Florida Department of Environmental Protection



Florida Park Service



Doing Things Differently:

Tracking Invasive Exotic Plants in the Florida Park Service

21 May 2013













The Big Picture

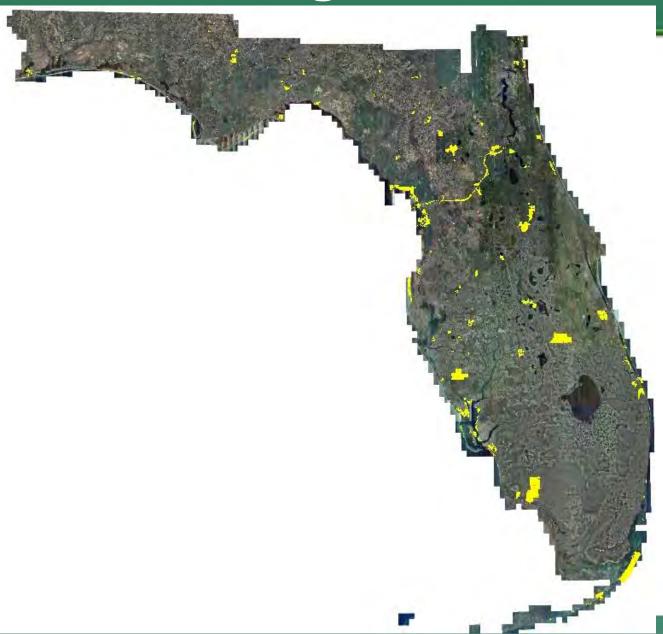


- 171 State Parks and Trails across 5 Districts
- ~785,000 Acres
- Almost all FNAI Natural Communities are represented
- 94% of Florida's rarest species and natural community types are represented
- Annual visitation ~25 million



The Big Picture







The Big Picture



Florida Park Service Mission Statement:

Provide resource-based recreation while preserving, interpreting and restoring natural and cultural resources.





- For many years we collected information on "acres treated"
 - Inconsistent system of counting stems and acres
 - Numbers were converted to summarize statewide accomplishments
 - Used MS Excel Spreadsheets
- No state-wide information collected on the extent of the problem (no standardized surveys)

7/3/2013





DI I				Sep	Oct	-Dec	Jan	-Mar	Apr	-Jun	
Big Lagoon Common name	Scientific name	EPPC	Acres			Treated	100000	Treated	Acres	Treated 250	Tota 29,250
Cogon grass Chinese tallow tree Moss verbena Pampas grass	Imperata cylindrica Sapium sebiferum Glandularia pulchella Cortaderia selloana	Category I I n/a n/a	acres	stems	acres	stems	acres	stems	1.000 18.000 0.250 10.000	76 64	
Blackwater River		EPPC	Acres	reated	Acres	Treated	Acres	Treated	The second secon	Treated 000	Total 4.000
Common name Cogon grass Japanese climbing fern Japanese honeysuckle	Scientific name Imperata cylindrica Lygodium japonicum Lonicera japonica	Category I I I	acres	stems	acres	stems	acres	stems	acres 3,500 0,250 0,250	stems	1.500
Falling Waters	Tables V.	EPPC	Acres 37.		The second secon	Freated 000	Acres	Treated		Treated	Total 102,000
Common name Japanese climbing fern Chinese privet Showy rattlebox Cogon grass Mimosa	Scientific name Lygodium japonicum Ligustrum sinense Crotalaria spectabilis Imperata cylindrica Albizia julibrissin	Category I I n/a I I	acres 35.500 0.500	stems 8 25	acres 42.000 23.000 4.000	stems 52	acres	stems	acres	stems	
Florida Caverns		EPPC	Acres	reated	Acres	Freated	Acres	Treated	The latest of the same of	Treated 100	Total 0.100
Common name Nandina Chinese privet	Scientific name Nandina domestica Ligustrum sinense	Category I I	acres	stems	acres	stems	acres	stems	acres	stems	0.100
Grayton Beach		EPPC	Acres	reated	Acres 0.0	Freated 10	Acres	Treated		Treated 200	Total 0.210
Common name Chinese tallow tree Cogon grass	Scientific name Sapium sebiferum Imperata cylindrica	Category I I	acres	siems	acres	stems 10	acres	stems	acres 0.200	stems	





- In 2009 we began to "Raise the Bar" for exotic plant data management
 - Established a state-wide committee of FPS staff stake-holders
 - Determined what our needs and resources were
 - Reviewed existing products and methods
- Ultimately decided that we need to develop our own product and protocol





- Compliant with NAWMA Mapping Standards
- Based on FNAI's methods with significant differences:
 - Multiple species per infestation
 - Not GIS or GPS dependant
- When is an Acre Infested?, Frank Price (FNAI)
 - Wildland Weeds, Spring 2009
- Infested Area = Gross Area x Midpoint of Cover Class
- MS Access as database platform





- Feb 2010 survey protocol implemented
- May 2010 database opens for entering Survey Records
- July 2011 database opens for setting Annual Treatment Goals
- Aug 2011 database opens for entering Treatment Records





Spatial Distribution – Management Zones in GIS

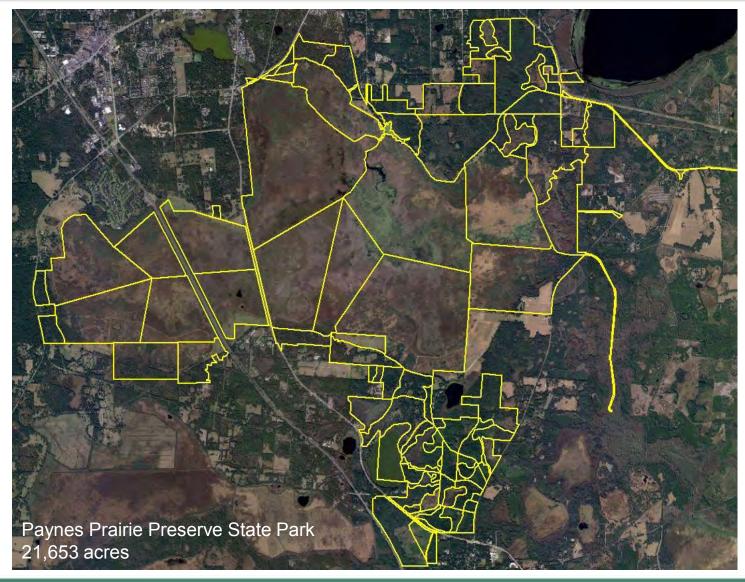






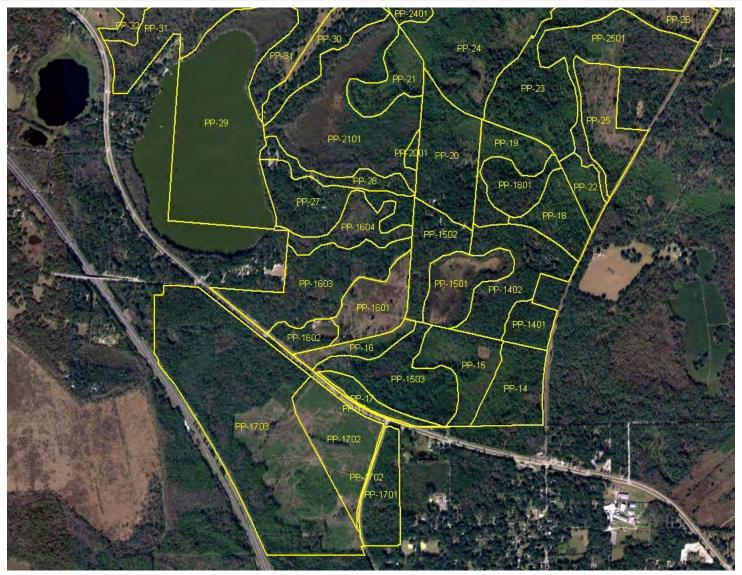














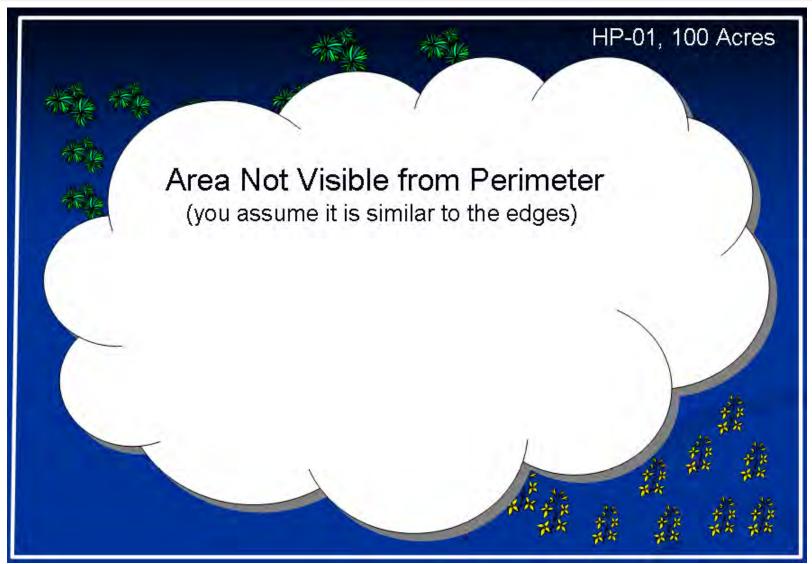


- Baseline Surveys
 - Every Management Zone has one or more Survey Records:
 - No Infestation Record (exotic free)
 - Broad Survey
 - Specific Survey(s) of one or more Infestation Areas
 - Core Information:
 - Species
 - Gross Area
 - Cover Class
 - Infested Area
 - calculated by database
 - = Gross Area x midpoint of Cover Class

7/3/2013

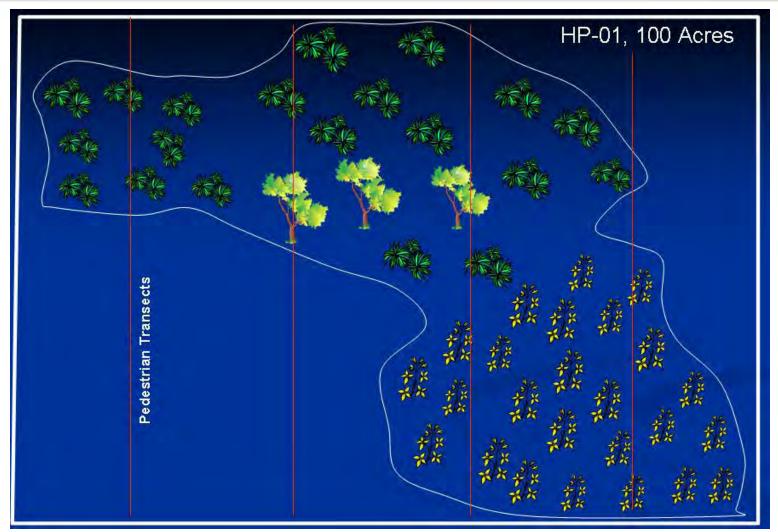






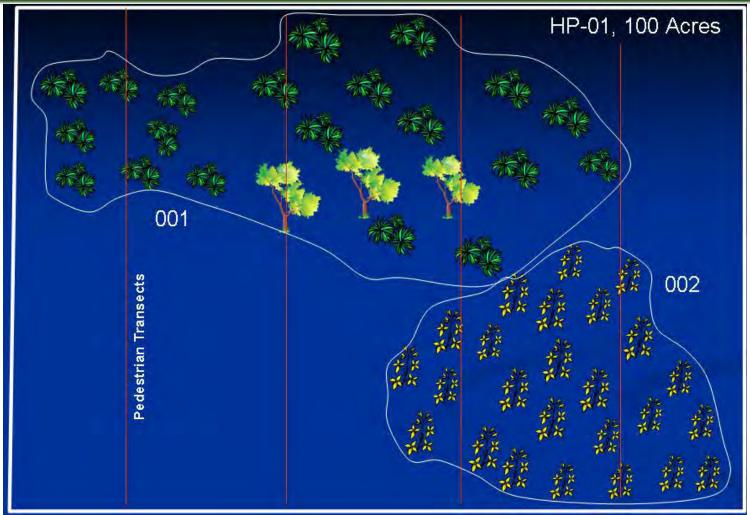
















Baseline Surveys

- Every Management Zone has one or more Survey Records:
 - No Infestation Record
 - Broad Survey of one Infestation Area
 - Specific Survey(s) of one or more Infestation Areas
- Core Information:
 - Species
 - Gross Area
 - Cover Class*
 - Infested Area (calculated by database)





Cover Classes

Cover Class	Range of Percent Cover	Midpoint of Pango
Class	Percent Cover	Midpoint of Range
0	0%	0%
1	1% - 5%	3.0%
2	6% - 25%	15.5%
3	26% - 50%	38.0%
4	51% - 75%	63.0%
5	76% - 95%	85.5%
6	96% - 100%	98.0%

7/3/2013





□ New Surveys	
Create New Survey Record	
Park: Paynes Prairie Abbreviation PP	7
Mng Zone: PP-1103 Zone Acres 138.33	_
Infestation Area: PP-1103-001	- metolAs
At time of survey was Area PP-1103-001 in maintenance?	No
Survey Date: SurveyType: Surveyor: Current Record:	_NO
5/1/2013 Broad ▼ G. Walker PP-1103-001	
Gross Area (acres): 138.3300	
Cover Class: I ▼ Infested Area (acres) 4.1499	
PestPlants - One, and only one, must be dominant; Distribution code needed on all.	
Species Dominant Greatest Concern Distribution	ition:
	2
cogon grass - Imperata cylindrica	3
*	_
Survey Notes - Max 65K characters; ctrl-Enter creates a new paragraph.	
Next Step	
- Create another new record (saves any carrent data show	u may
Cancel/Clear all fields (deletes survey data. Inf Area saved.)	ve to
Return (saves any current data shown in center section)	ess OK
If you're trying to close this form and get "must enter value", just keep clicking OK until close	ed.
Record: I I I I I I I I I I I I I I I I I I I	





All Surveys Report

In Maint	t Survey Date Survey Type		Gross Area	CoverClass Infested Are		Survey Notes	Surveyo
	Dom./Concer		ScientificName - C	ommonName	FLE P Category	Distribution	
	☑ Greatest Concern	⊻ Dominant	Imperata cylindric	cogon grass	I	3	Weimer
	☐ Greatest Concern	☐ Dominant	Ardisia crenata	coral ardisia	I	2	
PP-1102	2.84 acres						
PP-1102-00	1	Latitude/Longitude:					
🗆 In Maint	5/1/2010	Broad	2.84	2	0.4402		
	☑ Greatest Concern	☑ Dominant	Colocasia esculent	wild taro	1	3	Weimer
	Greatest Concern	☐ Dominant	Ardisia crenata	coral ardisia	ı	2	
	☐ Greatest Concern	☐ Dominant	Hydrillaverticillata	hydrilla	I	2	
PP-1103	138.33 acres						
PP-1103-00	1	Latitude/Longitude:					
✓ In Maint	5/1/2013	Broad	138.33	1	4.1499		
	☑ Greatest Concern	☑ Dominant	Sapium sebiferum	Chinese tallow tre	e I	2	G. Walker
	☑ Greatest Concern	☐ Dominant	Imperata cylindric	cogon grass	I	3	
☐ In Maint	5/1/2010	Broad	138.176	1	4.1453		
	☐ Greatest Concern	☑ Dominant	Ardisia crenata	coral ardisia	I	3	Weimer
PP-1104	113.52 acres						
PP-1104-00	1	Latitude/Longitude:					
☐ In Maint	5/1/2010	Broad	113.43	1	3.4029		
	☐ Greatest Concern	☑ Dominant	Ardisia crenata	coral ardisia		3	Weimer





Current Conditions Summary Report

Park Summary of Current Conditions

as of 5/15/2013

All Species

Management Zone	Total Acreages	In Maintenance Acres (%)		Gross Area	Infested Area	Number of Inf. Areas
PP-1	812.69	0	(0.0%)	812.68	24.38	1
PP-10	1,057.12	0	(0.0%)	1,05711	31.71	1
PP-1001	124.58	2	(1.8%)	122.40	3.67	1
PP-101	64.41	0	(0.0%)	64.40	1.93	1
PP-11	544.92	0	(0.0%)	544.92	16.35	1
PP-1101	68.86	0	(0.0%)	68.83	2.06	1
PP-1102	2.84	0	(0.0%)	2.84	0.44	1
PP-1103	138.33	138	(100.0%)	138.33	4.15	1
PP-1104	113.52	0	(0.1%)	113.43	3.40	1
PP-1105	33.82	0	(-0.6%)	34.01	1.02	1
PP-12	1,734.35	0	(0.0%)	1,734.35	52.03	1





Current Conditions Summary Report

Management Zone	Total Acreages	In Mainten Acres (9		Gross Area	Infested Area	Number of Inf. Areas
PP-38	182.60	0	(0.0%)	182.60	5.48	1
PP-39	49.37	49	(100.0%)	0.00	0.00	0
PP-4	380.94	0	(0.0%)	380.94	11.43	1
PP-40	25.75	26	(100.0%)	0.00	0.00	0
PP-41	47.71	0	(0.2%)	47.62	1.43	1
PP-42	84.67	0	(0.1%)	84.62	2.54	1
PP-5	498.16	7	(1.4%)	491.15	14.73	1
PP-6	639.88	0	(0.0%)	639.87	19.20	1
PP-601	14.72	0	(0.0%)	14.72	2.28	1
PP-7	686.65	0	(0.0%)	686.65	20.60	1
PP-8	1,703.55	0	(0.0%)	1,703.55	51.11	1
PP-801	605.99	-3	(-0.6%)	609.48	19.56	4
PP-802	145.00	0	(0.0%)	145.00	4.35	1
PP-803	25.32	0	(0.0%)	25.33	0.76	1
PP-804	169.25	0	(0.0%)	169.25	5.08	1
PP-805	186.94	0	(0.0%)	186.93	5.61	1
PP-806	98.11	10	(10.1%)	88.24	2.65	1
PP-807	1.49	0	(-0.5%)	150	0.23	1
PP-9	2,135.68	0	(0.0%)	2,135.68	64.07	1
Paynes Prairie	21,678.97	2,686	(12.4%)	19,131.09	577.59	64



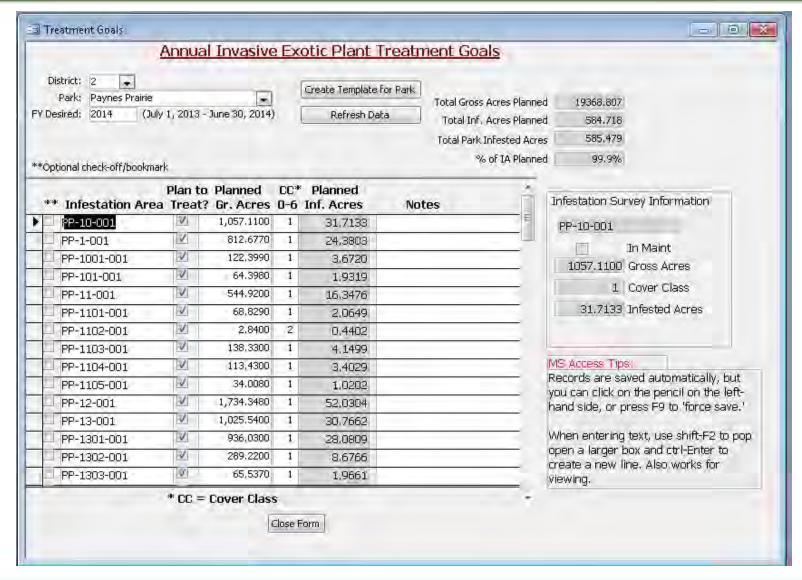


- Entering Annual Treatment Goals
 - Park Managers (or assignee) establish Annual Treatment Goal Prior to July1
 - Division measure is in Infested Acres (not Gross Acres)

7/3/2013











- Entering Exotic Plant Treatments
 - Tied to a Recorded Infestation Area
 - Similar Core Information
 - Gross Area Treated
 - Cover Class of <u>Species</u> Treated*
 - Optional Information





All Entries Don	e Add And	ther TRE	ATMENT	PROJECT	Record ID					
		Da	ta Entry N	Mode	10044	searching change 'M	. Press ctrl-F. 1atch' to either	your cursor in th Enter the search 'Start of Field' SE: Record ID,	n term and or 'Any part o	
Park:	Paynes Prairie		▼							
Treatment Date:	5/10/2013						Find N	lext		
Applicator Type:	PWC-IPM CODE DRP Control DRP Staff/ Other		eri Corps			pencil on Pressing ' adding/ed When ent	the left-hand s Esc' twice ofte liting the main ering text, use	shift-F2 to pop) to 'force save r entries wher open a larger	e.' n · box
Applicator Name:	G. Walker		Contr	actor name or sto	aff/vol name	and ctrl-E while read		a new line. Shfl	:-F2 also work	(S
Herbicide Bank?						Wille rea	allig.			
Notes:										
Follow Up Date:		[Optional]								
Inf.	Treated	Inf.	Create	📥 Active Inf. A	Area PP-1103	-001				
Area	Gross Acre	s Information	New Surv	Species		Cover Class*	Inf. Acres	Opt'l Info	Notes	_
PP-1103-001	4.5	5 Inf.	New Surv	Chinese t	allow tree	▼ I	0.1350	Opt'l		
*	-	Inf.	New Surv	cogon gra	ss	▼ II	0.6975	Opt'l		
				•		-	0.0000	Opt'l		
				•	Total o	f Inf. Acres:	0.8325			+
•	111		+	4		111				F
Use scroll bars to	o continue ente	ring data in sm	all windows	* Cover class	s represents %	6 cover of ea	ch individual	species within	the treated a	area.





Optional Treatment Ir	formation		X					
Optional Info	ormation	Paynes Prairie, PP-1103-001, Chinese tallow tree						
Treatment	Type: Chemical h	ack and squirt						
Ingredients								
Active Ingredient 1:	Triclopyr ester (e 🔻	Active Ingredient 2:	<u>s</u>					
Concentration:	22.0%	Concentration:	0.0%					
	Adjuvant:	Basal Oil	•					
	Concentration:	78.0%						
	lons of Mix Applied:	45						
Hours	Staff:	16						
	Volunteer:	0						
Notes:	AmeriCorps:	32						
1000			- 10					
			Ô					
Clos	e Form	[Esc] twice will undo this recor For Text boxes: Shift-F2 to get a larger pop-up. start a new paragraph. (true for all MS Access text	Ctrl-Enter to					





Treatment Report

Treatments							
Inf Area	Record ID*	Treatment Date	Applicator Type	Gross Area (acres)	Species Treated	Cover Class	Infested Area (acres)
District 2 Paynes Prairie							
PP-1103-001	10044	5/10/2013	Staff	4.5000	Chinese tallow tree cogon grass	II _	0.13500 0.69750 0.83250
PP-13-001	9477	3/19/2013	Staff	3.0000	Japanese climbing fern	III _	1.14000 1.14000
PP-13-001	9474	3/15/2013	Staff	2.0000	camphor-tree coral ardisia glossy privet shrimpplant wandering jew	 	0.64600 0.05100 0.26350 0.26350 0.64600 1.87000
PP-31-001	9473	3/16/2013	Staff	0.1000	coral ardisia	٧ _	0.08550
PP-31-001	9472	3/16/2013	Staff	0.1000	coral ardisia	٧ _	0.08550 0.08550
PP-34-001	9476	3/20/2013	Staff	2.0000	camphor-tree Chinese wisteria	II _	0.31000 0.76000 1.07000
PP-802-001	9462	3/25/2013	Staff	1.9000	coral ardisia hardy orange	_	0.05700 0.05700 0.11400
PP-9-001	9475	3/20/2013	Staff	2.0000	coral ardisia Japanese climbing fern Japanese honeysuckle	 V _	0.06000 0.31000 1.26000 1.63000
Park Totals:				15.6000			6.82750





Infestation Area History Report

Infestation Area History for PP-1103-001

			Su		Treatments				
Date	Gross	Cover	Infested			Greatest	Gross	Cover	Infested
Common Name	Area	Class	Area	Distribution	Dominant	Concern	Area	Class	Area
5/10/2013							4.50		
Chinese tallow tree								1	0.135
cogon grass								П	0.6975
5/1/2013	138.33	1	4.1499						
Chinese tallow tree				2	Yes	Yes			
cogon grass				3	No	Yes			
5/1/2010	138.18	1	4.1453						
coral ardisia				3	Yes	No			





Annual Report

Florida Park Service Invasive Exotic Plants Annual Report - Fiscal Year:July 1, 2012 - June 30, 2013

	5	Summary of Current Conditions / Planning					Accomplish	iments / Infe	ested Area T	reated (acres	s)	
Unit	Total Park Acres	Acres In Maintenance Condition	Gross Area (acres)	Infested Are a (acres)	Treatment Goals (Inf. Area)		Quarter 1 July-Sep	Quarter 2 Oct-Dec	Quarter 3 Jan-Mar	Quarter 4 Apr-Jun	% of Goal Met	Gross Area Worked
Marjorie Kinnan Rawlings	99.630	97.530	26.740	0.162	0.001	3.542	2 0.669	0.001	2.872	0.000	100%	32.842
Mike Roess Gold Head Branch	2,434.700	1,842.350	994.565	29.472	0.525	0.180	0.180	0.000	0.000	0.000	34%	5.000
O'Leno/River Rise	6,197.390	5,835.640	1,422.520	23.203	1.452	4.002	2 3.236	0.766	0.000	0.000	100%	86.590
Olustee Battlefield	617.050	613.933	3.117	0.094	0.008	0.009	9 0.009	0.000	0.000	0.000	100%	3.300
Paynes Prairie	21,678.970	2,154.023	19,368.807	584.718	6.915	82.589	9 24.378	51.384	5.995	0.833	100%	162.733
Pumpkin Hill	4,087.490	3,994.758	34.671	1.515	0.136	0.311	1 0.242	0.000	0.069	0.000	100%	3.319
Rainbow Springs	1,476.240	1,234.529	580.701	40.612	7.207	44.387	7 1.869	29.575	12.942	0.000	100%	615.053
San Felasco Hammock	7,358.700	5,649.180	2,180.379	155.689	28.683	190.257	7 122.526	43.612	21.157	2.963	100%	574.805
Stephen Foster	903.880	672.729	288.541	25.406	1.545	1.721	1 1.000	0.721	0.000	0.000	100%	2.900
Suwannee River	1,935.910	1,423.010	679.450	21.983	1.870	0.664	4 0.484	0.180	0.000	0.000	36%	12.738
Troy Spring	83.540	56.860	56.961	1.735	0.423	0.557	7 0.557	0.000	0.000	0.000	100%	18.510
Waccasassa Bay	34,228.650	34,198.650	70.620	7.539	0.138	0.197	7 0.098	0.099	0.000	0.000	100%	3.400
Wes Skiles Peacock Springs	761.020	277.590	483.430	14.628	0.525	6.390	0.000	6.390	0.000	0.000	100%	106.500
Yellow Bluff Fort	1.730	1.730	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	100%	0.001
Yulee Sugar Mill Ruins	4.600	2.150	2.450	0.931	0.931	0.018	3 0.018	0.000	0.000	0.000	2%	0.600
District 2 Total	129,939.46	100,984.20	32,979.53	2,613.46	100.38	421.56	6 188.35	155.16	60.26	17.79	100%	2,311.16

7/3/2013

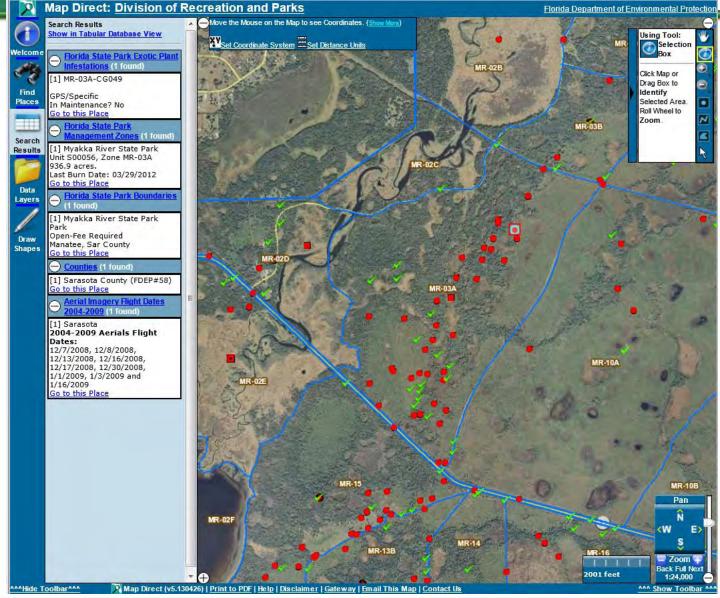




- Mapping Application using FDEP's MapDirect
 - What is FDEP's MapDirect?
 - These layers are also available in ArcGIS







7/3/2013



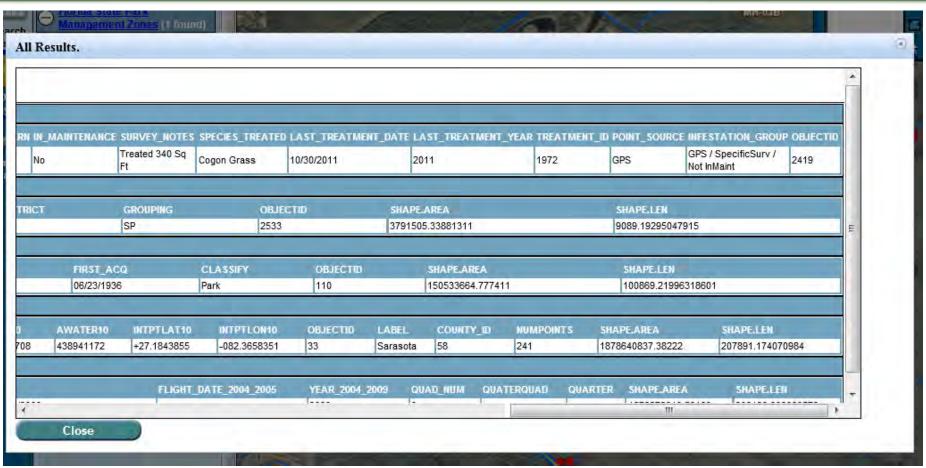




7/3/2013









Is It Working?



The Positive Aspects:

- It is standardized (written protocol)
- We now have a statewide picture of the issue
- We can now address program-wide needs
- It provides flexibility for the user
- Reports are geared towards Division Management as well as local users
- We developed it we can change it



Is It Working?



There are significant challenges:

- Database speed over the network
 - High cost of upgrading to Oracle
- Meeting the needs of hundreds of users & legislation
- Training many users / field staff turnover
- What level of data is "good enough"?
 - Can we measure change over time?
- Gross Area vs. Infested Area confusion
- Achieving "buy-in" from field staff
 - Treatments are part of evaluations but not surveys
- Data hasn't been exported into a global format



On the Cusp of Change?



- We are currently evaluating the entire system
- We have been asked to set Annual Treatment Goals based on "ecological need" and not available resources.

7/3/2013



Questions?







Questions?









Thank You!

Gregg Walker, Natural Resources Specialist
FDEP; Florida Park Service
Bureau of Natural and Cultural Resources
Carr Building; MS 530
3900 Commonwealth Blvd.
Tallahassee, FL 32399
(850) 245-3104
gregory.walker@dep.state.fl.us

