

South Florida  
Water Management District  
&  
Florida Fish and Wildlife Conservation  
Commission

SFWMD: Ellen Donlan, Francois Laroche, LeRoy Rodgers  
FFWCC: Jennifer Ketterlin



2008 Everglades Invasive Species Summit

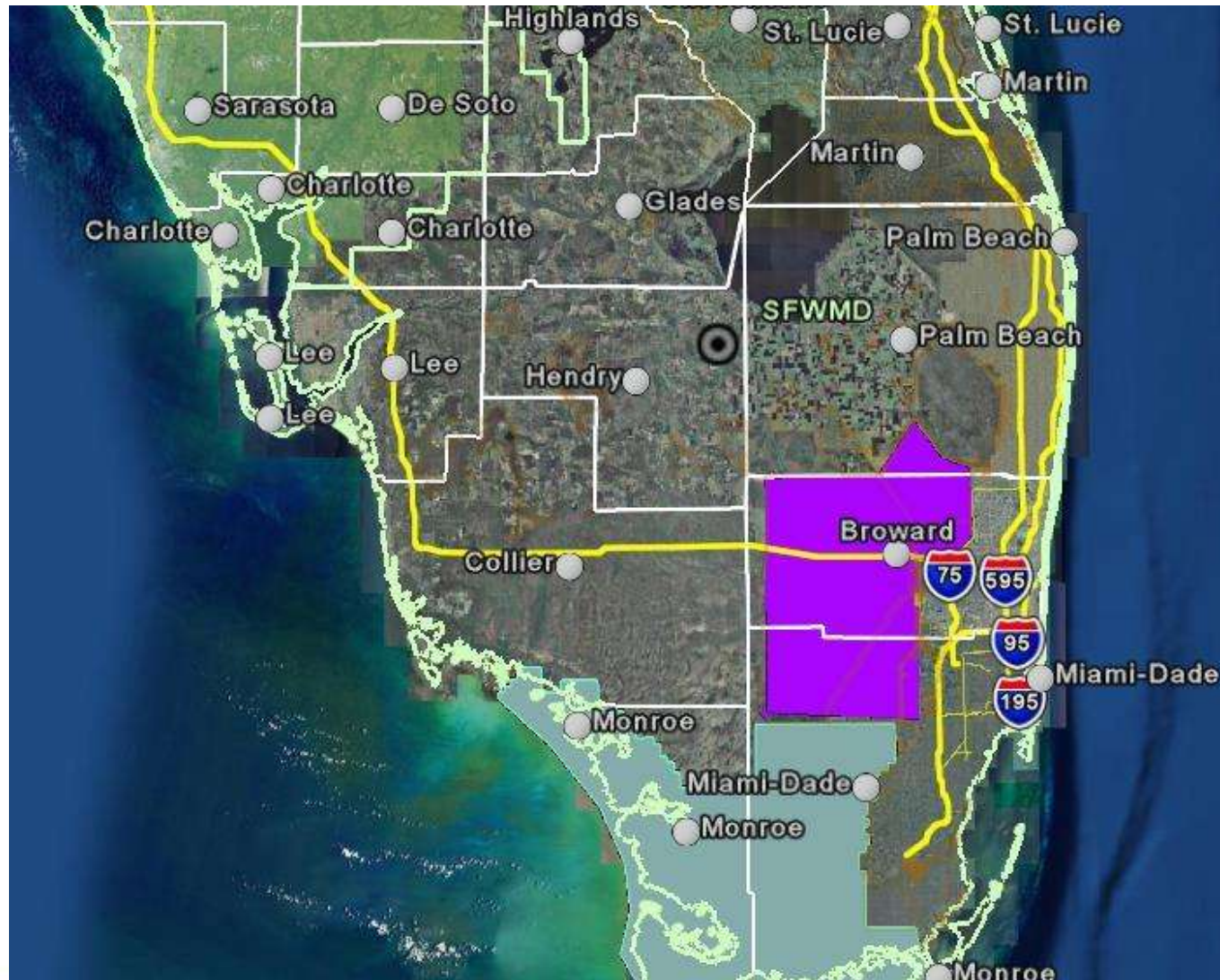
# Invasive Species Programs

## SFWMD

- Invasive species control within the WCAs and Pennsuco
- Description
  - Removal of melaleuca, schinus and lygodium from the marsh and tree islands. Removal of floating and submerged weeds from surrounding canal and levees. Removal of pythons and swamphens.
- Objective
  - Achieve maintenance control
- Partners
  - FDEP, SFWMD, FFWCC
- Start/End Dates
  - Sep 1990 – to today
- Status
  - ongoing
- Funding (FY 2008): DEP, Mitigation, Ad-Valorem
- Annual Summary
  - +/- 14,000 acres of exotic plants and Swamphen removal continues



# Project Area



# Priority Plant Species

- **Priority Plants**

- Melaleuca
- Schinus
- Lygodium
- *Panicum repens*
- *Floating Plants (Hyacinth, Lettuce)*

- **Plants of Concern**

- *Java Plum*
- *Lead tree*
- *Earleaf Acacia*
- *Exotic Grasses (giant reed, Phragmites)*

- **Newly Detected Plant Species**

- Increase in *Senna Pendula*



# Priority Animal Species

- **Priority Animals to control**
  - Python
  - Swampphen
- **Animals of Concern**
  - Iguanas and other burrowing animals



# Monitoring

- SRF maps are used to monitor the WCAs
- Biannual flights by staff
- Weekly site visits to check on contractors
- GPS record of treatment sites; tracked through weedar



## Weedar tracking



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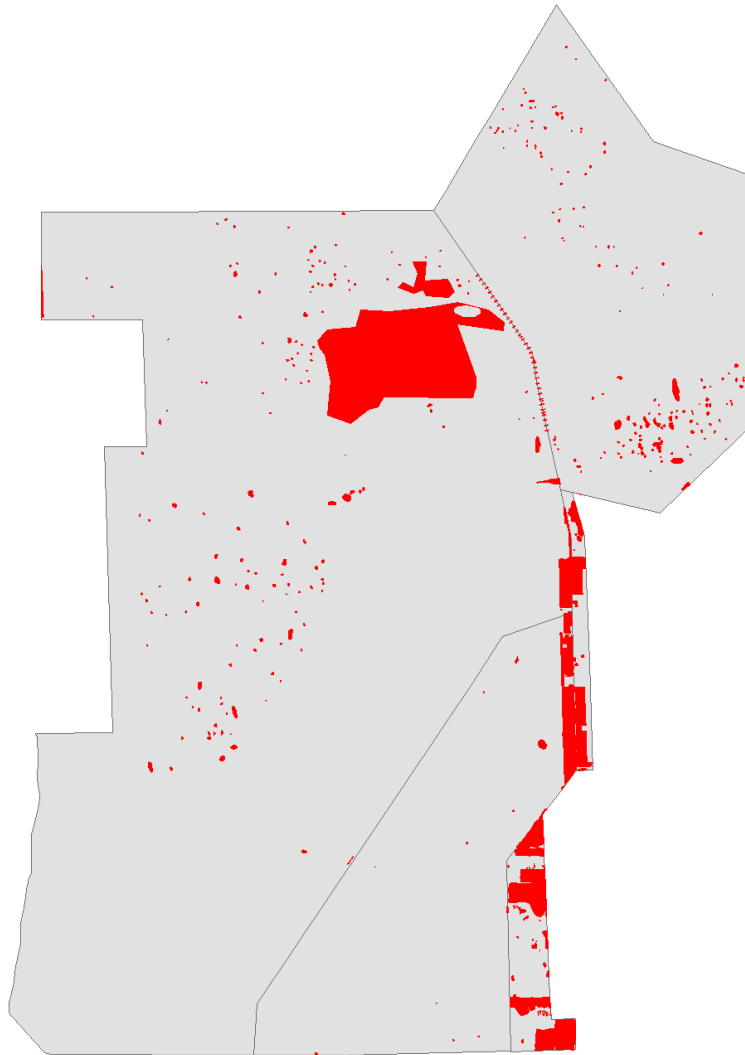
**Plant Treated UTM Report**  
For Period: 01-Oct-2007 to 13-Jul-2008

Plant Treated: Brazilian Pepper      Prepared on: Tuesday, July 15, 2008 3:20 PM

Plant Treated - Brazilian Pepper						
Asset SF-205 Wca 2b						
Work Order	Date Sprayed	Zone	Easting	Northing	Acreage	Coverage
4057879	14-NOV-07	17	564288	2899278	50	1T
4057879	21-NOV-07	17	560015	2899905	7	2T
4057879	26-NOV-07	17	559597	2899961	15	1T
4057879	29-NOV-07	17	560241	2899915	40	2T
4057879	03-DEC-07	17	562166	2900204	55	1T
4057879	04-DEC-07	17	564247	2899659	20	1T
4057879	11-JAN-08	17	559609	2899092	30	1T
4075391	06-MAY-08	17	563465	2900037	35	1T
4075391	07-MAY-08	17	563219	2900389	20	
4075391	08-MAY-08	17	555339	2893896	28	
4075391	15-MAY-08	17	555807	2892352	32	
4075391	20-MAY-08	17	555346	2845287	10	

Plant Treated	Asset Location	Treatment Method	Covered	Treated	Cost
Brazilian Pepper	SF-200-L36 -RC1 Reach 1	Foliar Hand Gun	112.00	38.60	\$8,581.55
		Plus: Total District Labor Cost Per Asset			\$350.40
		Total District Vehicle Cost Per Asset			\$0.00
		<b>Sub-Totals Per Asset:</b>	<b>112.00</b>	<b>38.60</b>	<b>\$8,931.95</b>
	SF-202 Wca 3a	Basal	10.00	3.80	\$2,664.60
		Foliar Aerial	800.00	784.00	\$83,673.85
		Plus: Total District Labor Cost Per Asset			\$0.00
		Total District Vehicle Cost Per Asset			\$0.00
		<b>Sub-Totals Per Asset:</b>	<b>810.00</b>	<b>787.80</b>	<b>\$86,338.45</b>
	SF-205 Wca 2b	Cut/Stamp	292.00	20.33	\$18,647.46
		Hand-Pull	80.00	1.50	\$891.00
		Plus: Total District Labor Cost Per Asset			\$0.00
		Total District Vehicle Cost Per Asset			\$0.00
		<b>Sub-Totals Per Asset:</b>	<b>342.00</b>	<b>21.83</b>	<b>\$19,538.46</b>
	SH-800-BIGCAY Biscayne Bay	Basal	26.80	16.36	\$14,151.16
		Cut/Stamp	26.25	17.82	\$21,124.31
		Hack & Squirt	237.44	117.85	\$96,974.52
		Hand-Pull	43.77	15.33	\$10,935.86
		Plus: Total District Labor Cost Per Asset			\$0.00
		Total District Vehicle Cost Per Asset			\$0.00
		<b>Sub-Totals Per Asset:</b>	<b>334.06</b>	<b>168.76</b>	<b>\$143,185.85</b>
	SH-800-FROGPN0 Frog Pond	Cut/Stamp	301.00	165.93	\$85,892.37
		Plus: Total District Labor Cost Per Asset			\$0.00
		Total District Vehicle Cost Per Asset			\$0.00

# Digital Aerial Sketch Mapping

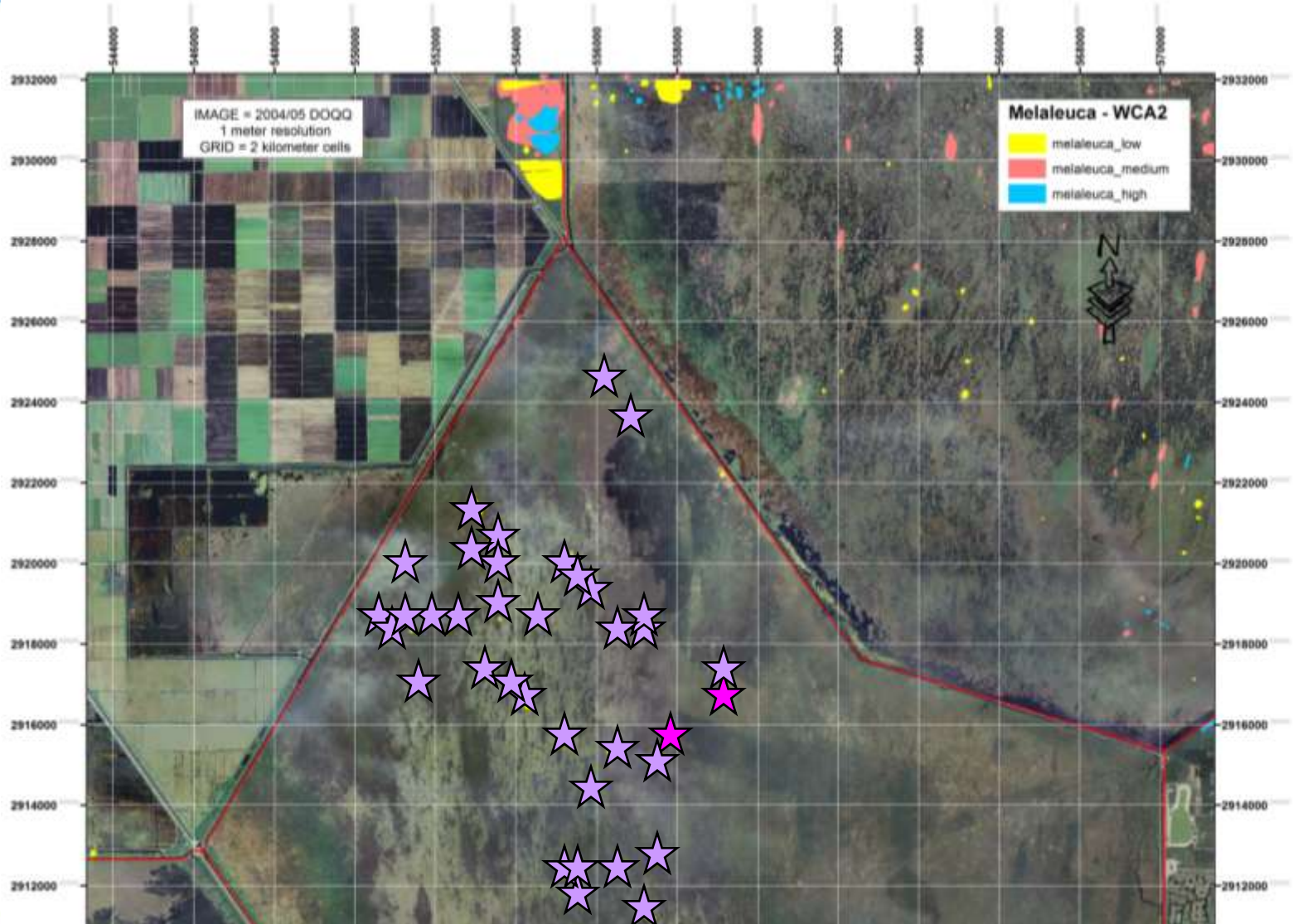


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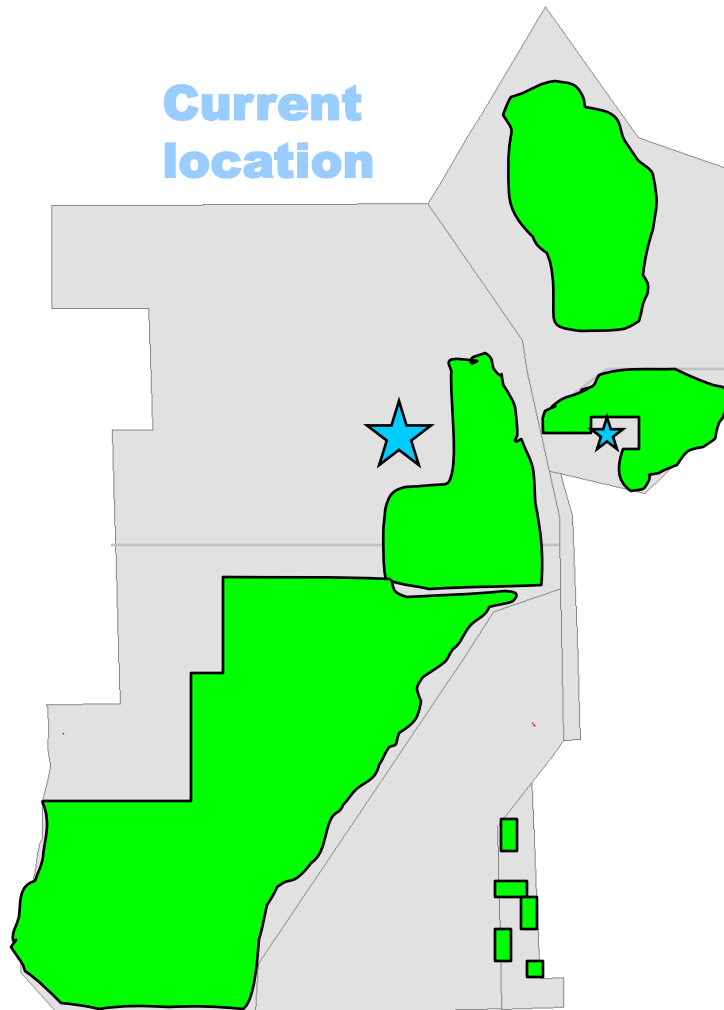
## Melaleuca

<u>Coverage Class</u>	<u>Acres</u>
High	2,226
Medium	7,484
<u>Low</u>	<u>30,212</u>
Total	39,922

# Use of Sketch Map in the field



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Fiscal Year Treatments: FY 2008  
Melaleuca



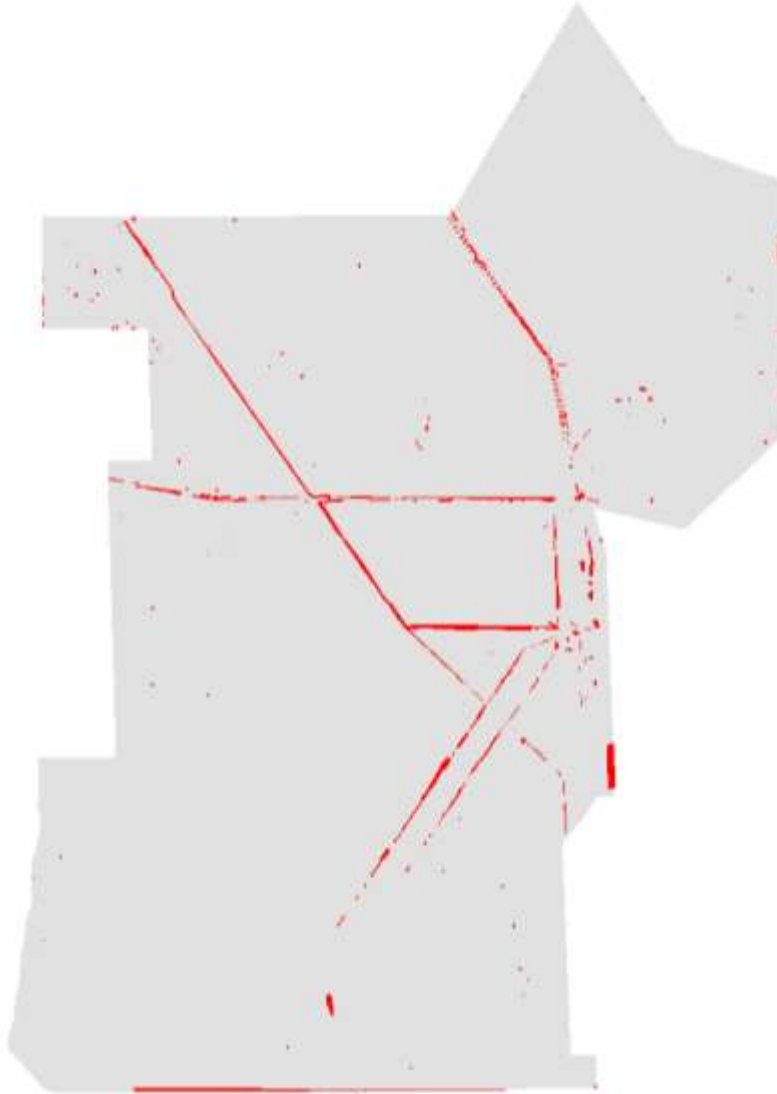
- Ground melaleuca treatment follow up to previous aerial and ground. Treating any schinus or lygodium also seen in marsh.

# Melaleuca treated this year (SFWMD)

- **WCAs** (ground only)
  - Acres covered 150,000
  - Acres Treated 9,850
  - Cost \$1,027,767
- **Pennsuco** (ground and aerial)
  - Acres Covered 5,500
  - Acres Treated 1,500
  - Cost \$365,350



# Digital Aerial Sketch Mapping



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## Brazilian Pepper

<u>Coverage Class</u>	<u>Acres</u>
High	1,269
Medium	3,555
<u>Low</u>	<u>724</u>
Total	5,548

# Schinus treated this year

- **WCA** (levees and islands) (ground and aerial)
  - Covered acres 1,250
  - Treated acres 809
  - Cost \$105,675
- **Pennsuco** (ground)
  - Covered acres 200
  - Treated acres 7.5
  - Cost \$14,000

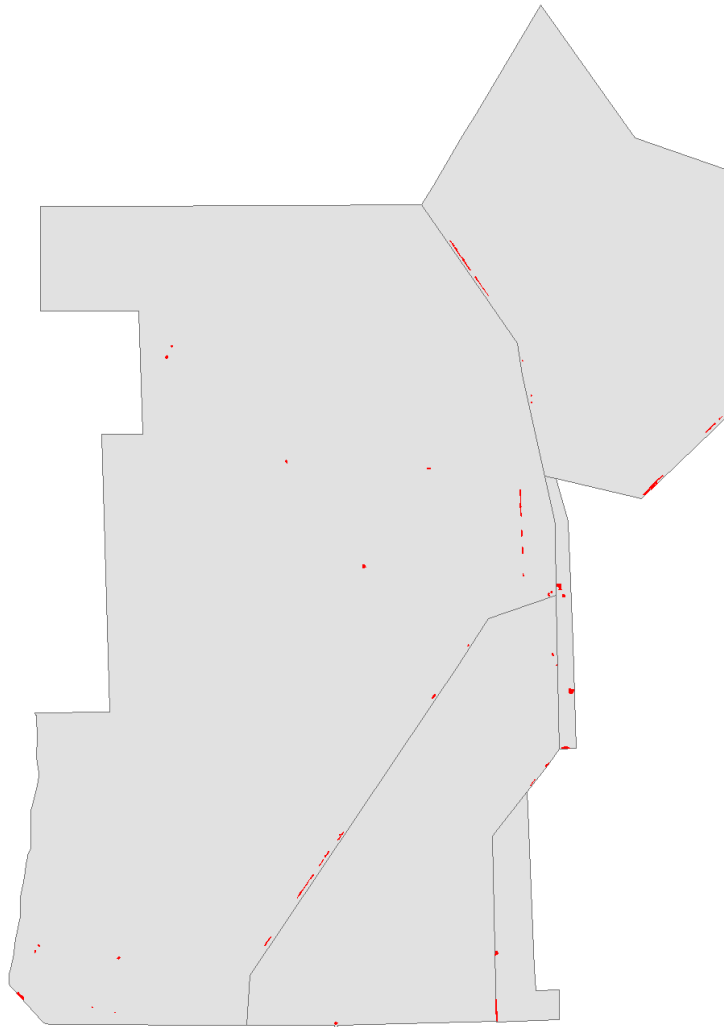


# Schinus treated this year

- WCA2b tree islands
- Pennsuco islands
- Levees & WCA3 islands – reference Jennifer Ketterlin's presentation



# Digital Aerial Sketch Mapping



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## Australian Pine

<u>Coverage Class</u>	<u>Acres</u>
High	154
Medium	128
<u>Low</u>	<u>208</u>
Total	489

# Australian Pine treated this year

- No large trees have been treated
- Seedlings treated along levees



# Digital Aerial Sketch Mapping



**Legend**

- Old World Climbing Fern
- Burma Reed
- Napier Grass
- SFWMD Boundary



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### Old World Climbing Fern

Coverage Class	Acres
High	
Medium	22
Low	70
<b>Total</b>	<b>92</b>

### Burma Reed

Coverage Class	Acres
High	201
Medium	40
Low	
<b>Total</b>	<b>241</b>

### Napier grass

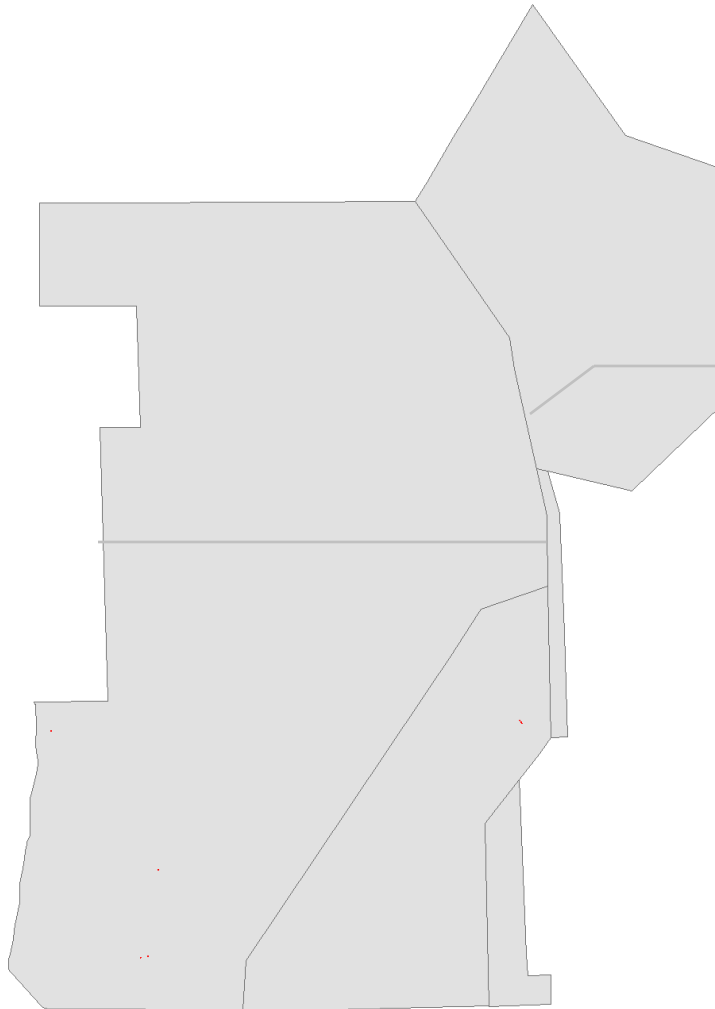
Coverage Class	Acres
High	71
Medium	286
Low	6
<b>Total</b>	<b>362</b>

# Lygodium treated this year (sfwmd)

- WCAs
  - Covered Acres 8,925
  - Treated Acres 1,705
  - Cost \$52,000
- Pennsuco
  - Covered Acres <1 acre
  - Treated Acres <1
  - Cost \$2,500

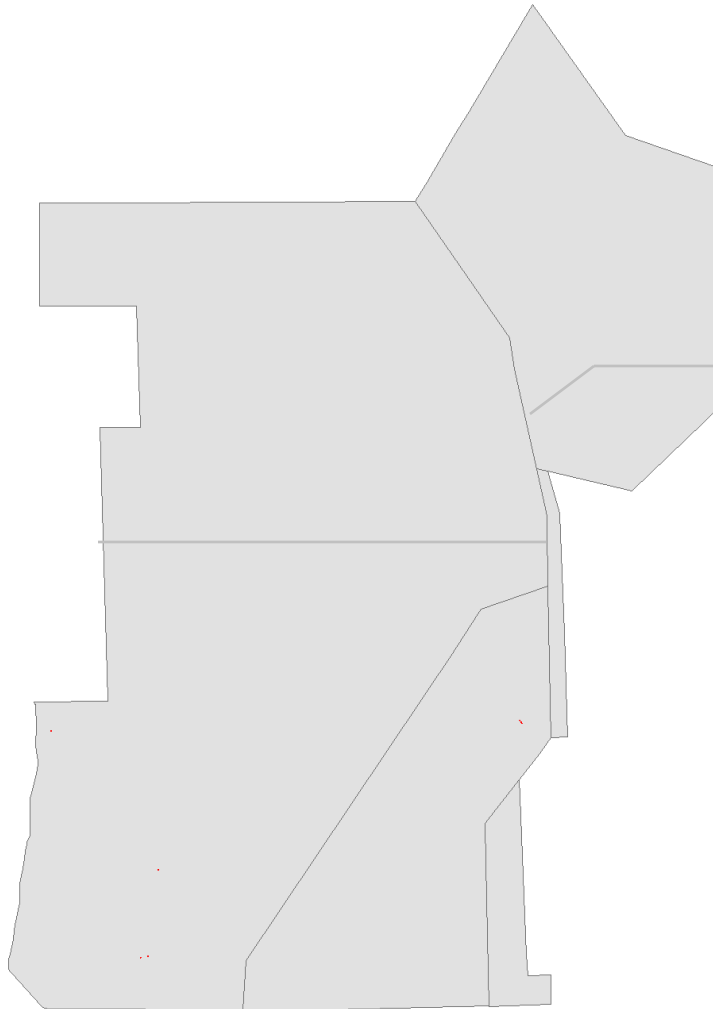


# Flood Control treatments



- Floating plants
  - Reduced problem due to drought.
- Submerged plants
- Levee maintenance

# Upcoming Treatments:



- Continue follow-up treatment of Melaleuca.
- Monitor and control Lygodium as needed
- Maintenance control of other exotic plant (schinus, java plum, lead tree etc.)
- Maintenance control of levees and canals
- Continue Swamhen and Python removal

# Innovations and Successes

- Use sketchmap for ground crews
- Herbicide trials
  - Melaleuca escort and imazapyr
- Use lighter crews for seedling removal
- Sweep tree islands for lygodium using data from researchers

