2013 Monitoring Report

DUTEX RESTORATION SITE

Escambia County, Florida

ERC #: 13-196C

August 2013

Ecological Resource Consultants, Inc.

2013 Monitoring Report

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EXECUTIVE SUMMARY

Annual monitoring of the DUTEX site was conducted in August 2013 to assess the hydrological, vegetative, ecological, and natural history of the site.

The 2013 Monitoring Report documents the current site conditions, the results of the quantitative and qualitative monitoring, the photographic points. The results of the quantitative and qualitative data are compared to the performance standards approved by the Interagency Review Team (IRT) for the Northwest Florida Water Management District's (NWFWMD) Umbrella, watershed-based, regional mitigation plan (hereafter, Umbrella Plan).

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1.0 INTRODUCTION

1.1. Purpose and Scope

1.1.1 Purpose

The Dutex Restoration Site (820 acres), which is located on Perdido Bay, was acquired June 12, 2009 specifically for use as mitigation to offset current and future Florida Department of Transportation (FDOT) wetland impacts. The goal of the mitigation is to restore the site to pre-disturbance conditions. Restoration activities include mechanical brush reduction, prescribed fire, herbicide treatments, selective planting and hydrologic enhancements. Full implementation of the approved mitigation plan will yield 107.16 UMAM credits (IRT-approval: 3/24/2011). The purpose of the study is to obtain data that reflect the current vegetative condition. The data will be reported to document permit compliance and will be used for a reference by which the success of future restoration efforts can be assessed.

1.1.2 Scope

The scope of this study is ecological monitoring in specific habitats and preparation of a report that summarizes the results of the data obtained during the monitoring activity. Critical evaluation allows the determination of current landscape scale conditions as reflected in the dominant species, species richness, invasive exotic plants and plant lifeforms (herbs, vines, shrubs and strata in the canopy). Evaluations of the data is used in selection of the appropriate restoration and management strategies, measurement of the success of implemented restoration practices, evaluation of the trends in landscape responses to management, selection of future adaptive management strategies and reporting adherence to and completion of regulatory permit conditions.

2.0 METHODS

2.1 Field Methods

The location of all transects is depicted on Figures 2W and 2E. A list of all the transect names appears in Table 1.

Table 1: Dutex Monitoring Scope by Activity

Project Name	Transect Name	Transect/Activity Type	Polygon Descriptor	Acres	Number of Transects
Dutex Restoration Site	**Dutex:West Tract**	Pedestrian Transect/Qualitative	411 - Mesic Pine Flatwoods	27.26	1
Dutex Restoration Site	**Dutex:West Tract**	Pedestrian Transect/Qualitative	611/613 - Bay Swamp	74.57	1
Dutex Restoration Site	**Dutex:West Tract**	Pedestrian Transect/Qualitative	625-Hydric Pine Flatwoods	28.94	1
Dutex Restoration Site	**Dutex:West Tract**	Pedestrian Transect/Qualitative	626-Hydric Pine Savanna	137.56	1
Dutex Restoration Site	**Dutex:West Tract**	Pedestrian Transect/Qualitative	641-Freshwater Marsh	77.99	1
Dutex Restoration Site	**Dutex:West Tract**	Pedestrian Transect/Qualitative	642-Saltwater Marsh	104.56	1
Total Number of Transects					**6**
Dutex Restoration Site	**Dutex:East Tract**	Pedestrian Transect/Qualitative	611- Bay Swamp	36.09	1
Dutex Restoration Site	**Dutex:East Tract**	Pedestrian Transect/Qualitative	614-Titi Swamp	56.54	1
Dutex Restoration Site	**Dutex:East Tract**	Pedestrian Transect/Qualitative	625-Hydric Pine Flatwoods	96.19	1
Dutex Restoration Site	**Dutex:East Tract**	Pedestrian Transect/Qualitative	626-Hydric Pine Savanna	52.86	1
Dutex Restoration Site	**Dutex:East Tract**	Pedestrian Transect/Qualitative	630-Wetland Forested Mixed	79.13	1
Total Number of Transects					
Dutex Restoration Site	**Dutex:West Tract**	Quantitative Transect	625-Hydric Pine Flatwoods	28.94	1
Dutex Restoration Site	**Dutex:West Tract**	Quantitative Transect	625-Hydric Pine Flatwoods	28.94	1
Dutex Restoration Site	**Dutex:West Tract**	Quantitative Transect	626-Hydric Pine Savanna	137.56	1
Dutex Restoration Site	**Dutex:West Tract**	Quantitative Transect	626-Hydric Pine Savanna	137.56	1
Total Number of Transects					**4**
Dutex Restoration Site	**Dutex:East Tract**	Quantitative Transect	625-Hydric Pine Flatwoods	96.19	1
Dutex Restoration Site	**Dutex:East Tract**	Quantitative Transect	625-Hydric Pine Flatwoods	96.19	1
Dutex Restoration Site	**Dutex:East Tract**	Quantitative Transect	626-Hydric Pine Savanna	52.86	1
Dutex Restoration Site	**Dutex:East Tract**	Quantitative Transect	626-Hydric Pine Savanna	52.86	1
Total Number of Transects					**4**


DWQT4-625
DWPT6_642
DWQT3-626
DWPT4_625
DWPT5_626
DWPT3_641
DWQT2-626
DWQT1-625
DWPT2_611
DWPT1_411
N
Legend
West Tract - 483.7 Acres
Panoramic Photo Points
0 500 1,000 2,000
Feet
Disclaimer- This document is for reference purposes only.
ERC makes no guarantee of the accuracy of the data contained herein.
2012 True Color
Figure 2W. Transect Locations, West Tract Map
Dutex Restoration Site
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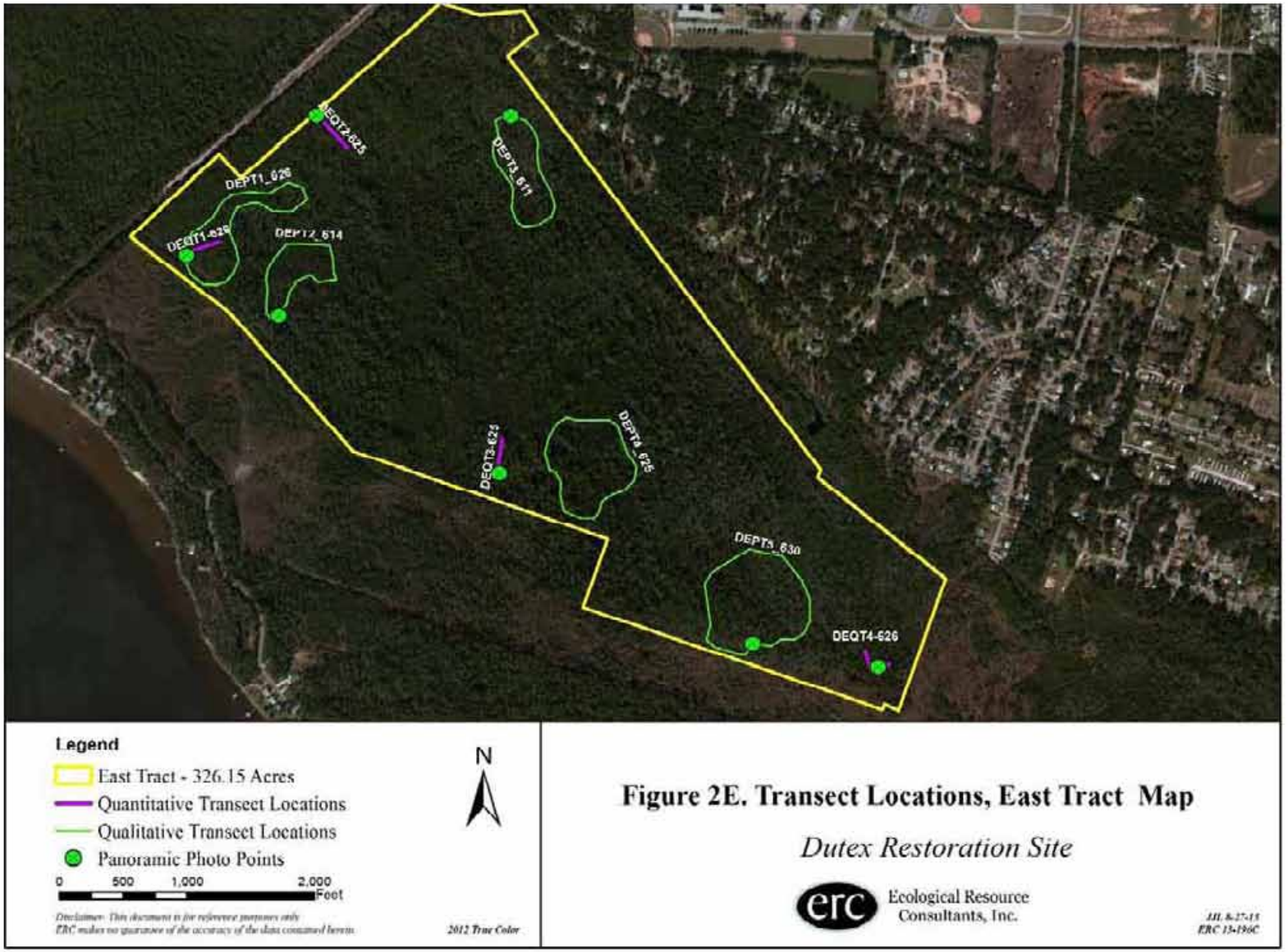
ERC 13-196C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DEQT1-626
DEPT2_614
DEPT3_611
DEQT3-624
DEPT4_625
DEPT5_630
DEQT4-626
Legend
East Tract - 326.15 Acres
Quantitative Transect Locations
Qualitative Transect Locations
Panoramic Photo Points
0 500 1,000 2,000
Feet
N
2012 True Color
Figure 2E. Transect Locations, East Tract Map
Dutex Restoration Site
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2.1.1 Quantitative Transects

Biological indicators are commonly used criteria for analyzing the value, health and restoration success of habitats. Indicators employed in the monitoring methodology for the Dutex Restoration Site include species diversity, relative cover, density and frequency for plant species. The sum of relative values (cover, density and frequency) is typically referred to as importance value. Ranking of plant species importance is used to describe the community structure, e.g. importance allows for discovery of dominant species, sensitive species and dominant lifeforms (i.e. herb, woody shrub, vine, or tree. Plant lifeform and community structure are typically measured in three plant strata: groundcover, shrub and canopy.

A summary of the measurements (importance, lifeform, diversity) for each plant community or habitat permits a critical evaluation of the landscape. The evaluation allows a determination of appropriate indicator species, species richness, invasive exotic plants and the presence of appropriate lifeforms versus lifeforms indicative of a degraded landscape. Evaluations of the measurements are used to assist in the selection of the appropriate restoration and management strategies, determination of the successional the landscape trending, the need for adaptive management strategies to enhance conditions for appropriate plant community structure, diversity and lifeforms; and successful adherence to and completion of regulatory permit conditions.

a) Measure and apply one 1m x 1m quadrat at each of the 30 points. Thirty (30) quadrats are used to sample each transect. The methodology samples 30 square meters along each 300 foot transect.

b) Photograph each sample point with the grid in place. A representative point is selected and located with GPS to obtain a 360 degree (panoramic) photograph of the landscape.

c) Identify and estimate coverage for each species. All groundcover, shrub, and vine species are identified. Data collected for each plot includes species name, percent cover by species, percent bare ground, and notes. The total coverage of each species within the plot was estimated using the following percentage classes: 100%, 75%, 50%, 25%, 12%, 6%, and 3%. The coverage classes represent successive divisions of the square by one-half (after 75%), and are readily and consistently applied in the field. Bare ground and/or open water is also recorded using the same coverage classes listed above.

2.1.2 Qualitative Transects

The initial qualitative monitoring is conducted prior to implementation of restoration activities in the late summer/fall and annually thereafter for the duration specified in the permit. The length of the transect is variable and depends upon the nature and size of the FLUCCS delineation that is evaluated.

The monitoring is conducted by recording observations along the designated transect called the “walking path”. Each walking paths is designed to ensure maximal coverage of

the selected plant community. The walking path is typically a loop for smaller ecosystem delineations and a line for larger ecosystem delineations. Approved transect locations are uploaded to a GPS unit to guide a walking traverse in the field. During the traverse, a record is maintained of species diversity and observations regarding overall ecosystem health and fecundity. Indications of wildlife usage and pertinent natural history notes are recorded. GPS locations are obtained for exotic invasive species and threatened and endangered species observed. Upon completion of the walking traverse, specific parameters are observed and recorded at an observation point for all polygons. The specific parameters include the following:

1. Note the type of plant community sampled.
2. Record date, time and weather conditions.
3. Estimate aerial coverage of plants in the canopy, subcanopy and shrub strata and identification of the dominant species in the canopy, subcanopy and shrub strata.
4. Estimate coverage of graminoids (grasses, sedges and rushes) and total coverage of groundcover including graminoids and forbs, based on the following cover classes as per a modified Braun/Blanquet scale: 0-1%; 1-5%; 5-25%; 25-50%; 50-75%; 75-100%.
5. Identify at least four dominant species in the groundcover.
6. Note any indications of wildlife usage and natural history including presence of any threatened or endangered species. Also note and obtain gps locations for threatened and endangered species observed at other points along the transect.
7. Identification of exotic species and estimated coverage of exotics as per Brower, et al., 1998. Also note and obtain gps locations for exotic invasive species observed at other points along the transect.
8. Estimate fuel load and note aspects of vegetative condition that might affect fire. Measure depth of litter and duff. Observe soil moisture conditions in upper 6 inches by inserting tiling spade into soil and using tactile method to determine moisture state.
9. Compile a list of plant species encountered during the qualitative transect inspection.

2.1.3 Panoramic Photographs

Representative photographs are obtained at specific locations for each qualitative and quantitative transect. The photographic documentation is a 360 degree panorama of the landscape at one end of the quantitative transect and at the representative data point for the qualitative transects. All photographic locations are depicted on Figures 3W, 3E, 4W, and 4E.

2.1.4. Additional Field Data Collection/Observations

All incidental listed wildlife and botanical observations are recorded during site visits. Surveys were conducted concurrently with overall site assessments performed as part of quantitative and qualitative transect field work. Georeferenced locations of threatened and endangered species are depicted in Figures 5W and 5E.

2.2 Analytical Methods

Biostatistical methods are employed to quantitatively describe and summarize the field data. The data collected in quadrats or quadrants along a 300 foot transect is analyzed by calculating the proportional distribution of all plants in the groundcover quadrats and recorded. The transect data is treated as representative samples of larger plant community polygons. The basic units for describing populations and communities are relative density, frequency and coverage. From these parameters, species importance and diversity are calculated. Formulas are provided below for several measures used to analyze the data.

2.2.1 Statistical Methodology

From the raw data, sum separately
(1) the % coverage of each species from all plots
(2) the # of individuals of each species from all plots
(3) the % coverage of all species sampled in plots
(4) the #'s of individuals of all species sampled in plots

2.2.2 Relative Coverage

Calculate the Relative Coverage by dividing the total coverage of each species by the total coverage of all species.
RC= (1) / (3)

2.2.3 Relative Density

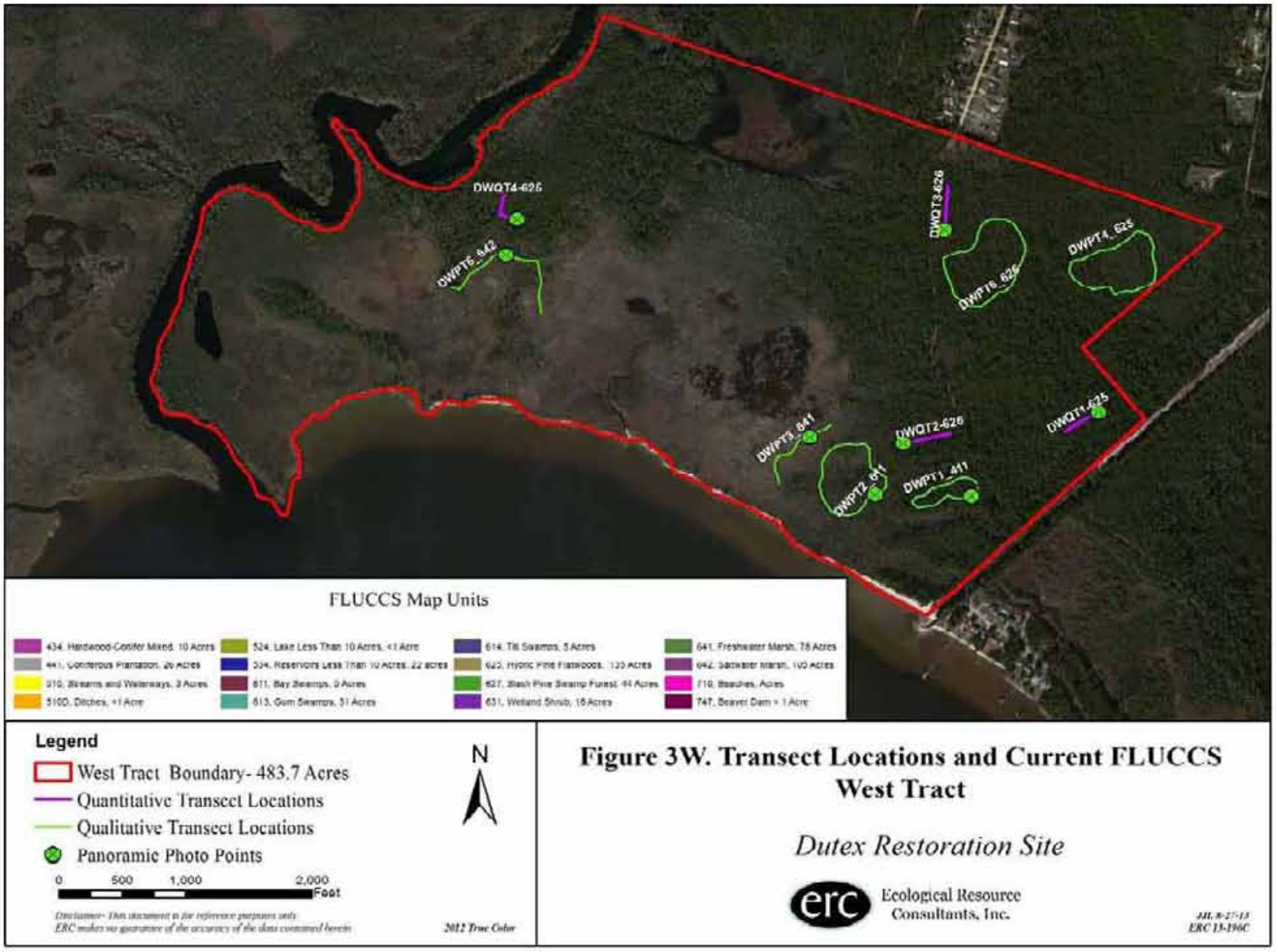
Calculate the Relative Density by dividing the total # of individuals of each species by the total #'s of individuals of all species
RD= (2) / (4)

2.2.4 Relative Frequency

Calculate the Relative Frequency by initially calculating the frequency for each species (5). This is the total number of sample plots in which a species occurred in divided by the total number of plots sampled. Sum the frequencies of each species (6). The **Relative Frequency** is obtained by dividing the frequency of each species by the total frequencies of all species.
RF= (5) / (6)

2.2.5 Importance Value

The Importance Value is the sum of all Relative values for each species.
Importance Value = RC+RD+RF
The Importance Value Percentage is the Importance Value multiplied by 100
Importance Value Percentage = Importance Value * 100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DWQT3-626
DWPT6_642
DWPT5_626
DWPT4_625
DWPT3_641
DWQT2-626
DWQT1-625
DWPT2_641
DWPT1_411
FLUCCS Map Units
434, Hardwood-Conifer Mixed, 10 Acres
524, Lake Less Than 10 Acres, <1 Acre
614, Tid Swamps, 5 Acres
641, Freshwater Marsh, 78 Acres
441, Coniferous Plantation, 26 Acres
534, Reservoirs Less Than 10 Acres, 22 acres
625, Hydric Pine Flatwoods, 120 Acres
642, Saltwater Marsh, 140 Acres
510, Streams and Waterways, 3 Acres
611, Bay Swamps, 9 Acres
627, Slash Pine Swamp Forest, 44 Acres
710, Beaches, Acres
5100, Ditches, <1 Acre
613, Gum Swamps, 31 Acres
631, Wetland Shrub, 16 Acres
747, Beaver Dam < 1 Acre
Legend
West Tract Boundary- 483.7 Acres
Quantitative Transect Locations
Qualitative Transect Locations
Panoramic Photo Points
0 500 1,000 2,000
Feet
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2012 True Color
Figure 3W. Transect Locations and Current FLUCCS
West Tract
Dutex Restoration Site
Ecological Resource
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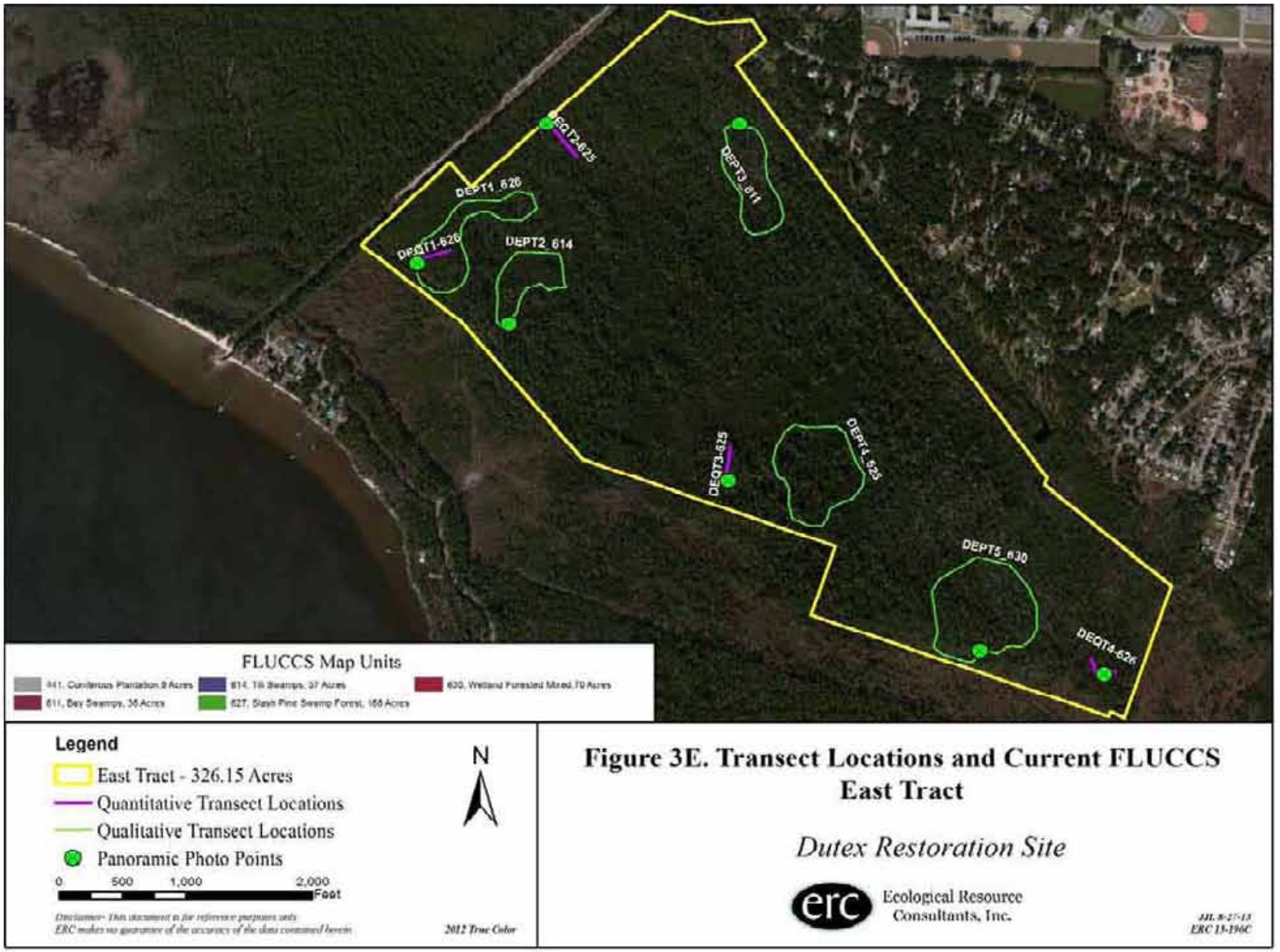
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DEPT4_626
DEQT1-626
DEPT2_614
DEQT3-625
DEPT4_623
DEPT5_630
DEQT4-626
FLUCCS Map Units
441, Coniferous Plantation, 9 Acres
614, Hardwood Swamps, 37 Acres
620, Wetland Forested Mixed, 70 Acres
611, Bay Swamps, 35 Acres
627, Slash Pine Swamp Forest, 166 Acres
Legend
East Tract - 326.15 Acres
Quantitative Transect Locations
Qualitative Transect Locations
Panoramic Photo Points
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Feet
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2012 True Color
Figure 3E. Transect Locations and Current FLUCCS
East Tract
Dutex Restoration Site
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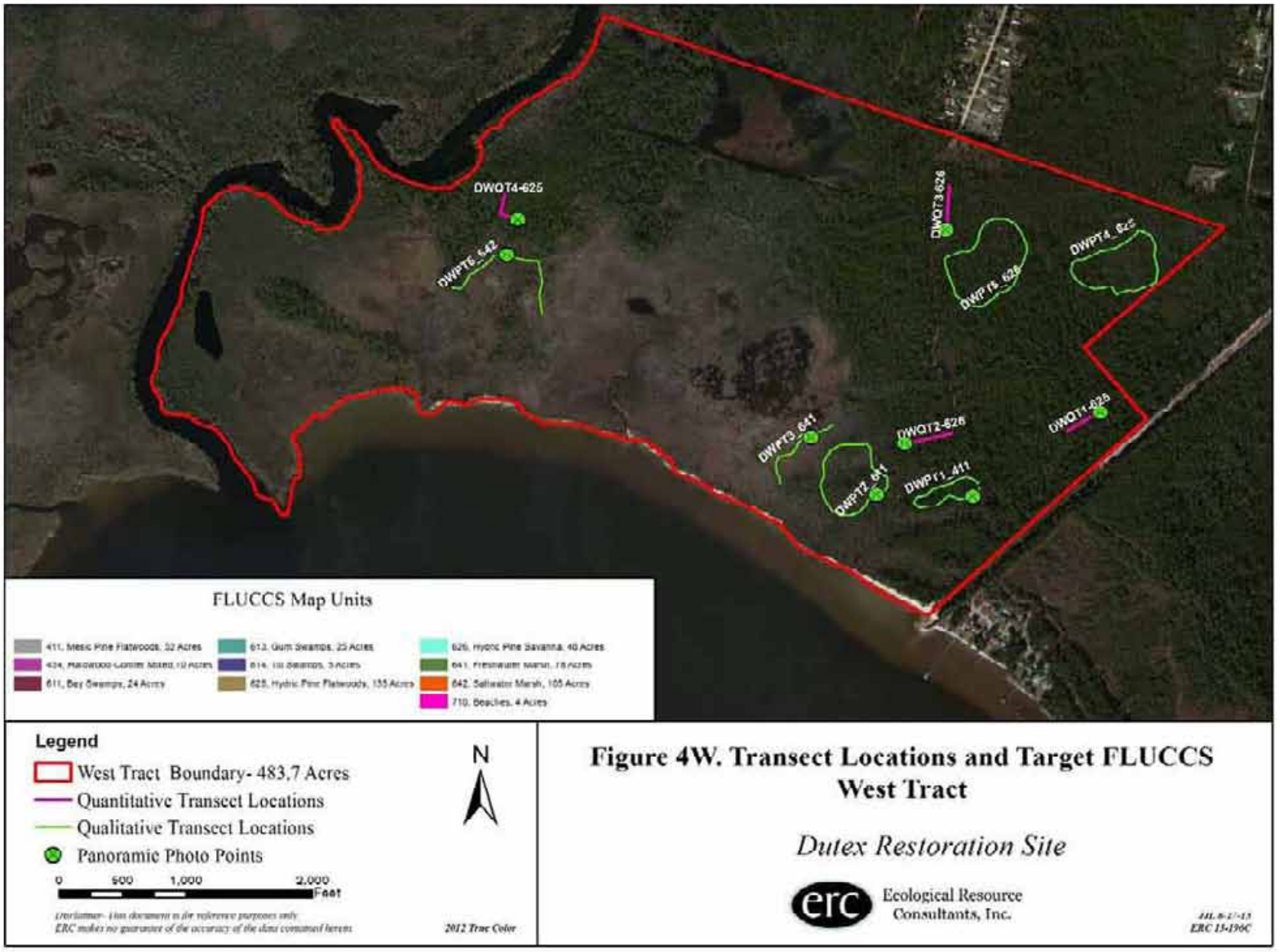
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DWPT5_626
DWPT4_625
DWPT3_641
DWQT2-626
DWPT2_641
DWPT1_411
DWQT1-625
FLUCCS Map Units
411, Mesic Pine Flatwoods, 32 Acres
613, Gum Swamps, 23 Acres
626, Hydric Pine Savanna, 40 Acres
611, Bay Swamps, 24 Acres
625, Hydric Pine Flatwoods, 155 Acres
642, Saltwater Marsh, 105 Acres
710, Beaches, 4 Acres
Legend
West Tract Boundary- 483.7 Acres
Quantitative Transect Locations
Qualitative Transect Locations
Panoramic Photo Points
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2012 True Color
Figure 4W. Transect Locations and Target FLUCCS
West Tract
Dutex Restoration Site
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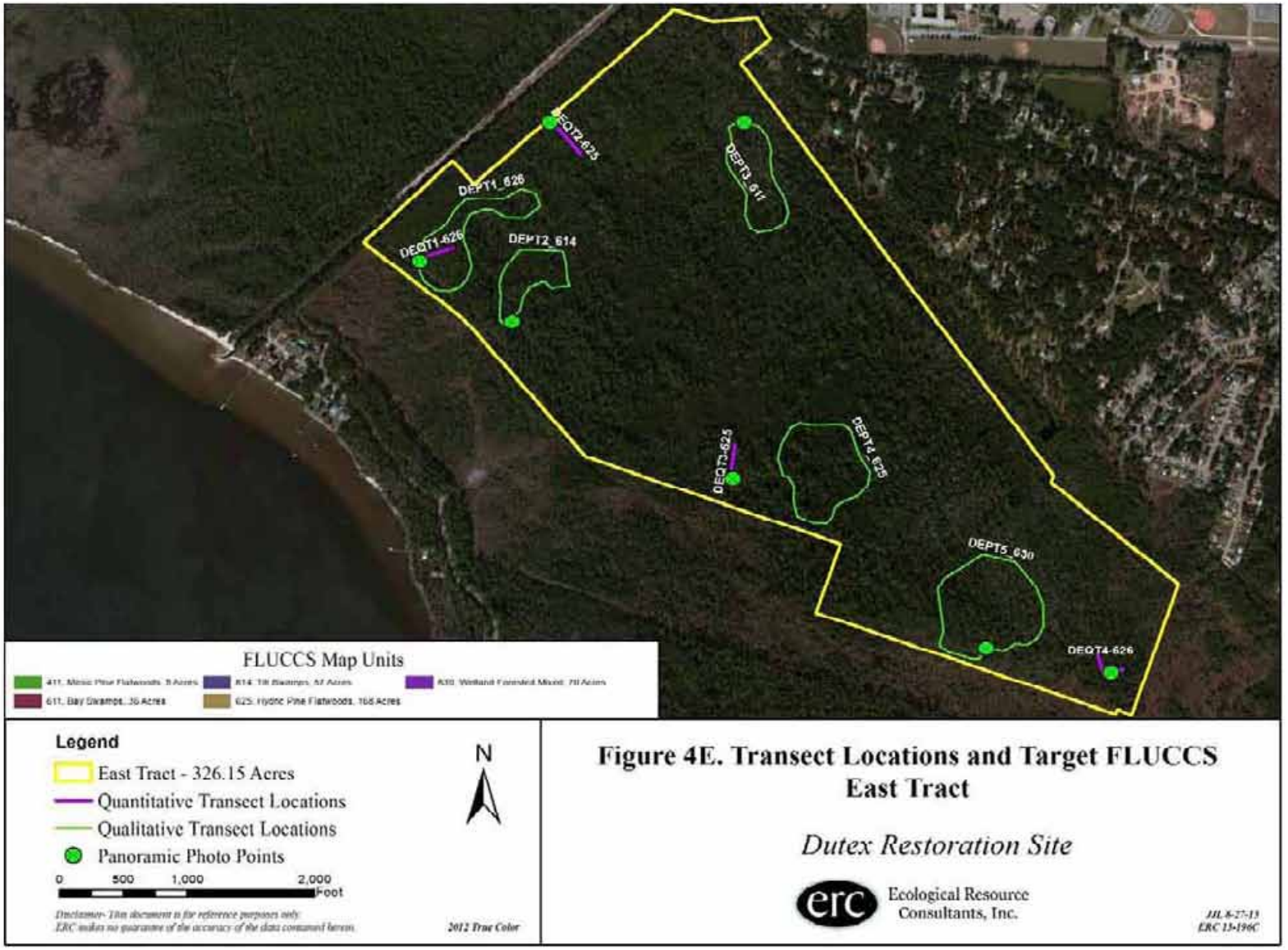
Consultants, Inc.
ERC 13-196C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DEPT5_630
DEQT4-626
FLUCCS Map Units
Legend
East Tract - 326.15 Acres
Quantitative Transect Locations
Qualitative Transect Locations
Panoramic Photo Points
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Foot
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2012 True Color
Figure 4E. Transect Locations and Target FLUCCS East Tract
Dutex Restoration Site
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ERC 13-196C


Legend
West Tract - 483.7 Acres
Lilium iridollae
Drosera intermedia
Sarracenia rosea
Sarracenia leucophylla
Sarracenia psittacina
0 500 1,000 2,000
Feet
N
2012 True Color
Figure 5W. Observed Threatened and Endangered Species, West Tract
Dutex Restoration Site
erc
Ecological Resource Consultants, Inc.


Legend
East Tract - 326.15 Acres
Drosera intermedia
Platanthera cristata
0 500 1,000 2,000
Feet
N
2012 True Color
Figure 5E. Observed Threatened and Endangered Species, East Tract
Dutex Restoration Site
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3.0 DATA AND OBSERVATIONS

3.1. Quantitative Transect Data

Four standard calculations of the relative abundance of each species are given for each quantitative transect: Importance Value, Relative Cover, Relative Density, and Relative Frequency (See Tables 2a, 3a, 4a, 5a, 6a, 7a, 8a, and 9a). Quantitative summary data is reported for each transect and broken down by plant community (See Tables 2b, 3b, 4b, 5b, 6b, 7b, 8b, and 9b).

Table 2a: Transect DEQT1-626 Hydric Pine Savanna

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Rubus argutus	3.5	3.7	1.9	5.0
Eupatorium capillifolium	1.7	1.9	1.0	2.5
Graminoids				
Panicum verrucosum	16.3	11.0	22.2	15.0
Rhynchospora sp.	3.5	3.7	1.9	5.0
Andropogon glomeratus	3.5	3.7	1.9	5.0
Vines				
Smilax laurifolia	3.5	3.7	1.9	5.0
Woody Plants				
Ilex coriacea	21.7	30.6	17.2	17.5
Cyrilla racemiflora	20.3	15.8	27.9	17.5
Cliftonia monophylla	15.7	13.9	18.3	15.0
Persea palustris	4.8	6.5	2.9	5.0
Nyssa sylvatica v. biflora	1.8	1.9	1.0	2.5
Lyonia lucida	1.8	1.9	1.0	2.5
Gaylussacia mosieri	1.8	1.9	1.0	2.5

Table 2b: Transect DEQT1-626 Hydric Pine Flatwoods

Groundcover Vegetation Relative Cover (%)				Average Cover (%)	Species Richness
Forbs	Graminoids	Vines	Woody Plants	Bare ground/ Standing water	
6%	19%	4%	72%	98%	13
Shrub Height (meters)					1.0

Transect DEQT1-626 Hydric Pine Flatwoods

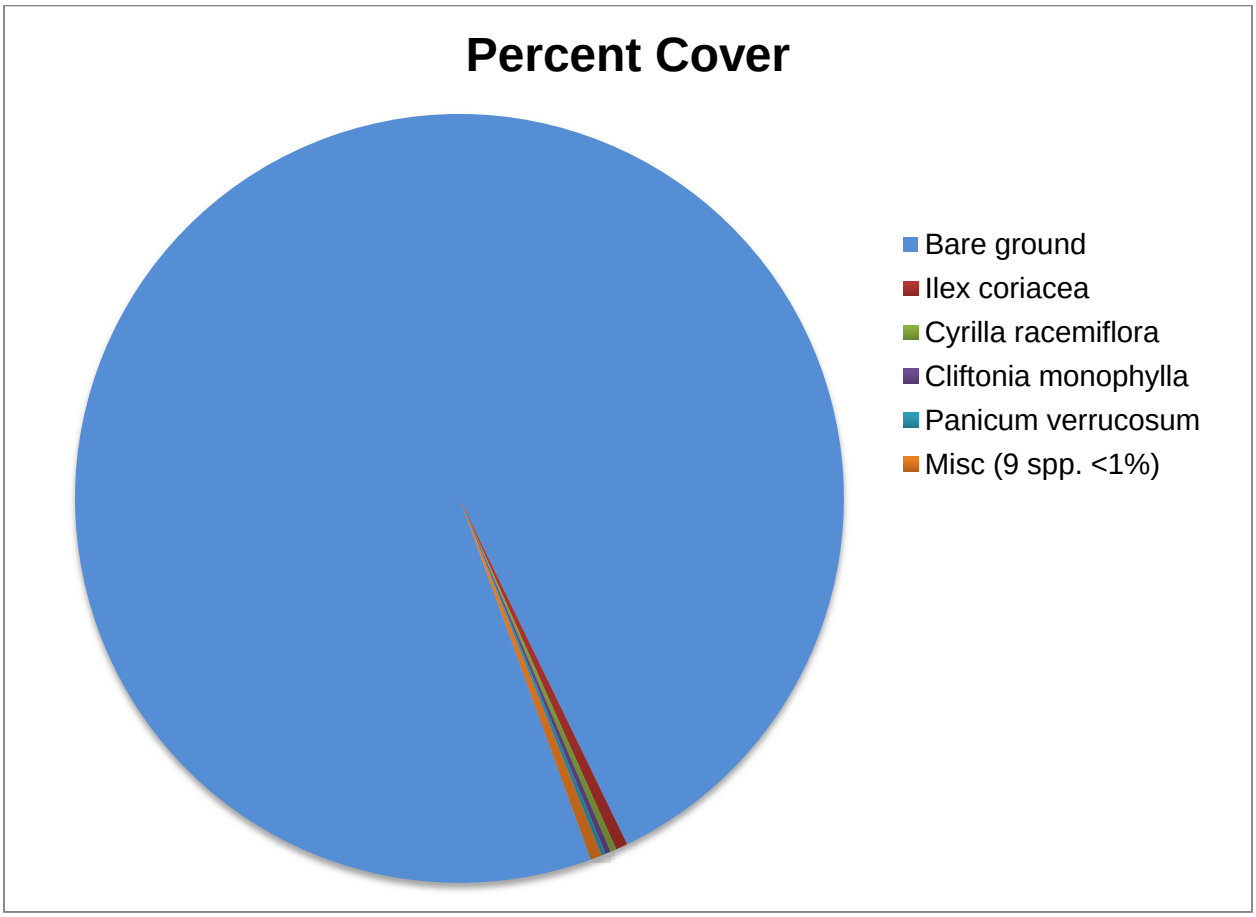


Table 3a: Transect DEQT2-625 Hydric Pine Flatwoods

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Eriocaulon decangulare	12.3	11.5	12.6	12.9
Woodwardia virginica	3.9	5.5	3.2	3.0
Graminoids				
Dichanthelium ensifolium	3.2	1.3	7.2	1.0
Rhynchospora miliacea	1.2	1.1	0.5	2.0
Panicum verrucosum	1.0	0.5	1.3	1.0
Andropogon glomeratus	0.6	0.5	0.3	1.0
Rhynchospora sp.	0.6	0.5	0.3	1.0
Bryophytes				
Sphagnum spp.	19.1	17.0	27.3	12.9
Vines				
Smilax laurifolia	5.1	4.2	3.2	7.9
Gelsemium rankinii	0.7	0.5	0.5	1.0
Woody Plants				
Ilex coriacea	12.7	14.1	12.0	11.9
Lyonia lucida	7.9	9.4	5.4	8.9
Myrica caroliniensis	5.6	6.0	3.7	6.9
Ilex cassine v. myrtifolia	5.4	6.3	4.0	5.9
Persea palustris	5.3	7.3	3.5	5.0
Gaylussacia mosieri	5.0	3.4	6.7	5.0
Cyrilla racemiflora	3.4	2.9	3.2	4.0
Magnolia virginiana	2.1	2.4	1.1	3.0
Nyssa ursina	1.7	1.8	1.3	2.0
Cliftonia monophylla	1.6	1.8	1.1	2.0
Nyssa sylvatica v. biflora	1.2	1.3	1.3	1.0
Sapium sebiferum	0.6	0.5	0.3	1.0

Table 3b: Transect DEQT2-625 Hydric Pine Flatwoods

Groundcover Vegetation Relative Cover (%)					Average Cover (%)	Species Richness
Forbs	Graminoids	Bryophytes	Vines	Woody Plants	Bare ground/ Standing water	
17%	4%	17%	5%	57%	82%	22
	Shrub Height (meters)					1.75

Transect DEQT2-625 Hydric Pine Flatwoods

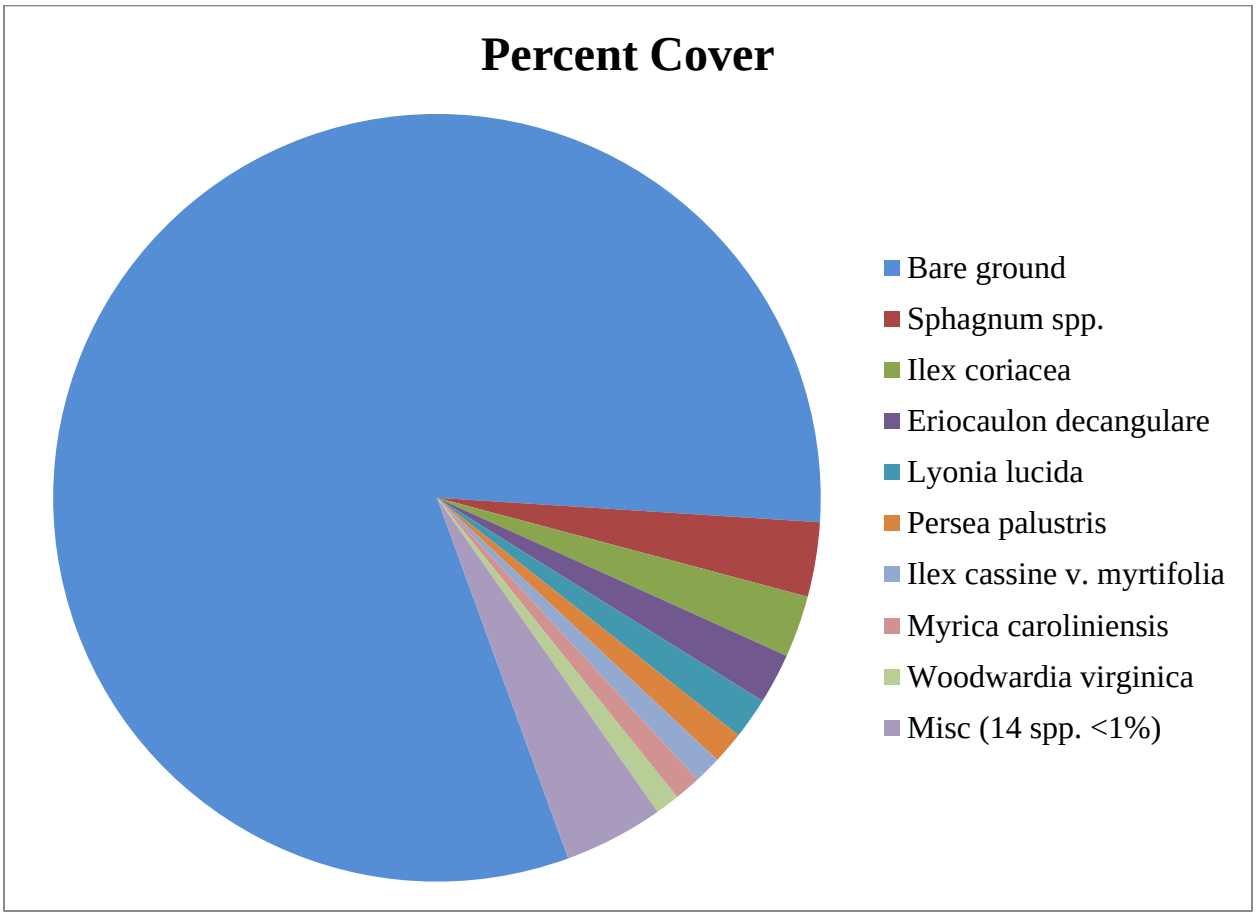


Table 4a: Transect DEQT3-625 Hydric Pine Flatwoods

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Pluchea baccharis	0.54	0.22	0.16	1.23
Vines				
Vitis rotundifolia	11.02	22.36	3.3	7.41
Toxicodendron radicans	4.94	2.25	3.93	8.64
Smilax laurifolia	2	1.35	0.94	3.7
Graminoids				
Andropogon glomeratus	3.16	0.22	8.02	1.23
Woody Plants				
Ilex coriacea	40.9	42.47	49.37	30.86
Persea palustris	16.13	12.7	11.01	24.69
Cliftonia monophylla	14.23	12.25	18.08	12.35
Gaylussacia mosieri	5.57	5.06	4.25	7.41
Magnolia virginiana	0.75	0.56	0.47	1.23
Vaccinium elliottii	0.75	0.56	0.47	1.23

Table 4b: Transect DEQT3-625 Hydric Pine Flatwoods

Groundcover Vegetation Relative Cover (%)				Average Cover (%)	Species Richness
Forbs	Graminoids	Vines	Woody Plants	Bare ground/ Standing water	
0.22%	0.22%	26%	74%	65%	11
Shrub Height (meters)					1.75

Transect DEQT3-625

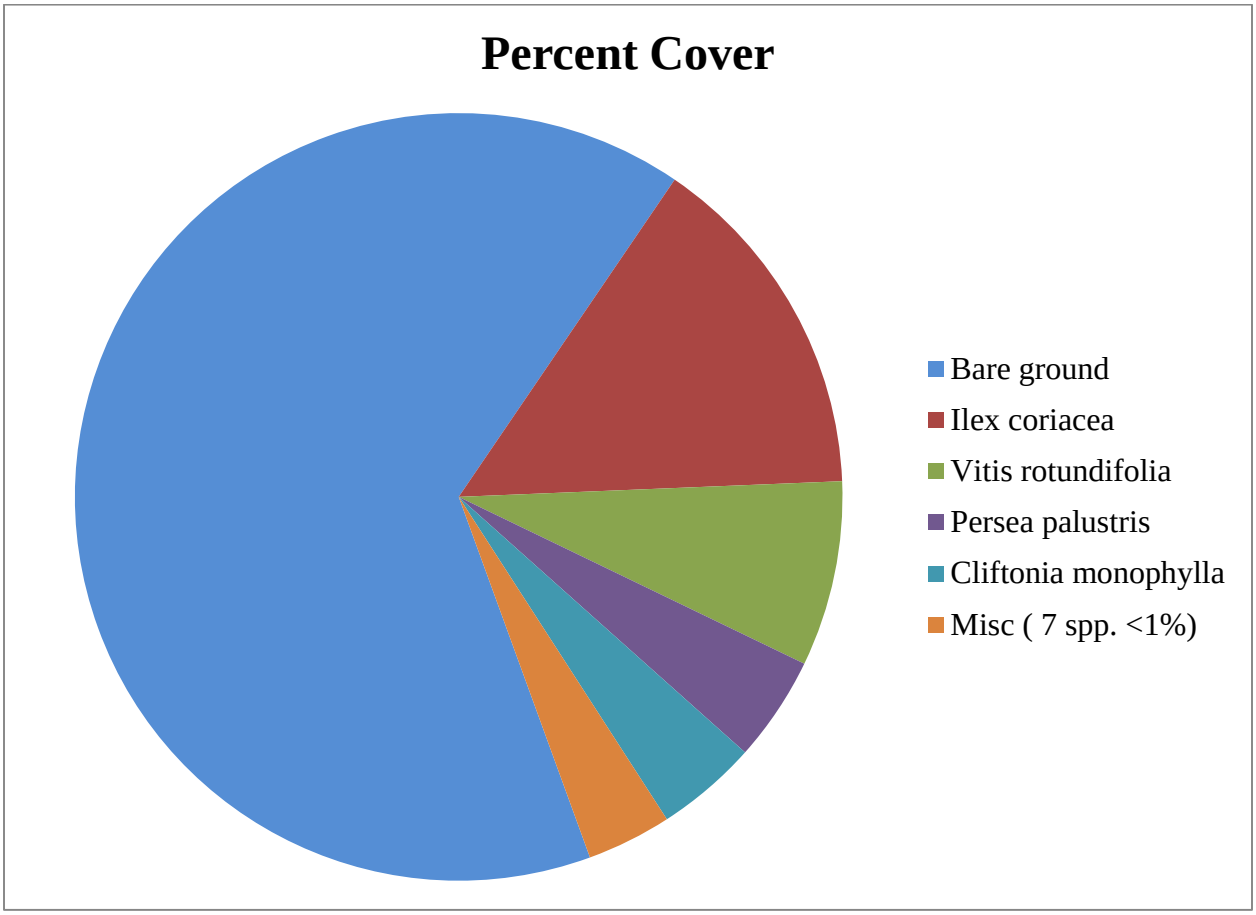


Table 5a: Transect DEQT4-626 Hydric Pine Savanna

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Pluchea baccharis	11.2	11.1	15.4	7.0
Eupatorium capillifolium	6.1	5.1	4.7	8.5
Erechtites hieraciifolius	4.7	4.7	3.8	5.5
Rubus argutus	3.0	2.9	1.7	4.5
Woodwardia virginica	2.4	2.6	2.1	2.5
Bidens mitis	1.9	1.8	1.5	2.5
Ludwigia pilosa	1.8	1.4	1.6	2.5
Lachnanthes caroliana	1.8	2.1	1.8	1.5
Rhexia virginica	1.5	1.7	1.5	1.5
Ludwigia octovalvis	1.4	1.1	1.1	2.0
Xyris sp.	1.3	1.3	1.2	1.5
Proserpinaca pectinata	1.3	0.8	1.5	1.5
Mitchella repens	0.9	0.6	1.1	1.0
Centella asiatica	0.7	0.6	0.6	1.0
Clitoria mariana	0.6	0.6	0.4	1.0
Ludwigia maritima	0.6	0.6	0.4	1.0
Viola primulifolia	0.6	0.3	1.0	0.5
Eriocaulon decangelare	0.5	0.7	0.4	0.5
Tragia urticifolia	0.5	0.3	0.6	0.5
Xyris Flabelliformis	0.4	0.3	0.5	0.5
Graminoids				
Panicum verrucosum	9.6	6.7	16.2	6.0
Rhynchospora sp.	4.9	2.2	8.4	4.0
Dichanthelium ensifolium v. unciphyllum	2.5	1.7	2.9	3.0
Andropogon glomeratus	1.0	0.8	0.6	1.5
Rhynchospora miliacea	0.6	0.7	0.6	0.5
Carex verrucosa	0.6	0.6	0.2	1.0
Rhynchospora chapmanii	0.6	0.6	0.2	1.0
Rhynchospora plumosa	0.4	0.0	0.4	0.5
Bryophytes				
Sphagnum spp.	0.8	1.9	0.0	0.01
Vines				
Vitis rotundifolia	6.8	11.9	2.9	5.5
Smilax laurifolia	4.9	4.2	2.9	7.5
Gelsemium rankinii	4.0	3.9	4.0	4.0
Mikania scandens	2.9	3.2	2.1	3.5

Table 5a: Transect DEQT4-626 Hydric Pine Savanna (Continued)

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Vines				
Toxicodendron radicans	0.3	0.3	0.1	0.5
Woody Plants				
Ilex coriacea	4.5	5.6	4.9	3.0
Myrica caroliniensis	2.6	3.8	2.4	1.5
Lyonia lucida	2.5	2.8	2.8	2.0
Cliftonia monophylla	1.7	2.1	1.6	1.5
Gaylussacia mosieri	1.2	1.4	1.3	1.0
Callicarpa americana	1.0	1.4	0.6	1.0
Magnolia virginiana	0.9	1.0	0.9	1.0
Photinia pyrifolia	0.8	1.0	0.5	1.0
Nyssa sylvatica v. biflora	0.6	0.6	0.2	1.0
Persea palustris	0.5	0.7	0.2	0.5
Hypericum chapmanii	0.4	0.3	0.4	0.5
Pinus elliottii	0.3	0.3	0.1	0.5

Table 5b: Transect DEQT4-626 Hydric Pine Savanna

Groundcover Vegetation Relative Cover (%)					Average Cover (%)	Species Richness
Forbs	Graminoids	Bryophytes	Vines	Woody Plants	Bare ground/ Standing water	
40%	13%	2%	23%	21%	77%	46
	Shrub Height (meters)					1.5

Transect DEQT4-626

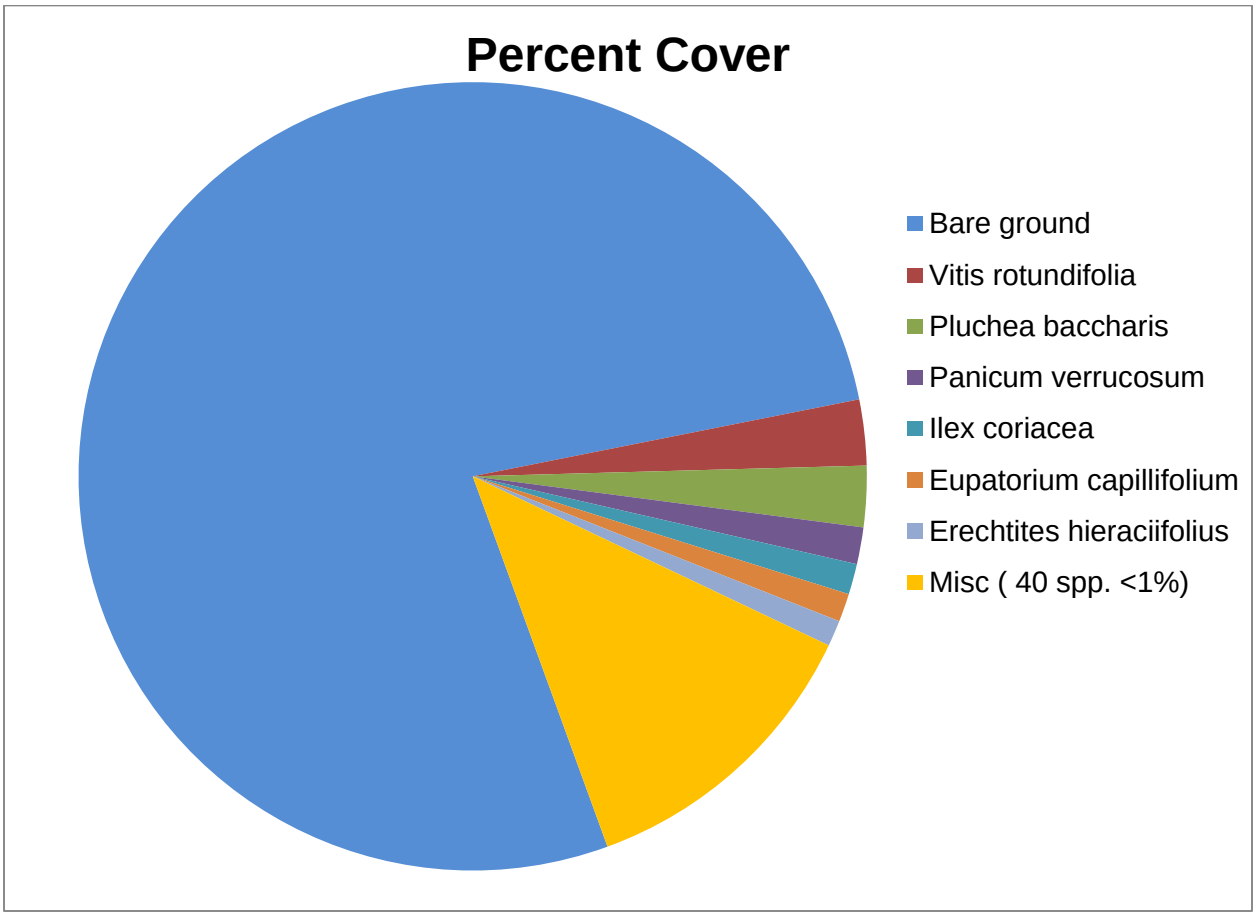


Table 6a: Transect DWQT1-625 Hydric Pine Flatwoods

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Lachnanthes caroliniana	9.7	7.7	8.2	13.1
Rhexia petiolata	1.1	0.8	0.3	2.0
Woodwardia virginica	1.0	1.0	1.0	1.0
Graminoids				
Panicum verrucosum	21.2	23.6	24.8	15.2
Rhynchospora filifolia	21.1	18.2	20.9	24.2
Rhynchospora fascicularis	0.6	0.4	0.5	1.0
Aristida palustris	0.5	0.4	0.2	1.0
Vines				
Smilax laurifolia	20.5	11.5	2.3	27.3
Woody Plants				
Cliftonia monophylla	20.5	31.7	18.6	11.1
Nyssa ursina	1.6	2.8	0.8	1.0
Ilex coriacea	1.3	0.8	1.0	2.0
Vaccinium corymbosum	1.0	1.0	1.0	1.0

Table 6b: Transect DWQT1-625 Hydric Pine Flatwoods

Groundcover Vegetation Relative Cover (%)				Average Cover (%)	
Forbs	Graminoids	Vines	Woody Plants	Bare ground/ Standing water	Species Richness
10%	43%	12%	36%	78%	12
Shrub Height (meters)					0.3

Transect DWQT1-625

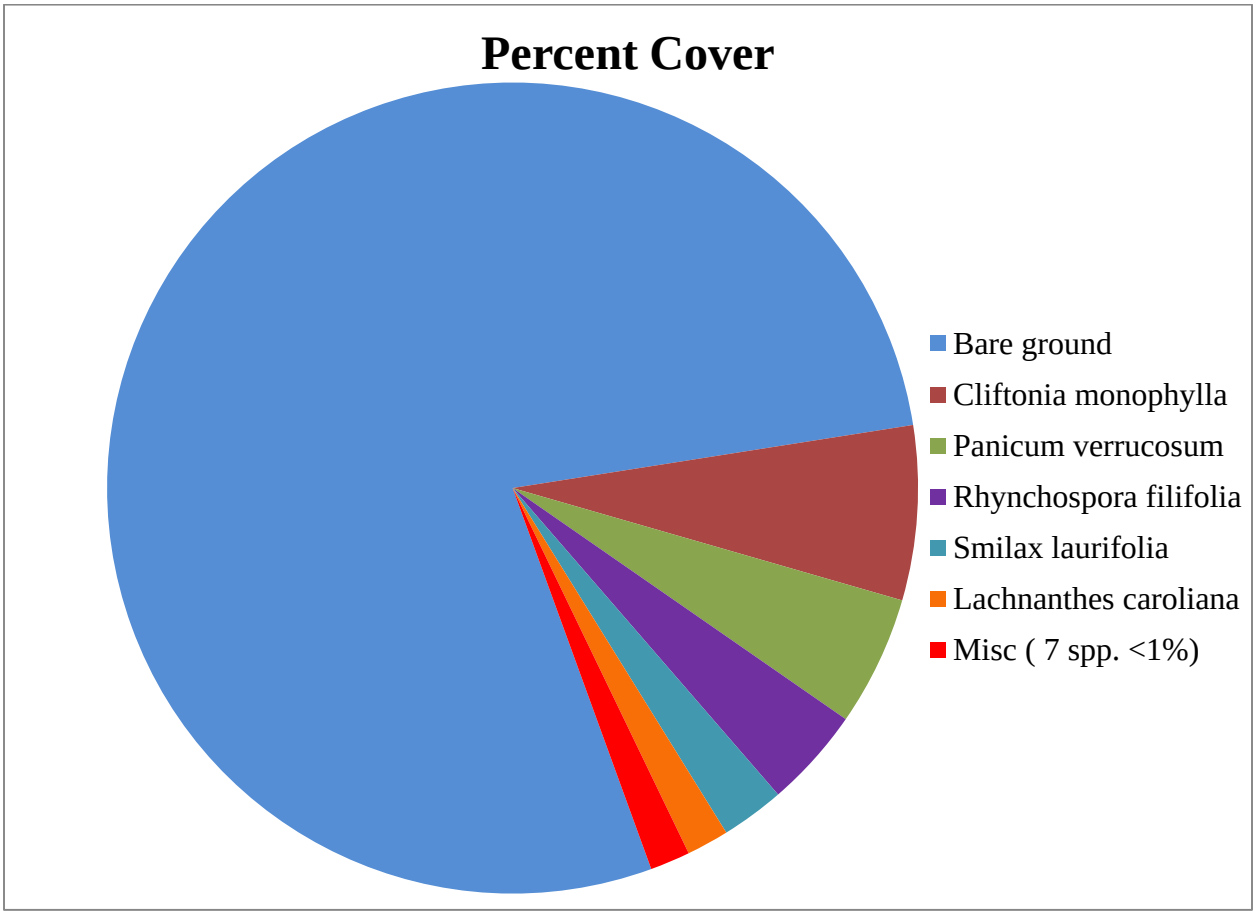


Table 7a: Transect DWQT2-626 Hydric Pine Savanna

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Clitoria mariana	4.3	1.8	7.5	3.7
Woodwardia virginica	1.9	1.7	1.8	2.2
Lachnanthes caroliana	1.7	0.8	1.9	2.2
Pteridium aquilinum var. pseudocaudatum	1.3	1.4	1.1	1.5
Serenoa repens	1.1	2.5	0.2	0.7
Eriocaulon decangelare	0.6	0.3	0.7	0.7
Ludwigia sp.	0.6	0.3	0.7	0.7
Woodwardia areolata	0.5	0.3	0.5	0.7
Mitchella repens	0.5	0.3	0.5	0.7
Drosera capillaris	0.5	0.3	0.3	0.7
Osmunda cinnamomea	0.4	0.3	0.2	0.7
Hypericum brachyphyllum	0.4	0.3	0.2	0.7
Rhexia alifanus	0.4	0.3	0.2	0.7
Rhexia mariana	0.4	0.3	0.2	0.7
Graminoids				
Rhynchospora filifolia	1.6	1.1	0.8	3.0
Aistida stricta v. beyrichiana	0.8	0.6	0.3	1.5
Rhynchospora miliacea	0.6	0.3	0.8	0.7
Rhynchospora sp.	0.5	0.3	0.5	0.7
Xyris sp.	0.5	0.3	0.3	0.7
Rhynchospora plumosa	0.4	0.3	0.2	0.7
Carex glaucescens	0.4	0.3	0.2	0.7
Bryophytes				
Sphagnum spp.	3.0	1.1	5.0	3.0
Vines				
Smilax laurifolia	3.4	2.0	3.1	5.2
Smilax glauca	0.4	0.3	0.2	0.7
Woody Plants				
Ilex coriacea	18.8	23.8	18.6	14.1
Gaylussacia mosieri	14.0	14.9	17.3	9.6
Cliftonia monophylla	13.4	14.2	14.8	11.1
Ilex glabra	10.0	11.5	11.0	7.4
Lyonia lucida	4.1	4.5	2.6	5.2
Persea palustris	3.4	2.8	2.1	5.2
Cyrilla racemiflora	2.5	2.4	2.3	3.0

Table 7a: Transect DWQT2-626 Hydric Pine Savanna (Continued)

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Woody Plants				
Photinia pyrifolia	2.2	1.8	1.1	3.7
Vaccinium corymbosum	2.2	2.9	1.3	2.2
Magnolia virginiana	1.3	1.8	0.5	1.5
Myrica caroliniensis	1.1	1.0	0.8	1.5
Styrax americanus	0.6	0.7	0.3	0.7
Clethra alnifolia	0.5	0.7	0.2	0.7

Table 7b: Transect DWQT2-626 Hydric Pine Savanna

Groundcover Vegetation Relative Cover (%)					Average Cover (%)	Species Richness
Forbs	Graminoids	Bryophytes	Vines	Woody Plants	Bare ground/ Standing water	
11%	3%	1%	2%	83%	70%	37
	Shrub Height (meters)					1.5

Transect DWQT2-626

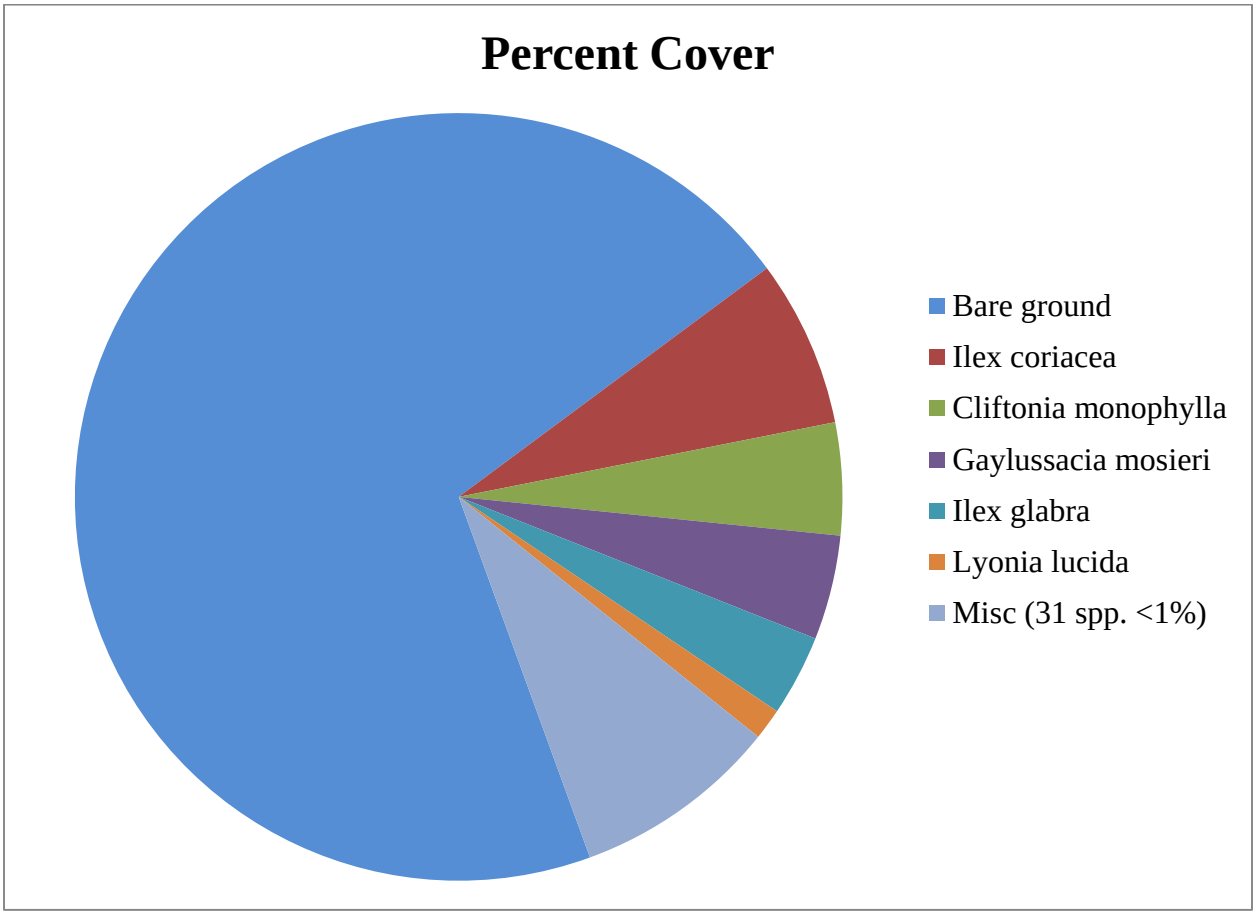


Table 8a: Transect DWQT3-626 Hydric Pine Savanna

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Eriocaulon decangelare	2.1	2.6	1.5	2.2
Hypericum brachyphyllum	2.1	1.8	2.0	2.6
Drosera capillaris	1.7	1.1	2.1	1.9
Sarracenia leucophylla	1.5	1.6	0.7	2.2
Lachnanthes caroliana	0.6	0.5	0.5	0.7
Xyris sp.	0.4	0.3	0.2	0.7
Ludwigia virgata	0.3	0.3	0.1	0.4
Houstonia sp.	0.3	0.1	0.3	0.4
Ludwigia pilosa	0.2	0.1	0.1	0.4
Utricularia cornuta	0.2	0.1	0.1	0.4
Polygala hookeri	0.2	0.1	0.1	0.4
Polygala lutea	0.2	0.1	0.1	0.4
Rhexia alifanus	0.2	0.1	0.1	0.4
Rhexia petiolata	0.2	0.1	0.1	0.4
Xyris serotina	0.2	0.1	0.1	0.4
Graminoids				
Dichanthelium ensifolium v. unciphyllum	12.0	11.6	16.6	7.8
Dichanthelium scoparium	8.9	8.7	11.1	7.0
Scelria triglomerata	7.5	11.8	5.2	5.6
Rhynchospora chapmanii	7.4	8.6	6.1	7.4
Rhynchospora filifolia	7.0	7.1	6.2	7.8
Rhynchospora plumosa	5.8	5.9	4.7	6.7
Rhynchospora fascicularis	4.9	5.0	4.8	4.8
Andropogon liebmannii var. pungensis	2.1	3.3	1.1	1.9
Fuirena breviseta	1.9	1.7	1.1	3.0
Rhynchospora odorata	1.5	1.8	1.2	1.5
Panicum verrucosum	1.1	0.4	1.6	1.1
Aristida palustris	1.0	1.0	0.5	1.5
Ctenium aromaticum	0.7	1.1	0.2	0.7
Andropogon gyrans	0.7	0.6	0.3	1.1
Dichanthelium erectifolium	0.5	0.3	0.5	0.7
Andropogon glomeratus	0.3	0.3	0.2	0.4

Table 8a: Transect DWQT3-626 Hydric Pine Savanna (Continued)

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Bryophytes				
Sphagnum spp.	0.2	0.1	0.1	0.4
Vines				
Smilax laurifolia	11.5	7.5	15.8	11.1
Woody Plants				
Gaylussacia mosieri	4.3	3.85	5.72	3.33
Cliftonia monophylla	1.49	1.55	1.45	1.48
Cyrilla racemiflora	1.41	1.76	1	1.48
Ilex coriacea	1.33	0.88	1.27	1.85
Photinia pyrifolia	1.14	1.22	1.09	1.11
Hypericum chapmanii	1.07	0.74	1	1.48
Vaccinium corymbosum	0.79	0.61	0.64	1.11
Nyssa ursina	0.68	0.95	0.73	0.37
Ilex glabra	0.65	0.47	0.73	0.74
Styrax americanus	0.59	0.68	0.36	0.74
Clethra alnifolia	0.49	0.47	0.27	0.74
Lyonia lucida	0.36	0.34	0.36	0.37
Magnolia virginiana	0.27	0.34	0.09	0.37
Myrica caroliniensis	0.2	0.1	0.1	0.4
Taxodium ascendens	0.2	0.1	0.1	0.4

Table 8b: Transect DWQT3-626 Hydric Pine Savanna

Groundcover Vegetation Relative Cover (%)					Average Cover (%)	Species Richness
Forbs	Graminoids	Bryophytes	Vines	Woody Plants	Bare ground/ Standing water	
9.3%	69%	0.141%	7.5%	14%	56%	48
	Shrub Height (meters)					0.3

Transect DWQT3-626

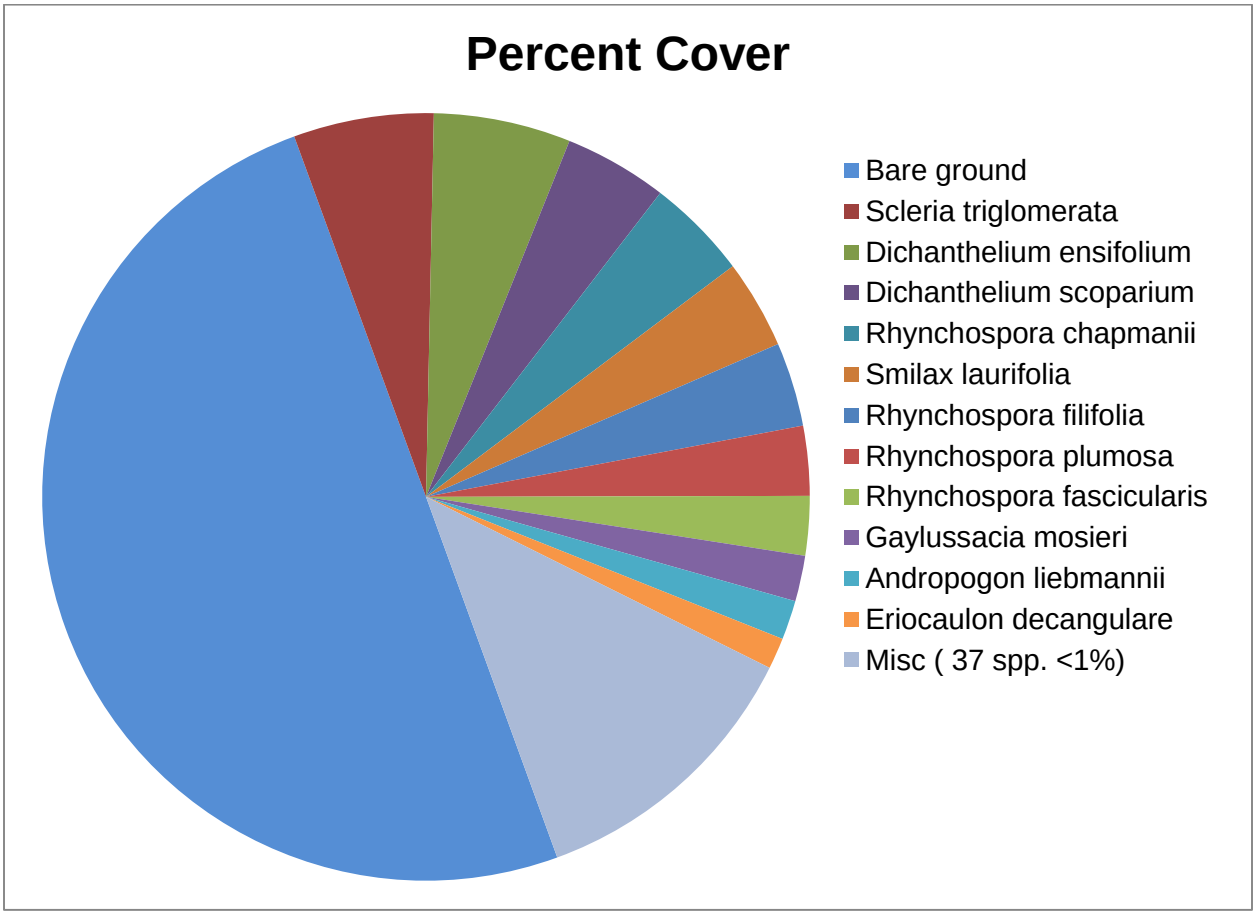


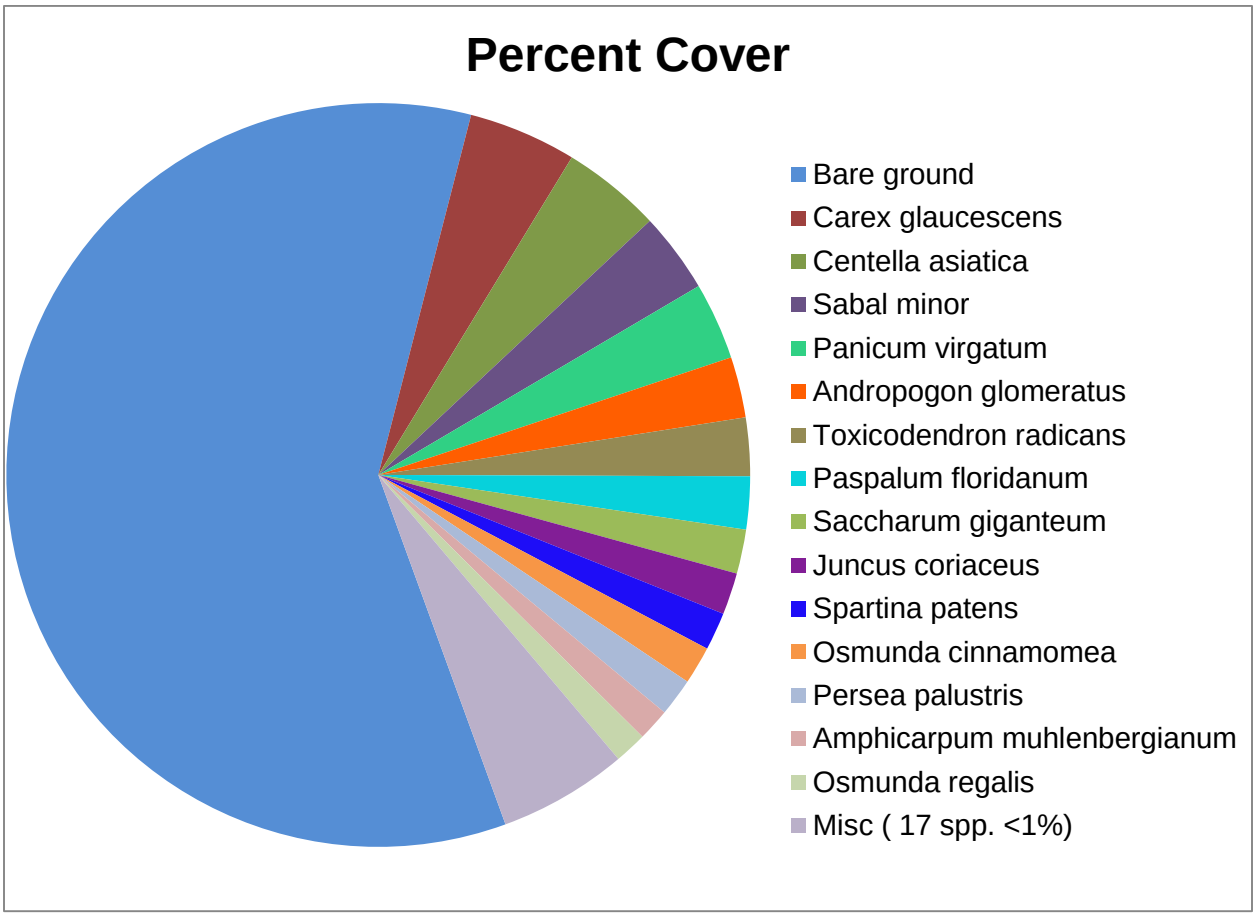
Table 9a: Transect DWQT4-625 Hydric Pine Flatwoods

Species	Importance Value (%)	Relative Cover (%)	Relative Density (%)	Relative Frequency (%)
Forbs				
Centella asiatica	18.9	10.7	30.9	15.3
Rubus argutus	5.4	2.4	9.4	4.5
Sabal minor	3.3	8.6	0.2	1.1
Saccharum giganteum	3.1	4.8	1.8	2.8
Osmunda cinnamomea	2.8	4.1	0.9	3.4
Osmunda regalis var. spectabilis	2.7	3.5	0.8	4.0
Medicago minima	1.0	0.8	0.6	1.7
Woodwardia virginica	1.0	1.2	1.2	0.6
Viola primulifolia	0.7	0.3	0.7	1.1
Eupatorium mohrii	0.4	0.4	0.2	0.6
Bidens mitis	0.3	0.2	0.3	0.6
Vines				
Toxicodendron radicans	7.9	6.3	8.3	9.0
Graminoids				
Carex glaucescens	8.3	11.6	6.0	7.3
Amphicarpum muhlenbergianum	7.1	3.5	12.0	5.7
Panicum virgatum	6.8	8.3	4.6	7.3
Andropogon glomeratus	6.3	6.5	5.0	7.3
Spartina patens	4.9	4.1	5.5	5.1
Paspalum floridanum	4.6	5.7	3.6	4.5
Juncus coriaceus	2.3	4.5	1.3	1.1
Dichanthelium scoparium	2.0	1.8	0.9	3.4
Rhynchospora miliacea	1.7	1.4	1.4	2.3
Rhynchospora plumosa	1.1	1.3	0.3	1.7
Rhynchospora fascicularis	0.9	0.9	0.7	1.1
Aristida stricta v. beyrichiana	0.7	0.9	0.2	1.1
Rhynchospora inundata	0.5	0.4	0.4	0.6
Dichanthelium ensifolium v. unciphyllum	0.4	0.4	0.2	0.6
Woody Plants				
Persea palustris	2.9	0.1	1.3	3.4
Magnolia virginiana	0.6	0.6	0.2	1.1
Photinia pyrifilia	0.5	0.4	0.6	0.6
Ilex vomitoria	0.4	0.4	0.2	0.6
Acer rubrum	0.3	0.2	0.3	0.6

Table 9b: Transect DWQT4-625 Hydric Pine Flatwoods

Groundcover Vegetation Relative Cover (%)				Average Cover (%)	Species Richness
Forbs	Graminoids	Vines	Woody Plants	Bare ground/ Standing water	
32%	56%	6%	6%	60%	31
Shrub Height (meters)					1.75

Transect DWQT4-625



3.2. Qualitative Transect Data

A summary of the qualitative data and plant lists are provided below for each transect (See Tables 10-20 for the plant lists). The qualitative data sheets can be found in Appendix A.

Qualitative Transect DEPT1-626 Hydric Pine Savanna

The plant community is a wet prairie using the FNAI classification. The estimated canopy coverage class is 26-50 percent and the majority of the canopy trees are greater than 10 m high. The dominant canopy species are *Pinus elliottii, Magnolia virginiana,* and *Nyssa sylvatica* var. *biflora*. The estimated height class for the majority of the subcanopy is 6 to 10 m. The dominant subcanopy species are *Cliftonia monophylla* and *Magnolia virginiana*. The shrub coverage is 0-1 percent and the majority of the shrubs are in the 0.5 m height class. The dominant shrub species are *Ilex coriacea, Vaccinium corymbosum, Myrica heterophylla,* and *Cliftonia monophylla*. The graminoid groundcover coverage class is 0-1 percent and the total groundcover cover class is 0-1 percent. The dominant groundcover species are *Smilax laurifolia* and *Gaylussacia mosieri*. The transect has significant bare ground coverage due to recent fire. Many shrubs have been reduced to coppice from a prescribed fire. The landscape is relatively open and the groundcover is dominated by coppice shrubs. There is rudimentary growth of fire adapted, weedy, herbaceous annuals.

The tree density is high. Wildlife observations included birds, insects, spiders, and amphibians. Natural regeneration of appropriate species is occurring. The landscape has been radically changed in the appropriate direction due to prescribed fire. The depth of duff is approximately 2 cm and the depth of litter is approximately 2 cm.

Table 10: Plant List for DEPT1-626

Scientific Name	Common Name
Cliftonia monoplylla	black titi
Cyrilla racemiflora	red titi
Gaylussacia mosieri	woolly huckleberry
Ilex coriacea	large gallberry
Magnolia virginiana	sweetbay
Myrica heterophylla	evergreen bayberry
Nyssa sylvatica var. *biflora*	tupelo
Persea palustris	silk bay
Pinus elliottii	slash pine
Smilax laurifolia	laurel greenbrier
Vaccinium corymbosum	highbush blueberry

Qualitative Transect DEPT2-614 Titi Swamp

The plant community is a wet prairie/shrub bog using the FNAI classification. The estimated canopy coverage class is 6-25 percent and the majority of canopy trees are 6-10m tall. The dominant canopy species are *Pinus elliottii, Cliftonia monophylla, Magnolia virginiana,* and *Nyssa sylvatica* var. *biflora*. The estimated height class for the majority of the subcanopy is 3-5m. The dominant subcanopy species are *Magnolia virginiana* and *Nyssa sylvatica v. biflora*. The shrub coverage is 1-5 percent and the majority of shrubs are in the 0.5 m height class. The dominant shrub species are *Ilex coriacea*, *Lyonia lucida,* and *Gaylussacia mosieri*. The graminoid groundcover coverage class is 1-5 percent and the total groundcover coverage class is 0-1 percent. The dominant groundcover species are *Smilax laurifolia, Woodwardia virginica, Gaylussacia mosieri,* and *Sphagnum* spp. The transect has significant bare ground coverage due to recent fire. Many shrubs have been reduced to coppice from a prescribed fire. The landscape is relatively open and the groundcover is dominated by coppice shrubs. There is rudimentary growth of fire adapted, weedy, herbaceous annuals. The tree density is high.

Wildlife observations included birds, insects, and spiders. Natural regeneration of appropriate species is occurring. The landscape has been radically changed in the appropriate direction due to prescribed fire. The depth of duff is approximately 2 cm and the depth of litter is approximately 1 cm.

Table 11: Qualitative Transect DEPT2-614 Plant List

Scientific Name	Common Name
Cliftonia monophylla	black titi
Cyrilla racemiflora	red titi
Gaylussacia mosieri	woolly huckleberry
Ilex coriacea	large gallberry
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Myrica heterophylla	evergreen bayberry
Nyssa sylvatica var. *biflora*	tupelo
Osmunda cinnamomea	cinnamon fern
Osmunda regalis	royal fern
Persea palustris	silk bay
Pinus elliottii	slash pine
Smilax laurifolia	laurel greenbrier
Sphagnum spp.	peat moss
Vaccinium corymbosum	highbush blueberry

Qualitative Transect DEPT3-611 Bay Swamp

The plant community a baygall using the FNAI classification. The estimated canopy coverage class is 25-50 percent and the majority of canopy trees are 6-10m tall. The dominant canopy species are *Liriodendron tulipifera, Cliftonia monophylla, Magnolia virginiana,* and *Nyssa sylvatica* var. *biflora*. The estimated height class for the majority of the subcanopy is 6-10m. The dominant subcanopy species are *Cliftonia monophylla, Acer rubrum,* and *Nyssa sylvatica var. biflora*. The shrub coverage is 1-5 percent and the majority of the shrubs are in the 0.6-1.5 m height class. The dominant shrub species are *Ilex coriacea, Myrica heterophylla, Cliftonia monophylla,* and *Persea palustris*. The graminoid groundcover coverage class is 26-50 percent and the total groundcover cover class is 26-50 percent. The dominant groundcover species are *Scleria triglomerata, Rhynchospora* spp., *Carex verrucosum, Osmunda cinnamomea, Sphagnum* spp., *Woodwardia areolata,* and *Vitis rotundifolia*. This transect contains appropriate habitat for the rare *Lilium iridollae,* which was found on the Dutex site in August of 2013. This plant community is appropriately managed with the addition of prescribed fire. The canopy is diverse and multi stratified and the groundcover is diverse.

Wildlife observations included birds, mammals, reptiles, amphibians, insects, and spiders. Natural regeneration of appropriate species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The depth of duff is approximately 0.1 cm and the depth of litter is approximately 1 cm.

Table 12: Qualitative Transect DEPT3-611 Plant List

Scientific Name	Common Name
Acer rubrum	red maple
Apteria aphylla	nodding nixie
Carex verrucosum	swamp sedge
Cliftonia monophylla	black titi
Cyrilla racemiflora	red titi
Gaylussacia mosieri	woolly huckleberry
Ilex coriacea	large gallberry
Liriodendron tulipifera	tuliptree
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Mitchella repens	partridgeberry
Myrica heterophylla	evergreen bayberry
Myrica inodora	odorless bayberry
Nyssa sylvatica var. *biflora*	tupelo
Osmanthus americanus	American wild olive
Osmunda cinnamomea	cinnamon fern
Persea palustris	silk bay
Pinus elliottii	slash pine

Table 12: Qualitative Transect DEPT3-611 Plant List (Continued)

Scientific Name	Common Name
Platanthera cristata	yellow-crested orchid
Scleria triglomerata	nutrush
Smilax laurifolia	laurel greenbrier
Sphagnum spp.	peat moss
Toxicodendron radicans	poison ivy
Toxicodendron vernix	poison sumac
Vaccinium corymbosum	highbush blueberry
Viburnum nudum	possumhaw
Vitis rotundifolia	muscadine grape
Woodwardia areolata	netted chain fern
Woodwardia virginica	Virginia chain fern

Qualitative Transect DEPT4-625 Hydric Pine Flatwoods

The plant community is a wet prairie/shrub bog using the FNAI classification. The estimated canopy coverage class is 6-25 percent and the majority of canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Cliftonia monophylla, Magnolia virginiana, Nyssa sylvatica* var. *biflora,* and *Persea palustris*. The estimated height class for the majority of the subcanopy is 6-10m. The dominant subcanopy species are *Cliftonia monophylla, Nyssa sylvatica var. biflora,* and *Magnolia virginiana*. The shrub coverage is 1-5 percent and the majority of the shrubs are in the 1.6-3 m height class. The dominant shrub species are *Ilex coriacea* and *Magnolia virginiana*. The graminoid groundcover coverage class is 0 percent and the total groundcover cover class is 1-5 percent. The dominant groundcover species are *Toxicodendron radicans, Smilax laurifolia* and *Vitis rotundifolia*. The transect has significant bare ground coverage and many shrubs have been reduced to coppice from a recent prescribed fire. The landscape is relatively open and the groundcover is dominated by coppice shrubs. There is rudimentary growth of fire adapted, weedy, herbaceous annuals.

Wildlife observations included birds, mammals, amphibians, insects, and spiders. Natural regeneration of appropriate species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The depth of duff is approximately 3 cm and the depth of litter is approximately 1 cm.

Table 13: Qualitative Transect DEPT4-625 Plant List

Scientific Name	Common Name
Cliftonia monoplylla	black titi
Cyrilla racemiflora	red titi
Gaylussacia mosieri	woolly huckleberry
Ilex coriacea	large gallberry
Ilex glabra	galberry
Lyonia lucida	fetterbush
Magnolia grandiflora	southern magnolia
Magnolia virginiana	sweetbay
Myrica heterophylla	evergreen bayberry
Myrica inodora	odorless bayberry
Nyssa sylvatica var. *biflora*	tupelo
Nyssa ursina	bear tupelo
Osmunda cinnamomea	cinnamon fern
Persea palustris	swamp bay
Pinus elliottii	slash pine
Smilax laurifolia	laurel greenbrier
Toxicodendron radicans	poison ivy
Vaccinium corymbosum	highbush blueberry
Vitis rotundifolia	muscadine grape
Woodwardia areolata	netted chain fern
Woodwardia virginica	Virginia chain fern

Qualitative Transect DEPT5-630 Wetland Forested Mixed

The plant community is a Baygall using the FNAI classification. The estimated canopy coverage class is 26-50 percent and the majority of canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Cliftonia monophylla, Magnolia virginiana, Nyssa sylvatica* var. *biflora*, and *Persea palustris*. The estimated height class for the majority of the subcanopy is 3-5m. The dominant subcanopy species are *Ilex cassine, Cliftonia monophylla*, and *Magnolia virginiana*. The shrub coverage is 6-25 percent and the majority of shrubs are in the 0.6-1.5m height class. The dominant shrub species are *Ilex coriacea, Magnolia virginiana, Viburnum nudum*, and *Lyonia lucida*. The graminoid groundcover coverage class is 6-25 percent and total groundcover coverage class is 6-25 percent. The dominant groundcover species are *Woodwardia areolata, Woodwardia virginica, Osmunda cinnamomea, Sphagnum* spp., *Rhynchospora miliacea, Carex verrucosum,* and *Smilax laurifolia*. The site has been burned in part. Fire killed some but not all larger shrubs. Additional prescribed fires are needed to reduce all shrubs to coppice and open the landscape.

Wildlife observations included birds, mammals, amphibians, insects, and spiders. Natural regeneration of appropriate species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The depth of duff is approximately 2 cm and the depth of litter is approximately 1 cm.

Table 14: Qualitative Transect DEPT5-630 Plant List

Scientific Name	Common Name
Carex verrucosum	caric sedge
Cliftonia monoplylla	black titi
Cyrilla racemiflora	red titi
Gaylussacia mosieri	woolly huckleberry
Ilex cassine	dahoon
Ilex coriacea	large gallberry
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Myrica heterophylla	evergreen bayberry
Nyssa biflora	tupelo
Osmunda cinnamomea	cinnamon fern
Persea palustris	swamp bay
Pinus elliottii	slash pine
Rhynchospora miliacea	beakrush
Smilax laurifolia	laurel greenbrier
Sphagnum sp.	peat moss
Toxicodendron radicans	poison ivy
Toxicodendron vernix	poison sumac
Vaccinium corymbosum	highbush blueberry
Viburnum nudum	possumhaw
Vitis rotundifolia	muscadine grape

Qualitative Transect DWPT1-441 Coniferous Plantation

The plant community is Mesic Flatwoods using the FNAI classification. The estimated canopy coverage class is 51-75 percent and the majority of the canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Quercus hemisphaerica,* and *Symplocos tinctoria*. The estimated height class for the majority of the subcanopy is 6-10m. The dominant subcanopy species are *Quercus hemisphaerica* and *Symplocos tinctoria*. The shrub coverage is 6-25 percent and the majority of the shrubs are in the 1.6-3m height class. The dominant shrub species are *Ilex coriacea* and *Quercus hemisphaerica*. The graminoid groundcover coverage class is 0 percent and total groundcover coverage class is 6-25 percent. The dominant groundcover species are *Serenoa repens, Ilex coriacea, Vitis rotundifolia,* and *Clethra*

alnifolia. The site has significant bare ground coverage because of long term fire suppression, a deep duff layer, and competition from multiple woody strata above the groundcover. The site has been burned in part. Fire killed some but not all larger shrubs. Additional prescribed fires are needed to reduce all shrubs to coppice and open the landscape.

Wildlife observations included birds, amphibians, insects, and spiders. Natural regeneration of appropriate groundcover species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. Fire was partially successful in reducing some shrubs to coppice. The depth of duff is approximately 2 cm and the depth of litter is approximately 0.5 cm.

Table 15: Qualitative Transect DWPT1-441 Plant List

Scientific Name	Common Name
Clethra alinfolia	sweet pepper bush
Ilex coriacea	large gallberry
Ilex glabra	gallberry
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Pinus elliottii	slash pine
Serenoa repens	saw-palmetto
Quercus hemispherica	laurel oak
Serenoa repens	saw-palmetto
Smilax laurifolia	laurel greenbrier
Symplocos tinctoria	common sweetleaf
Vaccinium arboreum	sparkleberry
Vaccinium corymbosum	highbush blueberry
Vitis rotundifolia	muscadine grape

Qualitative Transect DWPT2-626 Hydric Pine Savanna

The plant community is a Palustrine Marsh using the FNAI classification. The estimated canopy coverage class is 6-25 percent and the majority of canopy trees are 6-10 m high. The dominant canopy species are *Pinus elliottii, Taxodium ascendens, Acer rubrum, Magnolia virginiana, Nyssa sylvatica* var. *biflora,* and *Persea palustris*. The estimated height class for the majority of the subcanopy is 3-5m. The dominant subcanopy species are *Pinus elliottii, Acer rubrum, Nyssa sylvatica* var. *biflora,* and *Persea palustris*. The shrub coverage is 6-25 percent and the majority of the shrubs are in the 1.6-3m height class. The dominant shrub species are *Myrica cerifera, Lyonia lucida,* and *Myrica heterophylla*. The graminoid groundcover coverage class varies from 6-25 percent or significantly higher and total groundcover cover class is 6-25 percent or significantly higher. The dominant groundcover species are *Smilax laurifolia, Aristida stricta, Fuirena scirpoidea, Cladium jamaicense, Spartina patens, Panicum virgatum, Anthaenanthia rufa, Andropogon glomeratus,* and *Bidens mitis*. The rare *Lilium iridollae* was also found in the

seepage ecotone near this transect. The site has less bare ground coverage because of existing and naturally extensive dominance by marsh vegetation. The trees in the marsh appear to be stunted, with the trees located in elevated areas being taller in height. This transect traverses a diverse ecotone between freshwater seepage wetlands (baygall) and the nearby tidal marsh.

Wildlife observations included birds, amphibians, insects, and spiders. Natural regeneration of appropriate groundcover species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The fire was partially successful in reducing some shrubs to coppice. The depth of duff is approximately 1 cm and the depth of litter is approximately 1 cm.

Table 16: Qualitative Transect DWPT2-441 Plant List

Scientific Name	Common Name
Acer rubrum	red maple
Andropogon glomeratus	broomgrass
Anthaenantia rufa	purple silky-scale grass
Aristida palustris	swamp three-awn grass
Aristida stricta	wiregrass
Asclepias lanceolata	fewflower milkweed
Bidens mitis	smallfruit beggarticks
Carex verrucosum	caric sedge
Cladium jamaicense	sawgrass
Cliftonia monoplylla	black titi
Cyrilla racemiflora	red titi
Dicanthelium ensifolium	panic grass
Dichanthelium scabriusculum	woolly witchgrass
Eriocaulon compressum	pipewort
Eriocaulon decangulare	ten-angled pipewort
Fuirena scirpoidea	southern umbrella sedge
Gaylussacia mosieri	woolly huckleberry
Ilex cassine	dahoon
Ilex coriacea	large gallberry
Ilex glabra	gallberry
Lachnanthes caroliana	redroot
Lilium iridollae	Henry's lily
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Myrica cerifera	wax myrtle

Table 16: Qualitative Transect DWPT2-441 Plant List (Continued)

Scientific Name	Common Name
Myrica heterophylla	evergreen bayberry
Nyssa sylvatica var. *biflora*	tupelo
Osmunda cinnamomea	cinnamon fern
Osmunda regalis	royal fern
Panicum virgatum	switchgrass
Persea palustris	swamp bay
Photinia pyrifolia	red chokeberry
Pinus elliottii	slash pine
Rubus argutus	blackberry
Sabal minor	bluestem palmetto
Smilax laurifolia	laurel greenbrier
Smilax walteri	Walter's greenbrier
Sphagnum spp.	peat moss
Taxodium ascendens	pond cypress
Toxicodendron radicans	poison ivy
Vitis rotundifolia	muscadine grape
Woodwardia areolata	netted chain fern
Woodwardia virginica	Virginia chain fern

Qualitative Transect DWPT3-641 Freshwater Marsh

The plant community is a Tidal Marsh (low salinity variant) using the FNAI classification. The estimated canopy coverage class is 0-1 percent and the majority of the canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Taxodium ascendens, and Cliftonia monophylla*. There is no subcanopy. The shrub coverage is 1-5 percent and the majority of the shrubs are in the 0.6-1.5m height class. The dominant shrub species are *Myrica cerifera, Ilex cassina var. myrtifolia,* and *Ilex glabra*. The graminoid groundcover coverage class is 76-100 percent and total groundcover coverage class is 76-100 percent. The dominant groundcover species are *Cladium jamaicense* and *Juncus roemarianus*. The site has less bare ground coverage because of the existing and naturally extensive dominance by marsh vegetation. The trees in the marsh appear to be stressed because of saturated soils, this is natural and appropriate for a marsh.

Wildlife observations included birds, insects, and spiders. Natural regeneration of appropriate groundcover species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The fire was partially successful in reducing shrubs to coppice. The depth of duff is greater than 1 cm and depth of litter is approximately 0.5 cm.

Table 17: Qualitative Transect DWPT3-641 Plant List

Scientific Name	Common Name
Acer rubrum	red maple
Cladium jamaicense	sawgrass
Cliftonia monoplylla	black titi
Ilex cassine	dahoon
Ilex myrtifolia	myrtle-leaf holly
Ilex glabra	gallberry
Juncus roemerianus	black needle rush
Magnolia virginiana	sweetbay
Myrica cerifera	wax myrtle
Osmunda regalis	royal fern
Panicum virgatum	switchgrass
Persea palustris	swamp bay
Pinus elliottii	slash pine
Rubus argutus	blackberry
Sabal minor	bluestem palmetto
Taxodium ascendens	pond cypress
Toxicodendron radicans	poison ivy

Qualitative Transect DWPT4-614 Titi Swamp

The plant community is a Wet Prairie ecotone using the FNAI classification. The estimated canopy coverage class is 6-25 percent and the majority of canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Taxodium ascendens, Nyssa sylvatica var. biflora,* and *Magnolia virginiana*. The estimated height class for the majority of the subcanopy is 3-5m. The dominant subcanopy species are *Ilex cassine var. myrtifolia, Cliftonia monophylla, Nyssa sylvatica* var. *biflora,* and *Magnolia virginiana*. Shrub coverage is 6-25 percent and the majority of shrubs are in the 0.6-1.5m height class. The dominant shrub species are *Ilex cassine var. myrtifolia, Cliftonia monophylla,* and *Ilex coriacea*. The graminoid groundcover coverage class is 1-5 percent and total groundcover cover class is 1-5 percent. The dominant groundcover species are *Smilax laurifolia, Rhynchospora chapmanii, R. fascicularis, R. plumosa, Eriocaulon decangulare, Drosera capillaris, Dichanthelium sp., Lachnanthes Carolina,* and *Woodwardia virginica.* Although there were many more groundcover species observed, these were depauperate and in need of appropriate site management, *i.e.* restoration. The site has significant bare ground coverage because of the shading and competition from multiple layers of woody species above the groundcover, this is the natural condition for this type of landscape. Prescribed fire will enhance herbaceous groundcover coverage but this will always be a shaded landscape, with tussock plant lifeforms and relatively large areas of bare ground. The trees in the swamp appear are thriving.

Wildlife observations included birds, insects, and spiders. Natural regeneration of appropriate groundcover species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. Fire was successful in reducing many shrubs to coppice. The depth of duff is greater than 1 cm and depth of litter is approximately 1 cm.

Table 18: Qualitative Transect DWPT4-626 Plant List

Scientific Name	Common Name
Acer rubrum	red maple
Andropogon glomeratus	broomgrass
Anthaenantia rufa	purple silky-scale grass
Aristida palustris	swamp three-awn grass
Aristida stricta	wiregrass
Baccharis halimifolia	sea myrtle
Biglowia nudata	rayless goldenrod
Carex glaucescens	caric sedge
Centella asiatica	coinwort
Clethra alinfolia	sweet pepper bush
Cliftonia monoplylla	black titi
Coelorachis rugosa	wrinkled jointtail grass
Coreopsis linifolia	Texas tickseed
Cyperus odoratus	fragrant flatsedge
Cyrilla racemiflora	red titi
Dichanthelium aciculare	needleleaf witchgrass
Dicanthelium ensifolium	panic grass
Dichanthelium scabriusculum	woolly witchgrass
Drosera capillaris	pink sundew
Drosera intermedia	water sundew
Eleocharis baldwinii	Baldwin’s spikerush
Erigeron vernus	early whitetop fleabane
Euthamia graminifolia	grass-leaved goldenrod
Gaylussacia mosieri	woolly huckleberry
Eriocaulon compressum	pipewort
Eriocaulon decangulare	pipewort
Fuirena breviseta	umbrellasedge
Hypericum brachyphyllum	coastalplain St. John's-wort
Ilex cassine	dahoon
Ilex coriacea	large gallberry
Ilex glabra	gallberry
Ilex myrtifolia	myrtle leaf holly
Ilex vomitoria	yaupon

Table 18: Qualitative Transect DWPT4-626 Plant List (Continued)

Scientific Name	Common Name
Lachnanthes caroliana	redroot
Lachnocaulon anceps	whitehead bogbutton
Liatris spicata	shooting star
Lobelia glandulosa	glade lobelia
Lophiola americana	golden-crest
Ludwigia pilosa	hairy primrosewillow
Ludwigia virgata	savanna seedbox
Lycopus rubellus	water-hoarhound
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Mikania scandens	milk vine
Myrica cerifera	wax myrtle
Myrica heterophyla	evergreen bayberry
Nyssa sylvatica var. *biflora*	tupelo
Oldenlandia uniflora	clustered mille graines
Osmunda cinnamomea	cinnamon fern
Osmunda regalis	royal fern
Panicum verrucosum	warty panicum
Persea palustris	swamp bay
Photinia pyrifolia	red chokeberry
Pinus elliottii	slash pine
Polygala cruciata	drumheads
Polygala lutea	orange milkwort
Proserpinaca pectinata	combleaf mermaidweed
Rhexia lutea	yellow flower meadow beauty
Rhexia petiolata	meadow beauty
Rhexia virginica	meadow beauty
Rhynchospora chapmanii	Chapman’s beaksedge
Rhynchospora filifolia	threadleaf beaksedge
Rhynchospora plumosa	beaksedge
Rhynchospora inundata	horned beaksedge
Sapium sebiferum	popcorn tree
Sarracenia leucophylla	white top pitcher plant
Sarracenia psittacina	parrot pitcher plant
Sarracenia purpurea	purple pitcher plant
Scleria georgiana	Georgia nutrush
Scleria oligantha	littlehead nutrush
Scleria triglomerata	nutrush

Table 18: Qualitative Transect DWPT4-626 Plant List (Continued)

Scientific Name	Common Name
Smilax laurifolia	laurel greenbrier
Smilax walteri	Walter's greenbrier
Solidago rugosa	goldenrod
Sphagnum spp.	peat moss
Sporobolus curtisii	Curtiss' dropseed grass
Styrax americana	snowbell
Toxicodendron radicans	poison ivy
Utricularia cornuta	bladderwort
Utricularia purpurea	purple flower bladderwort
Vaccinium corymbosum	highbush blueberry
Viburnum nudum	possumhaw
Viola primulifolia	primrose-leaf violet
Vitis rotundifolia	muscadine grape
Woodwardia areolata	netted chain fern
Woodwardia virginica	Virginia chain fern
Xyris flabelliformis	yellow-eyed grass
Xyris serotina	swamp yellow-eyed grass
Xyris stricta	pineland yellow-eyed grass

Qualitative Transect DWPT5-626 Hydric Pine Savanna

The plant community is a Wet Prairie/Shrub Bog using the FNAI classification. The estimated canopy coverage class is 6-25 percent and the majority of the canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Taxodium ascendens, Nyssa sylvatica var. biflora,* and *Magnolia virginiana*. The estimated height class for the majority of the subcanopy is 3-5m. The dominant subcanopy species are *Cliftonia monophylla* and *Nyssa sylvatica* var. *biflora*. The shrub coverage is 6-25 percent and the majority of the shrubs are in the 1.6-3m height class. The dominant shrub species are *Gaylussacia mosieri, Cliftonia monophylla,* and *Ilex glabra*. The graminoid groundcover coverage class is 1-5 percent and the total groundcover coverage class is 1-5 percent. The dominant groundcover species are *Eriocaulon decangulare, Rhynchospora inundata, R. fascicularis,* and *Sarracenia leucophylla*. The site has significant bare ground coverage because of the shading and competition from multiple layers of woody species above the groundcover. The trees adapted to fire in the wet prairie are thriving.

Wildlife observations included birds, reptiles, insects, and spiders. Natural regeneration of appropriate groundcover species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The fire was successful in reducing shrubs to coppice. The depth of duff is 1 cm and depth of litter is approximately 0.5 cm or less.

Table 19: Qualitative Transect DWPT5-626 Plant List

Scientific Name	Common Name
Clethra anifolia	sweet pepper bush
Cliftonia monoplylla	black titi
Coelorachis rugosa	wrinkled jointtail grass
Coreopsis linifolia	Texas tickseed
Cyperus odoratus	fragrant flatsedge
Cyrilla racemiflora	red titi
Dichanthelium aciculare	needleleaf witchgrass
Gaylussacia mosieri	woolly huckleberry
Eriocaulon compressum	pipewort
Eriocaulon decangulare	pipewort
Fuirena breviseta	umbrellasedge
Ilex coriacea	large gallberry
Ilex glabra	gallberry
Ilex myrtifolia	myrtle leaf holly
Lachnanthes caroliana	redroot
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay
Myrica heterophylla	evergreen bayberry
Nyssa sylvatica var. *biflora*	tupelo
Panicum verrucosum	warty panicum
Persea palustris	swamp bay
Pinus elliottii	slash pine
Rhynchospora chapmanii	Chapman's beaksedge
Rhynchospora fascicularis	fascicled beaksedge
Rhynchospora microcarpa	southern beaksedge
Rhynchospora plumosa	beaksedge
Rhynchospora inundata	horned beaksedge
Sarracenia leucophylla	white top pitcher plant
Scleria triglomerata	nutrush
Smilax laurifolia	laurel greenbrier
Taxodium ascendens	pond cypress

Qualitative Transect DWPT6-642 Saltwater Marsh

The plant community is a Palustrine Marsh (very low salinity variant) using the FNAI classification. The estimated canopy coverage class is 6-25 percent and the majority of the canopy trees are 6-10m high. The dominant canopy species are *Pinus elliottii, Taxodium ascendens, Acer rubrum, Nyssa sylvatica* var. *biflora,* and *Juniperus virginiana*. The estimated subcanopy height is 3-5m. The subcanopy species are *Myrica cerifera* and *Nyssa sylvatica* var. *biflora*. The shrub coverage is 1-5 percent and the majority of the shrubs are in the 0.6-1.5m height class. The dominant shrub species are *Ilex vomitoria* and *Ilex cassine*. The graminoid groundcover coverage class is 76-100 percent and the total groundcover coverage class is 76-100 percent. The dominant groundcover species are *Cladium jamaicense, Osmunda cinnamomea, Toxicodendron radicans,* and *Juncus roemarianus*. The site has less bare ground coverage because of the existing and naturally extensive dominance by marsh vegetation. The trees in the marsh appear to be stressed because of saturated soils, this is natural and appropriate for a marsh.

Wildlife observations included birds, insects, and spiders. Natural regeneration of appropriate groundcover species is occurring. The landscape is now in the appropriate trajectory due to prescribed fire. The fire was partially successful in reducing shrubs to coppice. The depth of duff is approximately 1 cm and depth of litter is approximately 0.5 cm or less.

Table 20: Qualitative Transect DWPT6-642 Plant List

Scientific Name	Common Name
Acer rubrum	red maple
Clethra alinfolia	sweet pepper bush
Cliftonia monoplylla	black titi
Cyrilla racemiflora	red titi
Dichanthelium aciculare	needleleaf witchgrass
Gaylussacia mosieri	woolly huckleberry
Eriocaulon compressum	pipewort
Eriocaulon decangulare	pipewort
Fuirena breviseta	umbrellasedge
Ilex cassine	dahoon
Ilex glabra	gallberry
Ilex myrtifolia	myrtle leaf holly
Ilex vomitoria	yaupon
Ipomoea sagittata	salt marsh morning glory
Juncus roemerianus	black needle rush
Juniperus silicicola	coastal red cedar
Lachnanthes caroliana	redroot
Lyonia lucida	fetterbush
Magnolia virginiana	sweetbay

Table 20: Qualitative Transect DWPT6-642 Plant List (Continued)

Scientific Name	Common Name
Myrica heterophylla	evergreen bayberry
Nyssa sylvatica var. *biflora*	tupelo
Osmunda cinnamomea	cinnamon fern
Osmunda regalis	royal fern
Panicum verrucosum	warty panicum
Persea palustris	swamp bay
Pinus elliottii	slash pine
Rhynchospora chapmanii	Chapman's beaksedge
Rhynchospora fascicularis	fascicled beaksedge
Rhynchospora microcarpa	southern beaksedge
Rhynchospora plumosa	beaksedge
Rhynchospora inundata	horned beaksedge
Rubus argutus	blackberry
Sabal minor	bluestem palmetto
Sarracenia leucophylla	white top pitcher plant
Scirpus cyperinus	wool-grass bulrush
Scleria triglomerata	nutrush
Smilax laurifolia	laurel greenbrier
Taxodium ascendens	pond cypress
Toxicodendron radicans	poison ivy
Woodwardia areolata	netted chain fern

3.3. Photographic Documentation

Panoramic photographs are located in Appendix B of the monitoring report. Quantitative monitoring plot photographs are located in Appendix C.

4.0 RESULTS AND DISCUSSION

This site was historically an open landscape dominated by scattered, large slash pine. Currently the large slash pine are present, primarily in the wet prairie, wet flatwoods, and mesic flatwoods. Several quantitative transects contained a canopy of density of over 100 slash pine per acre. The addition of prescribed fire at the landscape scale has begun a process of opening the landscape, enhancing the sunlight penetration to the groundcover and reducing much of the fire suppressed subcanopy and shrub layer of titi and hollies to coppice. This was the first burning effort and the landscape recovery is on an appropriate trajectory. Selective herbicide treatment of coppice shrubs has also contributed to the open landscape. Continued prescribed fire is the best way to restore the landscape.

Prescribed fire has also reduced the depth of the duff layer and significantly reduced the leaf litter. Mineral soil exposure will result in a greater coverage by appropriate, native, groundcover species. Recovery will come from existing perennial plants and the existing seed bank. Greater plant diversity was observed in few scattered refugia exhibiting very high species richness in excess of 40 species, as measured in quantitative transects of wet prairie; DEQT4-626, and DWQT3-626. In addition, several rare plant species were located on site, see Figures 5W and 5E for a list and location of these species. The existing species diversity is an encouraging indicator that restoration activities can be successful. A portion of the Dutex Restoration Site located in quantitative transect DWQT1-625 polygon has been mechanically treated and selectively treated with herbicide. This has resulted in the reduction of woody coppice and an increase in coverage by native, herbaceous species.

Threats to the inherent biodiversity of this site are not restricted to fire suppression and global climate change. The expansion of exotic invasive species incursions on the site will likely be a significant challenge to restoration. Chinese tallow tree (*Sapium sebiferum)* is a significant invading species that has been found throughout the site as seedling plants. Other invasive plant species observed on adjacent properties are threats. The species include air potato (*Dioscorea bulbifera*), Chinese privet (*Ligustrum sinense*), torpedo grass *(Panicum repens)*, Japanese privet (*Ligustrum japonicum*), rattlebox (*Sesbanium punicea*), wild taro (*Colocasia esculenta)* and Japanese climbing fern (*Lygodium japonicum).* The greatest concentration of exotic invasive plant species in the area is the floodplain of Elevenmile creek and an old yard waste dump site along walking transect DEPT3-611.

5.0. CONCLUSIONS AND RECOMMENDATIONS

Most of the site has been burned as part of a prescribed fire. Although some of the larger titi survived the fire, most titi did not and there are now open landscapes and blackened stems of titi under large pines. The high bare ground coverage will decrease as light penetrates the burned landscapes and stimulates the growth of native, appropriate groundcover species. A continued increase in total coverage of herbaceous species is expected.

The appropriate management of this site included mechanical reduction of shrubs and subcanopy combined with selective herbicide treatment of woody coppice and use of prescribed fire. Because of this management, the species richness is increasing throughout the landscape, in all areas that have been burned.

Continued use of prescribed fire as often as the landscape will burn, will create the conditions for desirable, native groundcover species to recover. Currently the fire induced change in plant lifeform, i.e. shrubs to coppice and selection for herbaceous perennials, is creating the appropriate ecological conditions for the landscape to trend toward target plant communities. This recovery is highly dependent on the ability to burn the site as often as possible. A continuation of the current management practices of landscape scale prescribed fire, selection, elimination,n and control of invasive exotic, reduction of shrubs and maintenance of shrubs as coppice is recommended. If there are portions of the site that will not burn frequently, mechanical treatment of the landscape followed by prescribed fire is recommended. Continued

reduction of the duff layer and leaf litter by periodic fire is critical to the ecological selection of fire adapted wet prairie species.

Seeds collected from existing native populations of wet prairie and marsh species on site should be distributed to recently burned areas that are lacking herbaceous perennial species diversity and coverage. Especially where the duff layer has been significantly reduced or eliminated. This should occur every late summer/fall, until the appropriate diversity and a dominance of native, wet prairie species is achieved.

Continued monitoring of the site is recommended to track the landscape scale changes created from adaptive management and for measuring the plant lifeforms, so as to give meaningful biological indicators that can be used to make informed decisions about future management decisions. Overall the site has greatly benefited from the landscape scale prescribed fire. This is the most cost effective and most appropriate environmental management tool for the Dutex Restoration Site.

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APPENDIX A

QUALITATIVE DATA SHEETS

Qualitative assessment data sheet

Transect ID: DEPT1-626 **Date:** 8/23/2013

Plant Community Type: Hydric Pine Savanna **Time (am/pm):** 11:00 AM CT

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

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

3. CANOPY: ☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Cyrilla racemiflora	**2.** Cliftonia monophylla	**3.** Magnolia virginiana
4. Nyssa sylvatica v. biflora	**5.** Pinus elliottii	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. burned and mostly coppicing	**2.**	**3.**
4.	**5.**	**6.**

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.** Vaccinium corymbosum	**3.** Myrica heterophyla

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.** Ilex coriacea	**3.** Cliftonia monophylla

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

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

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

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Smilax laurifolia	**2.** Gaylussacia mosieri	**3.**
4.	**5.**	**6.**
7.	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DEPT1-626 **Date:** 8/23/2013

Plant Community Type: Hydric Pine Savanna

10. Tree density: appropriate for a savar **Why?:** ☑ too dense ☑ too sparse

11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☑ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. cicada **2.** dragonfly **3.** red-shouldered hawk

4. deer fly **5.** Carolina anole **6.** grey treefrog

7. brown headed nuthatch **8.** Mississippi kite **9.**

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☐ mammals ☐ arthropods ☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 2 litter (cm) 2

Soil moisture: wet

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Selective herbicide treatment may be necessary to control woody shrub growth. Herbicide treatment of coppice growth is recommended. Also depending on regrowth of groundcover species from the seed bank it may be necessary to reseed the areas beneath fire suppressed titi.

Qualitative assessment data sheet

Transect ID: DEPT2-614 **Date:** 8/23/2013

Plant Community Type: Titi Swamp **Time (am/pm):** 12:00 PM CT

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

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

☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Nyssa sylvatica v. biflora	**2.** Magnolia virginiana	**3.** Cliftonia monophylla
4. Pinus elliottii	**5.**	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. burned and mostly coppicing	**2.**	**3.**
4.	**5.**	**6.**

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.** Gaylussacia mosieri	**3.** Ilex coriacea

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

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

1. Persea palustris	**2.** Nyssa sylvatica v. biflora	**3.** Lyonia lucida

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

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

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

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Woodwardia virginica	**2.** Gaylussacia mosieri	**3.** Sphagnum spp.
4. Smilax laurifolia	**5.** Panicum verrucosum	**6.** Rhynchospora spp.
7.	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DEPT2-614 **Date:** 8/23/2013

Plant Community Type: Wetland Forested Mixed

10. Tree density: appropriate **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. cicada **2.** dragonfly **3.** red-shouldered hawk

4. deer fly **5.** Carolina anole **6.** Carolina cickadee

7. brown headed nuthatch **8.** turkey vulture **9.**

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☐ mammals ☑ arthropods ☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning ☑ herbicide treatment

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 2 litter (cm) 1

Soil moisture: wet

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Selective herbicide treatment may be necessary to control woody shrub growth. Herbicide treatment of coppice growth is recommended. Also depending on regrowth of groundcover species from the seed bank it may be necessary to reseed the areas beneath fire suppressed titi.

Qualitative assessment data sheet

Transect ID: DEPT3-611 **Date:** 8/23/2013

Plant Community Type: Bay Swamp **Time (am/pm):** 1:00 PM CT

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

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

☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Nyssa sylvatica v. biflora	**2.** Magnolia virginiana	**3.** Cliftonia monophylla
4. Liriodendron tulipifera	**5.** Acer rubrum	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. Cliftonia monophylla	**2.** Nyssa sylvatica v. biflora	**3.** Acer rubrum
4. burned and mostly coppicing	**5.**	**6.**

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

List 3 dominant **SHRUB** species observed:

1. Myrica heterophyla	**2.** Persea palustris	**3.** Ilex coriacea

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

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

1. Persea palustris	**2.** Ilex coriacea	**3.** Cliftonia monophylla

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

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

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

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Scleria triglomerata	**2.** Rhynchospora spp	**3.** Carex verrucosum
4. Osmunda cinnamomea	**5.** Sphagnum sp.	**6.** Woodwardia areolata
7. Vitis rotundifolia	**8.** Mitchella repens	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Cliftonia monophylla	**2.**	**3.**
4.	**5.**	**6.**

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DEPT3-611 **Date:** 8/23/2013

Plant Community Type: Bay Swamp

10. Tree density: appropriate **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☑ too wet other:

13. Water table: ☑ at the surface ☑ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. cicada **2.** bluejay **3.** orchard orbweaver spider

4. deer fly **5.** magnolia green jumping spider **6.** golden silk orbweaver spider

7. cottonmouth **8.** white tailed deer **9.**

17. Wildlife usage and natural history observations: ☑ amphibians ☐ reptiles ☐ fish ☑ birds ☑ mammals ☐ arthropods

☑ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes:

Along trail to transect there is an old rubbish dump site with air potato, elephant ear and possibly other invasive exotics - this needs to be removed and treated with herbicide. Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed

Landscape observation: ☑ recently burned ☐ secondary growth ☐ planted ☐ clear-cut

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☐ 11-20 yrs. ☑ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 0.1 litter (cm) 1

Soil moisture: wet

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

Fire burned into the baygall, continue burning entire site. Baygall restoration is trending toward appropriate target condition. Natural regeneration of native species is occuring. Along trail to transect there is an old rubbish dump site with air potato, elephant ear and possibly other invasive exotics - this needs to be removed and herbicided.

Qualitative assessment data sheet

Transect ID: DEPT4-625 **Date:** 8/23/2013

Plant Community Type: Hydric Pine Savanna **Time (am/pm):** 2:30 PM CT

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

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

☐ Pine Plantation (Rows) ☐ Managed for Pine ☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Magnolia virginiana	**2.** Persea palustris	**3.** Pinus elliottii
4. Nyssa sylvatica v. biflora	**5.** Cliftonia monophylla	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. burned and mostly coppicing	**2.**	**3.**
4.	**5.**	**6.**

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

List 3 dominant **SHRUB** species observed:

1. Vaccinium corymbosum	**2.** Ilex coriacea	**3.** Ilex glabra

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

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

1. Ilex coriacea	**2.** Magnolia virginiana	**3.**

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

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

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

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Toxicodendron radicans	**2.** Vitis rotundifolia	**3.** Smilax laurifolia
4.	**5.**	**6.**
7.	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DEPT4-625 **Date:** 8/23/2013

Plant Community Type: Hydric Pine Savanna

10. Tree density: appropriate **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. cicada **2.** bluejay **3.** orchard orbweaver spider

4. deer fly **5.** Carolina chickadee **6.** golden silk orbweaver spider

7. pine warbler **8.** white tailed deer **9.**

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☐ mammals ☑ arthropods/invertebrates

☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow were widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 3 litter (cm) 1

Soil moisture:

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Selective herbicide treatment may be necessary to control woody shrub growth. Herbicide treatment of coppice growth is recommended. Also depending on regrowth of groundcover species from the seed bank it may be necessary to reseed the areas beneath fire suppressed titi.

Qualitative assessment data sheet

Transect ID: DEPT5-630 **Date:** 8/23/2013

Plant Community Type: Wetland Forested Mixed **Time (am/pm):** 3:30 PM CT

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

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

☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Magnolia virginiana	**2.** Persea palustris	**3.** Pinus elliottii
4. Nyssa sylvatica v. biflora	**5.** Cliftonia monophylla	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. Ilex cassine	**2.** Magnolia virginiana	**3.** Lyonia lucida
4. Viburnum nudum	**5.** Cliftonia monophylla	**6.**

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

List 3 dominant **SHRUB** species observed:

1. Ilex coriacea	**2.** Lyonia lucida	**3.** Cliftonia monophylla

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

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

1. Ilex coriacea	**2.** Magnolia virginiana	**3.** Gaylussacia mosieri

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 graminoids and forbes):

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Woodwardia areolata	**2.** Woodwardia virginica	**3.** Osmunda cinnamomea
4. Sphagnum sp.	**5.** Rhynchospora miliacea	**6.** Carex verrucosum
7. Smilax laurifolia	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DEPT5-630 **Date:** 8/23/2013

Plant Community Type: Wetland Forested Mixed

10. Tree density: relatively appropriate - fire suppressed understory **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. deer fly **2.** raccoon tracks **3.** white-tailed deer tracks

4. eastern kingbird **5.** northern mockingbird **6.** eastern tiger swallowtail

7. red shouldered hawk **8.** jumping spider **9.** brown-headed nuthatch

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☑ mammals ☐ arthropods

☑ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☑ absent

Exotic species notes: Seedling Chinese tallow were widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 2 litter (cm) 1

Soil moisture:

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Selective herbicide treatment may be necessary to control woody shrub growth. Herbicide treatment of coppice growth is recommended. Also depending on regrowth of groundcover species from the seed bank it may be necessary to reseed the areas beneath fire suppressed titi.

Qualitative assessment data sheet

Transect ID: DWPT1-441 **Date:** 8/24/2013

Plant Community Type: Pine Flatwoods **Time (am/pm):** 4:00 PM CT

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

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

☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

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

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

List up to 6 dominant **SUBCANOPY** species observed:

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

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

List 3 dominant **SHRUB** species observed:

1. Vaccinium arboreum	**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. Ilex coriacea	**2.** Quercus hemisphaerica	**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 graminoids and forbes):

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Serenoa repens	**2.** Ilex coriacea	**3.** Vitis rotundifolia
4. Clethra alnifolia	**5.** Pteridium aquilinum	**6.**
7.	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Andropogon spp.	**3.**
4.	**5.**	**6.**

Vegetation notes: Shrubs have been burned and are coppiced. Low density and low species diversity of herbaceous species in the groundcover.

Qualitative assessment data sheet

Transect ID: DWPT1-441 **Date:** 8/24/2013

Plant Community Type: Pine Flatwoods

10. Tree density: appropriate **Why?:** ☑ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☐ at the surface ☑ below surface **Standing water:** ☐ present ☑ absent

14. Water color: ☐ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. deer fly **2.** red-bellied woodpecker **3.** jumping spider

4. dragonfly **5.** Carolina chickadee **6.** pine warbler

7. rufous sided towhee **8.** bluejay **9.** red-shouldered hawk

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☐ birds ☐ mammals ☑ arthropods

☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 2 litter (cm) 0.5

Soil moisture: moist

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Selective herbicide treatment may be necessary to control woody shrub growth.

Herbicide treatment of coppice growth is recommended. Also depending on regrowth of groundcover species from the seed bank it may be necessary to

reseed the areas beneath fire suppressed woody growth.

Qualitative assessment data sheet

Transect ID: DWPT2-626 **Date:** 8/24/2013

Plant Community Type: Hydric Pine Savanna **Time (am/pm):** 2:30 PM CT

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

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

☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Pinus elliottii	**2.** Taxodium ascendens	**3.** Acer rubrum
4. Magnolia virginiana	**5.** Nyssa sylvatica v. biflora	**6.** Persea palustris

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

List up to 6 dominant **SUBCANOPY** species observed:

1. Nyssa sylvatica v. biflora	**2.** Pinus elliottii	**3.** Persea palustris
4. Acer rubrum	**5.**	**6.**

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.**

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.** Lyonia lucida	**3.**

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

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

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

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Smilax laurifolia	**2.** Aristida stricta	**3.** Fuirena scirpoidea
4. Anthaenantia rufa	**5.** Andropogon glomeratus	**6.** Bidens mitis
7. Cladium jamaicense	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DWPT2-626 **Date:** 8/24/2013

Plant Community Type: Hydric Pine Savanna

10. Tree density: naturally dense **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees stressed **Why?:** ☐ too dense ☑ too wet other:

13. Water table: ☐ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☑ non-tannic/clear ☐ cloudy **slightly tannic- nearly clear**

Notes on wildlife usage observed:

1. pine warblers **2.** cicada **3.** red-bellied woodpecker

4. Gambusia affinis mosquitofish **5.** deer fly **6.** eastern kingbird

7. horsefly **8.** common yellow throat warbler **9.**

17. Wildlife usage and natural history observations: ☑ amphibians ☐ reptiles ☑ fish ☑ birds ☐ mammals ☐ arthropods ☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☐ 11-20 yrs. ☑ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): >1 litter (cm) 1

Soil moisture:

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

Site is a baygall type of forest adjacent to a tidal marsh; canopy is healthy and fire was allowed to burn through this forest. A rare *Lilium iridollea* was observed in the groundcover of the forest portion of transect; part of transect travels through a Cladium marsh. Continue to allow fire to burn throughout the site.

Qualitative assessment data sheet

Transect ID: DWPT3-641 **Date:** 8/24/2013

Plant Community Type: Freshwater/Tidal Marsh **Time (am/pm):** 12:30 PM CT

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

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

☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Pinus elliottii	**2.** Taxodium ascendens	**3.** Cliftonia monophylla
4.	**5.**	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1.	**2.**	**3.**
4.	**5.**	**6.**

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 cassine v. myrtifolia	**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. Acer rubrum	**2.** Myrica cerifera	**3.** Ilex cassine v. 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 graminoids and forbes):

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Juncus roemerianus	**2.** Cladium jamaicense	**3.** Smilax laurifolia
4.	**5.**	**6.**
7.	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes: This transect is primarily through tidal marsh vegetation.

Qualitative assessment data sheet

Transect ID: DWPT3-641 **Date:** 8/24/2013

Plant Community Type: Freshwater/tidal Marsh

10. Tree density: appropriately low **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy **notes:** **very low salinity brackish conditions**

Notes on wildlife usage observed:

1. cicada **2.** horsefly **3.** dragonfly

4. yellow fly and deer fly **5.** eastern kingbirds **6.** common yellowthroat warbler

7. wolf spiders **8.** grasshoppers **9.** cloudless sulfur butterfly

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☐ mammals ☐ arthropods

☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☐ present ☑ absent

Exotic species notes: Seedling Chinese tallow trees were not observed along this transect.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed

Landscape observation: ☑ well managed ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☐ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☐ continue prescribed burning **other:** primarily a tidal marsh without a canopy

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): >1 litter (cm) 0.5

Soil moisture: saturated

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Regular burning will maintain the tidal marsh in perpetuity.

Qualitative assessment data sheet

Transect ID: DWPT4-614 **Date:** 8/24/2013

Plant Community Type: Titi Swamps **Time (am/pm):** 11:30 AM CT

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

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

☐ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Pinus elliottii	**2.** Nyssa sylvatica v. biflora	**3.** Taxodium ascendens
4. Magnolia virginiana	**5.**	**6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. Ilex cassine v. myrtifolia	**2.** Cliftonia monophylla	**3.** Nyssa sylvatica v. biflora
4. Magnolia virginiana	**5.**	**6.**

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

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla	**2.** Ilex cassine v. myrtifolia	**3.** Ilex coriacea

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

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

1. Cliftonia monophylla	**2.** Nyssa sylvatica v. biflora	**3.** Ilex coriacea

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 graminoids and forbes):

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Smilax laurifolia	**2.** Rhynchospora chapmanii	**3.** Eriocaulon decangulare
4. Rhynchospora fascicularis	**5.** Drosera capillaris	**6.** Dichanthelium portiense
7. Rhynchospora plumosa	**8.** Lachnanthes carolina	**9.** Woodwardia virginica

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes: A very species rich transect, mostly tranversing wet prairie, bog and wet flatwoods.

Qualitative assessment data sheet

Transect ID: DWPT4-614 **Date:** 8/24/2013

Plant Community Type: Titi Swamps (it is actually a wet prairie)

10. Tree density: appropriate **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. cicada **2.** Mississippi kite **3.** eastern white tailed deer tracks

4. horsefly **5.** bluejay **6.** northern cardinal

7. cottonmouth **8.** deer fly **9.** yellow orb weaver spider

17. Wildlife usage and natural history observations: ☑ amphibians ☑ reptiles ☑ fish ☑ birds ☑ mammals ☑ arthropods

☑ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed

Landscape observation: ☑ recently (partially) burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 1 litter (cm) 0.5 or less

Soil moisture: wet

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

Transect has been partially burned, needs more fire. Selective herbicide treatment may be necessary to control woody shrub growth.

Herbicide treatment of coppice growth is recommended. This transect goes through one of the most species rich plant communities on the site,

no treatment other than frequent, prescribed fire is needed.

Qualitative assessment data sheet

Transect ID: DWPT5-626 **Date:** 8/24/2013

Plant Community Type: Hydric Pine Savanna **Time (am/pm):** 10:00 AM CT

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

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

☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Pinus elliottii **2.** Magnolia virginiana **3.** Taxodium ascendens

4. Nyssa sylvatica v. biflora **5.** **6.**

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

List up to 6 dominant **SUBCANOPY** species observed:

1. Nyssa sylvatica v. biflora **2.** Cliftonia monophylla **3.** Cyrilla racemiflora

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

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

List 3 dominant **SHRUB** species observed:

1. Cliftonia monophylla **2.** Gaylussacia mosieri **3.** Ilex glabra

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

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

1. Cliftonia monophylla **2.** Cliftonia monophylla **3.** Taxodium ascendens

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 graminoids and forbes):

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Fuirena breviseta **2.** Rhynchospora inundata **3.** Rhynchospora fascicularis

4. Eriocaulon decangulare **5.** Sarracenia leucophylla **6.**

7. **8.** **9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia **2.** Mikania scandens **3.** Eupatorium capillifolium

4. Panicum verrucosum **5.** Andropogon spp. **6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DWPT5-626 **Date:** 8/24/2013

Plant Community Type: Hydric Pine Savanna

10. Tree density: appropriate **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☑ trees healthy ☐ trees stressed **Why?:** ☐ too dense ☐ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☑ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. orchard orb weaver spider **2.** rufous sided towhee **3.** cardinals

4. white-tailed deer tracks **5.** brown-headed nuthatch **6.** bluejay

7. red shouldered hawk **8.** deer fly **9.** cidada

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☑ mammals ☑ arthropods

☑ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☑ present ☐ absent

Exotic species notes: Seedling Chinese tallow trees were observed widely scattered throughout the site.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☑ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☑ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:**

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 1.5 litter (cm) 1

Soil moisture: wet

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

Site has been burned, this killed the shrubs to the ground, these are in active coppice growth. Selective herbicide treatment may be necessary to control woody shrub growth. Herbicide treatment of coppice growth is recommended. Also depending on regrowth of groundcover species from the seed bank it may be necessary to reseed the areas beneath fire suppressed titi.

Qualitative assessment data sheet

Transect ID: DWPT6-642 **Date:** 8/24/2013

Plant Community Type: Tidal Marshes (as mapped) **Time (am/pm):** 9:00 AM CT

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

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

☑ Restoration in Progress

3. CANOPY % cover: ☐ 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 6 dominant **TREE** species observed in canopy:

1. Pinus elliottii	**2.** Taxodium ascendens	**3.** Juniperus virginiana
4. Acer rubrum	**5.** Nyssa sylvatica v. biflora	**6.** Myrica cerifera

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

List up to 6 dominant **SUBCANOPY** species observed:

1. Myrica cerifera	**2.** Nyssa sylvatica v. biflora	**3.**
4.	**5.**	**6.**

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 cassine	**3.** Ilex coriacea

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

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

1. Nyssa sylvatica v. biflora	**2.** Pinus elliottii	**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 graminoids and forbes):

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

List up to 9 dominant **GROUNDCOVER** species observed:

1. Cladium jamaicense	**2.** Toxicodendron radicans	**3.** Ipomoea sagittata
4. Juncus roemerianus	**5.** Osmunda cinnamomea	**6.** Spartina patens
7.	**8.**	**9.**

List the NATIVE **WEEDY** or **RUDERAL** species observe - otherwise SEE 18. EXOTIC SPECIES BELOW

1. Erectites hieracifolia	**2.** Mikania scandens	**3.** Eupatorium capillifolium
4. Panicum verrucosum	**5.** Andropogon spp.	**6.** Pluchea spp.

Vegetation notes:

Qualitative assessment data sheet

Transect ID: DWPT6-642 **Date:** 8/24/2013

Plant Community Type: Tidal Marshes (as mapped)

10. Tree density: appropriate though needs fire **Why?:** ☐ too dense ☐ too sparse

11. Tree health: ☐ trees healthy ☑ trees stressed **Why?:** ☐ too dense ☑ too wet other:

13. Water table: ☑ at the surface ☐ below surface **Standing water:** ☑ present ☐ absent

14. Water color: ☑ tannic ☐ non-tannic/clear ☐ cloudy

Notes on wildlife usage observed:

1. Carolina wren
2. horsefly
3. green pondhawk dragonfly
4. yellow fly and deer fly
5. palamedes swallowtail
6. common yellowthroat warbler
7. green jumping spider
8. orchard orb weaver spiders
9. eastern tiger swallowtail

17. Wildlife usage and natural history observations: ☐ amphibians ☐ reptiles ☐ fish ☑ birds ☐ mammals ☑ arthropods ☐ footprints ☐ scratch marks ☑ songs or calls ☐ scat

Wildlife notes:

Notes on Exotic species observed:

18. Exotic species: ☐ present ☑ absent

Exotic species notes: Seedling Chinese tallow trees were not observed along this transect.

Notes on Restoration:

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

Is natural regeneration occurring? ☑ yes ☐ no **and:** ☑ species appropriate ☐ supplemental planting/seeding needed

Landscape observation: ☑ recently burned

If planted: ☑ in process of restoration **~Tree age:** ☐ 0-5 yrs. ☐ 6-10 yrs. ☐ 11-20 yrs. ☐ 20+ yrs.

Recommendations for restoration: ☑ continue prescribed burning **other:** this transect is primarily through a marsh without a canopy

20. Notes on prescribed burning and fire conditions:

Fuels: duff (cm): 2 litter (cm) 2

Soil moisture: wet

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

This transect traverses areas of tidal marsh, with a mixture of brackish and freshwater species. Continue burning the marsh.

APPENDIX B

PANORAMIC PHOTOGRAPHS

QUALITATIVE TRANSECTS

Dutex Site East Tract. Qualitative Transect DEPT1-626: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEPT2-614-PP2: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEPT3-611-PP4: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEPT4-625: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEPT5-630-PP6: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWPT1-441-PP2: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWPT2-611-PP3: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWPT3-641-PP4: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWPT4-626: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWPT5-626: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWPT6-642-PP8: Panoramic Photograph depicted in two 180° sections.

0^0 **180^0**

180^0 **360^0**

QUANTITATIVE TRANSECTS

Dutex Site East Tract. Quantitative Transect DEQT1-626: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEQT2-625: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEQT3-625: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site East Tract. Qualitative Transect DEQT4-626: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWQT1-625: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWQT2-626: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Quantitative Transect DWQT3-626: Panoramic Photograph depicted in two 180 degree sections.

0^0 **180^0**

180^0 **360^0**

Dutex Site West Tract. Qualitative Transect DWQT4-626: Panoramic Photograph depicted in two 180 degree sections.

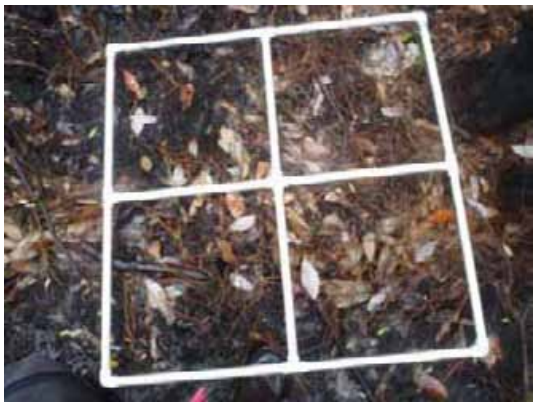
0^0 **180^0**

180^0 **360^0**

APPENDIX C

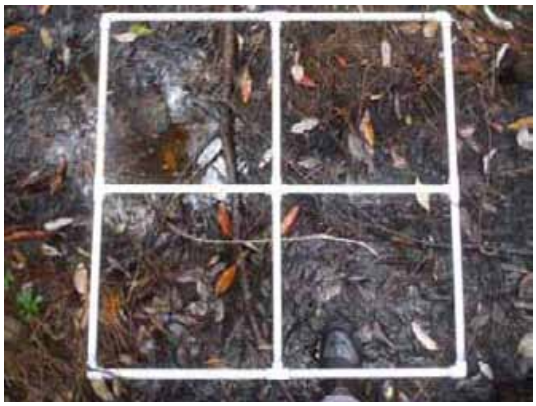
QUANTITATIVE MONITORING PLOT PHOTOGRAPHS

TRANSECT DEQT1-626 HYDRIC PINE SAVANNA

Photographs (left to right): 1) Transect DEQT1-626 Plot – 10 feet; 2) Transect DEQT1-626 Plot – 20 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 30 feet; 2) Transect DEQT1-626 Plot – 40 feet




Photographs (left to right): 1) Transect DEQT1-626 Plot – 50 feet; 2) Transect DEQT1-626 Plot – 60 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 70 feet; 2) Transect DEQT1-626 Plot – 80 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 90 feet; 2) Transect DEQT1-626 Plot – 100 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 110 feet; 2) Transect DEQT1-626 Plot – 120 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 130 feet; 2) Transect DEQT1-626 Plot – 140 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 150 feet; 2) Transect DEQT1-626 Plot – 160 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 170 feet; 2) Transect DEQT1-626 Plot – 180 feet

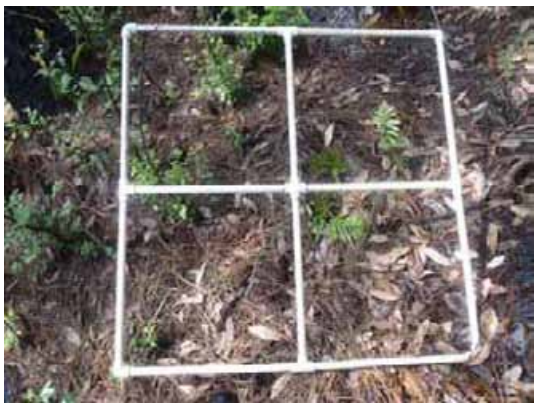

Photographs (left to right): 1) Transect DEQT1-626 Plot – 190 feet; 2) Transect DEQT1-626 Plot – 200 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 210 feet; 2) Transect DEQT1-626 Plot – 220 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 230 feet; 2) Transect DEQT1-626 Plot – 240 feet

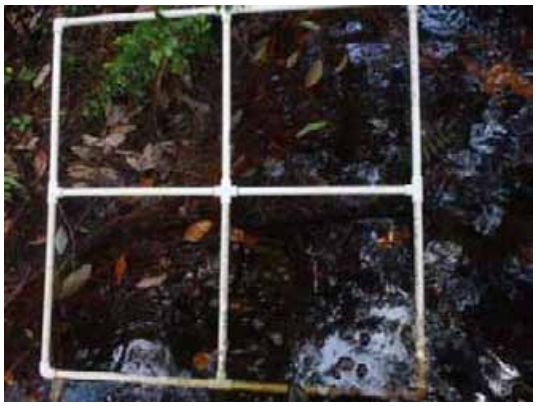
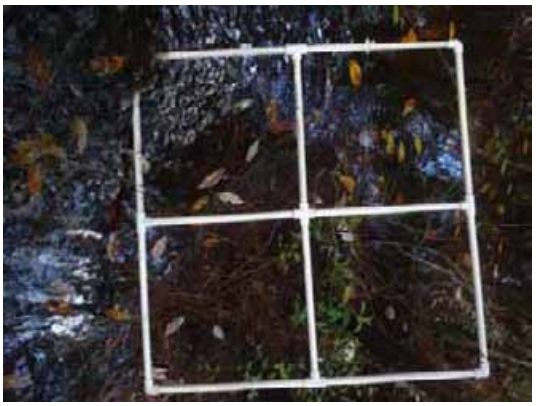

Photographs (left to right): 1) Transect DEQT1-626 Plot – 250 feet; 2) Transect DEQT1-626 Plot – 260 feet


Photographs (left to right): 1) Transect DEQT1-626 Plot – 270 feet; 2) Transect DEQT1-626 Plot – 280 feet

Photographs (left to right): 1) Transect DEQT1-626 Plot – 290 feet; 2) Transect DEQT1-626 Plot – 300 feet

TRANSECT DEQT2-625 HYDRIC PINE FLATWOODS

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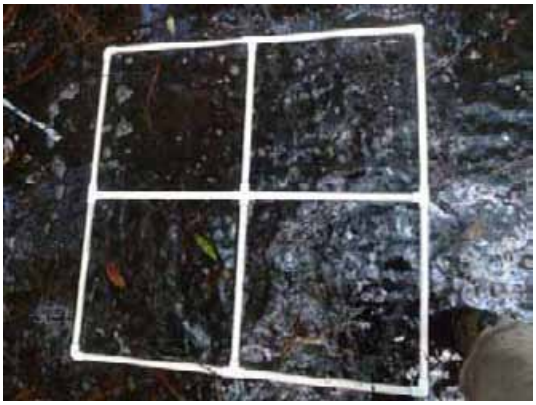
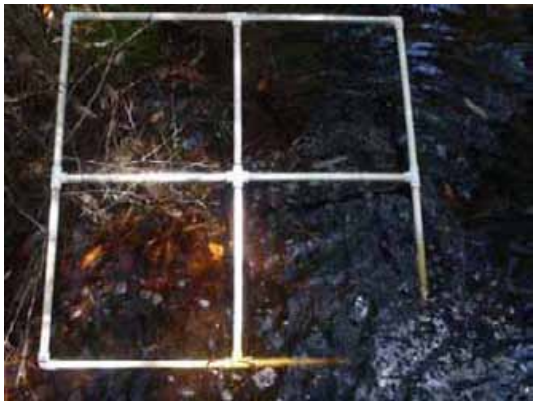
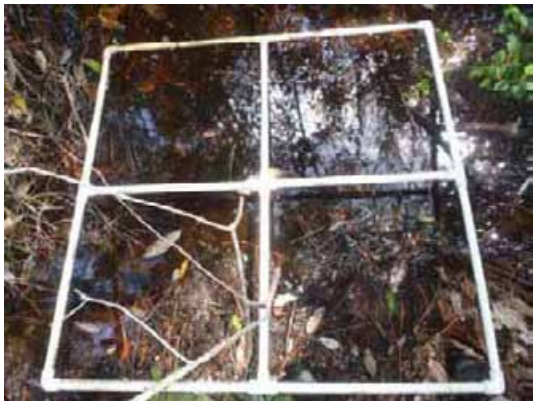



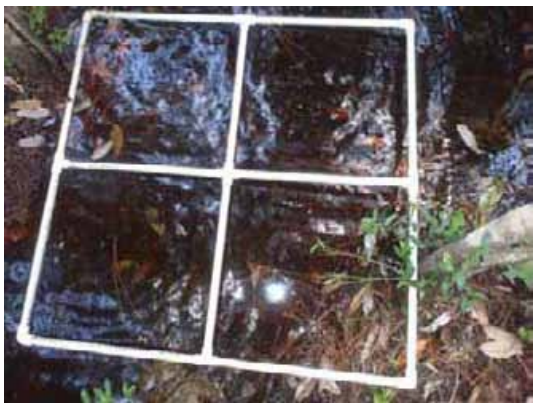
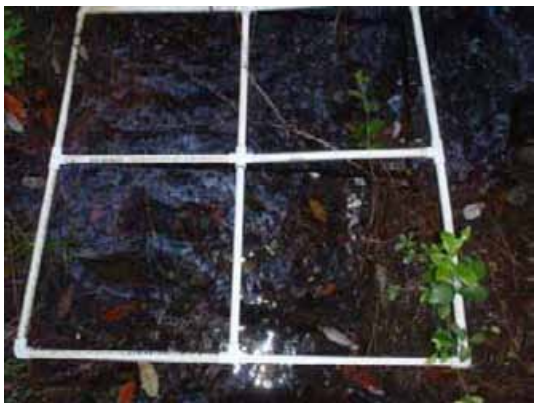
Photographs (left to right): 1) Transect DEQT2-625 Plot – 30 feet; 2) Transect DEQT2-625 Plot – 40 feet


Photographs (left to right): 1) Transect DEQT2-625 Plot – 50 feet; 2) Transect DEQT2-625 Plot – 60 feet


Photographs (left to right): 1) Transect DEQT2-625 Plot – 70 feet; 2) Transect DEQT2-625 Plot – 80 feet




Photographs (left to right): 1) Transect DEQT2-625 Plot – 90 feet; 2) Transect DEQT2-625 Plot – 100 feet

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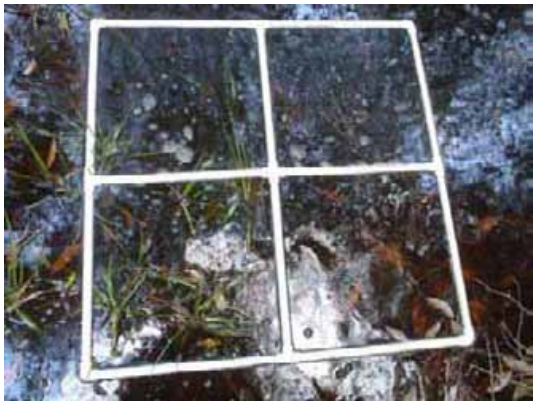
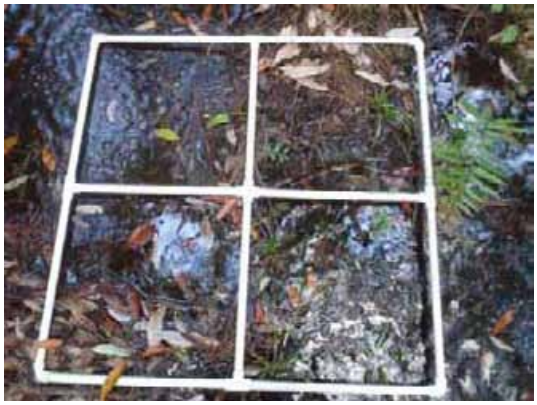
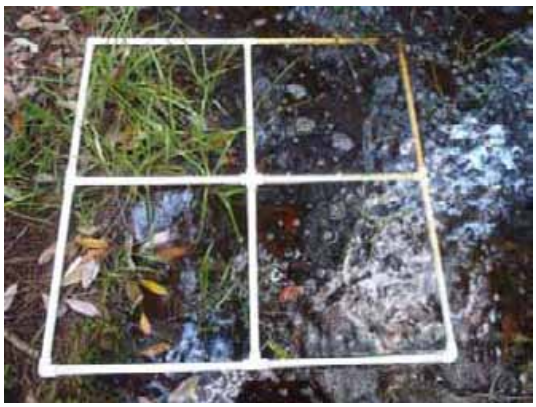
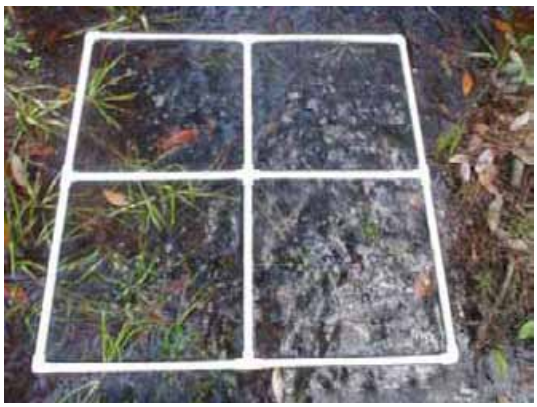
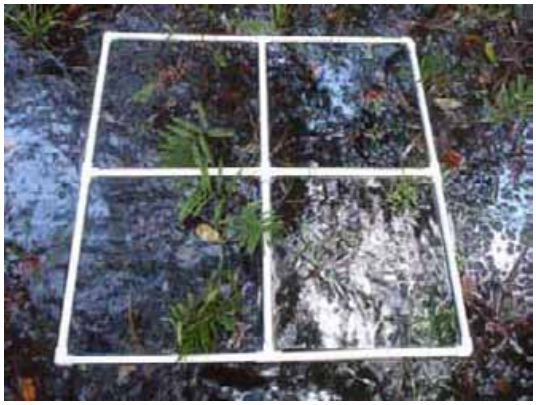
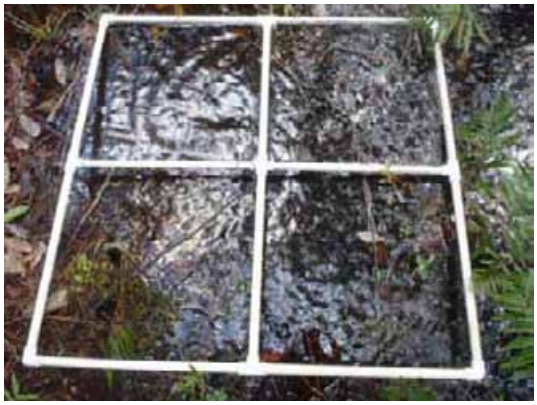



Photographs (left to right): 1) Transect DEQT2-625 Plot – 150 feet; 2) Transect DEQT2-625 Plot – 160 feet

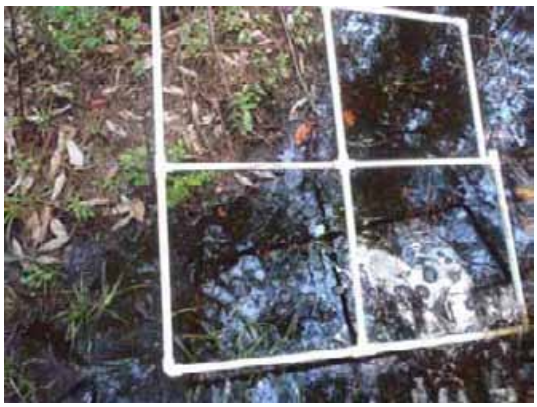



Photographs (left to right): 1) Transect DEQT2-625 Plot – 170 feet; 2) Transect DEQT2-625 Plot – 180 feet


Photographs (left to right): 1) Transect DEQT2-625 Plot – 190 feet; 2) Transect DEQT2-625 Plot – 200 feet

Photographs (left to right): 1) Transect DEQT2-625 Plot – 210 feet; 2) Transect DEQT2-625 Plot – 220 feet

Photographs (left to right): 1) Transect DEQT2-625 Plot – 230 feet; 2) Transect DEQT2-625 Plot – 240 feet


Photographs (left to right): 1) Transect DEQT2-625 Plot – 250 feet; 2) Transect DEQT2-625 Plot – 260 feet


Photographs (left to right): 1) Transect DEQT2-625 Plot – 270 feet; 2) Transect DEQT2-625 Plot – 280 feet


Photographs (left to right): 1) Transect DEQT2-625 Plot – 290 feet; 2) Transect DEQT2-625 Plot – 300 feet

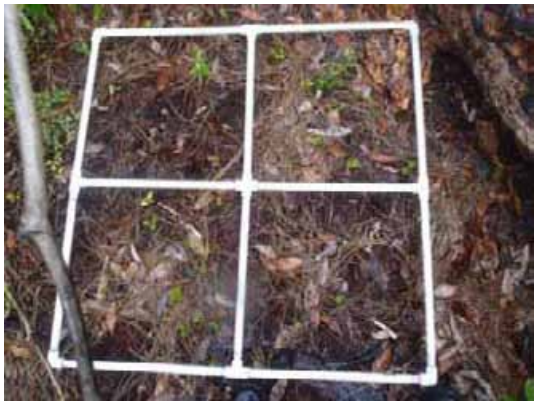
TRANSECT DEQT3-625 HYDRIC PINE FLATWOODS


Photographs (left to right): 1) Transect DEQT3-625 Plot – 70 feet; 2) Transect DEQT3-625 Plot – 80 feet

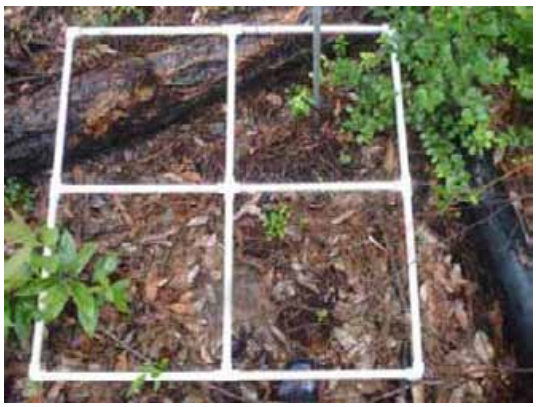

Photographs (left to right): 1) Transect DEQT3-625 Plot – 90 feet; 2) Transect DEQT3-625 Plot – 100 feet


Photographs (left to right): 1) Transect DEQT3-625 Plot – 110 feet; 2) Transect DEQT3-625 Plot – 120 feet


Photographs (left to right): 1) Transect DEQT3-625 Plot – 130 feet; 2) Transect DEQT3-625 Plot – 140 feet

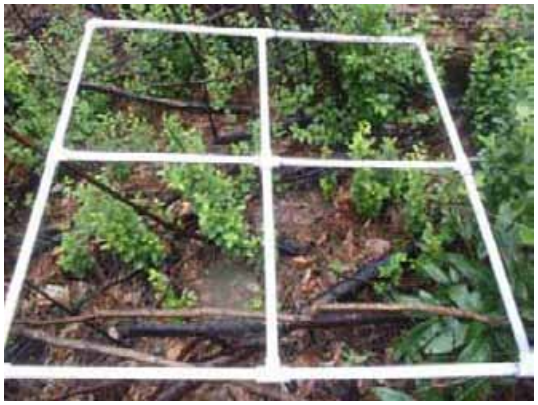



Photographs (left to right): 1) Transect DEQT3-625 Plot – 150 feet; 2) Transect DEQT3-625 Plot – 160 feet




Photographs (left to right): 1) Transect DEQT3-625 Plot – 170 feet; 2) Transect DEQT3-625 Plot – 180 feet

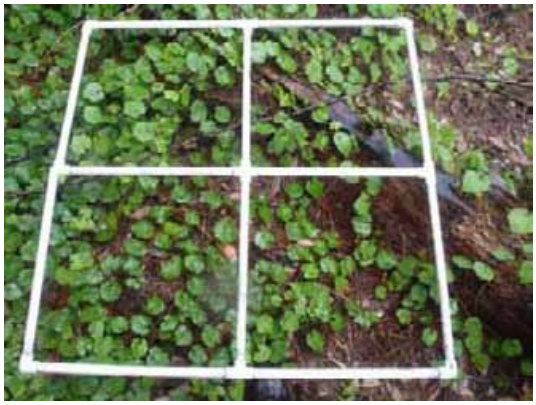

Photographs (left to right): 1) Transect DEQT3-625 Plot – 190 feet; 2) Transect DEQT3-625 Plot – 200 feet

Photographs (left to right): 1) Transect DEQT3-625 Plot – 210 feet; 2) Transect DEQT3-625 Plot – 220 feet


Photographs (left to right): 1) Transect DEQT3-625 Plot – 230 feet; 2) Transect DEQT3-625 Plot – 240 feet

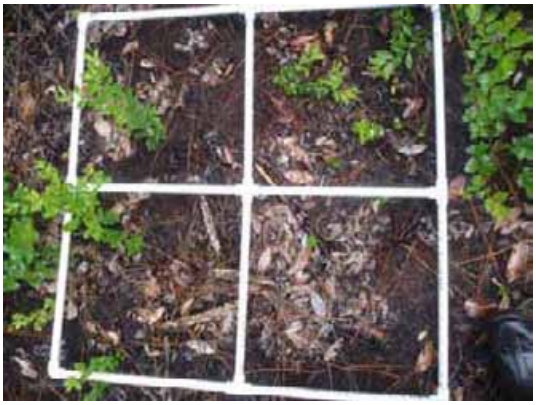
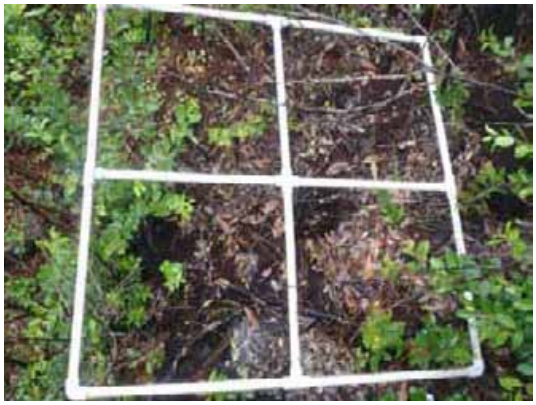

Photographs (left to right): 1) Transect DEQT3-625 Plot – 250 feet; 2) Transect DEQT3-625 Plot – 260 feet




Photographs (left to right): 1) Transect DEQT3-625 Plot – 270 feet; 2) Transect DEQT3-625 Plot – 280 feet


Photographs (left to right): 1) Transect DEQT3-625 Plot – 290 feet; 2) Transect DEQT3-625 Plot – 300 feet


Photographs (left to right): 1) Transect DEQT3-625 Plot – 10 feet; 2) Transect DEQT3-625 Plot – 20 feet

Photographs (left to right): 1) Transect DEQT3-625 Plot – 30 feet; 2) Transect DEQT3-625 Plot – 40 feet


Photographs (left to right): 1) Transect DEQT3-625 Plot – 50 feet; 2) Transect DEQT3-625 Plot – 60 feet

TRANSECT DEQT4-626 HYDRIC PINE SAVANNA


Photographs (left to right): 1) Transect DEQT4-626 Plot – 10 feet; 2) Transect DEQT4-626 Plot – 20 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 30 feet; 2) Transect DEQT4-626 Plot – 40 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 50 feet; 2) Transect DEQT4-626 Plot – 60 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 70 feet; 2) Transect DEQT4-626 Plot – 80 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 90 feet; 2) Transect DEQT4-626 Plot – 100 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 110 feet; 2) Transect DEQT4-626 Plot – 120 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 130 feet; 2) Transect DEQT4-626 Plot – 140 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 150 feet; 2) Transect DEQT4-626 Plot – 160 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 170 feet; 2) Transect DEQT4-626 Plot – 180 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 190 feet; 2) Transect DEQT4-626 Plot – 200 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 210 feet; 2) Transect DEQT4-626 Plot – 220 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 230 feet; 2) Transect DEQT-626 Plot – 240 feet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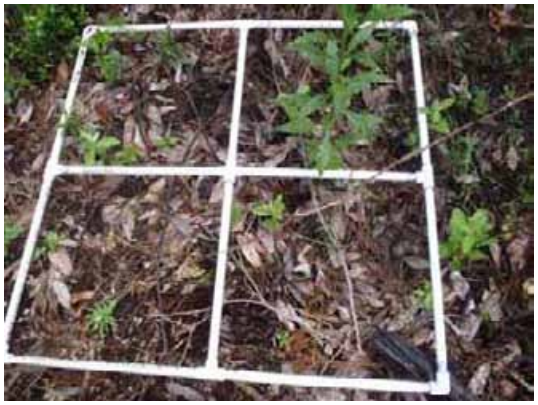


Photographs (left to right): 1) Transect DEQT4-626 Plot – 270 feet; 2) Transect DEQT4-626 Plot – 280 feet


Photographs (left to right): 1) Transect DEQT4-626 Plot – 290 feet; 2) Transect DEQT4-626 Plot – 300 feet

TRANSECT DWQT1-625 HYDRIC PINE FLATWOODS

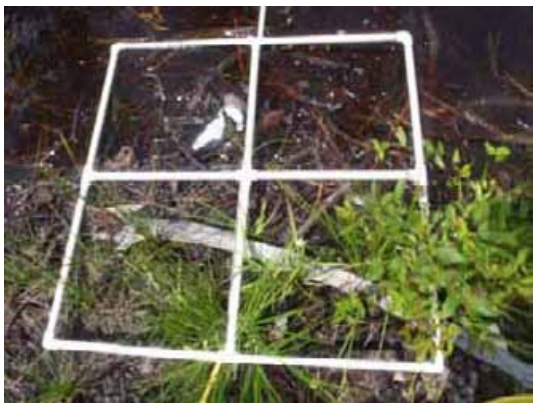

Photographs (left to right): 1) Transect DWQT1-625 Plot – 10 feet; 2) Transect DWQT1-625 Plot – 20 feet


Photographs (left to right): 1) Transect DWQT1-625 Plot – 30 feet; 2) Transect DWQT1-625 Plot – 40 feet

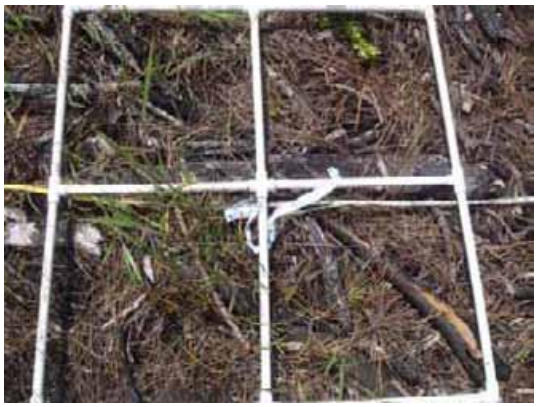

Photographs (left to right): 1) Transect DWQT1-625 Plot – 50 feet; 2) Transect DWQT1-625 Plot – 60 feet


Photographs (left to right): 1) Transect DWQT1-625 Plot – 70 feet; 2) Transect DWQT1-625 Plot – 80 feet

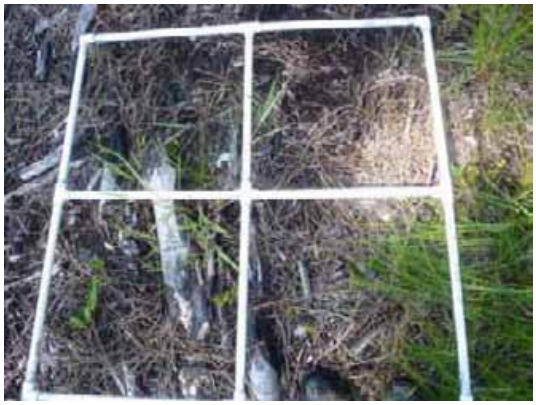
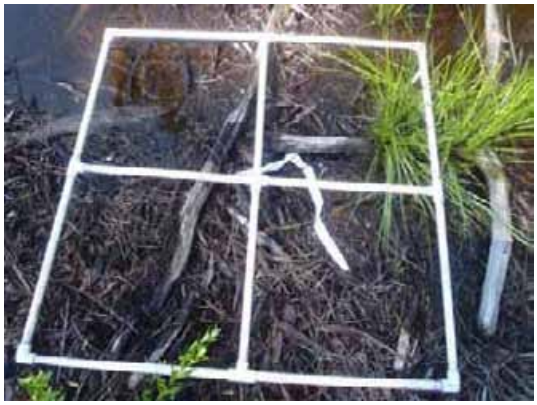

Photographs (left to right): 1) Transect DWQT1-625 Plot – 90 feet; 2) Transect DWQT1-625 Plot – 100 feet




Photographs (left to right): 1) Transect DWQT1-625 Plot – 110 feet; 2) Transect DWQT1-625 Plot – 120 feet

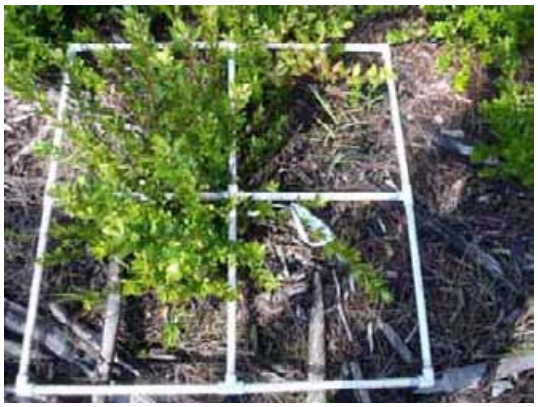



Photographs (left to right): 1) Transect DWQT1-625 Plot – 130 feet; 2) Transect DWQT1-625 Plot – 140 feet

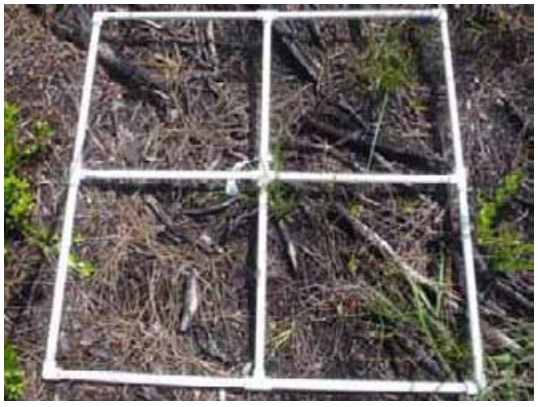



Photographs (left to right): 1) Transect DWQT1-625 Plot – 150 feet; 2) Transect DWQT1-625 Plot – 160 feet


Photographs (left to right): 1) Transect DWQT1-625 Plot – 170 feet; 2) Transect DWQT1-625 Plot – 180 feet

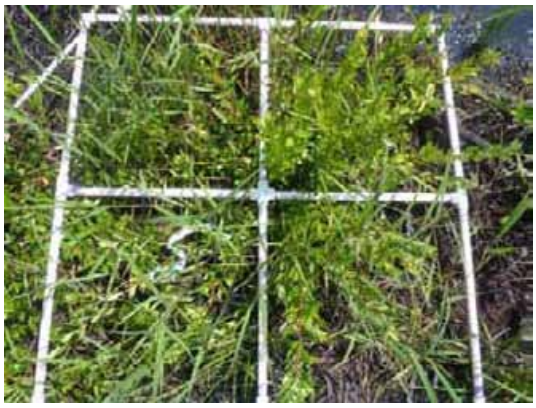



Photographs (left to right): 1) Transect DWQT1-625 Plot – 190 feet; 2) Transect DWQT1-625 Plot – 200 feet

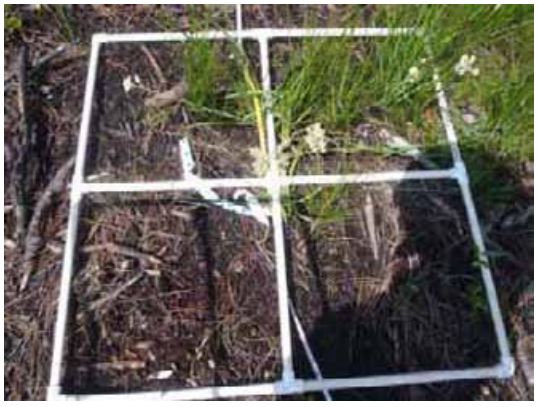



Photographs (left to right): 1) Transect DWQT1-625 Plot – 210 feet; 2) Transect DWQT1-625 Plot – 220 feet

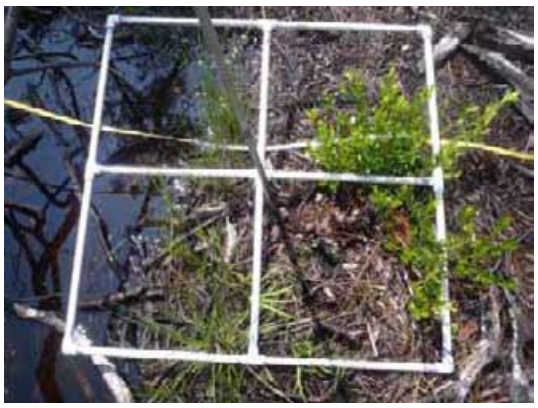

Photographs (left to right): 1) Transect DWQT1-625 Plot – 230 feet; 2) Transect DWQT1-625 Plot – 240 feet




Photographs (left to right): 1) Transect DWQT1-625 Plot – 250 feet; 2) Transect DWQT1-625 Plot – 260 feet

Photographs (left to right): 1) Transect DWQT1-625 Plot – 270 feet; 2) Transect DWQT1-625 Plot – 280 feet

Photographs (left to right): 1) Transect DWQT1-625 Plot – 290 feet; 2) Transect DWQT1-625 Plot – 300 feet

TRANSECT DWQT2-626 HYDRIC PINE SAVANNA

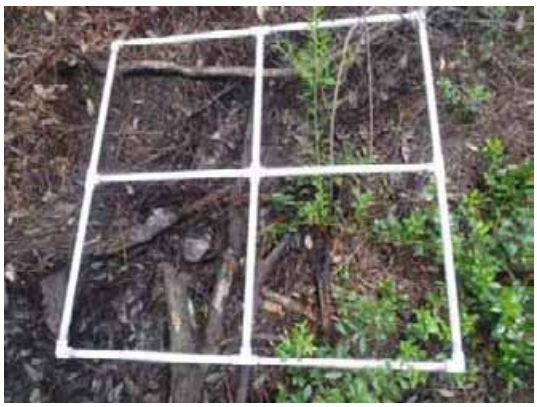

Photographs (left to right): 1) Transect DWQT2-626 Plot – 10 feet; 2) Transect DWQT2-626 Plot – 20 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 30 feet; 2) Transect DWQT2-626 Plot – 40 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 50 feet; 2) Transect DWQT2-626 Plot – 60 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 70 feet; 2) Transect DWQT2-626 Plot – 80 feet

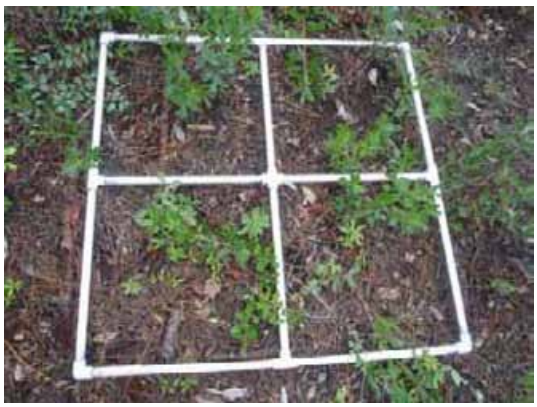

Photographs (left to right): 1) Transect DWQT2-626 Plot – 90 feet; 2) Transect DWQT2-626 Plot – 100 feet

Photographs (left to right): 1) Transect DWQT2-626 Plot – 110 feet; 2) Transect DWQT2-626 Plot – 120 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 130 feet; 2) Transect DWQT2-626 Plot – 140 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 150 feet; 2) Transect DWQT2-626 Plot – 160 feet

Photographs (left to right): 1) Transect DWQT2-626 Plot – 170 feet; 2) Transect DWQT2-626 Plot – 180 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 190 feet; 2) Transect DWQT2-626 Plot – 200 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 210 feet; 2) Transect DWQT2-626 Plot – 220 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 230 feet; 2) Transect DWQT2-626 Plot – 240 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 250 feet; 2) Transect DWQT2-626 Plot – 260 feet

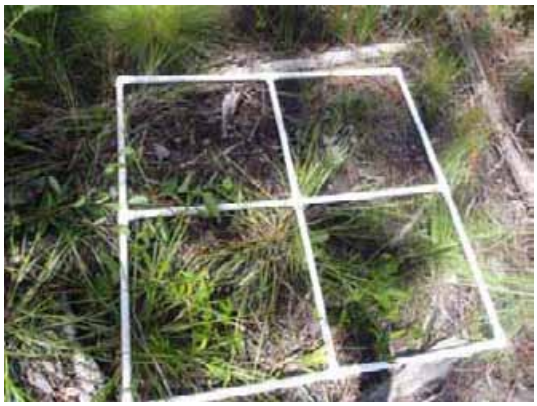

Photographs (left to right): 1) Transect DWQT2-626 Plot – 270 feet; 2) Transect DWQT2-626 Plot – 280 feet


Photographs (left to right): 1) Transect DWQT2-626 Plot – 290 feet; 2) Transect DWQT2-626 Plot – 300 feet

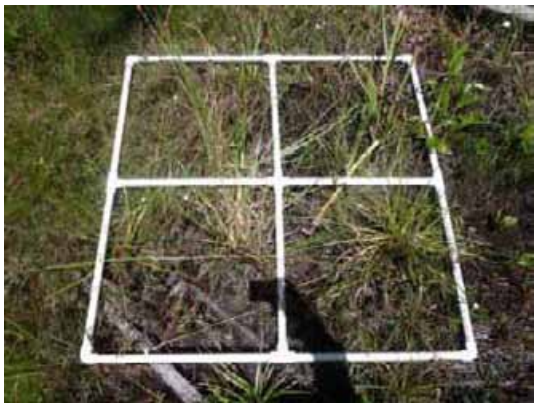
TRANSECT DWQT3-626 HYDRIC PINE SAVANNA


Photographs (left to right): 1) Transect DWQT3-626 Plot – 10 feet; 2) Transect DWQT3-626 Plot – 20 feet

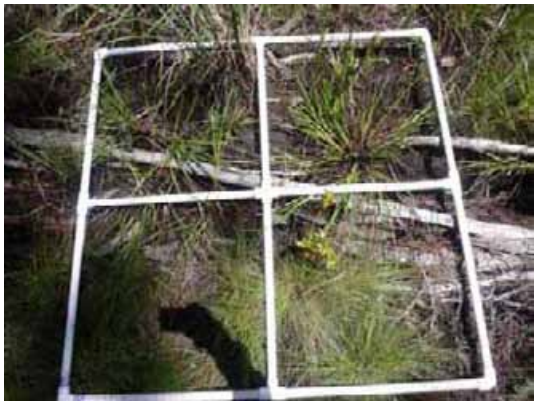

Photographs (left to right): 1) Transect DWQT3-626 Plot – 30 feet; 2) Transect DWQT3-626 Plot – 40 feet

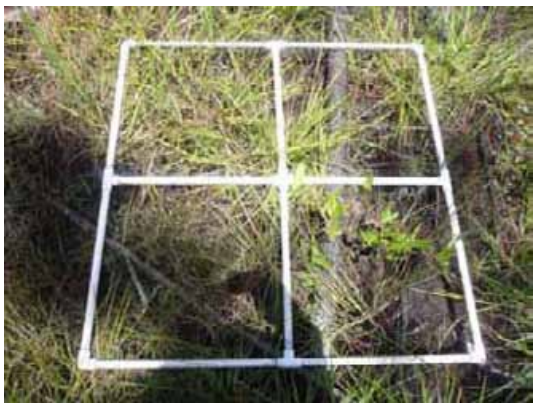
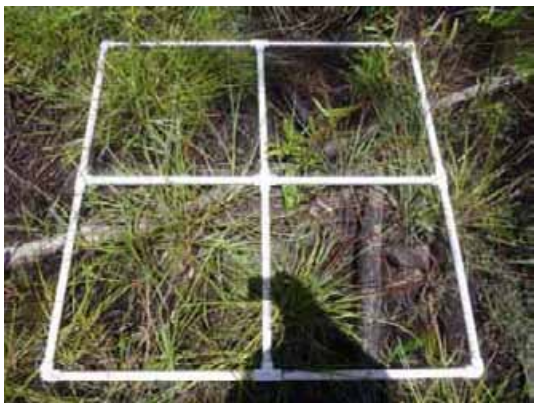
Photographs (left to right): 1) Transect DWQT3-626 Plot – 50 feet; 2) Transect DWQT3-626 Plot – 60 feet

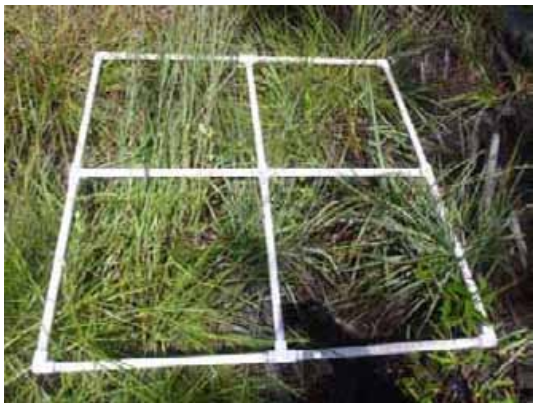
Photographs (left to right): 1) Transect DWQT3-626 Plot – 70 feet; 2) Transect DWQT3-626 Plot – 80 feet

Photographs (left to right): 1) Transect DWQT3-626 Plot – 90 feet; 2) Transect DWQT3-626 Plot – 100 feet

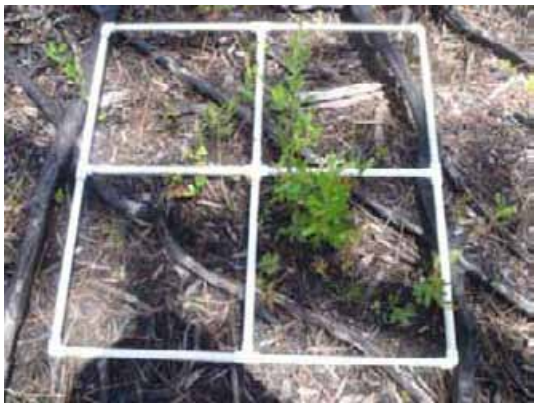
Photographs (left to right): 1) Transect DWQT3-626 Plot – 110 feet; 2) Transect DWQT3-626 Plot – 120 feet




Photographs (left to right): 1) Transect DWQT3-626 Plot – 130 feet; 2) Transect DWQT3-626 Plot – 140 feet

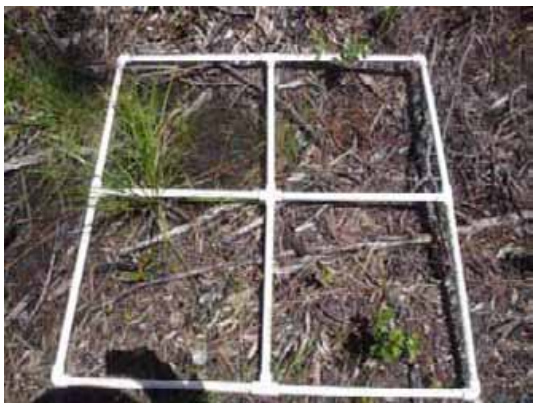

Photographs (left to right): 1) Transect DWQT3-626 Plot – 150 feet; 2) Transect DWQT3-626 Plot – 160 feet


Photographs (left to right): 1) Transect DWQT3-626 Plot – 170 feet; 2) Transect DWQT3-626 Plot – 180 feet

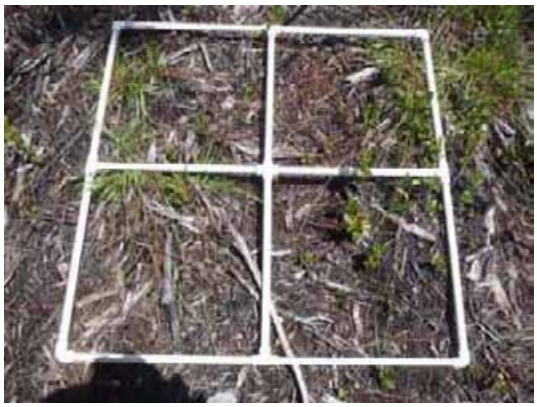



Photographs (left to right): 1) Transect DWQT3-626 Plot – 190 feet; 2) Transect DWQT3-626 Plot – 200 feet


Photographs (left to right): 1) Transect DWQT3-626 Plot – 210 feet; 2) Transect DWQT3-626 Plot – 220 feet




Photographs (left to right): 1) Transect DWQT3-626 Plot – 230 feet; 2) Transect DWQT3-626 Plot – 240 feet

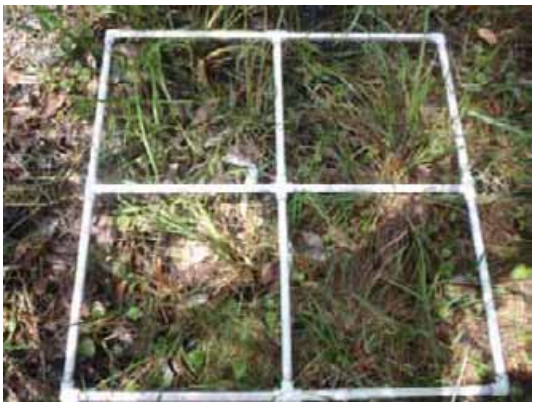



Photographs (left to right): 1) Transect DWQT3-626 Plot – 250 feet; 2) Transect DWQT3-626 Plot – 260 feet

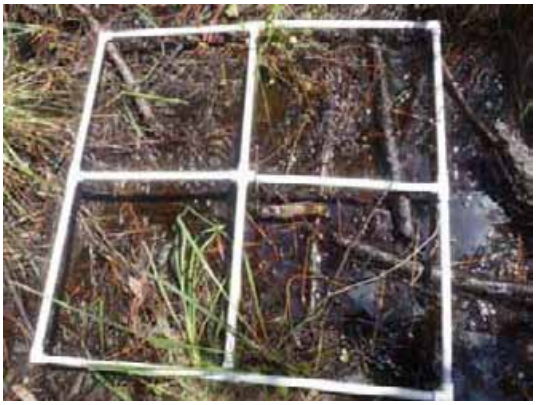
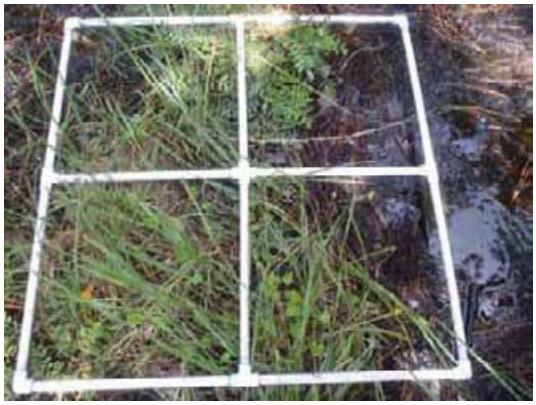

Photographs (left to right): 1) Transect DWQT3-626 Plot – 270 feet; 2) Transect DWQT3-626 Plot – 280 feet


Photographs (left to right): 1) Transect DWQT3-626 Plot – 290 feet; 2) Transect DWQT3-626 Plot – 300 feet

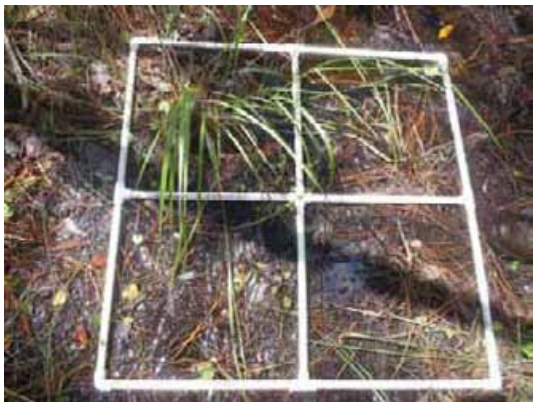
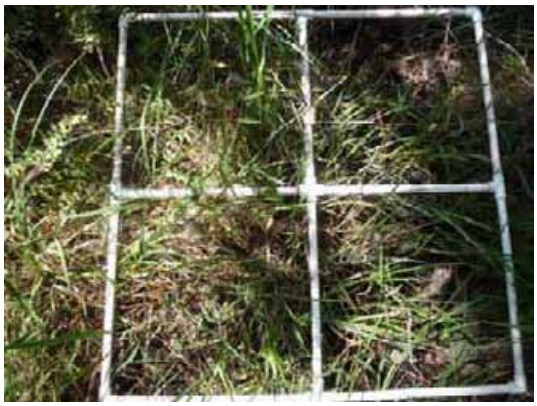
TRANSECT DWQT4-625 HYDRIC PINE FLATWOODS

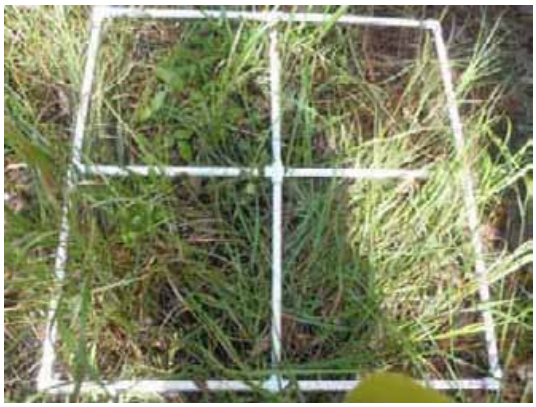
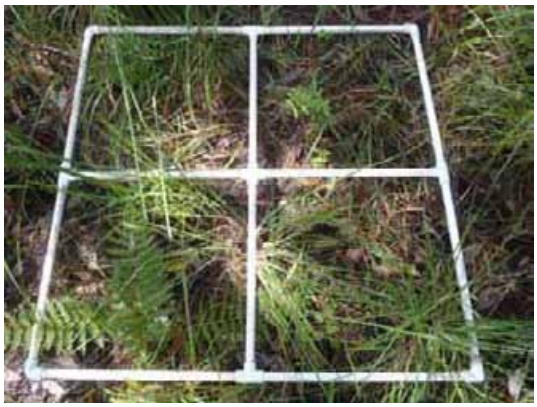
Photographs (left to right): 1) Transect DWQT4-625 Plot – 10 feet; 2) Transect DWQT4-625 Plot – 20 feet

Photographs (left to right): 1) Transect DWQT4-625 Plot – 30 feet; 2) Transect DWQT4-625 Plot – 40 feet

Photographs (left to right): 1) Transect DWQT4-625 Plot – 50 feet; 2) Transect DWQT4-625 Plot – 60 feet

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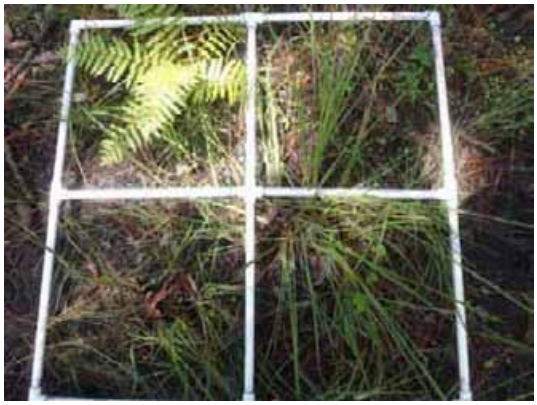
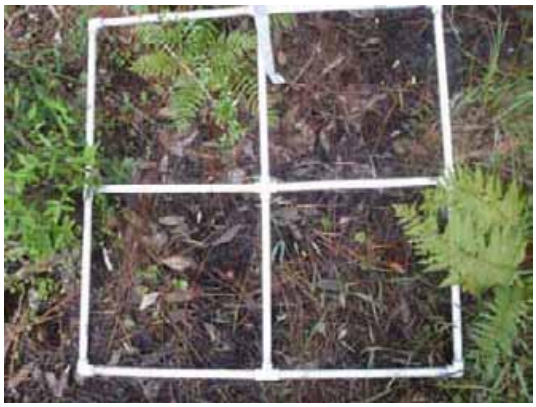
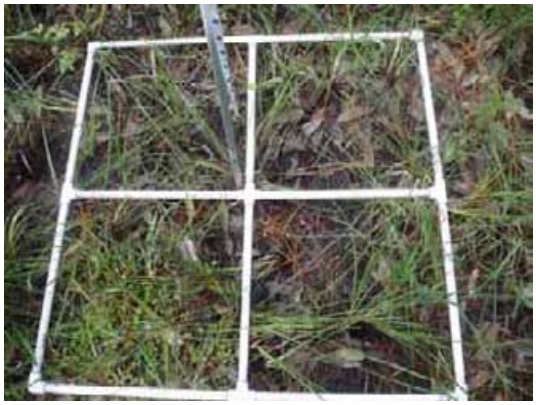
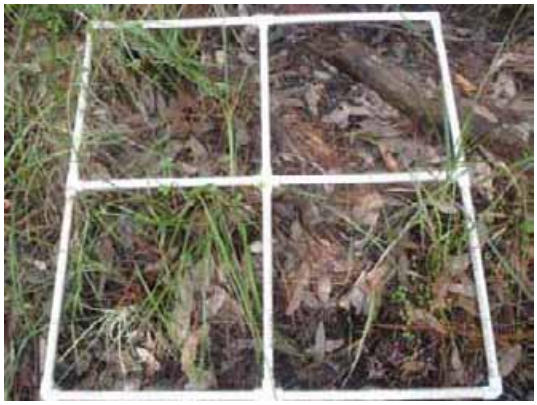


Photographs (left to right): 1) Transect DWQT4-625 Plot – 90 feet; 2) Transect DWQT4-625 Plot – 100 feet

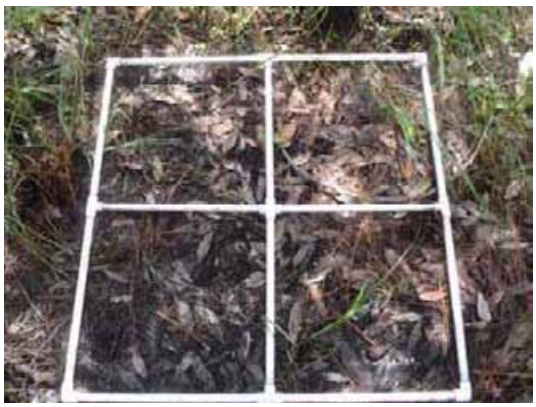

Photographs (left to right): 1) Transect DWQT4-625 Plot – 110 feet; 2) Transect DWQT4-625 Plot – 120 feet



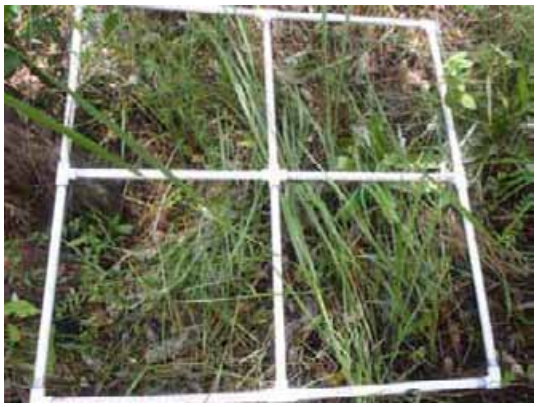

Photographs (left to right): 1) Transect DWQT4-625 Plot – 130 feet; 2) Transect DWQT4-625 Plot – 140 feet

Photographs (left to right): 1) Transect DWQT4-625 Plot – 150 feet; 2) Transect DWQT4-625 Plot – 160 feet




Photographs (left to right): 1) Transect DWQT4-625 Plot – 170 feet; 2) Transect DWQT4-625 Plot – 180 feet

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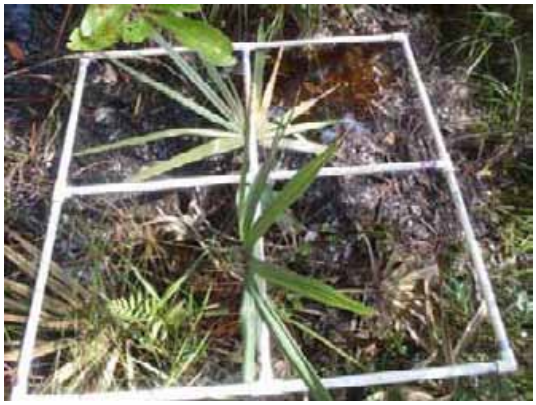
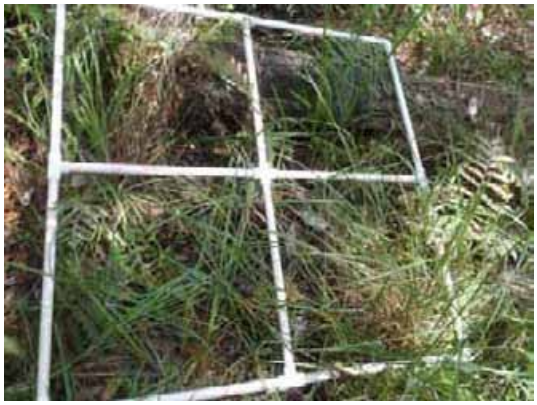

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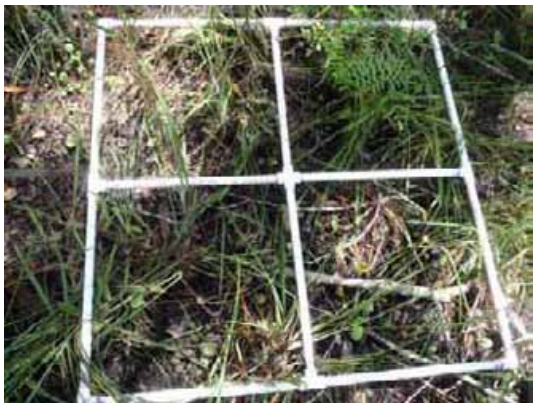
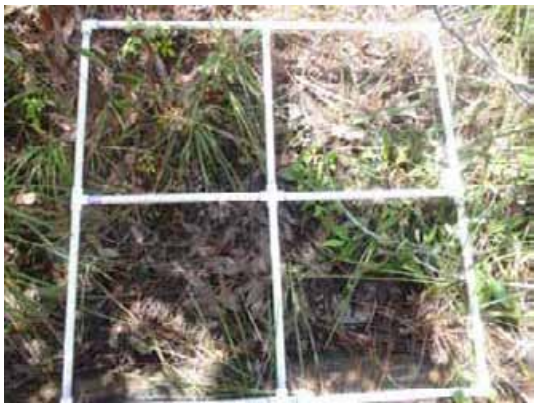
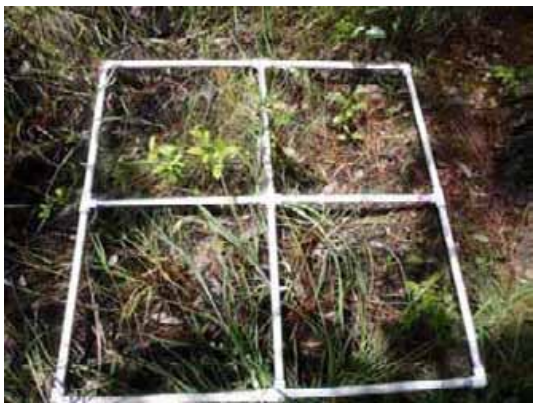
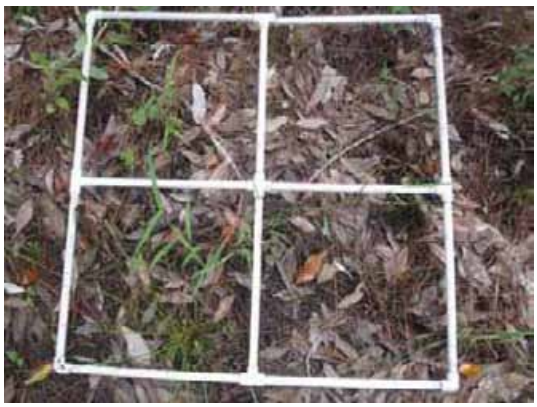



Photographs (left to right): 1) Transect DWQT4-625 Plot – 250 feet; 2) Transect DWQT4-625 Plot – 260 feet


Photographs (left to right): 1) Transect DWQT4-625 Plot – 270 feet; 2) Transect DWQT4-625 Plot – 280 feet

Photographs (left to right): 1) Transect DWQT4-625 Plot – 290 feet; 2) Transect DWQT4-625 Plot – 300 feet