

ENVIRONMENTAL MONITORING REPORT EAST CORKSCREW TREE WIZARD BIRD ROOKERY YOUNGQUIST

**Lee and Collier County
Township-46-North, Range 28-East
Township-48-North, Range-27-East
Township-47-North, Range-26-East**

Project: ML040585



**Monitoring Performed:
July 11-13, 2009**

**Submitted:
August 2009**

KCI Technologies, Inc.

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Narrative

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Narrative

Additional observations from July 13, 2009 monitoring

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Narrative

Additional observations from July 12, 2009 monitoring

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1.0 Introduction

KCI Technologies, Inc. (KCI) has conducted the biannual vegetative monitoring and data collection assessment for the Corkscrew Monitoring Mitigation Project, ML-040585, administered by the South Florida Water Management District (SFWMD). The monitoring requires qualitative and quantitative assessments to document the success of the vegetative and hydrologic restoration. No single community type could be established for each individual site based on the different successional stages in each area.

2.0 Purpose

The primary purpose of the monitoring program is to identify and describe the elements of the natural system, thus enabling the SFWMD to evaluate the success of exotic plant control activities, hydrologic restoration, groundcover restoration, and revegetation activities.

3.0 Site Location

The Corkscrew Mitigation Area is composed of five sites (Figure 1). Site 1 is located at East Corkscrew Marsh in Lee County, containing two areas, 1A and 1B. Site 2 is located at Bird Rookery in Collier County. Site 3 is located at Youngquist in Lee County, while Site 4 is located at Tree Wizard in Lee County. The SFWMD had been conducting invasive species eradication in these areas as a component of its restoration plan. The specific areas being monitored include Township 46 North, Range 28 East; Township 48 North, Range 27 East; and Township 47 North, Range 26 East.

4.0 Methodology

Previous monitoring on all sites utilized the transect method to determine the species coverage and distribution. However, this method did not appear to be developing a statistically significant sample of site vegetation. A new sampling protocol “species curve method” was discussed with SFWMD and applied in Spring 2005 to sites 1, 2 and 3 to overcome this difficulty. Site 4 was monitored using the original transect method. Beginning in 2008, the sites converted to an annual spring monitoring instead of the biannual sampling that took place during the spring and fall of the previous five years.

The two different sampling methods used are described below:

Species Curve Method - The boundaries of the site were delineated on a geo-referenced aerial photograph using ArcGIS. A 100’ buffer was excluded from the periphery of the site to avoid “contamination” of the samples from adjacent vegetative communities to define the “sampling area.” One hundred (100) points were randomly generated and numbered from ArcGIS within the sampling area. The coordinates were exported to a handheld GPS unit to allow location in the field. The points were sampled in numerical order by placing a grid ½ meter on each side (0.25 square meter) and identifying the percent coverage of each species located within the grid. Each species was entered onto an Excel spreadsheet and documented by scientific and common name. The species dominance in each site was determined by the species occurring for greater than 10 percent. Coverage was documented at each sample plot for every species as a percent coverage with the total percent not exceeding 100 percent/layer. The cumulative total of new species was plotted against the number of points sampled, i.e. the species frequency curve. Random plots were sampled until the species frequency curve remained flat for 3 consecutive points, which verified that no new species were being found. Photographs of each sampling point were taken for reference from an elevated position. Summary percent coverages by species were calculated for each layer by dividing the area occupied by each individual species by the total area surveyed.

Transect Method – A transect was established that bisects the site. The end points were permanently marked by installing 10-foot lengths of 4-inch PVC pipe and located with GPS. Data collection stations, each measuring 4 square meters, were established at equally spaced intervals of 175 feet to achieve even space of the quadrants along the defined transect location. Percent aerial coverage for overstory,

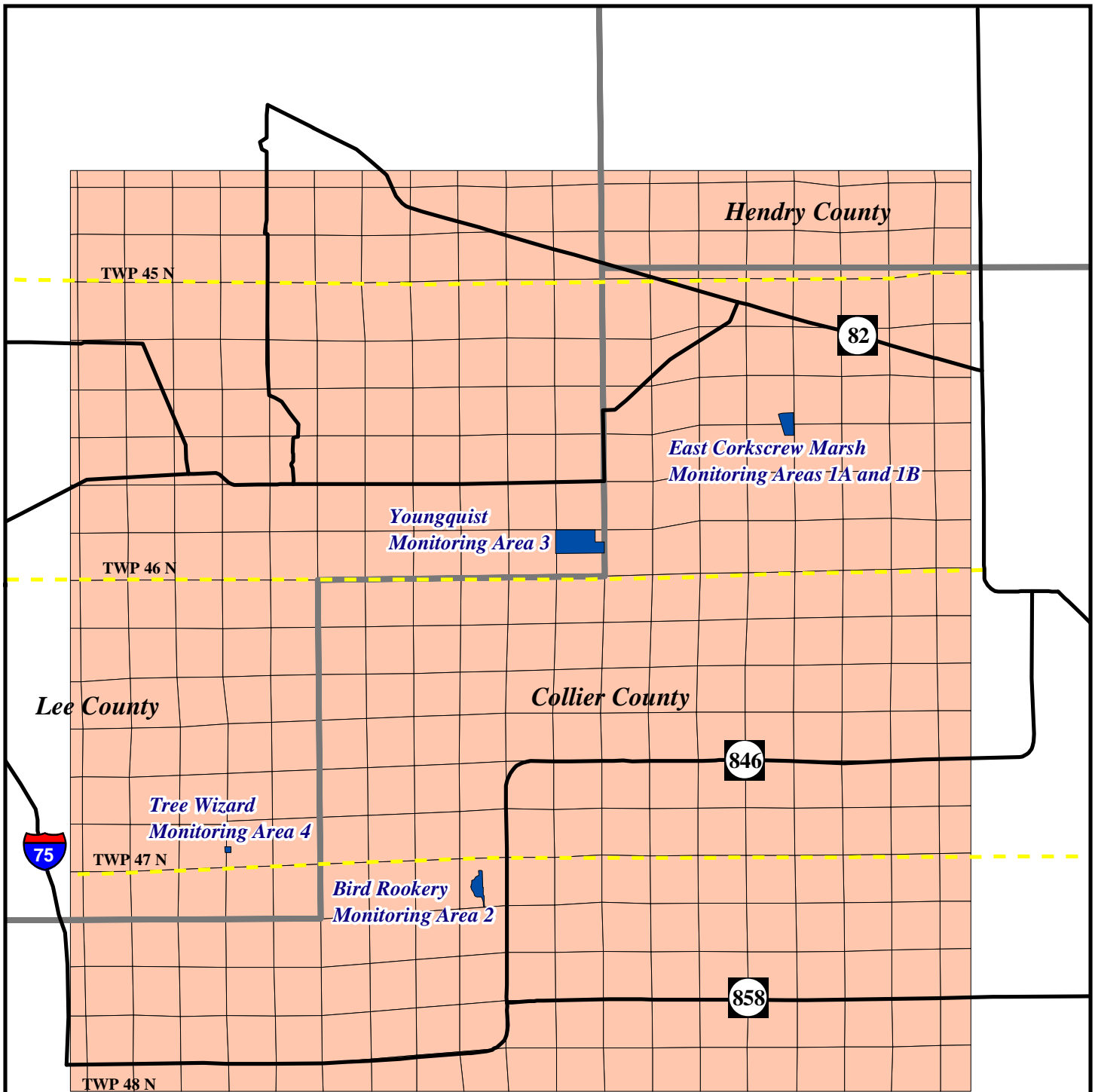



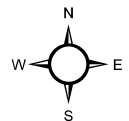


Figure 1. Location Map

-  Township Boundary
-  Roads
-  Mitigation Project Site

10,000 0 10,000
Feet



sapling/shrub, herbaceous and submerged aquatics were collected at each data point. Data were organized into a spreadsheet and correlated with photographic references for each collection station. Summary percent coverages by species were calculated for each layer by dividing the area occupied by each individual species by the total area surveyed.

Calculation of Percent Coverage by Species

CT = Percentage of coverage by species per collection station

CA = Total area sampled per collection point

PC = Total area covered by species per collection station (CT*CA)

TA = Total area sampled in transect (# collection points x # square meters per point)

TC = Total coverage by species per transect

$$TC = PC/TA$$

5.0 Results

The collected data for all five sites were incorporated into individual spreadsheets for presentation and are presented in the following section. A narrative describing each site is followed by summary data.

MONITORING DATA
July 11-13, 2009

SITE 1- EAST CORKSCREW MARSH

This site totals 804 acres in size. However, for the purpose of sampling, it was subdivided into two areas for monitoring due to the variance in management practices and community types.

Site 1A

Narrative

Site 1A (438 acres) is located in Township 46N, Range 28E (Cell 15/14 – Corkscrew Regional Ecosystem Watershed Project Ownership), and Township 46N, Range 28E (Cell 15 – Corkscrew Regional Ecosystem Watershed Project Ownership). Control efforts in the past consisted primarily of mowing the vegetation. In particular, the efforts were aimed at controlling the Bahia grass (*Paspalum notatum*). The site burned at some point between the Spring 2006 and Fall 2006 monitoring visits. Vegetation has returned to all areas of the site since the fire.

During the Spring 2009 monitoring visit, 10 random plots were sampled with a total of 12 species occurring within the monitored plots. There was approximately 7% dead biomass and 8% open void in the herbaceous layer in the plots sampled. Smut grass (*Sporobolus indicus*) increased from 4% in the 2008 monitoring to 34% coverage in 2009. Of the seeded species, slim bluestem (*Andropogon perangustatus*) decreased from 17%, in 2008 to only 1% in 2009, while bushy bluestem (*Andropogon glomeratus*) was not observed in any of the sampled plots. Yankee weed (*Eupatorium compositifolium*) was at 15% coverage and common carpetgrass (*Axonopus fissifolius*) was at 15% coverage as well. No species were found in the submerged, sapling/vine, and overstory layer and therefore these layers were classified as 100 percent open/void.

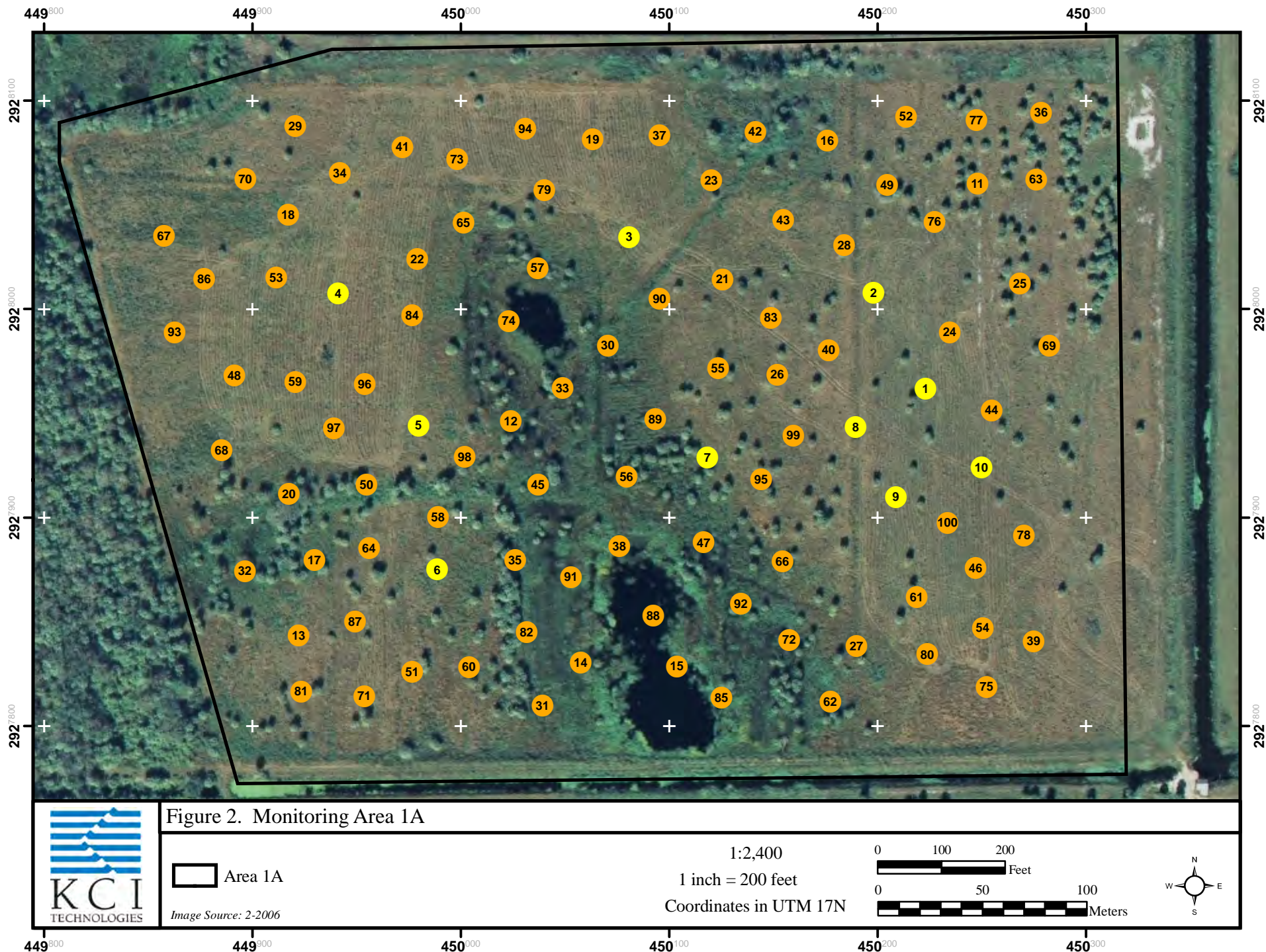
The site was seeded in December 2002 with a mix of flatwood species. The seeded plants identified during the Spring 2009 monitoring visit are described in the table below.

Planted Species by N. Bisset

Species (Common Name)	Scientific Name	Observed
Wiregrass	<i>Aristida stricta</i>	
Lopsided Indiangrass	<i>Sorgastrum secundum</i>	
Lovegrasses	<i>Eragrostis spp.</i>	
Bluestems	<i>Andropogon spp.</i>	X
Blazing Star	<i>Liatris spp.</i>	
Elephant's Foot	<i>Elephantopus elatus</i>	
Thoroughworts	<i>Eupatorium rotundifolium</i>	
Silver-Leaved Aster	<i>Pityopsis graminifolia</i>	
Tickseed	<i>Coreopsis leavenworthii</i>	

Additional observations from July 13, 2009 monitoring

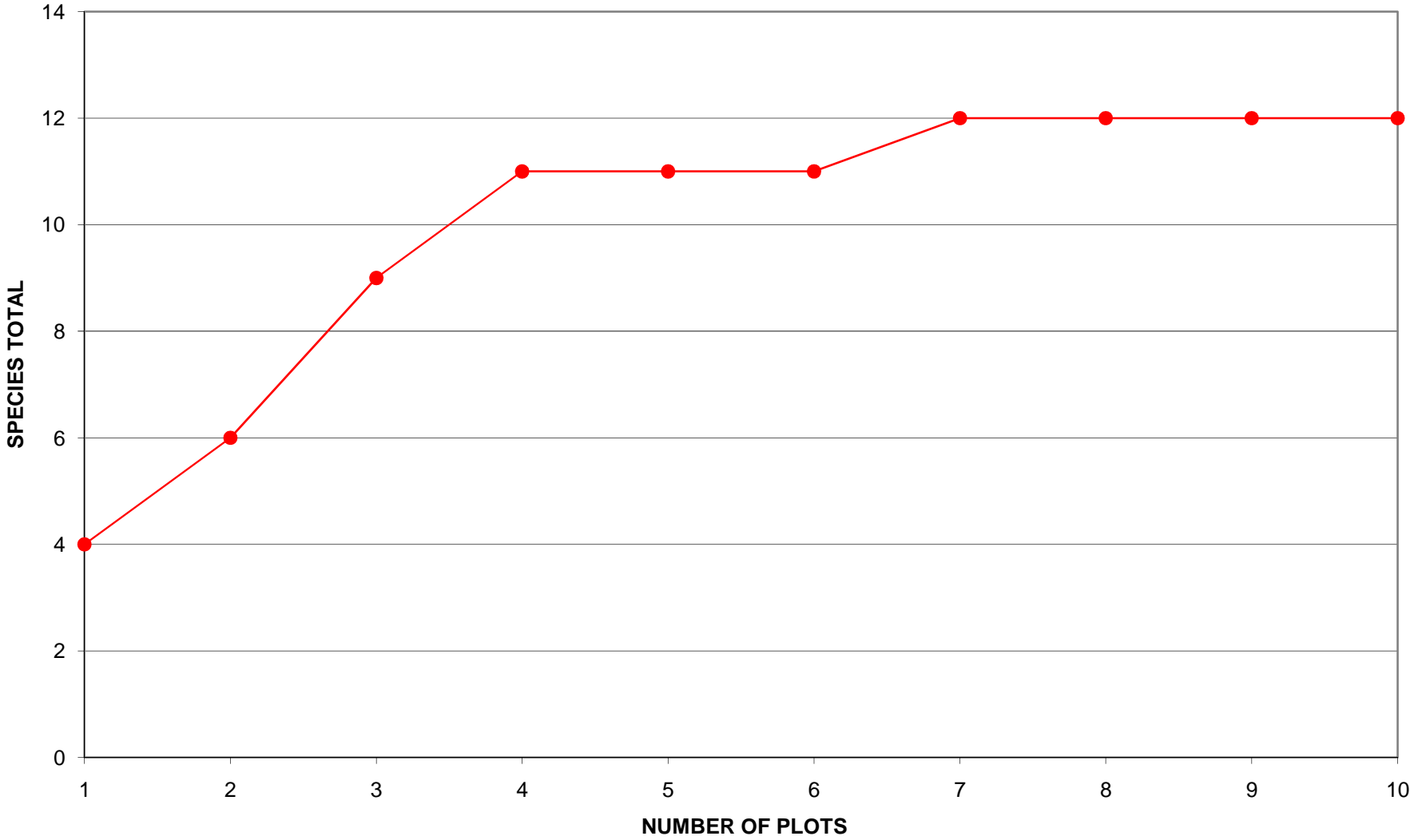
The soil conditions were moist sandy soils with standing water present in the middle of the site. The site is heavily vegetated with a consistent mixture of species. There are isolated areas on the eastern side of the site that are less densely vegetated with open sandy patches. The majority of the site is being taken over by smut grass with a decrease in seeded species being present on the site.



SITE 1A - EAST CORKSCREW MARSH MONITORING PLOTS

Sampling Points												
Common Name	Scientific Name	1	2	3	4	5	6	7	8	9	10	Cum %
Sand Cord Grass	<i>Spartina bakeri</i>	25%										3%
Slender Crabgrass	<i>Digitaria filiformis</i>	30%										3%
Pinebarren Flatsedge	<i>Cyperus retrorsus</i>	5%	10%		5%					15%	20%	6%
Yankee Weed	<i>Eupatorium compositifolium</i>	5%	35%	5%	5%	30%	20%	15%		20%	10%	15%
Smut Grass*	<i>Sporobolus indicus</i>		45%		45%	55%	70%		65%	55%		34%
Southern Dewberry	<i>Rubus Trivialis</i>		10%									1%
Maiden Cane	<i>Panicum hemitomon</i>			5%								1%
Peppervine	<i>Ampelopsis arborea</i>			10%					20%			3%
Common Carpetgrass	<i>Axonopus fissifolius</i>			75%				30%			45%	15%
Tropical Flatsedge	<i>Cyperus surinamensis</i>				5%				15%			2%
Knotroot Foxtail	<i>Setaria geniculata</i>				40%							4%
Slim Bluestem (Seeded)	<i>Andropogon perangustatus</i>							5%				1%
Open/Void	N/A	35%						45%				8%
Dead Biomass	N/A			5%		15%	10%	5%		10%	25%	7%
	Total Percentage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
*exotic species												
+seeded species												

**SITE 1A - EAST CORKSCREW MARSH
MONITORING PLOTS**



**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 1A**



PLOT 1



PLOT 2



PLOT 3



PLOT 4



PLOT 5



PLOT 6

**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 1A**



PLOT 7



PLOT 8



PLOT 9



PLOT 10

Site 1B

Narrative

Site 1B (406 acres) is located in Township 46N, Range 28E (Cell 23 – Corkscrew Regional Ecosystem Watershed Project Ownership), and in Township 46N, Range 28E (Cell 22 – Corkscrew Regional Ecosystem Watershed Project Ownership). Control efforts in the past consisted primarily of mowing the vegetation. In particular, the efforts were aimed at controlling Bahia grass (*Paspalum notatum*). The site burned during a fire that occurred between the spring and fall monitoring visits in 2006. The fire burned more severely on the western side of the site.

At Site 1B, 12 random plots were sampled and 21 species were identified within these plots during the 2009 visit. Among these plots, the dominant species in the herbaceous layer was common carpetgrass (*Axonopus fissifolius*) with 28% coverage. Slim bluestem (*Andropogon perangustatus*) decreased from 21% coverage in Spring 2008 to only 2% coverage in Spring 2009 monitoring. Smut grass (*Sporobolus indicus*) remained consistent at 13% coverage in the Spring 2009 monitoring period. Bahia grass (*Paspalum notatum*) increased from 3% in the Spring 2008 monitoring to 11% coverage in Spring 2009. There was also 6% dead biomass and 1% open/void coverage throughout the monitored areas. No species were found in the submerged, sapling/vine, and overstory layers and they were classified as 100 percent open/void.

The site was seeded in December 2002 with a mix of flatwood species. The table below identifies the planted species identified in the sampled plots during the Spring 2009 monitoring visit.

Planted Species by N. Bisset

Species (Common Name)	Scientific Name	Observed
Wiregrass	<i>Aristida stricta</i>	
Lopsided Indiangrass	<i>Sorgastrum secundum</i>	
Lovegrasses	<i>Eragrostis spp.</i>	
Bluestems	<i>Andropogon spp.</i>	X
Blazing Star	<i>Liatris spp.</i>	
Elephant's Foot	<i>Elephantopus elatus</i>	
Thoroughworts	<i>Eupatorium rotundifolium</i>	
Silver-Leaved Aster	<i>Pityopsis graminifolia</i>	
Tickseed	<i>Coreopsis leavenworthii</i>	

Additional observations from July 13, 2009 monitoring

The soil was moist and sandy with standing water observed in the middle of the site. After the site was burned sometime in 2006, the site is showing a large diversity of plant species. The western portion of the site contains less dense groupings of perennial species due to the fire. The eastern portion of the site has denser vegetation. Peruvian primrosewillow (*Ludwigia peruviana*) has not regained its dominance since the Spring 2007 monitoring, but the percentage of smut grass remains high on the site.

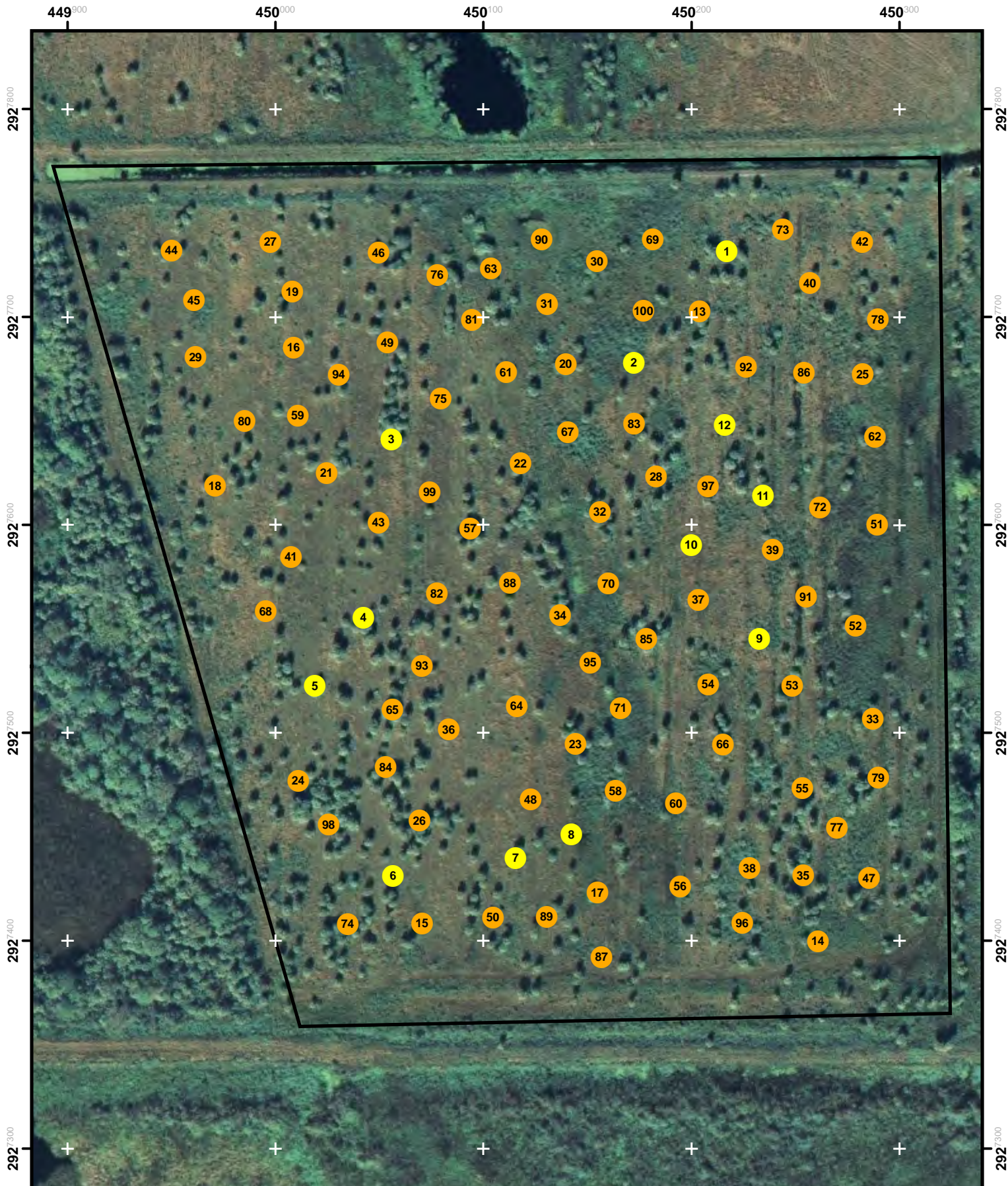
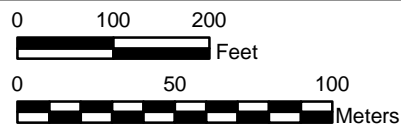


Figure 3. Monitoring Area 1B

 Area 1B

Image Source: 2-2006

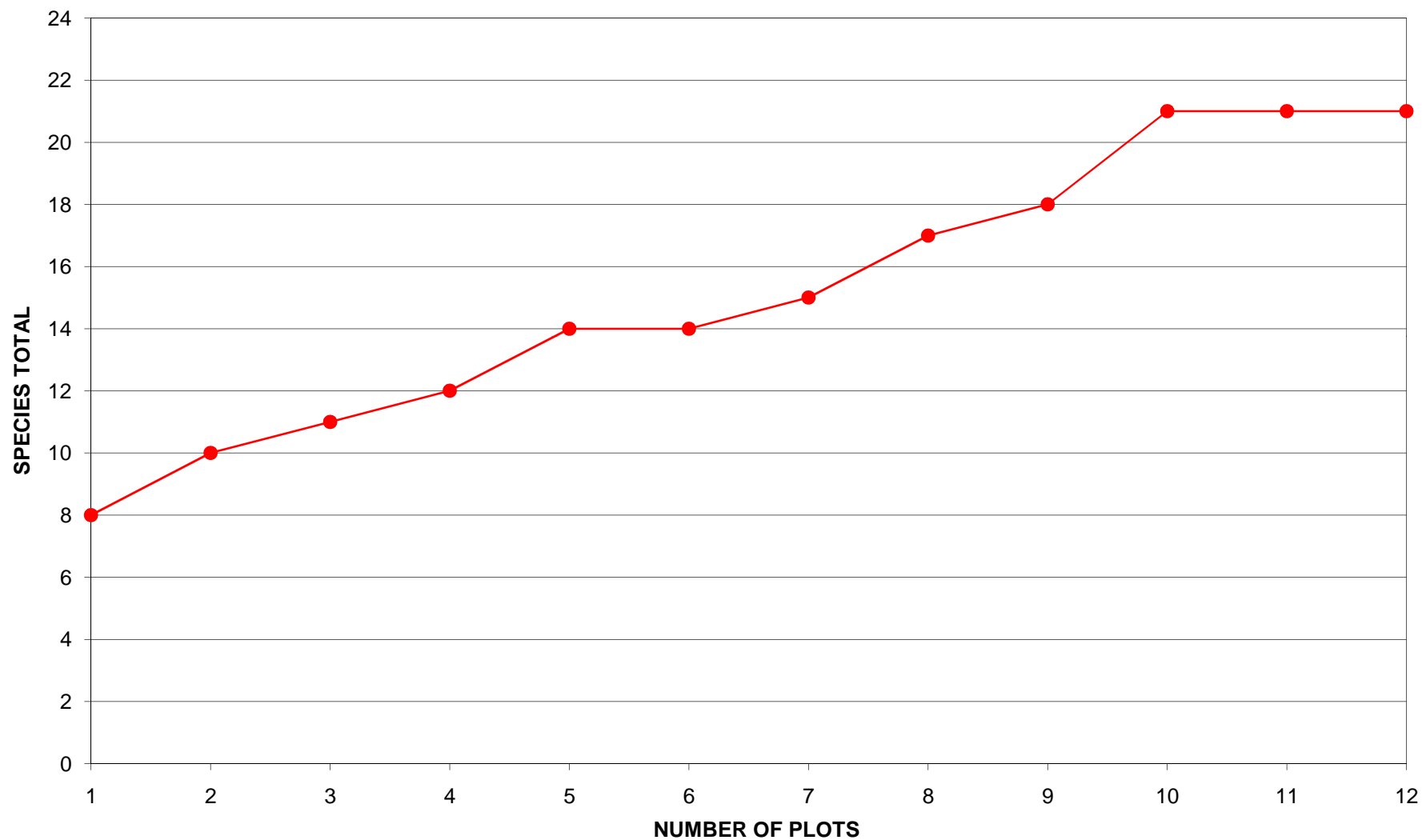
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1 inch = 200 feet
Coordinates in UTM 17N



SITE 1B - EAST CORKSCREW MARSH MONITORING PLOTS

		Sampling Points												
Common Name	Scientific Name	1	2	3	4	5	6	7	8	9	10	11	12	Cum %
Caesar Weed*	<i>Urena lobata</i>	5%								5%				0%
Greenbrier	<i>Smilax spp.</i>	10%										5%	5%	2%
Peppervine	<i>Ampelopsis arborea</i>	40%												3%
Ragweed	<i>Ambrosia artemisiifolia</i>	5%	5%							5%				1%
Smut Grass*	<i>Sporobolus indicus</i>	20%	75%							65%				13%
Zarabacoa Comun (Begga	<i>Desmodium incanum</i>	10%						5%						1%
Greenish-White Sedge	<i>Carex longii</i>	5%		85%										8%
Leavenworth's Goldenrod	<i>Solidago leavenworthii</i>	5%			5%			5%						1%
Common Carpetgrass	<i>Axonopus fissifolius</i>		10%		25%		90%		35%			80%	95%	28%
Dog Fennel	<i>Eupatorium capillifolium</i>		5%											0%
Yankee Weed	<i>Eupatorium compositifolium</i>			5%		5%		5%	10%					2%
Pinebarren flatsedge	<i>Cyperus retrorsus</i>				70%									6%
Common Carpetgrass	<i>Axonopus fissifolius</i>													0%
Tropical Flatsedge	<i>Cyperus surinamensis</i>					20%								2%
Bahia Grass	<i>Paspalum notatum</i>					65%		65%						11%
Chocolate Weed	<i>Melochia corchorifolia</i>							20%	25%					4%
Slim Bluestem (Seeded)	<i>Andropogon perangustatus</i>								20%					2%
Knotroot foxtail	<i>Setaria geniculata</i>									25%	45%			6%
Swamp Flatsedge	<i>Cyperus distinctus</i>										5%			0%
Maiden Cane	<i>Panicum hemitomon</i>										20%			2%
Mexican Primrosewillow	<i>Ludwigia octovalvis</i>										5%			0%
Dead Biomass	N/A		5%	10%		10%	10%		10%		10%	15%		6%
Open/Void	N/A										15%			1%
	Total Percentage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
*exotic species														
+seeded species														

SITE 1B - EAST CORKSCREW MARSH MONITORING PLOTS



**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 1B**



PLOT 1



PLOT 2



PLOT 3



PLOT 4



PLOT 5



PLOT 6

**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 1B**



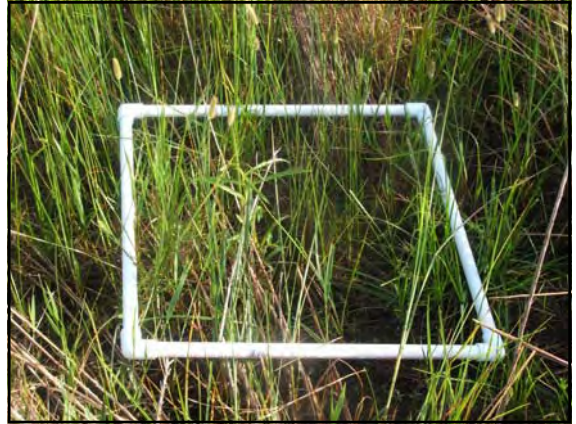
PLOT 7



PLOT 8



PLOT 9



PLOT 10



PLOT 11



PLOT 12

SITE 2- BIRD ROOKERY

Narrative

Site 2 (556 acres) is located in Township 48N, Range 27E (Cell 3 – Corkscrew Regional Ecosystem Watershed Project Ownership). Control efforts in the past consisted primarily of mowing the vegetation. There were no signs of additional management activities since the last monitoring in December 2006.

At Site 2, 14 random plots were sampled with 15 species found within the monitored plots in 2009. The dominant species in the herbaceous layer was common carpetgrass (*Axonopus fissifolius*) with an increase in coverage from 5% during the Spring 2008 monitoring to 19% coverage for the Spring 2009 monitoring period. There was 14% coverage of paragrass (*Urochloa mutica*) and 13% coverage of ragweed (*Ambrosia artemisiifolia*). There was also 11% dead biomass and 16% open/void coverage throughout the monitored areas. No species were found in the submerged, sapling/vine, and overstory layers and they were therefore classified as 100 percent open/void.

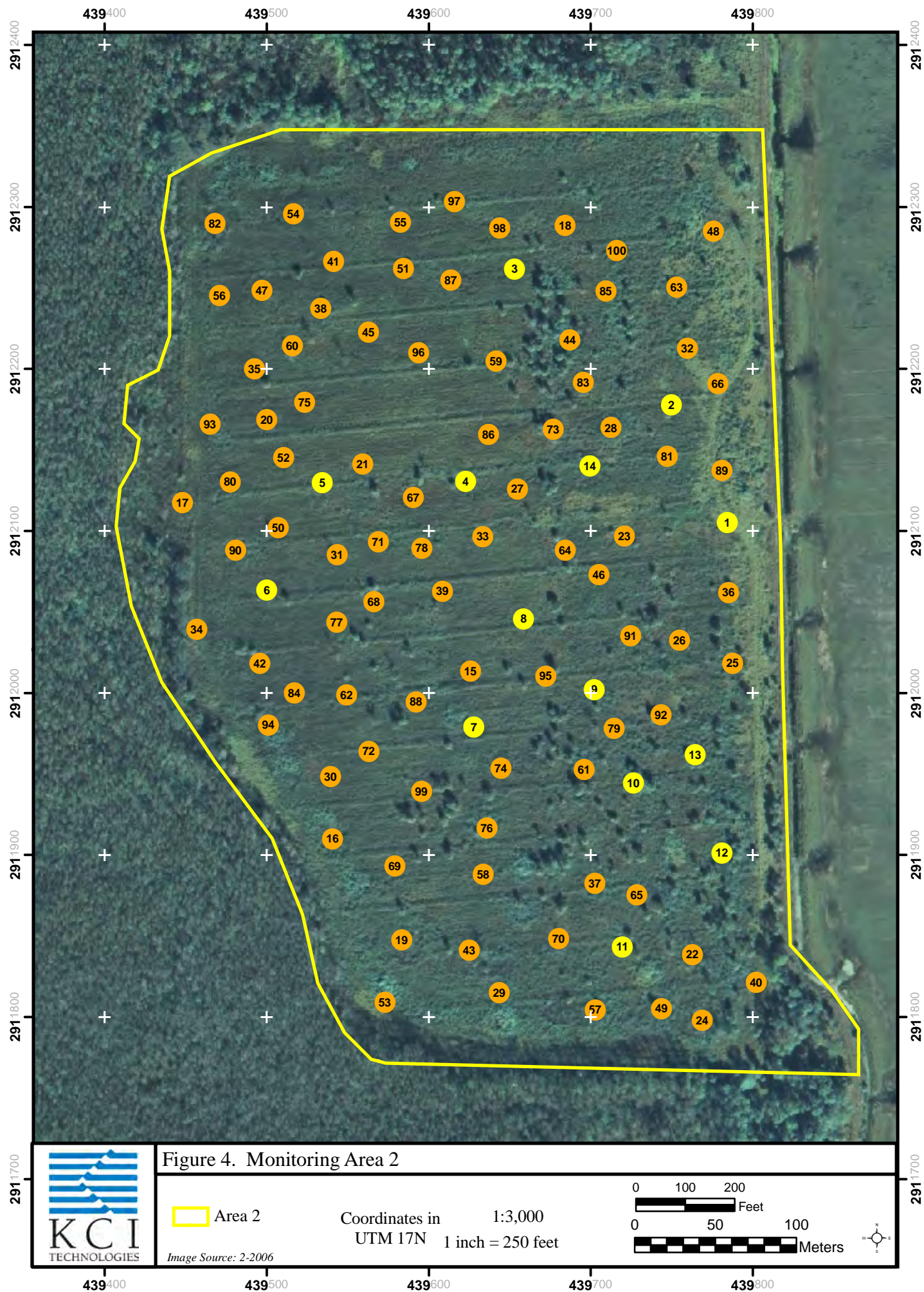
The site was seeded in December 2002 with a mixture of flatwood species. The table below identifies the planted species identified during the Spring 2009 monitoring visit. Although *Andropogon* species were observed on the site, there were no seeded species found in the sampled plots during the Spring 2009 monitoring visit.

Planted Species by N. Bisset

Species (Common Name)	Scientific Name	Observed
Wiregrass	<i>Aristida stricta</i>	
Lopsided Indiangrass	<i>Sorghastrum secundum</i>	
Lovegrasses	<i>Eragrostis spp.</i>	
Bluestems	<i>Andropogon spp.</i>	
Blazing Star	<i>Liatris spp.</i>	
Elephant's Foot	<i>Elephantopus elatus</i>	
Thoroughworts	<i>Eupatorium rotundifolium</i>	
Silver-Leaved Aster	<i>Pityopsis graminifolia</i>	
Tickseed	<i>Coreopsis leavenworthii</i>	

Additional observations from July 12, 2009 monitoring

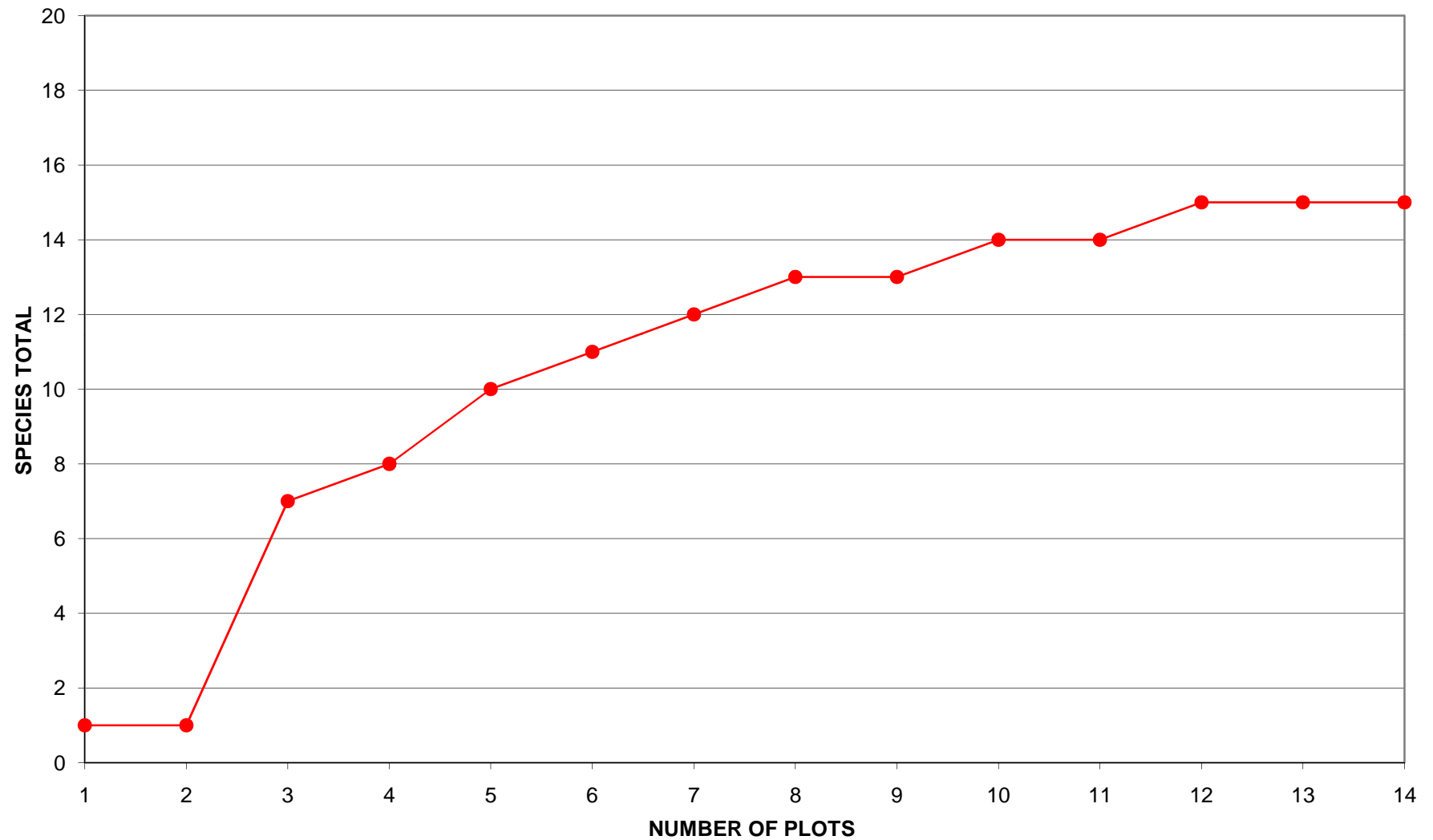
The site was dry and had sandy soil conditions. At the time of monitoring, there was no standing water observed on the site.. The site has responded positively to mowing in 2006 to control the invasive Peruvian primrosewillow (*Ludwigia peruviana*). During this most recent monitoring event, Peruvian primrosewillow coverage was significantly reduced and only existed in two monitoring plots. The site should still be followed carefully to ensure that the dominant thickets of Peruvian primrosewillow do not form once again.



SITE 2 - BIRD ROOKERY MONITORING PLOTS

[illegible]

SITE 2 - BIRD ROOKERY MONITORING PLOTS



**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 2**



PLOT 1



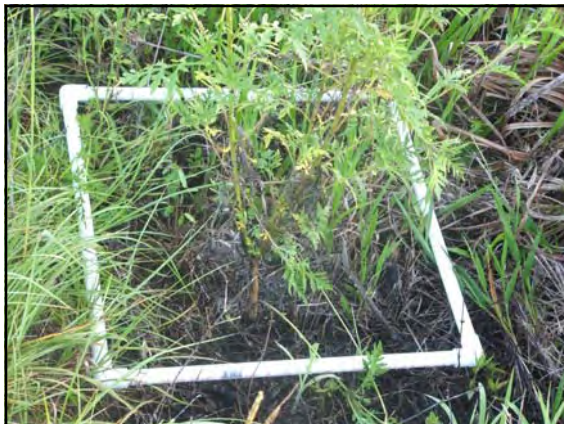
PLOT 2



PLOT 3



PLOT 4



PLOT 5



PLOT 6

**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 2**



PLOT 7



PLOT 8



PLOT 9



PLOT 10



PLOT 11

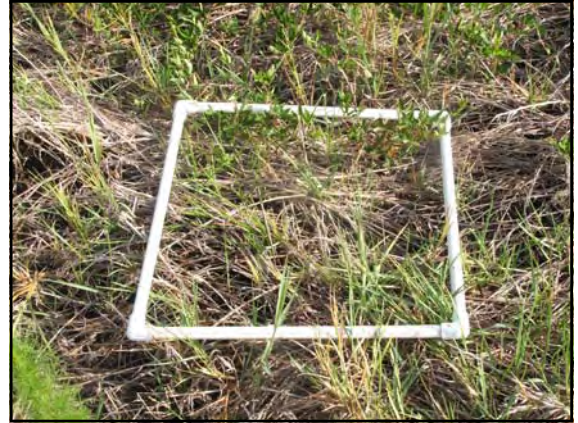


PLOT 12

**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 2**



PLOT 13



PLOT 14

SITE 3- YOUNGQUIST

Narrative

Site 3 (508 acres) is located in Township 46N, Range 27E (Cell 36 – Corkscrew Regional Ecosystem Watershed Project Ownership). Control efforts in the past consisted primarily of mowing the vegetation.

In summary, 10 random plots were sampled with 9 species occurring within the monitored plots. The dominant species on the site was ragweed (*Ambrosia artemisiifolia*) with a significant increase in coverage from 29% in Spring 2008 to 67% coverage in the 2009 Spring monitoring period. Another prevalent species during the 2009 site visit was sensitive pea (*Chamaecrista nictitans* var.) at 12%. No species were found in the submerged, sapling/vine, and overstory layers and they were all classified as 100% open/void.

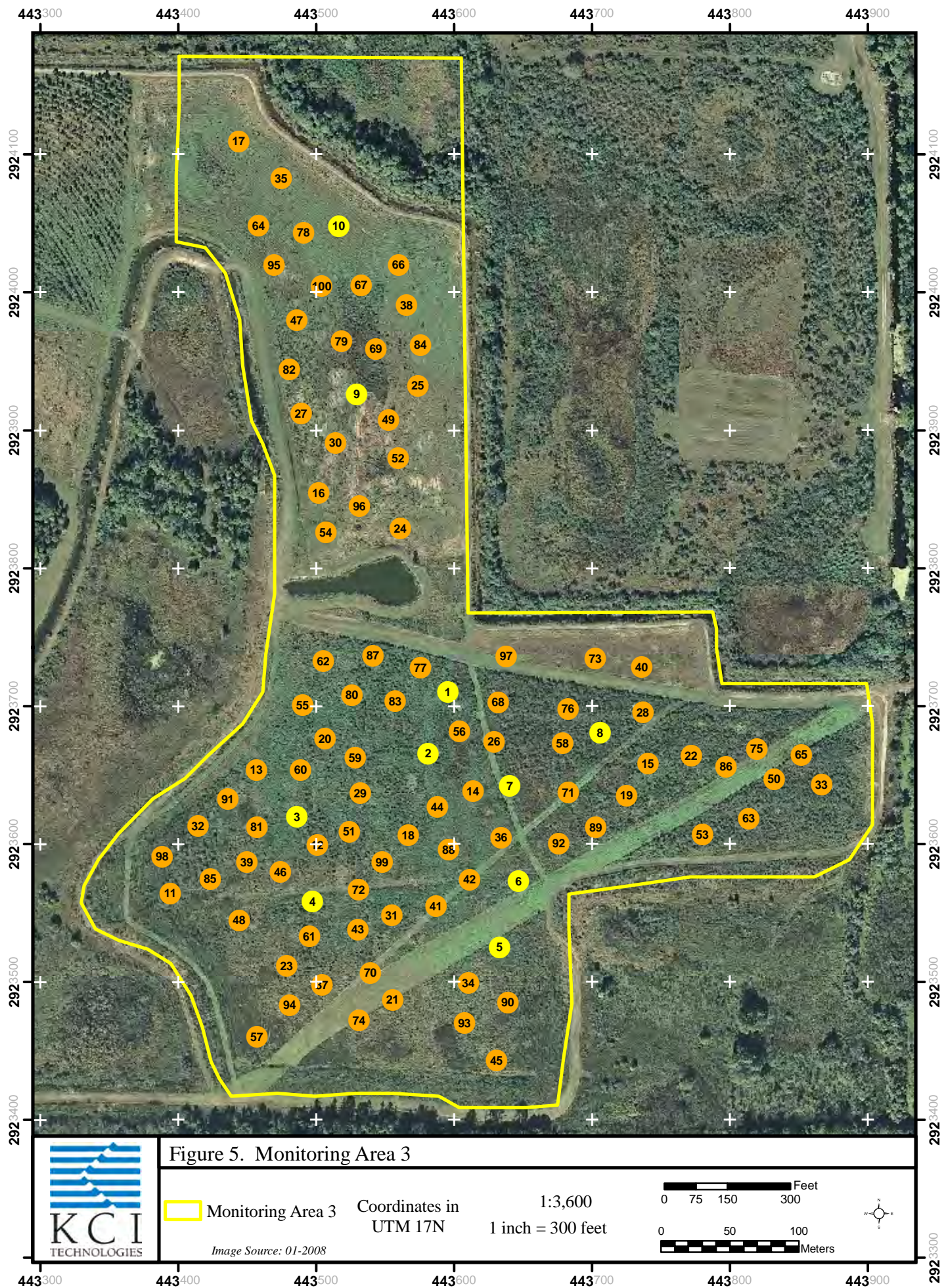
The site was seeded in December 2002 with a mixture of flatwood species. During the Spring 2009 site visit, none of the seeded species were found in the monitored plots

Planted Species by N. Bisset

Species (Common Name)	Scientific Name	Observed
Wiregrass	<i>Aristida stricta</i>	
Lopsided Indiangrass	<i>Sorgastrum secundum</i>	
Lovegrasses	<i>Eragrostis spp.</i>	
Bluestems	<i>Andropogon spp.</i>	
Blazing Star	<i>Liatris spp.</i>	
Elephant's Foot	<i>Elephantopus elatus</i>	
Thoroughworts	<i>Eupatorium rotundifolium</i>	
Silver-Leaved Aster	<i>Pityopsis graminifolia</i>	
Tickseed	<i>Coreopsis leavenworthii</i>	

Additional observations from July 12, 2009 monitoring

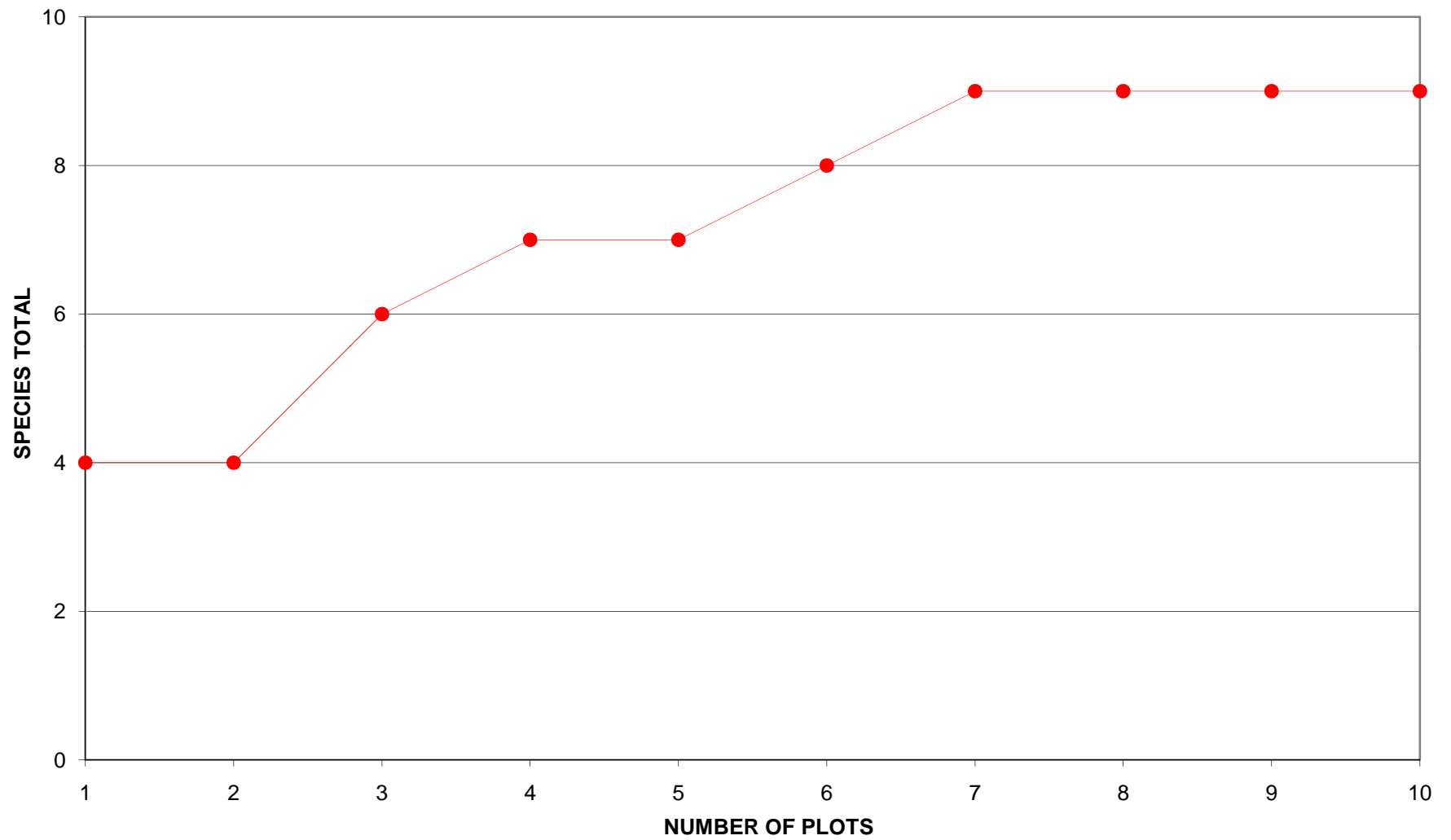
The soil was dry and sandy and the site had no standing water except for the pond observed in the middle of the site. The site does not show a large diversity of species; ragweed dominated the entire site with extensive dominance in the northern portion of the site. Both eastern baccharis (*Baccharis halimifolia*) and Peruvian primrosewillow (*Ludwigia peruviana*) declined from the Spring 2008 monitoring period.



SITE 3 - YOUNGQUIST MONITORING PLOTS

Sampling Points												
Common Name	Scientific Name	1	2	3	4	5	6	7	8	9	10	Cum %
Ragweed	<i>Ambrosia artemisiifolia</i>	35%	50%	75%	85%	95%	55%	70%	60%	50%	95%	67%
Knotroot foxtail	<i>Setaria geniculata</i>	40%					25%					7%
Turkey Tangle Fogfruit	<i>Phyla nodiflora</i>	15%	30%	5%	5%		10%	5%				7%
Peruvian Primrosewillow*	<i>Ludwigia peruviana</i>	10%	10%	5%								3%
Sensitive Pea	<i>Chamaecrista nictitans</i> var.			5%		5%	5%	10%	40%	50%	5%	12%
Zarabacoa Comun (Begga	<i>Desmodium incanum</i>			10%								1%
Dog Fennel	<i>Eupatorium capillifolium</i>				5%							1%
Caesar Weed*	<i>Urena lobata</i>						5%					1%
Slim Bluestem (Seeded)	<i>Andropogon perangustatus</i>							15%				2%
Dead Biomass	N/A		10%									1%
Open/Void	N/A				5%							1%
	Total Percentage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
*exotic species												
+seeded species												

SITE 3 - YOUNGQUIST MONITORING PLOTS



**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 3**



PLOT 1



PLOT 2



PLOT 3



PLOT 4



PLOT 5



PLOT 6

**SPRING 2009 CORKSCREW MONITORING PHOTOGRAPHS
SITE 3**



PLOT 7



PLOT 8



PLOT 9



PLOT 10

SITE 4- TREE WIZARD

Narrative

Site 4 is located in Township 47N, Range 26E (Cell 34 – Corkscrew Regional Ecosystem Watershed Project Ownership), although Plot 4-4 is located in Township 47N, Range 26E (Cell 35 – Corkscrew Regional Ecosystem Watershed Project Ownership). The site is located directly off of Vincent Road from Bonita Beach Road. The sampling transect starts at Point 4-1 at Vincent Road (GPS Coordinates Latitude 26° 20' 18.57", Longitude 82° 41' 25.17") and continues east approximately 650' to Point 4-4 (GPS coordinates Latitude 26° 20' 18.81", Longitude 82° 41' 19.22") (Figure 6).

The two most dominant species in the herbaceous layer at Site 4 were sand cord grass (*Spartina bakeri*) with 23% coverage followed by turkey tangle fogfruit (*Phyla nodiflora*) with 19% coverage. Knotroot foxtail (*Setaria geniculata*) comprised 11% coverage in the sampled plots. The proportion of exotic species in the herbaceous layer continues to decrease from 26% coverage during the Spring 2008 visit to 10% during the Spring 2009 visit.

The sapling/vine and overstory layers were both 100% open/void respectively.

Observations from July 11, 2009 monitoring

The transect had moist to dry soils during the monitoring visit. The two existing large ponds located in the middle of the transect had standing water.



Figure 6. Monitoring Area 4

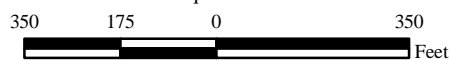


 **Monitoring Transect**



1:4,200

1 inch equals 350 feet



Map created 6/23/2006

Source: USGS DOQQs, 2000

Tree Wizard Monitoring Project - Data Form

TRANSECT / POINT 4-1

STATION 0+00

SUBMERGED AQUATICS		7/11/2009	6/27/2008
Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

HERBACEOUS SPECIES

Common Name	Scientific Name	% Coverage	% Coverage
Paragrass*	<i>Urochloa mutica</i>	0%	0%
Shrubby False Buttonweed*	<i>Spermacoce verticillata</i>	5%	5%
Virginia Buttonweed	<i>Diodia virginiana</i>	0%	0%
Small-Fruit Primrosewillow	<i>Ludwigia microcarpa</i>	0%	0%
Flatsedge	<i>Cyperus</i> sps.	0%	0%
Bushy Bluestem	<i>Andropogon glomeratus</i>	0%	0%
Slim Bluestem	<i>Andropogon perangustatus</i>	0%	0%
Three Angled Spikerush	<i>Eleocharis tricostrata</i>	0%	0%
Southern Bayberry	<i>Myrica cerifera</i>	0%	0%
Bahia Grass*	<i>Paspalum notatum</i>	0%	0%
Lovegrass	<i>Eragrostis</i> spp.	0%	0%
Smut Grass*	<i>Sporobolus indicus</i>	0%	0%
Ragweed	<i>Ambrosia artemisiifolia</i>	5%	5%
Turkey Tangle Fogfruit	<i>Phyla nodiflora</i>	20%	10%
Blue Maiden Cane	<i>Amphicarpum muehlenbergianum</i>	0%	0%
Bermuda Grass*	<i>Cynodon dactylon</i>	0%	0%
Vasey Grass	<i>Paspalum urvillei</i>	0%	0%
Spartina	<i>Spartina</i> Spp.	0%	0%
Florida Spurge	<i>Euphorbia flordiana</i>	0%	0%
Torpedo Grass	<i>Panicum repens</i>	0%	0%
Common Carpetgrass	<i>Axonopus fissifolius</i>	0%	0%
Knotroot Foxtail	<i>Setaria geniculata</i>	10%	10%
Sand Cord Grass	<i>Spartina bakeri</i>	60%	60%
Large-leaved buttonweed	<i>Borreria laevis</i>	0%	0%
Love Vine	<i>Cassytha filiformis</i>	0%	10%
White Twinevine	<i>Sarcostemma clausum</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Dead Biomass	N/A	0%	0%
Open/Void	N/A	0%	0%
TOTAL		100%	100%

SAPLING / VINE

Common Name	Scientific Name	% Coverage	% Coverage
Bald Cypress	<i>Taxodium distichum</i>	0%	0%
Slash Pine	<i>Pinus elliotii</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Open/Void	N/A	100%	100%
TOTAL		100%	100%

OVERSTORY

Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

NOTES: _____

Water Level / Soil Moisture _____

Aquatic Macrofauna _____

Wildlife Indicators (tracks, scat, nests) _____



Spring 2009



Spring 2008

Tree Wizard Monitoring Project - Data Form

TRANSECT / POINT 4-2

STATION 2+15

SUBMERGED AQUATICS		7/11/2009	6/27/2008
Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

HERBACEOUS SPECIES			
Common Name	Scientific Name	% Coverage	% Coverage
Paragrass*	<i>Urochloa mutica</i>	0%	0%
Shrubby False Buttonweed*	<i>Spermacoce verticillata</i>	20%	10%
Virginia Buttonweed	<i>Diodia virginiana</i>	0%	0%
Small-Fruit Primrosewillow	<i>Ludwigia microcarpa</i>	0%	0%
Flatsedge	<i>Cyperus</i> spp.	0%	0%
Bushy Bluestem	<i>Andropogon glomeratus</i>	0%	25%
Slim Bluestem	<i>Andropogon perangustatus</i>	0%	0%
Three Angled Spikerush	<i>Eleocharis tricostrata</i>	0%	0%
Southern Bayberry	<i>Myrica cerifera</i>	0%	0%
Bahia Grass*	<i>Paspalum notatum</i>	0%	0%
Lovegrass	<i>Eragrostis</i> spp.	0%	0%
Smut Grass*	<i>Sporobolus indicus</i>	0%	25%
Ragweed	<i>Ambrosia artemisiifolia</i>	0%	0%
Turkey Tangle Fogfruit	<i>Phyla nodiflora</i>	35%	30%
Blue Maiden Cane	<i>Amphicarpum muehlenbergianum</i>	0%	0%
Bermuda Grass*	<i>Cynodon dactylon</i>	0%	0%
Vasey Grass	<i>Paspalum urvillei</i>	0%	0%
Spartina	<i>Spartina</i> Spp.	0%	0%
Florida Spurge	<i>Euphorbia flordiana</i>	0%	0%
Torpedo Grass	<i>Panicum repens</i>	0%	0%
Common Carpetgrass	<i>Axonopus fissifolius</i>	0%	0%
Knotroot foxtail	<i>Setaria geniculata</i>	15%	10%
Sand Cord Grass	<i>Spartina bakeri</i>	15%	0%
Large-leaved buttonweed	<i>Borreria laevis</i>	0%	0%
Love Vine	<i>Cassytha filiformis</i>	0%	0%
White Twinevine	<i>Sarcostemma clausum</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	5%	0%
Dead Biomass	N/A	10%	0%
Open/Void	N/A	0%	0%
TOTAL		100%	100%

SAPLING / VINE			
Common Name	Scientific Name	% Coverage	% Coverage
Bald Cypress	<i>Taxodium distichum</i>	0%	0%
Slash Pine	<i>Pinus elliotii</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Open/Void	N/A	100%	100%
TOTAL		100%	100%

OVERSTORY			
Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

NOTES: _____

Water Level / Soil Moisture _____

Aquatic Macrofauna _____

Wildlife Indicators (tracks, scat, nests) _____



Spring 2009



Spring 2008

Tree Wizard Monitoring Project - Data Form

TRANSECT / POINT 4-3

STATION 4+30

SUBMERGED AQUATICS		7/11/2009	6/27/2008
Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

HERBACEOUS SPECIES

Common Name	Scientific Name	% Coverage	% Coverage
Paragrass*	<i>Urochloa mutica</i>	0%	0%
Shrubby False Buttonweed*	<i>Spermacoce verticillata</i>	0%	15%
Virginia Buttonweed	<i>Diodia virginiana</i>	0%	0%
Small-Fruit Primrosewillow	<i>Ludwigia microcarpa</i>	0%	0%
Flatsedge	<i>Cyperus</i> spp.	0%	0%
Bushy Bluestem	<i>Andropogon glomeratus</i>	0%	0%
Slim Bluestem	<i>Andropogon perangustatus</i>	0%	0%
Three Angled Spikerush	<i>Eleocharis tricostrata</i>	0%	0%
Southern Bayberry	<i>Myrica cerifera</i>	0%	0%
Bahia Grass*	<i>Paspalum notatum</i>	0%	0%
Lovegrass	<i>Eragrostis</i> spp.	0%	0%
Smut Grass*	<i>Sporobolus indicus</i>	0%	0%
Ragweed	<i>Ambrosia artemisiifolia</i>	0%	0%
Turkey Tangle Fogfruit	<i>Phyla nodiflora</i>	20%	35%
Blue Maiden Cane	<i>Amphicarpum muehlenbergianum</i>	0%	0%
Bermuda Grass*	<i>Cynodon dactylon</i>	0%	0%
Vasey Grass	<i>Paspalum urvillei</i>	0%	0%
Spartina	<i>Spartina</i> Spp.	0%	0%
Florida Spurge	<i>Euphorbia flordiana</i>	0%	0%
Torpedo Grass	<i>Panicum repens</i>	50%	20%
Common Carpetgrass	<i>Axonopus fissifolius</i>	15%	10%
Knotroot Foxtail	<i>Setaria geniculata</i>	0%	20%
Sand Cord Grass	<i>Spartina bakeri</i>	15%	0%
Large-leaved buttonweed	<i>Borreria laevis</i>	0%	0%
Love Vine	<i>Cassytha filiformis</i>	0%	0%
White Twinevine	<i>Sarcostemma clausum</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Dead Biomass	N/A	0%	0%
Open/Void	N/A	0%	0%
TOTAL		100%	100%

SAPLING / VINE

Common Name	Scientific Name	% Coverage	% Coverage
Bald Cypress	<i>Taxodium distichum</i>	0%	0%
Slash Pine	<i>Pinus elliotii</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Open/Void	N/A	100%	100%
TOTAL		100%	100%

OVERSTORY

Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

NOTES: *Exotic Species

Water Level / Soil Moisture _____

Aquatic Macrofauna _____

Wildlife Indicators (tracks, scat, nests) _____



Spring 2009



Spring 2008

Tree Wizard Monitoring Project - Data Form

TRANSECT / POINT 4-4

STATION 6+45

SUBMERGED AQUATICS		7/11/2009	6/27/2008
Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

HERBACEOUS SPECIES

Common Name	Scientific Name	% Coverage	% Coverage
Paragrass*	<i>Urochloa mutica</i>	0%	0%
Shrubby False Buttonweed*	<i>Spermacoce verticillata</i>	0%	0%
Virginia Buttonweed	<i>Diodia virginiana</i>	0%	0%
Small-fruit Primrosewillow	<i>Ludwigia microcarpa</i>	0%	0%
Flatsedge	<i>Cyperus</i> spp.	0%	0%
Bushy Bluestem	<i>Andropogon glomeratus</i>	0%	0%
Slim Bluestem	<i>Andropogon perangustatus</i>	0%	0%
Three Angled Spikerush	<i>Eleocharis tricostrata</i>	0%	0%
Southern Bayberry	<i>Myrica cerifera</i>	0%	0%
Bahia Grass*	<i>Paspalum notatum</i>	0%	0%
Lovegrass	<i>Eragrostis</i> spp.	0%	0%
Smut Grass*	<i>Sporobolus indicus</i>	0%	0%
Ragweed	<i>Ambrosia artemisiifolia</i>	35%	0%
Turkey Tangle Fogfruit	<i>Phyla nodiflora</i>	0%	0%
Blue Maiden Cane	<i>Amphicarpum muehlenbergianum</i>	0%	0%
Bermuda Grass*	<i>Cynodon dactylon</i>	15%	50%
Vasey Grass	<i>Paspalum urvillei</i>	0%	0%
Spartina	<i>Spartina</i> Spp.	0%	0%
Florida Spurge	<i>Euphorbia flordiana</i>	0%	0%
Torpedo Grass	<i>Panicum repens</i>	0%	0%
Common Carpetgrass	<i>Axonopus fissifolius</i>	0%	0%
Knotroot Foxtail	<i>Setaria geniculata</i>	20%	20%
Sand Cord Grass	<i>Spartina bakeri</i>	0%	0%
Large leaved buttonweed	<i>Borreria laevis</i>	0%	0%
Love Vine	<i>Cassytha filiformis</i>	0%	0%
White Twinevine	<i>Sarcostemma clausum</i>	0%	5%
Dahoon	<i>Ilex cassine</i>	0%	0%
Dead Biomass	N/A	30%	0%
Open/Void	N/A	0%	25%
TOTAL		100%	100%

SAPLING / VINE

Common Name	Scientific Name	% Coverage	% Coverage
Bald Cypress	<i>Taxodium distichum</i>	0%	0%
Slash Pine	<i>Pinus elliotii</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Open/Void	N/A	100%	100%
TOTAL		100%	100%

OVERSTORY

Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

NOTES: *Exotic Species

Water Level / Soil Moisture _____

Aquatic Macrofauna _____

Wildlife Indicators (tracks, scat, nests) _____



Spring 2009



Spring 2008

Tree Wizard Monitoring Project - Summary Sheet

TRANSECT / POINT 4

Total Length 650'

SUBMERGED AQUATICS

7/11/2009

6/27/2008

Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

HERBACEOUS SPECIES

Common Name	Scientific Name	% Coverage	% Coverage
Paragrass*	<i>Urochloa mutica</i>	0%	0%
Shrubby False Buttonweed*	<i>Spermacoce verticillata</i>	6%	8%
Virginia Buttonweed	<i>Diodia virginiana</i>	0%	0%
Small-Fruit Primrosewillow	<i>Ludwigia microcarpa</i>	0%	0%
Flatsedge	<i>Cyperus</i> spp.	0%	0%
Bushy Bluestem	<i>Andropogon glomeratus</i>	0%	6%
Slim Bluestem	<i>Andropogon perangustatus</i>	0%	0%
Three Angled Spikerush	<i>Eleocharis tricostrata</i>	0%	0%
Southern Bayberry	<i>Myrica cerifera</i>	0%	0%
Bahia Grass*	<i>Paspalum notatum</i>	0%	0%
Lovegrass	<i>Eragrostis</i> spp.	0%	0%
Smut Grass*	<i>Sporobolus indicus</i>	0%	6%
Ragweed	<i>Ambrosia artemisiifolia</i>	10%	1%
Turkey Tangle Fogfruit	<i>Phyla nodiflora</i>	19%	19%
Blue Maiden Cane	<i>Amphicarpum muehlenbergianum</i>	0%	0%
Bermuda Grass*	<i>Cynodon dactylon</i>	4%	13%
Vasey Grass	<i>Paspalum urvillei</i>	0%	0%
Spartina	<i>Spartina</i> Spp.	0%	0%
Florida Spurge	<i>Euphorbia floridiana</i>	0%	0%
Torpedo Grass	<i>Panicum repens</i>	13%	5%
Common Carpetgrass	<i>Axonopus fissifolius</i>	4%	3%
Knotroot Foxtail	<i>Setaria geniculata</i>	11%	15%
Sand Cord Grass	<i>Spartina bakeri</i>	23%	15%
Large leaved buttonweed	<i>Borreria laevis</i>	0%	0%
Love Vine	<i>Cassytha filiformis</i>	0%	3%
White Twinevine	<i>Sarcostemma clausum</i>	0%	1%
Dahoon	<i>Ilex cassine</i>	1%	0%
Dead Biomass	N/A	10%	0%
Open/Void	N/A	0%	6%
TOTAL		100%	100%
*Exotic Species Percent		10%	26%

SAPLING / VINE

Common Name	Scientific Name	% Coverage	% Coverage
Bald Cypress	<i>Taxodium distichum</i>	0%	0%
Slash Pine	<i>Pinus elliotii</i>	0%	0%
Dahoon	<i>Ilex cassine</i>	0%	0%
Open/Void	N/A	100%	100%
TOTAL		100%	100%
Exotic Species Percent		0%	0%

OVERSTORY

Common Name	Scientific Name	% Coverage	% Coverage
Open/Void	N/A	100%	100%
TOTAL		100%	100%

NOTES: *Exotic Species

Water Level / Soil Moisture

Aquatic Macrofauna

Wildlife Indicators (tracks, scat, nests)



Exotic Species were determined from the following references:

Wunderlin, R. P., and B. F. Hansen. 2003. Atlas of Florida Vascular Plants (<http://www.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

RAINFALL DATA 2008-2009

**Monthly Precipitation
FT MYERS PAGE FIELD
August 2008 - July 2009**

