Laundry Building	1

CONCEPTUAL LAND USE PLAN

Detailed Conceptual Land Use Plan Objectives

Seven use areas at Fanning Springs 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.

Springhead Day-Use Facilities

Objective: Update infrastructure and degraded landscape to support park facilities.

Actions:

- *Relocate the concessions/bathhouse building.*
- *Revegetate area between the bathhouse/concessions building and springhead.*
- *Remove conference building and revegetate the area.*

The construction of a new concessions and bathhouse building that meets current DRP standards is recommended. The replacement structure should be built further from the spring run to mitigate effects to the water resource. The proposed location of these buildings is further to the east, closer to the existing service road and further away from the steep slopes above the spring.

The altered area between the spring and the current bathhouse/concessions building should be revegetated. The installation of native flora will help minimize erosion which will decrease the amount of sediment that washes into the spring. Discrete signage to direct visitors toward the overlook deck will additionally minimize erosion from off-path foot traffic.

A small conference building is situated at the edge of a slope above the main springhead. Predating acquisition as a state park, the location of the structure interferes with the natural condition and aesthetics of the site. The area surrounding this building is seasonally trampled during peak visitation, which contributes to sedimentation of the spring during periods of high rainfall. It is recommended that this building be removed and relocated to existing upland clearing near the northern wayside picnic area. Once the building is removed, the area above the springhead should be revegetated to restore natural appearances and hydrology. Removal of the structure from this site will enhance the natural viewshed of the spring bowl and surrounding uplands.

Boating Access

Objective: Provide boater access while protecting aquatic habitat and visitor safety.

Actions:

- *Relocate boating access to alternative dock site.*
- *Address concerns at the existing on grade paddlecraft access*

Direct and indirect impacts from boat access and associated activities have resulted in the decline of submerged aquatic vegetation in the main spring run. Redirecting motorized vessels from the spring run to a convenient alternative dock site is recommended to ensure responsible stewardship of the spring-run stream which historically served as a critical refuge for the West Indian manatee. DRP and FWC will coordinate to plan and implement reintroduction of submerged aquatic vegetation vital to restoring the spring-run stream and providing essential overwintering habitat for West Indian manatee as well as habitat for other imperiled aquatic species such as the alligator snapping turtle and Gulf sturgeon. Shifting the arrival point for boats would also protect swimmers from potentially hazardous interactions with motorized watercraft. The closure of motorized boat access to the spring run would warrant public input.

With restriction of boating access in the main spring-run, a new dock will be made available to boaters arriving via the Suwannee River. A proposed universally accessible floating dock will be installed at the end of the scenic boardwalk that provides direct access to the spring basin. The existing boardwalk will be extended to provide safe and convenient connection to the floating dock. The boardwalk extension and floating dock will alleviate current erosion, accessibility/safety, and aesthetic concerns of this site while accommodating both boaters and paddlers equally.

The floating dock should provide capacity for up to 10 motorized boats and ease of ingress/egress for paddlecraft. Due to the high level of traffic on this stretch of the Suwannee River, boat slips should be provided to protect vessels from wakes caused by passing motorboats. Design may include features of the boat dock at Manatee Springs and the paddling dock at Ichetucknee Springs. The In addition to the new dock, the Wayside Picnic Area (see next section) will continue to provide additional boating access to the park as well as ingress/egress for paddlers, however, the new proposed site just north of the main spring basin will offer a shorter and more scenic walk to the destination springhead.

Northwestern Portion

Objective: Integrate with the park proper.

Actions:

- *Close entrance from U.S. Highway 19/27A/98.*
- *Integrate with park interior.*
- *Construct new meeting/conference building.*
- *Restore vegetative buffer between the wayside picnic area and US Highway 19/27A/98.*
- *Remove cement steps to the river and re-naturalize the riverbank.*

The northwestern portion of the park encompasses the wayside picnic area and other areas of the park that are the subject of proposed landscape improvements and facilities development.

The entrance to the wayside picnic area of Fanning Springs State Park is directly linked to U.S. Highway 19/27A/98 for vehicular ingress and egress. No connection, however, exists between the wayside picnic area and the interior of the park. In effect, the wayside picnic area functions as a separate entity that is not intuitively recognized as part of Fanning Springs State Park. The direct connection between the wayside picnic area and the highway should be closed, and a short, paved road should be constructed to connect the picnic area to the main day-use area parking. Some removal of vegetation and interior fencing should be considered to improve site lines and overall integration of the general area into the main body of the park.

The wayside picnic area should be presented to the public as an equally viable paddlecraft launch point comparable to the proposed floating dock. This change will also allow for consistent collection of park entrance fees and enable effective staff monitoring of this otherwise disjunct area. For visual and auditory insulation of the site from passing traffic and adjacent non-conservation activity, vegetation along the perimeter should be restored, maximizing the appearance and experience of the site as a state park.

Stormwater management should be improved by removing the concrete steps that lead from the paved parking area to the river as this largely defunct infrastructure serves as a conduit for stormwater runoff into the river. As a point of access to the river, it is considered an attractive nuisance – unsafe for unmonitored visitor use and encouraging swimming where the current is swift. Viewing the park from the Suwannee River, the staircase is an interruption in the otherwise natural embankment. Erosion control and restoration of the riverbank are integral to this measure. Additionally, ADA-accessibility improvements are also needed for the existing picnic shelters.

A new multi-use conference and events building should be constructed in an existing open area of the northwestern portion of the park. This existing open area is not programmed or designated for a specific purpose, such that there is flexibility with the siting of the proposed structure. Among multiple viable options within the open area, a site near U.S. Highway 19/27A/98 may be suitable to maximize utility connections and direct access to parking. This versatile building would house educational trainings for DRP staff, as well as resource-based community events or DRP staff meetings. The diverse uses associated with this building would replace the uses associated with the conference building that is proposed for removal from above the springhead. Design of the multi-use building should also absorb much of the special event usage that currently takes place on the nearby outdoor stage. For events that require the use of outdoor stages, the wide-open space of this portion of the park can utilize temporary installations.

Cabin Area

Objective: Build new facilities to meet visitor demand

Actions:

- Construct five new cabins.
- Construct a cabin maintenance and support area that includes a laundry facility.
- Construct an adjacent volunteer campsite.

Up to five additional cabins should be constructed to meet the demand for such overnight amenities at the park. There is ample room directly to the east of the existing complex of cabins for the additions. A new laundry facility and other support structures would need to be relocated and upgraded. With the increased number of structures and volume of guests, the expansion should be accompanied by an additional volunteer campsite in the near vicinity.

Staff Residence/Shop Area

Objective: Replace staff residence.

Currently, the only staff residence is an aging modular home. This structure is to be replaced with an updated structure to better support onsite staff needs and consistent oversight of the park.

Primitive River Camp

Objective: Improve existing primitive camp site

Actions:

- *Enhance natural vegetative buffer between the site and surrounding use areas.*
- *Replace/improve basic camp site amenities (i.e., fire ring, seating).*

This area is one of the existing "river campgrounds" and a component of the Suwannee River Wilderness Trail. To improve the river camp experience, enhancing a natural vegetative buffer between this camp site and the surrounding use areas is recommended. During the planning process the question of whether this location was suitable for a primitive river camp was discussed. This question led to the proposed relocation of the camp site to a disjunct southwestern parcel of the park that was deemed more primitive. This proposal was ultimately outweighed by opposing rationale that is explained below for the benefit of future readers and planning efforts:

- The relocated campsite would have required the creation of an altogether new paddling launch/landing which would have entailed the clearing of an intact segment of shoreline and alterations to the natural embankment. This camp site would have also required the installation of a restroom in this remote and flood-prone portion of the park, raising concerns over best strategies for wastewater management.
- The distance between this site and the headspring would limit the ability of campers to utilize both the campsite and day use area. Also, the only road to access the southwestern parcel crosses private property via an access easement, which is not intended for visitor access and would pose operational challenges.

OPTIMUM BOUNDARY

The optimum boundary for Fanning Springs State Park includes several parcels adjacent to different regions of the existing property. The majority of optimum boundary acreage entails a significant southern tract that, if acquired, would more than double the size of the park, establishing new conservation lands that form a connection between Fanning Springs State Park and Andrews Wildlife Management Area. There is a group of parcels contiguous with Andrews Wildlife Management Area that is recommended to be added to the wildlife management area's optimum boundary to further expand the Florida Wildlife Corridor.

Interspersed with the boundaries of the relatively undeveloped southwestern stretches of the park, acquisition of additional optimum boundary parcels would allow the park boundary to extend southwest in an uninterrupted manner along the Suwannee.

Finally, two parcels along the northeastern park boundary are also included in the optimum boundary. A 1.2-acre parcel is situated immediately to the east of the park's main entrance on U.S. Highway 19/27/98 and currently contains an unsightly slab, which is all that remains of a long-demolished structure. A 2.8-acre parcel abuts the intersection of U.S. 19/27/98 and Old Fanning Road (County Road 207). Acquiring this parcel would allow park property to occupy an existing boundary "notch" in its northeastern corner.

It is recommended that certain land parcels be included in the optimum boundary for neighboring conservation lands. The connection of several tracts of Wannee Conservation Area could be accomplished through the acquisition of a few forested parcels. It is suggested that the SRWMD add these parcels to their optimum boundary in hopes of extending the wildlife corridor and further protecting the Suwannee River watershed.

Nature Coast State Trail

Florida Forever BOT Projects
Optimum Boundary (ARC-Approved)
Proposed Non-DRP Conservation
Existing Park Boundary
Other Existing Conservation Lands

Fanning Springs State Park

Optimum Boundary Map

0 0.5 1 Miles

N