Year 2004 Annual Monitoring Report
Devils Swamp Mitigation Bank
Bay and Walton Counties, Florida

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St. Joe Company

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I. INTRODUCTION

The approximately 3,049 acres of the Devils' Swamp Mitigation Bank (DSMB) is located in southwestern Bay County, Florida and southeastern Walton County, Florida approximately 7.5 miles from State Road 79 and 5 miles east of Choctawhatchee Bay. The DSMB is north of the Intracoastal Waterway (ICW) and the majority of the area is south of Steele Field Road. The surrounding property is owned primarily the St. Joe Company and has predominantly been managed for silvicultural use. Significantly the contiguous property to the south of the bank is owned by the Northwest Florida Water Management District (NWFWMD) and this land is also being restored. At this time the region surrounding the DSMB has had limited development and little to no urban or suburbanization. The alterations to the natural history of the DSMB are primarily through ditching, road building, silviculture and the ICW and spoil associated with this. This property has also been used secondarily for hunting and game management. No feral hog activity was seen by the investigators during the course of this study. This property is accessible through several gated entrances along Steele Field Road. Authorization for access must be arranged through the St. Joe Company, Inc.

The DSMB is located in the St. Andrews Bay watershed as shown in Figure 1. This watershed is part of the area covered by the U.S. Army Corps of Engineers and Florida Department of Environmental Protection (FDEP) Ecosystem Management Agreement (EMA) for the West Bay to East Walton County GP/EMA project. In addition, NWFWMD lands contiguous with the southern boundary of the DSMB were acquired to protect the water resource.

The landform that comprises the DSMB is dominated by its marine and depositional origin as it lies entirely within the Gulf Coastal Plain (Randazzo and Jones, 1997). Shallow marine currents are responsible for much of the deposition and erosion that created this landform. The physiography can be described as a gently rolling plain, punctuated by depressions, sandy ridges and swales. This landscape is included as a physiographic region in the Gulf Coastal Lowlands (Randazzo and Jones, 1997). Though the water table is relatively close to the surface throughout this region, there is enough topographic relief for the formation of sandy hills colonized by sandhill vegetation or upland coniferous forests, as per FLUCCS. Rainfall is captured by the deep sands of xeric ridges and flows downward. The topography and soils create seepage slopes that provide the hydrology for hydric pine flatwoods and wet savannas, which eventually drain into wetlands with longer hydroperiods such as cypress swamps, gum swamps and mixed forested wetlands. The sandy soils are relatively nutrient and mineral poor and water conditions tend to be acidic and often tannic which further ties up the availability of nutrient and mineral content. These acid wetlands support a rich diversity of specially adapted plant species, such as sundews (*Drosera*), pitcherplants (*Sarracenia*) and butterworts (*Pinguicula*).

Another very important component to the natural ecology of this site is the resulting action of natural fire.

Historically, this region would have been burned by wildfire caused by lightning strikes at regular intervals. This would have controlled woody plant growth and woody dominance in most of the ecosystems at this site and helped to support a high diversity of herbaceous species in the wet savannas (including seepage slopes), pine flatwoods and sandhill ecosystems. With the suppression of these regular wild fires through human intervention, woody growth has dominated the groundcover and reduced the coverage and diversity of herbaceous species. Many herbaceous species create rich plant communities and although impacted by silviculture and fire suppression there are extant populations of endemic wet savanna species. However the overall ecologic health of these areas has diminished and must be reinvigorated by the reintroduction of prescribed fire.

There are several sand hill ridges that cross the site and create drainage patterns. In general it appears that flow on the northern portion of the site is generally to the north, into the drainage basin of the Choctawhatchee River. The drainage to the southern portion of site is southward, offsite and toward the ICW. Drainage on this site flows through swamps, wet savannas, seepage slopes (as per FNAI) and blackwater streams (as per FNAI). The drainage of the southern portion of the property is not as clearly defined. In general the drainage on site is defined by a dominance of obligate and facultative wet plant species and hydric soils. The drainage patterns on this site will be elucidated by the baseline hydrologic monitoring will begin in 2005. Future annual reports will address the drainage patterns and results from baseline hydrologic monitoring.

Man made ditches and roads have altered the hydrology and the water drainages patterns on the site. Some ditches appear to have been constructed to facilitate drainage of basin wetlands while others were designed to drain roadsides. The cumulative effect of ditching is to increase water drainage on the overall site. These alterations in combination with the silviculture bedding/site preperation and fire suppression of the site have greatly affected the ecology and hydrology of the site.

Large areas of the DSMB contain soils that are mapped as hydric (*see* Federal-MBI/FDEP-MBP, Exhibit B-1-4, Soils Map) by the Natural Resources Conservation Service (NRCS) and more than half the site is depicted as wetland on the quadrangle topography map (*see* Federal-MBI/FDEP-MBP, Exhibit B-1-3, Quadrangle Topography Map). Wetland soils such as rutledge sand, pickney fine sand and pickney sand depressional, are sandy soils that are nearly level with poor drainage and water tables at or near the surface. In addition, wetland soils such as Pamlico muck are organic soils, created from highly decomposed organics in very poorly drained landscapes. Upland soils are always well drained sands that support mesic pine flatwoods, scrubby flatwoods or sandhill. These are located in irregular ridges found scattered throughout the site but more commonly found in the upper portion of the site, especially the northwest area.

This site is desirable for a mitigation bank because it includes large ecosystems that provide habitat for native species, some of which are rare, threatened and endemic. It is also ecologically very important because it contains large areas of wetlands and large areas of recharge for the watershed that will help buffer any negative impacts to the water quality of St. Andrews Bay.

The biological importance of this site is best appreciated in the large ecosystems it contains. These ecosystems are made up of assemblages of plants and are described by the dominant plants or physical attributes. While the descriptive portion of the vegetation is floristic in nature, the principles of plant ecology are used for collecting data and measuring the change in vegetation distribution, life form and dominance. The purpose of floristics is to provide an inventory of plant species, plant diversity or species richness, and to provide the foundation for ecological research, *i.e*. plant monitoring, as described in this report, *see* quantitative and qualitative data collection. The vegetative monitoring is very important since, as per the mitigation instrument/permit, the investigators will use the change in vegetation to measure restoration.

The worldview of the DSMB is that it contains populations of plants related to species ranging from the coastal plain of the mid-Atlantic to eastern Texas, in a large floristic unit called the North American Atlantic Region (Takhtajan, 1986). The smaller subunit of this region is called the Gulf Coastal Plain Province. All of Florida and the DSMB are contained within this region. In general, this region contains many endemic plant species and was historically characterized by an open canopy of pines, principle among these was longleaf pine (*Pinus palustris*), and a groundcover dominated by wiregrass (known throughout its range as *Aristida stricta*, and using the latest taxonomy, in our region *A. stricta* var. *beyrichiana*). Evidence for this plant assemblage can be seen in the vegetative signature on the historic, 1949 aerial photograph of this site (*see* Federal-MBI/FDEP-MBP, Exhibit B-1-8, Historic Aerial Photo, 1949).

Pine dominance in the coastal plain depends on periodic fires and it is believed that most of the coastal plain has been subjected to naturally occurring fires for thousands and possibly millions of years (Takhtajan, 1986). Almost all terrestrial vascular plants native to the coastal plain have a distribution that is related to fire. Some species (*e.g.* all groundcover species found in wet savannas and flatwoods) are only found in areas with relatively frequent fire regimes of 1-3 years. Indeed our most common pine species such as slash pine (*Pinus elliottii*) and longleaf pine (*Pinus palustris*) are fire dependent endemics to the coastal plain and are of but a handful of trees capable of surviving fires with return intervals of 1-3 years. In addition, dependent or not on fire, the following taxa found in the DSMB are also endemic to the coastal plain: sweet gallberry (*Ilex coriacea),* gallberry *(I. glabra),* myrtle leaf holly *(I. cassine var. myrtifolia),* savanna iris *(Iris tridentata),* coastal red cedar *(Juniperus silicicola),* sweetbay *(Magnolia virginiana var. australis*), bay berry *(Myrica heterophylla),* swamp bay *(Persea palustris),* fever tree *(Pinckneya bracteata),* "bear" swamp gum *(Nyssa sylvatica var. ursina),* fetterbush *(Lyonia lucida),* fetterbush *(L. ferruginea),* butterwort *(Pinguicula* spp*.),* pitcherplant *(Sarracenia* spp*.),* saw palmetto *(Serenoa repens),* and pond cypress *(Taxodium ascendens)*. Endemic species found only in the northwest Florida region and in the

DSMB include odor-less bay berry *(Myrica inodora),* white top pitcherplant *(Sarracenia leucophylla)*, and parrothead pitcherplant (*S. psittacina)*. The reasons for the high level of endemic species in northwest Florida have never been fully elucidated. Endemism requires genetic isolation through biological or physical means as part of natural selection and evolution of new taxa. Physical isolation might involve the periodic inundation of the coastal plain over thousands of years, another involves the presence of refugia. The restoration of the DSMB will contribute greatly to the biologic integrity of the region, especially since the adjacent NWFWMD property is also slated for restoration and the lands to the north of the site are primarily watershed drainage associated with the Choctawhatchee River.

Related to the study of floristics is the study of plant sociology or plant mapping. This was used to create vegetation maps of the DSMB. The nomenclature used to describe the polygons and all plant communities in this report (unless otherwise referenced) is that described by FLUCCS or Florida Land Use, Cover and Forms Classification System (FLDOT, 1999). A map has been produced that uses the nomenclature of FLUCCS and depicts the current plant communities and the proposed plant communities *see* Federal-MBI/FDEP-MBP, Exhibit B-1-5 and B-1-6. As per the original descriptions found in the instrument/permit cited above, the plant communities are depicted on a map, Figure 2 of this report, as polygons labeled with the nomenclature used in FLUCCS. Accordingly, the site currently consists of upland pine plantation, hydric pine plantation, titi swamp, cypress swamp, shrub swamp, resevoir and roads. Drainage resevoirs and roads are typically not considered plant communities and are used here to describe the land use and landscape. The remaining descriptors represent the vegetation onsite and are similar to the nomenclature used by FNAI (1990). It should be noted that the existing landscape is deceiving as this is largely a product of the past 50 years or so of intensive silvicultural land use and associated fire suppression.

The historic 1949 aerial depicts a landscape of largely wet savanna (treeless hydric savanna as per FLUCCS), seepage slope (there is no FLUCCS equivalent), cypress swamp, longleaf pine flatwoods (upland coniferous forest as per FLUCCS), longleaf pine-xeric oak or sandhill (as per FNAI), mesic pine flatwoods (pine flatwoods as per FLUCCS), hydric pine flatwoods. The signature of the groundcover in the historic aerial is fine textured and this indicates a landscape of mostly fine textured graminoid dominance in all of the plant communities, except the deeper wetlands that support a dense canopy, such as swamps and bayheads. Many of these graminoid dominated plant communities have been converted to pine plantation such that there are few areas on this site that do not show signs of pine bedding or fire suppression associated with silviculture. Based on interpretation of our baseline data the typical graminoids that dominated the historic landscape include the following; Curtiss's sand reed (*Calamovilfa curtissii*), wiregrass (*Aristida stricta*), beak sedges (*Rhynchospora* spp.) bald sedges (*Scleria spp.*), and toothache grass (*Ctenium aromaticum*).

There are four activities with associated changes in vegetation to consider when viewing the artificial landscapes produced by silviculture, these have been outlined in a personal communication with Dr. Andre Clewell, 2004 and Jean Huffman, 2004. We are considering the effects that have altered the vegetation of the groundcover,

since this is the most dramatic change to the landscape compared with the historic 1942 aerial. First site prepping with large machinery has literally terra formed the landscape and created beds for planting. These have a "summit" and a "valley". The summit may be non-hydric and function as an upland with colonization of upland or facultative species, while the "valley" and the lower sides slopes of the valley may be inundated or saturated so as to create wetland conditions and favor colonization by wetland species. Large areas of pine flatwoods, wet prairie/savanna and freshwater marsh have been converted into bedded slash pine plantations in this manner. When we consider that the diversity of the wet prairies/savannas and marsh is found in the groundcover, the whole scale soil disturbance with associated groundcover species reduction of this magnitude will influence the species composition. At the DSMB one can find remnant wet savanna species, such as wiregrass, persisting in this type of landscape. In this scenario the artificial plant mixtures are often unlike those found in nature and represent a challenging restoration dilemma. At this time our philosophy is to allow these landscapes to equilibrate with the idea that the beds may erode and the appropriate species will be selected with prescribed fire.

The second issue involves the long term fire suppression. The woody species that have become the canopy, subcanopy and shrub layer of large areas of former open marsh and savanna are typically fire sensitive species that historically would have been confined to ecotones around wetlands or persisted in a graminoid dominated landscape as stump sprouts. Some of the most aggressive woody invaders include black titi (*Cliftonia monophylla*), white titi (*Cyrilla racemiflora*), sweet gallberry (*Ilex coriacea*), gallberry (*Ilex glabra*), sweetbay (*Magnolia virginiana*). In these particular instances, excluding invasive exotics, the native species could be considered native weedy or ruderal species because people have created the conditions that have allowed these species to inhibit or exclude appropriate native groundcover species. In some instances the native woody ruderal species have created extensive, biologically impoverished areas, lacking in species diversity, especially in regard to groundcover diversity. To the uninitiated, the outward appearance is of a fire suppressed pine flatwoods. To understand the dynamics and relationship between the space occupied by woody species, species richness, cover, frequency and density, the life forms of plants have been quantitatively and qualitatively measured, as they currently exist and these measures will be compared to those of a reference type for each plant association. Measurements of bare ground and open water are also included in this report. Fire suppressed pine plantations often contain large areas of bare ground, not readily obvious when looking at the landscape, but this factor is important when measuring the plant coverage in a plot.

The third issue involves a landscape wide change in hydrology. Part of this change can be attributed to the silvicultural bedding that create channels draining the landscape and redirecting surficial runoff. At this time we believe the channeling effect of bedding might influence the vegetation but it is not known to what effect this might produce and if the prescribed burning will eclipse any microtopographic effects. If drainage becomes an issue of ecologic consequence, crosscutting bedding plow lines will interrupt drainage effects without having to regrade large landscapes. Another, and probably more profound, effect is the increased evapotranspiration from the species that make up the fire suppressed woody

vegetation at this site. Woody plants are more efficient at evapotranspiration because they have large three dimensional lifeforms with vascular tissues and a greatly increased leaf surface area compared with short stature, clumping lifeforms of the groundcover they replaced. In addition, the slash pine plantations are planted at unnaturally high densities, further enhancing evapotranspiration. Water availability is directly correlated with plant productivity. Overall, the net effect of bedding and increased biomass of woody vegetation is a reduction of water availability in the surficial root zone, especially to relatively shallow and fibrous rooted species in the groundcover.

The fourth issue, is the combined effect from the competition of fire suppressed woody species for moisture as mentioned above, as well as for light, space and soil nutrients. Not to mention new dynamics influencing the life cycle, such as herbivory, pollination, dispersal and host of other unknown factors. One factor that is immediately obvious, is the light reduction from three dimensional layerage of leafy stems from fire suppressed woody growth. Along with available water, light availability is directly correlated with productivity. This is especially important to species adapted to high light conditions such as those found in wet prairie/savanna and marsh communities. Some prairie/marsh species persisting beneath pine plantations overgrown with white and black titi, and hollies (*Ilex* spp.), produce weak, stunted growth and show no signs of successful reproduction. In the deepest shade we have often found large clumps of wiregrass that have recently died or have only a few shoots living/persisting, often representing 1% or less of the entire plant body. It is believed that even with only small portions of the plant body surviving, rehabilitation might be possible (especially in areas with appropriate hydrology) by reintroduction of light to the groundcover. If this is accomplished through a prescribed fire regime then plants will benefit from increased light, moisture and fire "released" nutrient cycling. It is well documented that prescribed burning of vegetation mineralizes soils and releases nutrients bound in the leaf litter and living tissues, thereby enriching the soil nutrients. Frequent (every 1-3 years), low intensity surface fires prevent woody growth of hardwood species in the canopy and maintain open landscapes that allow light to penetrate to the groundcover. This prescriptive burning allows groundcover species that are adapted to periodic fire to successfully complete their life cycle and in areas depopulated by silvicultural activities/fire suppression, repopulate the landscape.

In summary, the DSMB contains an important part of the floral biodiversity of northwest Florida and contains floristic qualities that are recognized at the regional and global level. The natural history, floristics and ecology onsite has been influenced by the silvicultural practices, fire suppression, ditching, road construction, selective game management and adjacent land use. To better describe and understand the ecology and restoration as per the directive of the mitigation instrument/permit, vegetative monitoring using quantitative and qualitative vegetative measurements have been utilized to record the baseline species richness and plant community structure. In addition, notes on hydrology and wildlife have also been recorded. These techniques will be continued throughout the projected five year restoration process.

II. GOALS AND OBJECTIVES

Historically, the site was a mosaic of bayhead, wet savanna, gumswamp, cypress swamp, mesic and hydric pine flatwoods, and sandhill (*see* Federal-MBI/FDEP-MBP, Exhibit B-1-8, Historic Aerial Photo, 1949). The primary objective of the DSMB is to restore, enhance, maintain, and preserve this unique suite of ecosystems within the boundaries of the mitigation bank. It is especially important to restore those lands impacted by past activities that have degraded the habitat and/or system functions. Once restored, it is our understanding that the lands included in the DSMB will be preserved in perpetuity as per the instrument.

A comparison of the historic site conditions (1949 aerial photograph) to present/existing conditions has been used to qualitatively calculate the potential impacts to wetlands and wetland functions at the DSMB (*see* Federal-MBI/FDEP-MBP, Table B-3, Matrix of Existing to Post Restoration Land Uses and Acreages). Both uplands and wetlands have been impacted by silviculture and planted with slash pine and sand pine. The majority of this site has been selectively cut, cleared and prepared for timber. As part of the mitigation instrument, selective cutting of planted pine will occur throughout the restoration time frame, as part of the schedule of activities at the DSMB. Wetlands planted in slash pine are considered low quality wetlands in the permitting process as defined by the Regional General Permit /Environmental Management Area.

The first goal as stated in the Federal-MBI/FDEP-MBP, Attachment B-1, Compensatory Mitigation Plan, 2. Goals and Objectives, involves the restoration of wetlands by removing a large portion of the planted slash pine canopy in the low quality wetlands, either by prescribed burning or mechanical means. Much of the area mapped as hydric pine plantation and any wetland signatures planted in slash pine will be affected by the proposed impact of slash pine removal (*see* Federal-MBI/FDEP-MBP; Exhibits B-1-5, Existing Land Use and Land Cover and B-1-6, Proposed Land Use and Land Cover). This action will contribute to the aforementioned goal of restoration, which stipulates the recreation of the pre-silviculture vegetative signatures, such as; hydric pine flatwoods, mixed forested wetlands, cypress swamp, mesic pine flatwoods, hydric pine flatwoods, sandhill and the large open expanses of wet savanna.

The second goal involves restoring the historic plant communities to their appropriate species composition and structure. Determining appropriate structure involves analysis of plant life forms and the continuing quantitative and qualitative vegetative monitoring will be instructive to this end. By collecting the baseline data, *see* Results and Discussion of Phases 1-3 of this report, the investigators intend to compare the existing quantitative and qualitative vegetative communities to those of reference sites. In addition, the baseline will be compared to transects over the projected five years of restoration to record the change in proportional distribution of life forms. The reference sites are scheduled to be sampled in the same manner as described in the approved vegetative monitoring plan, which is included in the materials and methods section of this report. The reference site data collection is scheduled for the growing season of 2005.

The third goal is to return, within realistic limits, the natural hydrologic patterns and fire regime to historic conditions, circa 1940s. This action will involve a detailed baseline analysis of existing conditions by a professional hydrologist and the expertise of the St. Joe Foresters who have extensive experience in conducting prescribed burns. The hydrologic baseline data and analysis are scheduled to begin in 2005. The hydrologic restoration efforts will likely involve the use of ditch weirs, ditch filling, low water crossings on roads, and installing equalizer culverts.

Part of the objective is to better understand the ecology of this site, specifically the plant ecology. Botanical studies of plant distributions and plant ecology provide a better understanding of the complex relationship between native vegetation, hydrology, soils, salinity and topography. Quantitative and qualitative vegetative monitoring is designed to describe the baseline botanical conditions onsite. This monitoring will help the investigators and mitigation bank review team (MBRT), understand and review the progress of restoration which uses changes in vegetation diversity, coverage of vegetative life forms and species richness to measure successful restoration and release of mitigation bank credits.

III. MATERIALS AND METHODS – DATA COLLECTION

The purpose of the vegetative and hydrologic monitoring is to describe the plant associations/communities and identify progress associated with the restoration of the wetlands and landscape as per the mitigation instrument. Since the hydrologic monitoring will not begin until 2005, this information will not be included in this report. The main emphasis of this section will be on the materials and methods used for measuring vegetation in quantitative and qualitative transects. The monitoring protocols outlined herein have been reviewed and approved by the mitigation bank review team (MBRT) and will be used to measure and analyze the ecological response of the vegetation to the restoration activities.

Ecologic restoration of plant communities is dynamic and is expected to go through successional stages until a particular ecologic target is achieved. These targets are listed yearly and are included in the Federal-MBI/FDEP-MBP, Appendix B, IV Operation of the Bank. 2. Final Success Criteria. As such, periodic evaluation regarding the attainment of target conditions requires monitoring of sample areas to measure the effectiveness of the restoration techniques. The results of this analysis will allow for interpretation and conclusions from the data. In addition, the results will provide direct measurement both qualitative and quantitative life form, density and coverage classes for desirable (non-nuisance) and ecologically appropriate species, especially graminoid species. These measurements of groundcover coverage will be compared to the interim success criteria as described in the Federal-MBI/FDEP-MBP, Appendix B, IV Operation of the Bank, 3. Interim Success Criteria.

Ecological monitoring or sampling techniques described in this section will allow for the objective measure of species composition, species richness, as well as the proportional distribution (frequency, density and coverage) of life forms (groundcover, shrubs and trees) for all terrestrial plant communities within the study

area. The experimental design for sampling of populations allowing for objective conclusions is derived from widespread and generally accepted procedures/protocol found in Field and Laboratory Methods for General Ecology (Brower, et.al., 1990; Barbour, Burk and Pitts, 1980). The restoration activities proposed for the DSMB will substantially alter the appearance of the landscape as well as species distribution, reproductive response and life forms. In order to track these changes in community structure, a transect along with plots was used to sample the cover, density and frequency of groundcover, shrubs, and trees. The emphasis will be measuring groundcover, shrub and canopy since these parameters are specifically mentioned in the mitigation instrument/permit. In areas where trees display a random distribution, *i.e.* outside of planted pine areas, point quarter plotless sampling will be used.

After the first year of restoration activities, slated to begin in 2005, the monitoring techniques described in this section will allow for an initial measurement of interim success criteria. Final success criteria and interim success criteria involves measuring the coverage of groundcover (in particular graminoid and desirable species coverage), life forms, reproductive success, and coverage. Additionally, the density and coverage of trees and shrubs as well as species richness in a unit area will be measured. These measurements at DSMB are specifically addressed for the following plant communities, as per FLUCCS nomenclature: (1) Mixed Forested Wetland, (2) Cypress Swamp, (3) Savanna (treeless hydric savannas as per FLUCCS), (4) Hydric Pine Flatwoods and (5) Upland Pines, as specified in the Federal-MBI/FDEP-MBP, Appendix B, IV. Operation of the Bank, 2. Final Success Criteria and 3. Interim Success Criteria. The DSMB contains a mosaic of vegetation and ecotones. Large portions of what is mapped as hydric and mesic pine flatwoods *(see* Federal-MBI/FDEP-MBP; Exhibit A-1-6, Proposed Land Use and Land Cover), include inclusions of treeless hydric savanna, as per FLUCCS. This is typically known as wet savanna or wet savanna that has been planted in slash pine.

Plants were identified using vascular plant identification manuals appropriate for this area of Florida (Clewell, 1985; Godfrey, 1988; Hall, 1978; Tobe, et. al. 1995 and Wunderlin 1998). Nomenclature will follow that of Wunderlin, 1998, unless otherwise indicated. Extensive observations of similar ecosystems and studies were utilized in the development of the protocols (Burks, K.C. 1982; Burks, K.C. 1995; Clewell, 1985a; Ewel, 1990; FNAI, 1990; Frost, et. al. 1986; Glitzenstein, et. al., 1995; Harper, 1914; Anglin, 2004 personal communication; Burks, 2004 personal communication).

Life forms are described in the glossary of terms. Shrubs, Subcanopy and Canopy members have been segregated depending primarily on overall height and diameter at breast height.

In addition to using quantitative methods through such means as transects and plots, qualitative observations on the overall health and succession of plant assemblages were noted by photography and notes recorded during walking transects. Walking transects provide qualitative observations on the overall conditions within a particular plant community. An example of the data form used for these observations is included as Exhibit 3. Qualitative observations made during

the walking transects were designed to supplement the quantitative monitoring by recording general observations of the overall plant community being sampled. Invasive exotics were noted and recorded during all types of vegetative sampling and transportation while on site. All baseline vegetative sampling was performed in fall (September-December) of 2004, to ensure that most species would be in flower or fruit to aid in identification. A spring monitoring is not part of this monitoring plan since it is anticipated that few species that might flower in spring will be overlooked in a fall sampling period. All subsequent monitoring will be carried out annually in the summer/fall and thereafter through the time period as specified in the mitigation instrument.

Two types of monitoring will be carried out, quantitative and qualitative. The quantitative monitoring/sampling will be through the use of transects, plots and point quarter method. Placement of at least one quantitative transect in each of the largest plant community polygons/phase was used in creating the proposed locations for quantitative transects. Care was taken to locate the quantitative transects within a relatively homogenous plant community. The plant communities and all transects are indicated on Figure 2. The philosophy of placement of transects was to describe the typical plant community polygons in each phase.

A. Quantitative Data Collection

Measuring vegetation is a method of describing vegetation. The quantitative sampling is designed to record the proportional distribution (frequency, density and coverage) of all vascular plant life forms in a particular plant community or assemblage along a 100m transect that will be randomly placed in each polygon of a particular plant assemblage to be sampled, *see* Figure 2. The philosophy of placement of these transects (*see* proposed locations in exhibit A-1-7 of the Federal-MBI/FDEP-MBP), according to the mitigation bank review team, was to sample each of the largest communities, represented spatially as polygons, in each phase of the mitigation banks.

The naming convention used for labeling the quantitative transects is adapted from the FLUCCS names used in the instrument/permit (*see* Federal-MBI/FDEP-MBP; Exhibits B-1-5, Existing Land Use and Land Cover) and incorporates the names of the following: (1) Cypress Swamp, (2) Hydric Pine Flatwoods, (3) Mixed Forested Wetland, (4) Savanna, also called Treeless Hydric Savanna as per FLUCCS, and (5) Upland Pines. For example, the naming convention for DS1T1 CS is as follows: DS refers to Devils Swamp, 1 refers to phase 1, T1 refers to transect 1, and CS is the short name for cypress swamp. Thus, DS1T1 CS is the name used for quantitative transect 1, located in phase 1 of the DSMB, with the transect placed in what was mapped as a cypress swamp in Figure 2.

1. Groundcover Measurement

In the groundcover quadrats the proportional distribution of groundcover species and woody plants such as shrubs, subcanopy and trees was recorded in quadrats at a

sample point. The emphasis was to measure only those plant species that were rooted within the quadrat. Each sample point was located along the transect, with each point distributed every ten meters (these were georeferenced and marked by insertion of an iron piece at each point) along the transect. At each point a 1mx3m plot (rectangular quadrat) which is composed of three (3) 1mx1m subplots or square quadrats was measured and sampled. These permanent plots were georeferenced and marked by insertion of an iron piece at each center for future location with a metal detector. The subplots were distributed in a linear fashion perpendicular to the 100 meter transect. Each transect thus had thirty separate 1m x 1m subplots (*i.e.* 30 square meters will be sampled) in which the proportional distribution of life forms, frequency, density and coverage, were recorded. All groundcover coverage was measured using the following scale or coverage class: 3%, 6%, 12%, 25%, 50%, 75%, 100%. This scale was developed for use with a square quadrat. These subdivisions can be estimated and consistently applied by training the sampling staff to visualize each species as it relates to the overall plot and categorizing its coverage into the coverage classes above. Woody plant height measure includes those of shrubs, subcanopy and trees, which are usually fire suppressed shrubs. The following height scale was used to categorize the woody species:1= less than 0.5m; 2=0.5-2m; 3=2-5m; 4=5-10m; 5=10m or taller. Shrubs determined to be the most important components of the subplots and their heights would rarely exceed 3m. Exhibit 2 is an example of the field data form used to collect the quantitative data.

The proportional measurement of vines was also measured even though they could be considered groundcover, shrubs, subcanopy or canopy. Vines influence the proportional distribution of groundcover vegetation and their measurement is listed in a separate category in the results for quantitative sampling.

Tree saplings were noted and could potentially occur in the groundcover, shrub or subcanopy, which are collectively included as woody plants in the final results. Although the occurrence of subcanopy and canopy species were noted in 1mx1m plots they are not the primary subject of measure for this methodology. For baseline measurement any trees rooted within a plot were included in the data. Trees or canopy were measured using the methodology as described below, *see* 2. Canopy. Notes on the average height of the woody plants found in the thirty (30) 1mx1m quadrats will be included on the field sheets. Open water and bare ground around and beneath the stratified vegetation was also measured. The bare ground and open water coverage were averaged as separate measurements. These measurements give us information about the lack of plant coverage. Large areas of bare ground in mesic habitat is typically related to fire suppression and silviculture. It is assumed that bare ground coverage will decrease as the landscape is restored and appropriate herbaceous species repopulate the groundcover.

2. Canopy Measurement

The canopy or trees in this sampling technique includes all woody plants with a main trunk at least 10 cm (4 in) diameter measured at breast height (1.5 m) and have a stem at least 3 m tall. Basal areas of trees were determined from trunk diameter

measured 1.5 m above the ground. Generally, a flexible tapeline was used to convert circumference to diameter units. A direct measurement of foliage coverage is difficult in trees and basal area is assumed to be proportional to coverage (Barbour, et. al., 1980).

In an effort to save time whenever possible, point quarter or quadrant plotless sampling was employed in areas where the trees have not been planted in plantations, *i.e.* non-randomly. When non-random, highly aggregated or uniformly spaced trees were found within areas to be sampled along the transect, one representative 10mx10m plot was located along the transect and all trees will be measured for cover, density and frequency. A quadrat size of 100 meters squared has been suggested by Cain and Castro (1959) for vegetation in the temperate zone.

When point quarter sampling was used, each point along the 100 meter transect was used as the center for four compass directions (N, S, E, W), which divide the sampling site into four quarters or quadrants. In each quadrant, the distance in meters or centimeters to the center point of the nearest individual tree, regardless of species was measured. Only one tree per quadrant was measured so a total of four plants per point were measured. The tree was identified and the diameter at breast height (dbh) was recorded as diameter expressed in cm. The relative coverage of a species is the proportion of its coverage compared to the coverage of all species in the community combined. Relative density, frequency, cover and importance value can be calculated from measuring basal area in the methodology previously described.

Plots were used to measure trees, and each plot measured 10mx10m, or 100 square meters. One 10mx10m plot was randomly distributed at one point, chosen from the 10 points used to sample groundcover as described above, along the 100 meter transect. The 10mx10m plot was georeferenced and marked by insertion of an iron piece at each corner for future location with a metal detector. The trees were identified in each plot and the dbh was recorded along with an estimate of the tree height using the following scale:1=0- 1.5m; 2=1.5m-3m; 3= 3m-5m; 4=5m-10m; 5=greater than 10m. The dbh was measured as described above. Canopy coverage by visual estimation was not measured since dbh is assumed to be proportional to coverage. Density and cover were calculated from measuring dbh in 10mx10m plots. The frequency measure for trees when all species measured are the same species, such as in most planted pine situations is always 100%.

The interim and final success criteria for the mitigation instrument specify the number of trees and basal diameter for a unit area. Both fixed plots and plotless sampling techniques allow for the measure of density and basal area.

At each of the quantitative transects, one photograph was taken at either the beginning or the end of the 100m transect looking toward the center. In order to identify and correlate each photograph with its representative transect, a transect identification code was written on a sign (dry erase pad) placed at the location of each photograph. The naming convention used for the transects was previously described. The location of each original sign placement was marked using a GPS

and metal spikes. Each successive photograph of the same area will include as much of the original photograph field of view as possible. The photograph will be taken from average eyelevel (~ 5- 6'). Each photograph will thus include the sign with the transect identification code written on it and view of the landscape as it might be seen by someone standing and looking out over the landscape.

B. Qualitative Data Collection

Qualitative monitoring used a walking transect to record observations on the overall health, reproduction, life form and coverage of groundcover, shrub and canopy. Information was also recorded regarding wildlife usage, the state of the landscape and sightings of invasive exotics. Exhibit 3 is an example of the data form used in the field to record observations.

The naming convention used for labeling the qualitative transects is adapted from the FLUCCS names used in the instrument/permit (*see* Federal-MBI/FDEP-MBP; Exhibit A-1-6, Proposed Land Use and Land Cover) and incorporates the names of the following: (1) Palustrine Marsh, (2) Hydric Pine Flatwoods, (3) Cypress Flats, (4) Mixed Forested Wetland and (5) Mesic Pine Flatwoods. To allow for consistent reference to the mitigation permit/instrument we have retained the plant community mapping as shown on the Proposed Land Use and Land Cover Map, Exhibit A-1-6 as referenced in the permit/instrument. These plant community polygons have also been transferred to Figure 2 of this report. All quantitative transects and qualitative reference points have a naming convention and have been color coded by plant community on Figure 2. This same naming convention is used in the annual report. As an example, the naming convention for DSQT1 P3 HPF is as follows: DSQ refers to Devils Swamp Qualitative Transect, 1 refers to transect 1, and P3 is reference point 3, HPF are the initials for hydric pine flatwoods. Thus, DSQT1 P3 HPF is the name used for reference point 1 located on qualitative transect number 1 which is mapped as a hydric pine flatwoods in Figure 2.

The walking paths were designed to ensure maximal internal coverage of all typical landscape/community types in each phase. The specific vegetative, wildlife and hydrology observations recorded on the walking transects for all polygons include the following:

1. Estimated canopy species coverage using the following cover classes:
   (a) absent; (b) 0-1%; (c) 1-5%; (d) 6-25%; (c) 26-50%; (d) 51-75%; (e) 76-100%
2. Estimated height class of canopy species using the following scale:
   (a) absent; (b) 3-5m; (c) 6-10m; (d) greater than 10m
3. List of three dominant canopy species
4. Estimated height class of subcanopy species using the following scale:
   a) absent; (b) 3-5m; (c) 6-10m; (d) greater than 10m
5. List of three dominant subcanopy species
6. Estimated height class of shrub species using the following scale:
   (a) absent; (b) 3-5m; (c) 6-10m; (d) greater than 10m
7. Estimated shrub species coverage using the following cover classes:
   (a) absent; (b) 0-1%; (c) 1-5%; (d) 6-25%; (c) 26-50%; (d) 51-75%; (e) 76-100%
8. List of three dominant shrub species

9. Estimated total groundcover species coverage using the following cover classes: (a) absent; (b) 0-1%; (c) 1-5%; (d) 6-25%; (c) 26-50%; (d) 51-75%; (e) 76-100%
10. Estimated graminoid species coverage using the following cover classes: (a) absent; (b) 0-1%; (c) 1-5%; (d) 6-25%; (c) 26-50%; (d) 51-75%; (e) 76-100%
11. List of four dominant groundcover species
12. Estimated abundance of weedy or ruderal native species in each stratum using the following coverage: (a) absent, (b) less than 5% of area, (c) greater than 5% of area
13. List of weedy or ruderal native species present
14. Estimate of appropriateness of canopy density, canopy health
15. Notes on hydrologic indicators including the following: hydric soils, rafted debris, water stained vegetation, sediment deposition, elevated lichen line, algal mats/aufwuchs, aquatic fauna, morphological plant adaptations, aquatic bryophytes, tussocks/hummocks, aquatic plants and secondary flow channels.
16. Water table, whether it is at the surface or below the surface. If standing water is present, the color of the water, tannic versus non-tannic was recorded.
17. Notes on vegetation in the water column were also noted, for example: sphagnum or bladderwort (*Utricularia* spp.) were recorded.
18. Notes on any observations of possible altered hydrology, such as soil subsidence/oxidation, exposed roots, abnormal tree fall due to soil subsidence, lichens extending into what should be a surface water boundary, upland vegetation invading former functioning wetlands.
19. Notes on observations concerning the fauna and their life histories as reflected in footprints, scat, herbivory, nests, etc., in addition the calls of frogs, insects and birds were identified whenever possible.
20. Notes and location of exotic species observed.
21. Notes on the general aspect of the site, such as fire suppression, silviculture, age of trees, natural regeneration, supplemental planting, mechanical removal of woody vegetation and adaptive management techniques used toward restoration target/goals.
22. Wildlife usage. Notes on wildlife species were also collected such notes as to the identification of footprints, scat, herbivory, bird nests, animal remains, scratch marks, frog calls, arthropods observed or heard, reptiles, fish, birds and mammals observed.
23. Photographs of noteworthy additions to the species richness such as evidence of successful reproduction of ecologically appropriate species especially threatened and endangered species.

The methodology for photographing landscapes at specific points along the qualitative transects is as follows. The location of each photograph was marked using a GPS and the cardinal direction was noted on the qualitative data field sheet. Each photograph maximized the landscape view whenever possible. The photograph was taken from eyelevel (~ 5- 6'). Each photograph included a sign with the transect identification code written on it and view of the landscape as it might be seen by someone standing and looking out over the landscape.

In general, the photographs include as much view as is typical for a standard 35mm digital camera. No editing of photos was used other than that used to manipulate

photos for processing into formats suitable for report writing. All photos were taken when field data was recorded and georeferenced. All labeling of photographs in final reports include the date the photograph was taken, the location and the naming convention described above. A record of all photographs recorded as reference for the quantitative and qualitative transects in this report are found in Appendices E and G. Electronic storage of photographs was backed up for future reference.

A descriptive summary comparing the observations made during the walking transects with the quantitative measurements is included in this annual report. This summary includes interpretations from the data and how these findings are instructive of the overall progress toward the restoration goals as outlined in the DSMB and Devils Swamp Mitigation Bank instrument in part IV. Operation of the Bank, 2. Final Success Criteria, a. Community Requirements. This critical thinking allows for evaluation, readjustment and interpretation of the restoration methodology and techniques. As described above, the qualitative coverage classes for graminoid species in the groundcover will be compared to the interim success criteria as described in Appendix A of the Federal Mitigation Bank Instrument/FDEP Mitigation Bank Permit, 3. Interim Success Criteria. Adaptive management will be used to adjust and revise management activities accordingly. No restoration activities that would change the vegetation were performed at the DSMB in 2004; however, all quantitative and qualitative transects were monitored in all phases. This monitoring will allow for maximal adaptive management if needed. Photographs taken during the sampling will visually support written observations and overall trends toward restoration goals.

IV. MATERIAL AND METHODS – DATA ANALYSIS

A. Quantitative Data

Statistical methods were used to quantitatively describe and summarize the field collected data. From this analysis, conclusions were drawn about the overall appearance of the various plant communities at the DSMB. As previously discussed, the data were collected in quadrats or quadrants along a 100m transect. The proportional distribution of all plants was measured in groundcover quadrats. Tree measurements were either recorded in 10mx10m plots or using a plotless method called point quarter tree sampling. Monitoring protocols were approved by the MBRT as per the instrument/permit. The data collection forms used in the field are included in this report as Exhibits 2 and 3. The data were analyzed by computing statistics from samples taken as a subset from the larger plant communities at the DSMB. The basic units for describing populations and communities are relative density, frequency and coverage. From these parameters, species importance and diversity were calculated.

1. Species Richness

Species richness is the measure of plant diversity in a given area. There are approximately 350,000 species of plants in the world, of these approximately 250,000 are flowering plants. The entire state of Florida contains approximately

4,012 plant taxa. In contrast, Bay and Walton Counties are thought to contain about 880 taxa or approximately 21% of the flora of Florida (Keppner, E. and L. Keppner, 1997) and the web based Atlas of Florida Vascular Plants (http://www.plantatlas.usf.edu). Species richness data collection at the DSMB will provide an inventory of plant species and this information is included in this report as Exhibit 1. Each summary of quantitative monitoring data includes the number of species recorded in a given transect.

2. Relative Cover, Frequency, Density and Importance Value

The listed formulas are the basic formulas used to calculate the following information:

A. Groundcover Plot Sampling Statistics

Density (D) is the number of individuals in a unit area.

$$\mathbf{D} = \frac{\text{total number of individuals of a species}}{\text{total area sampled}} = \frac{n}{A}$$

Relative Density (RD) is the **Density (D)** of a species sampled divided by the total of the **Density (D)** of all species sampled or **Total Density (TD).**

$$\mathbf{RD} = \frac{\mathbf{D}}{\mathbf{TD}}$$

Frequency (*f*) is the chance of a particular species sampled occurring within any of the plots sampled.

$$\boldsymbol{f} = \frac{j}{k} = \frac{\text{number of plots where are particular species occurs}}{\text{Total number of plots sampled}}$$

Relative Frequency (R*f*) is the **Frequency (*f*)** of a species sampled divided by the total of the **Frequency (*f*)** of all species sampled or **Total Frequency (T*f*).**

$$\mathbf{R}\boldsymbol{f} = \frac{\boldsymbol{f}}{\mathbf{T}\boldsymbol{f}}$$

Coverage (C) is the proportion of the area sampled inhabited by a particular species. In this, the percentage cover was estimated at the time of data collection.

Relative Coverage (RC) is the **Coverage (C)** of a species sampled divided by the total of the **Coverage (C)** of all species sampled or **Total Coverage (TC)**

$$\mathbf{RC} = \frac{\mathbf{C}}{\mathbf{TC}}$$

The **Importance Value** is the total of all Relative values for each species sampled.

Importance Value = RC + RD + R*f*

The **Importance Value Percentage** = $\frac{\text{Importance Value}}{3} \times 100$

B. Canopy 10 meter X 10 meter Plot Sampling Statistics

Density (D) is the number of individuals in a unit area.

$$\mathbf{D} = \frac{\text{total number of individuals of a species}}{\text{total area sampled}} = \frac{n}{A}$$

Relative Density (RD) is the **Density (D)** of a species sampled divided by the total of the **Density (D)** of all species sampled or **Total Density (TD).**

$$\mathbf{RD} = \frac{\mathbf{D}}{\mathbf{TD}}$$

Frequency (*f*) is the chance of a particular species sampled occurring within any of the plots sampled.

$$f = \frac{j}{k} = \frac{\text{number of plots where are particular species occurs}}{\text{Total number of plots sampled}}$$

Relative Frequency (R*f*) is the **Frequency (*f*)** of a species sampled divided by the total of the **Frequency (*f*)** of all species sampled or **Total Frequency (T*f*).**

$$\mathbf{R}f = \frac{f}{\mathbf{T}f}$$

Coverage (C) is the proportion of the area sampled inhabited by a species. '**a**' may be estimated by basal area, foliage area, or basal coverage. In this case, basal area was used for this calculation.

$$\mathbf{C} = \frac{\text{total area covered by a species}}{\text{total area sampled}} = \frac{\mathbf{a}}{\mathbf{A}}$$

Relative Coverage (RC) is the **Coverage (C)** of a species sampled divided by the total of the **Coverage (C)** of all species sampled or **Total Coverage (TC).**

$$\mathbf{RC} = \frac{\mathbf{C}}{\mathbf{TC}}$$

The **Importance Value** is the total of all Relative values for each species sampled.

Importance Value = RC + RD + R*f*

The **Importance Value Percentage** is the **Importance Value** multiplied by 100

The **Importance Value Percentage** = $\frac{\text{Importance Value}}{3} \times 100$

C. Canopy Point Quarter Sampling Statistics

The unbiased **Total Density** is the calculated by:

TD = $\frac{[(4*100)\ (\text{total \# of point sampled} - 1)]}{[\pi\ (\text{total of point-to-point distances}^2)]}$

The result is an expression of number of trees per 100 meters^2.

Relative Density (RD) is the number of a species sampled divided by the total number of all species sampled.

RD = $\frac{\text{total \# of each species}}{\text{the total \# of all species.}}$

The **Absolute Density** is calculated:

D = TD X RD = (**Total Density** X **Relative Density)**

Frequency (*f*) is the chance of a particular species sampled occurring within any of the plots sampled.

$f = \frac{j}{k} = \frac{\text{number of plots where are particular species occurs}}{\text{Total number of plots sampled}}$

Relative Frequency (R*f*) is the **Frequency (*f*)** of a species sampled divided by the total of the **Frequency (*f*)** of all species sampled or **Total Frequency (T*f*).**

$Rf = \frac{f}{Tf}$

Coverage (C) is the proportion of the area sampled inhabited by a particular species.

$C = \frac{\text{(total of individuals of each species X Absolute Density)}}{\text{total of all species sampled}} = \frac{(\mathbf{a})(\mathbf{D})}{n}$

'**a**' may be estimated by basal area, foliage area, or basal coverage. In this case, basal area was used for this calculation.
Relative Coverage (RC) is the **Coverage (C)** of a species sampled divided by the total of the **Coverage (C)** of all species sampled or **Total Coverage (TC).**

$RC = \frac{C}{TC}$

The **Coverage** of a species is calculated:

$$\mathbf{C} = \frac{\text{(total of individuals of each species X } \mathbf{Absolute\ Density}\text{)}}{\text{total of all species sampled}}$$

Relative Coverage (RC) is the **Coverage (C)** of a species sampled divided by the total of the **Coverage (C)** of all species sampled or **Total Coverage (TC).**

$$\mathbf{RC} = \frac{\mathbf{C}}{\mathbf{TC}}$$

The **Importance Value** is the total of all Relative values for each species sampled.

Importance Value = RC + RD + R*f*

The **Importance Value Percentage** is the **Importance Value** multiplied by 100

$$\text{The } \mathbf{Importance\ Value\ Percentage} = \frac{\text{Importance Value}}{3} \times 100$$

3. Groundcover Vegetation

The groundcover was analyzed for each transect and plants were identified. The number of individual species and approximate percentage of coverage of each species was recorded. As previously mentioned in the section on groundcover measurement, a cover scale methodology was incorporated into the mitigation instrument/permit. Also, the coverage of over hanging stems from plants outside of the quadrats, open ground, open water, lichens and bryophytes (mosses and liverworts) was measured. The height of woody species was measured as to add to the information about the dominance of woody plants in the quadrats. The data have been provided herein in the appendices. Measuring other factors such as neighboring vegetation will give us a better understanding of the influence this imparts on the importance of vegetation measured within the quadrat.

4. Canopy Vegetation

Canopy vegetation was measured based on a definition of canopy or tree life form, which was any woody plant greater than 3m tall with a main trunk at least 10 cm (4 in) diameter or greater at breast height (1.5 m) and a stem at least 3 m tall. Quadrats of 10mx10m were located along a 100m transect in pine plantations or plotless sampling or point quarter method was used when the forest was not planted. Each species was recorded and the dbh was recorded for all canopy vegetation in the methodologies previously mentioned. The canopy was evaluated for life form coverage, density and frequency. The data from these measurements has been provided herein in the appendices.

5. Photography

Aspect photographs were taken for each of the quantitative and qualitative transects monitored at the DSMA. This photography was done to provide visual evidence of change in landscape conditions throughout the life of the restoration project. Methodology for the recording has been previously mentioned in this report in the data collection section of materials and methods. A complete compendium of photographs taken for this report is found in Appendices E and G.

B. Qualitative Data

The specific parameters observed and recorded on the walking transects for all polygons included notes on hydrologic indicators, notes on wildlife presence and

usage, identification and georeferenced location of invasive exotics, notes on general aspect of site, fire suppression and how adaptive management techniques might be used toward restoration, and photographs of the general aspect of the site at specific points. Examples of the qualitative data sheets used in the field are included as Exhibit 3.

1. Vegetation.

The dominant vegetation was described at a reference point along the qualitative transect. The data recorded was found to be indicative of the larger landscape within a particular polygon. The naming convention used to describe these polygons is that found in the original instrument/permit (*see* Federal-MBI/FDEP-MBP; Exhibits B-1-6, Proposed Land Use and Land Cover) and consists of the following: (1) Cypress Swamp, (2) Hydric Pine Flatwoods, (3) Mixed Forested Wetland, (4) Wet Savanna, and (5) Upland Pines.

The categories used and qualitatively estimated included whether the area was planted in pine, the age of the trees, estimated appropriateness of tree density and health, estimated dominance of canopy (by estimating coverage and height), estimated dominance of woody shrubs (by estimating coverage and height), estimated dominance of groundcover vegetation including a separate category for graminoid coverage, estimated coverage of native weedy species. All of these observations were designed to describe the overall composition of vegetation and plant communities. Invasive exotics were identified and their location georeferenced for future control.

2. Hydrology

As the hydrologic baseline data is collected and hydrologic improvements are made to the bank, changes to the hydrology of a given plant community at the landscape level are anticipated. Basic visual observations including commonly used hydrologic indicators as previously mentioned in the qualitative data collection will be used at the same site as the vegetation and notes on the general aspect were recorded. It should be noted that at the time of the site inspection, October- December, 2004 this area had experienced rainfall events from three tropical systems from August-October. Much of the wetlands at the DSMB were either inundated or saturated for the duration of the site inspection.

3. Wildlife/Natural History

Animal usage was recorded as previously mentioned in the qualitative data collection. Visual and auditory clues, *e.g.* either directly seeing the animal, hearing the animal or looking for evidence of animals by looking for scat, footprints, etc were utilized during the baseline monitoring. Notes on wildlife usage in at the DSMB might aid in understanding of the restoration efforts since certain species might be more inclined to use a particular landscape, and animal species richness is expected to increase as the site is restored.

4. General Aspect of the Area and Management

This item is a collection of information that records the general features of the landscape. For example, questions such as the following were considered:

- Has the site been bedded and planted in pines?
- How old are the trees?
- Are they planted too densely?
- What might this plant community have been before silvicultural activities? Is regeneration by appropriate vegetation occurring?
- If not, will the site need supplemental planting?
- Is the site fire suppressed?
- Is mechanical removal of woody fire suppressed vegetation appropriate?

In addition, any specific notes are included about how adaptive management might be used to attain the desired restoration results.

5. Photography

Aspect photographs were taken at reference points along the qualitative transect will depict the area before any restoration activity took place. The same area along the transect will be photographed over the life of the restoration to give a visual chronology as to how the overall vegetation/landscape has changed with restoration activities. These photographs support the findings recorded in the field data sheets. A complete compendium of photographs taken along the qualitative transects are found in Appendix G.

V. Results and Discussion

A. Quantitative Monitoring

The quantitative data collected during the 2004 annual monitoring of DSMB is presented in Appendices A-E. Photographs of each quadrat sampled are included in Appendix E. The photographs are included on a CD for ease of use. The naming convention used for the quantitative transects is found in the previous section of this report that explains the quantitative data collection. Each quantitative transect is described below per phase. The descriptions include a short summary of notes on the plant community sampled, the species richness, groundcover vegetation, and species present but not in the analysis, invasive exotics, canopy vegetation and recommended management for the area. All plants listed in the following descriptions are listed in descending order of importance as calculated and included in the data results referenced above. Locations of all transects are shown on Figure 2. All quantitative transects and qualitative reference points have been color coded by plant community.

1. Phase 1

Quantitative Transect - DS1T1 CS is located in the southeastern portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as cypress swamp wetland and is a depressional feature in the landscape. It might be best to think of this landscape as a shallow concave depression (saucer-like) that collects water. When the lip of the depression is breached, there is a signature on the aerials that appears to be a flow way from this swamp into another large swamp located to the west. Based on the presence of *Nyssa sylvatica* var. *ursina* (or *N. ursina*) and pond cypress (*Taxodium ascendens)* this community is best described as a pond cypress swamp which would be called a cypress swamp as per FLUCCS. This site has not been site prepped although it appears that the site had been logged in the past. Significantly, all the woody vegetation in this swamp was growing on hummocks. Terrestrial plant diversity was concentrated on these hummocks. Aquatic plants were observed and measured floating near the surface of the water.

Species Richness. 12 species were found in quadrats, of these 1 was a herbaceous species, 1 vine species and 10 woody species plants.

Groundcover Vegetation. There was 1 aquatic species recorded in this transect, in the genus of *Utricularia*. The woody species occupy 86% coverage with the rest of the coverage was either by woody species growing on “islands” or hummocks in the flooded landscape or by the aquatic, purple bladderwort (*Utricularia purpurea)* within the water column. The entire transect fell within the flooded landscape of a cypress swamp. Thus it is no surprise that the area within the plots was on average 86% open water. The water coverage was a natural part of the flooding events associated with the tropical cyclones of late summer 2004. The water was dark and tannic, *Utricularia purpurea* was the only aquatic plant recorded. We measured the coverage of *Utricularia* even though it was not rooted in the soil and it should be noted that this species is best described as ephemeral, seasonal and mobile as it might drift within the water column.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Four species were large enough to be counted as trees, *Cyrilla racemiflora, Cliftonia monophylla*, *Nyssa ursina* and *Taxodium ascendens*. We extrapolated our point quarter data and calculated 291 trees/acre with a basal area of 5,440 square feet/acre of this *Cyrilla racemiflora* was the most important species with 64% coverage and a basal area of 3,536 square feet/acre. It would be desirable to see the pond cypress increase in dominance with the restoration efforts.

Management. This site is a fire suppressed cypress forest that has been timbered in the past. A frequent burning regime (1-3 years) administered by as part of a

prescribed burn plan might reduce the woody dominance in the ecotone of this forest and favor herbaceous groundcover species, especially graminoid species. However the larger landscape is very wet and will probably not burn except in extremely dry conditions when a prescribed burn would not be an option. Reduction of the *Cyrilla* and *Cliftonia* presents an interesting restoration strategy and conundrum. Where the large "tree like" Cyrilla and Cliftonia always part of this landscape or are they an artifact of fire suppression. At this time there is no conclusive evidence to instruct or draw on. A possible restoration method might be to hand cut the *Cyrilla* and *Cliftonia* and hand plant pond cypress on the existing hummocks. Although this might recreate the original condition, the time and cost might preclude this option.

Quantitative Transect - DS1T2 HPF is located in the southeastern portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. Based on the presence of Serenoa repens, Pteridium aquilinum and Licania michauxii this community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Twenty two species were found in quadrats, of these 9 were herbaceous species, 5 were vine species and 8 were woody plants.

Groundcover Vegetation. There are 9 herbaceous groundcover species recorded in this transect, 4 of these are graminoid species in the genera of *Aristida, Andropogon* and *Dicanthelium*. The woody species occupy 67% of the coverage and are directly responsible (along with *Serenoa repens*) for the relatively low combined herbaceous species coverage of 29%. *Ilex glabra* was the most important woody groundcover species. *Serenoa repens* and *Pteridium aquilinum* were the most important herbaceous species. When this site is burned we expect the *Andropon, Aristida*, *Pteridium* and *Serenoa* to be some of the most important groundcover species. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 63% coverage of bare ground in our plots, and this was mostly covered by a thick layer of pine duff.

Species Present but not in Analysis. *Ilex opaca, Rhynchospora megacephala, Rhexia alifanus, Vaccinium corymbosum, Hypericum crux-andre, Ilex vomitoria, Carphephorus odoratissima, Cliftonia monophylla* and *Magnolia virginiana.*

Invasive Exotics. None.

Canopy Vegetation. This site is a very densely planted pine plantation of slash pine (*Pinus elliottii*). An estimated 1,295 trees/acre was calculated from the measurements made from a 10mx10m plot. The individual trees were small and occupied a basal area of 129 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years)

administered by as part of a prescribed burn plan would reduce the woody dominance favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS1T3 HPF is located in the southwest portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Nineteen species were found in quadrats, of these 7 were herbaceous species and 11 were woody plants.

Groundcover Vegetation. There are 7 herbaceous groundcover species recorded in this transect, 3 of these are graminoid species in the genera of *Aristida, Dicanthelium* and *Calamovilfa*. The woody species occupy 87% of the coverage and are directly responsible (along with *Serenoa repens*) for the relatively low combined herbaceous species coverage of 13%. *Ilex coriacea*, *Ilex glabra and Lyonia lucida* were the most important woody groundcover species. *Serenoa repens* was the most important herbaceous species. When this site is burned we expect the *Serenoa* to be one of the most important groundcover species. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 50% coverage of bare ground in our plots, and this was mostly covered by a thick layer of pine duff.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only woody species that was large enough to be considered part of the canopy. An estimated 1,011 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 97 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS1T4 HPF is located in the middle portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Twenty one species were found in quadrats, of these 8 were herbaceous species and 10 were woody plants.

Groundcover Vegetation. There are 8 herbaceous groundcover species recorded in this transect, 3 of these are graminoid species in the genera of *Andropogon* and *Dicanthelium*. The woody species occupy 67% of the coverage and are directly responsible (along with *Serenoa repens*) for the relatively low combined herbaceous species coverage of 31%. *Ilex coriacea*, *Ilex glabra and Lyonia lucida* were the most important woody groundcover species. *Serenoa repens* was the most important herbaceous species. When this site is burned we expect the *Serenoa* to be one of the most important groundcover species. When fire suppressed woody growth is part of the landscape, bare ground is often significant. In this case we measured an average of 65% coverage of bare ground in our plots, and a thick layer of pine duff covered this.

Species Present but not in Analysis. *Rhynchospora megacephala* and *Vaccinium corymbosum*.

Invasive Exotics. None.

Canopy Vegetation. Slash pine and fire suppressed Cliftonia monophylla were the only woody species that were large enough to be considered part of the canopy. An estimated 809 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 65 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy and woody shrub layer is very dense, fire suppressed and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered as part of a prescribed burn plan would reduce the woody dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS1T5 THS is located in the extreme upper half of phase 1.

Plant Community. This landscape is included in the polygon labeled as treeless hydric savanna. This community is best described as a fire suppressed hydric pine plantation as per FLUCCS, however because of the high slash pine mortality this community is trending toward becoming a wet savanna or treeless hydric savanna.

Species Richness. Twenty six species were found in quadrats, of these 19 were herbaceous, 1 was a vine and 6 were woody plants.

Groundcover Vegetation. There are 19 herbaceous groundcover species recorded in this transect, 6 of these are graminoid species in the genera of *Aristida,*

Rhynchospora, Ctenium, Dicanthelium, Panicum, and *Andropogon*. The woody species occupy 13% of the coverage and are directly responsible for the high combined herbaceous species coverage of 87%. *Cliftonia monophylla* was the most important woody groundcover species. We expect the wet savanna species to increase in dominance as this site is opened up due to prescribed burning, especially rare species such as *Sarracenia psitticina*.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Although planted as a pine plantation some of the planted pines have died due to the very poorly drained soils and those pines remaining are stunted and chlorotic. We calculated 1,011 trees/acre that are large enough to be considered canopy. The slash pine trees are densely planted and we measured a coverage in basal area of 123 square feet/acre. A 10mx10m plot was used to sample the canopy because this site was planted in pine however the total number of trees calculated is misleading since there are many areas devoid of canopy. The true density and coverage is probably half this number.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in a wet savanna. The slash pine canopy is not healthy but will need to be significantly reduced in some areas if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance, except for the fire resistant pond cypress. And favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS1T6 UP is located in the upper half of phase 1.

Plant Community. This landscape is included in the polygon labeled as upland pine. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Forty seven species were found in quadrats, of these 39 were herbaceous species and 4 were woody plants.

Groundcover Vegetation. There are 39 herbaceous groundcover species recorded in this transect, 12 of these are graminoid species in the genera of *Aristida, Andropogon, Dicanthelium, Scleria, Sporobolus, Paspalum, Rhynchospora, Panicum* and *Saccharum*. The woody species occupy 54% of the coverage and are directly responsible for the relatively low combined herbaceous species coverage of 39%.

Quercus minima and *Ilex glabra* were the most important woody groundcover species. *Serenoa repens* was the most important herbaceous species. When this site is burned we expect the importance values of a diversity of groundcover species, to increase. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 61%

coverage of bare ground in our plots, and this was mostly covered by a thick layer of pine duff.

Species Present but not in Analysis. *Sporobolus curtissii*, *Helianthus radula* and *Quercus geminata.*

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only woody species that was large enough to be considered part of the canopy. An estimated 971 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 107 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS1T7 MFW is located in the upper half of phase 1.

Plant Community. This landscape is included in the polygon labeled as mixed forested wetland. This community is best described as a fire suppressed mixed forested wetland as per FLUCCS.

Species Richness. Fourteen species were found in quadrats, of these 3 were herbaceous species, 3 were vine species and 8 woody plant species.

Groundcover Vegetation. There are 3 herbaceous groundcover species recorded in this transect, 2 of these are graminoid species in the genus *Rhynchospora*. They occupy 4 % of the groundcover. Significantly shade-loving ferns occupy 7% of the groundcover and can be expected to increase in dominance as this site matures. The 8 species of woody plants occupy 81% of the coverage. *Ilex coriacea*, *Myrica heterophylla*, *Lyonia lucida* and *Clethra alnifolia* were the most important woody groundcover species. These are species typically found in the ecotone of wetlands. We do not expect fire to burn through this wetland unless under extremely dry conditions. Based on the dominance of species in the shrub layer and canopy this wetland is expected to become a bayhead dominated by *Magnolia virginiana* and *Nyssa sylvatica* var. *biflora*.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. The canopy was dominated by three species typical of bayheads, *Cliftonia monophylla*, *Magnolia virginiana* and *Nyssa sylvatica* var. *biflora*. We measured the canopy using the point quarter method. Estimates for the basal

area of this forest were calculated to be 78 square feet/acre and the number of trees to be 690 trees/acre.

Management. This site is a fire suppressed landscape dominated by evergreen trees. The groundcover is sparse because the ground is shaded. Prescribed fire is expected to burn the ecotone of this area. However, fire is not expected to burn through this wetland unless during an extreme drought condition. Based on the dominance of species in the shrub layer and canopy, this wetland is expected to become a bayhead dominated by a canopy of *Magnolia virginiana* and *Nyssa sylvatica* var. *biflora*.

Quantitative Transect - DS1T8 UP is located in the upper half of the northeast portion phase 1.

Plant Community. This landscape is included in the polygon labeled as upland pine. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Thirty two species were found in quadrats, of these 26 were herbaceous species, 2 were vines and 4 were woody plants.

Groundcover Vegetation. There are 26 herbaceous groundcover species recorded in this transect, 3 of these are graminoid species in the genera of *Dicanthelium, Andropogon* and *Rhynchospora*. The woody species occupy 35% of the coverage and this slightly lower that the herbaceous species coverage of 39%. *Ilex glabra* was by far the most important woody groundcover species. *Serenoa repens* was the most important herbaceous species with 20% relative cover. When this site is burned we expect the *Serenoa* and *Pteridium* to remain dominants. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 65% coverage of bare ground in our plots, and a thick layer of pine duff mostly covered this.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only woody species that was large enough to be considered part of the canopy. An estimated 1000 trees/acre was calculated from the measurements made within a 10mx10m plot. The individual trees were small and occupied a basal area of 96 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

2. Phase 2

Quantitative Transect - DS2T1 UP is located in the upper half of the easternmost portion phase 2.

Plant Community. This landscape is included in the polygon labeled as upland pine. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Twenty five species were found in quadrats, of these 17 were herbaceous species, 2 were vines and 6 were woody plants.

Groundcover Vegetation. There are 17 herbaceous groundcover species recorded in this transect, 8 of these are graminoid species in the genera of *Dicanthelium, Aristida, Andropogon, Panicum* and *Sporobolus*. The woody species occupy 23% of the coverage and the herbaceous species occupy 59% of the coverage. *Ilex glabra* was by far the most important woody groundcover species. *Pteridium aquilinum* and *Serenoa repens* were the most important herbaceous species with a combined coverage of 38% relative cover. When this site is burned we expect the *Serenoa* and *Pteridium* to remain dominants. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 55% coverage of bare ground in our plots, and a thick layer of pine duff mostly covered this.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only woody species that was large enough to be considered part of the canopy. An estimated 1000 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 139 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS2T2 MFW is located in the southwestern portion of phase 2.

Plant Community. This landscape is included in the polygon labeled as mixed forested wetland. This community is best described as a fire suppressed wet savanna - “treeless” hydric savanna as per FLUCCS.

Species Richness. Ten species were found in quadrats, of these 2 were herbaceous species, 1 was a vine species and 7 were woody plant species.

Groundcover Vegetation. There were 2 herbaceous groundcover species recorded in this transect, 1 of these was graminoid species in the genus *Rhynchospora* and occupied 0.4 % of the groundcover. Significantly sun-requiring Sarracenia leucophylla occupied 3% of the groundcover and can be expected to increase in dominance as this site is restored to a more open landscape with prescribed burning. The 7 species of woody plants occupy 92% of the coverage. *Lyonia lucida*, *Ilex coriacea*, and *Cliftonia monophylla* were the most important groundcover species. These are species typically found in the ecotone of wetlands.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. The canopy was dominated by species typical of wet savanna, cypress forests and cypress flats. We measured the canopy using the point quarter method. The basal area of this forest was calculated to be 49 square feet/acre and the number of trees to be 419 trees/acre.

Management. This site is a fire suppressed landscape dominated by evergreen trees. The groundcover is sparse because the ground is shaded and covered by a deep duff layer. Prescribed fire is expected to burn the ecotone of this area. Based on the dominance of species in the shrub layer and canopy this wetland is expected to become a bayhead dominated by a canopy of *Magnolia virginiana* and *Nyssa sylvatica* var. *biflora*. The burn strategy should reduce the shrubby *Ilex coriacea*, *Lyonia lucida*, *Cliftonia monophylla* and *Magnolia virginiana* to coppice sprouts. This should promote the growth and dominance of *Sarracenia* and other appropriate wet savanna species.

Quantitative Transect - DS2T3 HPF is located in the southern portion of phase 2.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Eleven species were found in quadrats, of these 4 were herbaceous species, 3 were vines and 4 were woody plants.

Groundcover Vegetation. There are 4 herbaceous groundcover species recorded in this transect, 2 of these are graminoid species in the genera of *Andropogon* and *Aristida*. The woody species occupy 38% of the coverage with *Ilex glabra and Quercus minima* as the most important woody groundcover species. *Pteridium aquilinum* and *Serenoa repens* was the most important herbaceous species. When this site is burned we expect the *Pteridium* and *Serenoa* to remain the most important groundcover species. When fire suppressed woody growth is part of the landscape, bare ground is often a significant part of the ground surface coverage. In

this case we measured an average of 65% coverage of bare ground in our plots and a thick layer of pine duff covered this.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only woody species that was large enough to be considered part of the canopy. An estimated 1000 trees/acre was calculated from the measurements made within a 10mx10m plot. The individual trees were small and occupied an estimated basal area of 269 square feet/acre.

Management. This site is a fire suppressed slash pine (*Pinus elliottii*) plantation. The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS2T4 THS is located in the extreme southwest portion of phase 2.

Plant Community. This landscape is included in the polygon labeled as treeless hydric savanna. This community is best described as a fire suppressed hydric pine plantation as per FLUCCS, however because of the high slash pine mortality this community is trending toward becoming a wet savanna or treeless hydric savanna.

Species Richness. Eleven species were found in quadrats, of these 6 were herbaceous, 2 were vine species and 3 were woody plants.

Groundcover Vegetation. There are 6 herbaceous groundcover species recorded in this transect, 2 of these are graminoid species in the genera of *Aristida* and *Sporobolus*. The woody species occupy 21% of the coverage and *Ilex glabra* and *Cliftonia monophylla* were the most important woody groundcover species. We expect the herbaceous wet savanna species to increase in dominance as the woody species are reduced to coppice sprouting due to prescribed burning.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Although planted as a pine plantation we observed pine mortality most likely due to the very poorly drained soils. The overall canopy is not healthy but nonetheless there are areas with a dense canopy. There is no good device to sample this site but we used a 10mx10m plot to sample an area where the trees. We calculated 1,000 trees/acre that are large enough to be considered canopy. The slash pine trees are densely planted and we measured an estimated coverage in basal area of 182 square feet/acre. A 10mx10m plot was used to

sample the canopy because this site was planted in pine. It should be noted that the pine canopy is not uniform and significant gaps appear in the canopy.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in a wet savanna. The slash pine canopy will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance, except for the fire resistant pond cypress. And favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS2T5 UP is located in the southwestern most portion phase 2.

Plant Community. This landscape is included in the polygon labeled as upland pine. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS.

Species Richness. Sixteen species were found in quadrats, of these 8 were herbaceous species, 3 were vines and 5 were woody plants.

Groundcover Vegetation. There are 16 herbaceous groundcover species recorded in this transect, 5 of these are graminoid species in the genera of *Dicanthelium, Panicum, Rhynchospora, Andropogon* and *Scleria*. The woody species occupy 63% of the coverage and the herbaceous species occupy 33% of the coverage. *Ilex glabra* was by far the most important woody groundcover species with a relative coverage of 58%. *Pteridium aquilinum* and *Serenoa repens* were the most important herbaceous species with a combined coverage of 30% relative cover. When this site is burned we expect the *Serenoa* and *Pteridium* to remain dominants. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 54% coverage of bare ground in our plots, and this was mostly covered by a thick layer of pine duff.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only woody species that was large enough to be considered part of the canopy. An estimated 930 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 118 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS2T6 THS is located in the extreme northwest portion of phase 2.

Plant Community. This landscape is included in the polygon labeled as treeless hydric savanna. This community is best described as a fire suppressed hydric pine plantation as per FLUCCS, however because of the high slash pine mortality this community is trending toward becoming a wet savanna or treeless hydric savanna.

Species Richness. Eighteen species were found in quadrats, of these 9 were herbaceous, 2 were vine species and 7 were woody plants.

Groundcover Vegetation. There are 9 herbaceous groundcover species recorded in this transect, 2 of these are graminoid species in the genera of *Aristida* and *Rhynchospora*. The woody species occupy 58% of the coverage and *Cliftonia monophylla* and *Ilex cassine var. myrtifolia* were the most important woody groundcover species. We expect the herbaceous wet savanna species to increase in dominance as the woody species are reduced to coppice sprouting after several cycles of prescribed burning.

Species Present but not in Analysis. *Osmunda cinnamomea* and *Gaylussachi mosieri*.

Invasive Exotics. None.

Canopy Vegetation. Although planted as a pine plantation. The individual trees are thin and do not appear to be healthy. We calculated 849 trees/acre that are large enough to be considered canopy. The slash pine trees are densely planted and we measured a coverage, in basal area, of 150 square feet/acre. A 10mx10m plot was used to sample the canopy because this site was planted in pine.

Management. This site is a fire slash pine (*Pinus elliottii*) plantation in a wet savanna. The slash pine canopy will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

3. Phase 3

Quantitative Transect - DS3T1 THS is located in the extreme southeastern portion of phase 3.

Plant Community. This landscape is included in the polygon labeled as treeless hydric savanna. This community is best described as a fire suppressed hydric pine plantation as per FLUCCS.

Species Richness. Fifteen species were found in quadrats, of these 7 were herbaceous, 1 was a vine species and 7 were woody plants.

Groundcover Vegetation. There are 7 herbaceous groundcover species recorded in this transect, 5 of these are graminoid species in the genera of Arundinaria,

Andropogon, *Aristida* and *Dichanthelium*. Herbaceous species occupy only 9% coverage of the groundcover. In contrast the dominant and fire suppressed woody species occupy 81% coverage of the groundcover and *Ilex coriacea*, *Cliftonia monophylla* and *Ilex cassine var. myrtifolia* were the most important woody groundcover species. We expect the herbaceous wet savanna species to increase in dominance as the woody species are reduced to coppice sprouting after several cycles of prescribed burning.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. This is a slash pine (*Pinus elliottii*) plantation in a wet savanna. We calculated 647 trees/acre that are large enough to be considered canopy. The slash pine trees are densely planted and we measured an estimated coverage, in basal area, of 161 square feet/acre. A 10mx10m plot was used to sample the canopy because this site was planted in pine.

Management. As previously mentioned, this is a slash pine (*Pinus elliottii*) plantation in a wet savanna. The slash pine canopy will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - DS3T2 MFW is located in the southeastern portion of phase 3.

Plant Community. This landscape is included in the polygon labeled as mixed forested wetland. Based on the canopy species composition it can also be called a bayhead as per FLUCCS.

Species Richness. Seven species were found in quadrats, of these 2 were vine species and 5 were woody plant species.

Groundcover Vegetation. There were no herbaceous groundcover species recorded in this transect. The 5 species of woody plants occupy 64% of the coverage. *Lyonia lucida* and *Clethra alnifolia* were the most important groundcover species. These are species typically found in the ecotone of wetlands and on hummocks of deep swamps. Significantly, *Smilax laurifolia* was almost 35% of the coverage.

Species Present but not in Analysis. *Woodwardia virginica*, *Habenaria* spp., *Itea virginica*.

Invasive Exotics. None.

Canopy Vegetation. The canopy was dominated by species typical of swamps and bayheads such as *Nyssa sylvatica* var *biflora*, *Magnolia virginiana*, *Taxodium*

ascendens, *Persea palustris*, *Cliftonia monophylla* and *Ilex cassine* var. *myrtifolia*. We measured the canopy using the point quarter method. Based on the point quarter method, the basal area of this forest was calculated to be 93 square feet/acre and the number of trees to be 354 trees/acre.

Management. This site is a functioning wetland, at the time of the site inspection it appeared to be dry. The groundcover is sparse because the ground is shaded and covered by a thick canopy, subcanopy and shrub layer. Prescribed fire is expected to burn the ecotone of this area but not into the swamp. Based on the dominance of species in the shrub layer and canopy this wetland is a bayhead dominated by a canopy of *Magnolia virginiana* and *Nyssa sylvatica* var. *biflora*.

Quantitative Transect - DS3T3 UP is located in the southwestern most portion phase 3.

Plant Community. This landscape is included in the polygon labeled as upland pine. This community is best described as a fire suppressed "xeric" pine plantation as per FLUCCS. This site has been planted in sand pine (*Pinus clausa*). This site historically was a sandhill with a longleaf pine (*Pinus palustris*) canopy and a wiregrass (*Aristida stricta*) dominated groundcover.
Species Richness. Thirty one species were found in quadrats, of these 24 were herbaceous species, 2 were vine species and 5 were woody plants.

Groundcover Vegetation. There are 24 herbaceous groundcover species recorded in this transect, 5 of these are graminoid species in the genera of *Aristida, Panicum, Andropogon, Dicanthelium* and *Rhynchospora*. The woody species occupy 19% of the coverage and the herbaceous species occupy 75% of the coverage. *Quercus minima* was by far the most important woody groundcover species with a relative coverage of 17%. *Licania michauxii*, *Aristida stricta* and *Pteridium aquilinum* were

the most important herbaceous species with a combined coverage of 28% relative cover. When this site is burned we expect the *Licania*, *Aristida stricta* and *Pteridium* to remain dominants. Because the soils are nutrient poor and very well drained in sandhill communities, bare patches often exist, and at this site we measured 46% bare ground on average.

Species Present but not in Analysis. *Hieracium gronovii.*

Invasive Exotics. None.

Canopy Vegetation. Sand pine was the only woody species that was large enough to be considered part of the canopy. An estimated 485 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 139 square feet/acre. To achieve the desired restoration of sandhill for this site all sand pine should be removed and longleaf pine replanted or if existing longleaf pine are nearby, allowed to seed into the area. A prescribed burn schedule to accommodate longleaf pine regeneration will need to be considered.

Management. This site is a fire suppressed silvicultural planting of sand pine where there was once a longleaf pine canopy. The sand pine canopy is dense and will need to be eliminated if the appropriate canopy and groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species such as wiregrass.

Quantitative Transect - DS3T4 UP is located in the northwestern most portion phase 3.

Plant Community. This landscape is included in the polygon labeled as upland pine. This community is best described as a fire suppressed "xeric" pine plantation as per FLUCCS. This site has been planted in sand pine (*Pinus clausa*). This site historically was a sandhill with a longleaf pine (*Pinus palustris*) canopy and a wiregrass (*Aristida stricta*) dominated groundcover.

Species Richness. Thirteen species were found in quadrats, of these 9 were herbaceous species, 1 was a vine species and 3 were woody plants.

Groundcover Vegetation. There are 9 herbaceous groundcover species recorded in this transect, 3 of these are graminoid species in the genera of *Aristida, Andropogon,* and *Dicanthelium*. The relative coverage of woody species was estimated to be 24% of the coverage while the herbaceous species occupy 72% of the coverage. *Quercus laevis* a sandhill endemic was by far the most important woody groundcover species with a relative coverage of 23%. *Aristida stricta*, *Andropogon ternarius* and *Serenoa repens* were the most important herbaceous species with a combined coverage of 57% relative cover. When this site is burned we expect the *Aristida stricta* and *Serenoa repens* to remain dominants. Because the soils are nutrient poor and very well drained in sandhill communities, bare patches in the groundcover often exist, and at this site we measured 78% bare ground on average.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Sand pine was the only woody species that was large enough to be considered part of the canopy. An estimated 526 trees/acre was calculated from the measurement made from a 10mx10m plot. The individual trees were small

and occupied a basal area of 86 square feet/acre. To achieve the desired restoration of sandhill for this site all sand pine should be removed and longleaf pine replanted or if existing longleaf pine are nearby, allowed to seed into the area. A prescribed burn schedule to accommodate longleaf pine regeneration will need to be considered.

Management. This site is a fire suppressed silvicultural planting of sand pine where there was once a longleaf pine canopy. The sand pine canopy is dense and will need to be eliminated if the appropriate canopy and groundcover is to be restored. A

frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species such as wiregrass.

Quantitative Transect - DS3T5 HPF is located in the western most portion of phase 3.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. This community is best described as a fire suppressed wet savanna or "treeless" hydric savanna as per FLUCCS.

Species Richness. Seventeen species were found in quadrats, of these 9 were herbaceous species, 1 was a vine and 8 were woody plants.

Groundcover Vegetation. There are 9 herbaceous groundcover species recorded in this transect, 4 of these are graminoid species in the genera of *Aristida, Scleria, Ctenium* and *Rhynchospora*. The woody species occupy 94% of the coverage with *Clifonia monophylla and Ilex coriacea* as the most important woody groundcover species. *Hypericum chapmanii* and *Xyris species* were the most important herbaceous species. When this site is burned we expect the *Sarracenia leucophylla* to become more dominant. When fire suppressed woody growth is part of the landscape, bare ground is often a significant part of the ground surface coverage. In this case we measured an average of 88% coverage of bare ground in our plots and a thick layer of duff covered this.

Species Present but not in Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. Slash pine (*Pinus elliottii*), *Cliftonia monophylla*, *Ilex cassine* var. *myrtifolia*, *Cyrilla racemiflora* and *Magnolia virginiana* made up the canopy. An estimated 671 trees/acre was calculated from the canopy point quarter method. The individual trees were small and occupied a basal area of 72 square feet/acre.

Management. This site is a fire suppressed wet savanna that has been managed for slash pine production. The canopy is dense and will need to be significantly reduced if the groundcover is to be restored. A frequent burning regime (1-3 years) administered by as part of a prescribed burn plan would reduce the woody

dominance and favor appropriate fire dependent herbaceous groundcover species, especially graminoid species.

A. Qualitative Monitoring

The qualitative data collected during the 2004 annual monitoring of DSMB is presented in Appendices F. Photographs of each reference point sampled are included in Appendix G. The photographs are included on a CD for ease of use. The naming convention used for the qualitative transects is found in the previous section of this report that explains the quantitative data collection. Each qualitative transect is described below per phase. The descriptions include a short summary of notes on the plant community sampled, the species richness, groundcover vegetation, and species present but not in the analysis, invasive exotics, canopy vegetation and recommended management for the area. All plants listed in the following descriptions are listed in descending order of importance as calculated and included in the data results referenced above. Locations of all transects are shown on Figure 2. All quantitative transects and qualitative reference points have been color coded by plant community on Figure 2.

1. Phase 1

Reference point – DSQT1 P3 HPF is located in the northeastern portion of Phase 1, which centrally located near the northern boundary of Phase 1 of the DSMB.

Vegetation. This area is previously designated as a mix forested wetland, however it closer to a cypress swamp. The canopy predominately is pond cypress, *Taxodium ascendens* with scattered swamp tupelo, *Nyssa sylvatica* v. *biflora* and sweet bay, *Magnolia virginiana* with a subcanopy of titi, *Cyrilla racemiflora,* black titi, *Cliftonia monophylla*, and sweet gallberry, *Ilex coriacea*. Dominate shrub species are fetterbush, *Lyonia lucida,* sweet pepperbush, *Clethra alnifolia,* highbush blueberry, *Vaccinium corymbosum*. The groundcover is non-existent due to the thick subcanopy and shrub layers.

Hydrology. The area was inundated by tannic water at the time of the field inspection. Hydrology appears to be normal for this kind of plant community. Hydrologic indicators present included hydric soils, water stained vegetation and tussocks and hummocks.

Wildlife. At this point wildlife and wildlife activity observed included Florida cottonmouth, *Agkistrodon piscivorus conanti*, northern parula, *Parula americana*, white-tailed deer, *Odocoileus virginianus*, and raccoon, *Procyon lotor*.

General Observations and Management. The general condition of this area is good though prescribed fire during the growing season will help the restoration of this landscape, reducing the dense woody subcanopy and scrub layers and allowing

regeneration of forb and graminoid species, which have been largely eliminated by fire suppression.

Reference point – DSQT2 P1 HPF is located in the northeastern portion of Phase 1, which centrally located near the northern boundary of Phase 1 of the DSMB. It is southeast of the above point.

Vegetation. Prior to silviculture this are was likely characterized as mesic pine flatwoods though it is presently classed as hydric pine flatwoods. The canopy and subcanopy in this area is planted slash pine, *Pinus elliottii*. The shrub and groundcover strata are dominated by woody shrub species such as yaupon, *Ilex vomitoria,* fetterbush, *Lyonia lucida,* gallberry, *Ilex glabra,* saw palmetto, *Serenoa repens,* woolly huckleberry, *Gaylussacia mosieri,* sarsaparilla vine, *Smilax pumila,* and dwarf live oak, *Quercus minima*.

Hydrology. This point had now surface hydrology and no hydrologic indicators

Wildlife. No wildlife observations were made at point other than a prevalence of mosquitoes

General Observations and Management. A reduction in the density of the pine trees and warm season prescribe fire would allow natural regeneration of the herbaceous groundcover species.

Reference point – DSQT2 P2 is located due south of the previous point. This point is located the north central part of Phase 1 of the DSMB.

Vegetation. The canopy species at this are pond cypress, *Taxodium ascendens,* slash pine *Pinus elliottii,* and sweet bay, *Magnolia virginiana.* The subcanopy is black titi, *Cliftonia monophylla,* titi, *Cyrilla racemiflora, and* swamp tupelo, *Nyssa sylvatica v. biflora.* The shrub stratum is predominately fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea,* and sweet pepperbush, *Clethra alnifolia*. Groundcover species are absent in this area due to intense competition in upper strata.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, herbaceous plants forming tussocks, trees forming buttressed trunks and hummocks, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Observed wildlife at the time of data collection were spiders, mosquitoes, wasps, and crickets.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata. This would allow natural regeneration of the herbaceous groundcover species.

Reference point – DSQT2 P3 is located due south of the previous point. This point is located the north central part of Phase 1 of the DSMB.

Vegetation. This area is presently classified as a cypress swamp however it would be more accurately describe as wet savanna. In its present condition, scattered pond cypress, *Taxodium ascendens* and slash pine, *Pinus elliottii* make up the limited canopy. The subcanopy is thick growth by black titi, *Cliftonia monophylla* and titi, *Cyrilla racemiflora* that has grown because of the lack of fire to control these species' growth. The groundcover is greatly reduced because of the shading of these species and though regeneration of *Taxodium* is occurring there is intense competition with the titi species.

Hydrology. The water table at this point is at the surface though there was not standing water at the surface. The soils are hydric and clumps of Sphagnum moss were present

Wildlife. Observed wildlife at the time of data collection were spiders, mosquitoes, crickets, and an American crow, *Corvus brachyrhynchos.*

General Observations and Management. As with many areas at site, this point has been dramatically effect by the absent role of fire in the ecology. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT3 P2 is located due south of the previous point. This point is located slightly south of the center point of Phase 1 of the DSMB just to the west of county line road.

Vegetation. This area is presently classified as a mixed forested wetland however it would be more accurately describe as wet savanna in a fire suppressed condition. At this point there is no true canopy though there is a thick subcanopy dominated by bear tupelo, *Nyssa sylvatica v. ursina* and black titi, *Cliftonia monophylla.* The under story is a thick growth of predominately fetterbush, *Lyonia lucida,* black titi, *Cliftonia monophylla,* and bayberry, *Myrica heterophylla*. The ground cover has been shaded out to a great degree; however some graminoids species, yelloweye grass, *Xyris* sp., pipewort, *Eriocaulon* sp., and spoonleaf sundew, *Drosera intermedia* are still present. The latter being a state listed species.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, herbaceous plants forming tussocks, trees forming buttressed trunks and hummocks, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. A red-shouldered hawk, *Buteo lineatus*, was observed at this point along with an abundance population of mosquitoes.

General Observations and Management. As with many areas at site, this point has been dramatically effect by the absent role of fire in the ecology. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT3 P3 is located due south of the previous point. This point is located slightly south of the center point of Phase 1 of the DSMB just to the west of county line road.

Vegetation. The canopy and subcanopy species at this point are pond cypress, *Taxodium ascendens,* black titi, *Cliftonia monophylla, swamp* tupelo, *Nyssa sylvatica v. biflora,* and titi, *Cyrilla racemiflora.* The shrub stratum is predominately fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea,* and titi, *Cyrilla racemiflora*. Groundcover species are limited island like hummocks around the bases of canopy and subcanopy species. The predominate groundcover species were fetterbush, *Pieris phyllyreifolia*, coral greenbrier, *Smilax walteri*, and woolly huckleberry, *Gaylussacia mosieri.*

Hydrology. This site is hydric with a prolonged hydroperiod. The hummocks described above are surrounded by standing water, which is 20-50 cm deep. The hydrologic indicators present included hydric soils, aquatic bryophytes, aquatic plants, elevated lichen lines, aquatic fauna, water stain lines, the presents of hummocks, and morphologic plant adaptations such as adventious roots, buttressed trunks, and hypertrophied lenticels.

Wildlife. Observed wildlife at the time of data collection were mosquitoes, dragonfly larvae, pygmy sunfish, *Elassoma* sp., and Florida cricket frog, *Acris gryllus dorsalis.*

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata; however a fire may not carry though this area without mechanical assistance.

Reference point – DSQT8 P1 is located slightly north of the south boundary of Phase 1 of the DSMB near the middle of the east-west axis.

Vegetation. This point is with an area classified as hydric pine flatwoods presently. Although the are plant species present associated with hydric conditions, there are not any supporting hydrologic indicators and the presence of bracken fern, *Pteridium aquilinum* and saw palmetto, *Serenoa repens* in the groundcover suggests that this is not correct and the plant species present is most like due to lack of fire in the ecology which would naturally eliminate these occurrences. This area would more correctly be classified as a mesic pine flatwoods. The canopy is formed by planted slash pine, *Pinus elliottii*. The subcanopy and shrub layers are predominately fetterbush, *Lyonia lucida,* black titi, *Cliftonia monophylla,* and gallberry, *Ilex glabra.* In

addition to the groundcover species mentioned above shiny blueberry, *Vaccinium myrsinites* is also present in the groundcover.

Hydrology. There are no hydric indicators at this site and this would be classified as upland.

Wildlife. Mosquitoes and biting flies were the wildlife observed at this site.

General Observations and Management. Thinning the planted pines by 90-95% is needed to meet the success criterion. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT8 P2 is located north of the south boundary of Phase 1 of the DSMB.

Vegetation. This area is presently classified as a mix forested wetland however it would be more accurately describe as a cypress swamp however it is a unique site and has a component of species that would be more typically associated with a wet savanna. The canopy is primarily evenly spaced pond cypress, *Taxodium ascendens* with a few slash pines, *Pinus elliottii*. The subcanopy is titi, *Cyrilla racemiflora,* bear tupelo, *Nyssa sylvatica v. ursina,* myrtle-leaf holly, *Ilex cassine myrtifolia,* and Apalachicola St. John's-wort, *Hypericum chapmanii*. These are growing on substantial hummocks that are supporting a substantial diversity of groundcover species. The groundcover is made up of a diversity of beaksedges, *Rhynchospora* sp. and sedges, *Carex* sp., and pipewort, *Eriocaulon* sp., but the most visually striking aspect is the large population of white-topped pitcher plants, *Sarracenia leucophylla* that is very abundant at the observation point.

Hydrology. This site is hydric with a prolonged hydroperiod. The hummocks described above are surrounded by standing water, which is 20-50 cm deep. The hydrologic indicators present included hydric soils, aufwuchs, aquatic bryophytes, aquatic plants, rafted debris, elevated lichen lines, aquatic fauna, water stain lines, the presents of hummocks, and morphologic plant adaptations such as adventious roots, buttressed trunks, and hypertrophied lenticels.

Wildlife. Aside from the mosquitoes, observed wildlife included Florida cricket frog, *Acris gryllus dorsalis*, Florida cottonmouth, *Agkistrodon piscivorus conanti*, white-tailed deer, *Odocoileus virginianus*, great blue heron, *Ardea herodias*, and mosquito fish, *Gambusia affinis*.

General Observations and Management. Though most of the area surrounding this point is ecologically in need of fire it is unlikely that fire would burn through this site unless it was during a very dry period and then it would depend a great deal on whether there was sufficient fuel to carry the fire. This openness of this area is likely maintained by the environmental challenges presented and the adaptations of the species that can grow there. A unique and beautiful site will be primarily enhanced by the restoration of the surround plant communities.

Reference point – DSQT9 P1 is found in the southwest corner of Phase 1 of the DSMB east of the Intracoastal Waterway.

Vegetation. This area is presently designated as hydric treeless savanna. The canopy is presently scattered slash pine, *Pinus elliottii* that do not appear to be planted. The subcanopy and shrub strata are predominately black titi, *Cliftonia monophylla,* fetterbush, *Lyonia lucida,* titi, *Cyrilla racemiflora*, and sweet gallberry, *Ilex coriacea.* Their thick growth accounts for a minimal groundcover, which includes *Serenoa repens*, *Drosera* sp., *Xyris caroliniana*, and *Gaylussacia mosieri.*

Hydrology. The hydric indicators at this point are hydric soils, tussocked herbaceous plants, hummocked trees with buttressed bases, staining from previous high water, and adventitious rooting though there was no standing water present.

Wildlife. Aside from the mosquitoes, observed wildlife at this point was Florida cricket frog, *Acris gryllus dorsalis.*

General Observations and Management. this point has been dramatically effect by the absent role of fire in the ecology. Although the canopy is presently planted slash pine, *Pinus elliottii* it is likely that this was not the historic condition when it was a wet savanna or that the canopy was greatly reduced. The pines should be thinned at this point. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT9 P2 is found the southwest corner of Phase 1 of the DSMB east of the Intracoastal Waterway and northwest of the previous point.

Vegetation. This area is presently designated as hydric pine flatwoods and the canopy is presently planted slash pine, *Pinus elliottii.* The subcanopy and shrub strata are predominately black titi, *Cliftonia monophylla,* fetterbush, *Lyonia lucida,* gallberry, *Ilex glabra*, and sweet gallberry, *Ilex coriacea.* The groundcover is predominately shiny blueberry, *Vaccinium myrsinites,* saw palmetto, *Serenoa repens,* bracken fern, *Pteridium aquilinum,* and beaksedges, *Rhynchospora* sp.

Hydrology. There were no hydric indicators at this point and there was no standing water present.

Wildlife. Mosquitoes and crickets were the only wildlife observations at this point.

General Observations and Management. Thinning the planted pines by 90-95% is needed to meet the success criterion. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT10 P1 is located due north of the previous transect in the center of the southwest quadrant of Phase 1 of the DSMB.

Vegetation. This area is presently designated as hydric treeless savanna. The canopy is wide spread pond cypress, *Taxodium ascendens* and bear tupelo, *Nyssa sylvatica v. ursina* with a few slash pine, *Pinus elliottii*. The subcanopy and shrub strata are predominately black titi, *Cliftonia monophylla,* bear tupelo, *Nyssa sylvatica v. ursina,* fetterbush, *Lyonia lucida,* and Apalachicola St. John's-wort, *Hypericum chapmanii* Their thick growth accounts for a minimal groundcover, which includes white-topped pitcher plants, *Sarracenia leucophylla,* parrot pitcher plants, *Sarracenia psittacina,* sundews, *Drosera* sp., and beaksedges, *Rhynchospora* sp.

Hydrology. Tannic standing water was present. The hydric indicators at this point are hydric soils, tussocked herbaceous plants, hummocked trees with buttressed bases, staining from previous high water, and adventitious rooting.

Wildlife. Mosquito fish, *Gambusia affinis*, Mosquitoes and crickets constituted the wildlife at this point.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT10 P2 is located due north of the previous transect in the center of the southwest quadrant of Phase 1 of the DSMB. This point is northwest of the previous point.

Vegetation. This area is presently designated as hydric pine flatwoods and the canopy is presently planted slash pine, *Pinus elliottii.* The subcanopy and shrub strata are predominately fetterbush, *Lyonia lucida,* gallberry, *Ilex glabra*, and sweet gallberry, *Ilex coriacea.* The groundcover is predominately saw palmetto, *Serenoa repens,* bracken fern, *Pteridium aquilinum,* sarsaparilla vine, *Smilax pumila,* and dwarf live oak, *Quercus minima*.

Hydrology. There were no hydric indicators at this point and there was no standing water present.

Wildlife. Mosquitoes, crickets, gray catbird, *Dumetella carolinensis*, Virginia opossum, *Didelphis virginiana*, nine-banded armadillo, *Dasypus novemcinctus*, white-tailed deer, *Odocoileus virginianus*, and raccoon, *Procyon lotor* were the wildlife observations at this point.

General Observations and Management. Thinning the planted pines by 90-95% is needed to meet the success criterion. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT11 P1 is located due north of the previous transect.

Vegetation. This area is designated as upland pine. Its canopy is planted slash pine, *Pinus elliottii* and the area appears to be mesic pine flatwoods for the most part though it some scrub and sandhill associated species growing in the mapped polygon. In addition to the slash pine, there are also Magnolia grandiflora growing in the canopy strata. The subcanopy and the shrub strata are predominately rusty staggerbush, *Lyonia ferruginea,* gallberry, *Ilex glabra*, and sweet gallberry, *Ilex coriacea.* The groundcover is predominately saw palmetto, *Serenoa repens,* bracken fern, *Pteridium aquilinum,* ear-leaf greenbrier, *Smilax auriculata,* and dwarf live oak, *Quercus minima*.

Hydrology. There is no surface hydrology at this point and no hydrologic indicators.

Wildlife. Mosquitoes, crickets, and mixed warbler species were observed at this point.

General Observations and Management. Thinning the planted pines by 85% is needed to meet the success criterion. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT11 P2 is located just west of center near the northern boundary of DSMB. It is northeast of the previous point.

Vegetation. This area is presently designated as hydric treeless savanna. The canopy is presently scattered slash pine, *Pinus elliottii* that do not appear to be planted. The subcanopy strata are predominately young slash pine, *Pinus elliottii,* sweet bay, *Magnolia virginiana,* black titi, *Cliftonia monophylla.* The shrub stratum is predominately bayberry, *Myrica heterophylla,* titi, *Cyrilla racemiflora*, and sweet gallberry, *Ilex coriacea.* The groundcover includes yelloweye grass, *Xyris* sp*.,* club-moss, *Lycopodiella* sp*.,* ten angled pipewort, *Eriocaulon decangulare,* and white-topped pitcher plant, *Sarracenia leucophylla.*

Hydrology. The hydric indicators seen at this point were hydric soils, tussocked herbaceous plants, hummocked trees with buttressed bases, staining from previous high water, and adventitious.

Wildlife. Mosquitoes were only observed wildlife at this point.

General Observations and Management. this point has been dramatically effect by the absent role of fire in the ecology. Although the canopy is presently planted slash pine, *Pinus elliottii* it is likely that this was not the historic condition when it was a wet savanna or that the canopy was greatly reduced. The middle strata at this point are particularly thick and do not allow groundcover species to flourish because so little light reaches the ground. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy

and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT12 P1 is located in the northeastern portion of Phase 1, which centrally located near the northern boundary of the DSMB.

Vegetation. This area is designated as upland pine. Its canopy is planted slash pine, *Pinus elliottii* and the area appears to be mesic pine flatwoods for the most part though it some scrub and sandhill associated species growing in the mapped polygon. The subcanopy and the shrub strata are predominately yaupon, *Ilex vomitoria,* gallberry, *Ilex glabra*, and sweet gallberry, *Ilex coriacea.* The groundcover is predominately saw palmetto, *Serenoa repens,* bracken fern, *Pteridium aquilinum,* broomsedge bluestem, *Andropogon virginicus,* ten angled pipewort, *Eriocaulon decangulare,* witchgrass, *Dichanthelium* sp., and wiregrass, *Aristida stricta*.

Hydrology. There is no surface hydrology at this point and no hydrologic indicators.

Wildlife. Mosquitoes, crickets, nine-banded armadillo, *Dasypus novemcinctus*, and Eastern Towhee, *Pipilio erythrophthalmus,* were species observed at this point.

General Observations and Management. Thinning the planted pines by 85% is needed to meet the success criterion. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT12 P2 is located in the northeastern portion of Phase 1, which centrally located near the northern boundary of the DSMB.

Vegetation. This area is presently designated as hydric treeless savanna. The canopy is a few wide spread slash pine, *Pinus elliottii*. The subcanopy and shrub strata are predominately black titi, *Cliftonia monophylla,* titi, *Cyrilla racemiflora,* bear tupelo, *Nyssa sylvatica v. ursina,* fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea*, and sweet pepperbush, *Clethra alnifolia.* The groundcover includes yelloweye grass, *Xyris* sp*.,* flattened pipewort, *Eriocaulon compressum,* broomsedge bluestem, Andropogon virginicus, ten angled pipewort, *Eriocaulon decangulare,* witchgrass, *Dichanthelium* sp*.,* and white-topped pitcher plant, *Sarracenia leucophylla.*

Hydrology. Tannic standing water was present. The hydric indicators at this point are hydric soils, tussocked herbaceous plants, hummocked trees with buttressed bases, staining from previous high water, and adventitious rooting.

Wildlife. Mosquitoes were the wildlife at this point.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth

in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Phase 2

Reference point – DSQT1 P1 is located in the northwestern portion of Phase 2, which is centrally located near the northern boundary of Phase 2 of the DSMB.

Vegetation. This point is with a polygon classified as hydric pine flatwoods presently, however this area would more correctly be classified as upland pine or mesic pine flatwoods. The canopy is formed by planted slash pine, *Pinus elliottii*. The subcanopy and shrub layers are predominately fetterbush, *Lyonia lucida,* yaupon, *Ilex vomitoria,* and gallberry, *Ilex glabra.* The primary groundcover species are shiny blueberry, *Vaccinium myrsinites,* bluestem, *Andropogon* sp., ten angled pipewort, *Eriocaulon decangulare*, and witchgrass, *Dichanthelium* sp.

Hydrology. There are no hydric indicators at this site and this would be classified as upland.

Wildlife. Mosquitoes, crickets, Eastern Towhee, *Pipilio erythrophthalmus,* and gray catbird, *Dumetella carolinensis* were the wildlife observed at this site

General Observations and Management. Thinning the planted pines and the application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT1 P2 is located in the northwestern portion of Phase 2, which is centrally located near the northern boundary of Phase 2 of the DSMB.

Vegetation. This area is presently classified as a treeless hydric savanna. At this point the canopy is planted pine. There is a thick subcanopy of predominately bear tupelo, *Nyssa sylvatica v. ursina*, black titi, *Cliftonia monophylla,* fetterbush, *Lyonia lucida,* myrtle-leaf holly, *Ilex cassine myrtifolia,* and bayberry, *Myrica heterophylla*. The ground cover species include broomsedge bluestem, *Andropogon virginicus,* ten angled pipewort, *Eriocaulon decangulare,* and witchgrass, *Dichanthelium* sp.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, herbaceous plants forming tussocks, and the presences of adventitious roots.

Wildlife. An Eastern Towhee, *Pipilio erythrophthalmus* was observed at this point along with an abundance population of mosquitoes.

General Observations and Management. As with many areas at site, this point has been dramatically effect by the absent role of fire in the ecology. The application of warm season prescribe fire would greatly benefit this location to reduce the woody

species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT3 P1 is in the southwest corner of Phase 2 of the DSMB.

Vegetation. This point is with a polygon classified as hydric pine flatwoods presently, however this area would more correctly be classified as upland pine or mesic pine flatwoods. The canopy is formed by planted slash pine, *Pinus elliottii*. The subcanopy and shrub layers are predominately saw palmetto, *Serenoa repens,* black titi, *Cliftonia monophylla,* Elliott's blueberry*, Vaccinium elliottii,* and gallberry, *Ilex glabra.* The primary groundcover species are shiny blueberry, *Vaccinium myrsinites,* dwarf live oak, *Quercus minima,* and bracken fern, *Pteridium aquilinum.*

Hydrology. There are no hydric indicators at this site and this would be classified as upland.

Wildlife. Crickets were the wildlife only observed at this point.

General Observations and Management. Thinning the planted pines and the application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT4 P1 is just south of the north boundary in the middle of Phase 2 of the DSMB.

Vegetation. This point is with a polygon classified as hydric pine flatwoods presently, however this area would more correctly be classified as upland pine or mesic pine flatwoods. The canopy is formed by planted slash pine, *Pinus elliottii*. The subcanopy and shrub layers are predominately black titi, *Cliftonia monophylla,* fetterbush, sweet gallberry, *Ilex coriacea,* and gallberry, *Ilex glabra.* The primary groundcover species are sarsaparilla vine, *Smilax pumila,* bluestem, *Andropogon* sp., dwarf live oak, *Quercus minima,* and bracken fern, *Pteridium aquilinum*.

Hydrology. There are no hydric indicators at this site or surface hydrology at this site.

Wildlife. Mosquitoes and biting flies where well noted at this site.

General Observations and Management. Thinning the planted pines and the application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

Reference point – DSQT4 P2 is just south of the north boundary in the middle of Phase 2 of the DSMB. It is due north of the previous point.

Vegetation. This point is with an area classified as hydric treeless savanna presently. The thin canopy is formed by slash pine, *Pinus elliottii* that are not planted. The thick subcanopy and shrub layers are predominately fetterbush, *Lyonia lucida,* bear tupelo, *Nyssa sylvatica v. ursina,* titi, *Cyrilla racemiflora,* black titi, *Cliftonia monophylla,* and sweet gallberry, *Ilex coriacea.* The predominant groundcover species are woolly huckleberry, *Gaylussacia mosieri,* ten angled pipewort, *Eriocaulon decangulare,* white-topped pitcher plants, *Sarracenia leucophylla,* and parrot pitcher plants, *Sarracenia psittacina.*

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, hummocked trees with buttressed bases, rafted debris, staining from previous high water, and the presences of adventitious roots.

Wildlife. Frog and bird calls were the wildlife only observed at this point.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT4 P3 is just south of the north boundary in the middle of Phase 2 of the DSMB. It is due south of the previous point.

Vegetation. This polygon classed as mixed forested wetland. The canopy species at this point are slash pine *Pinus elliottii,* swamp tupelo, *Nyssa sylvatica v. biflora,* and sweet bay, *Magnolia virginiana.* The subcanopy is swamp bay, *Persea palustris,* black titi, *Cliftonia monophylla, and* swamp tupelo, *Nyssa sylvatica v. biflora.* The shrub stratum is predominately fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea,* and titi, *Cyrilla racemiflora*. Groundcover species are absent in this area due to intense shading in upper strata.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, trees forming buttressed trunks and hummocks, water staining on vegetation, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Observed wildlife at the time of data collection were crickets.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata though this particular community may resist fire due to it maturation.

Reference point – DSQT5 P1 is located in the northeast corner of the DSMB
Vegetation. The canopy at this point is planted slash pine, *Pinus elliottii*. Laurel oaks, *Quercus hemisphaerica* and younger slash pine, *Pinus elliottii* form the subcanopy. Yaupon, *Ilex vomitoria*, sweet gallberry, *Ilex coriacea*, and gallberry, *Ilex glabra* are the dominant shrub species. The predominate groundcover species are bracken, *Pteridium aquilinum*, dwarf live oak, *Quercus minima*, broomsedge bluestem, *Andropogon virginicus*, and ear-leaf greenbrier, *Smilax auriculata*.

Hydrology. There are no hydric indicators at this site or surface hydrology at this site.

Wildlife. Observed wildlife included monarch butterfly, *Danaus plexippus*, gray fox, *Urocyon cinereoargenteus,* white-tailed deer, *Odocoileus virginianus*, and raccoon, *Procyon lotor*.

General Observations and Management. Thinning the planted pines by 85% is needed. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT5 P2 is located in the northeast corner of the DSMB.

Vegetation. This area is presently designated as hydric pine flatwoods but would be more accurately described as a wet savanna. The canopy is planted slash pine, *Pinus elliottii.* The subcanopy strata are predominately young slash pine, *Pinus elliottii,* sweet bay, *Magnolia virginiana,* and bear tupelo, *Nyssa sylvatica v. ursina.* The shrub stratum is predominately black titi, *Cliftonia monophylla,* titi, *Cyrilla racemiflora*, and sweet gallberry, *Ilex coriacea.* The groundcover is absently at this point due to shading.

Hydrology. The hydric indicators seen at this point were hydric soils, rafted debris, secondary flow channels, hummocked trees with buttressed bases, staining from previous high water, and adventitious roots.

Wildlife. Mosquitoes, crickets, common yellowthroat, *Geothlypis thichas*, and ruby-crowned kinglet, *Regulus calendula* were the observed wildlife at this point.

General Observations and Management. this point has been dramatically effect by the absent role of fire in the ecology. Although the canopy is presently planted slash pine, *Pinus elliottii* it is likely that this was not the historic condition when it was a wet savanna or that the canopy was greatly reduced. The middle strata at this point are particularly thick and do not allow groundcover species to flourish because so little light reaches the ground. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT5 P3 P1 is located in the northeast corner of the DSMB.

Vegetation. This polygon classed as mixed forested wetland. The canopy species at this point are pond cypress, *Taxodium ascendens,* slash pine *Pinus elliottii,* and swamp tupelo, *Nyssa sylvatica v. biflora.* The subcanopy is swamp bay, *Persea palustris,* black titi, *Cliftonia monophylla, and* titi, *Cyrilla racemiflora.* The shrub stratum is predominately fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea,* sweet pepperbush, *Clethra alnifolia*. Groundcover species are absent in this area due to intense shading in upper strata.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, trees forming buttressed trunks and hummocks, water staining on vegetation, and the presences of adventitious roots.

Wildlife. Observed wildlife at the time of data collection were mosquitoes, crickets, and downy woodpecker.

General Observations and Management. This site is functioning normally with reproduction of the dominant tree species observed, although prescribed fire should be encouraged to burn into the ecotones. This site had some of the largest tree specimens seen on the entire site.

Reference point – DSQT6 P1 is located in the middle of Phase 2 of the DSMB southwest of the previous point.

Vegetation. This area is classified as hydric pine flatwoods.The canopy at this point is planted slash pine, *Pinus elliottii*. Black titi, *Cliftonia monophylla* is the subcanopy. Fetterbush, *Lyonia lucida*, sweet gallberry, *Ilex coriacea*, and black titi, *Cliftonia monophylla* are the dominant shrub species. The groundcover species was predominately saw palmetto, *Serenoa repens*.

Hydrology. There are no hydric indicators at this site or surface hydrology at this site.

Wildlife. Observed wildlife included mosquitoes and an eastern wood pee-wee, *Contopus virens.*

General Observations and Management. Thinning the planted pines by 85% is needed. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT6 P2 is located in the middle of Phase 2 of the DSMB due north of the previous point.

Vegetation. This point is presently classified as a mixed forested wetland. The canopy consists of slash pine, *Pinus elliottii,* sweet bay, *Magnolia virginiana,* and large black titi, *Cliftonia monophylla.* The subcanopy is primarily swamp bay, *Persea palustris,* black titi, *Cliftonia monophylla,* and sweet bay, *Magnolia virginiana.* the shrub is sweet gallberry, *Ilex coriacea,* black titi, *Cliftonia monophylla, and* bayberry, *Myrica heterophylla*. The only groundcover species was netted chain fern, *Woodwardia areolata.*

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, trees forming buttressed trunks and hummocks, water staining on vegetation, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Observed wildlife at the time of data collection were spiders, mosquitoes, and Florida cricket frog, *Acris gryllus dorsalis.*

General Observations and Management. This site is functioning normally with reproduction of the dominant tree species observed, although prescribed fire should be encouraged to burn into the ecotones.

Reference point – DSQT6 P3 is located in the middle of Phase 2 of the DSMB northwest of the previous point.

Vegetation. This point is presently classified as a mixed forested wetland, but it is more likely a fire suppressed former wet savanna. The canopy consists of slash pine, *Pinus elliottii* and sweet bay, *Magnolia virginiana.* The subcanopy is primarily black titi, *Cliftonia monophylla,* swamp tupelo, *Nyssa sylvatica v. biflora,* and sweet bay, *Magnolia virginiana.* the shrub stratum is bayberry, *Myrica heterophylla,* odorless bayberry, *Myrica inodora,* and fetterbush, *Lyonia lucida*. The groundcover species are absent.

Hydrology. At the time of data collection standing water was not present nor was there evidence of past surface water.

Wildlife. A red-shouldered hawk, *Buteo lineatus*, was observed.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT7 P1 is located in the southeast corner of Phase 2 of the DSMB.

Vegetation. This point is in a polygon class as upland pine and appears to be mesic pine flatwoods. The canopy at this point is planted slash pine, *Pinus elliottii* with younger slash pine, *Pinus elliottii* form the subcanopy. Yaupon, *Ilex vomitoria*, Elliott's blueberry*, Vaccinium elliottii*, and gallberry, *Ilex glabra* are the dominant shrub species. The predominate groundcover species are bracken, *Pteridium aquilinum*, dwarf live oak, *Quercus minima*, saw palmetto, *Serenoa repens,* bracken fern, *Pteridium aquilinum,* wiregrass, *Aristida stricta*, and dwarf live oak, *Quercus minima.*

Hydrology. There are no hydric indicators at this site or surface hydrology at this site.

Wildlife. At this point pine warblers, *Dendroica pinus*, were feeding in the canopy and crickets were calling.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT7 P2 is located in the southeast corner of Phase 2 of the DSMB.

Vegetation. This point is presently classified as a mixed forested wetland, but it is more likely a fire suppressed former wet savanna. The canopy consists of pond cypress, *Taxodium ascendens* and slash pine, *Pinus elliottii.* The subcanopy is primarily black titi, *Cliftonia monophylla,* swamp tupelo, *Nyssa sylvatica v. biflora,* and sweet bay, *Magnolia virginiana.* the shrub stratum is bayberry, *Myrica heterophylla,* and fetterbush, *Lyonia lucida*. The groundcover species are ten angled pipewort, *Eriocaulon decangulare*, sedge, *Carex* sp., white-topped pitcher plant, *Sarracenia leucophylla*, and sphagnum moss, *Sphagnum* sp.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, trees forming buttressed trunks and hummocks, herbaceous plants forming tussocks, water staining on vegetation, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Crickets, mosquitoes, and spiders were the only wildlife sightings.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Phase 3

Reference point – DSQT13 P1 is located in the south end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point is classified as hydric treeless savanna. The canopy is planted slash pine, *Pinus elliottii* and sweet bay, *Magnolia virginiana.* the subcanopy and scrub strata are black titi, *Cliftonia monophylla,* highbush blueberry, *Vaccinium corymbosum* bayberry, *Myrica heterophylla,* and fetterbush, *Lyonia lucida*. There was no groundcover present due to the thick upper strata.

Hydrology. At the time of data collection surface water was absent. Hydrologic indicators present included hydric soils, trees forming buttressed trunks.

Wildlife. Wildlife observed was abundant mosquitoes and a red-bellied woodpecker, *Melanerpes carolinus.*

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT13 P2 is located in the south end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point has been designated mixed forested wetland. The canopy consists of unplanted slash pine, *Pinus elliottii,* sweet bay, *Magnolia virginiana*, and swamp tupelo, *Nyssa sylvatica v. biflora.* The subcanopy is sweet bay, *Magnolia virginiana, red maple, Acer rubrum*, and swamp tupelo, *Nyssa sylvatica v. biflora.* The shrub stratum is bayberry, *Myrica heterophylla,* sweet pepperbush, *Clethra alnifolia,* and fetterbush, *Lyonia lucida*. The groundcover species were netted chain fern, *Woodwardia areolata* and royal fern, *Osmunda regalis.*

Hydrology. At the time of data collection surface water was absent.

Wildlife. Wildlife observations included crickets, blue jay, *Cyanocitta cristata*, and Barred Owl, *Strix varia.*

General Observations and Management. Allow prescribed fire to burn into ecotones; however this system is unlikely to burn itself.

Reference point – DSQT13 P3 is located in the south end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side. This point is in a polygon class as upland pine and appears to be mesic pine flatwoods. The canopy at this point is planted slash pine, *Pinus elliottii.* The subcanopy is slash pine, *Pinus elliottii,* American holly, *Ilex opaca*, and sweet bay, *Magnolia virginiana*. Fetterbush, *Lyonia lucida*, Elliott's blueberry, *Vaccinium elliottii*, and gallberry, *Ilex*

glabra are the dominant shrub species. The predominate groundcover species are saw palmetto, *Serenoa repens,* ear-leaf greenbrier, *Smilax auriculata,* and witchgrass, *Dichanthelium* sp.

Hydrology. There are no hydric indicators at this site or surface hydrology at this site

Wildlife. A red-shouldered hawk, *Buteo lineatus*, and a brown-headed nuthatch, *Sitta pusilla,* were observed.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT14 P1 is located in the middle of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point is classified as mixed forested wetland but it would be more correctly called a hydric treeless savanna. The canopy is planted slash pine, *Pinus elliottii* and black titi, *Cliftonia monophylla.* The subcanopy stratum was black titi, *Cliftonia monophylla* and bear tupelo, *Nyssa sylvatica v. ursina.* The shrub stratum was sweet gallberry, *Ilex coriacea*, sweet pepperbush, *Clethra alnifolia,* and fetterbush, *Lyonia lucida*. The ground cover included ten angled pipewort, *Eriocaulon decangulare,* white-topped pitcher plant, *Sarracenia leucophylla,* yelloweye grass*, Xyris* sp.

Hydrology. At the time of data collection surface water was absent but it was evident that it was near the surface. Hydric soils were present.

Wildlife. Wildlife observed was abundant diversity of spider species, crickets calling, and a gray catbird, *Dumetella carolinensis.*

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT14 P2 is located in the middle of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point is classified as cypress swamp the canopy is exclusively pond cypress, *Taxodium ascendens*. The subcanopy and shrub strata consist primarily of myrtle-leaf holly, *Ilex cassine myrtifolia,* and Apalachicola St. John's-wort, *Hypericum chapmanii*. The groundcover is primarily narrow fruit horned beakrush, *Rhynchospora inundata*, flattened pipewort, *Eriocaulon compressum*, yelloweye grass*, Xyris* sp., and sundew, *Drosera capillaris*.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, aufwuchs, rafted debris, trees forming buttressed trunks, herbaceous plants forming tussocks, water staining on vegetation, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Wildlife observed included Florida cricket frog, *Acris gryllus dorsalis,* American robin, *Turdus migratorius*, white-tailed deer, *Odocoileus virginianus*, and raccoon, *Procyon lotor*.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT14 P3 is located in the middle of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This is classed as hydric pine flatwoods; however it is upland pine or more precisely, sandhill. The dominate canopy species is longleaf pine, *Pinus palustris*, and sand pine, *Pinus clausa*. The subcanopy is made up sand pine *Pinus clausa*, sand live oak, *Quercus geminata*, and bluejack oak, *Quercus incana*. The shrub stratum is yaupon, *Ilex vomitoria,* Elliott's blueberry*, Vaccinium elliottii,* and gallberry, *Ilex glabra.* The ground cover is predominately dwarf live oak, *Quercus minima,* wiregrass, *Aristida stricta,* gopher apple, *Licania Michauxii,* and flatwoods St. John's-wort*, Hypericum microsepalum.*

Hydrology. There are no hydric indicators at this site or surface hydrology at this site.

Wildlife. Wildlife observed included pine warblers, *Dendroica pinus*, American robin, *Turdus migratorius*, white-tailed deer, *Odocoileus virginianus*, and raccoon, *Procyon lotor*.

General Observations and Management. This point is some of the best upland plant community at the DSMB as far as the condition of the groundcover and the presents of longleaf pine. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT15 P1 is located in the northwestern end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point is classified as hydric pine flatwoods, but it would be more correctly called a hydric treeless savanna. The canopy and subcanopy strata are

black titi, *Cliftonia monophylla.* The shrub stratum was black titi, *Cliftonia monophylla*, and bayberry, *Myrica heterophylla*, and fetterbush, *Lyonia lucida*. The ground cover included ten angled pipewort, *Eriocaulon decangulare,* flattened pipewort, *Eriocaulon compressum,* yelloweye grass*, Xyris* sp*,* and wiregrass, *Aristida stricta*.

Hydrology. At the time of data collection surface water was absent but it was evident that it was near the surface. Hydric soils were present.

Wildlife. Wildlife observed was mosquitoes, northern cardinal, *Cardinalis cardinalis*, and summer tanager, *Piranga rubra*.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT15 P2 is located in the northwestern end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This polygon classed as mixed forested wetland. The canopy species at this point are swamp tupelo, *Nyssa sylvatica v. biflora,* black titi, *Cliftonia monophylla*, and sweet bay, *Magnolia virginiana.* The subcanopy is Dahoon, *Ilex cassine,* black titi, *Cliftonia monophylla, and* swamp tupelo, *Nyssa sylvatica v. biflora.* The shrub stratum is predominately fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea,* sweet pepperbush, *Clethra alnifolia*. Groundcover species that were present in this area included ten angled pipewort, *Eriocaulon decangulare,* flattened pipewort, *Eriocaulon compressum,* purple pitcher plant, *Sarracenia purpurea, and* white arrow arum, *Peltandra sagittifolia*.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, trees forming buttressed trunks and hummocks, water staining on vegetation, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Observed wildlife at the time of data collection were spiders, mosquitoes, and Florida cricket frog, *Acris gryllus dorsalis.*

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata though this particular community may resist fire due to it maturation.

Reference point – DSQT15 P3 is located in the northwestern end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point is classified as cypress swamp the canopy is slash pine, *Pinus elliottii* and pond cypress, *Taxodium ascendens*. The subcanopy strata consist primarily of myrtle-leaf holly, *Ilex cassine myrtifolia,* and titi, *Cyrilla racemiflora,* and pond cypress, *Taxodium ascendens*. The shrub strata consist primarily of myrtle-leaf holly, *Ilex cassine myrtifolia,* titi, *Cyrilla racemiflora,* and black titi, *Cliftonia monophylla* The groundcover is primarily foxtail club-moss, *Lycopodiella alopecuroides*, flattened pipewort, *Eriocaulon compressum*, yelloweye grass*, Xyris* sp., and sundew, *Drosera capillaris*.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils, aufwuchs, rafted debris, trees forming buttressed trunks, herbaceous plants forming tussocks, water staining on vegetation, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Wildlife observed included mosquitoes and eastern Towhee, *Pipilio erythrophthalmus*.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT16 P1 is located in the northwestern end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This is classed as upland pine or more precisely, sandhill. The dominate canopy species is sand pine, *Pinus clausa*. The subcanopy and shrub strata are predominately turkey oak, *Quercus laevis* and bluejack oak, *Quercus incana*. The ground cover is predominately wiregrass, *Aristida stricta,* saw palmetto, *Serenoa repens,* ear-leaf greenbrier, *Smilax auriculata,* splitbeard and bluestem, *Andropogon ternarius.*

Hydrology. There are no hydric indicators at this site or surface hydrology at this site.

Wildlife. Wildlife observed included mosquitoes, white-tailed deer, *Odocoileus virginianus*, and tufted titmouse, *Parus bicolor*.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the shrub and groundcover strata and return this area to open habitat with a rich diversity of herbaceous species in the groundcover.

Reference point – DSQT16 P2 is located in the northwestern end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This polygon classed as mixed forested wetland. The canopy and subcanopy species at this point are swamp tupelo, *Nyssa sylvatica v. biflora* and sweet bay, *Magnolia virginiana.* The shrub stratum is predominately fetterbush, *Lyonia lucida,* sweet gallberry, *Ilex coriacea,* swamp azalea, *Rhododendron viscosum*. Groundcover species that were present in this area was cinnamon fern, *Osmunda cinnamomea*.

Hydrology. At the time of data collection standing water was present and tannic. Hydrologic indicators present included hydric soils and trees forming buttressed trunks and hummocks, and the presences of adventitious roots. Sphagnum moss was also present.

Wildlife. Observed wildlife at the time of data collection were crickets and mosquitoes.

General Observations and Management. The application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata though this particular community may resist fire due to it maturation.

Reference point – DSQT16 P3 is located in the northwestern end of Phase 3, which is the panhandle portion of the DSMB projecting off of the northwestern side.

Vegetation. This point is with a polygon classified as hydric pine flatwoods presently, however this area would more correctly be classified as upland pine or mesic pine flatwoods. The canopy and subcanopy are made up of by planted slash pine, *Pinus elliottii*. The shrub stratum is predominately fetterbush, *Lyonia lucida,* dwarf huckleberry, *Gaylussacia dumosa,* and gallberry, *Ilex glabra.* The primary groundcover species are wiregrass, *Aristida stricta,* saw palmetto, *Serenoa repens,* bluestem, *Andropogon* sp., and bracken fern, *Pteridium aquilinum*.

Hydrology. There are no hydric indicators at this site and this would be classified as upland.

Wildlife. Mosquitoes, crickets, Eastern Towhee, *Pipilio erythrophthalmus,* and pine warblers, *Dendroica pinus,* were the wildlife observed at this site.

General Observations and Management. Thinning the planted pines and the application of warm season prescribe fire would greatly benefit this location to reduce the woody species growth in the subcanopy and shrub strata.

VII. INTERPRETATIONS AND CONCLUSIONS

The DSMB presents many restoration challenges. Primary among these is the understanding of the plant communities being sampled. The baseline monitoring presented in this report is the first step in the restoration process. We envision a reclassification of the proposed landscape as we learn more about the plant communities at this site and how they compare to those of reference sites. After reviewing the results from both the quantitative and qualitative data it is clear that much of the landscape has been substantially impacted by many years of silviculture. The 1949 aerial photograph is the best forensic example of what the landscape looked like before people changed the dominant vegetation. The open landscape of the 1940s is now a patchwork of planted slash pine (*Pinus elliottii*) and sand pine (*P. clausa*) of various ages and densities and extensive "titi swamps" or fire suppressed wet savanna and other types of historically open landscapes. Much of the diversity in this landscape is contained in the groundcover and the groundcover species diversity has been reduced by silvicultural practices in many areas. We have outlined the main considerations created from past land use and fire suppression in the introduction.

There are some general trends noted during the compilation of data and summary of results. First, all sample sites are in need of a prescribe fire plan. A frequent fire of once every 1 to 3 years during the growing season is preferred, as this has been used to restore similar sites in Tate's Hell State Forest and the Apalachicola National Forest. Second, the mesic pine flatwoods oftern have a remarkable regularity of species similarity and number of species/transect. The typical fire suppressed landscape has a groundcover dominated by gallberry (*Ilex glabra*) and saw palmetto (*Serenoa repens*). Large areas of bare ground beneath these species is covered by a thick layer of pine duff. Third, there are areas mapped on the existing land use and cover maps as hydric pine plantations, titi swamp and shrub swamp which are better understood as wet savanna (also called treeless hydric savanna) and seepage slope. Areas identified as hydric pine plantations, titi swamp and shrub swamp may need to have the planted pine canopy and fire suppressed woody vegetation radically reduced or eliminated to allow light to reach the ground, which will allow for the growth of appropriate groundcover species. Fourth, there are large areas of upland mapped on the existing land use and cover maps as hydric pine flatwoods with no evidence of functioning wetlands. These areas are best described as sandhill and mesic pine flatwoods. Fifth, the sandhills with their characteristic canopy of longleaf pine (*Pinus palustris*) have been converted into pine plantations of sand pine (*Pinus clausa*). Sand pine although native, could be considered as ruderal in this scenario and the plantations should be thermally or mechanically removed and replanted with longleaf pine. Some of the planted sandhill still possess a species rich and appropriate groundcover, including the graminoid, wiregrass (*Aristida stricta*).

The 1949 aerial photograph clearly shows a landscape of widely spaced pines with a graminoid dominated groundcover in large areas of upland and wetlands. The canopy was most likely longleaf pine and to a lesser extent slash pine. Historic conditions as per the 1949 photograph were used to frame the discussion of management in the data results and discussion of this report. New information will

be added to our discussion of management of this site as this data is collected and analyzed as part of our investigation of reference sites.

The prescribed burning or "ecological" burning is one of the primary restoration tools used to restore the landscape. The objective of the prescribed burning is to facilitate the restoration of planted pinelands with ecologically appropriate plant communities including: hydric pine flatwoods, mesic pine flatwoods, scrubby pine flatwoods, sandhill, wet savanna, cypress swamp, bay swamp, gum swamp and mixed forested wetlands. The fires are supposed to mimic the natural fire frequency and help recreate the seasonal rhythms that existed before fire suppression and silviculture. The initial burning is intended to thermally thin the inappropriate woody growth from many years of fire suppression. These will be high intensity burns designed to consume the standing biomass, release minerals in the biomass and expose the soil for germination. Later burns are intended to select for appropriate species in the plant communities described above.

The operation of the BPMB involves the collaboration of many individuals from permitting, engineering, forestry, corporate and consulting professions. Efforts will be coordinated with Don Hamrick of the United States Army Corps of Engineers, Larry O'Donell, Vicki Tauxe and Connie Bersok of the Florida Department of Environmental Permitting, Hildreth Cooper of the United States Fish and Wildlife Service,Joel Hayworth, P.E., professional hydrologist, Dave Tillis and Thomas Estes of the St. Joe Company, Inc., Mike Lamonica and Steve Shea, Foresters of St. Joe Company, Inc., to begin the landscape changes that will improve the vegetation and hydrology and overall ecology at the BPMB. Beginning in 2005 the mechanical thinning, invasive exotic control, prescribed burning, and baseline hydrologic measurements will commence within a scheduled phase boundary. The reference site data will be collected in 2005 for use in comparison to all future vegetative monitoring. Vegetative monitoring will resume in the late summer/fall of 2005 along transects within those phase boundaries, but only in those landscapes that have been modified by restoration activities. This will be the pattern of monitoring for the next five years. After the baseline monitoring is completed in 2007, hydrologic improvements will be completed and vegetative monitoring will be used to gauge the appropriateness of hydrologic improvements.

In future annual reports, two new categories, Success Criterion Attainment and Notes, and Summary of Compliance and/or Enforcement Actions will be added to the annual report, especially as the restoration effort begins to affect the plant communities and landscape.

VIII. REFERENCES

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Exhibit 1: Vegetative Species List

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NameLatin	Common Name	Family Name	Vegetative Classification
Agalinis aphylla	SCALELEAF FALSE FOXGL	OROBANCHACEAE	Forbs
Andropogon glomeratus	BUSHY BLUESTEM	POACEAE	Graminoids
Andropogon sp.	BLUESTEM	POACEAE	Graminoids
Andropogon ternarius	SPLITBEARD BLUESTEM	POACEAE	Graminoids
Andropogon virginicus	BROOMSEDGE BLUESTEM	POACEAE	Graminoids
Andropogon virginicus v. glau	CHALKY BLUESTEM	POACEAE	Graminoids
Aristida palustris	LONGLEAF THREEAWN	POACEAE	Graminoids
Aristida stricta v. beyrichiana	WIREGRASS	POACEAE	Graminoids
Arundinaria gigantea	CANEBRAKE or SWITCH CA	POACEAE	Graminoids
Asclepias cinerea	CAROLINA MILKWEED	APOCYNACEAE	Forbs
Baptisia lanceolata	GOPHERWEED	FABACEAE	Forbs
Calamovilfa curtissii	FLORIDA SANDREED	POACEAE	Graminoids
Chrysoma pauciflosculosa	BUSH GOLDENROD	ASTERACEAE	Forbs
Chrysopsis sp.	GOLDENASTER	ASTERACEAE	Forbs
Clethra alnifolia	COASTAL SWEETPEPPERB	CLETHRACEAE	Woody Plants
Cliftonia monophylla	BLACK TITI; BUCKWHEAT T	CYRILLACEAE	Woody Plants
Cnidoscolus stimulosus	TREAD-SOFTLY; FINGER-R	EUPHORBIACEAE	Forbs
Coelorachis sp.	JOINTGRASS	POACEAE	Graminoids
Commelina erecta	WHITEMOUTH DAYFLOWER	COMMELINACEAE	Forbs
Conradina canescens	FALSE ROSEMARY	LAMIACEAE	Forbs
Crotalaria pallida v. obovata	SMOOTH RATTLEBOX	FABACEAE	Forbs
Crotalaria purshii	PURSH'S RATTLEBOX	FABACEAE	Forbs
Crotalaria rotundifolia	RABBITBELLS	FABACEAE	Forbs
Crotalaria sp.	RATTLEBOX	FABACEAE	Forbs
Croton argyranthemus	SILVER CROTON	EUPHORBIACEAE	Forbs
Ctenium aromaticum	TOOTHACHEGRASS	POACEAE	Graminoids
Cyperus sp.	FLATSEDGE	CYPERACEAE	Graminoids

NameLatin	Common Name	Family Name	Vegetative Classification
Cyrilla racemiflora	TITI	CYRILLACEAE	Woody Plants
Dalea carnea v. gracilis	WHITETASSELS	FABACEAE	Forbs
Desmodium sp.	TICKTREFOIL	FABACEAE	Forbs
Dichanthelium scabriusculum	WOOLLY WITCHGRASS	POACEAE	Graminoids
Dichanthelium sp.	WITCHGRASS	POACEAE	Graminoids
Drosera capillaris	PINK SUNDEW	DROSERACEAE	Forbs
Eragrostis sp.	LOVEGRASS	POACEAE	Graminoids
Eriocaulon compressum	FLATTENED PIPEWORT	ERIOCAULACEAE	Forbs
Eriocaulon decangulare	TENANGLE PIPEWORT	ERIOCAULACEAE	Forbs
Eriocaulon sp.	HATPINS; PIPEWORT	ERIOCAULACEAE	Forbs
Eupatorium capillifolium	DOGFENNEL	ASTERACEAE	Forbs
Eupatorium leptophyllum	FALSEFENNEL	ASTERACEAE	Forbs
Euphorbia curtisii	CURTIS' SPURGE	EUPHORBIACEAE	Forbs
Euphorbia floridana	GREATER FLORIDA SPURG	EUPHORBIACEAE	Forbs
Euthamia graminifolia v. hirtip	FLATTOP GOLDENROD	ASTERACEAE	Forbs
Euthamia sp.	FLATTOP GOLDENROD	ASTERACEAE	Forbs
Froelichia floridana	COTTONWEED; PLAINS SN	AMARANTHACEAE	Forbs
Gaylussacia dumosa	HUCKLEBERRY	ERICACEAE	Woody Plants
Gaylussacia frondosa var. to	BLUE HUCKLEBERRY	ERICACEAE	Woody Plants
Gaylussacia mosieri	WOOLLY HUCKLEBERRY	ERICACEAE	Woody Plants
Gelsemium rankinii	SWAMP JESSAMINE	GELSEMIACEAE	Vines
Helianthus sp.	SUNFLOWER	ASTERACEAE	Forbs
Heterotheca subaxillaris	CAMPHORWEED	ASTERACEAE	Forbs
Houstonia sp.	BLUET	RUBIACEAE	Forbs
Hypericum chapmanii	APALACHICOLA ST.JOHN'S-	CLUSIACEAE	Forbs
Hypericum crux-andreae	ST.PETER'S-WORT	CLUSIACEAE	Forbs
Hypericum gentianoides	PINEWEEDS; ORANGEGRA	CLUSIACEAE	Forbs

NameLatin	Common Name	Family Name	Vegetative Classification
Hypericum microsepalum	FLATWOODS ST.JOHN'S-W	CLUSIACEAE	Forbs
Hypericum sp.	FOURPETAL ST.JOHN'S-WO	CLUSIACEAE	Forbs
Ilex cassine v. myrtifolia	MYRTLE DAHOON	AQUIFOLIACEAE	Woody Plants
Ilex coriacea	LARGE GALLBERRY; SWEE	AQUIFOLIACEAE	Woody Plants
Ilex glabra	INKBERRY; GALLBERRY	AQUIFOLIACEAE	Woody Plants
Ilex vomitoria	YAUPON	AQUIFOLIACEAE	Woody Plants
Kalmia hirsuta	WICKY; HAIRY LAUREL	ERICACEAE	Forbs
Lachnanthes caroliana	CAROLINA REDROOT	HAEMODORACEAE	Forbs
Leucothoe racemosa	SWAMP DOGHOBBLE	ERICACEAE	Woody Plants
Liatris sp.	GAYFEATHER	ASTERACEAE	Forbs
Licania michauxii	GOPHER APPLE	CHRYSOBALANACEAE	Forbs
Lophiola aurea	GOLDEN CREST	NARTHECIACEAE	Forbs
Lycopodiella alopecuroides	FOXTAIL CLUB-MOSS	LYCOPODIACEAE	Forbs
Lycopodiella prostrata	HARPER'S CLUB-MOSS	LYCOPODIACEAE	Forbs
Lycopodiella sp.	CLUB-MOSS	LYCOPODIACEAE	Forbs
Lyonia ferruginea	RUSTY STAGGERBUSH	ERICACEAE	Woody Plants
Lyonia lucida	FETTERBUSH	ERICACEAE	Woody Plants
Magnolia virginiana	SWEETBAY	MAGNOLIACEAE	Woody Plants
Myrica heterophyla	EVERGREEN or NORTHERN	MYRICACEAE	Woody Plants
Nyssa sylvatica v. biflora	SWAMP TUPELO	CORNACEAE	Woody Plants
Nyssa ursina	BEAR TUPELO	CORNACEAE	Woody Plants
Panicum sp.		POACEAE	Graminoids
Panicum virgatum	SWITCHGRASS	POACEAE	Graminoids
Paspalum sp.		POACEAE	Graminoids
Persea palustris	SWAMP BAY	LAURACEAE	Woody Plants
Photinia pyrifolia	RED CHOKEBERRY	ROSACEAE	Woody Plants
Photinia sp.		ROSACEAE	Woody Plants

NameLatin	Common Name	Family Name	Vegetative Classification
Pieris phyllyreifolia	FETTERBUSH	ERICACEAE	Woody Plants
Pinus clausa	SAND PINE	PINACEAE	Woody Plants
Pinus elliottii	SLASH PINE	PINACEAE	Woody Plants
Pityopsis graminifolia	NARROWLEAF SILKGRASS	ASTERACEAE	Forbs
Polygala nana	CANDYROOT	POLYGALACEAE	Forbs
Polygonella sp.	JOINTWEED	POLYGONACEAE	Forbs
Polypremum procumbens	RUSTWEED; JUNIPERLEAF	TETRACHONDRACEAE	Forbs
Pteridium aquilinum var. pseu	TAILED BRACKEN	DENNSTAEDTIACEAE	Forbs
Pterocaulon pycnostachyum	BLACKROOT	ASTERACEAE	Forbs
Quercus hemisphaerica	LAUREL OAK	FAGACEAE	Woody Plants
Quercus incana	BLUEJACK OAK	FAGACEAE	Woody Plants
Quercus laevis	TURKEY OAK	FAGACEAE	Woody Plants
Quercus minima	DWARF LIVE OAK	FAGACEAE	Woody Plants
Quercus pumila	RUNNING OAK	FAGACEAE	Woody Plants
Rhexia nashii	MAID MARIAN	MELASTOMATACEAE	Forbs
Rhexia sp.	MEADOWBEAUTY	MELASTOMATACEAE	Forbs
Rhus copallinum	WINGED SUMAC	ANACARDIACEAE	Woody Plants
Rhynchospora chapmanii	CHAPMAN'S BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora inundata	NARROWFRUIT HORNED B	CYPERACEAE	Graminoids
Rhynchospora megalocarpa	SANDYFIELD BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora sp.	BEAKSEDGE	CYPERACEAE	Graminoids
Rubus sp.	DEWBERRY or BLACKBERR	ROSACEAE	Forbs
Sabatia brevifolia	SHORTLEAF ROSEGENTIAN	GENTIANACEAE	Forbs
Saccharum sp.	PLUMEGRASS	POACEAE	Graminoids
Salvia azurea	AZURE BLUE SAGE	LAMIACEAE	Forbs
Sarracenia leucophylla	WHITETOP PITCHERPLANT	SARRACENIACEAE	Forbs
Sarracenia psittacina	PARROT PITCHERPLANT	SARRACENIACEAE	Forbs

NameLatin	Common Name	Family Name	Vegetative Classification
Scleria ciliata	FRINGED NUTRUSH	CYPERACEAE	Graminoids
Scleria sp.	NUTRUSH	CYPERACEAE	Graminoids
Serenoa repens	SAW PALMETTO	ARECACEAE	Forbs
Smilax auriculata	EARLEAF GREENBRIER	SMILACACEAE	Vines
Smilax glauca	CAT GREENBRIER; WILD SA	SMILACACEAE	Vines
Smilax laurifolia	LAUREL GREENBRIER; BAM	SMILACACEAE	Vines
Smilax pumila	SARSAPARILLA VINE	SMILACACEAE	Vines
Smilax sp.	GREENBRIER	SMILACACEAE	Vines
Solidago odora	ANISESCENTED or SWEET	ASTERACEAE	Forbs
Sporobolus floridanus	FLORIDA DROPSEED	POACEAE	Graminoids
Sporobolus junceus	PINEYWOODS DROPSEED	POACEAE	Graminoids
Sporobolus sp.	DROPSEED	POACEAE	Graminoids
Stillingia sylvatica	QUEENSDELIGHT	EUPHORBIACEAE	Forbs
Stylisma villosa	HAIRY DAWNFLOWER	CONVOLVULACEAE	Forbs
Symphyotrichum concolor	EASTERN SILVER ASTER	ASTERACEAE	Forbs
Symphyotrichum sp.	ASTER	ASTERACEAE	Forbs
Taxodium ascendens	POND-CYPRESS	CUPRESSACEAE	Woody Plants
Tephrosia chrysophylla	SCURF HOARYPEA	FABACEAE	Forbs
Tephrosia florida	FLORIDA HOARYPEA	FABACEAE	Forbs
Tragia sp.		EUPHORBIACEAE	Forbs
Utricularia purpurea	EASTERN PURPLE BLADDE	LENTIBULARIACEAE	Forbs
Vaccinium corymbosum	HIGHBUSH BLUEBERRY	ERICACEAE	Woody Plants
Vaccinium elliottii	MAYBERRY	ERICACEAE	Woody Plants
Vaccinium myrsinites	SHINY BLUEBERRY	ERICACEAE	Woody Plants
Viola palmata	EARLY BLUE VIOLET	VIOLACEAE	Forbs
Vitis rotundifolia	MUSCADINE	VITACEAE	Vines
Woodwardia virginica	VIRGINIA CHAIN FERN	BLECHNACEAE	Forbs

NameLatin	Common Name	Family Name	Vegetative Classification
Xyris caroliniana	CAROLINA YELLOWEYED G	XYRIDACEAE	Forbs
Xyris sp.	YELLOWEYED GRASS	XYRIDACEAE	Forbs
Yucca filamentosa	ADAM'S NEEDLE	AGAVACEAE	Forbs

*Note: Latin names followed by * are exotic species.*

Exhibit 2: Quantitative Monitoring Data Forms

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Site Name: ____________________ Transect ID: ____________

Plant Community: ____________________ Transect Length: ____________

Person Recording: ____________________ Date: ____________

GPS Begin			GPS End		
Lat			Lat		
Long			Long		

Hieght Scale				
1= 0m-1.5m	2= 1.5m-3m	3= 3m-5m	4= 5m-10m	5= >10m

Metric Conversions						
0.5m=19.7in	1m=3.2ft	2m=6.5ft	3m=9.8ft	4m=13ft	5m=16.4ft	10m=32.8ft

Plot #	subplot #	Species	% cover	# of Individuals	height scale	DBH	Notes

Definition and Descriptions

Groundcover: herbaceous plants generally less than 1.5 meters tall and if weakly woody with a diameter of less than 2.54 cm (1 in) at 1.5 meters (4.5 ft)

Shrub: woody plants less than 3m (9.8ft). No stem diameter requirement, usually laes than 2.54cm (1in) diameter at breast hieght (DBH), but cannot be greater than 10cm DBH, otherwise considered canopy.

Shrubs: woody plants in the groundcover that are not large enough to be considered subcanopy, usually have multiple stems, can include tree saplings

Subcanopy: woody plants greater than 3m tall with a stem less than 10cm (4in) DBH, often includes tree saplings

Canopy: woody plants greater than 3m tall with a main greater than 10cm (4in) DBH

Height Scale Equivalents: **Groundcover:** NA; **Shrubs:** 1(0m-1.5m), 2(1.5m-3m); **Subcanopy:** 3(3m-5m), 4(5m-10m) and 5(>10m) with DBH <(less than)10cm; **Canopy:** 3(3m-5m), 4(5m-10m) and 5(>10m) with DBH >(greater than) 10cm

Notes: 1) Measure the diameter at breast hieght (DBH) of all subcanopy and canopy specimens that are rooted within each subplot. There is no requirement for measuring stems less than 2.54 cm (1in) at breast hieght record "less than 2.54 cm".

2) If a speices occurs at more than one hieght scale with in a single subplot, a new record should be made for each hieght scale occurence.

Site Name: _____ Transect ID: _____

Plant Community: _____ Transect Length: _____

Stratum: _____ Date: _____

Person Recording: _____

GPS Begin		GPS End	
Lat		Lat	
Long		Long	

Metric Conversions

0.5m=19.7in	2m=6.5ft	4m=13ft		10m=32.8ft
1m=3.2ft	3m=9.8ft	5m=16.4ft		

Point Number	Quadrant Number	Species	Dia. or Circ. (cm)	Area Covered (cm^2)	Point-to-Point Distance (m)	Notes
1	1					
1	2					
1	3					
1	4					
2	1					
2	2					
2	3					
2	4					
3	1					
3	2					
3	3					
3	4					
4	1					
4	2					
4	3					
4	4					
5	1					
5	2					
5	3					
5	4					
6	1					
6	2					
6	3					
6	4					
7	1					
7	2					
7	3					
7	4					
8	1					
8	2					
8	3					
8	4					
9	1					
9	2					
9	3					
9	4					
10	1					
10	2					
10	3					
10	4					

Site Name: _____ Transect ID: _____

Plant Community: _____ Transect Length: _____

Stratum: _____ Date: _____

Person Recording: _____

GPS Begin		GPS End	
Lat		Lat	
Long		Long	

Plant #	Species	Dia.	Height scale	# of indiv.	Plot #	subplot #	Notes
1							
2							
3							
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Exhibit 3: Qualitative Monitoring Data Forms

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Qualitative monitoring notes, to be recorded at selected areas representative of majority of a particular plant community traversed in the walking transects			
Site Name:		Plant community type:	
Transect ID:		Date and time (am/pm):	
		Person recording data:	

1. Weather:	**(a)** full sun	**(b)** part sun	**(c)** cloudy	**(d)** cloudy and rain/fog
2. Temperature:	**(a)** 20-50 F	**(b)** 51-70 F	**(c)** 71-90 F	**(d)** 91-110 F
3. CANOPY % cover:		pine plantation (rows) or		managed for pine
	(a) absent	**(b)** 0-1%	**(c)** 1-5%	**(d)** 6-25%
	(e) 26-50%	**(f)** 51-75%	**(g)** 76-100%	
4.Estimated height class of the majority of **TREES** using the following scale:				
	(a) absent	**(b)** 3-5m	**(c)** 6-10m	**(d)** >10m
List 3 dominant **TREE** species observed in canopy				
	1.	2.	3.	
5.Estimated height class of the majority of **SUBCANOPY** using the following scale:				
	(a) absent	**(b)** 3-5m	**(c)** 6-10m	**(d)** >10m
List 3 dominant **SUBCANOPY** species observed				
	1.	2.	3.	
6. SHRUBS % cover:				
	(a) absent	**(b)** 0-1%	**(c)** 1-5%	**(d)** 6-25%
	(e) 26-50%	**(f)** 51-75%	**(g)** 76-100%	
List 3 dominant **SHRUB** species observed				
	1.	2.	3.	
7. Estimated height class of the majority of **SHRUBS** using the following scale:				
	(a) absent	**(b)** 0-.5m	**(c)** .6-1.5m	**(d)** 1.6-3m
8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):				
	(a) absent	**(b)** 0-1%	**(c)** 1-5%	**(d)** 6-25%
	(e) 26-50%	**(f)** 51-75%	**(g)** 76-100%	
List 4 dominant **GROUNDCOVER** species observed				
	1.	2.		
	3.	4.		
9. Estimated abundance of **weedy** or **ruderal NATIVE** species in each strata:				
	GROUNDCOVER:	**(a)** absent	**(b)** <5% of area	**(c)** >5% of area
	SHRUB:	**(a)** absent	**(b)** <5% of area	**(c)** >5% of area
	SUBCANOPY:	**(a)** absent	**(b)** <5% of area	**(c)** >5% of area
	CANOPY:	**(a)** absent	**(b)** <5% of area	**(c)** >5% of area
List of **ruderal** species present**:**				
	1.	2.		
	3.	4.		
	5.	6.		

10. Tree density:	**(a)** tree density appropriate	**(b)** tree density inappropriate
(why?):	**(a)** too dense	**(b)** too sparse
11. Tree health:	**(a)** trees healthy	**(b)** trees stressed
(if stressed, why?):	**(a)** too dense	**(b)** too wet

12. Hydrologic indicators *(circle those indicators that apply)**:***		
(a) hydric soils	**(b)** sediment deposition	**(c)** algal mat / aufwuchs
(d) aquatic bryotphytes	**(e)** aquatic plants	**(f)** rafted debris
(g) elevated lichen lines	**(h)** aquatic fauna	**(i)** tussocks/hummocks
(j) water stained vegetation/ stain lines		**(k)** secondary flow channels
(l) morphological plant adaptations/adventitious roots/buttressed trunks/ hypertrophied lenticles		

13. Water table:	**(a)** at the surface		**(b)** below surface
14. Standing water:	**(a)** present		**(b)** absent
15. Water color:	**(a)** tannic	**(b)** non-tanic/clear	**(c)** cloudy
(if cloudy, why?)	**(a)** suspended sediments	**(b)** other:	

16. Water column:	**(a)** sphagnum present	**(b)** utricularia present

17. Altered hydrology *(circle those indicators that apply)***:**					
	(a) soil subsidence / oxidation of muck	**(b)** exposed roots		**(c)** abnormal tree fall due to soil subsidence	
	(d) lichen lines:		typical		abnormal
	(e) inappropriate vegetation *(i.e. - upland vegetation invading wetlands)*				
	List inappropriate vegetation:				
	1.	2.			
	3.	4.			
	5.	6.			
	7.	8.			

18. Wildlife usage and natural history observations *(circle those that apply)***:**			
	(a) footprints	animal type:	
	(b) scat	animal species:	
	(c) herbivory observed:		
	(d) bird nests/calls:	bird species:	
	(e) animal remains:		
	(f) scratch marks:		
	(g) frog calls:	frog species:	
	(h) arthropods observed or heard:		
	(i) reptiles observed:		
	(j) fish observed:		
	(k) mammals observed *(including humans)***:**		

19. Exotic species:		**(a)** present	**(b)** absent		
If present **must be georeferenced** and include the following information:					
	Species:		**Location:**		
	% cover:	**(a)** absent	**(b)** 0-1%	**(c)** 1-5%	**(d)** 6-25%
		(e) 26-50%	**(f)** 51-75%	**(g)** 76-100%	
	Species:		**Location:**		
	% cover:	**(a)** absent	**(b)** 0-1%	**(c)** 1-5%	**(d)** 6-25%
		(e) 26-50%	**(f)** 51-75%	**(g)** 76-100%	
	Species:		**Location:**		
	% cover:	**(a)** absent	**(b)** 0-1%	**(c)** 1-5%	**(d)** 6-25%
		(e) 26-50%	**(f)** 51-75%	**(g)** 76-100%	

20. Any notes on the general aspect of the site/techniques to meet restoration goals				
	1.	**(a)** fire suppressed	**(b)** appropriately managed	**(c)** needs mechanical vegetation reduction
	2.	**(a)** is species appropriate	**(b)** supplemental planting needed	**(c)** supplemental seeding needed
	3.	**(a)** functioning appropriately	**(b)** functioning inappropriately	
		(if functioning inappropriately, why?)		
	4.	bedded and planted:	approx. Tree age:	years old
	5.	**(a)** appropriate mature trees	**(b)** secondary growth, was logged *(if logged, when?)*	years ago months ago
Specific notes for adaptive management:.				
Noteworthy additions to the species richness such as: evidence of successful reproduction of ecologically appropriate species *(especially threatened and endangered species):*				

Appendix A: Quantitative Monitoring Results - Groundcover

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Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T1 - Cypress Swamp

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Utricularia purpurea	5.56%	0.1668	0.1345	0	0.0323
Vines					
Smilax laurifolia	1.8%	0.0539	0.0045	0.0171	0.0323
Woody Plants					
Lyonia lucida	23.56%	0.7069	0.2101	0.2226	0.2742
Pieris phyllyreifolia	20.99%	0.6296	0.0476	0.3562	0.2258
Cyrilla racemiflora	15.85%	0.4754	0.2925	0.0377	0.1452
Gaylussacia mosieri	9.34%	0.2803	0.0113	0.1884	0.0806
Ilex coriacea	8.32%	0.2497	0.0756	0.1096	0.0645
Cliftonia monophylla	5.4%	0.1621	0.0726	0.0411	0.0484
Nyssa sylvatica v. biflora	3.52%	0.1056	0.0665	0.0068	0.0323
Taxodium ascendens	2.74%	0.0822	0.0627	0.0034	0.0161
Leucothoe racemosa	1.51%	0.0453	0.0189	0.0103	0.0161
Clethra alnifolia	1.4%	0.0421	0.003	0.0068	0.0323

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T2 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Serenoa repens	8.43%	0.2529	0.153	0.0183	0.0816
Pteridium aquilinum var. pseudocaudatum	6.68%	0.2004	0.058	0.054	0.0884
Aristida stricta v. beyrichiana	4.25%	0.1275	0.0662	0.0137	0.0476
Andropogon virginicus	0.91%	0.0272	0.0041	0.0027	0.0204
Kalmia hirsuta	0.86%	0.0259	0.005	0.0073	0.0136
Dichanthelium sp.	0.6%	0.0181	0.0027	0.0018	0.0136
Licania michauxii	0.33%	0.01	0.0014	0.0018	0.0068
Xyris caroliniana	0.3%	0.0091	0.0014	0.0009	0.0068
Andropogon virginicus v. glaucus	0.3%	0.0091	0.0014	0.0009	0.0068
Vines					
Smilax pumila	4.39%	0.1316	0.0206	0.043	0.068
Vitis rotundifolia	1.98%	0.0595	0.0105	0.0082	0.0408
Smilax laurifolia	0.94%	0.0282	0.0041	0.0037	0.0204
Smilax sp.	0.36%	0.0109	0.0014	0.0027	0.0068
Smilax glauca	0.3%	0.0091	0.0014	0.0009	0.0068
Woody Plants					
Ilex glabra	23.88%	0.7165	0.2659	0.2601	0.1905
Gaylussacia dumosa	13.47%	0.4042	0.1101	0.2125	0.0816
Ilex coriacea	12.7%	0.3811	0.1599	0.1328	0.0884
Vaccinium myrsinites	7.9%	0.2369	0.064	0.1117	0.0612
Quercus minima	7.03%	0.211	0.0416	0.0742	0.0952
Gaylussacia frondosa var. tomentosa	3.62%	0.1085	0.0247	0.043	0.0408
Photinia pyrifolia	0.4%	0.0119	0.0014	0.0037	0.0068
Lyonia ferruginea	0.33%	0.01	0.0014	0.0018	0.0068

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T3 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Serenoa repens	6.55%	0.1965	0.0956	0.0319	0.069
Hypericum crux-andreae	1.87%	0.056	0.007	0.0145	0.0345
Aristida stricta v. beyrichiana	1.21%	0.0364	0.0037	0.0068	0.0259
Kalmia hirsuta	0.86%	0.0257	0.0103	0.0068	0.0086
Dichanthelium sp.	0.79%	0.0236	0.0025	0.0039	0.0172
Calamovilfa curtissii	0.69%	0.0208	0.0103	0.0019	0.0086
Xyris caroliniana	0.36%	0.0108	0.0012	0.001	0.0086
Woody Plants					
Ilex coriacea	37.09%	1.1126	0.4619	0.4352	0.2155
Ilex glabra	14.74%	0.4422	0.1457	0.1586	0.1379
Lyonia lucida	13.39%	0.4018	0.1238	0.1228	0.1552
Quercus minima	10.05%	0.3016	0.0476	0.1074	0.1466
Gaylussacia dumosa	4.77%	0.1432	0.0277	0.0638	0.0517
Cliftonia monophylla	2.65%	0.0795	0.0468	0.0068	0.0259
Vaccinium myrsinites	1.9%	0.057	0.007	0.0155	0.0345
Photinia sp.	0.95%	0.0284	0.0025	0.0087	0.0172
Gaylussacia frondosa var. tomentosa	0.88%	0.0265	0.0025	0.0068	0.0172
Photinia pyrifolia	0.52%	0.0156	0.0012	0.0058	0.0086
Lyonia ferruginea	0.36%	0.0108	0.0012	0.001	0.0086
Pinus elliottii	0.36%	0.0108	0.0012	0.001	0.0086

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Serenoa repens	12.21%	0.3663	0.2231	0.037	0.1062
Pteridium aquilinum var. pseudocaudatum	4.52%	0.1356	0.0175	0.0473	0.0708
Kalmia hirsuta	2.88%	0.0864	0.0373	0.0226	0.0265
Andropogon virginicus	1.61%	0.0484	0.0225	0.0082	0.0177
Dichanthelium sp.	1.01%	0.0302	0.0022	0.0103	0.0177
Xyris sp.	1%	0.0299	0.006	0.0062	0.0177
Andropogon virginicus v. glaucus	0.73%	0.022	0.0022	0.0021	0.0177
Cyperus sp.	0.51%	0.0153	0.0044	0.0021	0.0088
Vines					
Smilax auriculata	0.76%	0.0229	0.0011	0.0041	0.0177
Vitis rotundifolia	0.64%	0.0191	0.0082	0.0021	0.0088
Smilax pumila	0.38%	0.0114	0.0005	0.0021	0.0088
Woody Plants					
Ilex coriacea	15.68%	0.4703	0.1283	0.2181	0.1239
Ilex glabra	14.69%	0.4408	0.1513	0.1214	0.1681
Lyonia lucida	14.34%	0.4302	0.1277	0.214	0.0885
Gaylussacia dumosa	8.08%	0.2425	0.0729	0.0988	0.0708
Cliftonia monophylla	6.99%	0.2097	0.1393	0.035	0.0354
Quercus minima	4.44%	0.1331	0.0088	0.0535	0.0708
Gaylussacia frondosa var. tomentosa	4.33%	0.1299	0.0219	0.0638	0.0442
Clethra alnifolia	1.85%	0.0554	0.0104	0.0185	0.0265
Vaccinium myrsinites	1.76%	0.0527	0.0077	0.0185	0.0265
Photinia pyrifolia	1.58%	0.0475	0.0066	0.0144	0.0265

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T5 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Eriocaulon compressum	28.72%	0.8616	0.2092	0.5292	0.1232
Aristida stricta v. beyrichiana	12.81%	0.3842	0.2424	0.0384	0.1034
Lycopodiella alopecuroides	12.34%	0.3701	0.1052	0.1319	0.133
Hypericum chapmanii	10.7%	0.3211	0.1766	0.0361	0.1084
Xyris sp.	8.55%	0.2565	0.0448	0.0935	0.1182
Rhynchospora sp.	3.39%	0.1016	0.0309	0.0264	0.0443
Ctenium aromaticum	2.14%	0.0641	0.012	0.0176	0.0345
Drosera capillaris	1.65%	0.0496	0.0033	0.0167	0.0296
Rhynchospora inundata	1.51%	0.0452	0.01	0.0056	0.0296
Eriocaulon decangulare	1.43%	0.0428	0.0066	0.0116	0.0246
Dichanthelium sp.	1.21%	0.0362	0.002	0.0046	0.0296
Lophiola aurea	0.83%	0.0249	0.002	0.0032	0.0197
Panicum virgatum	0.71%	0.0214	0.0133	0.0032	0.0049
Rhexia nashii	0.65%	0.0195	0.001	0.0037	0.0148
Sarracenia psittacina	0.47%	0.0141	0.0027	0.0065	0.0049
Eupatorium leptophyllum	0.44%	0.0132	0.0083	0	0.0049
Lachnanthes caroliana	0.44%	0.0131	0.0013	0.0019	0.0099
Hypericum sp.	0.38%	0.0115	0.001	0.0056	0.0049
Andropogon virginicus	0.19%	0.0057	0.0003	0.0005	0.0049
Vines					
Smilax laurifolia	0.4%	0.012	0.0007	0.0014	0.0099
Woody Plants					
Cliftonia monophylla	5.31%	0.1593	0.0525	0.0477	0.0591
Ilex cassine v. myrtifolia	2.27%	0.0681	0.0236	0.0051	0.0394
Taxodium ascendens	1.4%	0.0419	0.0203	0.0019	0.0197
Ilex glabra	1.16%	0.0349	0.0136	0.0065	0.0148
Cyrilla racemiflora	0.47%	0.0141	0.0083	0.0009	0.0049
Nyssa sylvatica v. biflora	0.46%	0.0137	0.0083	0.0005	0.0049

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T6 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Pteridium aquilinum var. pseudocaudatum	8.65%	0.2594	0.1302	0.0704	0.0588
Aristida stricta v. beyrichiana	6.18%	0.1853	0.0572	0.0497	0.0784
Andropogon ternarius	5.3%	0.1589	0.045	0.06	0.0539
Serenoa repens	2.81%	0.0844	0.0607	0.0041	0.0196
Dichanthelium sp.	2.68%	0.0805	0.0111	0.0155	0.0539
Aristida palustris	2.46%	0.0739	0.014	0.0207	0.0392
Tragia sp.	2.24%	0.0672	0.0058	0.0124	0.049
Licania michauxii	1.51%	0.0452	0.007	0.0186	0.0196
Scleria ciliata	1.16%	0.0348	0.0041	0.0062	0.0245
Pityopsis graminifolia	1.15%	0.0346	0.0029	0.0072	0.0245
Tephrosia chrysophylla	1.09%	0.0326	0.0029	0.0052	0.0245
Liatris sp.	0.87%	0.026	0.0023	0.0041	0.0196
Andropogon sp.	0.8%	0.024	0.0041	0.0052	0.0147
Solidago odora	0.72%	0.0217	0.0018	0.0052	0.0147
Yucca filamentosa	0.72%	0.0216	0.0146	0.0021	0.0049
Sporobolus sp.	0.69%	0.0206	0.0018	0.0041	0.0147
Croton argyranthemus	0.69%	0.0206	0.0018	0.0041	0.0147
Symphyotrichum sp.	0.69%	0.0206	0.0018	0.0041	0.0147
Paspalum sp.	0.69%	0.0206	0.0018	0.0041	0.0147
Polygonella sp.	0.68%	0.0203	0.0012	0.0093	0.0098
Stylisma villosa	0.65%	0.0196	0.0018	0.0031	0.0147
Symphyotrichum concolor	0.65%	0.0196	0.0018	0.0031	0.0147
Rhynchospora megalocarpa	0.51%	0.0152	0.0023	0.0031	0.0098
Panicum virgatum	0.47%	0.0141	0.0012	0.0031	0.0098
Polygala nana	0.47%	0.0141	0.0012	0.0031	0.0098
Stillingia sylvatica	0.43%	0.0129	0.0018	0.0062	0.0049
Agalinis aphylla	0.36%	0.0108	0.0018	0.0041	0.0049
Pterocaulon pycnostachyum	0.26%	0.0077	0.0018	0.001	0.0049
Eragrostis sp.	0.26%	0.0077	0.0018	0.001	0.0049

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T6 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Baptisia lanceolata	0.26%	0.0077	0.0018	0.001	0.0049
Hypericum microsepalum	0.26%	0.0077	0.0018	0.001	0.0049
Coelorachis sp.	0.25%	0.0076	0.0006	0.0021	0.0049
Xyris caroliniana	0.22%	0.0065	0.0006	0.001	0.0049
Saccharum sp.	0.22%	0.0065	0.0006	0.001	0.0049
Chrysoma pauciflosculosa	0.22%	0.0065	0.0006	0.001	0.0049
Viola palmata	0.22%	0.0065	0.0006	0.001	0.0049
Lachnanthes caroliana	0.22%	0.0065	0.0006	0.001	0.0049
Asclepias cinerea	0.22%	0.0065	0.0006	0.001	0.0049
Houstonia sp.	0.22%	0.0065	0.0006	0.001	0.0049
Vines					
Smilax auriculata	7.29%	0.2186	0.0572	0.0683	0.0931
Smilax laurifolia	0.64%	0.0193	0.0012	0.0083	0.0098
Vitis rotundifolia	0.61%	0.0182	0.0053	0.0031	0.0098
Smilax glauca	0.22%	0.0065	0.0006	0.001	0.0049
Woody Plants					
Quercus minima	37.38%	1.1213	0.4729	0.5259	0.1225
Ilex glabra	4.39%	0.1316	0.0502	0.0373	0.0441
Quercus hemisphaerica	0.94%	0.0282	0.0163	0.0021	0.0098
Pinus elliottii	0.44%	0.0131	0.0012	0.0021	0.0098

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T7 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Woodwardia virginica	6.32%	0.1895	0.0702	0.036	0.0833
Rhynchospora sp.	5.79%	0.1738	0.036	0.0961	0.0417
Rhynchospora inundata	0.62%	0.0186	0.0017	0.003	0.0139
Vines					
Gelsemium rankinii	11.82%	0.3545	0.0599	0.2252	0.0694
Smilax laurifolia	3.81%	0.1144	0.012	0.033	0.0694
Vitis rotundifolia	0.73%	0.022	0.0051	0.003	0.0139
Woody Plants					
Ilex coriacea	25.03%	0.7508	0.2106	0.2763	0.2639
Myrica heterophyla	10.87%	0.326	0.2055	0.0511	0.0694
Lyonia lucida	10.39%	0.3118	0.1027	0.0841	0.125
Clethra alnifolia	10.15%	0.3046	0.1661	0.0691	0.0694
Magnolia virginiana	5.62%	0.1685	0.0582	0.027	0.0833
Cliftonia monophylla	5.45%	0.1635	0.0599	0.048	0.0556
Gaylussacia mosieri	2.77%	0.0831	0.0103	0.045	0.0278
Persea palustris	0.62%	0.0186	0.0017	0.003	0.0139

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T8 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Serenoa repens	10.34%	0.3101	0.2221	0.0213	0.0667
Pteridium aquilinum var. pseudocaudatum	6.78%	0.2034	0.0723	0.0561	0.075
Dichanthelium sp.	5.79%	0.1736	0.0181	0.0638	0.0917
Pityopsis graminifolia	3.04%	0.0912	0.0103	0.0309	0.05
Andropogon virginicus	2.87%	0.0862	0.0271	0.0174	0.0417
Euthamia sp.	2.29%	0.0688	0.0142	0.0213	0.0333
Tragia sp.	1.13%	0.034	0.0032	0.0058	0.025
Stillingia sylvatica	1.05%	0.0315	0.0097	0.0135	0.0083
Polypremum procumbens	1.03%	0.0309	0.0026	0.0116	0.0167
Liatris sp.	0.73%	0.0219	0.0013	0.0039	0.0167
Euphorbia curtisii	0.73%	0.0219	0.0013	0.0039	0.0167
Heterotheca subaxillaris	0.73%	0.0219	0.0013	0.0039	0.0167
Polygonella sp.	0.53%	0.016	0.0019	0.0058	0.0083
Crotalaria pallida v. obovata	0.47%	0.0141	0.0019	0.0039	0.0083
Eragrostis sp.	0.4%	0.0121	0.0019	0.0019	0.0083
Dalea carnea v. gracilis	0.4%	0.0121	0.0019	0.0019	0.0083
Commelina erecta	0.36%	0.0108	0.0006	0.0019	0.0083
Chrysopsis sp.	0.36%	0.0108	0.0006	0.0019	0.0083
Desmodium sp.	0.36%	0.0108	0.0006	0.0019	0.0083
Crotalaria sp.	0.36%	0.0108	0.0006	0.0019	0.0083
Eupatorium capillifolium	0.36%	0.0108	0.0006	0.0019	0.0083
Cnidoscolus stimulosus	0.36%	0.0108	0.0006	0.0019	0.0083
Rubus sp.	0.36%	0.0108	0.0006	0.0019	0.0083
Hypericum gentianoides	0.36%	0.0108	0.0006	0.0019	0.0083
Rhynchospora sp.	0.36%	0.0108	0.0006	0.0019	0.0083
Salvia azurea	0.36%	0.0108	0.0006	0.0019	0.0083
Vines					
Smilax auriculata	29.26%	0.8778	0.2343	0.4352	0.2083
Vitis rotundifolia	0.94%	0.0283	0.0161	0.0039	0.0083

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS1T8 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Woody Plants					
Ilex glabra	26.13%	0.784	0.3318	0.2689	0.1833
Vaccinium elliottii	0.88%	0.0263	0.0161	0.0019	0.0083
Rhus copallinum	0.4%	0.0121	0.0019	0.0019	0.0083
Vaccinium myrsinites	0.4%	0.0121	0.0019	0.0019	0.0083

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS2T1 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Pteridium aquilinum var. pseudocaudatum	16.07%	0.4821	0.2272	0.102	0.1529
Serenoa repens	7.35%	0.2206	0.1673	0.0087	0.0446
Polygonella sp.	6.59%	0.1977	0.0732	0.0672	0.0573
Dichanthelium sp.	2.83%	0.0848	0.0098	0.0304	0.0446
Aristida stricta v. beyrichiana	2.67%	0.08	0.0235	0.0119	0.0446
Andropogon sp.	2.62%	0.0785	0.016	0.0434	0.0191
Andropogon glomeratus	2.49%	0.0747	0.0106	0.0195	0.0446
Andropogon virginicus v. glaucus	2.08%	0.0624	0.0177	0.0065	0.0382
Panicum virgatum	1.74%	0.0522	0.0053	0.0087	0.0382
Xyris caroliniana	1.71%	0.0514	0.0213	0.0174	0.0127
Euthamia graminifolia v. hirtipes	1.28%	0.0383	0.0084	0.0108	0.0191
Andropogon ternarius	1.1%	0.0329	0.0062	0.0076	0.0191
Solidago odora	0.85%	0.0256	0.0022	0.0043	0.0191
Tragia sp.	0.79%	0.0237	0.0013	0.0033	0.0191
Sporobolus junceus	0.29%	0.0088	0.0013	0.0011	0.0064
Sabatia brevifolia	0.26%	0.0079	0.0004	0.0011	0.0064
Hypericum chapmanii	0.26%	0.0079	0.0004	0.0011	0.0064
Vines					
Smilax pumila	14.62%	0.4387	0.1114	0.2636	0.0637
Smilax auriculata	9.13%	0.274	0.0705	0.0889	0.1146
Woody Plants					
Quercus minima	12.66%	0.3798	0.098	0.1735	0.1083
Quercus pumila	6.58%	0.1973	0.0519	0.0944	0.051
Ilex glabra	4.12%	0.1236	0.0519	0.0271	0.0446
Pinus elliottii	0.88%	0.0264	0.0115	0.0022	0.0127
Ilex vomitoria	0.69%	0.0208	0.0111	0.0033	0.0064
Quercus hemisphaerica	0.33%	0.0099	0.0013	0.0022	0.0064

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS2T2 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Sarracenia leucophylla	3.68%	0.1103	0.0291	0.0286	0.0526
Rhynchospora sp.	1.01%	0.0303	0.0046	0.0082	0.0175
Vines					
Smilax laurifolia	4.52%	0.1356	0.0368	0.0286	0.0702
Woody Plants					
Lyonia lucida	54.45%	1.6336	0.5844	0.5755	0.4737
Ilex coriacea	16.08%	0.4824	0.158	0.2367	0.0877
Cliftonia monophylla	9.54%	0.2863	0.1104	0.0531	0.1228
Gaylussacia frondosa var. tomentosa	6.1%	0.1829	0.0245	0.0531	0.1053
Taxodium ascendens	2%	0.0599	0.0383	0.0041	0.0175
Magnolia virginiana	1.75%	0.0525	0.0092	0.0082	0.0351
Ilex cassine v. myrtifolia	0.87%	0.0262	0.0046	0.0041	0.0175

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS2T3 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Pteridium aquilinum var. pseudocaudatum	18.87%	0.566	0.1798	0.2082	0.178
Serenoa repens	17.07%	0.5121	0.3331	0.0434	0.1356
Andropogon virginicus v. glaucus	0.41%	0.0124	0.0017	0.0022	0.0085
Aristida stricta v. beyrichiana	0.41%	0.0124	0.0017	0.0022	0.0085
Vines					
Smilax auriculata	9.23%	0.277	0.0568	0.0846	0.1356
Smilax pumila	4.87%	0.1461	0.0347	0.0521	0.0593
Smilax glauca	4.15%	0.1246	0.0132	0.0521	0.0593
Woody Plants					
Ilex glabra	27.21%	0.8163	0.2725	0.3319	0.2119
Quercus minima	10.16%	0.3049	0.0353	0.1171	0.1525
Gaylussacia dumosa	4.24%	0.1272	0.0237	0.0781	0.0254
Ilex coriacea	3.37%	0.101	0.0474	0.0282	0.0254

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS2T4 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Hypericum chapmanii	52.94%	1.5883	0.5435	0.6418	0.403
Aristida stricta v. beyrichiana	11.05%	0.3315	0.1375	0.0597	0.1343
Sporobolus floridanus	4.25%	0.1274	0.0498	0.0179	0.0597
Lycopodiella prostrata	2.27%	0.0681	0.0054	0.0179	0.0448
Woodwardia virginica	2.15%	0.0646	0.0138	0.0209	0.0299
Xyris sp.	1.57%	0.0472	0.0024	0.0149	0.0299
Vines					
Smilax laurifolia	2.51%	0.0753	0.0156	0.0149	0.0448
Smilax auriculata	2.1%	0.0629	0.024	0.009	0.0299
Woody Plants					
Ilex glabra	15%	0.4499	0.1604	0.1552	0.1343
Cliftonia monophylla	5.06%	0.1518	0.0324	0.0448	0.0746
Ilex cassine v. myrtifolia	1.1%	0.0329	0.015	0.003	0.0149

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS2T5 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Pteridium aquilinum var. pseudocaudatum	18.42%	0.5525	0.1534	0.162	0.2371
Serenoa repens	6.78%	0.2035	0.1515	0.0108	0.0412
Dichanthelium sp.	2.66%	0.0799	0.0046	0.0238	0.0515
Panicum sp.	1.8%	0.0539	0.0079	0.0151	0.0309
Rhynchospora sp.	1.36%	0.0407	0.0033	0.0065	0.0309
Andropogon virginicus v. glaucus	1.03%	0.0309	0.006	0.0043	0.0206
Scleria sp.	0.99%	0.0297	0.0026	0.0065	0.0206
Xyris caroliniana	0.92%	0.0275	0.0026	0.0043	0.0206
Vines					
Smilax auriculata	13.25%	0.3975	0.0278	0.1944	0.1753
Smilax pumila	2.05%	0.0616	0.0053	0.0151	0.0412
Smilax laurifolia	0.91%	0.0274	0.002	0.0151	0.0103
Woody Plants					
Ilex glabra	45.43%	1.3629	0.5873	0.5076	0.268
Ilex vomitoria	1.36%	0.0409	0.0073	0.013	0.0206
Vaccinium elliottii	1.3%	0.039	0.0265	0.0022	0.0103
Ilex coriacea	1.18%	0.0353	0.0099	0.0151	0.0103
Quercus minima	0.55%	0.0166	0.002	0.0043	0.0103

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS2T6 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Hypericum chapmanii	36.4%	1.0919	0.3273	0.4503	0.3143
Aristida stricta v. beyrichiana	5.39%	0.1616	0.0679	0.0366	0.0571
Lachnanthes caroliana	4.14%	0.1242	0.0057	0.0471	0.0714
Rhynchospora sp.	3.19%	0.0957	0.0057	0.0471	0.0429
Eriocaulon decangulare	3.07%	0.0922	0.0074	0.0419	0.0429
Panicum virgatum	1.76%	0.0528	0.0033	0.0209	0.0286
Rhexia sp.	1.36%	0.0407	0.0016	0.0105	0.0286
Eriocaulon sp.	0.85%	0.0256	0.0008	0.0105	0.0143
Lycopodiella sp.	0.68%	0.0203	0.0008	0.0052	0.0143
Vines					
Smilax laurifolia	1.36%	0.0407	0.0016	0.0105	0.0286
Smilax sp.	0.68%	0.0203	0.0008	0.0052	0.0143
Woody Plants					
Cliftonia monophylla	18.21%	0.5464	0.2741	0.1152	0.1571
Ilex cassine v. myrtifolia	7.27%	0.2181	0.1244	0.0366	0.0571
Cyrilla racemiflora	5.02%	0.1507	0.054	0.0681	0.0286
Ilex coriacea	4.6%	0.1381	0.0376	0.0576	0.0429
Vaccinium corymbosum	2.37%	0.0711	0.0516	0.0052	0.0143
Ilex glabra	2.32%	0.0695	0.0147	0.0262	0.0286
Magnolia virginiana	1.33%	0.04	0.0205	0.0052	0.0143

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS3T1 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Lachnanthes caroliana	7.59%	0.2278	0.0123	0.0859	0.1296
Arundinaria gigantea	6.07%	0.1822	0.03	0.0781	0.0741
Andropogon glomeratus	5.01%	0.1502	0.0194	0.0938	0.037
Aristida stricta v. beyrichiana	3.33%	0.1	0.0053	0.0391	0.0556
Andropogon sp.	1.61%	0.0482	0.0141	0.0156	0.0185
Dichanthelium scabriusculum	1.35%	0.0404	0.0141	0.0078	0.0185
Hypericum chapmanii	0.94%	0.0281	0.0018	0.0078	0.0185
Vines					
Smilax laurifolia	17.98%	0.5394	0.0935	0.2422	0.2037
Woody Plants					
Ilex coriacea	22.1%	0.6631	0.3069	0.2266	0.1296
Cliftonia monophylla	16%	0.4799	0.2487	0.1016	0.1296
Ilex cassine v. myrtifolia	10.62%	0.3187	0.224	0.0391	0.0556
Cyrilla racemiflora	2.37%	0.071	0.0106	0.0234	0.037
Ilex glabra	1.99%	0.0597	0.0071	0.0156	0.037
Nyssa sylvatica v. biflora	1.99%	0.0597	0.0071	0.0156	0.037
Magnolia virginiana	1.05%	0.0316	0.0053	0.0078	0.0185

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS3T2 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Vines					
Smilax laurifolia	44.24%	1.3272	0.351	0.5	0.4762
Smilax glauca	1.19%	0.0357	0.0041	0.0078	0.0238
Woody Plants					
Lyonia lucida	28.35%	0.8505	0.2367	0.3281	0.2857
Clethra alnifolia	20.22%	0.6067	0.3388	0.125	0.1429
Nyssa sylvatica v. biflora	3.61%	0.1084	0.0612	0.0234	0.0238
Ilex cassine v. myrtifolia	1.19%	0.0357	0.0041	0.0078	0.0238
Persea palustris	1.19%	0.0357	0.0041	0.0078	0.0238

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS3T3 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Licania michauxii	16.5%	0.4949	0.1882	0.2449	0.0618
Aristida stricta v. beyrichiana	11.18%	0.3355	0.1091	0.0972	0.1292
Pteridium aquilinum var. pseudocaudatum	10.79%	0.3237	0.1693	0.0645	0.0899
Serenoa repens	8.94%	0.2681	0.2082	0.0093	0.0506
Panicum virgatum	3.6%	0.1079	0.0078	0.0327	0.0674
Andropogon ternarius	2.76%	0.0827	0.0134	0.0187	0.0506
Dichanthelium sp.	1.49%	0.0447	0.0045	0.0065	0.0337
Tragia sp.	1.22%	0.0367	0.0039	0.0047	0.0281
Rhynchospora megalocarpa	1.02%	0.0305	0.0033	0.0047	0.0225
Conradina canescens	0.96%	0.0288	0.0223	0.0009	0.0056
Tephrosia chrysophylla	0.95%	0.0284	0.0022	0.0037	0.0225
Stylisma villosa	0.7%	0.0209	0.0022	0.0075	0.0112
Froelichia floridana	0.64%	0.0192	0.0061	0.0019	0.0112
Desmodium sp.	0.51%	0.0153	0.0022	0.0019	0.0112
Crotalaria sp.	0.27%	0.0082	0.0017	0.0009	0.0056
Crotalaria rotundifolia	0.27%	0.0081	0.0006	0.0019	0.0056
Symphyotrichum sp.	0.24%	0.0071	0.0006	0.0009	0.0056
Helianthus sp.	0.24%	0.0071	0.0006	0.0009	0.0056
Tephrosia florida	0.24%	0.0071	0.0006	0.0009	0.0056
Eriocaulon sp.	0.24%	0.0071	0.0006	0.0009	0.0056
Commelina erecta	0.24%	0.0071	0.0006	0.0009	0.0056
Crotalaria purshii	0.24%	0.0071	0.0006	0.0009	0.0056
Euphorbia floridana	0.24%	0.0071	0.0006	0.0009	0.0056
Yucca filamentosa	0.24%	0.0071	0.0006	0.0009	0.0056
Vines					
Smilax auriculata	10.53%	0.3158	0.0557	0.114	0.1461
Smilax laurifolia	0.68%	0.0204	0.0045	0.0103	0.0056
Woody Plants					
Quercus minima	22.02%	0.6605	0.1743	0.3514	0.1348

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS3T3 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus clausa	1.79%	0.0536	0.005	0.0093	0.0393
Quercus hemisphaerica	0.57%	0.0171	0.0022	0.0037	0.0112
Quercus incana	0.5%	0.0149	0.0084	0.0009	0.0056
Rhus copallinum	0.24%	0.0071	0.0006	0.0009	0.0056

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS3T4 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Aristida stricta v. beyrichiana	37.24%	1.1171	0.3672	0.4588	0.2911
Andropogon ternarius	13.13%	0.394	0.1607	0.0941	0.1392
Tephrosia chrysophylla	7.11%	0.2132	0.0305	0.0941	0.0886
Serenoa repens	6.42%	0.1925	0.1201	0.0471	0.0253
Dichanthelium sp.	2.89%	0.0868	0.0068	0.0294	0.0506
Aristida palustris	2.84%	0.0852	0.0237	0.0235	0.038
Froelichia floridana	1.77%	0.0531	0.0102	0.0176	0.0253
Asclepias cinerea	1.35%	0.0405	0.0034	0.0118	0.0253
Desmodium sp.	0.68%	0.0203	0.0017	0.0059	0.0127
Vines					
Smilax auriculata	6.52%	0.1956	0.0305	0.0765	0.0886
Woody Plants					
Quercus laevis	13.88%	0.4163	0.2318	0.0706	0.1139
Pinus clausa	5.5%	0.1651	0.0118	0.0647	0.0886
Quercus hemisphaerica	0.68%	0.0203	0.0017	0.0059	0.0127

Quantitative Monitoring Data Results - Groundcover
Devils Swamp transect number DS3T5 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Hypericum chapmanii	4.37%	0.1312	0.0316	0.025	0.0746
Xyris sp.	2.35%	0.0704	0.0056	0.02	0.0448
Sarracenia leucophylla	1.65%	0.0494	0.0045	0.015	0.0299
Eriocaulon decangulare	0.87%	0.026	0.0011	0.01	0.0149
Aristida stricta v. beyrichiana	0.78%	0.0233	0.0034	0.005	0.0149
Ctenium aromaticum	0.7%	0.021	0.0011	0.005	0.0149
Drosera capillaris	0.7%	0.021	0.0011	0.005	0.0149
Rhynchospora chapmanii	0.7%	0.021	0.0011	0.005	0.0149
Scleria sp.	0.7%	0.021	0.0011	0.005	0.0149
Vines					
Smilax laurifolia	3.79%	0.1137	0.009	0.045	0.0597
Woody Plants					
Cliftonia monophylla	53.39%	1.6017	0.7136	0.515	0.3731
Ilex coriacea	17.41%	0.5223	0.133	0.255	0.1343
Ilex cassine v. myrtifolia	4.55%	0.1364	0.0417	0.035	0.0597
Ilex glabra	4.38%	0.1314	0.0417	0.03	0.0597
Pinus elliottii	2.18%	0.0654	0.0056	0.015	0.0448
Magnolia virginiana	0.78%	0.0233	0.0034	0.005	0.0149
Gaylussacia mosieri	0.7%	0.021	0.0011	0.005	0.0149

Appendix B: Summary of Quantitative Baseline Conditions

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Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T1 - Cypress Swamp

Percent Cover by vegetative classification:

Forbs	13.45%
Vines	0.45%
Woody Plants	86.08%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	63%
Open/standing water	85.97%

Species Richness: 12 species

Average height of Shrubs: 2.03 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T2 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	21.88%
Graminoids	7.44%
Vines	3.8%
Woody Plants	66.9%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	63.37%

Species Richness:	22 species
Average height of Shrubs:	1.7 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T3 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	11.41%
Graminoids	1.65%
Woody Plants	86.91%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	50.03%

Species Richness:	19 species
Average height of Shrubs:	1.8 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T4 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	28.39%
Graminoids	3.13%
Vines	0.98%
Woody Plants	67.49%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	65.8%

Species Richness:	21 species
Average height of Shrubs:	1.33 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T5 - Treeless Hydric Savanna

Percent Cover by vegetative classification:

Forbs	56.2%
Graminoids	31.09%
Vines	0.07%
Woody Plants	12.66%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	37.32%

Species Richness:	26 species
Average height of Shrubs:	1.47 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T6 - Upland Pine

Percent Cover by vegetative classification:

Forbs	25.04%
Graminoids	14.56%
Vines	6.43%
Woody Plants	54.06%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	61.54%

Species Richness:	47 species
Average height of Shrubs:	1.52 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T7 - Mixed Forested Wetland

Percent Cover by vegetative classification:

Forbs	7.02%
Graminoids	3.77%
Vines	7.7%
Woody Plants	81.5%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	92.73%

Species Richness:	14 species
Average height of Shrubs:	1.33 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS1T8 - Upland Pine

Percent Cover by vegetative classification:

Forbs	34.94%
Graminoids	4.77%
Vines	25.04%
Woody Plants	35.17%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	64.9%

Species Richness:	32 species
Average height of Shrubs:	1.23 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS2T1 - Upland Pine

Percent Cover by vegetative classification:

Forbs	50.17%
Graminoids	9.04%
Vines	18.19%
Woody Plants	22.57%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	55.04%

Species Richness:	25 species
Average height of Shrubs:	1.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS2T2 - Mixed Forested Wetland

Percent Cover by vegetative classification:

Forbs	2.91%
Graminoids	0.46%
Vines	3.68%
Woody Plants	92.94%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	82.81%
Open/standing water	86.5%

Species Richness: 10 species

Average height of Shrubs: 1.21 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS2T3 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	51.29%
Graminoids	0.34%
Vines	10.47%
Woody Plants	37.89%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	65.33%

Species Richness:	11 species
Average height of Shrubs:	1.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS2T4 - Treeless Hydric Savanna

Percent Cover by vegetative classification:

Forbs	56.51%
Graminoids	18.73%
Vines	3.96%
Woody Plants	20.78%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	71.13%
Open/standing water	59.57%

Species Richness:	11 species
Average height of Shrubs:	1.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS2T5 - Upland Pine

Percent Cover by vegetative classification:

Forbs	30.75%
Graminoids	2.44%
Vines	3.51%
Woody Plants	63.3%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	54.22%

Species Richness:	16 species
Average height of Shrubs:	1.15 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS2T6 - Treeless Hydric Savanna

Percent Cover by vegetative classification:

Forbs	34.36%
Graminoids	7.69%
Vines	0.24%
Woody Plants	57.69%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	88.61%
Open/standing water	61%

Species Richness:	18 species
Average height of Shrubs:	1.85 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS3T1 - Treeless Hydric Savanna

Percent Cover by vegetative classification:

Forbs	1.41%
Graminoids	8.29%
Vines	9.35%
Woody Plants	80.97%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	91.86%
Open/standing water	63%

Species Richness: 15 species

Average height of Shrubs: 1.76 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS3T2 - Mixed Forested Wetland

Percent Cover by vegetative classification:

Vines	35.51%
Woody Plants	64.49%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	94.2%

Species Richness:	7 species
Average height of Shrubs:	1.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS3T3 - Upland Pine

Percent Cover by vegetative classification:

Forbs	61.17%
Graminoids	13.81%
Vines	6.02%
Woody Plants	19.05%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	46.83%

Species Richness:	31 species
Average height of Shrubs:	1.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS3T4 - Upland Pine

Percent Cover by vegetative classification:

Forbs	16.59%
Graminoids	55.84%
Vines	3.05%
Woody Plants	24.53%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	77.85%

Species Richness:	13 species
Average height of Shrubs:	1.36 meters

Summary of Quantitative Baseline Conditions - Groundcover
Devils Swamp transect number DS3T5 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	4.39%
Graminoids	0.67%
Vines	0.9%
Woody Plants	94.01%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	87.89%
Open/standing water	25%

Species Richness: 17 species

Average height of Shrubs: 1.7 meters

Appendix C: Quantitative Monitoring Results – Canopy Point Quarter

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Quantitative Monitoring Data Results - Canopy Point Quarter
Devils Swamp transect number DS1T1 - Cypress Swamp

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Cyrilla racemiflora	51.59%	1.5477	0.6477	0.45	0.45
Cliftonia monophylla	19.56%	0.5869	0.1369	0.225	0.225
Taxodium ascendens	19.41%	0.5823	0.1823	0.2	0.2
Nyssa ursina	9.44%	0.2831	0.0331	0.125	0.125

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 7.2035 sq m/hectare 31.3785 sq ft/acre

Number of Individuals: 1248.98 /hectare 505.44 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter
Devils Swamp transect number DS1T7 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Cliftonia monophylla	68.21%	2.0464	0.7464	0.65	0.65
Magnolia virginiana	30.11%	0.9033	0.2533	0.325	0.325
Nyssa sylvatica v. biflora	1.68%	0.0503	0.0003	0.025	0.025

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 17.9789 sq m/hectare 78.3159 sq ft/acre

Number of Individuals: 1706.76 /hectare 690.7 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter
Devils Swamp transect number DS2T2 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Cliftonia monophylla	60.87%	1.8261	0.6261	0.6	0.6
Pinus elliottii	26.01%	0.7803	0.3303	0.225	0.225
Taxodium ascendens	11.42%	0.3427	0.0427	0.15	0.15
Magnolia virginiana	1.7%	0.0509	0.0009	0.025	0.025

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 11.4306 sq m/hectare 49.7917 sq ft/acre

Number of Individuals: 1036.07 /hectare 419.28 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter
Devils Swamp transect number DS3T2 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Nyssa sylvatica v. biflora	71.09%	2.1326	0.8326	0.65	0.65
Magnolia virginiana	22.12%	0.6635	0.1635	0.25	0.25
Taxodium ascendens	1.76%	0.0529	0.0029	0.025	0.025
Persea palustris	1.68%	0.0505	0.0005	0.025	0.025
Cliftonia monophylla	1.68%	0.0503	0.0003	0.025	0.025
Ilex cassine v. myrtifolia	1.67%	0.0502	0.0002	0.025	0.025

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 21.518 sq m/hectare 93.7322 sq ft/acre

Number of Individuals: 877.07 /hectare 354.94 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter
Devils Swamp transect number DS3T5 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	79.25%	2.3776	0.9776	0.7	0.7
Cliftonia monophylla	13.99%	0.4196	0.0196	0.2	0.2
Ilex cassine v. myrtifolia	3.37%	0.1011	0.0011	0.05	0.05
Cyrilla racemiflora	1.71%	0.0513	0.0013	0.025	0.025
Magnolia virginiana	1.68%	0.0504	0.0004	0.025	0.025

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 16.5881 sq m/hectare 72.2576 sq ft/acre

Number of Individuals: 671.98 /hectare 271.94 /acre

Appendix D: Quantitative Monitoring Results – 10m x 10m

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Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS1T2 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 30 sq m/hectare 129.17 sq ft/acre

Number of Individuals: 3200 /hectare 1295 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS1T3 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 23 sq m/hectare 96.88 sq ft/acre

Number of Individuals: 2500 /hectare 1011.72 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS1T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	90.5567%	2.7167	0.9667	0.95	0.8
Cliftonia monophylla	9.4433%	0.2833	0.0333	0.05	0.2

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 15 sq m/hectare 64.585 sq ft/acre

Number of Individuals: 2000 /hectare 809.37 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS1T5 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	86.35%	2.5905	0.8305	0.96	0.8
Taxodium ascendens	13.65%	0.4095	0.1695	0.04	0.2

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 29.5 sq m/hectare 129.17 sq ft/acre

Number of Individuals: 2500 /hectare 1011.72 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS1T6 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 24 sq m/hectare 107.64 sq ft/acre

Number of Individuals: 2400 /hectare 971.25 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS1T8 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area :	22 sq m/hectare	96.88 sq ft/acre
Number of Individuals:	2500 /hectare	1011.72 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS2T1 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area :	32 sq m/hectare	139.93 sq ft/acre
Number of Individuals:	3700 /hectare	1497.34 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS2T3 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 62 sq m/hectare 269.1 sq ft/acre

Number of Individuals: 2800 /hectare 1133.12 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS2T4 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 43 sq m/hectare 182.99 sq ft/acre

Number of Individuals: 2800 /hectare 1133.12 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS2T5 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 26 sq m/hectare 118.4 sq ft/acre

Number of Individuals: 2300 /hectare 930.78 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS2T6 - Wet Prairie / Seepage Slope

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 34 sq m/hectare 150.69 sq ft/acre

Number of Individuals: 2100 /hectare 849.84 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS3T1 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 36 sq m/hectare 161.46 sq ft/acre

Number of Individuals: 1600 /hectare 647.5 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS3T3 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus clausa	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 31 sq m/hectare 139.93 sq ft/acre

Number of Individuals: 1200 /hectare 485.62 /acre

Quantitative Monitoring Data Results - 10m x 10m

Devils Swamp transect number DS3T4 - Upland Pine

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus clausa	100%	3	1	1	1

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 21 sq m/hectare 86.11 sq ft/acre

Number of Individuals: 1300 /hectare 526.09 /acre

Appendix E: Quantitative Monitoring Photographs

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Devils Swamp Mitigation Bank – Phase 1 Quantitative Photographs

Devils Swamp Phase 1 Transect 1
Cypress Swamp (DS1T1 CS)

Devils Swamp Phase 1 Transect 2
Hydric Pine Flatwoods (DS1T2 HPF)

Devils Swamp Phase 1 Transect 3
Hydric Pine Flatwoods (DS1T3 HPF)

Devils Swamp Phase 1 Transect 4
Hydric Pine Flatwoods (DS1T4 HPF)

Devils Swamp Phase 1 Transect 5
Treeless Hydric Savanna (DS1T5 THS)

Devils Swamp Mitigation Bank – Phase 1 & 2 Quantitative Photographs

Devils Swamp Phase 1 Transect 6
Upland Pine (DS1T6 UP)

Devils Swamp Phase 1 Transect 7
Mixed Forested Wetland (DS1T7 MFW)

Devils Swamp Phase 1 Transect 8
Upland Pine (DS1T8 UP)

Devils Swamp Phase 2 Transect 1
Upland Pine (DS2T1 UP)

Devils Swamp Phase 2 Transect 2
Mixed Forested Wetland (DS2T2 MFW)

Devils Swamp Mitigation Bank – Phase 2 Quantitative Photographs

Devils Swamp Phase 2 Transect 3
Hydric Pine Flatwoods (DS2T3 HPF)

Devils Swamp Phase 2 Transect 5
Upland Pine (DS2T5 UP)

Devils Swamp Phase 2 Transect 4
Treeless Hydric Savanna (DS2T4 THS)

Breakfast Point Phase 2 Transect 6
Treeless Hydric Savanna (BP3T4 THS)

Devils Swamp Mitigation Bank – Phase 3 Quantitative Photographs

Devils Swamp Phase 3 Transect 1
Treeless Hydric Savanna (DS3T1 THS)

Devils Swamp Phase 3 Transect 2
Cypress Swamp (DS3T2 CS)

Devils Swamp Phase 3 Transect 3
Upland Pine (DS3T3 UP)

Devils Swamp Phase 3 Transect 4
Upland Pine (DS3T4 UP)

Devils Swamp Phase 3 Transect 5
Hydric Pine Flatwoods (DS2T2 HPF)

Appendix F: Qualitative Monitoring Results

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Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT1_P1 **Date and time (am/pm):** 11/9/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☑ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Lyonia lucida **3.** Vaccinium myrsinites

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Lyonia lucida **2.** Ilex vomitoria **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Andropogon sp. **2.** Dicanthelium sp.

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Andropogon sp. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Andropogon sp. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling, mosquitos biting, Gray Catbird (Dumetella carolinensis) and Eastern Towhee (Pipilo erythrophthalmus) calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☐ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribedslash pine canopy reduction recommended. Pine duff thick and groundcover unlikely to recover w/o a prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Treeless Hydric Savanna

Transect ID: DSQT1_P2 **Date and time (am/pm):** 11/9/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☑ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Pinus elliottii **3.** Nyssa sylvatica v. ursina

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Nyssa sylvatica v. ursina **2.** Myrica heterophylla **3.** Ilex myrtifolia

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex myrtifolia **2.** Myrica heterophylla **3.** Lyonia lucida

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Andropogon virginicus **2.** Eriocaulon decangulare

3. Lachnanthes carolina **4.** Dicanthelium sp.

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Andropogon virginicus **2.** Eriocaulon decangulare **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Andropogon virginicus **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☑ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. Pinus elliottii
2.
3.
4.
5.
6.

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☐ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Eastern Towhee (Pipilo erythrophthalmus)

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed fire and slash pine canopy reduction recommended. Site is a former wet prairie with low groundcover coverage.
The groundcover coverage and diversity can be improved with a prescribed, warm season burn. Supplimental planting may be needed.

Site Name: Devils Swamp **Plant community type:** Cypress Swamp

Transect ID: DSQ1_P3 **Date and time (am/pm):** 11/9/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Magnolia virginiana **3.** Nyssa sylvatica v. biflora

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.** Ilex coriacea

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Clethra alnifolia **2.** Lyonia lucida **3.** Vaccinium corymbosum

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☑ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☑ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☑ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Florida Cottonmouth (Agkistrodon piscivorus conanti); Northern Parula (Parula americana); White-tailed Deer (Odocoileus virginianus); Raccoon (Procyon lotor); Feral Hog (Sus scrofa).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed fire warm season recommended. Site is functioning normally, reproduction of dominant trees observed. Allow fire to burn into ecotone and interior. Pond cypress regeneration will be enhanced with reintroduction of fire into landscape. Plant diversity of the ecotone will increase as woody species dominance is reduced with warm season prescribed burns.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT2_P1 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** Quercus hemisphearica **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex vomitoria **2.** Lyonia lucida **3.** Ilex glabra

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex vomitoria **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.** Gaylussachia mosieri

3. Smilax pumila **4.** Quercus minima

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Serenoa repens **2.** Smilax sp. **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos abundant and biting

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed fire and slash pine canopy reduction recommended. Groundcover is mostly dominated by woody species and saw palmetto. Graminoids and forb diversity and coverage would be increased by prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Cypress Swamp

Transect ID: DSQT2_P2 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Pinus elliottii **3.** Magnolia virginiana

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Nyssa sylvatica v. biflora **3.** Cyrilla racemiflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Lyonia lucida **2.** Ilex coriacea **3.** Clethra alnifolia

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos, spiders, paper wasps, cickets.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and possibly mechanical reduction of woody species in ecotone would increase groundcover species diversity and coverage. Pond cypress need periodic fires to promote regeneration. Presently the thick woody growth in the interior of this swamp is not conducive for pond cypress regeneration.

Site Name: Devils Swamp **Plant community type:** Treeless Hydric Savanna

Transect ID: DSQT2_P3 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Taxodium ascendens **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Taxodium ascendens **3.** Cyrilla racemiflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Ilex coriacea **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Gaylussachia mosieri **2.** Sarracenia leucophylla

3. Smilax laurifolia **4.** Eriocaulon decangulare

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Smilax laurifolia **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Smilax laurifolia **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos, crickets, spiders. A merican Crow (Corvus brachyrhynchos).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a former wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn. Canopy, subcanopy and shrub reduction recommended. The canopy of this landscape should have a few scattered slash pine, if any canopy at all.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT3_P1 **Date and time (am/pm):** 11/10/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Vaccinium elliottii **3.** Serenoa repens

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Vaccinium elliottii **2.** Cliftonia monophylla **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Vaccinium myrsinites **2.** Pteridium aquilinum

3. Quercus minima **4.** Ilex glabra

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed fire warm season recommended. Pine duff is thick and small seeds are unlikely to germinate without a prescribed fire.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT3_P2 **Date and time (am/pm):** 11/10/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☑ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☑ absent ☐ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Nyssa sylvatica v. ursina **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla **2.** Lyonia lucida **3.** Myrica heterophylla

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Myrica heterophylla **2.** Lyonia lucida **3.** Cliftonia monophylla

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Xyris spp. **2.** Dicanthelium sp.

3. Drosera intermedia **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☐ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl
13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Red-shouldered Hawk (Buteo lineatus). Mosquitos abundant and biting.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☑ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and subcanopy and shrub reduction recommended. Site is a former wet prairie w poor groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn. Mechanical removal of fire suppressed woody species may be necessary if fire will not burn into former wet prairie. Supplimental planting may be required.

Site Name: Devils Swamp **Plant community type:** Cypress Swamp

Transect ID: DSQT3_P3 **Date and time (am/pm):** 11/11/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☐ Cloudy ☑ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Nyssa sylvatica v. biflora **3.** Cliftonia monophylla

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cyrilla racemiflora **2.** Cliftonia monophylla **3.** Nyssa sylvatica v. biflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Lyonia lucida **3.** Ilex coriacea

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Lyonia lucida **2.** Ilex coriacea **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Pieris phillyreifolius **2.** Smilax walteri (vine)

3. Gaylussachia mosieri **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cyrilla racemiflora **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☑ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☑ fish observed
☐ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Fish (Elasoma sp.), dragonfly larvae, mosquitos biting, Florida Cricket Frog (Acris gryllus dorsalis).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Very wet site, may not burn. Fire should be allowed to burn into ecotone. Pond cypresss require periodic fire for successful regeneration.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT4_P1 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Pinus elliottii **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex coriacea **2.** Cliftonia monophylla **3.** Ilex glabra

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Pteridium aquilinum **2.** Andropogon sp.

3. Smilax pumila **4.** Quercus minima

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl
13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos, biting flies.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed fire and slash pine canopy reduction recommended.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DST4_P2 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** Cliftonia monophylla **3.** Nyssa sylvatica v. ursina

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Ilex coriacea **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex coriacea **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Gaylussachia mosieri **2.** Sarracenia leucophylla

3. Sarracenia psitticina **4.** Eriocaulon decangulare

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☑ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☑ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☑ frog calls ☐ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and subcanopy and shrub reduction recommended. Site is a former wet prairie w low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn. If fire will not reduce the woody, fire suppressed growth, mechanical treatment to reduce woody species may be required.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT4_P3 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Magnolia virginiana **3.** Nyssa sylvatica v. biflora

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Nyssa sylvatica v. biflora **2.** Cliftonia monophylla **3.** Persea palustris

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex coriacea **2.** Lyonia lucida **3.** Cyrilla racemiflora

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex coriacea **2.** Cliftonia monophylla **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☑ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

A wet bayhead, prescribed fire most likely will not burn interior of forest but the ecotone should be allowed to burn.

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT5_P1 **Date and time (am/pm):** 11/10/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Quercus hemisphearica **2.** Pinus elliottii **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex vomitoria **2.** Ilex coriacea **3.** Ilex glabra

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex vomitoria **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Pteridium aquilinum **2.** Quercus minima

3. Andropogon virginicus **4.** Smilax auriculata (Vine)

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Serenoa repens **2.** **3.** Quercus minima

List the **WEEDY** or **RUDERAL** species observed:

1. Andropogon virginicus **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☑ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

White-tailed Deer (Odocoileus virginianus); Gray Fox (Urocyon cinereoargenteus); Raccoon (Procyon lotor); monarch butterfly.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and slash pine canopy reduction recommended.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT5_P2 **Date and time (am/pm):** 11/10/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** Nyssa sylvatica v. ursina **3.** Magnolia virginiana

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Cliftonia monophylla **3.** Ilex coriacea

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☑ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☑ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☑ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos biting, Crickets calling; Common Yellowthroat (Geothlypis trichas), Ruby-crowned Kinglet, (Regulus calendula).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and subcanopy and shrub reduction recommended. Site is a wet prairie with no groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn. Supplimental planting to increase groundcover diversity and coverage may be needed.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT5_P3 **Date and time (am/pm):** 11/10/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☑ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Nyssa sylvatica v. biflora **3.** Pinus elliottii

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.** Persea palustris

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Clethra alnifolia **2.** Ilex coriacea **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☑ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos biting, crickets calling; Woodpeckers seen around nesting hole in a snag.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Dome swamp with standing water, prescribed fire will probably not burn into this forest, however the ecotone should be encouraged to burn. Pond cypress required periodic fire for natural regeneration.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT6_P1 **Date and time (am/pm):** 11/10/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Lyonia lucida **2.** Ilex coriacea **3.** Cliftonia monophylla

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos biting; Eastern Wood-peewee (Contopus virens).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and slash pine canopy reduction recommended. Groundcover diversity is low. If burning will not reduce woody shrubs and subcanopy then mechanical treatment may be needed. Supplimental planting may be needed to restore groundcover diversity and coverage.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT6_P2 **Date and time (am/pm):** 11/10/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Magnolia virginiana **2.** Cliftonia monophylla **3.** Pinus elliottii

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Persea palustris **3.** Magnolia virginiana

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex coriacea **2.** Cliftonia monophylla **3.** Myrica heterophylla

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** Myrica heterophylla **3.** Magnolia virginiana

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Woodwardia aereolata **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Florida Cricket Frog (Acris gryllus dorsalis); crickets calling, mosquitos biting, spider species seen on stems and leaves.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is functioning normally, reproduction of dominant trees observed. Prescribed fire should be encourage to burn into the ecotone.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT6_P3 **Date and time (am/pm):** 11/10/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Magnolia virginiana **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Magnolia virginiana **2.** Cliftonia monophylla **3.** Nyssa sylvatica v. biflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Myrica heterophylla **2.** Myrica inodora **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex coriacea **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☐ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Red-shouldered Hawk (Buteo lineatus)

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Former wet prairie that has become dominated by bayhead species due to fire suppression.
Prescribed warm season fire and canopy, subcanopy and woody shrub reduction recommended. Groundcover may need to be replanted to restore diversity and appropriate coverage.

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT7_P1 **Date and time (am/pm):** 11/10/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex vomitoria **2.** Ilex glabra **3.** Vaccinium elliottii

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex vomitoria **2.** Vaccinium elliottii **3.** Quercus hemisphearica

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Quercus minima **2.** Serenoa repens

3. Aristida stricta **4.** Pteridium aquilinum

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Andropogon sp. **2.** Quercus hemisphearica **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Pine Warbler (Dendroica pinus) calling, crickets calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and slash pine canopy reduction recommended.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT7_P2 **Date and time (am/pm):** 11/10/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Pinus elliottii **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Magnolia virginiana **3.** Nyssa sylvatica v. biflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Lyonia lucida **2.** Myrica heterophylla **3.**

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Myrica heterophylla **2.** Magnolia virginiana **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Eriocaulon decangulare **2.** Sarracenia leucophylla

3. Carex sp. **4.** Sphagnum sp.

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☑ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling, mosquitos biting, spiders crawling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and canopy, subcanopy and shrub layer reduction recommended. Site is a wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT8_P1 **Date and time (am/pm):** 11/17/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla **2.** Lyonia lucida **3.** Ilex glabra

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.** Pteridium aquilinum

3. Vaccium myrsinites **4.** Smilax laurifolia (vine)

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Smilax laurifolia (vine) **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos and biting flies.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire. Woody shrub coverage needs to be reduced and pine canopy reduced.

Site Name: Devils Swamp **Plant community type:** Cypress Swamp

Transect ID: DSQT8_P2 **Date and time (am/pm):** 11/17/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Pinus elliottii **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Taxodium ascendens **2.** Pinus elliottii **3.** Cyrilla racemiflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Ilex myrtifolia **3.** Gaylussachia mosieri

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Pieris phillyreifolia **2.** Ilex myrtifolia **3.** Cyrilla racemiflora

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Sarracenia leucophylla **2.** Hypericum chapmanii

3. Carex verracosum **4.** Eriocaulon decangulare

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Hypericum chapmanii **2.** Eriocaulon decangulare **3.** Sarracenia leucophylla

List the **WEEDY** or **RUDERAL** species observed:

1. Cyrilla racemiflora **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☑ algal mat/aufwuchs ☑ aquatic bryotphytes ☑ aquatic plants
☑ rafted debris ☑ elevated lichen lines ☑ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☑ fish observed
☐ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☑ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Numerous biting mosquitos. Florida Cricket Frog (Acris gryllus dorsalis), Florida Cottonmouth (Agkistrodon piscivorus conanti), White-tailed Deer (Odocoileus virginianus), Great Blue Heron (Ardea herodias), Mosquito fish (Gambusia).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a wet prairie/cypress flat with abundant white topped pitcherplants (Sarracenia leucophylla). The canopy is sparse and woody plants have distinct hummocks, pitcherplants are growing on hummocks. Site was flooded when we sampled. Fire should be allowed to burn into this landscape if vegetation will carry fire which is doubtful.

Site Name: Devils Swamp **Plant community type:** Treeless Hydric Savanna

Transect ID: DSQT9_P1 **Date and time (am/pm):** 11/16/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Lyonia lucida **2.** Cyrilla racemiflora **3.** Ilex coriacea

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.** Drosera sp.

3. Xyris caroliniana **4.** Gaylussachia mosieri

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Florida Cricket Frog (Acris gryllus dorsalis), mosquitos biting.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☑ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Thin the subcanopy and shrub layer with prescribed fire or by mechanical means. Some replanting of groundcover may be needed.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT9_P2 **Date and time (am/pm):** 11/16/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** Cliftonia monophylla **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Ilex coriacea **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Vaccinium myrsinites **2.** Serenoa repens

3. Rhynchospora sp. **4.** Pteridium aquilinum

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Ilex glabra **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling, mosquitos biting.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and slash pine canopy reduction recommended.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT10_P1 **Date and time (am/pm):** 11/16/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Nyssa sylvatica v. ursina **3.** Pinus elliottii

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Nyssa sylvatica v. ursina **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla **2.** Lyonia lucida **3.** Hypericum chapmanii

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Hypericum chapmanii **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Sarracenia leucophylla **2.** Rhynchospora spp.

3. Sarracenia psitticina **4.** Drosera spp.

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Rhynchospora spp. **2.** Drosera spp. **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☑ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☑ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquito fish (Gambusia) were seen in the water. Crickets calling, mosquitos biting.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT10_P2 **Date and time (am/pm):** 11/16/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Ilex coriacea **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Pteridium aquilinum **2.** Serenoa repens

3. Quercus minima **4.** Smilax pumila

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Serenoa repens **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☐ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☑ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Gray Catbird (Dumetella carolinensis), Virginia Opossum (Didelphis virginiana), Nine-banded Armadillo (Dasypus novemcinctus), Raccoon (Procyon lotor), White-tailed Deer (Odocoileus virginianus). Mosquitos biting, crickets calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Canopy, subcanopy and shrub reduction recommended. Prescribed fire warm season recommended.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire.

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT11_P1 **Date and time (am/pm):** 11/16/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Magnolia grandiflora **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Ilex coriacea **3.** Lyonia ferrigenea

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex vomitoria **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Pteridium aquilinum **2.** Serenoa repens

3. Quercus minima **4.** Smilax auriculata (vine) also muscadine (Vitis

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Serenoa repens **2.** Smilax auriculata **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Fall migratory warblers seen in trees and shrubs. Crickets calling, mosquitos biting.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Groundcover coverage and diversity is low due to fire suppression, site preperation and high density of planted slash pine.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire. Canopy & shrub reduction recommended.
Supplimental planting of appropriate groundcover may be needed.

Site Name: Devils Swamp **Plant community type:** Treeless Hydric Savanna

Transect ID: DSQT11_P2 **Date and time (am/pm):** 11/16/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** Magnolia virginiana **3.** Cliftonia monophylla

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Ilex coriacea **3.** Myrica heterophylla

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Myrica heterophylla **2.** Magnolia virginiana **3.** Myrica inodora

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Lycopodium spp. **2.** Xyris spp.

3. Eriocaulon decangulare **4.** Sarracenia leucophylla

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Xyris spp. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☐ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Unusually quite, no large animals seen or heard, vegetation very dense. Mosquitos abundant.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a wet prairie with very little groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn.

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT12_P1 **Date and time (am/pm):** 11/16/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex vomitoria **2.** Ilex coriacea **3.** Ilex glabra

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex vomitoria **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Pteridium aquilinum **2.** Serenoa repens

3. Aristida stricta **4.** Andropogon virginicus

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Andropogon virginicus **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Andropogon virginicus **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Nine-banded Armadillo (Dasypus novemcinctus). Mosquitos biting, crickets calling. Eastern Towhee (Pipilo erythrophthalmus) calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire
Canopy, subcanopy and shrub reduction recommended.

Site Name: Devils Swamp **Plant community type:** Treeless Hydric Savanna

Transect ID: DSQT12_P2 **Date and time (am/pm):** 11/16/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.** Nyssa sylvatica v. ursina

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cyrilla racemiflora **2.** Clethra alnifolia **3.** Ilex coriacea

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Lyonia lucida **2.** Cliftonia monophylla **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Eriocaulon decangulare **2.** Eriocaulon compressum

3. Sarracenia leucophylla? **4.** Xyris spp.

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☑ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☑ secondary flow channels
☐ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos abundant.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn.

Site Name: Devils Swamp **Plant community type:** Treeless Hydric Savanna

Transect ID: DSQT13_P1 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☑ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Magnolia virginiana **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Vaccinium corymbosum **2.** Myrica heterophylla **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** Magnolia virginiana **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Numerous mosquitos biting. Red-bellied Woodpecker (Melanerpes carolinus) seen.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a former wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm seas
warm season burn. Canopy, subcanopy and shrub reduction recommended.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT13_P2 **Date and time (am/pm):** 11/17/2004 ☑ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Magnolia virginiana **3.** Nyssa sylvatica v. biflora

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Magnolia virginiana **2.** Nyssa sylvatica v. biflora **3.** Acer rubrum

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Lyonia lucida **2.** Myrica heterophylla **3.** Clethra alnifolia

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Magnolia virginiana **2.** Myrica heterophylla **3.** Persea palustris

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Woodwardia virginica **2.** Osmunda regalis

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Blue Jay (Cyanocitta cristata), Barred Owl (Strix varia). Crickets calling.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☐ fire suppresse ☑ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Allow prescribed fire to burn into ecotone of bayhead, it is doubtful that bayhead will burn since the soils will almost always be wet. Natural regeneration is occuring. The use of bayhead is per FNAI (1991).

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT13_P3 **Date and time (am/pm):** 11/17/2005 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** Ilex opaca **3.** Magnolia virginiana

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Lyonia lucida **3.** Vaccinium elliottii

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex opaca **2.** Myrica cerifera **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.** Smilax auriculata

3. Dichanthelium sp. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Smilax auriculata **2.** Serenoa repens **3.** Dichanthelium sp.

List the **WEEDY** or **RUDERAL** species observed:

1. Ilex glabra **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl
13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Abundant mosquitos biting. Red-shouldered Hawk (Buteo lineatus), Brown-headed Nuthatch (Sitta pusilla).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☑ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed warm season fire and slash pine canopy reduction recommended.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire. Wiregrass may need to be planted.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT14_P1 **Date and time (am/pm):** 11/11/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☐ Cloudy ☑ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Cliftonia monophylla **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** Nyssa sylvatica v. ursina **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Clethra alnifolia **2.** Ilex coriacea **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** Lyonia lucida **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Sarracenia leucophylla **2.** Eriocaulon decangulare

3. Xyris spp. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos abudant and biting. Numerous species of spiders seen. Crickets calling. Gray Catbird (Dumetella carolinensis).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn.

Site Name: Devils Swamp **Plant community type:** Cypress Swamp

Transect ID: DSQT14_P2 **Date and time (am/pm):** 11/11/2004 ☑ AM ☑ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☐ Cloudy ☑ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Taxodium ascendens **2.** Ilex myrtifolia **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex myrtifolia **2.** Hypericum chapmanii **3.**

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Rhynchospora inundata **2.** Eriocaulon compressum

3. Xyris spp. **4.** Drosera spp.

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☑ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☑ rafted debris ☑ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☑ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☑ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos abundant and biting. Florida Cricket Frog (Acris gryllus dorsalis) calling. American Robin (Turdus migratorius) calling, probably feeding on Ilex fruit. White-tailed Deer (Odocoileus virginianus) footprints seen. Raccoon (Procyon lotor) scat.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☐ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Prescribed fire warm season recommended. Allow prescribed fire to burn into ecotone, it is doubtful fire would burn across cypress dome. If a prescribed fire burned across this pond cypress dome, the thick bark of the pond cypress would protect the living tissues and trees would resprout after fire. Fire would promote regeneration of pone cypress.

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT14_P3 **Date and time (am/pm):** 11/11/2004 ☑ AM ☐ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☐ Cloudy ☑ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☑ 51-70 F ☐ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☐ 6-10m ☑ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus palustris **2.** Pinus clausa **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus clausa **2.** Quercus geminata **3.** Quercus incana

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex vomitoria **2.** Vaccinium elliottii **3.** Ilex glabra

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex vomitoria **2.** Vaccinium elliottii **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Aristida stricta **2.** Quercus minima

3. Licania michauxii **4.** Hypericum microsepalum

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Ilex vomitoria **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☑ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☑ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☐ reptiles observed ☑ mammals observed

Notes on wildlife useage observed:

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Sandhill, fire suppressed, needs a warm season burn and possibly mechanical treatment to reduce larger oaks.
Groundcover diversity is good, presecribed fire will help reduce woody species and promote wiregrass and forbs.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT15_P1 **Date and time (am/pm):** 11/18/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☐ Part Sun ☑ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Cliftonia monophylla **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla **2.** Myrica heterophylla **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Myrica heterophylla **2.** Cliftonia monophylla **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Eriocaulon decangulare **2.** Rhynchospora sp.

3. Aristida stricta **4.** Eriocaulon compressum

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Northern Cardinal (Cardinalis cardinalis), Summer Tanager (Piranga rubra). Numerous biting mosquitos.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Site is a former wet prairie with low groundcover coverage. The groundcover coverage and diversity can be improved with a prescribed, warm season burn. Canopy, subcanopy and shrub reduction recommended. Supplimental planting of groundcover may be required.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT15_P2 **Date and time (am/pm):** 11/18/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Nyssa sylvatica v. biflora **2.** Cliftonia monophylla **3.** Magnolia virginiana

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Nyssa sylvatica v. biflora **2.** Cliftonia monophylla **3.** Ilex cassine

6. SHRUBS % cover: ☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Lyonia lucida **2.** Ilex coriacea **3.** Clethra alnifolia

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☑ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Nyssa sylvatica v. biflora **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Sarracenia purpurea **2.** Eriocaulon compressum

3. Eriocaulon decangulare **4.** Peltandra sagittifolia

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Rhynchospora spp. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☑ sediment deposition ☐ algal mat/aufwuchs ☑ aquatic bryotphytes ☐ aquatic plants
☑ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☑ secondary flow channels
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☐ tannic ☑ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☑ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Florida Cricket Frog (Acris gryllus dorsalis), crickets calling. Mosquitos abundant and biting. Spider species abundant.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Seepage slope, historically this would have been an open wet prairie adjacent to seeapage stream. Fire suppression has allowed woody trees and shrubs to out compete the groundcover species. Relictual pockets of high diversity were found, a prescribed warm season burn might help increase the coverage and diversity of wet prairie species, mechanical treatment may be required.

Site Name: Devils Swamp **Plant community type:** Cypress Swamp

Transect ID: DSQT15_P3 **Date and time (am/pm):** 11/18/2004 ☐ AM ☑ PM

1. Weather: ☐ Full Sun ☑ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Taxodium ascendens **2.** Pinus elliottii **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Taxodium ascendens **2.** Ilex myrtifolia **3.** Cyrilla racemiflora

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla **2.** Ilex myrtifolia **3.** Cyrilla racemiflora

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Lycopodium alopecuroides **2.** Drosera capillaris

3. Eriocaulon compressum **4.** Xyris spp.

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Drosera capillaris **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Cliftonia monophylla **2.** Cyrilla racemiflora **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**

4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Mosquitos abundant and biting, Eastern Towhee (Pipilo erythrophthalmus) heard.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Canopy is appropriate, shrubby layer of cliftonia and cyrilla in the ecotone and invading interior of dome swamp. If a prescribed warm season fire & mechanical treatment of reducing cliftonia & cyrilla were performed, the groundcover diversity and coverage would increase.

Site Name: Devils Swamp **Plant community type:** Upland Pine

Transect ID: DSQT16_P1 **Date and time (am/pm):** 11/17/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus clausa **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Quercus leavis **2.** Quercus incana **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Quercus leavis **2.** Quercus incana **3.**

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☑ 0-.5m ☐ .6-1.5m ☐ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.** Aristida stricta

3. Smilax auriculata **4.** Andropogon ternarius

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Serenoa repens **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. Pinus clausa **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☑ footprints ☑ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling, Mosquitos biting. White-tailed Deer (Odocoileus virginianus) footprints and scat. Tufted Titmouse (Parus bicolor) in pines.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☑ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☐ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☑ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Sand pine (Pinus clausa) need to be completely removed, all oaks cut to ground and groundcover replanted in wiregrass. Longleaf pine seedlings need to be planted. Once wiregrass becomes established area can be burned every 1-3 years.

Site Name: Devils Swamp **Plant community type:** Mixed Forested Wetland

Transect ID: DSQT16_P2 **Date and time (am/pm):** ☐ AM ☐ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☑ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Nyssa sylvatica v. biflora **2.** Magnolia virginiana **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Magnolia virginiana **2.** Nyssa sylvatica v. biflora **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☑ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex coriacea **2.** Lyonia lucida **3.** Rhododendron viscosum

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. Ilex coriacea **2.** Myrica heterophylla **3.** Magnolia virginiana

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☑ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Osmunda cinnamomea **2.**

3. **4.**

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. **2.** **3.**

List the **WEEDY** or **RUDERAL** species observed:

1. **2.** **3.**

10. Tree density: ☑ appropriate ☐ inappropriate **Why?:** ☐ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☐ too dense ☐ too wet

12. Hydrologic indicators ☑ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☑ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent
14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☐ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling, numerous mosquitos biting.

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☐ planted ☐ clear-cut
If planted: ☐ bedded and planted ☑ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☐ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

This site is a dome swamp with typical wetland hardwood species. Regeneration of forest was observed. Allow prescribed fire to burn ecotone. Interior of swamp will rarely burn because it is too wet.

Site Name: Devils Swamp **Plant community type:** Hydric Pine Flatwoods

Transect ID: DSQT16_P3 **Date and time (am/pm):** 11/17/2004 ☐ AM ☑ PM

1. Weather: ☑ Full Sun ☐ Part Sun ☐ Cloudy ☐ Cloudy and Rain/Fog

2. Temperature: ☐ 20-50 F ☐ 51-70 F ☑ 71-90 F ☐ 91-110 F

3. CANOPY % cover: ☑ Pine Plantation (Rows) ☑ Managed for Pine ☐ Natural Forest

☐ Absent ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☑ 51-75% ☐ 76-100%

4. Estimated height class of the majority of **TREES** using the following scale: ☐ absent ☐ 3-5m ☑ 6-10m ☐ >10m

List 3 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** **3.**

5. Estimated height class of the majority of **SUBCANOPY** using the following scale ☐ absent ☑ 3-5m ☐ 6-10m ☐ >10m

List 3 dominant **SUBCANOPY** species observed:

1. Pinus elliottii **2.** **3.**

6. SHRUBS % cover: ☐ Absent ☐ 0-1% ☐ 1-5% ☑ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Gaylussacia dumosa **3.** Lyonia lucida

7. Estimated height class of the majority of **SHRUBS** using the following scale: ☐ absent ☐ 0-.5m ☐ .6-1.5m ☑ 1.6-3m

List 3 of the most common **SHRUB** and/or **TREE** seedlings observed:

1. **2.** **3.**

8. GROUNDCOVER % cover of graminoids (grasses, sedges and rushes):

☐ Absent ☑ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

9. TOTAL GROUNDCOVER % cover (including graminiods and forbes):

☐ Absent ☐ 0-1% ☑ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

List 4 dominant **GROUNDCOVER** species observed:

1. Serenoa repens **2.** Pteridium aquilinum

3. Andropogon sp. **4.** Aristida stricta

List 3 of the most common **GROUNDCOVER** seedlings observed:

1. Andropogon sp. **2.** Rhynchospora sp. **3.** Vitis rotundifolia

List the **WEEDY** or **RUDERAL** species observed:

1. Ilex glabra **2.** **3.**

10. Tree density: ☐ appropriate ☑ inappropriate **Why?:** ☑ too dense ☐ too sparse
11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☑ too dense ☐ too wet

12. Hydrologic indicators ☐ hydric soils ☐ sediment deposition ☐ algal mat/aufwuchs ☐ aquatic bryotphytes ☐ aquatic plants
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secondary flow channels
☐ water stained vegetation/ stain lines ☐ morphological plant adaptations/adventitious roots/buttressed trunks/hypertrophied lenticl

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent
14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy **If cloudy, why?** ☐ suspended sediments ☐ other:
15. Water column: ☐ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☐ abnormal tree fall due to soil subsidenc
☐ inappropriate vegetation ☐ lichen lines: ☐ typical ☐ abnorma

List inappropriate vegetation:

1. **2.** **3.**
4. **5.** **6.**

17. Wildlife usage and natural history observations ☐ footprints ☐ scat ☐ herbivory observe ☑ bird nests/calls ☐ fish observed
☐ animal remains ☐ scratch marks ☐ frog calls ☑ arthropods observed ☐ reptiles observed ☐ mammals observed

Notes on wildlife useage observed:

Crickets calling, numerous mosquitos. Pine Warbler(Dendroica pinus), Eastern Towhee (Pipilo erythrophthalmus).

18. Exotic species: ☐ present ☑ absent

If present **must be georeferenced** and include the following information:

Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%
Species: **Location:** **latitude** **longitude**
% cover: ☐ 0-1% ☐ 1-5% ☐ 6-25% ☐ 26-50% ☐ 51-75% ☐ 76-100%

19. Notes on the general aspect of the site/techniques to meet restoration goals:

Is natural regeneration occuring? ☐ yes ☑ no **and:** ☐ species appropriate ☐ supplemental planting/seeding needed
Site is/has: ☑ fire suppresse ☐ appropriately manage ☑ secondary growth ☑ planted ☐ clear-cut
If planted: ☑ bedded and planted ☐ not bedded but managed for pine **~Tree age:** ☐ 0-5 yrs ☐ 6-10 yrs ☑ 11-20 yrs ☐ 20+ yrs
Recommendations for restoration: ☑ prescribed burn ☑ mechanical treatment **other:**

Specific notes on restoration, observations, or adaptive management techniques:

Groundcover coverage and diversity is low due to fire suppression, site preperation and high density of planted slash pine.
Pine duff is thick and groundcover is unlikely to recover without a prescribed warm season fire. Canopy & shrub reduction recommended.

Appendix G: Qualitative Monitoring Photographs

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Devil's Swamp Mitigation Bank – Phase 1 Qualitative Photographs

Devil's Swamp Transect 1 Reference Point 3
Mixed Forested Wetland (DSQT1 P3 MFW)

Devil's Swamp Transect 2 Reference Point 1
Hydric Pine Flatwoods (DSQT2 P1 HPF)

Devil's Swamp Transect 2 Reference Point 2
Cypress Swamp (DSQT2 P2 CS)

Devil's Swamp Transect 2 Reference Point 3
Cypress Swamp (DSQT2 P3 CS)

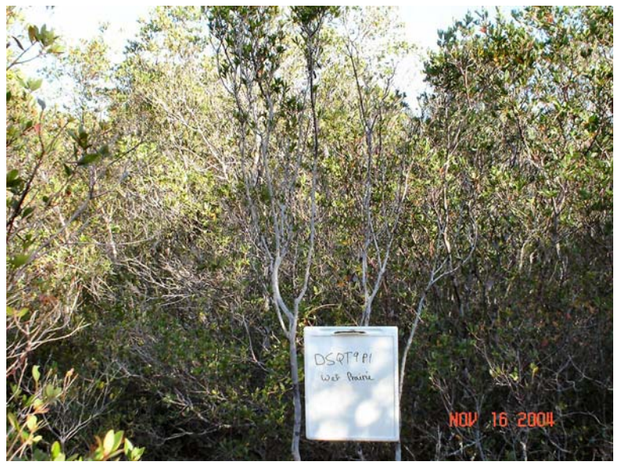
Devil's Swamp Transect 3 Reference Point 2
Hydric Treeless Savanna (DSQT3 P2 HTS)

Devil's Swamp Mitigation Bank – Phase 1
Qualitative Photographs

Devil's Swamp Transect 3 Reference Point 2
Mixed Forested Wetland (DSQT3 P2 MFW)

Devil's Swamp Transect 8 Reference Point 1
Hydric Pine Flatwoods (DSQT8 P1 HPF)

Devil's Swamp Transect 8 Reference Point 2
Mixed Forested Wetland (DSQT8 P2 MFW)



Devil's Swamp Transect 9 Reference Point 1
Hydric Treeless Savanna (DSQT9 P1 HTS)

Devil's Swamp Transect 9 Reference Point 2
Hydric Pine Flatwoods (DSQT9 P2 HPF)

Devil's Swamp Mitigation Bank – Phase 1
Qualitative Photographs

Devil's Swamp Transect 10 Reference Point 1
Hydric Treeless Savanna (DSQT10 P1 HTS)

Devil's Swamp Transect 10 Reference Point 2
Hydric Pine Flatwoods (DSQT10 P2 HPF)

Devil's Swamp Transect 11 Reference Point 1
Upland Pine (DSQT11 P1 UP)

Devil's Swamp Transect 11 Reference Point 2
Hydric Treeless Savanna (DSQT11 P2 HTS)

Devil's Swamp Transect 12 Reference Point 1
Upland Pine (DSQT12 P1 UP)

Devil's Swamp Mitigation Bank – Phase 1 & 2 Qualitative Photographs

Devil's Swamp Transect 12 Reference Point 2
Hydric Treeless Savanna (DSQT12 P2 HTS)

Devil's Swamp Transect 1 Reference Point 2
Hydric Treeless Savanna (DSQT1 P2 HTS)

Devil's Swamp Transect 1 Reference Point 1
Hydric Pine Flatwoods (DSQT1 P1 HPF)

Devil's Swamp Transect 3 Reference Point 1
Hydric Pine Flatwoods (DSQT3 P1 HPF)

Devil's Swamp Transect 4 Reference Point 1
Hydric Pine Flatwoods (DSQT4 P1 HPF)

Devil's Swamp Mitigation Bank – Phase 2 Qualitative Photographs

Devil's Swamp Transect 4 Reference Point 2
Mixed Forested Wetland (DSQT4 P2 MFW)

Devil's Swamp Transect 5 Reference Point 1
Mesic Pine Flatwoods (DSQT5 P1 MPF)

Devil's Swamp Transect 5 Reference Point 2
Hydric Pine Flatwoods (DSQT5 P2 HPF)

Devil's Swamp Transect 4 Reference Point 3
Mixed Forested Wetland (DSQT4 P3 MFW)

Devil's Swamp Transect 5 Reference Point 3
Mixed Forested Wetland (DSQT5 P3 MFW)

Devil's Swamp Mitigation Bank – Phase 2
Qualitative Photographs

Devil's Swamp Transect 6 Reference Point 1
Hydric Pine Flatwoods (DSQT6 P1 HPF)

Devil's Swamp Transect 6 Reference Point 3
Mixed Forested Wetland (DSQT6 P3 MFW)

Devil's Swamp Transect 6 Reference Point 2 Mixed Forested Wetland (DSQT6 P2 MFW)

Devil's Swamp Transect 7 Reference Point 1
Upland Pine (DSQT7 P1 UP)

Devil's Swamp Transect 7 Reference Point 2
Mixed Forested Wetland (DSQT7 P2 MFW)

Devil's Swamp Mitigation Bank – Phase 3
Qualitative Photographs

Devil's Swamp Transect 13 Reference Point 1
Hydric Treeless Savanna (DSQT13 P1 HTS)

Devil's Swamp Transect 13 Reference Point 2
Mixed Forested Wetland (DSQT13 P2 MFW)

Devil's Swamp Transect 13 Reference Point 3
Upland Pine (DSQT13 P3 UP)

Devil's Swamp Transect 14 Reference Point 1
Mixed Forested Wetland (DSQT14 P1 MFW)

Devil's Swamp Transect 4 Reference Point 2
Cypress Swamp (DSQT14 P2 CS)

Devil's Swamp Mitigation Bank – Phase 3
Qualitative Photographs

Devil's Swamp Transect 14 Reference Point 3
Hydric Pine Flatwoods (DSQT14 P3 HPF)

Devil's Swamp Transect 15 Reference Point 1
Hydric Pine Flatwoods (DSQT15 P1 HPF)

Devil's Swamp Transect 15 Reference Point 2
Mixed Forested Wetland (DSQT15 P2 MFW)

Devil's Swamp Transect 15 Reference Point 3
Cypress Swamp (DSQT15 P3 CS)

Devil's Swamp Mitigation Bank – Phase 1
Qualitative Photographs

Devil's Swamp Transect 16 Reference Point 1
Upland Pine (DSQT16 P1 UP)

Devil's Swamp Transect 16 Reference Point 2
Mixed Forested Wetland (DSQT16 P2 MFW)

Devil's Swamp Transect 16 Reference Point 3
Hydric Pine Flatwoods (DSQT16 P3 HPF)

Glossary of Terms

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Glossary of Terms

Association describes the population of plants in a given landscape. The mitigation instrument/permit uses the January 1999, Florida Land Use, Cover and Forms Classification System (FLUCCS) to describe the vegetative associations.

Bedding, **Bedded Rows** describes the silvicultural practice of making planting beds for pine trees, which specifically refers to slash pine (*Pinus elliottii)* at the DSMB. This practice is often done in areas that might have been too wet to grow pines in natural conditions.

Canopy layer includes woody trees with a main trunk at least 10 cm (4 in) diameter or greater at breast height (1.5 m) and a stem at least 3 m tall.

Community is a general term applied to a vegetation unit. Association and community are used interchangeable to describe vegetation.
is used to describe

Dominance is used to describe individual organisms or groups of organism that exert influence or control over a landscape or area. It is ambiguously used by ecologists to describe the species which contributes the most cover or basal area. Another view is that of plant sociologic dominance where the dominant plants control the reproduction and continued existence of the community. Wiregrass (*Aristida stricta*) is an example of a sociologic dominant in longleaf pine (*Pinus palustris*) communities, even though longleaf pine is the physiognomic dominant. Informative naming conventions incorporate this important observation, for example the *Pinus palustris*/*Aristida stricta* community.

Ecosystem is the sum of the plant community, animal community, and environment in a given area or habitat.

Edaphic is a term meaning of or relating to soil, especially as it affects living organisms.

Endemic species are those found in a particular geographic area. Often these populations represent a historically wide ranging species which has become restricted to a small area, usually due to genetic isolation and “accidents” of geologic history or remnants of the ancient Arcto-Tertiary flora.

Evapotranspiration is the combined measure of the total amount of water lost by transpiration and evaporation. Broad leaves have larger surface areas and greater evapotranspiration potential than needle leaved or grass like leaves.

Evolution is the change in the genetic composition of a population during successive generations, as a result of natural selection acting on the genetic variation among individuals, and resulting in the development of new species or taxon.

Facultative species of vascular plants are those plants with a wide physiologic tolerance to a variety of edaphic and hydric conditions. Facultative species are found in uplands and wetlands, so hey are not a good ecological indicator of wetland conditions. Slash pine (*Pinus elliottii*) and gallberry (*Ilex glabra*) are good examples of facultative species.

Facultative wet species of vascular plants are those plants that are naturally distributed in wetlands, very poorly drained soils and areas with seasonal surface water inundation. They are physiologically, reproductively and ecologically tolerant and/or adapted to life in wetland conditions. Chokeberry (*Photina pyrifolia*) and bitter gallberry (*Ilex coriacea*) are good examples of facultative wet species.

Floristics is the study of plant species diversity in relation to habitat diversity within an area.

FLUCCS or Florida Land Use, Cover and Forms Classification System was developed by the Florida Department of Transportation, Survey and Mapping Section for use in describing land use by remote sensing and digital mapping systems. FLUCCS is used for planning, permitting and describing landscapes. This system was not developed for use in plant ecology and does not fully describe the complexity of vegetation in the mitigation banks.

FNAI or Florida Natural Areas Inventory Guide to the Natural Communities of Florida is hierarchical classification of the natural communities based on the original, natural biological associations of Florida.

Forb is a non-graminoid herbaceous plant.

Graminoid is a grass like plant in the grass family (*Poaceae*), sedge family (*Cyperaceae*) or rush family (*Juncaceae*).

Groundcover is the herbaceous or weakly woody plant layer closest to the ground, typically less than 1.5 m tall. If the plants are weakly woody, then the plants must have a diameter of less than 2.54 cm (1 in) at 1.5 m height. Groundcover plant cover includes all herbaceous annuals and perennials.

Halophyte is a plant tolerant of various mineral salts in the soil, usually of sodium chloride.

Herbaceous describes non-woody, soft (usually vascular) plant tissues that are non-woody. Generally herbaceous plants are found in the groundcover and tissues may die to the ground each season. For the purposes of this plant monitoring, weakly woody species such as St. Johns wort (*Hypericum*), wicky (*Kalmia hirsuta*) and large leathery plants such as saw palmetto (*Serenoa repens*) are included. Annual species are always herbaceous.

Hydric soils these are soils that generally occur in wetlands and are saturated long enough to develop anaerobic conditions in the upper part. Hydric soils are typically inundated or saturated within 6 to 12 inches of the surface for at least part of most years. Anaerobic conditions typically result in surface accumulation of organic matter and reduction and movement of iron and manganese to produce a soil morphology that is identifiable in the field as a hydric soil indicator. (National Technical Committee for Hydric Soils (NTCHS) and Natural Resource Conservation Service (NRCS)).

Invasive exotic is used to describe a non-native organism that persists and spreads throughout a given area.

Life form describes the vegetative type, which can include annual herbaceous plants, shrubs, trees, plants with rhizomes, bulbs, corms, needleleaf trees, clump forming grasses, etc. In this report the life form is generally used to describe grass like plants, groundcover-herbaceous plants, woody shrubs, subcanopy and trees or canopy.

Monotypic means of one type. This term is used to describe a single species dominance in a particular landscape. The term is often used to describe the zonation of plants as influenced by some edaphic or hydrologic factor.

Natural Community is a distinct and reoccurring assemblage of populations of all flora and fauna naturally associated with each other and their physical environment. They are characterized by a combination of physiognomy, vegetative structure and species composition, topography, land form, soil, hydrology, climate and fire. They are named for their most characteristic physical or biological feature.

Natural selection is the evolutionary force that tends to produce systematic and heritable change between one generation and the next, which may result in adaptation and survival, variation and specialization, or extinction.

Obligate wetland plants are typically only found in wetlands and are the dominant vegetation in wetlands.

Perennial refers to growing or persisting for three or more annual growing seasons.

Permit/instrument is used as shorthand for the Devils Swamp Federal Mitigation Bank Instrument (MBI)/FDEP Mitigation Bank Permit (MBP).

Physiognomy is the architecture and life form that give a landscape an outward appearance. For example, the pine dominated forests at the DSMB historically were characterized by large, widely spaced, needle leaved, evergreen trees with a graminoid dominated groundcover.

Physiography is the study of physical features of the earth's surface.

Pine duff is the often thick layer of humic or less decomposed life litter from dense stands of pines (*Pinus* spp.). This layer is especially thick in fire suppressed, silvicultural planting of pine. Pine duff is not considered soil but is a part of the O horizon in the soil column.

Pine plantation is also called coniferous plantation as per FLUCCS, we will use pine plantation to describe artificially planted or seeded forests. These stands are characterized by high density, uniform age and appearance and low species diversity.

Plant sociology is the description and mapping of vegetative types and communities.

Quadrat is any of a group of small, usually rectangular plots of land arranged for close study of the distribution of plants or animals in an area.

Quadrant is any of the four areas into which a plane is divided by the reference axes in a Cartesian coordinate system, designated *first, second, third,* and *fourth.*

Reference community is a plant community selected to represent the typical or characteristic type. These will be selected from areas that have experienced long term appropriate management.

Refugium (pl. refugia) Is an area that has escaped ecological changes occurring elsewhere and so provides a suitable habitat for relict species.

Ruderal is used to describe a weedy species. In the context of this report, ruderal refers to weedy native plants that create conditions that inhibit or exclude appropriate vegetation.

Savannah, see wet savanna.

Shrub layer is woody plants typically less than 1.5 m (4.5 ft) tall but could grow as tall as 3 m (9.8 ft) especially in fire suppressed landscapes. Stems are always woody and plants may have several stems from a common root system. No stem diameter requirements exist, although the diameter will typically be less than 2.54 cm (1 in) in diameter at 1.5 m.

Silviculture in reference to pine silviculture which is the commercial production of pine (Pinus) trees as a crop for saw timber or pulp. Intensive (agi-industrial) silviculture includes constructing raised beds on which pine seedlings are planted; bedding is very destructive to the native groundcover vegetation. See pine plantation.

Strata describes a vegetative layer. Each layer is made up of a life form such as canopy, subcanopy, shrub or groundcover.

Subcanopy layer includes woody plants 3 m tall or taller with a stem less than 10 cm (4 in) diameter at breast height (1.5 m). Typically plants have a single stem. Young trees or saplings with slender stems are usually included in this layer.

Succession is the change in the vegetative community over time.

Taxon (pl. taxa) is the basic unit of taxonomy. This group refers to a taxonomic group of any rank or family. For example, *Taxodium* is a taxon at the rank of genus.

Very Poorly Drained Soils is the terminology used by soil scientists to describe seasonally, permanently, or tidally inundated soils.

Wet Savanna describes the landscape commonly known as wet prairie, pitcher plant bog, fen, savanna as per FNAI (and other authors) and treeless hydric savanna as per FLUCCS. The use of wet prairie in this report only refers to the FNAI description and should not be confused with the FLUCCS use of wet prairie.

Wetland generally defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted physiologically, reproductively and ecologically for life in saturated soil conditions. Wetlands may have hydric soils and/or hydrologic indicators.

Woody describes vascular tissues with a firm structure and tissues not dying down to the ground.