Year 2004 Annual Monitoring Report

Breakfast Point Mitigation Bank
Bay County, Florida

Prepared for:
Breakfast Point Mitigation Bank,
St. Joe Company

Submitted to: The Florida Department of Environmental Protection
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U.S. Fish and Wildlife Service

St. Joe Company

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FIRST ANNUAL MONITORING REPORT
YEAR 2004 ANNUAL MONITORING REPORT

Results from the 2004 Monitoring at Breakfast Point Mitigation Bank

BREAKFAST POINT MITIGATION BANK
BAY COUNTY, FLORIDA
ACOE Permit No.: SAJ-2004-1865
FDEP Permit No.: 0227473-001

Applicant: Breakfast Point Mitigation Bank
St. Joe Company
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BAY COUNTY, FLORIDA

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I. INTRODUCTION

The approximately 4,637 acre Breakfast Point Mitigation Banks (BPMB) is located entirely within Bay County, Florida on a rounded peninsula juting into West Bay. The site is located approximately 0.5 mile north of U.S. Highway 98 and about 2 miles east of State Road 79. The U.S. Highway 98/West Bay Bridge is located approximately 1 mile to the east. West Bay is the northern boundary. In general the site is surrounded by private lands to the south, east and west. Lands outside the mitigation bank are rapidly becoming more urbanized, which makes the location and unique natural history of this site especially important. This report specifically refers to the objectives found in the following: Federal Mitigation Bank Instrument (MBI)/FDEP Mitigation Bank Permit (MBP), ACOE Permit No.: SAJ-2004-1865, FDEP Permit No.: 0227473-001.

Land based access to the property is through two gates located at the southeastern and southwestern portions of the sites. Permission to access this site must be made by contacting the St. Joe Company, Inc.

The BPMB is located in the St. Andrews Bay watershed, see 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. This site is desirable for a mitigation bank because of the unique ecosystems that provide habitat for native species, some of which are rare, threatened and endemic. Also, this mitigation bank is ecologically significant because it contains large areas of wetlands and coastline that will help buffer any negative impacts to the water quality of West Bay.

The landform that comprising the BPMB 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 flat plain, one of low relief and is included as a physiographic region in the Gulf Coastal Lowlands (Randazzo and Jones, 1997). Ridges and ancient shorelines generally trend northwest to southeast and produce a

drainage pattern trending toward the Botheration Bayou. This low relief also means that this site contains extensive shoreline, as well as approximately 11 miles of saltmarsh, salterns, hydric pine flatwoods, tidal creeks and bayous. Much of this landscape is only a few inches or feet above sea level and anecdotal evidence suggests large portions of the peninsula are flooded, or at least showered, with salty winds during strong tropical storms. This observation is further supported by the 100 year flood plain contour which includes much of the site (*see* Federal Mitigation Bank Instrument (MBI)/FDEP Mitigation Bank Permit (MBP), Exhibit 2-3, 100 Year Flood Plain Map). This inundation by salty bay water has greatly influenced the plant assemblages and soils and is responsible, in part, for some of the unique qualities of this site. Wetland soils containing sulfur were found well away from the immediate coast and it is possible that the sulfur in the soils was deposited by inundation events involving the brackish bay water. Based on preliminary observations made during the quantitative and qualitative vegetation monitoring the distribution of halophytic vegetation also supports the theory of flooding by salty water across large expanses, including the interior of this site. Another theory involves hydrologic alteration and subsequent spread of brackish tolerant vegetation or saltmarsh vegetation along with brackish water intrusion, into the interior of the site by way of large ditches. Although the ditches are tidally influenced, large scale water movement into the site via the ditches has not been observed. If the ditches were modified to exclude saltwater intrusion into the interior of the site, the halophytic species would be expected to retreat toward the bay with the reduction of mineral salts in the soils, as part of the restoration of historic hydrologic conditions.

Large drainage features and roads have altered the hydrology of this site. There are three large ditches (and many smaller roadside ditches) that drain this site (*see* Federal-MBI/FDEP-MBP, Exhibits 2-4, Hydrologic Restoration Plan). The first (1) ditch is the large north/south ditch draining the interior of the peninsula. This large, deep ditch drains the southeastern portion of the site as well as the lands south of the site and enters West Bay just east of Basin Bayou. The second (2) ditch is the large ditch draining lands to the south and enters the BPMB in the southeastern corner of the site and drains into West Bay near Shell Point (AKA West Bay Point). The third (3) ditch is the large ditch draining lands to the south and enters the BPMB in the southwest corner of the site and drains into Botheration Bayou. Baseline hydrologic monitoring and hydrologic restoration is slated to begin in 2005. First hydrologic monitoring, topographic maps, aerial photographs and field verification will be used to understand the drainage patterns onsite and will be augmented through the use of hydrologic modeling. Historic flow patterns and surface water elevations will be used to help restore the appropriate vegetation in the mitigation bank. Project botanists and ecologists will work with the hydrologist to determine the responsiveness of appropriate plant communities to the restored hydrology.

The soils at this site are predominately hydric. These soils are generally nearly level, have water tables at or near the surface, and have sandy textures. The

wetland soils often contain sulfur, which is evident by the smell of hydrogen sulfide gas when any activity disturbs the soils. Upland soils also have sandy textures; however, these soils have better drainage and in general are dominated by pine flatwoods. Flatwoods are found on low relief ridges, often only a few inches to a few feet above the greater landscape of lower relief wetlands. All mapped soil polygons, except one on this site, are described by the Natural Resources Conservation Service (NRCS) as hydric (*see* Federal-MBI/FDEP-MBP, Exhibit 2-2, Map of Hydric Soils at BPMB, Hydrologic Restoration Plan). Of these, half are primarily hydric, the rest contain inclusions of hydric soils. The only exception is Chipley Sand which is primarily non-hydric. The soil descriptions attest to the flat landscape of low elevation and poor drainage. This poorly drained landscape has produced extensive wetlands variously referred to as swamps, marshes and hydric pine flatwoods.

The mitigation instrument/permit uses changes in vegetation to measure restoration. The biological importance of this site is best appreciated in the large ecosystems it contains. These ecosystems are comprised 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 employed for collecting data used in measuring the change in vegetation distribution, life form and dominance. The purpose of floristics is to provide an inventory of plant species and plant diversity or species richness and to provide the foundation for ecological research, as described in this report, *see* III. Materials and Methods – Data Collection.

The worldview of the BPMB 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, including the BPMB, is 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*).

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 involving a requirement for or an avoidance of 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 on average. Indeed, the most common pine species in the general area, 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 on average. In addition, dependent or not on fire, the following taxa

recorded at the BPMB are also endemic to the coastal plain: *Ilex coriacea, I. glabra, Ilex myrtifolia, Iris tridentata, Juniperus silicicola, Magnolia virginiana var. australis, Myrica heterophylla, Persea palustris, Nyssa sylvatica var. ursina, Lyonia lucida, L. ferruginea, Pinguicula spp., Sarracennia spp., Serenoa repens,* and *Taxodium ascendens*. Endemic species found only in the northwest Florida region and in the BPMB include *Gentiana pennelliana, Hymenocallis henryae, Myrica inodora, Sarracenia leucophylla*, and *S. psittacina*. By our estimate, the BPMB contains one of the largest populations of the very restrictive endemic, *Hymenocallis henryae*, outside of the Apalachicola National Forest. 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 or could possibly be related to the presence of refugia. The restoration of the BPMB will contribute greatly to the biologic integrity of the region and as the surrounding area is developed the bank will serve as a refugium for rare and endemic flora and fauna. For list of plants found at the BPMB, see Exhibit 1.

Related to the study of floristics is the study of plant sociology or plant mapping. This method was used to create vegetation maps of the BPMB. The nomenclature used to describe the polygons is that described by FLUCCS or Florida Land Use, Cover and Forms Classification System (FLDOT, 1999). A map has been produced using the nomenclature of FLUCCS and depicting the current plant communities and the proposed plant communities *see* Federal-MBI/FDEP-MBP, Exhibit A-1-5 and A-1-6. As per the original descriptions found in the instrument/permit cited above, the plant communities are depicted on a map as polygons labeled with the nomenclature used in FLUCCS. Accordingly, the site currently consists of tidal flats, tidal creek, saltwater marsh, freshwater marsh, mixed forested wetlands, cypress swamp, wet savanna, mesic pine plantation, hydric pine plantation, pine islands, mesic pine flatwoods, drainage ditch and roads. Drainage ditches, roads, and tidal creeks 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). The existing landscape is largely a product of the past 50 years or so of intensive silvicultural land use and associated fire suppression.

The historic 1942 aerial depicts a landscape dominated by wet savanna and marsh (freshwater and brackish). The signature on the aerial is fine textured indicating a landscape of mostly fine textured graminoid dominance with very little woody species coverage. Graminoid dominated plant communities have been aggressively converted to pine plantation as demonstrated by the few areas on the site that do not show signs of pine bedding or fire suppression associated with silviculture. Based on the interpretation of the baseline data, the typical graminoids that dominated the historic landscape include the following in freshwater marsh and wet savanna; bluemaiden cane (*Amphicarpum muhlenbergianum*), wiregrass (*Aristida stricta*), switchgrass (*Panicum virgatum*),

beak sedges (*Rhynchospora* spp.) and bald sedges (*Scleria* spp.); and the following in brackish marsh; black needle rush (*Juncus roemarianus*), cordgrass (*Spartina patens*) and switchgrass (*Panicum virgatum*).

There are four activities with associated changes in vegetation to consider when viewing the artificial landscapes produced by silviculture. These activities have been outlined in a personal communication with A.F. Clewell, 2004. The effects that have altered the vegetation of the groundcover were considered, since this occurrence is the most dramatic change to the landscape compared with the historic 1942 aerial. First, site prepping with large machinery has literally transformed the landscape and created beds for planting, especially in wetlands. These beds have a "summit" and a "valley". The summit may have non-hydric soils 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 creating wetland conditions and favoring colonization by wetland species. Large areas of pine flatwoods, wet savanna and freshwater marsh have been converted into bedded slash pine plantations in this manner. When considering that the diversity of the wet 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 BPMB one can find remnant wet savanna species, such as wiregrass, persisting in this type of landscape. In this scenario of bedded pine plantations, the artificial plant mixtures are often unlike those found in nature and represent a challenging restoration dilemma. At this time the 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*), bitter gallberry (*Ilex coriacea*), gallberry (*Ilex glabra*), sweetbay (*Magnolia virginiana*) and infrequently Chinese tallow tree (*Sapium sebiferum*). 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 creating channels draining the landscape and redirecting surficial runoff. At this time, it is believed the channeling effect of bedding would be more significant in a landscape with more pronounced topography. 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 comprising 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 life forms 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. Also new dynamics influence the life cycle, such as herbivory, pollination, dispersal and host of other unknown factors. One limiting factor is the lack of available light as a result of the three dimensional layerage of leafy stems from fire suppressed woody growth. Along with available water, light availability is directly correlated with productivity. This factor is especially important to species adapted to high light conditions such as those found in wet savanna and marsh communities. Some of these 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. Sometimes, in the deepest shade large clumps of wiregrass were discovered. Many have recently died or having 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 by reintroduction of light to the groundcover, especially in areas with appropriate hydrology. If this scenario is accomplished through a prescribed fire regime and/or mechanical means, then plants will benefit from increased light, moisture, and if burned, 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 on average), low intensity surface fires prevent woody growth of hardwood species in the canopy and maintain open landscapes allowing 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. Note any invasive exotic plant species that persist after prescribed burning will be controlled by herbicide application.

In summary, the restoration work at the BPMB is particularly interested in restoring those plant communities, especially those dominated by groundcover graminoid and forb species, that would have historically dominated the landscape, as per the 1942 aerial photograph. Currently, the BPMB contains an important part of the floral biodiversity of northwest Florida and as this site is successfully restored, it will contain 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. These techniques will be continued throughout the projected five year restoration process.

II. GOALS AND OBJECTIVES

Historically, the site was a mosaic of freshwater marsh, wet savanna, saltmarsh, salterns, cypress swamp, mesic and hydric pine flatwoods (*see* Federal-MBI/FDEP-MBP, Exhibit A-1-8, Historic Aerial Photo, 1942). The primary objective of the BPMB 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 BPMB will be preserved in perpetuity as per the instrument.

A comparison of the historic site conditions (1942 aerial) to present/existing conditions has been used to qualitatively calculate the potential impacts to wetlands and wetland functions at the BPMB (*see* Federal-MBI/FDEP-MBP, Table A-2, BPMB Existing Land Use Characteristics). Accordingly 87% of the site was determined to have been planted in slash pine (*Pinus elliottii*) in the past 40 years. Both uplands and wetlands have been impacted by silviculture with slash pine being the only pine species planted at this site. Historically, slash pine have been used at this site for turpentine production and stumps with “cat faced” sap conducting grooves, carved by turpentine collectors many years ago can still be located at this site. The majority of this site has been selectively cut, cleared and prepared for timber. As part of the mitigation instrument, selective cutting of planted slash pine will occur throughout the restoration time frame, as part of the schedule of activities at the BPMB. 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 A-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 A-1-5, Existing Land Use and Land Cover and A-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, specifically the large open expanses of marsh, cypress flats and 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 1-4 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 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 A, 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 (as per the Federal-MBI/FDEP-MBP, Attachment A-7, Desirable Species List) and graminoid species. These measurements of groundcover coverage will be compared to the interim success criteria as described in the Federal-MBI/FDEP-MBP, Appendix A, 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 BPMB 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 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, these criteria also require the measurement of the density and coverage of trees and shrubs as well as species richness in a unit area. These measurements at BPMB are specifically addressed for the following plant communities, as per FLUCCS nomenclature: (1) Palustrine Marsh, (2) Hydric Pine Flatwoods, (3) Cypress Flats, (4) Mixed Forested Wetland and (5) Mesic Pine Flatwoods, as specified in the Federal-MBI/FDEP-MBP, Appendix A, IV. Operation of the Bank, 2. Final Success Criteria and 3. Interim Success Criteria. The BPMB contains a mosaic of vegetation and ecotones. Large portions of what is mapped as palustrine marsh, 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, which is best understood as wet savanna or former wet savanna that has been planted in slash pine. This report will use wet savanna to mean treeless hydric savanna.

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; Huffman, 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 per 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 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 A-1-5, Existing 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. Wet prairie/savanna and saltmarsh ecotones were also added to the quantitative monitoring to record the change across the landscape where the flatwoods merge with coastal marsh and prairie/savanna. For example, the naming convention for BP1T1 MFW is as follows: BP refers to Breakfast Point, 1 refers to phase 1, T1 refers to transect 1, and MFW is the short name for mixed forested wetlands. Thus, BP1T1 MFW is the name used for quantitative transect 1, located in phase 1 of the BPMB, with the transect placed in what was mapped as a mixed forested wetland in the instrument/permit.

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 randomly 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. We also added wet prairie/savanna and saltmarsh ecotones to our quantitative monitoring so as to record the change across the landscape where the flatwoods merge with coastal marsh and prairie/savanna. 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 BPQT1 P1PM is as follows: BPQ refers to Breakfast Point Qualitative Transect, 1 refers to transect 1, and P1 is reference point 1, PM are the initials for palustrine marsh. Thus, BPQT1 P1PM is the name used for reference point 1 located on qualitative transect number 1 which is mapped as a palustrine marsh 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 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 BPMB 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 BPMB 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 from rather large sets of data from various plant communities at the BPMB. 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 10m X 10m 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 the data in samples taken as a subset from the larger plant communities at the BPMB. 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 County is thought to contain 856 taxa or 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 BPMB 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.

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

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 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:

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

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.

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

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*).**

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

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

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

'**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).**

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

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

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

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

The **Importance Value Percentage =** Importance Value X 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 10m x 10m were located along a 100m transect in pine plantations or plotless sampling 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 BPMA. 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 A-1-6, Proposed Land Use and Land Cover) and consists of the following: (1) Palustrine Marsh (=Freshwater Marsh), (2) Hydric Pine Flatwoods, (3) Cypress Flats, (4) Mixed Forested Wetland, and (5) Mesic Pine Flatwoods. Wet savanna (also called wet prairie) or as per FLUCCS nomenclature, treeless hydric savanna was added to this list to describe landscapes with characteristic wet savanna species.

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 BPMB was 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 BPMB 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 transcect 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 BPMB 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 - BP1T1 MFW is located in the southeastern portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as mixed forested wetland. Based on the presence of *Nyssa sylvatica* var. *ursina* (or *N. ursina*), *Stillingia aquatica,* and pond cypress (*Taxodium ascendens)* this community is best described as a fire suppressed pond cypress swamp which would be called a cypress flat as per FLUCCS. This plant community has not been site prepped and the pine density may be a result of fire suppression or other factors.

Species Richness. Twenty eight species were found in quadrats, of these fourteen were herbaceous species, two vines, and twelve woody plants.

Groundcover Vegetation. There are fourteen groundcover species recorded in this transect, four of these are graminoid species in the genera of *Rhynchospora, Andropogon, Schizachyrium,* and *Dicanthelium*. The woody species occupy 70% of the coverage and are directly responsible for the relatively low combined herbaceous species coverage of 22%. *Lyonia lucida* was the most important woody groundcover species. *Hypericum chapmanii* was the most important herbaceous species. When this site is burned, the *Hypericum*, *Rhynchospora,* and *Andropogon* are expected to become the most important groundcover species. Significantly much of the ground surface was on average 50% bare with 26% open water. The water coverage was a natural part of the flooding events associated with the tropical cyclones of late summer 2004. The bare ground coverage is most likely the result of excessive woody growth due to fire suppression.

Species Present but not in the Analysis. *Osmunda regalis, Rhynchospora inundata,* and *Stillingia aquatica*.

Invasive Exotics. None of these species were found in this transect.

Canopy Vegetation. Two species were large enough to be counted as canopy, slash pine (*Pinus elliottii*) and pond cypress (*Taxodium ascendens*). We extrapolated our point quarter data and calculated 142 trees per acre with a basal area of 36 square feet per acre, of this, slash pine was the more important species with 98% coverage and a basal area of 35 square feet per acre. Pond cypress basal area is expected to increase with restoration.

Management. This site is a fire suppressed cypress forest that has been managed for slash pine. The slash pine canopy is over topping the pond cypress canopy. Reducing, if not eliminating, the slash pine canopy to restore this community to a pond cypress dominated canopy in conjunction with a herbaceous species diverse groundcover is recommended. However if

mechanical reduction is not possible, then a fire plan should be used to thermally thin the pines and select for the cypress. A frequent burning regime of 1-3 years on average administered as part of a prescribed burn plan would reduce the woody dominance and favor herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP1T2 CF is located in the northwestern portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as cypress flats swamp. Based on the presence of *Nyssa sylvatica* var. *ursina* (or *N. ursina*), *Stillingia aquatica,* and *Taxodium ascendens,* this community is best described as a fire suppressed cypress flat as per FLUCCS.

Species Richness. Thirty two species were found in quadrats, of these there were twenty four herbaceous species, one vine, and eight woody plant species.

Groundcover Vegetation. There were twenty four groundcover species recorded in this transect, eleven of these species were graminoid species in the genera of *Amphicarpum, Andropogon, Juncus, Panicum,* and *Dicanthelium*. The woody species occupy 31% of the coverage. Herbacous groundcover species occupy 67%. *Taxodium ascendens* and *Nyssa ursina* are expected to become more important when this area is burned. Most of the woody shrub species are only able to exist in this landscape because they are growing at the top of the bedded silvicultural rows.

Species Present but not in the Analysis. *Oxypolis filiformis, Eupatorium* sp., *Toxicodendron radicans, Liatris spicata, Typha latifolia.*

Invasive Exotics. Chinese tallow tree (*Sapium sebiferum*) was found. These trees will be reduced to coppice sprouts. Any Chinese tallow remaining after burning will be eliminated through herbicide application.

Canopy Vegetation. No woody species large enough to be considered canopy were present.

Management. This site is a fire suppressed cypress forest previously managed for slash pine (*Pinus elliottii*). The slash pine canopy has mostly died due to very poorly drained soils. Pond cypress (*Taxodium ascendens*) is present and will eventually form a canopy of widely spaced, flat topped trees. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan would reduce the woody dominance on the tops of bedded rows and favor pond cypress reproduction and herbaceous groundcover species, especially graminoid species. Chinese tallow tree will be reduced to coppice sprouts by prescribed burning.

Quantitative Transect - BP1T3 MPF is located in the northern most portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as mesic pine flatwoods. 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 there were thirteen herbaceous species, two vines, and eleven woody plants.

Groundcover Vegetation. There are thirteen groundcover species recorded in this transect, four of these are graminoid species in the genera of *Amphicarpum, Andropogon, Rhynchospora,* and *Dicanthelium*. The woody species occupy 63% of the coverage and are directly responsible for the relatively low combined herbaceous species coverage of 35%. *Ilex glabra* was the most important woody groundcover species. *Pteridium aquilinum* was the most important herbaceous species. When this site is burned, the *Andropogon, Amphicarpum, Rhynchospora*, *Pteridium,* and *Serenoa* are expected to become the most important groundcover species. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case, an average of 58% coverage of bare ground was measured in the plots. This area was mostly covered by a thick layer of pine duff.

Species Present but not in the Analysis. *Clethra alnifolia, Lyonia lucida, Cyrilla racemiflora, Smilax laurifolia*. These are species of the more mesic sections of this transect and are not indicative of the overall moisture conditions of the plant community described.

Invasive Exotics. None.

Canopy Vegetation. Slash pine was the only arborescent species that was large enough to be considered part of the canopy. An estimated 687 trees per acre were calculated from the measurement made from a 10mx10m plot. The individual trees were small and occupied a basal area of 182 square feet per 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 of 1-3 years on average, administered as a part of a prescribed burn plan will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP1T4 HPF is located in the northern most 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 palustrine marsh previously planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The soils are very poorly drained and many of the slash pine have died.

Species Richness. Forty six species were found in quadrats, of these there were thirty five herbaceous species, two vines, and nine woody plants.

Groundcover Vegetation. There are forty six groundcover species recorded in this transect, fourteen of these are graminoid species in the genera of *Juncus, Andropogon, Panicum, Dicanthelium, Rhynchospora, Scirpus,* and *Fuirena*. The woody species occupy 26% of the coverage and these species are typically confined to the top of the bedded rows. The groundcover is diverse and a lack of woody dominance is directly responsible for the relatively high herbaceous species coverage of 72%. *Myrica heterophylla* was the most important woody groundcover species. *Ludwigia pilosa* was the most important herbaceous species. When this site is burned, the graminoid genera listed above is expected to become the most important groundcover species.

Species Present but not in the Analysis. None.

Invasive Exotics. *Sapium sebiferum* was found growing at the top of the bedded rows. Any Chinese tallow remaining after burning will be eliminated through herbicide application.

Canopy Vegetation. This landscape is a pine plantation with relatively young trees. A 10mx10m plot was used to sample the canopy because this site was planted in pine.The slash pine large enough to be considered canopy were calculated to be 283 slash pine per acre. The trees were widely spaced and between the mortality due to very poorly drained soils and the age of the trees the coverage in basal area is estimated to be 43 square feet per acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in a historically treeless palustrine marsh. The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored and the open aspect of the landscape recreated. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan will reduce the dominance of woody species, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. Invasive exotics may need herbicidal treatment for control if burning does not inhibit their spread.

Quantitative Transect - BP1T5 MPF is located in the extreme southeastern corner of phase 1.

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

Species Richness. Twenty seven species were found in quadrats. Of these species, fifteen were herbaceous species, one vine and eleven woody plant species.

Groundcover Vegetation. There are fifteen groundcover species recorded in this transect. Five of these are graminoid species in the genera of *Aristida, Dicanthelium, Panicum, Scleria,* and *Andropogon*. The woody species occupy 72% of the coverage and are directly responsible for the relatively low combined herbaceous species coverage of 28%. *Ilex glabra* was the most important woody groundcover species. *Kalmia hirsuta* was the most important herbaceous groundcover species. When this site is burned, the graminoids, as listed above, and *Serenoa* are expected to become the most important groundcover species. When the fire suppressed woody growth is part of the landscape, the bare ground is often also significant. In this case, an average of 43% coverage of bare ground was measured in the plots. This bare ground was mostly covered by a thick layer of pine duff.

Species Present but not in the Analysis. None.

Invasive Exotics. *Panicum repens*. This species could become a serious pest in the groundcover if not confined to only those plots where the soil has been disturbed.

Canopy Vegetation. A pine plantation with relatively young trees was measured by a 10mx10m plot. The slash pine that are large enough to be considered canopy was calculated to be 728 slash pine per acre. The trees are densely planted and a coverage in basal area of 161 square feet per acre was measured.

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 in order to restore the groundcover. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan will reduce the woody species dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. *Panicum repens* will have to be controlled by herbicide.

Quantitative Transect - BP1T6 CF is located in the eastern portion of phase 1.

Plant Community. This landscape is included in the polygon labeled as cypress flats swamp. Although no pond cypress were recorded in the quadrats, pond cypress were present in the greater landscape identified as cypress flats.

Species Richness. Twenty six species were found in quadrats. Of these, twenty one were herbaceous species, two vines and three woody plants species.

Groundcover Vegetation. There are twenty one groundcover species recorded in this transect, ten of these are graminoid species in the genera of *Panicum, Andropogon, Cladium, Rhynchospora, Juncus, Dicanthelium, Amphicarpum, Carex, and Juncus*. The woody species occupy 2% of the coverage. Herbaceous groundcover species occupy 95% of the cover.

Species Present but not in the Analysis. *Oxypolis filiformis.*

Invasive Exotics. Chinese tallow tree (*Sapium sebiferum*) was found. This species will be reduced to coppice sprouts by prescribed burning. Any Chinese tallow remaining after burning will be eliminated through herbicide application.

Canopy Vegetation. Three canopy species were present. The following are listed by decreasing importance value; slash pine, pond cypress and Chinese tallow tree. Based on the field measurements using the point quarter method the following densities of trees were calculated:

- planted slash pine, 60 trees per acre
- pond cypress, 7 trees per acre
- Chinese tallow, 1 tree per acre

The density and coverage of slash pine will be reduced as part of the restoration of this community.

Management. This site is a fire suppressed cypress flats. The slash pine canopy needs to be eliminated or reduced significantly. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan will reduce the woody shrub species, favoring reproduction of pond cypress and herbaceous groundcover species, especially graminoid species. Chinese tallow will be reduced to coppice sprouts by frequent fires. Any Chinese tallow remaining after burning will be eliminated through herbicide application. Once the burning regime begins and is continued into perpetuity, Chinese tallow will have difficulty becoming established and reproducing in this plant community.

2. Phase 2

Quantitative Transect - BP2T1 PM is located in the northern portion of phase 2, east of Breakfast Point Road.

Plant Community. This landscape is included in the polygon labeled as palustrine marsh. This site is too wet to grow pines and consequently is relatively undisturbed.

Species Richness. Twelve species were found in quadrats. Of these species, nine were herbaceous species, one vine and two woody plant species. The woody plants were growing in the ecotone around this marsh and were not a part of the central area of the marsh. Floristically this site has an interesting mix of saltmarsh species such as *Ipomoea sagittata*, coastal marsh species such as *Eleocharis cellulose,* and depression marsh species such as *Rhynchospora tracyi*.

Groundcover Vegetation. There are nine groundcover species recorded in this transect, four of these are graminoid species in the genera of *Eleocharis, Cladium, Rhynchospora,* and *Dicanthelium*. The woody species occupy 1% of the coverage and these are species are confined to the landward edge of the marsh. The groundcover coverage is 99%; however, it is not diverse. This diversity should not be taken as a negative reflection of land management or appropriateness of species. The low diversity of this particular marsh is typical as is the lack of woody dominance. *Myrica heterophylla* was the most important woody groundcover species found only along the ecotone. *Eleocharis cellulose,* which is aptly named coastal spike sedge, was the most important herbaceous species in of the area of marsh sampled and was inundated by 6-18 inches of clear water. Sawgrass grew in monotypic stands in a deeper zone. If fire burns across this site, new additions to the species richness might be found. As would be expected in a marsh, water covered 59% of the plots, on average.

Species Present but not in the Analysis. *Panicum virgatum, Pluchea odorata, Saccharum giganteum, Hypericum cistifolium, Solidago sempervirens, Photina pyrifolia*.

Invasive Exotics. None.

Canopy Vegetation. None.

Management. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan will favor appropriate fire resistant herbaceous groundcover species, especially graminoid species. Invasive exotics are not expected to be a problem in this type of plant community.

Quantitative Transect - BP2T2 HPF is located in the central portion of phase 2, west of Blue Cooler Road.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. This community is best described as a palustrine marsh or a wet savanna previously planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The soils are very poorly drained and many of the slash pine have died. Standing water was present in the furrows from the silvicultural bedding.

Species Richness. Fifty species were found in quadrats, of these there were forty one herbaceous species, one vine and eight woody plants.

Groundcover Vegetation. There are fifty groundcover species recorded in this transect, sixteen of these are graminoid species in the genera of *Dicanthelium, Panicum, Juncus, Rhynchospora, Andropogon, Aristida,* and *Fuirena*. The woody species occupy 45% of the coverage and these species are typically confined to the top of the bedded rows. The groundcover is diverse with a coverage of 54%. *Pinus elliottii* is densely planted and is shading much of the groundcover. *Ilex glabra* is the most important woody shrub species and is essentially confined to the top of the bedding rows. Many of the groundcover species found in these plots are common to disturbed areas. When this site is burned, the graminoid genera, listed above, is expected to become the most important groundcover species.

Species Present but not in the Analysis. *Scirpus cyperinus*.

Invasive Exotics. None.

Canopy Vegetation. A pine plantation with relatively young trees planted in a marsh was measured. Slash Pine, large enough to be considered canopy, were calculated at 687 slash pine per acre. The trees were densely planted and a coverage in basal area of 107 square feet per acre was measured. A 10mx10m plot to sample the canopy was used because this site was planted in pine.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in a historically a treeless hydric savanna as per FLUCCS or a wet prairie as per FNAI. The slash pine canopy is very dense and will need to be significantly reduced if the groundcover is to be restored and the open aspect of the landscape recreated. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan, will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. This landscape is one preferred by the Chinese tallow tree and constant vigilance for this species and other invasive exotics will be important.

Quantitative Transect - BP2T3 MPF is located in the southwestern portion of phase 2.

Plant Community. This landscape is included in a polygon labeled as mesic pine flatwoods. However, based on the groundcover species this landscape is best described as palustrine marsh/wet savanna. In addition, this site has been planted in slash pine and currently exists as fire suppressed hydric pine plantation as per FLUCCS. It is densely planted in slash pine and contains a dominance of wetland groundcover species such as *Juncus roemarianus*.

Species Richness. Nineteen species were found in quadrats, of these thirteen were herbaceous species and six woody plant species.

Groundcover Vegetation. There are thirty groundcover species recorded in this transect, seven of these are graminoid species in the genera of Juncus, *Aristida, Rhynchospora, Dicanthelium, Andropogon,* and *Amphicarpum*. The woody species occupy 47% of the coverage and the herbaceous species occupy 53% of the coverage. *Photinia pyrifolia* was the most important woody groundcover species. One of the most obvious reasons for inappropriate shrub coverage is fire suppression. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. An average of 67% coverage of bare ground in our plots was measured. This area was mostly covered by a thick layer of pine duff.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees. We calculated 809 slash pine per acre that were large enough to be considered canopy. The trees are densely planted and a coverage in basal area of 161 square feet per acre was measured. A 10mx10m plot was used to sample the canopy because this site was planted in pine.

Management. This site is a fire suppressed dense 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. To restore the groundcover the elimination or 90% reduction in canopy dominance would be required. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, would reduce the woody shrub dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. The management strategy should be to restore this site to a palustrine marsh or wet prairie. Time will tell which of these two communities the groundcover will favor.

Quantitative Transect - BP2T4 CF is located in the southwestern portion of phase 2.

Plant Community. This landscape is included in the polygon labeled as cypress flats swamp. At the present this community is best described as a palustrine marsh. Although no pond cypress were recorded in the quadrats there are pond cypress in the greater landscape polygon identified as cypress flats. This landscape can be thought of as a mosaic of cypress flats and palustrine marsh. This area of the mosaic happens to be palustine marsh.

Species Richness. Twenty one species were found in quadrats, of these twenty were herbaceous species and one was a woody plants species.

Groundcover Vegetation. There are twenty groundcover species recorded in this transect, ten of these are graminoid species in the genera of Spartina, *Panicum, Rhynchospora, Juncus, Amphicarpum, Dicanthelium,* and *Ctenium*. The woody species occupy less than 1% of the coverage and are confined to elevation rises in the landscape. Herbacous species occupy 99% of the groundcover.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. The point quarter method was used to measure a pine plantation planted in a cypress flat. The pines are relatively young trees and are planted in very poorly drained soils of a cypress flat. This is probably the reason for their patchiness in the landscape. Thus, the slash pine trees are densely planted and clustered rather than evenly distributed across the landscape. In contrast, the pond cypress are larger individuals that are more widely spaced out. We calculated forty six slash pine per acre and thirty pond cypress per acre, that are large enough to be considered canopy.

Management. This site is a fire suppressed cypress flats mosaic with palustrine marsh. Slash pine should be eliminated or reduced by 98% in this landscape. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody species, favoringr reproduction of pond cypress and herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP2T5 HPF is located in the southwestern 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 palustrine marsh or a wet savanna that has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The soils are very poorly drained and many of the

slash pine have died and there was standing water in the furrows from the silvicultural bedding.

Species Richness. Forty two species were found in quadrats, of these thirty five were herbaceous species and seven were woody plants.

Groundcover Vegetation. There are thirty five groundcover species recorded in this transect, eighteen of these are graminoid species in the genera of *Juncus, Panicum, Juncus, Cladium, Rhynchospora, Andropogon, Amphicarpum, Dicanthelium, and Carex*. The woody species occupy 11% of the coverage and these are species that are typically confined to the top of the bedded rows. The groundcover is diverse and the relatively thin canopy of woody species is directly responsible for the herbaceous species coverage of 88%. *Pinus elliottii* were densely planted in the plots but most have died due to the very poorly drained soils. *Myrica cerifera* is the most important woody shrub species. *Ludwidgia pilosa, Spartina patens,* and *Juncus roemarianus* were very abundant and were the most important herbaceous species. Many of the species found in these plots are common to coastal marsh and saltmarsh. Currently this site is dominated by graminoid genera listed above and this coverage is expected to increase with prescribed burning.

Species Present but not in the analysis. *Muhlenbergia capillaris*.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a marsh. We calculated 566 slash pine per acre, that were large enough to be considered canopy. The trees were densely planted and in one area where they were not drowned by very poorly drained soils a coverage in basal area of 86 square feet per acre was measured. A 10mx10m plot was used to sample the canopy because this site was planted in pine. The pines were not evenly distributed across the landscape and in many areas there is no canopy.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in an area that was historically a treeless palustrine marsh or wet savanna. *Nyssa ursina* and *Ilex myrtifolia* are typical examples of wet prairie species found along this transect. The slash pine canopy should be eliminated and the open aspect of the landscape recreated. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody dominance. This activity should favor appropriate fire dependent herbaceous groundcover species, especially graminoid species. Because this site contains primarily very poorly drained soils, invasive exotics are not anticipated to be a problem in this area.

Quantitative Transect - BP2T6 MPF is located in the northeastern portion of phase 2, just east of breakfast point road.

Plant Community. This landscape is included in the polygon labeled as mesic pine flatwoods. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS. The area is densely planted in slash pine and contains a dominance of mesic flatwoods species such as *Serenoa repens* and *Ilex glabra*.

Species Richness. Twenty five species were found in quadrats, of these fifteen were herbaceous species and seven were woody plant species.

Groundcover Vegetation. There are fifteen groundcover species recorded in this transect, seven of these are graminoid species in the genera of *Dicanthelium, Panicum, Rhynchospora, Rhynchospora,* and *Andropogon*. The woody species occupy 51% of the coverage and the dominance of the woody shrubs is directly responsible for the low coverage of graminoids. Overall, herbaceous species occupy 45% of the coverage. *Ilex glabra* was the most important woody groundcover species. One of the most obvious reasons for shrub dominance is fire suppression. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case an average of 59% coverage of bare ground was measured in our plots and this area was mostly covered by a thick layer of pine duff.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a mesic pine flatwoods. We calculated 445 slash pine per acre, that were large enough to be considered canopy. The trees were densely planted and recently some stand thinning was performed. A coverage in basal area of 129 square feet per acre was measured. A 10mx10m plot was used to sample the canopy because this site was planted in pine.

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

Quantitative Transect - BP2T7 CF is located in the northeastern portion of phase 2.

Plant Community. This landscape is included in the polygon labeled as a cypress flats swamp. Based on the presence of *Nyssa ursina*, *Stillingia aquatica,* and *Taxodium ascendens* this community is best described as a fire suppressed cypress flat as per FLUCCS.

Species Richness. Forty three species were found in quadrats, of these thirty three were herbaceous species, two were vines and eight were woody plant species.

Groundcover Vegetation. There are thirty three groundcover species recorded in this transect, twenty two of these are graminoid species in the genera of Spartina, Rhynchospora, Panicum, Juncus, Coelorachis, Saccharum, *Dicanthelium,* and *Aristida*. The woody species occupy 11% of the coverage. Herbacous groundcover species occupy 86% of the coverage. *Taxodium ascendens* are expected to become more important when this area is restored. Most of the woody shrub species are only able to exist in this landscape because they are growing at the top of the bedded silvicultural rows.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. A 10mx10m plot was used to measure a pine plantation planted in a cypress flat. The pines are relatively young trees and planted in very poorly drained soils of a cypress flat. The slash pine trees are densely planted. In contrast, the pond cypress are larger individuals that are more widely spaced. We calculated 522 slash pine per acre and 80 pond cypress per acre, that are large enough to be considered canopy.

Management. This site is a fire suppressed cypress forest that has been managed for slash pine (*Pinus elliottii*). The slash pine canopy has mostly died due to very poorly drained soils, pond cypress (*Taxodium ascendens*) is present and will eventually form a canopy of widely spaced, flat topped trees. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody shrubs to stump sprouts on the tops of bedded rows, favoring pond cypress reproduction and herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP2T8 TF is located in the mid portion of the eastern boundary of phase 2, east of Johnson Bayou road and north of Johnson Bayou.

Plant Community. This landscape is located just outside of a polygon labeled as hydric pine flatwoods and we called it a tidal flat since most of the transect is waterward of the pine flatwoods. This transect intentionally includes two communities. The greater of the two is the tidal flat (as per FLUCCS) also called saltmarsh/saltern (as per FNAI), the other a fire suppressed, coastal hydric pine flatwoods. This transect was added to the existing proposed transect locations to

monitor the ecological and beneficial change in vegetation when fire is added to the ecotone between tidal flat and coastal pine flatwoods.

Species Richness. Twenty four species were found in quadrats, of these twenty were herbaceous species, one was a vine and four were woody plants.

Groundcover Vegetation. There are twenty groundcover species recorded in this transect, twelve of these are graminoid species in the genera of *Juncus, Sporobolus, Spartina, Aristida, Cladium, Fimbristylis* and *Schizachyrium.* The woody species occupy 23% of the coverage and these are species that are typically found in near coastal conditions such as *Ilex vomitoria* and *Myrica cerifera*. The groundcover is typical for a coastal hydric pine flatwoods and covers 77% of the ground. *Pinus elliottii* is naturally occurring at this site and has not been planted or managed, possibly because the soils are barely above the mean high water line.

Species Present but not in the Analysis. *Muhlenbergia capillaris, Distichlis spicata, Paspalum vaginatum, Borrichia frutescens, Iva frutescens, Limonium carolinianum, Triglochin striata*.

Invasive Exotics. None.

Canopy Vegetation. Slash pine is the only member of the canopy. The naturally existing trees were calculated to include 283 trees per acre with a basal area of 139 square feet per acre. These are probably appropriate density and coverage measures for this forest since it has never been planted or mechanically manipulated. Prescribed burning is the only recommended remedial activity for this community.

Management. This site is a fire suppressed native stand of slash pine (*Pinus elliottii*) . The shrubs density represents conditions created by fire suppression. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP2T9 MPF is located in the end of breakfast point road, in the northernmost portion of phase 2.

Plant Community. This landscape is located in a polygon labeled as mesic pine flatwoods. This transect intentionally includes two communities. One is the saltmarsh/saltern and the other a fire suppressed, planted mesic pine plantation as per FLUCCS. This transect was added to the existing proposed transect locations to monitor the ecological and beneficial change in vegetation when the canopy is reduced and fire is added to the ecotone between saltmarsh and coastal, mesic pine flatwoods.

Species Richness. Sixteen species were found in quadrats, of these ten were herbaceous species, one was a vine and five were woody plants.

Groundcover Vegetation. There are ten groundcover species recorded in this transect, seven of these are graminoid species in the genera of *Juncus, Sporobolus, Spartina, Cladium, Panicum,* and *Setaria.* The graminoid species are confined to the open landscape of the saltmarsh end of the transect. Any graminoids that historically grew in the ecotone or pine flatwoods have been shaded and extirpated by planted slash pine, fire suppressed woody shrubs, and especially dense *Serenoa repens*. Woody species occupy 19% of the groundcover and these are species that are typically found in fire suppressed pine flatwooods such as *Ilex vomitoria, Lyonia lucida, Ilex glabra,* and *Myrica cerifera*. The herbaceous groundcover covers 79% of the ground. *Pinus elliottii* is densely planted and the site is fire suppressed and managed for pine.

Species Present but not in the Analysis. *Muhlenbergia capillaris, Distichlis spicata, Iva frutescens, Fimbristylis spadicea*.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a mesic pine flatwoods. We calculated 526 slash pine per acre, that are large enough to be considered canopy. The trees were densely planted and a coverage in basal area of 96 square feet per acre was measured. A 10mx10m plot was used to sample the canopy because this site was planted in pine. The pines were evenly distributed across the landscape and in many areas there were large areas of bare ground covered in thick pine duff.

Management. This site is a fire suppressed planted pine plantation of slash pine (*Pinus elliottii*). The shrub and high saw palmetto density represents conditions created by fire suppression. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, may reduce the saw palmetto dominance and favor appropriate fire dependent herbaceous groundcover species - especially graminoid species.

3. Phase 3

Quantitative Transect - BP3T1 HPF is located in the southwestern 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 palustrine marsh or a wet savanna that has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The soils are very poorly drained to poorly drained and many of the slash pine have died. Much of site contained standing water in the furrows from the silvicultural bedding. Standing water was recorded.

Species Richness. Sixty one species were found in quadrats, of these fifty were herbaceous species, four were vines and seven were woody plants.

Groundcover Vegetation. There are fifty groundcover species recorded in this transect, twenty six of these are graminoid species in the genera of *Cladium, Spartina, Dicanthelium, Andropogon, Juncus, Rhynchospora, Schoenus, Eleocharis, Aristida, Muhlenbergia, Schizachyrium, Scleria,* and *Fuirena*. The woody species, which are typically confined to the top of the bedded rows, occupy 40% of the coverage. The groundcover is diverse and the relatively thin canopy of woody species is directly responsible for the herbaceous species coverage of 58%. *Pinus elliottii* was densely planted in the plots but most has died due to the very poorly drained soils. *Myrica cerifera* is the most important woody shrub species. And *Nyssa ursina*, typically found in wet savanna, is also a conspicuous part of this landscape. The groundcover species recorded in this transect were the most diverse of the sample sites. Currently this site is dominated by an equal coverage of graminoid and forb genera. The dynamics of this plant community are expected to change with prescribed burning. The graminoid dominance is expected to increase and the woody shrub coverage to decrease or at least reduced to coppice sprouts.

Species Present but not in the Analysis. None.

Invasive Exotics. *Sapium sebiferum*. Any Chinese tallow remaining after burning will be eliminated through herbicide application.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a marsh. 121 slash pine per acre that were large enough to be considered canopy were calculated. The trees were densely planted and a coverage in basal area of 5 square feet per acre was measured in one area where the trees were not drowned by very poorly drained soils. A 10mx10m plot was used to sample the canopy because this site was planted in pine. The pines were not evenly distributed across the landscape and in many areas there was no canopy.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in an area that was historically a treeless or nearly treeless palustrine marsh or wet savanna. The slash pine canopy should be eliminated and the open aspect of the landscape recreated. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. Most of this site is too wet for the establishment of invasive exotics. However *Sapium sebiferum* has become established at the top of the planting beds and in areas where the pigs have been rutting. This species in particular will always infest this area of the BPMB unless the mature, reproducing trees located just to the south of the bank are eliminated. Any Chinese tallow remaining after prescribed burning will be

eliminated through herbicide application. Elimination of feral hogs will also reduce establishment of all invasive exotic plant species.

Quantitative Transect - BP3T2 MPF is located in the northeastern portion of phase 3, just east of Tiki Trail Road.

Plant Community. This landscape is included in the polygon labeled as mesic pine flatwoods. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS. It is densely planted in slash pine and contains a dominance of mesic flatwoods species such as *Serenoa repens* and *Ilex glabra*. Two plots at the end of the transect are ecotonal with a palustrine marsh. *Cladium* and *Nyssa* were recorded in this ecotone.

Species Richness. Thirty species were found in quadrats, of these sixteen were herbaceous species, two were vines and twelve were woody plant species.

Groundcover Vegetation. There are sixteen groundcover species recorded in this transect, seven of these are graminoid species in the genera of *Andropogon, Rhynchospora, Dicanthelium, Anthaenantia,* and *Cladium*. The woody species occupy 70% of the coverage and the dominance of the woody shrubs is directly responsible for the low herbaceous groundcover coverage. Overall, herbaceous species occupy 25% of the coverage. *Ilex glabra* was the most important woody shrub. One of the most obvious reasons for shrub and sapling facultative wet species (such as *Magnolia virginiana*) dominance is fire suppression. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 74% coverage of bare ground in our plots and this was mostly covered by a thick layer of pine duff.

Species Present but not in the Analysis. *Aristida stricta*.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a mesic pine flatwoods. 809 slash pine per acre in a densely planted pine plantation that were large enough to be considered canopy were calculated. A coverage in basal area of 172 square feet per acre was measured. A 10mx10m plot was used to sample the canopy because this site was planted in pine. To achieve the desired 60-112 trees per acre and basal area of 40-70 square feet per acre, an estimated 749 trees will need to be removed per acre.

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

species, especially graminoid species. The management strategy should be to restore this site to a mesic pine flatwoods.

Quantitative Transect - BP3T3 CF is located in the central portion of phase 3, just east of Tiki Trail road.

Plant Community. This landscape is included in the polygon labeled as cypress flats swamp. Based on the presence of *Nyssa ursina*, *Ilex myrtifolia*, *Stillingia aquatica* and *Taxodium ascendens* this community is best described as a fire suppressed cypress flat as per FLUCCS.

Species Richness. Forty one species were found in quadrats, of these twenty seven were herbaceous species, five were vine species and nine were woody plant species.

Groundcover Vegetation. There are twenty seven groundcover species recorded in this transect, fourteen of these are graminoid species in the genera of *Cladium, Rhynchospora, Spartina, Juncus, Aristida, Andropogon, Saccharum, Dicanthelium,* and *Amphicarpum*. The woody species occupy 22% of the coverage. Herbacous groundcover species occupy 75% of the coverage. *Taxodium ascendens* are expected to become more important when this area is restored and other woody species to be present but less dominant. Most of the woody shrub species are only able to exist in this landscape because they are growing at the top of the bedded silvicultural rows.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. The canopy is made up of mostly pond cypress and there is evidence of regeneration of pond cypress, saplings were seen. At the moment there is no planted pine in this community. The pond cypress trees cover is a basal area of 11 square feet/acre and we estimate a pond cypress density of approximately 100 trees/acre. Prescribed burning is the only remedial activity needed to restore this landscape.

Management. This site is a fire suppressed cypress forest that has been managed for slash pine (*Pinus elliottii*). The slash pine canopy has mostly died due to very poorly drained soils, pond cypress (*Taxodium ascendens*) is present and will eventually form a canopy of widely spaced, flat topped trees. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody shrubs to stump sprouts on the tops of bedded rows, favoring pond cypress reproduction and herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP3T4 HPF is located in the northeastern 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 palustrine marsh or a wet savanna that has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The soils are very poorly drained to poorly drained and many of the slash pine have died. Much of site contained standing water in the furrows from the silvicultural bedding. We recorded 45% coverage of standing water, on average.

Species Richness. Thirty six species were found in quadrats, of these twenty seven were herbaceous species, three were vines and six were woody plants.

Groundcover Vegetation. There are twenty seven herbaceous groundcover species recorded in this transect, twelve of these are graminoid species in the genera of *Spartina, , Andropogon, Juncus, Rhynchospora, Aristida, Dicanthelium, and Panicum.* The woody species occupy 19% of the coverage and these are facultative wet species that are typically confined to the top of the bedded rows. The groundcover is diverse and the relatively thin canopy of woody species is directly responsible for the herbaceous species coverage of 74%. *Pinus elliottii* was densely planted in the plots but most has died due to the very poorly drained soils. *Photinia pyrifolia* is the most important woody shrub species. And *Nyssa ursina*, typically found in wet savanna, is also a conspicuous part of this landscape. The dynamics of this plant community are expected to change with prescribed burning. We expect the graminoid dominance to increase and the woody shrub coverage to decrease.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a marsh. We calculated 404 slash pine per acre, that are large enough to be considered canopy. The trees were densely planted and a coverage in basal area of 43 square feet per acre was measured in one area where the trees were not drowned by very poorly drained soils. A 10mx10m plot was used to sample the canopy because this site was planted in pine. The pines are not evenly distributed across the landscape and in many areas there is no canopy.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in an area that was historically a treeless or nearly treeless palustrine marsh or wet savanna. The slash pine canopy should be eliminated and the open aspect of the landscape recreated. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. Most of this site is too wet for the establishment of invasive exotics. However *Sapium sebiferum* is the prime

candidate for becoming established at the top of the planting beds and in areas where the pigs have been rutting. This species in particular will always infest this area of the BPMB unless the mature, reproducing trees located just to the south of the bank are eliminated. Elimination of feral hogs will also reduce establishment of all invasive exotic plant species.

Quantitative Transect - BP3T5 PM is located in the central portion of phase 3, east of Johnson Bayou road.

Plant Community. This landscape is included in the polygon labeled as palustrine marsh based on the floristic assemblage it is best referred to as a palustrine or freshwater marsh. This site is too wet to grow pines and consequently is relatively undisturbed.

Species Richness. Six species were found in quadrats, of these all were herbaceous species. The woody plants are growing in the ecotone around this marsh and are not a part of the central area of the marsh. Floristically this site is has the lowest species richness recorded at the BPMB.

Groundcover Vegetation. There are six groundcover species recorded in this transect, three of these are graminoid species in the genera of *Spartina, Juncus,* and *Rhynchospora*. No woody species were found in the marsh. The groundcover coverage is 100% however it is not diverse but this diversity should not be taken as a negative reflection of land management or appropriateness of species. The low diversity of this particular marsh could very well be typical as is the lack of woody dominance.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. None.

Management. The only restoration activity needed for this site would be a frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will favor appropriate fire resistant herbaceous groundcover species, especially graminoid species. Invasive exotics are not expected to be a problem in this type of plant community because of the ability of the graminoids to carry fire across this landscape thereby eliminating, at least, any woody invasive exotics.

4. Phase 4

Quantitative Transect - BP4T1 HPF is located in the northeastern portion of phase 4.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. This community is best described as a palustrine marsh or a wet savanna that has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The soils are poorly drained and many of the slash pines have died.

Species Richness. Thirty two species were found in the quadrats, of these twenty seven were herbaceous species, 1 was a vine and 4 were woody plants.

Groundcover Vegetation. There are twenty seven groundcover species recorded in this transect, thirteen of these are graminoid species in the genera of *Panicum, Andropogon, Juncus, Dicanthelium, Rhynchospora,* and *Aristida.* The woody species occupy 44% of the coverage and these are facultative and facultative wet species that are typically confined to the top of the bedded rows. The groundcover is diverse and the relatively thin canopy of woody species is directly responsible for the herbaceous species coverage of 74%. *Pinus elliottii* was densely planted in the plots but most have died due to the very poorly drained soils. *Ilex glabra* and *Myrica heterophylla* were the most important woody shrub species. And *Verbesina chapmanii*, *Ilex cassine* var. *myrtifolia* and *Nyssa ursina*, typically found in wet savanna, were also a conspicuous part of this landscape. The dynamics of this plant community are expected to change with prescribed burning. We expect the graminoid dominance to increase and the woody shrub coverage to decrease.

Species Present but not in the Analysis. *Verbesina chapmanii, Nyssa ursina, Saccharum giganteus, Ilex cassine var. myrtifolia, Cyrilla racemiflora.*

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a marsh. We calculated 242 slash pine per acre that were large enough to be considered canopy. The trees were densely planted and a coverage in basal area of 43 square feet per acre was measured in one area where the trees were not drowned by very poorly drained soils. A 10mx10m plot was used to sample the canopy because this site was planted in pine. It should be noted that the pines are not evenly distributed across the landscape and in many areas there is no canopy.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*) in an area that was historically a treeless or nearly treeless palustrine marsh or wet savanna. The slash pine canopy should be eliminated

and the open aspect of the landscape recreated. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. This site has a high potential for the establishment of *Sapium sebiferum.* In addition, there are large areas of soil disturbance from pig rutting. Elimination of feral hogs will also reduce establishment of all invasive exotic plant species.

Quantitative Transect - BP4T2 HPF is located in the northeastern portion of phase 3, just south of Tiki Trail Road.

Plant Community. This landscape is included in the polygon labeled as hydric pine flatwoods. However, this community is best described as a fire suppressed mesic pine plantation as per FLUCCS. It is densely planted in slash pine and contains a dominance of mesic flatwoods species such as *Serenoa repens* and *Ilex glabra*.

Species Richness. Twenty nine species were found in quadrats, of these fourteen were herbaceous species, two were vines and thirteen were woody plant species.

Groundcover Vegetation. There are fourteen herbaceous groundcover species recorded in this transect, seven of these are graminoid species in the genera of Aristida, *Dicanthelium, Ctenium, Panicum, Andropogon* and *Rhynchospora*. The woody species occupy 73% of the coverage and the dominance of the woody shrubs is directly responsible for the low herbaceous groundcover coverage. Overall, herbaceous species occupy 26% of the groundcover coverage. Lyonia lucida and *Ilex glabra* were the most important woody shrubs. When fire suppressed woody growth is part of the landscape, bare ground is often also significant. In this case we measured an average of 59% coverage of bare ground in our plots and this was mostly covered by a thick layer of pine duff.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a mesic pine flatwoods. We calculated 809 slash pine per acre in a densely planted pine plantation that were large enough to be considered canopy. We measured a coverage in basal area of 161 square feet per acre. A 10mx10m plot was used to sample the canopy because this site was planted in pine.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is dense and will need to be reduced if the groundcover is to be restored. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the

woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. The management strategy should be to restore this site to a mesic pine flatwoods.

Quantitative Transect - BP4T3 CF is located in the central portion of phase 4, just south of Tiki Trail road.

Plant Community. This landscape is included in the polygon labeled as cypress flats. Based on the presence of large *Taxodium ascendens* this community is best described as a fire suppressed cypress flat as per FLUCCS.

Species Richness. Forty six species were found in the quadrats, of these twenty seven were herbaceous species, two were vine species and seventeen were woody plant species. This is the greatest woody plant diversity of all our sample transects at the BPMB.

Groundcover Vegetation. There are twenty seven herbaceous groundcover species recorded in this transect, fourteen of these are graminoid species in the genera of *Dichanthelium, Saccharum, Rhynchospora, Carex, Aristida, Juncus* and *Andropogon.*The woody species occupy 48% of the coverage. Herbacous groundcover species occupy 51% of the coverage. *Taxodium ascendens* is not expected to become more important when this area is restored. Other woody species are expected to be present but less dominant.

Species Present but not in the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. The canopy is made up of mostly pond cypress and there is evidence of regeneration of pond cypress, saplings were seen. This is not a planted pine forest and we used the point quarter method to sample the canopy. Pond cypress density was estimated at 19 trees/acre and the cover was estimated with a basal area of approximately 4 square feet/acre. Prescribed burning is the only remedial activity needed to restore this landscape.

Management. This site is a fire suppressed cypress forest. The forest has been logged in the past but has not been managed for slash pine (*Pinus elliottii*). Pond cypress (*Taxodium ascendens*) is dominant in the canopy. A frequent burning regime (1-3 years on average) administered by as part of a prescribed burn plan would reduce the woody shrubs to stump sprouts and favor pond cypress reproduction and herbaceous groundcover species, especially graminoid species.

Quantitative Transect - BP4T4 MPF is located in the central portion of phase 4, just north of Tiki Trail Road.

Plant Community. This landscape is included in the polygon labeled as mesic pine flatwoods. This community is best described as a fire suppressed mesic pine plantation as per FLUCCS. The site is densely planted in slash pine and contains a dominance of mesic flatwoods species such as *Serenoa repens* and *Ilex glabra*. This transect lines up and is contiguous to BP4T5. This was done to sample the ecotone across the flatwoods into the adjacent treeless hydric savanna (as per FLUCCS) or wet prairie.

Species Richness. Twenty three species were found in quadrats, of these13 were herbaceous species, 2 were vines and 8 were woody plant species.

Groundcover Vegetation. There are 13 groundcover species recorded in this transect, 7 of these are graminoid species in the genera of *Sporobolus, Aristida*, *Andropogon, Dicanthelium, Fuirena* and *Amphicarpum.* The woody species occupy 57% of the coverage. Overall, herbaceous species occupy 42% of the coverage. *Ilex glabra* and Quercus minima were the most important woody shrubs and are typical dominants in fire suppressed pine flatwoods. 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 the Analysis. None.

Invasive Exotics. None.

Canopy Vegetation. This is a pine plantation with relatively young trees planted in a mesic pine flatwoods. A 10mx10m plot was used sample the canopy because this site was planted in pine. Slash pine density was calculated to be approximately 607 slash pine/acre in a densely planted pine plantation. In addition, the coverage in basal area was 139 square feet/acre.

Management. This site is a fire suppressed silvicultural planting of slash pine (*Pinus elliottii*). The slash pine canopy is dense and will need to be reduced in order to restore the groundcover. A frequent burning regime of 1-3 years on average, administered by as part of a prescribed burn plan, will reduce the woody dominance, favoring appropriate fire dependent herbaceous groundcover species, especially graminoid species. The management strategy should focus on restoring this site to a mesic pine flatwoods.

Quantitative Transect - BP4T5 THS is located in the northeastern portion of phase 4.

Plant Community. This landscape is outside of the labeled polygons. Based on the floristic associates this community is best described as a treeless hydric

savanna as per FLUCCS or a wet savanna/wet prairie. The soils are poorly drained and many of the slash pine have died or are show signs of stunted growth.

Species Richness. Twenty four species were found in the quadrats, of these seventeen were herbaceous species, twelve were vine species and five were woody plants.

Groundcover Vegetation. There are seventeen groundcover species recorded in this transect, eleven of these are graminoid species in the genera of *Cladium, Panicum, Spartina, Aristida, Juncus, Amphicarpum, Rhynchospora, Dicanthelium, and Saccharum.* The woody species occupy 4% of the coverage and these are facultative and facultative wet species that are growing on hummocks in the wet savanna. The groundcover is diverse and the very sparse canopy of woody species is directly responsible for the herbaceous species coverage of 95%. Several wet savanna species such as *Verbesina chapmanii* and *Hymenocallis henryea* were also a conspicuous part of this landscape. The dynamics of this plant community are expected to change with prescribed burning. We expect the graminoid and the rare endemic *Hymenocallis henryea* dominance to increase and the woody shrub coverage to decrease.

Species Present but not in the Analysis. *Hymenocallis henryea.*

Invasive Exotics. None.

Canopy Vegetation. There are very few trees in the marsh. A 10mx10m sample plot was used to measure the planted slash pine (*Pinus elliottii*). The canopy consisted of approximately 40 slash pine/acre. The trees were not dense nor did they appear especially healthy, especially since they were planted in very poorly drained soils. It should be noted that the pines are not evenly distributed across the landscape and along most of the transect there is no canopy.

Management. A frequent burning regime of 1-3 years on average, administered as part of a prescribed burn plan, will promote appropriate groundcover species dominance and diversity. The large population of the rare, endemic *Hymenocallis henryea* in this savanna is especially notable and will benefit from prescribed, warm season fires.

A. Qualitative Monitoring

The qualitative data was collected in November-December 2004 during the annual monitoring event and the data results are presented in Appendix F. Photographs depicting the general landscape of each reference point are included in Appendix G. The Naming convention used for the quantitative transects was previously described in, B. Qualitative Data Collection. Locations of all transects are shown on Figure 2.

1. Phase 1

Reference point - BPQT4 P1 is located in the southeastern portion of Phase 1.

Vegetation. This landscape is described as a cypress flat as most of the canopy consisted of widely scattered pond cypress (*Taxodium ascendens*) and slash pine. Shrubs included pop ash (*Fraxinus caroliniana)*. The groundcover was dominated by graminoids with up to 75% coverage.

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. Soils with a dark surface, sands were coated with organics and the presence of muck at the surface. Hydrologic indicators included the algae seen in the water column, tadpoles, cricket frogs, water stained vegetation and tussocks and hummocks.

Wildlife. This transect is located southeast of a slash pine forest of relatively large and mature slash pine. This forest contains a bald eagle (*Haliaeetus leucocephalus*) nest and the eagles were seen flying over this area. Large flocks - hundreds, of tree swallows were also observed feeding on the wax myrtle (*Myrica cerifera*) fruit.

General Observations and Management. Hurricane Ivan salt-burned much of the foliage but we expect the plants to recover after being flushed of salt by winter rains. Appropriate regeneration by pond cypress was observed. Prescribed fire during the growing season will help the restoration of this landscape and promote regeneration of pond cypress and graminoid species.

Reference point - BPQT4 P2 is located in the southern section of phase 1, southwest of BPQT4 P1.

Vegetation. The reference site is described as a mixed forested wetland because it contains a mosaic of both slash pine and pond cypress depressions. The cypress flats merges into this landscape and it is floristically related to it. This particular landscape is difficult to pigeonhole into a recognized plant community. It is possible that this landscape represents a hydric pine flatwood or

fire suppressed wet savanna. Wiregrass (*Aristida stricta*) tussocks were found along the edge of this forest and the only obvious characteristic savanna element missing were pitcherplants (*Sarracenia* spp.). The shrubs, vines, and groundcover plants within this forest were hummocked and tussocked. The shrubs consisted of the same species of evergreen shrubs that could be found in a fire suppressed wet savanna, such as *Lyonia lucida*, *Smilax laurifolia, Ilex glabra* and sphagnum moss. We will continue to call it a mixed forested wetland until we know what might happen to this landscape with the addition of prescribed fire. The forest is naturally regenerating although it appears that the canopy is unnaturally dense and the pond cypress previously grew in a more open landscape as evidenced by their spreading canopies.

Hydrology. This site is saturated to the surface, in depressions there is tannic water present amongst clumps of sphagnum moss. The plants were tussocked, the trees were buttressed, cricket frogs were seen, aquatic plants such as mermaid weed (Proserpinaca spp.) were seen in the water. Soils had a dark surface with organics coating the sand grains. The hydrology appears appropriate to support the observed vegetation.

Wildlife. This transect is located south of a slash pine forest consisting of relatively large and mature slash pine. This forest contains a bald eagle (*Haliaeetus leucocephalus*) nest and the eagles were seen flying over this area. Florida cricket frogs were also observed (*Acris gryllus dorsalis*).

General Observations and Management. A prescribed warm season burn is recommended to reduce the number of slash pines and allow the pond cypress to regenerate. The herbaceous groundcover species have been largely eliminated (only 6% of the groundcover is graminoid) in this forest due to the fire suppressed, evergreen, shrub growth, which covers at least 50% of the ground. A fire frequency of once every 1-3 years on average, will greatly improve the habitat and promote increased groundcover diversity.

Reference point - BPQT4 P3 is located near the center of phase one.

Vegetation. This site is labeled as a mixed forested wetland. This site is planted in slash pine. Nomenclature as per FLUCCS would be a hydric pine plantation. The groundcover and other species, now relictual, suggest that historically this was a wet savanna or cypress flat. Pond cypress, bear tupelo (*Nyssa sylvatica* var. *ursina*), variable leaf wax-myrtle (*Myrica heterophylla)*, myrtle leaf holly (*Ilex myrtifolia)* and pop ash (*Fraxinus caroliniana)* were observed as stump sprouts or seedlings. The fire suppression has allowed the woody shrubs such as *Myrica*, *Hypericum* and *Lyonia* to occupy at least 25% of the ground. This competition by woody species is beginning to replace the weedy graminoids and forbs such as *Andropogon* spp. and *Rubus argutus*.

Hydrology. The site was saturated and the groundcover shows signs of becoming tussocked. Soils are hydric, with a dark surface. Soils appear to be

very disturbed by silviculture and rutting by feral hogs. *Hypericum* had evidence of adventitious rooting. Algal mats were found on the soil surface and leaves and pine needles showed stains from tannins in the water.

Wildlife. Several species of birds were seen such as American robins, catbirds (*Dumetella carolinensis*), wintering warblers, and eastern towhee *(Piplio erythrophthalmus)*. Some of the birds were observed eating the wax myrtle fruit and the smilax berries. A dead mockingbird was found. Footprints, scat, and rutting were observed from feral hogs.

General Observations and Management. The site is a young planted pine plantation. As previously mentioned, this is a FLUCCS hydric pine plantation. We recommend removal of 99% of all slash pines. This will allow pond cypress, tupelo, and pop ash to regenerate. The increased supply of light to the ground would also increase groundcover diversity. Supplemental planting of appropriate groundcover species, such as wiregrass, might also be needed.

Reference point - BPQT10 P1 is located in the northernmost portion of phase one.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a palustrine marsh or wet savanna. The site has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The groundcover vegetation is dominated by marsh species such as *Juncus roemarianus* and *Panicum virgatum,* and other wetland species, which occupy about 50% of the ground. Shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Myrica heterophylla* are growing only at the apex of the beds where the soils are hydric/poorly drained. This is one of the unique marsh/savanna areas at this site where halophytic species such as *Juncus roemarianus* is growing with wet savanna species such as *Nyssa sylvatica* var. *ursina*.

Hydrology. This site has a water table at the surface with standing water. Indicators include dark soils, the smell of sulfur, tannic stains on the inundated vegetation, and tussocked herbaceous plants. Algal species and mosquito fish (*Gambusia* sp.) were observed in the water. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Mosquito fish and crayfish were observed in the water. Swarms of biting mosquitos and sand gnats were common. Footprints of white tailed deer were also common.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed

warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT10 P2 is located in the northernmost portion of phase one, just south of BPQT10 P1.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of shrubs to dominate the ground up to a height of 1.6-3m. There are no graminoids. The land that is not covered by woody shrubs such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida*, *L. ferrigenea*), and gallberry (*Ilex glabra*) is covered by saw palmetto (*Serenoa repens*), bracken fern (*Pteridium aquilinum*) and American beautyberry (*Callicarpa americana*) seedlings.

Hydrology. The site is an upland with non-hydric soils and a very thick duff layer.

Wildlife. Many of the fire suppressed planted pinelands were rather depauperate of wildlife. Bluejay (*Cyanocitta cristata*), gray catbird (*Dumetella carolinensis*) and eastern towhee (*Piplio erythrophthalmus*) were heard in the thick brush.

General Observations and Management. Remove 50% of all planted slash pine to allow for regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed germination of appropriate groundcover herbaceous plants and the natural regeneration expected in a mesic pine flatwoods is not occurring. Prescribed warm season fire will remove the thick duff, expose the soil to seeds, and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT10 P3 is located near the center of phase one and south of BPQT10 P2.

Vegetation. This landscape is described as a cypress flat. The site has been planted in slash pine. Many of the pines have been killed by the poorly drained soils. This was evidenced by the open areas with standing water and the young pond cypress sprouting throughout the landscape. Except for the fire suppressed shrubs and groundcover this landscape contains many appropriate species found in cypress flats. The graminoid coverage is in the 6-25% range due to competition from woody shrubs such as *Ilex vomitoria*, *Myrica cerifera* and *Ilex glabra*.

Hydrology. The hydrology is probably typical for a cypress flat. Hydric soils had a dark surface and the smell of sulfur. The tannic water had stained the vegetation. Algae, insect larvae were seen in the water. Grasses were tussocked. *Hypericum chapmanii* had adventitious roots.

Wildlife. Cedar waxwings (*Bombycilla cedrorum*) were seen in small flocks overhead. Gray catbirds, eastern towhee, American robin (*Turdus migratorius*) were seen feeding on the *Nyssa sylvatica* var. *ursina* fruit.

General Observations and Management. The planted slash pine canopy should be reduced to 10 trees per acre. Prescribed fire during the growing season will help the restoration of this landscape and promote regeneration and coverage of pond cypress and appropriate graminoid and groundcover species.

Reference point - BPQT10 P4 is located near the center of phase one.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of shrubs to dominate the ground up to a height of .6-1.5m. Graminoid coverage is estimated at 1% and the groundcover has been suppressed by the fire suppressed woody shrubs. Woody shrubs such as fetterbush (*Lyonia lucida*, *L. ferrigenea*) and gallberry (*Ilex glabra*), and groundcover species such as saw palmetto (*Serenoa repens*), dwarf blueberry (*Vaccinium myrsinites*) and flatwoods laurel (*Kalmia hirsuta*) create a nearly 100% cover of vegetation beneath the planted slash pine.

Hydrology. This site is an upland with upland soils. A thick pine duff covers the soils.

Wildlife. Cedar waxwings, gray catbirds, eastern towhee, American robin were either seen or heard in the shrubs or heard flying overhead. Sandhill cranes were heard near this site when we were monitoring the quantitative transects two weeks before.

General Observations and Management. Remove 50% of all planted slash pine, allow regeneration of sun dependent groundcover species. The thick duff layer is inhibiting natural regeneration of small seeded, groundcover species. Prescribed warm season fire will remove the thick duff, expose the soil to seeds and kill the inappropriate woody shrubs to the ground level and with time continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT13 P1 is located in the southwestern most section of phase one.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of shrubs to dominate the ground up to a height of 1.5-3m. Graminoid coverage is estimated at 1% and the groundcover has been suppressed by the fire suppressed woody shrubs and is estimated at less than 5% coverage. Woody shrubs such as *Ilex vomitoria*, *Lyonia lucida* and *Ilex glabra*, and groundcover species such as *Serenoa repens*, *Vaccinium myrsinites*, *Aristida stricta* and *Kalmia hirsuta* create an estimated 75% cover of vegetation beneath the planted slash pine. The other 25% is open ground, consisting mostly of thick pine duff.

Hydrology. This site is an upland with upland soils. A thick pine duff covers the soils.

Wildlife. Evidence of feral pig (*Sus scrofa*), raccoon (*Procyon lotor*) and bobcat (*Lynx rufus*) were seen.

General Observations and Management. Remove 70% of all planted slash pine, allow regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seedling germination of appropriate groundcover species. Prescribed warm season fire will remove the thick duff, expose the soil to seeds and kill the inappropriate woody shrubs to the ground level and with time continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT13 P2 is located in the southwestern most section of phase one, east of large northwest/southeast ditch.

Vegetation. The vegetation is described as a mixed forested wetland. This is a catchall designation for a wooded swamp. The dominant trees are *Pinus elliottii*, sweetbay magnolia (*Magnolia virginiana*), swamp gum (Nyssa sylvatica var. biflora) and *Taxodium ascendens.* Subcanopy species include *Ilex myrtifolia* and red maple (*Acer rubrum*). Wood shrubs are estimated to cover 51-75% of the ground. Graminoids were estimated at less than 5% coverage and the overall groundcover was estimated at less than 25% coverage.

Hydrology. The hydrology is supporting a wetland even though there is a ditch located. The water table was above the soil surface. Soils were hydric with a dark surface. The water was tannic. Water stained vegetation, aquatic fauna, morphological plant adaptations to water such as buttressed trunks were seen, plants were hummocked.

Wildlife. Feral pig (*Sus scrofa*) footprints were seen.

General Observations and Management. A prescribed fire should be allowed to burn across the landscape and this will select for appropriate fire tolerant vegetation. It is doubtful that a fire will burn into the interior of this swamp. The ecotone should be encouraged to burn allowing the pond cypress to regenerate and appropriate groundcover species to increase in abundance.

2. Phase 2

Reference point - BPQT5 P1 is located in the southeastern corner of phase 2.

Vegetation. This landscape is described as a cypress flat as most of the canopy consisted of widely scattered slash pine (*Pinus elliottii*) and pond cypress (*Taxodium ascendens*). Shrubs include waxmyrtle (*Myrica cerifera) and* chokeberry *(Photinia pyrifolia)*. The groundcover was dominated by graminoids with an estimated 76-100% coverage. Site is a mosaic of pond cypress flats and palustrine marsh.

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. Soils with a dark surface, sands were coated with organics and the presence of muck at the surface. Hydologic indicators included the algae seen in the water column, tadpoles, cricket frogs, water stained vegetation, buttressed trunks and tussocks and hummocks.

Wildlife: Numerous mosquitos and biting gnats were present.

General Observations and Management. Appropriate regeneration by native groundcover graminoid species was observed. Prescribed fire during the growing season will help the restoration of this landscape and promote regeneration of pond cypress and graminoid species. Since this site is a mosaic of pond cypress and palustrine marsh, cypress should seed into areas where they are physiologically/ecologically adapted. The canopy coverage by slash pine is minimal and appropriate.

Reference point - BPQT5 P2 is located in the southeastern corner of phase 2.

Vegetation. This site is described as a hydric pine flatwoods, however the overall aspect and species composition suggests it has much in common with a mesic pine flatwoods. It has been planted in slash pine and would be called a mesic pine plantation as per FLUCCS. Slash pine have been planted in dense rows. There is very little herbaceous groundcover, estimated at 1-5% coverage with estimated 1% coverage by graminoids, *Andropogon* spp. Fire suppression has allowed shrubs to dominate the groundcover, with estimateds 51-75% coverage of *Ilex glabra*, *Ilex coriacea* and *Lyonia ferrigenea*.

Hydrology. Site is a mesic pine flatwoods that merges with hydric pine flatwoods**.** Soils at the reference point are non-hydric. Soils are covered by a thick pine duff layer.

Wildlife. Fire suppressed pine flatwoods contain low animal diversity at the BPMB. Other than a few birds flying overhead there is not much to report regarding animals at this reference point. Biting mosquitos were common.

General Observations and Management. Pine duff is thick and inhibits seed germination of appropriate groundcover species. Prescribed warm season fire will remove the thick duff layer, inappropriate woody shrubs and select for herbaceous graminoids. Canopy needs to be reduced to allow light to reach ground. 70% canopy reduction is recommended for this forest.

Reference point - BPQT6 P1 is located in the northeastern section of phase 2.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy has been thinned relatively recently but is still too dense. The fire suppression has allowed a very dense layer of shrubs to dominate the groundcover, estimated to occupy 76-100% of the groundcover and growing up to a height of 1.6-3m. There are are graminoids, mostly weedy native species such as Andropogon and these occupy about 15% of the groundcover. What isn't covered by woody shrubs such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida*) and gallberry (*Ilex glabra*) is covered by saw palmetto (*Serenoa repens*).

Hydrology. Soils are non hydric; therefore, this is not a wetland. Hydrology is typical for a mesic pine flatwoods.

Wildlife. Wintering warbler species *(Dendroica, Parula, Geothlypis* species) American robins (*Turdus migratorius)*, gray catbirds (*Dumetella carolinensis)* and tree swallows (*Tachycineta bicolor*) were observed.

General Observations and Management. Continue canopy reduction of planted slash pine, allow regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed germination and the natural regeneration expected in a mesic pine flatwoods is not occurring. Prescribed warm season fire will remove the thick duff, expose the soil to seeds, and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT6 P2 is located in the northeastern section of phase 2.

Vegetation. The landscape is described as a palustrine marsh and has no canopy and a dominance of graminoids. Sawgrass (*Cladium jamaicense*), cordgrass (*Spartina patens*), and black needle rush (*Juncus roemarianus*) dominate the marsh.

Hydrology. Appropriate wetland hydrology for a freshwater marsh was observed. Clear water was present but it will become tannic over time. Algal species, water stained vegetation, and morphological plant adaptations to wetland conditions were observed.

Wildlife. Mosquito fish (*Gambusia*) were observed in the water.

General Observations and Management. Because the marsh has no canopy, prescribed warm season fire should be allowed to burn across landscape.

Reference point - BPQT7 P1 is located in the northeastern section of phase 2.

Vegetation. This landscape is described as a cypress flat because most of the canopy consisted of widely scattered pond cypress (*Taxodium ascendens*) and a dense planted canopy of slash pines. According to the FLUCCS code, this would be called a hydric pine plantation. Fire suppression and silviculture have created an unnatural landscape. Shrubs and tree saplings were estimated to cover 26-50% of the groundcover. These included bear nyssa (*Nyssa sylvatica* var. *ursina),* sweetbay magnolia *(Magnolia virginiana),* chokeberry *(Phontina pyrifolia*) and myrtle leaf holly *(Ilex myrtifolia)*. There were graminoids in the groundcover, estimated at 26-50% coverage. There were also some plants like the wiregrass (Aristida stricta) that were in decline from the competition exerted by the fire suppressed woody plants. Graminoids dominated up to 75% of the groundcover.

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. Soils with a dark surface, sands were coated with organics and the presence of muck at the surface. Hydologic indicators included the algae seen in the water column, cricket frogs, water stained vegetation, buttressed trunks and tussocks and hummocks.

Wildlife. Scat and footprints of river otter (*Lutra canadensis*), ferel hog (*Sus*), raccoon (*Procyon lotor*) were found. Observed Florida Cricket Frog (*Acris gryllus dorsalis*), Gray Catbird (*Dumetella carolinensis*), Carolina Chickadee (*Parus carolinensis*).

General Observations and Management. Prescribed fire during the growing season will help the restoration of this landscape and promote regeneration of pond cypress and graminoid species.

Reference point - BPQT7 P2 is located in the northeastern section of phase 2.

Vegetation. This site is described as a hydric pine flatwoods. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The groundcover has been reduced to an estimated 1% coverage by competition from fire suppressed woody vegetation such as waxmyrtle (*Myrica cerifera*), sweet pepperbush (*Clethra alnifolia*), and chokeberry (*Photina pyrifolia*) which were estimated to cover about 76-100% of the ground.

Hydrology. This site has a water table at the surface. Hydrologic indicators were inconclusive at this reference point. There were possibly some hummocked shrubs. Hydrology appears to be sufficient to support the facultative wet vegetation.

Wildlife. A wintering gray Catbird (*Dumetella carolinensis*) was heard which is probably feeding on the holly and chokeberry fruit.

General Observations and Management. Remove 90% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT8 P1 is located in the northwest portion of phase 2.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy is too dense and is estimated to occupy 76-100% of the canopy. The fire suppression has allowed a very dense layer of shrubs to dominate the groundcover. The shrubs, which were estimated to occupy 76-100% of the groundcover are growing up to a height of 1.6-3m. There are no graminoids. The land that is not covered by woody shrubs such as fetterbush (*Lyonia lucida*) and gallberry (*Ilex glabra*) is covered by a thick layer of pine duff.

Hydrology. Soils are non hydric; therefore, this is not a wetland. The hydrology is typical of a mesic pine flatwoods.

Wildlife. The following birds were seen: Eastern towhee (*Pipilo erythrophthalmus*), Red-bellied woodpecker (*Melanerpes carolinus*); robin (*Turdus migratorius*), gray catbird (*Dumetella carolinensis*). In addition the mosquitos were biting and crickets were heard “chirping”.

General Observations and Management. Continue canopy reduction of planted slash pine to allow regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed germination and the natural regeneration expected in a mesic pine flatwoods is not occurring. Prescribed warm season

fire will remove the thick duff, expose the soil to seeds, and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT8 P2 is located in the northwestern portion of phase 2.

Vegetation. The landscape is described as a palustrine marsh. There is no canopy and an estimated 76-100% coverage of graminoids such as cordgrass (*Spartina patens*) and switch grass (*Panicum virgatum*) dominate the marsh. Ludwidgia pilosa was also present as co-dominant in groundcover.

Hydrology. Appropriate wetland hydrology for a freshwater marsh was observed. Clear water was present but it will become tannic over time. Hydric soils smelling of sulfur, algal species, water stained vegetation, and morphological plant adaptations to wetland conditions were observed.

Wildlife. Eastern towhee (*Pipilo erythrophthalmus*) were heard in the adjacent pine forest. Florida Cricket Frogs (*Acris gryllus dorsalis*) were seen in the marsh.

General Observations and Management. Because there is no canopy, prescribed warm season fire should be allowed to burn across the landscape. The fire will inhibit any fire suppressed shrubs that might invade the landscape.

Reference point - BPQT9 P1 is located in the northwest section of phase 2.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests that it has much in common with a palustrine marsh or wet savanna. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The groundcover vegetation is dominated by marsh species such as *Spartina patens, Ludwidgia pilosa, Juncus spp., Rhynchospora spp.,* and other wetland species, which occupy about 50% of the groundcover. Shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Ilex glabra* are growing only on hummocks where the soils are probably hydric/poorly drained.

Hydrology. This site has a water table at the surface with standing water. Soils are very poorly drained, have a dark surface, and the smell of sulfur. The tannic water has stained the inundated vegetation. Algal species and mosquito fish (*Gambusia* sp.) were seen in the water. Herbaceous plants were tussocked. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Crickets were heard and feral hog (*Sus scrofa*) rutting was seen in the soils, especially near the margins of wetlands.

General Observations and Management. Allow regeneration of sun dependent groundcover species. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT9 P2 is located in the northwest section of phase 2.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a palustrine marsh or wet savanna. This is evidenced by the presence of *Nyssa sylvatica* var. *ursina*. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The groundcover vegetation is dominated by marsh species such as plume grass (*Erianthus sp.),* camphor weed (Pluchea foetida), beak sedge (*Rhynchospora spp.),* and other wetland species, which occupy about 26-50% of the ground. Shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Photinia pyrifolia* are growing only at the apex of the beds where the soils are hydric/poorly drained.

Hydrology. This site has a water table at the surface with standing water. Soils had a dark surface and the inundated vegetation had been stained by tannic water. Algal species, mosquito fish (*Gambusia* sp.), and tadpoles were seen in the water. Herbaceous plants were tussocked. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Birds and frogs were heard calling and numerous mosquitos were biting.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT10 P5 is located in the northwest section of phase 2.

Vegetation. This landscape is described as a cypress flat as most of the canopy consisted of widely scattered pond cypress (*Taxodium ascendens*) and slash pine. Shrubs included *Myrica cerifera* and *Photinia pyrifolia*. The groundcover was dominated by up to 75% coverage of graminoids.

Hydrology. The area was inundated by tannic water at the time of the field inspection. The hydrology appears to be normal for this kind of plant community. Soils had a dark surface, sands were coated with organics, and there was the presence of muck at the surface. Hydrologic indicators included the algae seen in the water column, tadpoles, cricket frogs, water stained vegetation, morphological plant adaptations to flooding, tussocks, and hummocks.

Wildlife. American robins (Turdus migratorius) were seen feeding on the fruit of *Nyssa sylvatica* var. *ursina* and *Myrica cerifera*. Wintering warblers were seen in the shrubs and pond cypress trees.

General Observations and Management. Remove the larger slash pine. Prescribed fire during the growing season will help restore this landscape and promote regeneration of pond cypress and graminoid species.

Reference point - BPQT11 P1 is located in the northwest section of phase 2.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy is very dense and relatively young. The fire suppression has allowed a very dense layer of shrubs to dominate the ground up to a height of 0.6-1.5m. There are no graminoids. The land that is not covered by woody shrubs such as yaupon (*Ilex vomitoria*), fetterbush (*Lyonia lucida*), and gallberry (*Ilex glabra*) is covered by saw palmetto (*Serenoa repens*) and bracken fern (*Pteridium aquilinum*) or is bare ground with a thick layer of pine duff.

Hydrology. The site is an upland with non hydric soils and a very thick duff layer.

Wildlife. Several birds were observed: Northern cardinal (*Cardinalis cardinalis*); eastern towhee (*Pipilo erythrophthalmus*), common ground-dove (*Columbina passerina*), and mourning dove (*Zenaida macroura*). Numerous biting mosquitos and sand gnats were also observed.

General Observations and Management. Remove 50% of all planted slash pine, allow regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed reproduction and the natural regeneration expected in a mesic pine flatwoods is not occurring. Prescribed warm season fire will remove the thick duff, expose the soil to seeds and kill the inappropriate woody shrubs to the ground level and with time continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT11 P2 is located in the northwest section of phase 2, near a salt marsh.

Vegetation. This landscape is described as a cypress flat; however, based on the species dominance in the groundcover, this community is better described as a pulustrine marsh or wet savanna that has been planted in slash pine. Typically we found *Nyssa sylvatica* var. *ursina* in the wet savannas and at this site. Accordingly it would be called a hydric pine plantation as per FLUCCS. No pond cypress trees (*Taxodium* ascendens) were found. Fire suppression has allowed

woody shrubs such as *Myrica cerifera*, *Photinia pyrifolia* and *Ilex vomitoria* to cover up to 50% of the ground. The herbaceous groundcover was dominated by graminoids with up to 50% coverage.

Hydrology. The area was saturated at the time of the field inspection. Hydrology appears to be sufficient for supporting a marsh. Soils had a dark surface and sands were coated with organics. Hydrologic indicators included the smell of sulfur, water stained vegetation, tussocks, and hummocks.

Wildlife. Northern cardinal (*Cardinalis cardinalis*) and American robin, (*Turdus migratorius*) were seen.

General Observations and Management. The planted slash pine canopy needs to be removed. Prescribed fire during the growing season will help restore the landscape and promote regeneration of wet savanna and palustrine marsh graminoid species.

Reference point - BPQT12 P1 is located in the northwest section of phase 2, northeast of Botheration Bayou.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and as per FLUCCS this would be called a mesic pine plantation. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of shrubs to dominate the ground up to a height of 1.6-3m. There are a few graminoids such as *Andropogon virginicus*. The land that is not covered by woody shrubs such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida*, *L. ferrigenea*), and gallberry (*Ilex glabra*) is either covered by saw palmetto (*Serenoa repens*) or is bare ground covered by a thick layer of pine duff.

Hydrology. The site is an upland with non hydric soils and a very thick duff layer.

Wildlife. Footprints of raccoon (*Procyon lotor*) and feral pig (*Sus scrofa*) were found. Northern cardinal (*Cardinalis cardinalis*) and American robin (*Turdus migratorius*) were seen in the shrubs and trees.

General Observations and Management. Remove 50% of all planted slash pine, allow regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed reproduction and the natural regeneration expected in a mesic pine flatwoods is not occurring. Prescribed warm season fire will remove the thick duff, expose the soil to seeds and kill the inappropriate woody shrubs to the ground level and with time continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT12 P2 is located in the northwest section of phase 2, northeast of botheration bayou.

Vegetation. This site is described as a hydric pine flatwoods, however the overall aspect and species composition suggests it has much in common with a palustrine marsh. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The freshwater marsh species which also dominated the herbaceous groundcover vegetation are the following: *Juncus roemarianus, Cladium jamaicense, Rhynchospora inundata* and *Spartina patens,* and other wetland species. These graminoids occupy more than 50% of the ground. Shrubs such as *Myrica cerifera*, *Ilex glabra* and *Photina pyrifolia* are growing only at the apex of the beds where the soils are hydric/poorly drained.

Hydrology. This site has a water table at the surface with standing water. Soils have a dark surface, smell of sulfur, the tannic water has stained the inundated vegetation. Algal species were seen in the water as well as mosquito fish (Gambusia sp.). Herbaceous plants were tussocked and woody plants are hummocked. Hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Northern cardinal (*Cardinalis cardinalis*) and ruby-crowned kinglet (Regulus calendula) were seen in the shrubs. A great blue heron (*Ardea herodias*) flew from the marsh.

General Observations and Management. Remove 99% of all planted slash pine, allow regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

3. Phase 3

Reference point - BPQT1 P1 is located in the southeastern most section of phase 3 near shell point.

Vegetation. This site is described as a hydric pine flatwoods. These are low forests associated with small barrier islands, high saltmarsh marsh and saltmarsh. The groundcover vegetation is dominated by high marsh species such as Muhlenbergia capillaries, *Cladium jamaicense* and *Panicum virgatum,* which occupy about 50% of the ground. Shrubs such as *Myrica cerifera*, *Ilex vomitoria* are growing on hummocks and are unnaturally large and woody due to fire suppression.

Hydrology. This site has a water table at the surface with standing water. Soils have a sulfur smell. Hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Catbirds (*Dumetella carolinensis*) and robins (*Turdus migratorius*) were common near the yaupon holly.

General Observations and Management. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids. Not much is needed to restore this site, only the return of frequent fire is required and a lookout for invasive exotics such as Chinese tallow tree.

Reference point - BPQT1 P2 is located in the southeastern most section of phase 3 near shell point.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and would be called a mesic pine plantation per FLUCCS. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of shrubs, such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida)*, and gallberry (*Ilex glabra*) to dominate the ground. This layer is estimated to be about 51-75% coverage and up to a height of .6-1.5m. There are very few graminoids and the total herbaceous groundcover is about 25% and is primarily made up of *Serenoa repens*.

Hydrology. Site is an upland with non-hydric soils and a very thick duff layer.

Wildlife. Scat from white tailed deer (*Odocoileus virginianus*). Gray catbird (*Dumetella carolinensis*) and robin (*Turdus migratorius*) were seen eating the *Photinia* fruit.

General Observations and Management. Remove 50% of all planted slash pine to allow for regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed reproduction and the natural regeneration, expected in a mesic pine flatwoods, is not occurring. Prescribed warm season fire will remove the thick duff, expose the soil to seeds and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT2 P1 is located in the southeastern most section of phase 3.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a palustrine marsh or wet savanna. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The groundcover

vegetation is dominated by marsh species such as *Spartina patens* and *Panicum virgatum* and other wetland species, which occupy about 25% of the ground. Woody shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Ilex glabra* are growing only at the top of the beds where the soils are hydric/poorly drained.

Hydrology. This site has a water table at the surface with standing water. Indicators include dark soils, the smell of sulfur, tannic stains on the inundated vegetation, and tussocked herbaceous plants. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Numberous mosquitos were biting. Wintering warblers were seen feeding in the shrubs and a gray catbird (*Dumetella carolinensis*) was heard. Raccoon (*Procyon lotor*) footprints were also observed.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT2 P2 is located in the southeastern most portion of phase 3.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and would be called a mesic pine plantation as per FLUCCS. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of woody shrubs, such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida)*, and gallberry (*Ilex glabra*) to dominate the groundcover. This layer is estimated to be about 51-75% coverage and up to a height of .6-1.5m. There are no graminoids and the total herbaceous groundcover, which primarily consists of Saw palmetto (*Serenoa repens),* is about 25%.

Hydrology. The site is an upland with non-hydric soils and a very thick duff layer.

Wildlife. Wintering warbler species were seen and there were numerous biting mosquitos.

General Observations and Management. Remove 50% of all planted slash pine to allow for regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed reproduction and the natural regeneration, expected in a mesic pine flatwoods, is not occurring. Prescribed warm season fire will remove the thick duff, expose the soil to seeds, and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT2 P3 is located in the southeastern most portion of phase 3.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a palustrine marsh or wet savanna. The site has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The groundcover vegetation is dominated by marsh species such as *Spartina patens* and *Juncus roemarianus,* and other wetland species, which occupy about 25% of the ground. Woody shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Myrica heterophylla* are growing only at the top of the beds where the soils are hydric/poorly drained.

Hydrology. This site has a water table below the surface. Herbaceous plants were tussocked. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Numberous mosquitos were biting. Robins (*Turdus migratorius*) were seen in the shrubs. Buckeye butterfly were also seen.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT3 P1 is located in the southeastern portion of phase 3.

Vegetation. This landscape is described as a mesic pine flatwoods. The canopy is planted in slash pine and would be called a mesic pine plantation as per FLUCCS. The slash pine canopy is dense and relatively young. The fire suppression has allowed a very dense layer of shrubs to dominate the ground up to a height of 0.6-.15m. There are no graminoids. What land is not covered by woody shrubs such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida*, *L. ferrigenea*), and gallberry (*Ilex glabra*) is either covered by saw palmetto (*Serenoa repens*) or is bare ground covered by a thick layer of pine duff.

Hydrology. The site is an upland with non-hydric soils and a very thick duff layer.

Wildlife. White-tailed deer (*Odocoileus virginianus*) scat. Biting mosquitos and sand gnats were present. A wolf spider was seen in the pine duff and a Gulf coast box turtle (*Terrapene carolina major*) was also seen.

General Observations and Management. Remove 50% of all planted slash pine to allow for regeneration of sun dependent groundcover species. The thick duff layer is inhibiting seed reproduction and the natural regeneration, expected in a mesic pine flatwoods, is not occurring. Prescribed warm season fire will

remove the thick duff, expose the soil to seeds, and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT3 P2 is located in the southeastern portion of phase 3.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a palustrine marsh or wet savanna. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The groundcover vegetation is dominated by graminoid species such as *Spartina patens, Juncus roemarianus, Cladium jamaicense,* and *Panicum virgatum,* and other marsh species. These occupy about 51% of the groundcover. Woody shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Ilex glabra* are growing only at the top of the beds where the soils are hydric/poorly drained. These shrubs are also common but are an artifact of fire suppression.

Hydrology. This site has a water table at the surface with standing water. Indicators include dark soils, the smell of sulfur, tannic stains on the inundated vegetation, and tussocked herbaceous plants. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Mosquitofish (*Gambusia holbrooki*), crayfish, and mosquito larva were seen in the water. White-tailed deer (*Odocoileus virginianus*) scat and footprints were observed. Marsh rabbit (*Sylvilagus palustris*), raccoon (*Procyon lotor*), and feral hog scat were also observed. Sand gnats and mosquitos were biting.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT3 P3 is located in the southeastern portion of phase 3.

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests the site has much in common with a palustrine marsh or wet savanna. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The herbaceous groundcover vegetation is dominated by graminoid species such as *Spartina patens, Juncus roemarianus,* and other marsh species. These occupy about 50% of the groundcover. Woody shrubs such as *Myrica cerifera*, *Ilex vomitoria,* and *Ilex glabra* are growing only at the top of the beds where the soils

are hydric/poorly drained. These shrubs occupy about 75% of the groundcover. Although the woody shrubs are common they are an artifact of fire suppression.

Hydrology. This site has a water table at the surface with standing water. Indicators include dark soils, the smell of sulfur, tannic stains on the inundated vegetation, and tussocked herbaceous plants. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Numerous mosquitos were biting. Wintering warblers were seen feeding in the shrubs and feral hog rutting was observed in the wetland. Mosquito larva and mosquito fish (Gambusia) were observed in the water. American robin (Turdus migratorius) flocks were seen overhead.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species and destroy all Chinese tallow trees (*Sapium sebiferum*) by using appropriate herbicide. Any Chinese tallow remaining after prescribed burning will be eliminated through herbicide application. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT3 P4 is located in the southeastern portion of phase 3.

Vegetation. This landscape is described as a mesic pine flatwoods. This site has been heavily logged in the past and the landscape is relatively open with good diversity in the groundcover. The fire suppression has allowed a very dense layer of shrubs, such as yaupon (*Ilex vomitoria*), Fetterbush (*Lyonia lucida*, and gallberry (*Ilex glabra*) to dominate the ground. This layer is estimated to be about 51-75% coverage and up to a height of 1.6-3m. There are very few graminoids and the total herbaceous groundcover is about 25%. The herbaceous groundcover is very diverse as compared with the groundcover of most of the mesic pine flatwoods in the BPMB.

Hydrology. The site is an upland with non-hydric soils and a very thick duff layer.

Wildlife. Many birds were heard or seen including the following: Eastern towhee (*Pipilo erythrophthalmus*), white throated sparrow (*Zonotrichia albicollis*), hermit thrush (*Catharus guttatus*), American robin (*Turdus migratorius*) and gray catbird (*Dumetella carolinensis*)

General Observations and Management. Prescribe burn this site to allow for regeneration of sun dependent groundcover species. There is a duff layer that is inhibiting seed germination. The prevention of seed germination combined with the fire suppression is favoring growth of woody shrubs. Prescribed warm season fire will remove the thick duff, expose the soil to seeds, and kill the

inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

4. Phase 4

Reference point - BPQT13 P3 is located in the southwestern most section of phase 4, west of large northwest/southeast ditch.

Vegetation. This landscape is described as a hydric pine flatwoods. The canopy is densely planted/bedded with slash pine. The fire suppression has allowed the shrubs, primarily *Ilex glabra*, *Myrica heterophylla*, and Chapman's hypericum (*Hypericum chapmanii)* to cover 26-50% of the ground. Beneath the shrubs is a layer of 26-50% graminoids, primarily wiregrass (*Aristida stricta)*, broomsedge (*Andropogon virginicus*), and Curtiss dropseed (*Sporobolus curtissii*). Other typical wet savanna species at this site include hatpins (*Eriocaulon decangulare*) and possibly pitcherplants (*Sarracenia* spp.).

Hydrology. There are no hydrologic indicators that would not be considered relictual. Neither standing water nor water saturation to the surface was seen. The silviculture increased evapotranspiration from the densely planted pines, and the adjacent ditch to the east are believed to have altered the hydrology.

Wildlife. Wintering warbler species, American robin (*Turdus migratorius*), and cedar waxwing (*Bombycilla cedrorum*) were observed.

General Observations and Management. This site is a former wet savanna that has been planted in slash pine. The bedding, fire suppression, and hydrologic alteration from the trees and adjacent ditch have changed the hydropattern of this site. The hydrology will be improved if at least 99% of the slash pine are removed and the ditch drainage is addressed by appropriate remedial activity. The plant community can be rejuvenated by prescribed warm season burning on a regular frequency (once every 1-3 years on average). This will reduce the coverage of woody shrubs and increase the groundcover species diversity and coverage by graminoid species such as wiregrass.

Reference point - BPQT14 P1 is located in the southwestern portion of phase 4.

Vegetation. This landscape is described as a mesic pine flatwoods. It has been planted in slash pine and would be called a mesic pine plantation as per FLUCCS. The fire suppression has allowed a very dense layer of woody shrubs, such as fetterbush (*Lyonia lucida)* and gallberry (*Ilex glabra*) to dominate the ground. This shrub layer is estimated to be about 51-75% coverage and up to a height of 0.6-1.5m. There are some weedy graminoids such as *Andropogon virginicus* and a few patches of wiregrass (*Aristida stricta*). The total herbaceous groundcover makes up about 25% of the land.

Hydrology. The site is an upland with non-hydric soils and a very thick duff layer.

Wildlife. Many birds, including tufted titmouse (*Parus bicolor*), wintering warbler species, American robin, (*Turdus migratorius*), cedar waxwing (*Bombycilla cedrorum*) and northern cardinal (*Cardinalis cardinalis*), were heard or seen.

General Observations and Management. Prescribe burn this site to allow for regeneration of sun dependent groundcover species. There is a duff layer that is inhibiting seed germination. The prevention of seed germination, combined with the fire suppression, is favoring growth of woody shrubs. Prescribed warm season fire will remove the thick duff, expose the soil to seeds, and kill the inappropriate woody shrubs to the ground level. With time, continued prescribed warm season burning will select for herbaceous graminoids.

Reference point - BPQT14 P2 is located in the southwestern portion of phase 4

Vegetation. This landscape is described as a cypress flat. No pond cypress *Taxodium ascendens*) were found; however, this landscape is probably best described as a fire suppressed wet savanna since it contains large *Nyssa sylvatica* var. *ursine,* which are characteristically found in wet savannas. Shrubs included *Myrica cerifera, Clethra alnifolia,* and *Photinia pyrifolia*. The groundcover has no graminoids.

Hydrology. The water table was below the soil surface. No final conclusions were made about the hydrology. Although the hydrology appears to be normal for this kind of plant community, more evidence of hydrology at this site was expected.

Wildlife. Crickets were heard in the shrubs and foot prints of raccoon (*Procyon lotor*) were seen. Northern cardinal (*Cardinalis cardinalis*) and tufted titmouse (*Parus bicolor*) were seen in the trees.

General Observations and Management. Prescribed fire during the growing season will help the restoration of this landscape and promote regeneration of appropriate species. This landscape has been fire suppressed and possibly hydrologically altered over a period of time. With frequent fire graminoid species are expected to dominate the groundcover.

Reference point - BPQT14 P3 is located in the southwestern portion of phase 4

Vegetation. This site is described as a hydric pine flatwoods. It has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The slash pine are young and very dense. The herbaceous portion of the groundcover vegetation is dominated by weedy species such as *Andropogon*

virginicus and *Rhynchospora spp.*, which occupy about 25% of the ground. Woody shrubs such as *Cyrilla racemiflora*, *Lyonia lucida,* and *Ilex glabra* occupy up to 75% of the groundcover.

Hydrology. The water table is below the soil surface and this site is best referred to as mesic.

Wildlife. Numberous mosquitos were biting. In addition, Florida cricket frog (*Acris gryllus dorsalis*) and eastern towhee (*Pipilo erythrophthalmus*) were heard.

General Observations and Management. Remove 80% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT15 P1 is located in the western portion of phase 4

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a wet savanna. The site has been planted in slash pine and would be called a hydric pine plantation as per FLUCCS. The high mortality of the bedded pines suggests that the soils are very poorly drained. The herbaceous groundcover vegetation is dominated by wet savanna species such as *Aristida stricta* and *Juncus spp.,* and other wetland species, which occupy about 60% of the ground. Woody shrubs such as *Myrica heterophylla*, *Ilex myrtifolia,* and *Ilex glabra* are growing primarily at the top of the beds where the soils are hydric/poorly drained.

Hydrology. This site has a water table at the surface with standing water Indicators include dark soils, tannic stains on the inundated vegetation, and tussocked herbaceous plants. The hydrology appears to be sufficient to support the marsh vegetation.

Wildlife. Numerous mosquitos were biting and Florida cricket frogs (*Acris gryllus dorsalis*) were heard. Raccoon (*Procyon lotor*) footprints and scat were found and northern cardinal (*Cardinalis cardinalis*) and wintering warblers were seen.

General Observations and Management. Remove 99% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT15 P2 is located in the western portion of phase 4

Vegetation. This site is described as a hydric pine flatwoods; however, the overall aspect and species composition suggests it has much in common with a mesic pine flatwoods. The site has been planted in slash pine and would be called a mesic pine plantation as per FLUCCS. Slash pine have been planted in dense rows. There is very little graminoid groundcover, estimated at 1-5% coverage with estimated 1% coverage by *Andropogon* spp. Fire suppression has allowed woody shrubs to dominate the groundcover, with 51-75% coverage of *Ilex glabra*, *Lyonia lucida,* and *Lyonia ferrigenea*. The rest of the groundcover is dominated by saw palmetto (*Serenoa repens*).

Hydrology. This site is an upland consisting of characteristic upland soils.

Wildlife. The following birds were seen or heard: Belted kingfisher (*Ceryl alcyon*), eastern towhee (*Pipilo erythrophthalmus*), and northern mockingbird (*Mimus polyglottos*).
General Observations and Management. Remove 80% of all planted slash pine to allow for regeneration of sun dependent groundcover species. It is assumed that with time the bedding will become less pronounced. Prescribed warm season fire will remove the inappropriate woody shrubs and select for herbaceous graminoids.

Reference point - BPQT15 P3 is located in the western portion of phase 4

Vegetation. This landscape is described as a cypress flat as most of the canopy consisted of widely scattered pond cypress (*Taxodium ascendens*) and slash pine. Shrubs included *Myrica heterophylla, Nyssa sylvatica var. ursine,* and *Ilex myrtifolia*. The groundcover was dominated by graminoids with up to 25% coverage. This site also contains some notable wet savanna species such as *Sarracenia flava* and *Verbesina chapmanii*.

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. Soils had a dark surface. Hydrologic indicators included the water stained vegetation, morphological plant adaptations to flooding, tussocks, and hummocks. Sphagnum moss was also present.

Wildlife. Florida cricket frog (*Acris gryllus dorsalis*) and mosquito fish (*Gambusia affinis*) were seen in the water.

General Observations and Management. Remove larger slash pine. Frequent prescribed fire during the growing season will help to restore the landscape and promote regeneration of pond cypress, appropriate graminoid species, and wet savanna species such as *Sarracenia flava* and *Verbesina chapmanii*.

VII. INTERPRETATIONS AND CONCLUSIONS

The BPMB presents many restoration challenges. A primary challenge is attaining an understanding of the plant communities being sampled. The first step in a restoration process is to perform baseline monitoring. As more information is gained about the plant communities at this site and how they compare to those of reference sites, a reclassification of the proposed landscape may be needed.

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 1942 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 of various ages and densities. Much of the diversity in this landscape is contained in the groundcover but the groundcover has been severely impacted by silvicultural practices in many areas. The main considerations created from these impacts and fire suppression have been covered in the introduction of this report. The photographs of the transects and reference points included in this report, support our baseline qualitative and quantitative measurements and observations.

There are some general trends noted during the compilation of data and summary of results. These are based on the comparison of the qualitative and quantitative data. First, all sample sites need a prescribed 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 have a remarkable regularity of species similarity and number of species per transect. The typical fire suppressed pineflatwoods landscape will have a layer of gallberry (*Ilex glabra*) often mixed with saw palmetto (*Serenoa repens*). These two species often dominate the groundcover. Large areas of open ground beneath these species are covered by a thick layer of pine duff. Third, there are large areas mapped as hydric pine flatwoods, which although recognized as hydric pine plantation according the the FLUCCS code, are better understood as wet savanna or palustrine marsh. Areas identified as palustrine marsh may need to have the planted pine canopy sustaintially reduced or eliminated to allow light to reach the ground, thereby permitting the growth of appropriate groundcover species. It is not known at this time how much of the historic aerial actually consisted of hydric pine flatwoods. We have used the historic conditions to frame our discussion of management in the data results and discussion of this report. In summary, the qualitative observations support the quantitative observations and measurements. New information will be incorporated into the discussion of management of this site as data from reference sites is collected and analyzed.

The primary restoration tools will involve the mechanical removal of densely planted slash pine (*Pinus elliottii*), hydrologic restoration and the addition of prescribed fire to the landscape. Of these fire might be the most dramatic in its overall effect on the landscape. It is well known by ecologists that the native graminoids and some forbs will burn and quickly respout after fire. In addition many of these fire tolerant species require fire to initiate their reproductive cycle. These graminoids and forbs are often long-lived herbaceous perennials that help maintain the open landscapes as shown in historic photographs and described by earlier botanists such as William Bartram, Roland Harper and more recently by the late Robert Godfrey and Andre Clewell. The investigators intend to return frequent fire intervals, which will encourage the native, fire tolerant, herbaceous groundcover species and prevent the return of woody shrubs that would otherwise shade and out compete the graminoids and forbs, especially those species that influence the structure and ecology of a majority of the ecosystems found at the BPMB.

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 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.

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Exhibit 1: Vegetative Species List

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NameLatin	Common Name	Family Name	Vegetative Classification
Acer rubrum	RED MAPLE	SAPINDACEAE	Woody Plants
Agalinis maritima	SALTMARSH FALSE FOXGL	OROBANCHACEAE	Forbs
Agalinis sp.	FALSE FOXGLOVE	OROBANCHACEAE	Forbs
Alnus serrulata	HAZEL ALDER	BETULACEAE	Woody Plants
Amphicarpum muhlenbergian	BLUE MAIDENCANE	POACEAE	Graminoids
Andropogon brachystachyus	SHORTSPIKE BLUESTEM	POACEAE	Graminoids
Andropogon glomeratus	BUSHY BLUESTEM	POACEAE	Graminoids
Andropogon glomeratus v. gl	PURPLE BLUESTEM	POACEAE	Graminoids
Andropogon gyrans	ELLIOTT'S 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
Anthaenantia rufa	PURPLE SILKYSCALE	POACEAE	Forbs
Aristida palustris	LONGLEAF THREEAWN	POACEAE	Graminoids
Aristida spiciformis	BOTTLEBRUSH THREEAWN	POACEAE	Graminoids
Aristida stricta v. beyrichiana	WIREGRASS	POACEAE	Graminoids
Arnoglossum ovatum	OVATELEAF INDIAN PLANT	ASTERACEAE	Forbs
Asclepias sp.	MILKWEED	APOCYNACEAE	Forbs
Baccharis glomeruliflora	SILVERLING	ASTERACEAE	Forbs
Baccharis sp.		ASTERACEAE	Woody Plants
Batis maritima	SALTWORT; TURTLEWEED	BATACEAE	Forbs
Bigelowia nudata	PINELAND RAYLESS GOLD	ASTERACEAE	Forbs
Boltonia sp.	DOLL'S DAISY	ASTERACEAE	Forbs
Borrichia frutescens	BUSHY SEASIDE OXEYE	ASTERACEAE	Forbs
Carex glaucescens	CLUSTERED SEDGE	CYPERACEAE	Graminoids
Carex sp.	SEDGE	CYPERACEAE	Graminoids

NameLatin	Common Name	Family Name	Vegetative Classification
Carex verrucosa	WARTY SEDGE	CYPERACEAE	Graminoids
Carphephorus odoratissimus	VANILLALEAF	ASTERACEAE	Forbs
Centella asiatica	SPADELEAF	ARALIACEAE	Forbs
Cladium jamaicense	SAWGRASS	CYPERACEAE	Graminoids
Clethra alnifolia	COASTAL SWEETPEPPERB	CLETHRACEAE	Woody Plants
Cliftonia monophylla	BLACK TITI; BUCKWHEAT T	CYRILLACEAE	Woody Plants
Coelorachis rugosa	WRINKLED JOINTTAILGRAS	POACEAE	Graminoids
Conradina canescens	FALSE ROSEMARY	LAMIACEAE	Forbs
Coreopsis floridana	FLORIDA TICKSEED	ASTERACEAE	Forbs
Ctenium aromaticum	TOOTHACHEGRASS	POACEAE	Graminoids
Cynanchum angustifolium	GULF COAST SWALLOWWO	APOCYNACEAE	Forbs
Cyrilla racemiflora	TITI	CYRILLACEAE	Woody Plants
Desmodium floridanum	FLORIDA TICKTREFOIL	FABACEAE	Forbs
Dichanthelium erectifolium	ERECTLEAF WITCHGRASS	POACEAE	Graminoids
Dichanthelium scabriusculum	WOOLLY WITCHGRASS	POACEAE	Graminoids
Dichanthelium sp.	WITCHGRASS	POACEAE	Graminoids
Drosera capillaris	PINK SUNDEW	DROSERACEAE	Forbs
Eleocharis baldwinii	BALDWIN'S SPIKERUSH; RO	CYPERACEAE	Graminoids
Eleocharis cellulosa	GULF COAST SPIKERUSH	CYPERACEAE	Graminoids
Eragrostis sp.	LOVEGRASS	POACEAE	Graminoids
Erigeron vernus	EARLY WHITETOP FLEABA	ASTERACEAE	Forbs
Eriocaulon compressum	FLATTENED PIPEWORT	ERIOCAULACEAE	Forbs
Eriocaulon decangulare	TENANGLE PIPEWORT	ERIOCAULACEAE	Forbs
Eupatorium capillifolium	DOGFENNEL	ASTERACEAE	Forbs
Eupatorium mohrii	MOHR'S THOROUGHWORT	ASTERACEAE	Forbs
Euthamia caroliniana	SLENDER FLATTOP GOLDE	ASTERACEAE	Forbs
Euthamia graminifolia v. hirtip	FLATTOP GOLDENROD	ASTERACEAE	Forbs

NameLatin	Common Name	Family Name	Vegetative Classification
Euthamia sp.	FLATTOP GOLDENROD	ASTERACEAE	Forbs
Fimbristylis spadicea	MARSH FIMBRY	CYPERACEAE	Graminoids
Fraxinus caroliniana	CAROLINA ASH; WATER AS	OLEACEAE	Woody Plants
Fuirena breviseta	SALTMARSH UMBRELLASE	CYPERACEAE	Graminoids
Fuirena scirpoidea	SOUTHERN UMBRELLASED	CYPERACEAE	Graminoids
Fuirena sp.	UMBRELLASEDGE	CYPERACEAE	Graminoids
Fuirena squarrosa	HAIRY UMBRELLASEDGE	CYPERACEAE	Graminoids
Gaylussacia dumosa	HUCKLEBERRY	ERICACEAE	Woody Plants
Gaylussacia frondosa var. to	BLUE HUCKLEBERRY	ERICACEAE	Woody Plants
Helianthus radula	STIFF SUNFLOWER	ASTERACEAE	Forbs
Houstonia sp.	BLUET	RUBIACEAE	Forbs
Hypericum chapmanii	APALACHICOLA ST.JOHN'S-	CLUSIACEAE	Forbs
Hypericum cistifolium	ROUNDPOD ST.JOHN'S-WO	CLUSIACEAE	Forbs
Hypericum crux-andreae	ST.PETER'S-WORT	CLUSIACEAE	Forbs
Hypericum fasciculatum	SANDWEED; PEELBARK ST.	CLUSIACEAE	Forbs
Hypericum gentianoides	PINEWEEDS; ORANGEGRA	CLUSIACEAE	Forbs
Hypericum microsepalum	FLATWOODS ST.JOHN'S-W	CLUSIACEAE	Forbs
Hypericum mutilum	DWARF ST.JOHN'S-WORT	CLUSIACEAE	Forbs
Hypericum sp.	FOURPETAL ST.JOHN'S-WO	CLUSIACEAE	Forbs
Hypericum suffruticosum	PINELAND ST.JOHN'S-WOR	CLUSIACEAE	Forbs
Hyptis alata	CLUSTERED BUSHMINT; M	LAMIACEAE	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
Ipomoea sagittata	SALTMARSH MORNING-GL	CONVOLVULACEAE	Vines
Juncus coriaceus	LEATHERY RUSH	JUNCACEAE	Graminoids

NameLatin	Common Name	Family Name	Vegetative Classification
Juncus marginatus	SHORE RUSH; GRASSLEAF	JUNCACEAE	Graminoids
Juncus megacephalus	BIGHEAD RUSH	JUNCACEAE	Graminoids
Juncus polycephalos	MANYHEAD RUSH	JUNCACEAE	Graminoids
Juncus repens	LESSER CREEPING RUSH	JUNCACEAE	Graminoids
Juncus roemerianus	BLACK NEEDLE RUSH	JUNCACEAE	Graminoids
Juncus scirpoides	NEEDLEPOD RUSH	JUNCACEAE	Graminoids
Juncus sp.	RUSH	JUNCACEAE	Graminoids
Kalmia hirsuta	WICKY; HAIRY LAUREL	ERICACEAE	Forbs
Lachnanthes caroliana	CAROLINA REDROOT	HAEMODORACEAE	Forbs
Lachnocaulon beyrichianum	SOUTHERN BOGBUTTON	ERIOCAULACEAE	Forbs
Lachnocaulon sp.	BOGBUTTON	ERIOCAULACEAE	Forbs
Liatris sp.	GAYFEATHER	ASTERACEAE	Forbs
Liatris spicata	DENSE GAYFEATHER	ASTERACEAE	Forbs
Limonium carolinianum	CAROLINA SEALAVENDER	PLUMBAGINACEAE	Forbs
Linum sp.	FLAX	LINACEAE	Forbs
Lobelia floridana	FLORIDA LOBELIA	CAMPANULACEAE	Forbs
Lobelia sp.	LOBELIA	CAMPANULACEAE	Forbs
Ludwigia alata	WINGED PRIMROSEWILLO	ONAGRACEAE	Forbs
Ludwigia pilosa	HAIRY PRIMROSEWILLOW	ONAGRACEAE	Forbs
Ludwigia suffruticosa	SHRUBBY PRIMROSEWILLO	ONAGRACEAE	Forbs
Lyonia ferruginea	RUSTY STAGGERBUSH	ERICACEAE	Woody Plants
Lyonia lucida	FETTERBUSH	ERICACEAE	Woody Plants
Magnolia virginiana	SWEETBAY	MAGNOLIACEAE	Woody Plants
Mikania scandens	CLIMBING HEMPVINE	ASTERACEAE	Vines
Mitreola sp.	HORNPOD	LOGANIACEAE	Forbs
Muhlenbergia capillaris	HAIRAWN MUHLY	POACEAE	Graminoids
Myrica cerifera	SOUTHERN BAYBERRY; WA	MYRICACEAE	Woody Plants

NameLatin	Common Name	Family Name	Vegetative Classification
Myrica heterophyla	EVERGREEN or NORTHERN	MYRICACEAE	Woody Plants
Nyssa ursina	BEAR TUPELO	CORNACEAE	Woody Plants
Opuntia humifusa	PRICKLYPEAR	CACTACEAE	Forbs
Osmunda regalis var. specta	ROYAL FERN	OSMUNDACEAE	Forbs
Oxypolis filiformis	WATER COWBANE	APIACEAE	Forbs
Panicum anceps	BEAKED PANICUM	POACEAE	Graminoids
Panicum repens *	TORPEDOGRASS	POACEAE	Graminoids
Panicum sp.		POACEAE	Graminoids
Panicum virgatum	SWITCHGRASS	POACEAE	Graminoids
Persea palustris	SWAMP BAY	LAURACEAE	Woody Plants
Photinia pyrifolia	RED CHOKEBERRY	ROSACEAE	Woody Plants
Pieris phyllyreifolia	FETTERBUSH	ERICACEAE	Woody Plants
Pinus elliottii	SLASH PINE	PINACEAE	Woody Plants
Pluchea foetida	STINKING CAMPHORWEED	ASTERACEAE	Forbs
Pluchea sp.	CAMPHORWEED	ASTERACEAE	Forbs
Polygala lutea	ORANGE MILKWORT	POLYGALACEAE	Forbs
Polygonella sp.	JOINTWEED	POLYGONACEAE	Forbs
Polygonum sp.	SMARTWEED	POLYGONACEAE	Forbs
Pontederia cordata	PICKERELWEED	PONTEDERIACEAE	Forbs
Proserpinaca pectinata	COMBLEAF MERMAIDWEED	HALORAGACEAE	Forbs
Pteridium aquilinum var. pseu	TAILED BRACKEN	DENNSTAEDTIACEAE	Forbs
Pterocaulon pycnostachyum	BLACKROOT	ASTERACEAE	Forbs
Quercus minima	DWARF LIVE OAK	FAGACEAE	Woody Plants
Rhexia alifanus	SAVANNAH MEADOWBEAU	MELASTOMATACEAE	Forbs
Rhexia sp.	MEADOWBEAUTY	MELASTOMATACEAE	Forbs
Rhexia virginica	HANDSOME HARRY	MELASTOMATACEAE	Forbs
Rhus copallinum	WINGED SUMAC	ANACARDIACEAE	Woody Plants

NameLatin	Common Name	Family Name	Vegetative Classification
Rhynchospora chapmanii	CHAPMAN'S BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora ciliaris	FRINGED BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora fascicularis	FASCICLED BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora filifolia	THREADLEAF BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora inundata	NARROWFRUIT HORNED B	CYPERACEAE	Graminoids
Rhynchospora microcarpa	SOUTHERN BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora microcephala	BUNCHED BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora oligantha	FEATHERBRISTLE BEAKSE	CYPERACEAE	Graminoids
Rhynchospora sp.	BEAKSEDGE	CYPERACEAE	Graminoids
Rhynchospora tracyi	TRACY'S BEAKSEDGE	CYPERACEAE	Graminoids
Rubus argutus	SAWTOOTH BLACKBERRY	ROSACEAE	Forbs
Rubus sp.	DEWBERRY or BLACKBERR	ROSACEAE	Forbs
Saccharum sp.	PLUMEGRASS	POACEAE	Graminoids
Sagittaria lancifolia media	BULLTONGUE ARROWHEA	ALISMATACEAE	Forbs
*Sapium sebiferum **	POPCORNTREE; CHINESE T	EUPHORBIACEAE	Woody Plants
Sarcocornia perennis	PERENNIAL GLASSWORT; V	AMARANTHACEAE	Forbs
Schizachyrium scoparium	LITTLE BLUESTEM	POACEAE	Graminoids
Schizachyrium sp.	BLUESTEM	POACEAE	Graminoids
Schoenus nigricans	BLACK BOGRUSH	CYPERACEAE	Graminoids
Scirpus cyperinus	WOOLGRASS	CYPERACEAE	Graminoids
Scleria sp.	NUTRUSH	CYPERACEAE	Graminoids
Serenoa repens	SAW PALMETTO	ARECACEAE	Forbs
Setaria parviflora	YELLOW FOXTAIL	POACEAE	Graminoids
Smilax auriculata	EARLEAF GREENBRIER	SMILACACEAE	Vines
Smilax glauca	CAT GREENBRIER; WILD SA	SMILACACEAE	Vines
Smilax laurifolia	LAUREL GREENBRIER; BAM	SMILACACEAE	Vines
Smilax sp.	GREENBRIER	SMILACACEAE	Vines

NameLatin	Common Name	Family Name	Vegetative Classification
Solidago fistulosa	PINEBARREN GOLDENROD	ASTERACEAE	Forbs
Solidago odora	ANISESCENTED or SWEET	ASTERACEAE	Forbs
Solidago rugosa subsp. asper	WRINKLELEAF GOLDENRO	ASTERACEAE	Forbs
Solidago sempervirens	SEASIDE GOLDENROD	ASTERACEAE	Forbs
Solidago sp.	GOLDENROD	ASTERACEAE	Forbs
Solidago stricta	WAND GOLDENROD	ASTERACEAE	Forbs
Spartina patens	SALTMEADOW CORDGRAS	POACEAE	Graminoids
Spartina spartinae	GULF CORDGRASS	POACEAE	Graminoids
Spiranthes laciniata	LACELIP LADIESTRESSES	ORCHIDACEAE	Forbs
Sporobolus sp.	DROPSEED	POACEAE	Graminoids
Sporobolus virginicus	SEASHORE DROPSEED	POACEAE	Graminoids
Stillingia aquatica	WATER TOOTHLEAF; CORK	EUPHORBIACEAE	Forbs
Symphyotrichum tenuifolium	PERENNIAL SALTMARSH A	ASTERACEAE	Forbs
Symphyotrichum dumosum	RICE BUTTON ASTER	ASTERACEAE	Forbs
Syngonanthus flavidulus	YELLOW HATPINS	ERIOCAULACEAE	Forbs
Taxodium ascendens	POND-CYPRESS	CUPRESSACEAE	Woody Plants
Toxicodendron radicans	EASTERN POISON IVY	ANACARDIACEAE	Vines
Vaccinium darrowii	DARROW'S BLUEBERRY	ERICACEAE	Woody Plants
Vaccinium myrsinites	SHINY BLUEBERRY	ERICACEAE	Woody Plants
Verbesina chapmanii	CHAPMAN'S CROWNBEARD	ASTERACEAE	Forbs
Viola lanceolata	BOG WHITE VIOLET	VIOLACEAE	Forbs
Vitis rotundifolia	MUSCADINE	VITACEAE	Vines
Xyris caroliniana	CAROLINA YELLOWEYED G	XYRIDACEAE	Forbs
Xyris flabelliformis	SAVANNAH YELLOWEYED	XYRIDACEAE	Forbs
Xyris sp.	YELLOWEYED GRASS	XYRIDACEAE	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: _____
Plant Community: _____
Stratum: _____
Person Recording: _____

Transect ID: _____
Transect Length: _____
Date: _____

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					
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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							
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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
Breakfast Point transect number BP1T1 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Hypericum chapmanii	7.89%	0.2368	0.11	0.0513	0.0755
Rhynchospora filifolia	7.63%	0.2288	0.0609	0.0673	0.1006
Rhynchospora fascicularis	4.57%	0.137	0.0299	0.0442	0.0629
Rhynchospora chapmanii	3.25%	0.0976	0.0086	0.0513	0.0377
Drosera capillaris	1.37%	0.0411	0.002	0.0265	0.0126
Rubus argutus	0.99%	0.0298	0.003	0.0142	0.0126
Xyris sp.	0.72%	0.0217	0.002	0.0071	0.0126
Andropogon virginicus v. glaucus	0.69%	0.0207	0.001	0.0071	0.0126
Dichanthelium erectifolium	0.57%	0.0171	0.001	0.0035	0.0126
Dichanthelium sp.	0.34%	0.0103	0.0005	0.0035	0.0063
Schizachyrium scoparium	0.32%	0.0096	0.0015	0.0018	0.0063
Ludwigia pilosa	0.32%	0.0096	0.0015	0.0018	0.0063
Hypericum fasciculatum	0.29%	0.0086	0.0005	0.0018	0.0063
Euthamia caroliniana	0.29%	0.0086	0.0005	0.0018	0.0063
Vines					
Smilax laurifolia	8.62%	0.2586	0.0766	0.0814	0.1006
Vitis rotundifolia	0.32%	0.0096	0.0015	0.0018	0.0063
Woody Plants					
Lyonia lucida	18.97%	0.5691	0.1775	0.2973	0.0943
Cliftonia monophylla	10.12%	0.3035	0.1466	0.0814	0.0755
Cyrilla racemiflora	8.68%	0.2604	0.0837	0.0761	0.1006
Fraxinus caroliniana	7.19%	0.2158	0.1273	0.0319	0.0566
Myrica cerifera	4.84%	0.1452	0.0507	0.0442	0.0503
Pieris phyllyreifolia	4.42%	0.1325	0.0203	0.0619	0.0503
Pinus elliottii	2.28%	0.0684	0.0183	0.0124	0.0377
Nyssa ursina	1.56%	0.0468	0.0208	0.0071	0.0189
Clethra alnifolia	1.05%	0.0314	0.0127	0.0124	0.0063
Magnolia virginiana	1.01%	0.0303	0.0142	0.0035	0.0126
Taxodium ascendens	1.01%	0.0303	0.0142	0.0035	0.0126

Quantitative Monitoring Data Results - Groundcover

Breakfast Point transect number BP1T1 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Ilex coriacea	0.69%	0.0208	0.0127	0.0018	0.0063

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T2 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Amphicarpum muhlenbergianum	18.77%	0.5631	0.1034	0.4035	0.0562
Ludwigia pilosa	11.45%	0.3436	0.1493	0.1213	0.073
Juncus roemerianus	11.12%	0.3335	0.1282	0.1098	0.0955
Sagittaria lancifolia media	7.5%	0.225	0.0522	0.0604	0.1124
Pluchea foetida	6.21%	0.1864	0.0448	0.0517	0.0899
Solidago sempervirens	5.16%	0.1549	0.0338	0.0424	0.0787
Panicum virgatum	5.05%	0.1514	0.0527	0.0538	0.0449
Andropogon virginicus	2.51%	0.0753	0.0295	0.0065	0.0393
Juncus marginatus	1.88%	0.0565	0.0079	0.0261	0.0225
Centella asiatica	1.83%	0.0548	0.0105	0.0218	0.0225
Stillingia aquatica	1.79%	0.0538	0.0058	0.0087	0.0393
Solidago fistulosa	1.69%	0.0508	0.0079	0.0092	0.0337
Euthamia graminifolia v. hirtipes	1.54%	0.0461	0.0105	0.0131	0.0225
Hypericum cistifolium	1.16%	0.0349	0.0032	0.0092	0.0225
Dichanthelium scabriusculum	1.13%	0.0339	0.0032	0.0082	0.0225
Juncus scirpoides	1.05%	0.0316	0.0053	0.0038	0.0225
Rubus argutus	1%	0.03	0.0042	0.0033	0.0225
Andropogon glomeratus	0.68%	0.0204	0.0132	0.0016	0.0056
Dichanthelium sp.	0.66%	0.0197	0.0047	0.0038	0.0112
Euthamia sp.	0.52%	0.0155	0.0021	0.0022	0.0112
Juncus coriaceus	0.5%	0.0149	0.0021	0.0016	0.0112
Baccharis glomeruliflora	0.29%	0.0088	0.0005	0.0027	0.0056
Juncus sp.	0.28%	0.0083	0.0005	0.0022	0.0056
Hypericum crux-andreae	0.24%	0.0072	0.0005	0.0011	0.0056
Vines					
Vitis rotundifolia	0.64%	0.0193	0.0132	0.0005	0.0056
Woody Plants					
Myrica cerifera	8.49%	0.2547	0.1962	0.0136	0.0449
Ilex vomitoria	2.92%	0.0877	0.0448	0.0092	0.0337

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T2 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Nyssa ursina	2.05%	0.0614	0.0464	0.0038	0.0112
Ilex glabra	1.2%	0.0361	0.0216	0.0033	0.0112
Ilex coriacea	0.22%	0.0066	0.0005	0.0005	0.0056
Sapium sebiferum	0.22%	0.0066	0.0005	0.0005	0.0056
Pinus elliottii	0.22%	0.0066	0.0005	0.0005	0.0056

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T3 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Pteridium aquilinum var. pseudocaudatum	16.52%	0.4956	0.1741	0.1922	0.1293
Kalmia hirsuta	9.63%	0.2889	0.0689	0.151	0.069
Serenoa repens	5.45%	0.1634	0.1066	0.0137	0.0431
Dichanthelium sp.	2.74%	0.0821	0.0029	0.0275	0.0517
Andropogon virginicus	1.57%	0.0472	0.0029	0.0098	0.0345
Amphicarpum muhlenbergianum	1.24%	0.0371	0.0014	0.0098	0.0259
Rubus argutus	1.11%	0.0332	0.0014	0.0059	0.0259
Solidago stricta	1.03%	0.0309	0.0019	0.0118	0.0172
Hypericum microsepalum	0.4%	0.012	0.0014	0.002	0.0086
Euthamia sp.	0.37%	0.0111	0.0005	0.002	0.0086
Rhynchospora sp.	0.37%	0.0111	0.0005	0.002	0.0086
Eupatorium mohrii	0.37%	0.0111	0.0005	0.002	0.0086
Hypericum crux-andreae	0.37%	0.0111	0.0005	0.002	0.0086
Vines					
Smilax auriculata	1.91%	0.0573	0.0024	0.0118	0.0431
Vitis rotundifolia	0.4%	0.012	0.0014	0.002	0.0086
Woody Plants					
Ilex glabra	28.07%	0.842	0.3057	0.2863	0.25
Photinia pyrifolia	8.6%	0.2581	0.0699	0.102	0.0862
Lyonia ferruginea	7.32%	0.2197	0.1056	0.0451	0.069
Vaccinium myrsinites	5.81%	0.1743	0.0704	0.0608	0.0431
Ilex vomitoria	2.92%	0.0877	0.0458	0.0333	0.0086
Ilex coriacea	2.04%	0.0613	0.0265	0.0176	0.0172
Myrica cerifera	0.59%	0.0178	0.0072	0.002	0.0086
Cliftonia monophylla	0.43%	0.013	0.0005	0.0039	0.0086
Rhus copallinum	0.37%	0.0111	0.0005	0.002	0.0086
Quercus minima	0.37%	0.0111	0.0005	0.002	0.0086

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Ludwigia pilosa	18.53%	0.5559	0.2384	0.2483	0.0692
Juncus marginatus	11.31%	0.3393	0.081	0.1698	0.0885
Pluchea foetida	6.4%	0.192	0.0432	0.0642	0.0846
Andropogon virginicus	5.43%	0.163	0.0726	0.0366	0.0538
Solidago fistulosa	5.1%	0.1531	0.0315	0.0562	0.0654
Panicum virgatum	3.8%	0.1141	0.0382	0.0451	0.0308
Andropogon sp.	3.58%	0.1073	0.0508	0.018	0.0385
Rubus argutus	3.21%	0.0964	0.0239	0.0302	0.0423
Dichanthelium sp.	3.13%	0.094	0.0151	0.0212	0.0577
Euthamia sp.	2.9%	0.0871	0.0164	0.0207	0.05
Rhynchospora sp.	2.38%	0.0713	0.0097	0.0424	0.0192
Juncus sp.	2.04%	0.0612	0.0155	0.0111	0.0346
Proserpinaca pectinata	1.9%	0.057	0.0105	0.0196	0.0269
Sagittaria lancifolia media	1.69%	0.0507	0.0159	0.0233	0.0115
Rhynchospora chapmanii	1.21%	0.0364	0.005	0.0122	0.0192
Juncus roemerianus	0.86%	0.0259	0.0059	0.0085	0.0115
Centella asiatica	0.81%	0.0242	0.0038	0.0127	0.0077
Hypericum chapmanii	0.78%	0.0235	0.0088	0.0032	0.0115
Polygonum sp.	0.77%	0.0231	0.0042	0.0074	0.0115
Rhexia sp.	0.74%	0.0221	0.0025	0.0042	0.0154
Stillingia aquatica	0.68%	0.0203	0.0017	0.0032	0.0154
Rubus sp.	0.53%	0.0159	0.0063	0.0058	0.0038
Eupatorium capillifolium	0.49%	0.0148	0.0105	0.0005	0.0038
Dichanthelium scabriusculum	0.41%	0.0123	0.0025	0.0021	0.0077
Scirpus cyperinus	0.35%	0.0106	0.0063	0.0005	0.0038
Fuirena sp.	0.33%	0.0099	0.0034	0.0027	0.0038
Lachnanthes caroliana	0.32%	0.0096	0.0008	0.0011	0.0077
Rhynchospora inundata	0.26%	0.0077	0.0034	0.0005	0.0038
Juncus polycephalos	0.19%	0.0058	0.0004	0.0016	0.0038

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Hypericum crux-andreae	0.18%	0.0053	0.0004	0.0011	0.0038
Eupatorium mohrii	0.18%	0.0053	0.0004	0.0011	0.0038
Polygonella sp.	0.16%	0.0047	0.0004	0.0005	0.0038
Hypericum fasciculatum	0.16%	0.0047	0.0004	0.0005	0.0038
Lobelia sp.	0.16%	0.0047	0.0004	0.0005	0.0038
Xyris sp.	0.16%	0.0047	0.0004	0.0005	0.0038
Vines					
Smilax laurifolia	0.69%	0.0208	0.0017	0.0037	0.0154
Toxicodendron radicans	0.16%	0.0047	0.0004	0.0005	0.0038
Woody Plants					
Myrica heterophyla	5.92%	0.1775	0.1255	0.0212	0.0308
Photinia pyrifolia	4.84%	0.1453	0.0441	0.0589	0.0423
Ilex vomitoria	3.65%	0.1095	0.055	0.0276	0.0269
Myrica cerifera	1.61%	0.0484	0.0298	0.0032	0.0154
Ilex glabra	0.84%	0.0253	0.0101	0.0037	0.0115
Pinus elliottii	0.48%	0.0144	0.0013	0.0016	0.0115
Baccharis sp.	0.32%	0.0096	0.0008	0.0011	0.0077
Magnolia virginiana	0.16%	0.0047	0.0004	0.0005	0.0038
Sapium sebiferum	0.16%	0.0047	0.0004	0.0005	0.0038

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T5 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Kalmia hirsuta	13.67%	0.41	0.0769	0.2743	0.0588
Serenoa repens	8.4%	0.2521	0.1518	0.0194	0.0809
Hypericum microsepalum	2.38%	0.0714	0.004	0.0233	0.0441
Dichanthelium sp.	1.91%	0.0573	0.0024	0.0181	0.0368
Aristida stricta v. beyrichiana	1.63%	0.0489	0.0165	0.0103	0.0221
Solidago odora	1.44%	0.0431	0.0072	0.0065	0.0294
Carphephorus odoratissimus	1.33%	0.0399	0.004	0.0065	0.0294
Panicum repens	0.99%	0.0297	0.0008	0.0142	0.0147
Eupatorium mohrii	0.95%	0.0285	0.0012	0.0052	0.0221
Conradina canescens	0.79%	0.0237	0.0064	0.0026	0.0147
Scleria sp.	0.73%	0.022	0.0008	0.0065	0.0147
Andropogon sp.	0.45%	0.0134	0.006	0	0.0074
Asclepias sp.	0.35%	0.0104	0.0004	0.0026	0.0074
Xyris caroliniana	0.35%	0.0104	0.0004	0.0026	0.0074
Polygala lutea	0.3%	0.0091	0.0004	0.0013	0.0074
Vines					
Smilax auriculata	0.3%	0.0091	0.0004	0.0013	0.0074
Woody Plants					
Ilex glabra	16.94%	0.5082	0.2222	0.1242	0.1618
Lyonia ferruginea	11.68%	0.3503	0.1965	0.0582	0.0956
Lyonia lucida	9.31%	0.2794	0.1433	0.0699	0.0662
Gaylussacia dumosa	6.76%	0.2027	0.0326	0.1113	0.0588
Quercus minima	6.35%	0.1905	0.029	0.11	0.0515
Photinia pyrifolia	3.87%	0.1161	0.0137	0.0362	0.0662
Gaylussacia frondosa var. tomentosa	3.86%	0.1159	0.0262	0.075	0.0147
Cyrilla racemiflora	2.57%	0.0772	0.0326	0.0078	0.0368
Ilex coriacea	1.37%	0.0411	0.0125	0.0065	0.0221
Vaccinium myrsinites	0.72%	0.0215	0.0016	0.0052	0.0147
Ilex vomitoria	0.63%	0.0188	0.0101	0.0013	0.0074

Quantitative Monitoring Data Results - Groundcover

Breakfast Point transect number BP1T5 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP1T6 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Panicum repens	36.47%	1.0941	0.2402	0.8076	0.0463
Andropogon virginicus v. glaucus	13.02%	0.3906	0.2092	0.0425	0.1389
Ludwigia pilosa	10.24%	0.3073	0.1597	0.055	0.0926
Cladium jamaicense	9.9%	0.2969	0.1666	0.0192	0.1111
Stillingia aquatica	5.2%	0.1561	0.0138	0.0127	0.1296
Rhynchospora sp.	4.09%	0.1228	0.0303	0.0092	0.0833
Rubus argutus	3.02%	0.0907	0.0138	0.0121	0.0648
Pontederia cordata	2.67%	0.0801	0.0571	0.0137	0.0093
Juncus sp.	2.18%	0.0654	0.0255	0.0029	0.037
Amphicarpum muhlenbergianum	1.12%	0.0337	0.0034	0.0025	0.0278
Dichanthelium scabriusculum	0.97%	0.029	0.0103	0.0094	0.0093
Dichanthelium sp.	0.86%	0.0259	0.0062	0.0012	0.0185
Rhynchospora inundata	0.79%	0.0236	0.0041	0.001	0.0185
Rhexia sp.	0.73%	0.0219	0.0028	0.0006	0.0185
Euthamia sp.	0.73%	0.0219	0.0028	0.0006	0.0185
Hypericum gentianoides	0.39%	0.0116	0.0021	0.0002	0.0093
Rubus sp.	0.37%	0.011	0.0007	0.001	0.0093
Carex sp.	0.37%	0.011	0.0007	0.001	0.0093
Solidago fistulosa	0.34%	0.0102	0.0007	0.0002	0.0093
Xyris sp.	0.34%	0.0102	0.0007	0.0002	0.0093
Centella asiatica	0.34%	0.0102	0.0007	0.0002	0.0093
Vines					
Smilax laurifolia	2.1%	0.0629	0.0234	0.0025	0.037
Toxicodendron radicans	1.75%	0.0525	0.0048	0.0014	0.0463
Woody Plants					
Sapium sebiferum	0.9%	0.0271	0.0172	0.0006	0.0093
Photinia pyrifolia	0.78%	0.0235	0.0028	0.0022	0.0185
Pinus elliottii	0.34%	0.0102	0.0007	0.0002	0.0093

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T1 - Palustrine Marsh

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Eleocharis cellulosa	50.47%	1.514	0.6026	0.6141	0.2973
Sagittaria lancifolia media	13.49%	0.4046	0.0853	0.1031	0.2162
Cladium jamaicense	13.05%	0.3914	0.1831	0.0867	0.1216
Ludwigia pilosa	7.15%	0.2145	0.0527	0.1077	0.0541
Stillingia aquatica	6.71%	0.2012	0.0479	0.0182	0.1351
Rhynchospora tracyi	3.86%	0.1159	0.0125	0.0493	0.0541
Euthamia graminifolia v. hirtipes	1.54%	0.0462	0.0021	0.0036	0.0405
Dichanthelium sp.	0.78%	0.0233	0.0007	0.0091	0.0135
Centella asiatica	0.63%	0.0188	0.0007	0.0046	0.0135
Vines					
Ipomoea sagittata	1.01%	0.0302	0.0014	0.0018	0.027
Woody Plants					
Pinus elliottii	0.66%	0.0199	0.0055	0.0009	0.0135
Myrica cerifera	0.66%	0.0199	0.0055	0.0009	0.0135

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T2 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Dichanthelium sp.	12.88%	0.3864	0.1246	0.1954	0.0664
Panicum virgatum	10.46%	0.3139	0.1146	0.1187	0.0806
Ludwigia pilosa	9.84%	0.2952	0.1013	0.1418	0.0521
Rubus argutus	5.98%	0.1793	0.0373	0.0662	0.0758
Andropogon virginicus	4.34%	0.1303	0.054	0.0242	0.0521
Juncus marginatus	3.64%	0.1091	0.016	0.0504	0.0427
Juncus roemerianus	3.44%	0.1031	0.0746	0.0095	0.019
Solidago rugosa subsp. aspera	3.22%	0.0967	0.0193	0.0347	0.0427
Pluchea foetida	3.22%	0.0967	0.022	0.0273	0.0474
Rhynchospora filifolia	2.85%	0.0855	0.036	0.0305	0.019
Euthamia caroliniana	2.5%	0.075	0.034	0.0126	0.0284
Euthamia sp.	2.12%	0.0636	0.022	0.0179	0.0237
Stillingia aquatica	1.99%	0.0598	0.0087	0.0179	0.0332
Rhynchospora sp.	1.75%	0.0525	0.0173	0.021	0.0142
Xyris sp.	1.67%	0.0502	0.0133	0.0179	0.019
Eupatorium mohrii	1.65%	0.0495	0.0047	0.0116	0.0332
Viola lanceolata	1.55%	0.0464	0.0053	0.0221	0.019
Hypericum fasciculatum	1.42%	0.0427	0.0127	0.0063	0.0237
Juncus sp.	1.39%	0.0416	0.0127	0.0147	0.0142
Andropogon sp.	1.35%	0.0405	0.012	0.0095	0.019
Erigeron vernus	1.26%	0.0378	0.0073	0.021	0.0095
Rhynchospora oligantha	0.88%	0.0265	0.0107	0.0063	0.0095
Proserpinaca pectinata	0.86%	0.0259	0.0027	0.0042	0.019
Rhexia alifanus	0.7%	0.0209	0.004	0.0074	0.0095
Baccharis glomeruliflora	0.58%	0.0175	0.0027	0.0053	0.0095
Rhynchospora chapmanii	0.58%	0.0175	0.0027	0.0053	0.0095
Rhexia virginica	0.58%	0.0175	0.0027	0.0053	0.0095
Andropogon virginicus v. glaucus	0.56%	0.0168	0.01	0.0021	0.0047
Centella asiatica	0.55%	0.0164	0.0027	0.0042	0.0095

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T2 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Rhynchospora inundata	0.43%	0.013	0.002	0.0063	0.0047
Aristida stricta v. beyrichiana	0.37%	0.0111	0.0053	0.0011	0.0047
Hypericum crux-andreae	0.33%	0.0099	0.002	0.0032	0.0047
Fuirena breviseta	0.29%	0.0086	0.0007	0.0032	0.0047
Rubus sp.	0.29%	0.0086	0.0007	0.0032	0.0047
Eragrostis sp.	0.26%	0.0078	0.002	0.0011	0.0047
Dichanthelium scabriusculum	0.25%	0.0075	0.0007	0.0021	0.0047
Solidago sp.	0.22%	0.0065	0.0007	0.0011	0.0047
Euthamia graminifolia v. hirtipes	0.22%	0.0065	0.0007	0.0011	0.0047
Rhexia sp.	0.22%	0.0065	0.0007	0.0011	0.0047
Hypericum mutilum	0.22%	0.0065	0.0007	0.0011	0.0047
Ludwigia alata	0.22%	0.0065	0.0007	0.0011	0.0047
Vines					
Smilax laurifolia	0.29%	0.0088	0.002	0.0021	0.0047
Woody Plants					
Ilex glabra	5.91%	0.1773	0.1199	0.0242	0.0332
Ilex vomitoria	2.2%	0.066	0.026	0.0116	0.0284
Photinia pyrifolia	1.5%	0.0449	0.016	0.0147	0.0142
Myrica cerifera	1.27%	0.0382	0.0266	0.0021	0.0095
Rhus copallinum	0.65%	0.0194	0.002	0.0032	0.0142
Pinus elliottii	0.65%	0.0194	0.002	0.0032	0.0142
Baccharis sp.	0.25%	0.0075	0.0007	0.0021	0.0047
Nyssa ursina	0.22%	0.0065	0.0007	0.0011	0.0047

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T3 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Juncus roemerianus	18.6%	0.558	0.2086	0.1576	0.1918
Aristida stricta v. beyrichiana	13.72%	0.4115	0.2169	0.0439	0.1507
Rubus argutus	4.6%	0.1379	0.0092	0.0465	0.0822
Rhynchospora sp.	4.53%	0.1359	0.0064	0.0336	0.0959
Andropogon sp.	2.65%	0.0796	0.0119	0.0129	0.0548
Serenoa repens	2.56%	0.0768	0.0579	0.0052	0.0137
Dichanthelium sp.	2.37%	0.071	0.0092	0.0207	0.0411
Andropogon virginicus	1.21%	0.0363	0.0037	0.0052	0.0274
Euthamia caroliniana	0.75%	0.0224	0.0009	0.0078	0.0137
Ludwigia pilosa	0.57%	0.0172	0.0009	0.0026	0.0137
Euthamia sp.	0.57%	0.0172	0.0009	0.0026	0.0137
Amphicarpum muhlenbergianum	0.57%	0.0172	0.0009	0.0026	0.0137
Eriocaulon decangulare	0.57%	0.0172	0.0009	0.0026	0.0137
Woody Plants					
Photinia pyrifolia	29.15%	0.8746	0.2353	0.5297	0.1096
Ilex glabra	9.16%	0.2747	0.1287	0.0775	0.0685
Ilex cassine v. myrtifolia	4.1%	0.1229	0.0689	0.0129	0.0411
Ilex vomitoria	1.92%	0.0576	0.0147	0.0155	0.0274
Myrica heterophyla	1.83%	0.0548	0.023	0.0181	0.0137
Vaccinium myrsinites	0.57%	0.0172	0.0009	0.0026	0.0137

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T4 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Spartina patens	44.28%	1.3285	0.6118	0.5284	0.1883
Panicum virgatum	10.02%	0.3007	0.1031	0.1197	0.0779
Ludwigia pilosa	8.93%	0.268	0.0532	0.0849	0.1299
Pluchea foetida	5.84%	0.1751	0.0252	0.0525	0.0974
Juncus roemerianus	4.79%	0.1438	0.0323	0.0336	0.0779
Rhynchospora inundata	4.39%	0.1318	0.0455	0.0538	0.0325
Xyris sp.	3.5%	0.105	0.0389	0.0336	0.0325
Stillingia aquatica	3.46%	0.1037	0.0115	0.0208	0.0714
Amphicarpum muhlenbergianum	3.44%	0.1033	0.0121	0.0263	0.0649
Hypericum cistifolium	3.38%	0.1014	0.0351	0.0079	0.0584
Sagittaria lancifolia media	1.89%	0.0566	0.0066	0.011	0.039
Rhynchospora sp.	1.31%	0.0393	0.006	0.0073	0.026
Andropogon sp.	1.12%	0.0337	0.0093	0.0049	0.0195
Liatris spicata	0.78%	0.0235	0.0016	0.0024	0.0195
Juncus marginatus	0.57%	0.0172	0.0011	0.0031	0.013
Dichanthelium sp.	0.55%	0.0165	0.0011	0.0024	0.013
Ctenium aromaticum	0.51%	0.0153	0.0011	0.0012	0.013
Arnoglossum ovatum	0.37%	0.0112	0.0016	0.0031	0.0065
Solidago fistulosa	0.29%	0.0088	0.0005	0.0018	0.0065
Rhexia alifanus	0.25%	0.0076	0.0005	0.0006	0.0065
Woody Plants					
Myrica cerifera	0.29%	0.0087	0.0016	0.0006	0.0065

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T5 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Ludwigia pilosa	16.19%	0.4856	0.1555	0.2206	0.1095
Spartina patens	12.46%	0.3737	0.1561	0.138	0.0796
Juncus roemerianus	9.99%	0.2997	0.1612	0.0738	0.0647
Hypericum fasciculatum	8.77%	0.2631	0.1117	0.0817	0.0697
Panicum virgatum	5.3%	0.1589	0.0347	0.0844	0.0398
Cladium jamaicense	4.44%	0.1331	0.0468	0.0316	0.0547
Pluchea foetida	3.67%	0.11	0.0251	0.0351	0.0498
Rhynchospora inundata	3.34%	0.1001	0.026	0.0492	0.0249
Xyris sp.	2.87%	0.086	0.0166	0.0246	0.0448
Sagittaria lancifolia media	2.34%	0.0702	0.0082	0.0272	0.0348
Andropogon virginicus	2.34%	0.0701	0.0305	0.0097	0.0299
Boltonia sp.	2.18%	0.0655	0.0136	0.022	0.0299
Amphicarpum muhlenbergianum	2.09%	0.0627	0.0036	0.0193	0.0398
Stillingia aquatica	2.08%	0.0625	0.0172	0.0105	0.0348
Dichanthelium sp.	1.99%	0.0598	0.0042	0.0158	0.0398
Rhynchospora sp.	1.92%	0.0575	0.0109	0.0167	0.0299
Rhynchospora chapmanii	1.59%	0.0477	0.01	0.0228	0.0149
Euthamia graminifolia v. hirtipes	1.44%	0.0431	0.0039	0.0193	0.0199
Juncus megacephalus	1.28%	0.0385	0.0048	0.0088	0.0249
Euthamia sp.	1%	0.0301	0.0075	0.0176	0.005
Erigeron vernus	0.94%	0.0282	0.0033	0.0149	0.01
Dichanthelium scabriusculum	0.77%	0.0231	0.0069	0.0062	0.01
Rhynchospora microcarpa	0.73%	0.022	0.0085	0.0035	0.01
Rhynchospora microcephala	0.63%	0.0189	0.0054	0.0035	0.01
Rubus argutus	0.61%	0.0182	0.0012	0.007	0.01
Carex verrucosa	0.5%	0.0151	0.0075	0.0026	0.005
Eupatorium mohrii	0.5%	0.015	0.0006	0.0044	0.01
Solidago sempervirens	0.47%	0.0141	0.0006	0.0035	0.01
Andropogon virginicus v. glaucus	0.35%	0.0104	0.0045	0.0009	0.005

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T5 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Juncus marginatus	0.28%	0.0085	0.0009	0.0026	0.005
Juncus scirpoides	0.26%	0.0079	0.0003	0.0026	0.005
Spiranthes laciniata	0.26%	0.0077	0.0009	0.0018	0.005
Proserpinaca pectinata	0.24%	0.0071	0.0003	0.0018	0.005
Mitreola sp.	0.21%	0.0062	0.0003	0.0009	0.005
Oxypolis filiformis	0.21%	0.0062	0.0003	0.0009	0.005
Woody Plants					
Myrica cerifera	2.75%	0.0824	0.0649	0.0026	0.0149
Pinus elliottii	0.83%	0.0249	0.019	0.0009	0.005
Photinia pyrifolia	0.6%	0.018	0.0027	0.0053	0.01
Ilex vomitoria	0.45%	0.0134	0.0075	0.0009	0.005
Ilex cassine v. myrtifolia	0.45%	0.0134	0.0075	0.0009	0.005
Nyssa ursina	0.45%	0.0134	0.0075	0.0009	0.005
Myrica heterophyla	0.28%	0.0085	0.0009	0.0026	0.005

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T6 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Serenoa repens	13.28%	0.3983	0.2662	0.0321	0.1
Dichanthelium sp.	10.82%	0.3245	0.0741	0.1413	0.1091
Panicum virgatum	5.34%	0.1602	0.051	0.0819	0.0273
Rhynchospora sp.	3.87%	0.1162	0.0338	0.0369	0.0455
Rhynchospora chapmanii	1.94%	0.0581	0.0089	0.0401	0.0091
Rubus argutus	1.84%	0.0553	0.0077	0.0112	0.0364
Andropogon virginicus	1.55%	0.0464	0.0036	0.0064	0.0364
Hypericum fasciculatum	1.36%	0.0408	0.0071	0.0064	0.0273
Xyris sp.	1.13%	0.0339	0.0018	0.0048	0.0273
Syngonanthus flavidulus	1.1%	0.0331	0.0047	0.0193	0.0091
Andropogon sp.	0.94%	0.0283	0.0053	0.0048	0.0182
Hypericum microsepalum	0.94%	0.0282	0.0036	0.0064	0.0182
Andropogon glomeratus	0.51%	0.0154	0.0047	0.0016	0.0091
Xyris flabelliformis	0.48%	0.0145	0.0006	0.0048	0.0091
Hypericum crux-andreae	0.38%	0.0113	0.0006	0.0016	0.0091
Vines					
Smilax laurifolia	1.84%	0.0551	0.0101	0.0177	0.0273
Toxicodendron radicans	0.75%	0.0226	0.0012	0.0032	0.0182
Smilax glauca	0.38%	0.0113	0.0006	0.0016	0.0091
Woody Plants					
Ilex glabra	29.96%	0.8989	0.3474	0.3242	0.2273
Photinia pyrifolia	11.89%	0.3568	0.0326	0.2151	0.1091
Ilex vomitoria	6.29%	0.1886	0.1174	0.0257	0.0455
Pinus elliottii	1.88%	0.0565	0.003	0.008	0.0455
Lyonia ferruginea	0.65%	0.0196	0.0089	0.0016	0.0091
Myrica cerifera	0.51%	0.0154	0.0047	0.0016	0.0091
Gaylussacia frondosa var. tomentosa	0.38%	0.0113	0.0006	0.0016	0.0091

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T7 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Ludwigia pilosa	20.32%	0.6097	0.1928	0.3169	0.1
Spartina patens	10.84%	0.3252	0.1721	0.0719	0.0812
Rhynchospora inundata	6.03%	0.181	0.0615	0.082	0.0375
Pluchea foetida	5.78%	0.1735	0.0402	0.0708	0.0625
Hypericum fasciculatum	5.21%	0.1563	0.068	0.0258	0.0625
Panicum virgatum	4.82%	0.1446	0.0384	0.0562	0.05
Rubus argutus	4.02%	0.1206	0.0296	0.0348	0.0562
Rhynchospora filifolia	3.78%	0.1134	0.0361	0.0461	0.0312
Juncus roemerianus	3.54%	0.1062	0.0455	0.0169	0.0438
Amphicarpum muhlenbergianum	2.76%	0.0829	0.0231	0.0348	0.025
Rhynchospora oligantha	1.89%	0.0568	0.0313	0.0067	0.0188
Andropogon virginicus	1.89%	0.0568	0.0166	0.009	0.0312
Centella asiatica	1.77%	0.0532	0.0018	0.0326	0.0188
Coelorachis rugosa	1.71%	0.0514	0.0124	0.0202	0.0188
Xyris sp.	1.51%	0.0454	0.0047	0.0157	0.025
Dichanthelium scabriusculum	1.5%	0.045	0.0195	0.0067	0.0188
Saccharum sp.	1.33%	0.0399	0.0195	0.0079	0.0125
Andropogon glomeratus	1.25%	0.0376	0.0154	0.0034	0.0188
Bigelowia nudata	1.23%	0.037	0.0065	0.018	0.0125
Aristida palustris	1.12%	0.0336	0.0024	0.0124	0.0188
Juncus megacephalus	0.69%	0.0207	0.0089	0.0056	0.0062
Juncus repens	0.62%	0.0185	0.0089	0.0034	0.0062
Rhynchospora microcarpa	0.57%	0.0171	0.0024	0.0022	0.0125
Euthamia graminifolia v. hirtipes	0.45%	0.0136	0.0018	0.0056	0.0062
Juncus sp.	0.44%	0.0131	0.0047	0.0022	0.0062
Linum sp.	0.41%	0.0124	0.0006	0.0056	0.0062
Andropogon sp.	0.38%	0.0114	0.0018	0.0034	0.0062
Rhynchospora fascicularis	0.3%	0.0091	0.0018	0.0011	0.0062
Oxypolis filiformis	0.3%	0.0091	0.0018	0.0011	0.0062

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T7 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Dichanthelium sp.	0.3%	0.0091	0.0018	0.0011	0.0062
Panicum sp.	0.26%	0.0079	0.0006	0.0011	0.0062
Rhynchospora sp.	0.26%	0.0079	0.0006	0.0011	0.0062
Stillingia aquatica	0.26%	0.0079	0.0006	0.0011	0.0062
Vines					
Toxicodendron radicans	2.58%	0.0774	0.0083	0.0191	0.05
Smilax laurifolia	0.57%	0.0171	0.0035	0.0011	0.0125
Woody Plants					
Ilex vomitoria	3.58%	0.1075	0.0656	0.0169	0.025
Photinia pyrifolia	2%	0.0601	0.016	0.0191	0.025
Pinus elliottii	1.1%	0.033	0.0018	0.0124	0.0188
Ilex cassine v. myrtifolia	1%	0.0301	0.0154	0.0022	0.0125
Myrica cerifera	0.54%	0.0162	0.0089	0.0011	0.0062
Ilex glabra	0.44%	0.0131	0.0047	0.0022	0.0062
Taxodium ascendens	0.3%	0.0091	0.0018	0.0011	0.0062
Nyssa ursina	0.26%	0.0079	0.0006	0.0011	0.0062

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T8 - Tidal Flats

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Juncus roemerianus	16.09%	0.4827	0.1433	0.1495	0.1899
Sarcocornia perennis	12.9%	0.3869	0.0191	0.3045	0.0633
Batis maritima	10.94%	0.3283	0.0682	0.2221	0.038
Sporobolus virginicus	10.24%	0.3071	0.0185	0.2	0.0886
Serenoa repens	8.35%	0.2504	0.1802	0.0069	0.0633
Spartina patens	5.24%	0.1573	0.0763	0.0304	0.0506
Spartina spartinae	4.6%	0.1381	0.0959	0.0042	0.038
Aristida stricta v. beyrichiana	4.08%	0.1223	0.0641	0.0076	0.0506
Cladium jamaicense	3.04%	0.0911	0.0393	0.0138	0.038
Fimbristylis spadicea	2.69%	0.0806	0.0295	0.0131	0.038
Panicum virgatum	1.66%	0.0497	0.0069	0.0048	0.038
Symphyotrichum tenuifolium	1.04%	0.0311	0.0023	0.0035	0.0253
Schizachyrium sp.	0.93%	0.0278	0.0144	0.0007	0.0127
Agalinis maritima	0.74%	0.0221	0.0046	0.0048	0.0127
Borrichia frutescens	0.6%	0.0181	0.0006	0.0048	0.0127
Panicum sp.	0.51%	0.0154	0.0006	0.0021	0.0127
Juncus repens	0.5%	0.0151	0.0017	0.0007	0.0127
Limonium carolinianum	0.49%	0.0147	0.0006	0.0014	0.0127
Cynanchum angustifolium	0.47%	0.014	0.0006	0.0007	0.0127
Schizachyrium scoparium	0.47%	0.014	0.0006	0.0007	0.0127
Vines					
Ipomoea sagittata	0.47%	0.014	0.0006	0.0007	0.0127
Woody Plants					
Ilex vomitoria	11.14%	0.3343	0.201	0.0194	0.1139
Myrica cerifera	2.32%	0.0696	0.0295	0.0021	0.038
Quercus minima	0.53%	0.0158	0.0017	0.0014	0.0127

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP2T9 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Juncus roemerianus	17.97%	0.539	0.2043	0.1983	0.1364
Serenoa repens	16.78%	0.5033	0.3195	0.0474	0.1364
Sporobolus virginicus	13.88%	0.4164	0.0281	0.2974	0.0909
Spartina patens	13.07%	0.392	0.0997	0.2241	0.0682
Cladium jamaicense	4.15%	0.1246	0.0348	0.0216	0.0682
Limonium carolinianum	3.96%	0.1187	0.0203	0.0302	0.0682
Spartina spartinae	3.56%	0.1068	0.0484	0.0129	0.0455
Panicum virgatum	2.28%	0.0685	0.0242	0.0216	0.0227
Setaria parviflora	1.38%	0.0415	0.0145	0.0043	0.0227
Euthamia sp.	1%	0.0299	0.0029	0.0043	0.0227
Vines					
Toxicodendron radicans	2.24%	0.0671	0.0087	0.0129	0.0455
Woody Plants					
Ilex vomitoria	11.54%	0.3461	0.1094	0.0776	0.1591
Lyonia lucida	2.93%	0.088	0.061	0.0043	0.0227
Quercus minima	2.44%	0.0733	0.0019	0.0259	0.0455
Ilex glabra	1.44%	0.0433	0.0077	0.0129	0.0227
Myrica cerifera	1.38%	0.0415	0.0145	0.0043	0.0227

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T1 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Hypericum fasciculatum	10.31%	0.3094	0.0876	0.1524	0.0694
Cladium jamaicense	9.83%	0.2949	0.1212	0.098	0.0757
Centella asiatica	7.97%	0.239	0.0208	0.1551	0.0631
Rubus argutus	5.05%	0.1514	0.0434	0.0481	0.0599
Dichanthelium sp.	4.27%	0.1282	0.014	0.0606	0.0536
Spartina patens	3.86%	0.1157	0.0525	0.0348	0.0284
Ludwigia pilosa	3.36%	0.1008	0.034	0.0321	0.0347
Eriocaulon decangulare	2.28%	0.0685	0.0174	0.0196	0.0315
Coreopsis floridana	2.26%	0.0677	0.0045	0.0285	0.0347
Euthamia sp.	2.11%	0.0633	0.0144	0.0205	0.0284
Andropogon virginicus	1.91%	0.0574	0.017	0.0152	0.0252
Baccharis glomeruliflora	1.86%	0.0559	0.0177	0.0098	0.0284
Euthamia graminifolia v. hirtipes	1.73%	0.052	0.0162	0.0169	0.0189
Arnoglossum ovatum	1.67%	0.0501	0.0083	0.0134	0.0284
Juncus roemerianus	1.63%	0.0488	0.0223	0.0107	0.0158
Rhynchospora inundata	1.14%	0.0343	0.0083	0.0134	0.0126
Proserpinaca pectinata	1.12%	0.0336	0.0023	0.0187	0.0126
Schoenus nigricans	1.07%	0.0321	0.0181	0.0045	0.0095
Stillingia aquatica	1.03%	0.031	0.0023	0.0098	0.0189
Pluchea foetida	1.03%	0.0308	0.003	0.0089	0.0189
Rhynchospora oligantha	0.74%	0.0221	0.0064	0.0062	0.0095
Erigeron vernus	0.65%	0.0194	0.0019	0.008	0.0095
Eupatorium mohrii	0.65%	0.0194	0.0015	0.0053	0.0126
Eleocharis baldwinii	0.65%	0.0194	0.0015	0.0116	0.0063
Aristida palustris	0.56%	0.0167	0.0068	0.0036	0.0063
Solidago rugosa subsp. aspera	0.53%	0.0159	0.0019	0.0045	0.0095
Opuntia humifusa	0.51%	0.0153	0.0094	0.0027	0.0032
Rhynchospora fascicularis	0.38%	0.0113	0.0023	0.0027	0.0063
Juncus megacephalus	0.35%	0.0105	0.0015	0.0027	0.0063

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T1 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Muhlenbergia capillaris	0.33%	0.0098	0.0057	0.0009	0.0032
Saccharum sp.	0.33%	0.0098	0.0008	0.0027	0.0063
Juncus sp.	0.32%	0.0096	0.0015	0.0018	0.0063
Xyris sp.	0.3%	0.0089	0.0008	0.0018	0.0063
Schizachyrium sp.	0.24%	0.0072	0.0004	0.0036	0.0032
Bigelowia nudata	0.2%	0.0061	0.0011	0.0018	0.0032
Symphyotrichum dumosum	0.18%	0.0054	0.0004	0.0018	0.0032
Eriocaulon compressum	0.17%	0.0052	0.0011	0.0009	0.0032
Scleria sp.	0.17%	0.0052	0.0011	0.0009	0.0032
Rhynchospora sp.	0.17%	0.0052	0.0011	0.0009	0.0032
Andropogon virginicus v. glaucus	0.17%	0.0052	0.0011	0.0009	0.0032
Oxypolis filiformis	0.15%	0.0045	0.0004	0.0009	0.0032
Solidago sempervirens	0.15%	0.0045	0.0004	0.0009	0.0032
Asclepias sp.	0.15%	0.0045	0.0004	0.0009	0.0032
Eragrostis sp.	0.15%	0.0045	0.0004	0.0009	0.0032
Panicum virgatum	0.15%	0.0045	0.0004	0.0009	0.0032
Agalinis sp.	0.15%	0.0045	0.0004	0.0009	0.0032
Lobelia floridana	0.15%	0.0045	0.0004	0.0009	0.0032
Fuirena breviseta	0.15%	0.0045	0.0004	0.0009	0.0032
Hyptis alata	0.15%	0.0045	0.0004	0.0009	0.0032
Fuirena squarrosa	0.15%	0.0045	0.0004	0.0009	0.0032
Vines					
Toxicodendron radicans	3.44%	0.1033	0.0128	0.0463	0.0442
Mikania scandens	0.82%	0.0245	0.003	0.0089	0.0126
Ipomoea sagittata	0.65%	0.0194	0.0023	0.0045	0.0126
Vitis rotundifolia	0.35%	0.0105	0.0015	0.0027	0.0063
Woody Plants					
Myrica cerifera	11.67%	0.35	0.267	0.0357	0.0473
Ilex vomitoria	3.8%	0.1139	0.0668	0.025	0.0221
Nyssa ursina	3.24%	0.0971	0.0653	0.0223	0.0095

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T1 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	0.62%	0.0186	0.0015	0.0045	0.0126
Acer rubrum	0.44%	0.0133	0.0011	0.0027	0.0095
Persea palustris	0.3%	0.0089	0.0008	0.0018	0.0063
Sapium sebiferum	0.15%	0.0045	0.0004	0.0009	0.0032

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T2 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Rubus argutus	8.18%	0.2453	0.0331	0.1083	0.1039
Andropogon sp.	3.98%	0.1193	0.0485	0.0318	0.039
Rhynchospora sp.	3.29%	0.0988	0.0473	0.0255	0.026
Dichanthelium sp.	3.03%	0.0909	0.0201	0.0318	0.039
Andropogon glomeratus v. glaucopsis	2.27%	0.0681	0.0296	0.0255	0.013
Eriocaulon decangulare	2.21%	0.0664	0.0083	0.0191	0.039
Serenoa repens	1.84%	0.0553	0.0296	0.0127	0.013
Panicum virgatum	1.45%	0.0434	0.0047	0.0127	0.026
Anthaenantia rufa	1.39%	0.0416	0.0095	0.0191	0.013
Houstonia sp.	1.37%	0.0411	0.0024	0.0127	0.026
Cladium jamaicense	1.24%	0.0371	0.0177	0.0064	0.013
Centella asiatica	1.19%	0.0356	0.0035	0.0191	0.013
Osmunda regalis var. spectabilis	0.96%	0.0289	0.0095	0.0064	0.013
Lachnanthes caroliana	0.9%	0.0269	0.0012	0.0127	0.013
Euthamia sp.	0.9%	0.0269	0.0012	0.0127	0.013
Eupatorium mohrii	0.69%	0.0206	0.0012	0.0064	0.013
Vines					
Smilax laurifolia	5.08%	0.1525	0.0236	0.051	0.0779
Toxicodendron radicans	1.37%	0.0411	0.0024	0.0127	0.026
Woody Plants					
Ilex glabra	22.52%	0.6756	0.3546	0.1911	0.1299
Myrica heterophyla	7.31%	0.2193	0.065	0.0764	0.0779
Myrica cerifera	6.81%	0.2044	0.1336	0.0318	0.039
Ilex vomitoria	4.45%	0.1336	0.0118	0.0828	0.039
Photinia pyrifolia	3.96%	0.1187	0.0095	0.0573	0.0519
Nyssa ursina	3.55%	0.1066	0.0745	0.0191	0.013
Lyonia lucida	3.26%	0.0978	0.0272	0.0446	0.026
Cliftonia monophylla	2.08%	0.0625	0.0047	0.0318	0.026
Ilex coriacea	1.92%	0.0576	0.0189	0.0127	0.026

Quantitative Monitoring Data Results - Groundcover

Breakfast Point transect number BP3T2 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Cyrilla racemiflora	1.45%	0.0434	0.0047	0.0127	0.026
Persea palustris	0.69%	0.0206	0.0012	0.0064	0.013
Pinus elliottii	0.69%	0.0206	0.0012	0.0064	0.013

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T3 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Cladium jamaicense	16.22%	0.4865	0.1749	0.1937	0.1179
Hypericum fasciculatum	9.35%	0.2805	0.1054	0.0828	0.0923
Rhynchospora inundata	7.89%	0.2367	0.0957	0.0743	0.0667
Eriocaulon decangulare	6.62%	0.1985	0.0575	0.0743	0.0667
Spartina patens	6.24%	0.1872	0.0285	0.1279	0.0308
Juncus sp.	6.2%	0.1859	0.1068	0.0329	0.0462
Aristida stricta v. beyrichiana	4.38%	0.1315	0.0649	0.0256	0.041
Rhynchospora sp.	4.27%	0.1281	0.023	0.0743	0.0308
Verbesina chapmanii	4.02%	0.1206	0.0345	0.0451	0.041
Pluchea foetida	2.44%	0.0731	0.0092	0.028	0.0359
Ludwigia pilosa	1.75%	0.0525	0.0074	0.0195	0.0256
Andropogon virginicus	1.6%	0.0481	0.0115	0.011	0.0256
Rubus argutus	1.48%	0.0445	0.0055	0.0134	0.0256
Juncus roemerianus	1.48%	0.0443	0.0041	0.0146	0.0256
Saccharum sp.	1.2%	0.0361	0.0083	0.0073	0.0205
Dichanthelium sp.	1.07%	0.032	0.0018	0.0097	0.0205
Hypericum cistifolium	1.03%	0.0308	0.0083	0.0122	0.0103
Dichanthelium scabriusculum	0.6%	0.0181	0.0041	0.0037	0.0103
Desmodium floridanum	0.58%	0.0173	0.0037	0.0085	0.0051
Euthamia graminifolia v. hirtipes	0.45%	0.0136	0.0009	0.0024	0.0103
Xyris sp.	0.27%	0.008	0.0005	0.0024	0.0051
Stillingia aquatica	0.27%	0.008	0.0005	0.0024	0.0051
Baccharis glomeruliflora	0.27%	0.008	0.0005	0.0024	0.0051
Andropogon sp.	0.26%	0.0077	0.0014	0.0012	0.0051
Rhynchospora fascicularis	0.26%	0.0077	0.0014	0.0012	0.0051
Centella asiatica	0.23%	0.0068	0.0005	0.0012	0.0051
Amphicarpum muhlenbergianum	0.23%	0.0068	0.0005	0.0012	0.0051
Vines					
Toxicodendron radicans	4.79%	0.1436	0.0221	0.0548	0.0667

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T3 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Mikania scandens	0.45%	0.0136	0.0009	0.0024	0.0103
Smilax laurifolia	0.26%	0.0077	0.0014	0.0012	0.0051
Vitis rotundifolia	0.23%	0.0068	0.0005	0.0012	0.0051
Ipomoea sagittata	0.23%	0.0068	0.0005	0.0012	0.0051
Woody Plants					
Nyssa ursina	4.27%	0.128	0.0801	0.0171	0.0308
Myrica cerifera	3.41%	0.1023	0.0635	0.0183	0.0205
Taxodium ascendens	2.43%	0.0729	0.0451	0.0073	0.0205
Pinus elliottii	0.94%	0.0282	0.0028	0.0049	0.0205
Photinia pyrifolia	0.69%	0.0206	0.0018	0.0085	0.0103
Magnolia virginiana	0.59%	0.0178	0.0115	0.0012	0.0051
Ilex vomitoria	0.42%	0.0125	0.0037	0.0037	0.0051
Ilex glabra	0.42%	0.0125	0.0037	0.0037	0.0051
Ilex cassine v. myrtifolia	0.26%	0.0077	0.0014	0.0012	0.0051

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Spartina patens	17.33%	0.5199	0.2655	0.1704	0.084
Rubus argutus	13.29%	0.3986	0.0964	0.1801	0.1221
Andropogon virginicus	10.99%	0.3297	0.1429	0.0723	0.1145
Hypericum fasciculatum	5.03%	0.1509	0.0364	0.0611	0.0534
Euthamia graminifolia v. hirtipes	4.49%	0.1348	0.0086	0.0804	0.0458
Juncus roemerianus	2.22%	0.0667	0.045	0.0064	0.0153
Rhynchospora fascicularis	1.81%	0.0544	0.0219	0.0096	0.0229
Pluchea foetida	1.57%	0.047	0.0128	0.0113	0.0229
Aristida stricta v. beyrichiana	1.56%	0.0469	0.0268	0.0048	0.0153
Rhynchospora inundata	1.46%	0.0438	0.0064	0.0145	0.0229
Dichanthelium scabriusculum	1.34%	0.0403	0.0134	0.0193	0.0076
Xyris sp.	1.12%	0.0335	0.015	0.0032	0.0153
Dichanthelium sp.	1.03%	0.0309	0.0011	0.0145	0.0153
Panicum virgatum	1%	0.0301	0.008	0.0145	0.0076
Eupatorium mohrii	0.91%	0.0274	0.0134	0.0064	0.0076
Hypericum cistifolium	0.9%	0.0271	0.0086	0.0032	0.0153
Rhynchospora sp.	0.85%	0.0254	0.0021	0.008	0.0153
Hypericum chapmanii	0.84%	0.0252	0.008	0.0096	0.0076
Juncus megacephalus	0.78%	0.0233	0.0048	0.0032	0.0153
Pluchea sp.	0.7%	0.021	0.0005	0.0129	0.0076
Ludwigia suffruticosa	0.66%	0.0199	0.0043	0.008	0.0076
Solidago sempervirens	0.41%	0.0124	0.0016	0.0032	0.0076
Andropogon sp.	0.41%	0.0124	0.0016	0.0032	0.0076
Stillingia aquatica	0.38%	0.0113	0.0005	0.0032	0.0076
Solidago odora	0.32%	0.0097	0.0005	0.0016	0.0076
Solidago rugosa subsp. aspera	0.32%	0.0097	0.0005	0.0016	0.0076
Hypericum suffruticosum	0.32%	0.0097	0.0005	0.0016	0.0076
Vines					
Toxicodendron radicans	8.5%	0.2549	0.0439	0.127	0.084

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Smilax laurifolia	1.89%	0.0568	0.0134	0.0129	0.0305
Smilax sp.	0.52%	0.0156	0.0016	0.0064	0.0076
Woody Plants					
Photinia pyrifolia	7.09%	0.2128	0.03	0.0836	0.0992
Ilex vomitoria	3.72%	0.1116	0.0589	0.0145	0.0382
Myrica cerifera	1.96%	0.0587	0.031	0.0048	0.0229
Ilex glabra	1.78%	0.0534	0.0268	0.0113	0.0153
Nyssa ursina	1.7%	0.0509	0.0337	0.0096	0.0076
Pinus elliottii	0.75%	0.0226	0.0134	0.0016	0.0076

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP3T5 - Palustrine Marsh

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Spartina patens	64.46%	1.9338	0.8124	0.7368	0.3846
Juncus roemerianus	21.52%	0.6455	0.1361	0.2017	0.3077
Sagittaria lancifolia media	8.78%	0.2635	0.0331	0.0381	0.1923
Xyris sp.	2.68%	0.0804	0.0052	0.0111	0.0641
Rhynchospora sp.	2.07%	0.0621	0.0125	0.0111	0.0385
Stillingia aquatica	0.49%	0.0147	0.0007	0.0012	0.0128

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T1 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Panicum anceps	12.46%	0.3738	0.1111	0.125	0.1377
Andropogon virginicus	11.41%	0.3423	0.164	0.0841	0.0942
Serenoa repens	6.11%	0.1833	0.1508	0.0108	0.0217
Rubus argutus	5.53%	0.1658	0.0273	0.0733	0.0652
Houstonia sp.	4.6%	0.1379	0.0088	0.0711	0.058
Juncus sp.	3.96%	0.1188	0.0106	0.0647	0.0435
Dichanthelium sp.	3.41%	0.1023	0.0071	0.0517	0.0435
Solidago fistulosa	3.38%	0.1014	0.0141	0.0366	0.0507
Stillingia aquatica	2.75%	0.0825	0.0088	0.0302	0.0435
Pluchea foetida	1.52%	0.0455	0.0044	0.0194	0.0217
Xyris sp.	1.5%	0.0451	0.0053	0.0108	0.029
Rhynchospora ciliaris	1.31%	0.0394	0.0026	0.0151	0.0217
Eupatorium mohrii	1.24%	0.0372	0.0026	0.0129	0.0217
Euthamia graminifolia v. hirtipes	0.97%	0.0292	0.0018	0.0129	0.0145
Hypericum fasciculatum	0.96%	0.0288	0.0035	0.0108	0.0145
Hypericum chapmanii	0.9%	0.027	0.0026	0.0172	0.0072
Andropogon virginicus v. glaucus	0.83%	0.0249	0.0018	0.0086	0.0145
Eriocaulon decangulare	0.76%	0.0227	0.0026	0.0129	0.0072
Rhynchospora chapmanii	0.69%	0.0206	0.0026	0.0108	0.0072
Rhynchospora filifolia	0.63%	0.0189	0.0009	0.0108	0.0072
Juncus marginatus	0.63%	0.0189	0.0009	0.0108	0.0072
Dichanthelium scabriusculum	0.4%	0.012	0.0026	0.0022	0.0072
Rhynchospora sp.	0.4%	0.012	0.0026	0.0022	0.0072
Euthamia sp.	0.34%	0.0103	0.0009	0.0022	0.0072
Hypericum crux-andreae	0.34%	0.0103	0.0009	0.0022	0.0072
Andropogon gyrans	0.34%	0.0103	0.0009	0.0022	0.0072
Aristida stricta v. beyrichiana	0.34%	0.0103	0.0009	0.0022	0.0072
Vines					
Smilax laurifolia	3.88%	0.1164	0.0097	0.056	0.0507

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T1 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Woody Plants					
Ilex glabra	10.93%	0.3278	0.1684	0.0797	0.0797
Myrica heterophyla	7.36%	0.2208	0.1393	0.0453	0.0362
Photinia pyrifolia	6.54%	0.1961	0.0608	0.0991	0.0362
Pinus elliottii	3.56%	0.1067	0.0785	0.0065	0.0217

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T2 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Aristida stricta v. beyrichiana	9.94%	0.2982	0.1406	0.0545	0.1031
Dichanthelium sp.	4.73%	0.1419	0.0173	0.0421	0.0825
Serenoa repens	4.63%	0.139	0.0854	0.0124	0.0412
Rhexia alifanus	1.87%	0.0561	0.0025	0.0124	0.0412
Ctenium aromaticum	1.59%	0.0476	0.0043	0.0124	0.0309
Panicum anceps	1.34%	0.0402	0.0019	0.0074	0.0309
Andropogon virginicus	0.68%	0.0203	0.005	0.005	0.0103
Rhynchospora sp.	0.61%	0.0183	0.0006	0.0074	0.0103
Andropogon sp.	0.53%	0.0159	0.0006	0.005	0.0103
Helianthus radula	0.45%	0.0134	0.0006	0.0025	0.0103
Xyris sp.	0.45%	0.0134	0.0006	0.0025	0.0103
Eupatorium mohrii	0.45%	0.0134	0.0006	0.0025	0.0103
Hypericum sp.	0.45%	0.0134	0.0006	0.0025	0.0103
Xyris caroliniana	0.45%	0.0134	0.0006	0.0025	0.0103
Vines					
Smilax laurifolia	0.94%	0.0281	0.0025	0.005	0.0206
Smilax auriculata	0.45%	0.0134	0.0006	0.0025	0.0103
Woody Plants					
Lyonia lucida	20.82%	0.6246	0.1573	0.4158	0.0515
Ilex glabra	18.34%	0.5503	0.2402	0.1658	0.1443
Ilex vomitoria	8.38%	0.2513	0.1201	0.0693	0.0619
Lyonia ferruginea	5.83%	0.175	0.0632	0.0396	0.0722
Photinia pyrifolia	4.19%	0.1257	0.0173	0.0569	0.0515
Pinus elliottii	4.19%	0.1256	0.0873	0.0074	0.0309
Quercus minima	2.78%	0.0833	0.0149	0.0272	0.0412
Clethra alnifolia	2.1%	0.0629	0.0068	0.0149	0.0412
Myrica heterophyla	1.35%	0.0404	0.0099	0.0099	0.0206
Ilex coriacea	0.94%	0.0283	0.0155	0.0025	0.0103
Cyrilla racemiflora	0.65%	0.0196	0.0019	0.0074	0.0103

Quantitative Monitoring Data Results - Groundcover

Breakfast Point transect number BP4T2 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Magnolia virginiana	0.45%	0.0134	0.0006	0.0025	0.0103
Myrica cerifera	0.45%	0.0134	0.0006	0.0025	0.0103

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T3 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Dichanthelium scabriusculum	9.28%	0.2785	0.1367	0.0809	0.0609
Ludwigia suffruticosa	5.29%	0.1588	0.0388	0.0642	0.0558
Saccharum sp.	5.14%	0.1543	0.0649	0.0488	0.0406
Rhynchospora inundata	5.12%	0.1537	0.0415	0.0513	0.0609
Pluchea foetida	3.23%	0.0969	0.0191	0.0321	0.0457
Carex glaucescens	3.17%	0.095	0.0351	0.0193	0.0406
Lachnocaulon beyrichianum	3.05%	0.0916	0.0043	0.0822	0.0051
Aristida stricta v. beyrichiana	2.56%	0.0769	0.0399	0.0218	0.0152
Hypericum chapmanii	2.49%	0.0746	0.0186	0.0205	0.0355
Dichanthelium sp.	2.34%	0.0701	0.0356	0.0193	0.0152
Rubus argutus	2.22%	0.0665	0.0154	0.0257	0.0254
Juncus scirpoides	1.72%	0.0517	0.0096	0.0167	0.0254
Juncus polycephalos	1.53%	0.046	0.009	0.0167	0.0203
Rhynchospora sp.	1.43%	0.0428	0.0032	0.0193	0.0203
Stillingia aquatica	1.08%	0.0323	0.0043	0.0077	0.0203
Eriocaulon decangulare	1.05%	0.0315	0.0059	0.0154	0.0102
Xyris sp.	0.98%	0.0295	0.0027	0.0116	0.0152
Centella asiatica	0.95%	0.0284	0.0016	0.0116	0.0152
Euthamia sp.	0.76%	0.0228	0.0037	0.0039	0.0152
Andropogon virginicus	0.71%	0.0212	0.0059	0.0051	0.0102
Andropogon sp.	0.61%	0.0183	0.0016	0.0116	0.0051
Drosera capillaris	0.59%	0.0177	0.0011	0.0064	0.0102
Lachnocaulon sp.	0.51%	0.0152	0.0011	0.0039	0.0102
Hypericum sp.	0.49%	0.0146	0.0005	0.009	0.0051
Rhynchospora filifolia	0.46%	0.0139	0.0011	0.0026	0.0102
Andropogon ternarius	0.39%	0.0118	0.0016	0.0051	0.0051
Rhynchospora chapmanii	0.27%	0.008	0.0016	0.0013	0.0051
Vines					
Smilax laurifolia	2.51%	0.0752	0.0128	0.0167	0.0457

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T3 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Toxicodendron radicans	0.46%	0.0139	0.0011	0.0026	0.0102
Woody Plants					
Clethra alnifolia	6.8%	0.204	0.0686	0.0796	0.0558
Cliftonia monophylla	5.37%	0.161	0.0691	0.0513	0.0406
Myrica cerifera	5.01%	0.1503	0.1005	0.0193	0.0305
Lyonia lucida	4.68%	0.1404	0.0431	0.0719	0.0254
Nyssa ursina	3.1%	0.0931	0.0574	0.0103	0.0254
Ilex glabra	2.71%	0.0814	0.0239	0.0321	0.0254
Ilex coriacea	2%	0.0601	0.0229	0.027	0.0102
Cyrilla racemiflora	2%	0.0599	0.0191	0.0205	0.0203
Magnolia virginiana	1.74%	0.0522	0.0165	0.0103	0.0254
Pinus elliottii	1.66%	0.0499	0.0117	0.0077	0.0305
Myrica heterophyla	1.48%	0.0443	0.0213	0.0128	0.0102
Quercus minima	0.88%	0.0264	0.0021	0.0141	0.0102
Persea palustris	0.66%	0.0197	0.0133	0.0013	0.0051
Photinia pyrifolia	0.5%	0.0149	0.0021	0.0026	0.0102
Fraxinus caroliniana	0.4%	0.012	0.0043	0.0026	0.0051
Acer rubrum	0.36%	0.0107	0.0043	0.0013	0.0051
Alnus serrulata	0.31%	0.0093	0.0016	0.0026	0.0051

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T4 - Mesic Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Sporobolus sp.	9.2%	0.276	0.1477	0.0441	0.0842
Aristida stricta v. beyrichiana	6.38%	0.1914	0.0883	0.0294	0.0737
Serenoa repens	6.01%	0.1802	0.1388	0.0098	0.0316
Rubus argutus	3.27%	0.0982	0.008	0.027	0.0632
Carphephorus odoratissimus	3.09%	0.0926	0.0064	0.0441	0.0421
Andropogon virginicus	2.08%	0.0623	0.0233	0.0074	0.0316
Dichanthelium sp.	1.92%	0.0576	0.0032	0.0123	0.0421
Fuirena scirpoidea	1.57%	0.0472	0.0016	0.0245	0.0211
Amphicarpum muhlenbergianum	1.38%	0.0414	0.0024	0.0074	0.0316
Aristida spiciformis	0.46%	0.0138	0.0008	0.0025	0.0105
Fuirena sp.	0.46%	0.0138	0.0008	0.0025	0.0105
Liatris sp.	0.46%	0.0138	0.0008	0.0025	0.0105
Pterocaulon pycnostachyum	0.46%	0.0138	0.0008	0.0025	0.0105
Vines					
Smilax auriculata	1.38%	0.0414	0.0024	0.0074	0.0316
Vitis rotundifolia	0.46%	0.0138	0.0008	0.0025	0.0105
Woody Plants					
Ilex glabra	20.21%	0.6063	0.2793	0.1691	0.1579
Quercus minima	18.69%	0.5606	0.1429	0.2598	0.1579
Photinia pyrifolia	6.62%	0.1986	0.0161	0.1299	0.0526
Ilex vomitoria	6.45%	0.1936	0.0401	0.1324	0.0211
Vaccinium darrowii	5.52%	0.1656	0.0313	0.0711	0.0632
Pinus elliottii	2.58%	0.0774	0.0514	0.0049	0.0211
Lyonia lucida	0.83%	0.025	0.012	0.0025	0.0105
Myrica heterophyla	0.54%	0.0162	0.0008	0.0049	0.0105

Quantitative Monitoring Data Results - Groundcover
Breakfast Point transect number BP4T5 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Herbaceous Plants					
Cladium jamaicense	36.23%	1.087	0.4338	0.4487	0.2045
Panicum virgatum	13.17%	0.395	0.081	0.1776	0.1364
Spartina patens	11.12%	0.3337	0.1015	0.111	0.1212
Aristida stricta v. beyrichiana	10.38%	0.3115	0.2102	0.0407	0.0606
Juncus sp.	8.03%	0.241	0.0752	0.0749	0.0909
Juncus roemerianus	3.7%	0.1111	0.0096	0.0333	0.0682
Stillingia aquatica	2.36%	0.0708	0.0058	0.012	0.053
Centella asiatica	1.76%	0.0527	0.0032	0.0268	0.0227
Xyris sp.	1.36%	0.0407	0.0116	0.0139	0.0152
Verbesina chapmanii	1.31%	0.0394	0.0103	0.0139	0.0152
Amphicarpum muhlenbergianum	0.7%	0.0211	0.0013	0.0046	0.0152
Rhynchospora sp.	0.66%	0.0197	0.0026	0.0019	0.0152
Dichanthelium sp.	0.61%	0.0184	0.0013	0.0019	0.0152
Andropogon brachystachyus	0.38%	0.0114	0.0019	0.0019	0.0076
Osmunda regalis var. spectabilis	0.35%	0.0104	0.0019	0.0009	0.0076
Saccharum sp.	0.35%	0.0104	0.0019	0.0009	0.0076
Liatris spicata	0.34%	0.0101	0.0006	0.0019	0.0076
Vines					
Smilax laurifolia	0.66%	0.0197	0.0026	0.0019	0.0152
Ipomoea sagittata	0.3%	0.0091	0.0006	0.0009	0.0076
Woody Plants					
Ilex vomitoria	2.12%	0.0637	0.0186	0.0148	0.0303
Pinus elliottii	1.48%	0.0445	0.0096	0.0046	0.0303
Ilex glabra	1.14%	0.0341	0.0077	0.0037	0.0227
Photinia pyrifolia	0.91%	0.0274	0.0019	0.0028	0.0227
Myrica heterophyla	0.58%	0.0173	0.0051	0.0046	0.0076

Appendix B: Summary of Quantitative Baseline Conditions

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Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP1T1 - Mixed Forested Wetland

Percent Cover by vegetative classification:

Forbs	11.95%
Graminoids	10.34%
Vines	7.81%
Woody Plants	69.9%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	49.55%
Open/standing water	26.2%

Species Richness:	28 species
Average height of Shrubs:	1.44 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP1T2 - Cypress Flat

Percent Cover by vegetative classification:

Forbs	32.53%
Graminoids	35.07%
Vines	1.32%
Woody Plants	31.05%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	42.58%
Open/standing water	49.3%

Species Richness: 32 species

Average height of Shrubs: 1.91 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP1T3 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	35.58%
Graminoids	0.77%
Vines	0.38%
Woody Plants	63.26%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	58.3%

Species Richness:	25 species
Average height of Shrubs:	1.74 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP1T4 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	42.08%
Graminoids	30.98%
Vines	0.21%
Woody Plants	26.74%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	17.29%
Open/standing water	46.65%

Species Richness:	46 species
Average height of Shrubs:	1.43 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP1T5 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	25.27%
Graminoids	2.65%
Vines	0.04%
Woody Plants	72.03%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	43.47%

Species Richness:	27 species
Average height of Shrubs:	1.49 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP1T6 - Cypress Flat

Percent Cover by vegetative classification:

Forbs	25.49%
Graminoids	69.65%
Vines	2.82%
Woody Plants	2.07%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	37.85%
Open/standing water	74%

Species Richness: 26 species

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T1 - Palustrine Marsh

Percent Cover by vegetative classification:

Forbs	18.87%
Graminoids	79.89%
Vines	0.14%
Woody Plants	1.1%

Percent Cover Average of Bare Ground and Standing Water:

Open/standing water	59.17%

Species Richness: 12 species

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T2 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	30.89%
Graminoids	49.59%
Vines	0.2%
Woody Plants	19.39%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	39.85%
Open/standing water	50%

Species Richness: 50 species

Average height of Shrubs: 1.52 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T3 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	7.07%
Graminoids	45.76%
Woody Plants	47.15%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	67.52%

Species Richness:	19 species
Average height of Shrubs:	1.52 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T4 - Cypress Flat

Percent Cover by vegetative classification:

Forbs	17.47%
Graminoids	82.34%
Woody Plants	0.16%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	28.25%
Open/standing water	32.15%

Species Richness:	21 species
Average height of Shrubs:	1.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T5 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	36.68%
Graminoids	52.28%
Woody Plants	11%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	23.25%
Open/standing water	43.55%

Species Richness:	42 species
Average height of Shrubs:	2.3 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T6 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	29.23%
Graminoids	18.14%
Vines	1.19%
Woody Plants	51.46%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	59.07%

Species Richness:	25 species
Average height of Shrubs:	1.16 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T7 - Cypress Flat

Percent Cover by vegetative classification:

Forbs	34.84%
Graminoids	52.53%
Vines	1.18%
Woody Plants	11.48%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	15.71%
Open/standing water	53.46%

Species Richness:	43 species
Average height of Shrubs:	1.68 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T8 - Tidal Flats

Percent Cover by vegetative classification:

Forbs	27.62%
Graminoids	49.11%
Vines	0.06%
Woody Plants	23.22%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	62.41%
Open/standing water	83%

Species Richness: 24 species

Average height of Shrubs: 1.68 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP2T9 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	34.27%
Graminoids	45.4%
Vines	0.87%
Woody Plants	19.45%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	69.87%
Open/standing water	25%

Species Richness: 16 species

Average height of Shrubs: 1.99 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP3T1 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	29.24%
Graminoids	28.52%
Vines	1.96%
Woody Plants	40.29%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	14.81%
Open/standing water	32.39%

Species Richness:	61 species
Average height of Shrubs:	1.97 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP3T2 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	9.95%
Graminoids	16.79%
Vines	2.6%
Woody Plants	70.69%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	74.26%
Open/standing water	43%

Species Richness: 30 species

Average height of Shrubs: 1.65 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP3T3 - Cypress Flat

Percent Cover by vegetative classification:

Forbs	23.44%
Graminoids	52.69%
Vines	2.54%
Woody Plants	21.36%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	28.92%
Open/standing water	46.84%

Species Richness:	41 species
Average height of Shrubs:	1.99 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP3T4 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	20.76%
Graminoids	53.95%
Vines	5.89%
Woody Plants	19.38%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	64.08%
Open/standing water	45.67%

Species Richness:	36 species
Average height of Shrubs:	1.88 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP3T5 - Palustrine Marsh

Percent Cover by vegetative classification:

Forbs	3.9%
Graminoids	96.1%

Percent Cover Average of Bare Ground and Standing Water:

Open/standing water	54.27%

Species Richness: 6 species

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP4T1 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	23.44%
Graminoids	30.86%
Vines	0.97%
Woody Plants	44.7%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	60.8%

Species Richness:	32 species
Average height of Shrubs:	2.3 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP4T2 - Hydric Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	9.09%
Graminoids	17.03%
Vines	0.31%
Woody Plants	73.56%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	59.61%

Species Richness:	29 species
Average height of Shrubs:	1.63 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP4T3 - Cypress Flat

Percent Cover by vegetative classification:

Forbs	11.71%
Graminoids	38.73%
Vines	1.39%
Woody Plants	48.18%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	50.25%
Open/standing water	37.8%

Species Richness: 46 species

Average height of Shrubs: 1.16 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP4T4 - Mesic Pine Flatwoods

Percent Cover by vegetative classification:

Forbs	15.48%
Graminoids	26.81%
Vines	0.32%
Woody Plants	57.39%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	63.89%

Species Richness:	23 species
Average height of Shrubs:	2.05 meters

Summary of Quantitative Baseline Conditions - Groundcover
Breakfast Point transect number BP4T5 - Treeless Hydric Savanna

Percent Cover by vegetative classification:

Forbs	3.34%
Graminoids	92.03%
Vines	0.32%
Woody Plants	4.29%

Percent Cover Average of Bare Ground and Standing Water:

Bare ground	17.33%
Open/standing water	37.74%

Species Richness: 24 species

Average height of Shrubs: 1.05 meters

Appendix C: Quantitative Monitoring Results – Canopy Point Quarter

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Quantitative Monitoring Data Results - Canopy Point Quarter
Breakfast Point transect number BP1T1 - Mixed Forested Wetland

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	87.75%	2.6325	0.9825	0.825	0.825
Taxodium ascendens	12.25%	0.3675	0.0175	0.175	0.175

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 8.4136 sq m/hectare 36.6498 sq ft/acre

Number of Individuals: 351.6 /hectare 142.29 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter

Breakfast Point transect number BP1T6 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	89.89%	2.6967	0.9467	0.875	0.875
Taxodium ascendens	8.43%	0.2529	0.0529	0.1	0.1
Sapium sebiferum	1.68%	0.0504	0.0004	0.025	0.025

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 1.2812 sq m/hectare 5.5808 sq ft/acre

Number of Individuals: 175.37 /hectare 70.97 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter

Breakfast Point transect number BP2T4 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	59.83%	1.795	0.595	0.6	0.6
Taxodium ascendens	40.17%	1.205	0.405	0.4	0.4

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 1.5246 sq m/hectare 6.641 sq ft/acre

Number of Individuals: 191.98 /hectare 77.69 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter

Breakfast Point transect number BP3T3 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Taxodium ascendens	64.33%	1.9299	0.7299	0.6	0.6
Pinus elliottii	35.67%	1.0701	0.2701	0.4	0.4

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 3.8641 sq m/hectare 16.8318 sq ft/acre

Number of Individuals: 413.08 /hectare 167.17 /acre

Quantitative Monitoring Data Results - Canopy Point Quarter
Breakfast Point transect number BP4T3 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Taxodium ascendens	47.89%	1.4366	0.5866	0.425	0.425
Pinus elliottii	35.64%	1.0691	0.3691	0.35	0.35
Magnolia virginiana	13.1%	0.3929	0.0429	0.175	0.175
Cliftonia monophylla	1.69%	0.0508	0.0008	0.025	0.025
Nyssa ursina	1.69%	0.0506	0.0006	0.025	0.025

Summary of Quantitative Baseline Conditions - Canopy Point Quarter

Basal Area : 1.8013 sq m/hectare 7.8465 sq ft/acre

Number of Individuals: 117.13 /hectare 47.4 /acre

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

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Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP1T3 - Mesic 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 : 41 sq m/hectare 182.99 sq ft/acre

Number of Individuals: 1700 /hectare 687.97 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP1T4 - 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 : 9 sq m/hectare 43.06 sq ft/acre

Number of Individuals: 700 /hectare 283.28 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP1T5 - Mesic 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 : 37 sq m/hectare 161.46 sq ft/acre

Number of Individuals: 1800 /hectare 728.43 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T2 - 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 : 25 sq m/hectare 107.64 sq ft/acre

Number of Individuals: 1700 /hectare 687.97 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T3 - Mesic 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 : 37 sq m/hectare 161.46 sq ft/acre

Number of Individuals: 2000 /hectare 809.37 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T5 - 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 : 19 sq m/hectare 86.11 sq ft/acre

Number of Individuals: 1400 /hectare 566.56 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T6 - Mesic 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 : 29 sq m/hectare 129.17 sq ft/acre

Number of Individuals: 1100 /hectare 445.15 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T7 - Cypress Flat

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	84.7233%	2.5417	0.875	0.8667	0.8
Taxodium ascendens	15.2767%	0.4583	0.125	0.1333	0.2

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 8 sq m/hectare 37.67 sq ft/acre

Number of Individuals: 1500 /hectare 607.03 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T8 - Tidal Flats

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: 700 /hectare 283.28 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP2T9 - Mesic 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: 1300 /hectare 526.09 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP3T1 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	75%	2.25	1	1	0.25
SPACE HOLDER	25%	0.75	0	0	0.75

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 1.5 sq m/hectare 5.38 sq ft/acre

Number of Individuals: 300 /hectare 121.41 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP3T2 - Mesic 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 : 40 sq m/hectare 172.22 sq ft/acre

Number of Individuals: 2000 /hectare 809.37 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP3T4 - Hydric Pine Flatwoods

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	91.6667%	2.75	1	1	0.75
SPACE HOLDER	8.3333%	0.25	0	0	0.25

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 9.5 sq m/hectare 43.055 sq ft/acre

Number of Individuals: 1000 /hectare 404.69 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP4T1 - 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 : 10 sq m/hectare 43.06 sq ft/acre

Number of Individuals: 600 /hectare 242.81 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP4T2 - 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 : 37 sq m/hectare 161.46 sq ft/acre

Number of Individuals: 2000 /hectare 809.37 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP4T4 - Mesic 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 : 32 sq m/hectare 139.93 sq ft/acre

Number of Individuals: 1500 /hectare 607.03 /acre

Quantitative Monitoring Data Results - 10m x 10m

Breakfast Point transect number BP4T5 - Treeless Hydric Savanna

Species	Importance Value %	Importance Value	Relative Cover	Relative Density	Relative Frequency
Pinus elliottii	75%	2.25	1	1	0.25
SPACE HOLDER	25%	0.75	0	0	0.75

Summary of Quantitative Baseline Conditions - 10m x 10m

Basal Area : 1 sq m/hectare 5.38 sq ft/acre

Number of Individuals: 100 /hectare 40.47 /acre

Appendix E: Quantitative Monitoring Photographs

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Breakfast Point Mitigation Bank – Phase 1 Quantitative Photographs

Breakfast Point Phase 1 Transect 1
Mixed Forested Wetland (BP1T1 MFW)

Breakfast Point Phase 1 Transect 2
Cypress Flats (BP1T2 CF)

Breakfast Point Phase 1 Transect 3
Mesic Pine Flatwoods (BP1T3 MPF)

Breakfast Point Phase 1 Transect 4
Hydric Pine Flatwoods (BP1T4 HPF)

Breakfast Point Phase 1 Transect 5
Mesic Pine Flatwoods (BP1T5 MPF)

Breakfast Point Mitigation Bank – Phase 1 & 2 Quantitative Photographs

Breakfast Point Phase 1 Transect 6
Cypress Flats (BP1T6 CF)

Breakfast Point Phase 2 Transect 1
Palustrine Marsh (BP2T1 MP)

Breakfast Point Phase 2 Transect 2
Hydric Pine Flatwoods (BP2T2 HPF)

Breakfast Point Phase 2 Transect 3
Mesic Pine Flatwoods (BP2T3 MPF)

Breakfast Point Phase 2 Transect 4
Cypress Flats (BP2T4 CF)

Breakfast Point Mitigation Bank – Phase 2 Quantitative Photographs

Breakfast Point Phase 2 Transect 5
Hydric Pine Flatwoods (BP2T5 HPF)

Breakfast Point Phase 2 Transect 6
Mesic Pine Flatwoods (BP2T6 MPF)

Breakfast Point Phase 2 Transect 7
Cypress Flats (BP2T7 CF)

Breakfast Point Phase 2 Transect 8
Tidal Flats (BP2T8 TF)

Breakfast Point Phase 2 Transect 9
Mesic Pine Flatwoods (BP2T9 MPF)

Breakfast Point Mitigation Bank – Phase 3 Quantitative Photographs

Breakfast Point Phase 3 Transect 1
Hydric Pine Flatwoods (BP3T1 HPF)

Breakfast Point Phase 3 Transect 2
Mesic Pine Flatwoods (BP3T2 MPF)

Breakfast Point Phase 3 Transect 3
Cypress Flats (BP3T3 CF)

Breakfast Point Phase 3 Transect 4
Hydric Pine Flatwoods (BP3T4 HPF)

Breakfast Point Phase 3 Transect 5
Palustrine Marsh (BP3T5 PM)

Breakfast Point Mitigation Bank – Phase 4 Quantitative Photographs

Breakfast Point Phase 4 Transect 1
Hydric Pine Flatwoods (BP4T1 HPF)

Breakfast Point Phase 4 Transect 2
Cypress Flats (BP4T2 CF)

Breakfast Point Phase 4 Transect 3
Hydric Pine Flatwoods (BP4T3 HPF)

Breakfast Point Phase 4 Transect 4
Mesic Pine Flatwoods (BP4T4 MPF)

Breakfast Point Phase 4 Transect 5
Treeless Hydric Savanna (BP4T5 THS)

Appendix F: Qualitative Monitoring Results

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Site Name: Breakfast Point **Plant community type:** Palustrine Marsh

Transect ID: BPQT1_P1PM **Date and time (am/pm):** 12/21/2004 ☐ 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. Myrica cerifera **2.** **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 cerifera **2.** Pinus 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. Muhlenbergia capillaris **2.** Cladium jamaicense

3. Panicum virgatum **4.** Setaria geniculata

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

1. Panicum virgatum **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 subsiden
☐ 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:

Catbird (Dumetella carolinensis); Robin (Turdus migratorius)

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 go

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 best described as wet prairie or high marsh associated with saltmarsh grading into a hydric pine flatwoods.
Halophytes such as saltmarsh aster (Aster tenuifolius) were present, Juncus roemarianus marsh is located just downslope, to the east of this site.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT1_P2MPF **Date and time (am/pm):** 2/21/2004 ☐ 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.** 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. **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. **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 subsiden
☐ 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:

Scat from white tailed deer (Odocoileus virginianusr bird calls from Catbird (Dumetella carolinensis);
Robin (Turdus migratorius) eating the Aronia arbutifolia fruit.

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 go

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 needs a prescribed warm season burn. Large shrubs have eliminated most of the groundcover diversity. Thick pine duff is inhibiting small seed germination.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT2_P1HPF **Date and time (am/pm):** 2/21/2004 ☑ 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.** Sapium sebiferum **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.** Myrica cerifera

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 cerifera **2.** Myrica heterophyla **3.** Ilex vomitoria

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. Spartina patens **2.** Juncus roemarianus

3. **4.**

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:

Mosquito species were biting. Wintering warblers feeding in shrubs. Catbird (Dumetella carolinensis) was heard.
Raccoon (Procyon lotor) footprints were seen.

18. Exotic species: ☑ present ☐ absent

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

Species: Sapium sebiferum **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 go

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 needs a prescribed warm season burn. Large shrubs have eliminated most of the groundcover diversity, these could be reduced with a prescribed fire.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT2_P2MPF **Date and time (am/pm):** 2/21/2004 ☑ 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. Lyonia lucida **2.** Ilex vomitoria **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.**

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:

Wintering warblers in the thick undergrowth. Mosquitos present. Can hear the construction of highway 98 bridge.

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 go

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:

Needs a prescribed burn to remove more the half of the canopy. Fire suppressed shrub layer has eliminated the groundcover.
Thick pine duff present, this would inhibit small seed germination.

Site Name: Breakfast Point **Plant community type:** Palustrine Marsh

Transect ID: BPQT2_P3PM **Date and time (am/pm):** 2/21/2004 ☑ 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.** Sapiium sebiferum **3.**

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

List 3 dominant **SHRUB** species observed:

1. **2.** **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 cerifera **2.** Ilex vomitoria **3.** Myrica heterophylla

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. Spartina patens **2.** Juncus roemarianus

3. **4.**

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

1. Myrica cerifera **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 channel
☑ 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 subsiden
☐ 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:

Robin (Turdus migratorius) was seen in shrubs. Mosquito and buckeye butterfly also seen.

18. Exotic species: ☑ present ☐ absent

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

Species: Sapium sebiferum **Location:** SAP BPQT-4 **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 go

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 burn recommended. Slash pine planted in a marsh.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT3_P1MPF **Date and time (am/pm):** 12/16/2004 ☐ 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.**

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 glabra **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. **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. **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 subsiden
☐ 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) scat; biting mosquitos and sand gnats; wolf spider: Gulf Coast Box Turtle (Terrapene carolina major) shell was found; white throated sparrows and wintering warblers were 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 go

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 burn recommended. Thick pine duff inhibiting small seed germination and groundcover diversity.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT3_P2CF **Date and time (am/pm):** 12/16/2004 ☐ 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. Nyssa sylvatica v. ursina **2.** Myrica cerifera **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 cerifera **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. Cladium jamaicense **2.** Juncus roemarianus

3. Spartina patens **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 subsiden
☐ 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:

mosquitofish (Gambusia holbrooki), crayfish and mosquito larva were seen in the water; White-tailed Deer (Odocoileus virginianus), Marsh Rabbit (Sylvilagus palustris), Raccoon (Procyon lotor), feral hog scat was observed; sand gnats, mosquitos were biting;

18. Exotic species: ☑ present ☐ absent

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

Species: S. sebiferum,destroyed onsite **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 go

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 burn recommended.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT3_P3HPF **Date and time (am/pm):** 12/16/2004 ☐ 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.** Sapium sebiferum **3.**

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

List 3 dominant **SHRUB** species observed:

1. Myrica cerifera **2.** Ilex vomitoria **3.** Sapium sebiferum

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. Sapium sebiferum **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. Juncus roemarianus **2.** Spartina patens

3. Aristida stricta **4.** Andropogon sp.

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:

Feral hog rutting observed in wetland; Mosquito larva and mosquito fish (Gambusia), in water; Robin (Turdus migratorius).

18. Exotic species: ☑ present ☐ absent

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

Species: Sapium sebiferum **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 go

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 burn recommended. Majority of the groundcover is species appropriate. However, 1-5% of the groundcover is Sapium sebiferum.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT3_P4MPF **Date and time (am/pm):** 12/16/2004 ☐ 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. Myrica cerifera **2.** Ilex glabra **3.** Ilex vomitoria

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 cerifera **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. Aristida stricta **2.** Andropogon

3. Scleria sp. **4.** Dicanthelium sp.

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

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

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

1. Andropogon **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:

Eastern towhee (Pipilo erythrophthalmus), white throated sparrow (Zonotrichia albicollis) , hermit thrush (Catharus guttatus), American robin (Turdus migratorius), 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 go

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 needs a warm season burn, was clear cut in the past, tree density is appropriate, groundcover diversity is low due to competition from fire suppressed shrubs.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT4_P1CF **Date and time (am/pm):** 12/12/2004 ☐ 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. **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. Myrica cerifera **2.** Ilex vomitoria **3.** Fraxinus caroliniana

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. Fraxinus caroliniana **2.** Myrica cerifera **3.** Ilex vomitoria

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. Amphicarpum muhlenbergianum **2.** Hypericum fasciculatum

3. Rhynchospora fascicularis **4.** Stillingia aquatica

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

1. Stillingia aquatica **2.** **3.**

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

1. Amphicarpum muhlenbergianum **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:

Bald eagles (Haliaeetus leucocephalus) flying over nest in distance,eastern towhee (Pipilo erythrophthalmus), tree swallow (Tachycineta bicolor)

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 go

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 cypress flat with scattered pond cypress, some regeneration of cypress was seen. Foliage of many plants was salt burned from hurricane Ivan.

Site Name: Breakfast Point **Plant community type:** Mixed Forested Wetland

Transect ID: BPQT4-P2MFW **Date and time (am/pm):** 12/21/2004 ☐ 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. Pinus elliottii **2.** Taxodium ascendens **3.**

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

List 3 dominant **SHRUB** species observed:

1. Myrica cerifera **2.** Ilex glabra **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. Pinus elliottii **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. Hypericum fasciculatum **2.** Rhynchospora fascicularis

3. Sphagnum sp. **4.** Smilax laurifolia

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

1. Smilax laurifolia **2.** Hypericum fasciculatum **3.** Rhynchospora fascicularis

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:

Bald eagles (Haliaeetus leucocephalus) flying over nest in distance; 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 go

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 canopy reduction would allow for more regeneration of scattered pond cypress which are mixed with slash pine in this forest. Soils are saturate possiblesite for wet prairie restoration or cypress flats. Myrica heterophylla, Drosera capillaris and Clethra alnifolia were also seen. Large hummock with fire suppressed tangles of Smilax laurifolia.

Site Name: Breakfast Point **Plant community type:** Mixed Forested Wetland

Transect ID: BPQT4_P3MFW **Date and time (am/pm):** 12/21/2004 ☐ 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. Lyonia lucida **2.** Myrica cerifera **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. Myrica cerifera **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. Andropogon virginicus **2.** Hypericum fasciculatum

3. Solidago rugosa **4.** Smilax laurifolia

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

1. Smilax laurifolia **2.** Andropogon virginicus **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 subsiden
☐ 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:

Cricket frogs were calling, eastern towhee, catbirds, wintering warbler species, robins, dead mockingbird, hog rutting and hog scat, crickets were calling.

18. Exotic species: ☑ present ☐ absent Hogs

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 go

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 canopy reduction recommended. This site was formerly a wet prairie/cypress flat that has been converted into a pine plantation growing in hydric soils. Evidence for wet prairie/cypress flats is found in the regeneration of Ilex myrtifolia, Myrica heterophylla, Taxodium ascendens, Fraxinus caroliniana. A prescribed warm season fire would help the groundcover species and pond cypress regenerate.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT4_P4HPF **Date and time (am/pm):** 12/21/2004 ☐ 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.** Photinia pyrifolia (Aronia arbutifoli **3.** Myrica cerifera

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 cerifera **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. Spartina patens **2.** Andropogon virginicus

3. Juncus roemarianus **4.** Panicum scabriusculum (=Dicanthelium scab

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

1. Andropogon virginicus **2.** Panicum scabriusculum (=Dicanth **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:

White-tailed Deer (Odocoileus virginianus fer) scat seen; mosquitos and sand gnats 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 go

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:

Contains many halophytes such as Juncus roemarianus and Spartina patens. Prescribed warm season fire. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT4_P5CF **Date and time (am/pm):** 12/21/2004 ☐ 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. Taxodium ascendens **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. Myrica cerifera **2.** Fraxinus caroliniana **3.** Ilex vomitoria

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 cerifera **2.** Taxodium ascendens **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. Spartina patens **2.** Rubus argutus

3. Cladium jamaicense **4.** Hypericum fasciculatum

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

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

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

1. Rubus argutus **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:

Eastern towhee was heard; biting mosquitos and sand gnats

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 go

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 canopy reduction recommended. Prescribed warm season burn recommended.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT5_P1CF **Date and time (am/pm):** 12/22/2004 ☑ 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. Myrica cerifera **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. Myrica cerifera **2.** Photinia pyrifolia (Aronia arbutifoli **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 cerifera **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. Panicum virgatum **2.** Spartina patens

3. Juncus sp. **4.** Andropogon sp.

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:

Mosquito and biting sand gnats.

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 go

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 burn recommended. Canopy coverage is minimal and appropriate for this type of plant community.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT5_P2HPF **Date and time (am/pm):** 12/22/2004 ☑ 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 coriacea **2.** Lyonia ferrigenea **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. **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. Andropogon virginicus **2.**

3. **4.**

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:

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 go

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 burn recommended. Pine canopy reduction recommended. Thick pine duff inhibiting small seed germination and groundcover diversity.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT6_P1MPF **Date and time (am/pm):** 12/22/2004 ☑ 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. Ilex glabra **2.** Ilex vomitoria **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. Andropogon virginicus **2.** Serenoa repens

3. Rhynchospora fascicularis **4.** Panicum anceps

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

1. Rhynchospora sp. **2.** Ilex vomitoria **3.** Andropogon virginicus

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

1. Andropogon virginicus **2.** Rhynchospora sp. **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:

Wintering warbler species, robins, catbird, tree swallows

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 go

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 needs a prescribed fire during the warm season. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Palustrine Marsh

Transect ID: BPQT6_P2PM **Date and time (am/pm):** 12/22/2004 ☑ 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.** **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. Cladium jamaicense **2.** Spartina patens

3. Juncus roemarianus **4.** Andropogon virginicus

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

1. **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:

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 go

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 marsh with no canopy, allow fire to burn across marsh when surrounding uplands are burned.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT7_P1CF **Date and time (am/pm):** 12/22/2004 ☑ 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.** Taxodium ascendens **3.** Ilex myrtifolia

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.** Ilex glabra **3.** Photinia pyrifolia (=Aronia arbutifo

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 cerifera **2.** Magnolia virginiana **3.** Ilex myrtifolia

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.** Juncus roemarianus

3. Andropogon virginicus **4.** Panicum virgatum

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:

Evidence of River Otter (Lutra canadensis); feral hog, Raccoon (Procyon lotor), Nine-banded Armadillo (Dasypus novemcinctus);
Observed Florida Cricket Frog (Acris gryllus dorsalis) Gray Catbird (Dumetella carolinensis); Carolina Chickadee (Parus carolinensis), robin, etc.

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 go

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:

Verbesina chapmanii was also seen in this area. Wet prairie/cypress flat, should respond favourable to a prescribed fire during the warm season.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: PBQT7_P2HPF **Date and time (am/pm):** 12/22/2004 ☑ 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. Myrica cerifera **2.** Magnolia virginiana **3.** Photinia pyrifolia (Aronia arbutifoli

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.** Clethra alnifolia **3.** Photinia pyrifolia (Aronia arbutifoli

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 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. **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:

Gray Catbird (Dumetella carolinensis) was 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 go

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 burn recommended. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT8_P1MPF **Date and time (am/pm):** 12/21/2004 ☐ 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. Lyonia lucida **2.** Ilex glabra **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. **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. 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 subsiden
☐ 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:

Eastern towhee (Pipilo erythrophthalmus), Red-bellied Woodpecker (Melanerpes carolinus); robin (Turdus migratorius), catbird (Dumetella carolinensis); crickets 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 go

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 burn recommended.Pine canopy reduction recommended. Thick pine duff inhibiting small seed germination and groundcover diversity.

Site Name: Breakfast Point **Plant community type:** Palustrine Marsh

Transect ID: BPQT8_P2PM **Date and time (am/pm):** 12/21/2004 ☐ 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. **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. **2.** **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. Panicum virgatum **2.** Spartina patens

3. Ludwigia pilosa **4.** Xyris spp.

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

1. Ludwigia pilosa **2.** **3.**

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

1. Ludwigia pilosa **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:

Eastern towhee, 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 go

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 burn recommended.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT9_T1HPF **Date and time (am/pm):** 12/22/2004 ☑ 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. Myrica cerifera **2.** Ilex vomitoria **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. Myrica cerifera **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. Spartina patens **2.** Andropogon virginicus

3. Ludwigia pilosa **4.** Pluchea foetida

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

1. Ludwigia pilosa **2.** **3.**

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

1. Ludwigia pilosa **2.** Pluchea foetida **3.** Andropogon virginicus

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; feral hog rutting seen in soils, especially near margins of wetlands

18. Exotic species: ☑ present ☐ absent

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

Species: Feral pig (Sus scrofa) **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 go

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:

Fire suppressed, being invaded by woody shrubs such as Myrica cerifera. Prescribed fire during the warm season would be beneficial. This site is best described as hydric pine flatwoods or wet prairie.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT9_P2HPF **Date and time (am/pm):** 12/22/2004 ☑ 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.**

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.** Myrica heterophylla **3.** Photinia pyrifolia (Aronia arbutifoli

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 cerifera **2.** Ilex vomitoria **3.** Pinus elliottii

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.** Erianthus strictus

3. Pluchea foetida **4.** Rubus argutus

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

1. Andropogon virginicus **2.** Rubus argutus **3.** Pluchea foetida

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:

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 go
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 planted in slash pine, according to FLUCCS this would be a "hydric pine plantation". Best described as a former wet prairie since this landscape contains wet prairie elements such as Nyssa v. ursina, Myrica heterophylla. Some pines appear to have killed by too much water. Prescribed warm season fire will be beneficial for this landscape and will help the groundcover diversity. Pine canopy reduction recom

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT10_P1HPF **Date and time (am/pm):** 12/22/2004 ☑ 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. Myrica cerifera **2.** Ilex vomitoria **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 cerifera **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. Juncus roemarianus **2.** Panicum virgatum

3. Andropogon virginicus **4.** Aristida stricta

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.** Andropogon glomeratus **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 subsiden
☐ 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), crayfish in water; wintering warblers in shrubs; crickets, mosquitos, biting sand gnats; footprints of white tailed deer and raccoon.

18. Exotic species: ☑ present ☐ absent

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

Species: Sapium sebiferum **Location:** SAP-BPQT10-1 **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 go

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 burn recommended. Pine canopy reduction recommended.. This is one of the unique wet prairies at BPMB, where halophy halophytes grow typical wet prairie species such as Nyssa sylvatica v. ursina and wiregrass (Aristida stricta).

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT10_P2MPF **Date and time (am/pm):** 12/27/2004 ☑ 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 nigra **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.** Myrica cerifera **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.** Myrica cerifera **3.** Lyonia ferrigenea

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.** Vaccinium myrsinites

3. Callicarpa americana **4.** Pteridium aquilinum

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

1. Callicarpa americana **2.** **3.**

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

1. Myrica cerifera **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 subsiden
☐ 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); Gray Catbird (Dumetella carolinensis);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 go

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:

Fire suppressed mesic pine flatwoods that has been planted in slash pine. Prescribed warm season burn recommended. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT10_P3CF **Date and time (am/pm):** 12/22/2004 ☑ 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. Pinus elliottii **2.** Taxodium ascendens **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.** Myrica cerifera **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.** 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. Panicum virgatum **2.** Andropogon virginicus

3. Ludwigia pilosa **4.** Hypericum fasciculatum

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

1. Ludwigia pilosa **2.** **3.**

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

1. Andropogon virginicus **2.** Ludwigia pilosa **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:

Cedar Waxwing (Bombycilla cedrorum);Gray Catbird (Dumetella carolinensis);Eastern Towhee (Pipilo erythrophthalmus);
American Robin, (Turdus migratorius); crayfish chimneys; white tailed deer footprints.

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 go

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:

Fraxinus caroliniana was also observed. Prescribed warm season burn recommended. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT10_P4CF **Date and time (am/pm):** 12/22/2004 ☑ 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.**

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

List 3 dominant **SHRUB** species observed:

1. Myrica cerifera **2.** Nyssa sylvatica v. ursina **3.** Photinia pyrifolia (=Aronia arbutifo

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 cerifera **2.** Taxodium ascendens **3.** Pinus elliottii

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. Panicum virgatum **2.** Andropogon virginicus

3. Ludwigia pilosa **4.** Spartina patens

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.** Ludwigia pilosa **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:

robins feeding on Nyssa ursina fruit and Myrica cerifera. Wintering warblers in shrubs.

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 go

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 burn recommended. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT11_P1CF **Date and time (am/pm):** 12/21/2004 ☐ 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.** Myrica cerifera

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

List 3 dominant **SHRUB** species observed:

1. Myrica cerifera **2.** Photinia pyrifolia (=Aronia arbutifo **3.** Ilex vomitoria

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.** 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. Erianthus giganteus **2.** Spartina patens

3. Andropogon sp. **4.** Cladium jamaicense

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:

Northern Cardinal (Cardinalis cardinalis); American Robin, (Turdus migratorius)

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 go

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 burn recommended. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT11_P2HPF **Date and time (am/pm):** 12/21/2004 ☐ 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.** Myrica cerifera **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 vomitoria **3.** Myrica cerifera

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.** 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. Quercus minima **2.** Rubus argutus

3. Toxicodendron radicans **4.** Pteridium aquilinum

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

1. Toxicodendron radicans **2.** **3.**

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

1. Rubus argutus **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); Eastern Towhee (Pipilo erythrophthalmus):Common Ground-Dove (Columbina passerina):
Mourning Dove (Zenaida macroura)

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 go

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:

Low diversity of groundcover species can be increased with a prescribed fire to reduce the excessive woody vegetation.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT12_P1MPF **Date and time (am/pm):** 12/21/2004 ☐ 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. Cyrilla racemiflora **2.** Myrica cerifera **3.** Magnolia grandiflora

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

List 3 dominant **SHRUB** species observed:

1. Myrica cerifera **2.** Lyonia ferrigenea **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. Myrica cerifera **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.** Andropogon virginicus

3. Rhynchospora sp. **4.** Carphephorus odoritissima

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:

Raccoon (Procyon lotor): Feral pig (Sus scrofa); Northern Cardinal (Cardinalis cardinalis); American Robin, (Turdus migratorius); 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 go

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:

Fire suppessed mesic pine flatwoods planted in slash pine. Thick duff on ground, too much compitition has reduced the groundcover diversity. Recommend a prescribed burn to restore this site, slash pine canopy needs to be reduced.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT12_P2HPF **Date and time (am/pm):** 12/21/2004 ☐ / ☑

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 ☐

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 ☐

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% ☐ 7

List 3 dominant **SHRUB** species observed:

1. Ilex glabra **2.** Photinia pyrifolia **3.** Myrica cerifera

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

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

1. Myrica cerifera **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. Cladium jamaicensis **2.** Rhynchospora inundata

3. Spartina patens **4.** Juncus roemarianus

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 ☐ aqua
☐ rafted debris ☐ elevated lichen lines ☐ aquatic fauna ☐ tussocks/hummocks ☐ secc
☑ water stained vegetation/ stain lines ☑ morphological plant adaptations/adventitious roots/buttr
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 ☐ c
15. Water column: ☑ sphagnum present ☐ utricularia present
16. Altered hydrology: ☐ soil subsidence / oxidation of muck ☐ exposed roots ☑ abnormal tree fall due to s
☐ 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/call ☐
☐ animal remains ☐ scratch marks ☐ frog calls ☐ arthropods observed ☐ reptiles obser ☐

Notes on wildlife useage observed:

Northern Cardinal (Cardinalis cardinalis); great blue heron (Ardea herodias)
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 go

Is natural regeneration occuring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental
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 ☑ 1 ☐
Recommendations for restoration: ☑ prescribed burr ☑ mechanical treatmen **other:**

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

Reduce slash pine canopy, prescribe warm season burn recommended.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT13_P1MPF **Date and time (am/pm):** 12/21/2004 ☐ 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.** 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 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.** Aristida stricta

3. Andropogon virginicus **4.** Vaccinium myrsinites

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:

Feral pig (Sus scrofa):Raccoon (Procyon lotor): Bobcat (Lynx rufus)

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 go

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:

Needs to a prescribed warm season burn and canopy reduction.

Site Name: Breakfast Point **Plant community type:** Mixed Forested Wetland

Transect ID: BPQT13_P2MFW **Date and time (am/pm):** 12/21/2004 ☐ 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.** Taxodium ascendens

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. Ilex myrtifolia **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.** 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.** Pinus 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. Eriocaulon decangulare **2.** Xyris sp.

3. Dicanthelium sp. **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:

Feral pig (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 go

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 prescribed fire would allow the pond cypress to regenerate, currently the woody vegetation is too dense.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT13_P3HPF **Date and time (am/pm):** 12/21/2004 ☐ 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. Ilex myrtifolia **2.** Cyrilla racemiflora **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. Ilex glabra **2.** Hypericum chapmanii **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. **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. Aristida stricta **2.** Andropogon virginicus

3. Eriocaulon decangulare **4.** Sporobolus curtissii

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:

Wintering warblers, American Robin, (Turdus migratorius), Cedar Waxwing (Bombycilla cedrorum)

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 go

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:

Wet prairie planted in slash pine, contains Verbesina chapmanii and Sarracenia flava. Needs a warm season prescribed fire.
Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Mesic Pine Flatwoods

Transect ID: BPQT14_P1MPF **Date and time (am/pm):** 12/21/2004 ☑ 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.** **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.** 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. Magnolia virginiana **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. Aristida stricta **2.** Gaylussachia dumosa

3. Andropogon virginicus **4.** Vaccinium myrsinites

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 subsiden
☐ 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:

Tufted Titmouse (Parus bicolor), Wintering warblers, American Robin, (Turdus migratorius), Cedar Waxwing (Bombycilla cedrorum), Northern Cardinal (Cardinalis cardinalis)

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 go

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:

Contains groundcover species such as wire grass (Aristida stricta) that should respond well to a prescribed warm season burn. Pine canopy reduction recommended.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT14_P2CF **Date and time (am/pm):** 12/21/2004 ☑ 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. ursina **2.** Magnolia virginiana **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. Myrica cerifera **2.** Magnolia virginiana **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.** Clethra alnifolia **3.** Photinia pyrifolia (Aronia arbutifoli

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.** **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 heard; Raccoon (Procyon lotor), Northern Cardinal (Cardinalis cardinalis), Tufted Titmouse (Parus bicolor)

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 go

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:

Probably a fire suppressed former wet savanna that has become dominated by fire intolorant species such as Magnolia virginiana.
Prescribed warm season burn recommended

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT14_P3HPF **Date and time (am/pm):** 12/21/2004 ☑ 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.**

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.** Cyrilla racemiflora **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. Cyrilla racemiflora **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. Andropogon virginicus **2.** Aristida stricta

3. Rhynchospora sp. **4.** Lycopodium alopecuroides

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.** 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. Pinus elliottii
2. Cyrilla racemiflora
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), 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 go

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 converted into a pine plantation. Pine canopy reduction recommended. Prescribed warm season burn recommended.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT15_P1HPF **Date and time (am/pm):** 12/21/2004 ☑ 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.** 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. Magnolia virginiana **2.** Ilex myrtifolia **3.** Pinus elliottii

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.** 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.** Pinus 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.** Juncus roemarianus

3. Eriocaulon decangulare **4.** Aristida affinis

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. 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:

Mosquitos, Florida Cricket Frog (Acris gryllus dorsalis), Raccoon (Procyon lotor), Northern Cardinal (Cardinalis cardinalis), wintering warblers.

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 go

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:

Slash pine canopy needs to be reduced and prescribed warm season fire will help regenerate appropriate existing groundcover species.

Site Name: Breakfast Point **Plant community type:** Hydric Pine Flatwoods

Transect ID: BPQT15_P2HPF **Date and time (am/pm):** 12/21/2004 ☑ 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.**

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

List 3 dominant **SHRUB** species observed:

1. Lyonia ferrigenea **2.** Ilex vomitoria **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 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.** Pteridium aquilinium

3. Andropogon sp. **4.** Hypericum sp.

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

1. Hypericum sp. **2.** Andropogon sp. **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:

Belted Kingfisher (Ceryl alcyon), Eastern Towhee (Pipilo erythrophthalmus), Northern Mockingbird, (Mimus polyglottos)

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 go

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 fire suppressed and the excessive woody vegetation is shading the few clumps of wiregrass, reduction of the canopy and a warm season prescribed burn would benefit the groundcover species and result in an increase in the coverage of native graminoid and forb species.

Site Name: Breakfast Point **Plant community type:** Cypress Flat

Transect ID: BPQT15_P3CF **Date and time (am/pm):** 12/21/2004 ☑ 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.** 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. ursina **2.** Taxodium ascendens **3.**

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.** Nyssa sylvatica v. ursina **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. Pinus elliottii **2.** Taxodium ascendens **3.** Nyssa sylvatica v. ursina

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.** Juncus roemarianus

3. Hypericum sp. **4.** Erianthus giganteus

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

1. **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. 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:

Florida Cricket Frog (Acris gryllus dorsalis), mosquito fish (Gambusia affinis).

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 go

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:

Contains wet prairie species such as Verbesina chapmanii and Sarracenia flava. Site is very fire suppressed and has been planted in slash pine. A reduction of slash pine canopy is recommended to allow the pond cypress to reproduce and light to reach the groundcover. Prescribed warm season burn recommended. Pine canopy reduction recommended.

Appendix G: Qualitative Monitoring Photographs

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Breakfast Point Mitigation Bank – Phase 1 Qualitative Photographs

Breakfast Point Transect 4 Reference Point 1
Cypress Flats (BPQT4 P1 CF)

Breakfast Point Transect 4 Reference Point 3
Mixed Forested Wetland (BPQT4 P3 MFW)

Breakfast Point Transect 4 Reference Point 2
Mixed Forested Wetland (BPQT4 P2 MFW)

Breakfast Point Transect 10 Reference Point 1
Hydric Pine Flatwoods (BPQT10 P1 HPF)

Breakfast Point Transect 10 Reference Point 2
Mesic Pine Flatwoods (BPQT10 P2 MPF)

Breakfast Point Mitigation Bank – Phase 1 & 2 Qualitative Photographs

Breakfast Point Transect 10 Reference Point 3
Cypress Flats (BPQT10 P3 CF)

Breakfast Point Transect 13 Reference Point 1
Mesic Pine Flatwoods (BPQT13 P1 MPF)

Breakfast Point Transect 13 Reference Point 2
Mixed Forested Wetland (BPQT13 P2 MFW)

Breakfast Point Transect 5 Reference Point 1
Cypress Flats (BPQT5 P1 CF)

Breakfast Point Transect 5 Reference Point 2
Hydric Pine Flatwoods (BPQT5 P2 HPF)

Breakfast Point Mitigation Bank – Phase 2 Qualitative Photographs

Breakfast Point Transect 6 Reference Point 1
Mesic Pine Flatwoods (BPQT6 P1 MPF)

Breakfast Point Transect 6 Reference Point 2
Palustrine Marsh (BPQT6 P2 PM)

Breakfast Point Transect 7 Reference Point 1
Cypress Flats (BPQT7 P1 CF)

Breakfast Point Transect 7 Reference Point 2
Hydric Pine Flatwoods (BPQT7 P2 HPF)

Breakfast Point Transect 8 Reference Point 1
Mesic Pine Flatwoods (BPQT8 P1 MPF)

Breakfast Point Mitigation Bank – Phase 2 Qualitative Photographs

Breakfast Point Transect 8 Reference Point 2 Palustrine Marsh (BPQT8 P2 PM)

Breakfast Point Transect 9 Reference Point 2 Hydric Pine Flatwoods (BPQT9 P2 HPF)

Breakfast Point Transect 9 Reference Point 1 Palustrine Marsh (BPQT9 P1 PM)

Breakfast Point Transect 10 Reference Point 4 Mesic Pine Flatwoods (BPQT10 P4 MPF)

Breakfast Point Transect 10 Reference Point 5 Cypress Flats (BPQT10 P5 CF)

Breakfast Point Mitigation Bank – Phase 2 Qualitative Photographs

Breakfast Point Transect 11 Reference Point 1 Mesic Pine Flatwoods (BPQT11 P1 MPF)

Breakfast Point Transect 12 Reference Point 1 Mesic Pine Flatwoods (BPQT12 P1 MPF)

Breakfast Point Transect 11 Reference Point 2 Hydric Pine Flatwoods (BPQT11 P2 HPF)

Breakfast Point Transect 11 Reference Point 2 Hydric Pine Flatwoods (BPQT12 P2 HPF)

Breakfast Point Mitigation Bank – Phase 3 Qualitative Photographs

Breakfast Point Transect 1 Reference Point 1 Hydric Pine Flatwoods (BPQT1 P1 HPF)
)

Breakfast Point Transect 1 Reference Point 2 Mesic Pine Flatwoods (BPQT1 P2 MPF)

Breakfast Point Transect 10 Reference Point 4 Hydric Pine Flatwoods (BPQT2 P1 HPF)

Breakfast Point Transect 2 Reference Point 2 Mesic Pine Flatwoods (BPQT2 P2 MPF)

Breakfast Point Transect 2 Reference Point 3 Hydric Pine Flatwoods (BPQT2 P3 HPF)

Breakfast Point Mitigation Bank – Phase 3 Qualitative Photographs

Breakfast Point Transect 3 Reference Point 1
Mesic Pine Flatwoods (BPQT3 P1 MPF)

Breakfast Point Transect 3 Reference Point 2
Hydric Pine Flatwoods (BPQT3 P2 HPF)

Breakfast Point Transect 3 Reference Point 3
Hydric Pine Flatwoods (BPQT3 P3 HPF)

Breakfast Point Transect 3 Reference Point 4
Mesic Pine Flatwoods (BPQT3 P4 MPF)

Breakfast Point Transect 4 Reference Point 4
Hydric Pine Flatwoods (BPQT4 P4 HPF)

Breakfast Point Mitigation Bank – Phase 3 & 4 Qualitative Photographs

Breakfast Point Transect 4 Reference Point 5 Cypress Flats (BPQT4 P5 CF)

Breakfast Point Transect 13 Reference Point 3 Hydric Pine Flatwoods (BPQT13 P3 HPF)

Breakfast Point Transect 14 Reference Point 1 Mesic Pine Flatwoods (BPQT14 P1 MPF)

Breakfast Point Transect 14 Reference Point 2 Cypress Flats (BPQT14 P2 CF)

Breakfast Point Transect 14 Reference Point 3 Hydric Pine Flatwoods (BPQT14 P3 HPF)

Breakfast Point Mitigation Bank – Phase 4 Qualitative Photographs

Breakfast Point Transect 15 Reference Point 1 Hydric Pine Flatwoods (BPQT15 P1 HPF)

Breakfast Point Transect 15 Reference Point 2 Hydric Pine Flatwoods (BPQT15 P2 HPF)

Breakfast Point Transect 15 Reference Point 3 Cypress Flats (BPQT15 P3 CF)

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 BPMB. 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.

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 Breakfast Point 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.

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 such as cattails (*Typha latifolia*).

Savannah, see wet savanna.

Sere describes the path of succession. The term seral describes changing vegetation.

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.