

New and/or Difficult to Control Upland, Wetland and Aquatic Invasive Plants



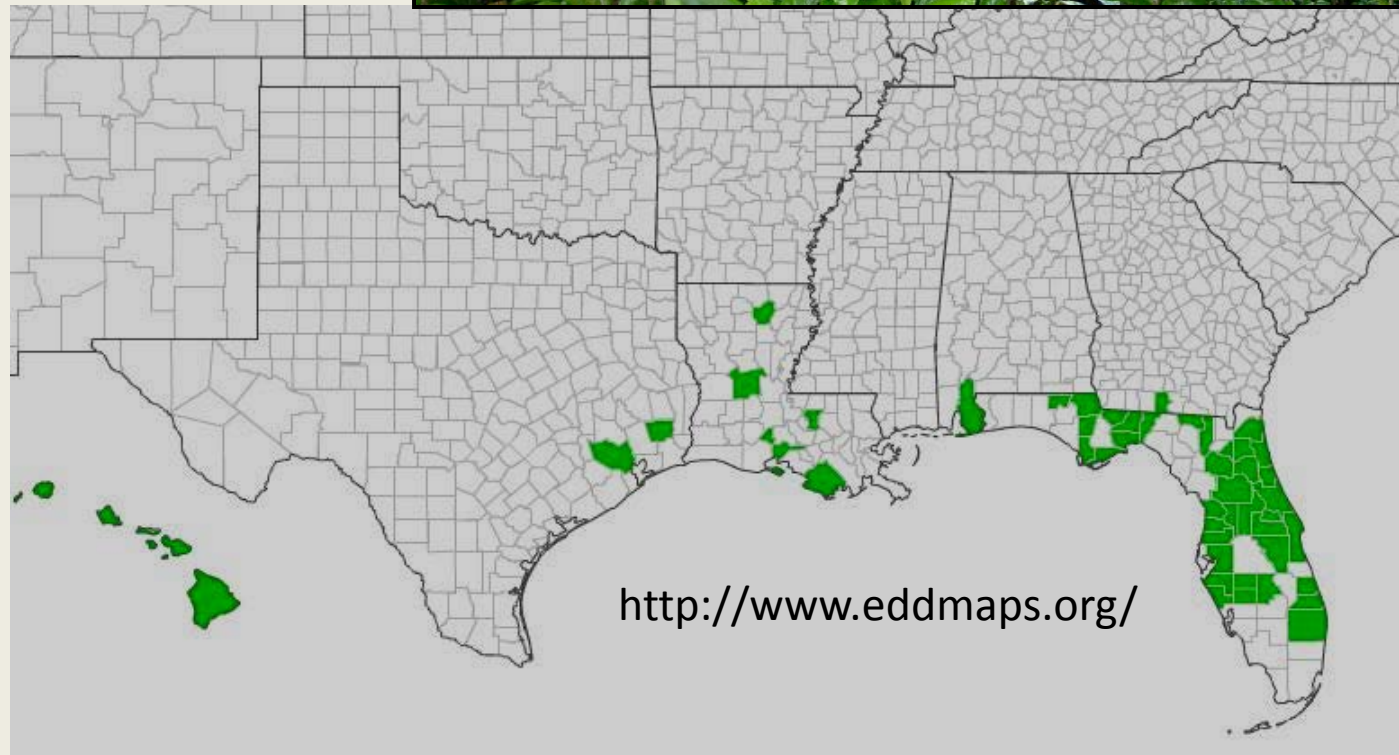
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Coral ardisia

(Ardisia crenata)

- ✓ Introduced ~1900
- ✓ Popular landscape plant
- ✓ Bird dispersed
- ✓ Zones 8-10





Flowers –
Whitish / Pink

Fruit – 1 seeded
drupe

- typically red
- white variant



Leaves – simple, dark
green, waxy, slightly
Crenate (scalloped)
margins

Methods

- **Two experimental sites (Gainesville, FL)**
- **10 herbicide treatments per site**
 - Four herbicide treatments with limited trials
- **5 x 5 meter plots**
- **Herbicide treatments replicated six times (3 x per site)**
 - Limited trials (1 x per site)
- **Pre-treatment and 12 month evaluation**

Herbicides Tested - % product

Growth Regulators:

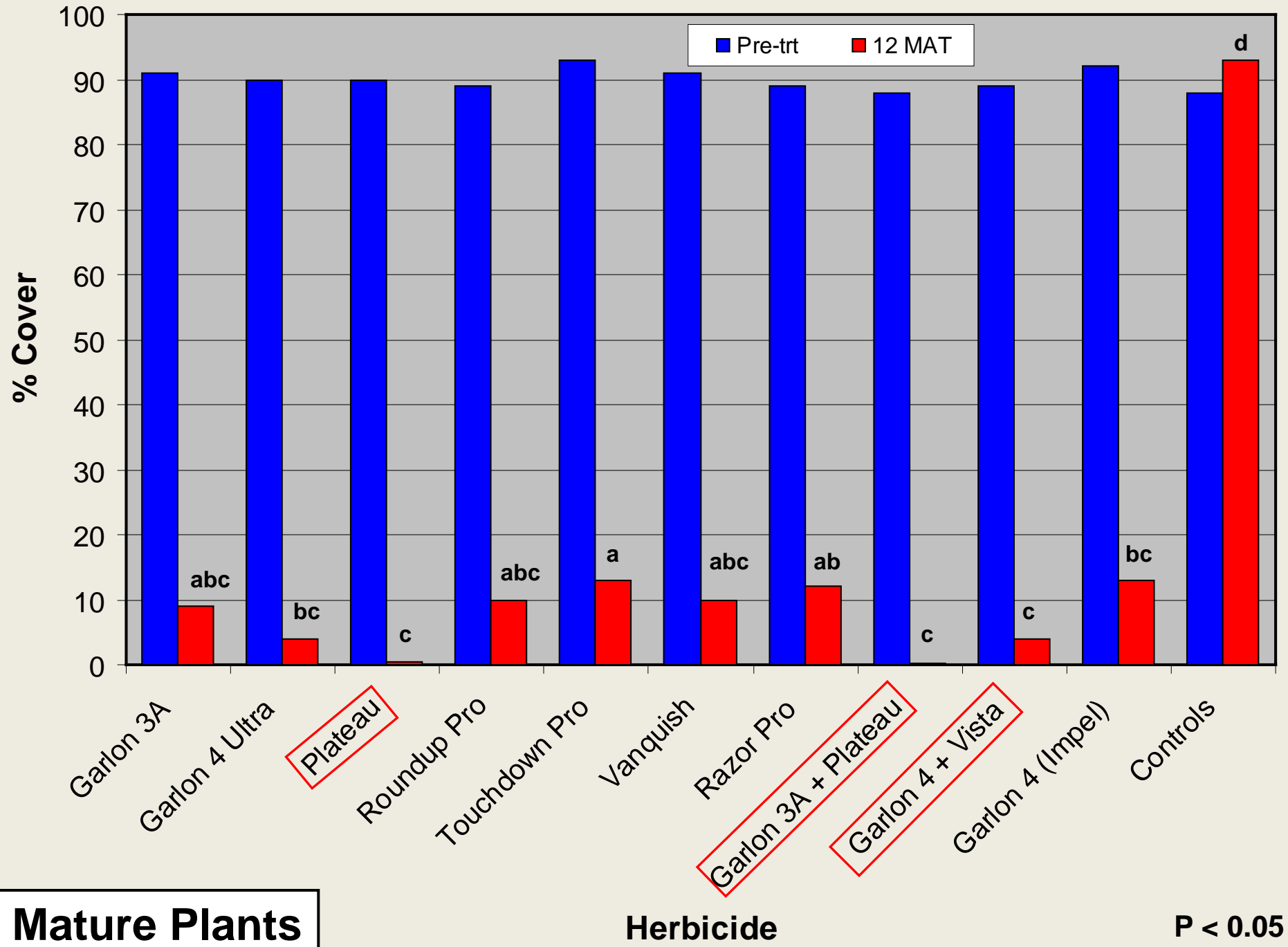
- Garlon 3A (triclopyr amine) – 3.00%
- Garlon 4 Ultra (triclopyr ester) – 2.25%
- Garlon 4 Ultra (triclopyr ester) + Impel – 18.00%
- Vanquish (dicamba) – 1.00%
- Garlon 4 Ultra (triclopyr ester) + Vista (fluroxypyr) – 3.00% + 1.00%

Amino Acid Inhibitors:

- Plateau (imazapic) – 1.00%
- Roundup Pro (glyphosate, isopropylamine salt) – 5.00%
- Touchdown Pro (glyphosate, diammonium salt) – 5.00%
- Razor Pro (glyphosate, isopropylamine salt) – 5.00%

Growth Regulators + Amino Acid Inhibitors:

- Garlon 3A (triclopyr) + Plateau (imazapic) – 3.00% + 1.00%



Pre-treatment



12 MAT



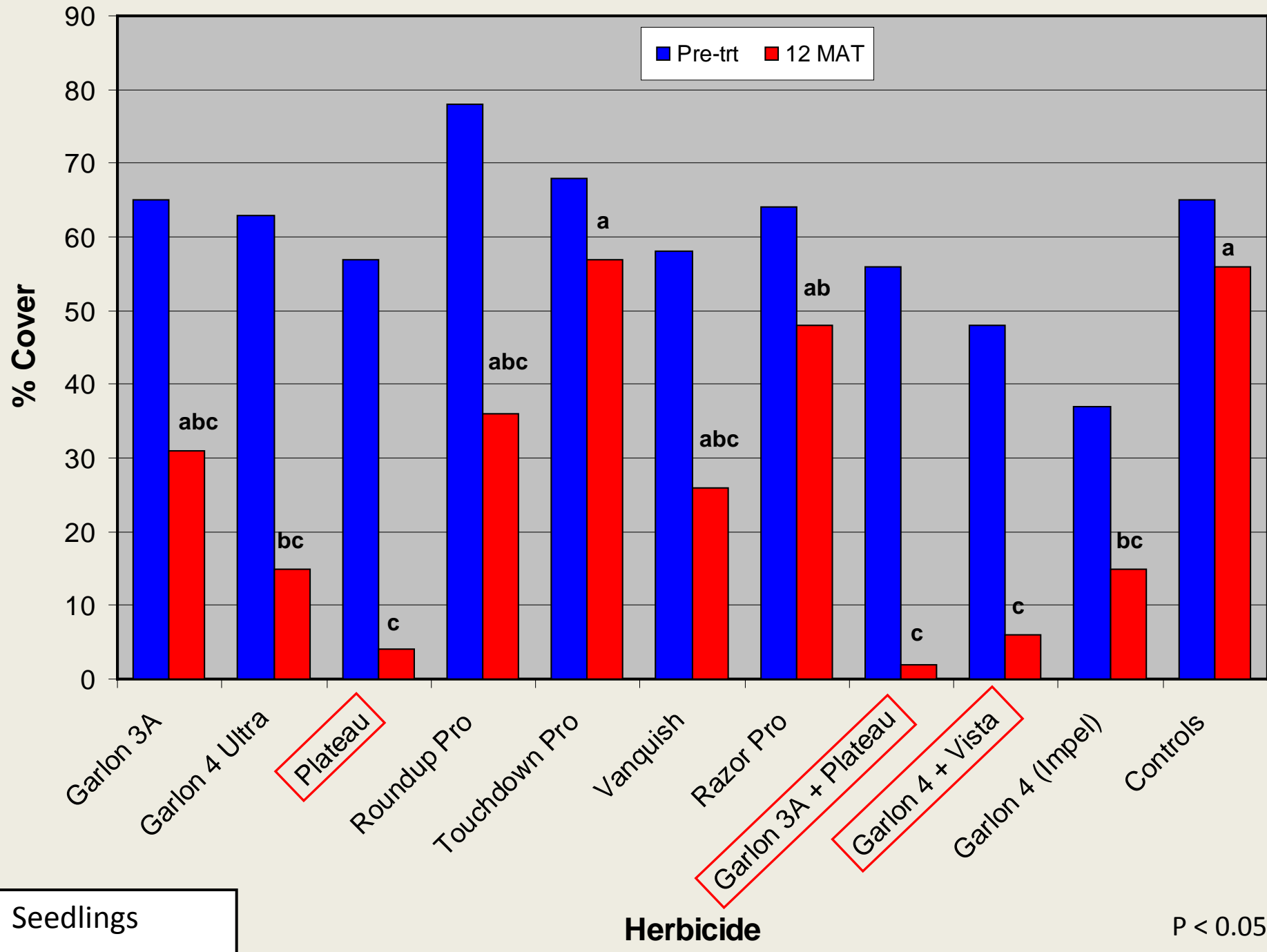
Seedlings following treatment

– will require additional control



Density can be
> 300-400 / m²





Conclusions / Treatment Methods

Foliar (spray-to-wet):

- Garlon 3A - triclopyr amine (2.25% to 3.00%)
- Plateau - imazapic (1.00%)
- Plateau (1.00%) + Garlon 3A (3.00%)

Basal:

- Garlon 4 Ultra - triclopyr ester (18%) + Impel
 - *Increase time / labor and higher cost*
 - *Possible use in low infestations with high native plant density*

Re-treatment will be required:

- Re-sprouts at 12 months post-treatment
- Seedlings (300-400 / m²)

Japanese ardisia (*Ardisia japonica*)

2008

✓ FL - San Felasco Hammock Preserve

2011-2012

✓ AL – Magnolia Springs, Daphne



Ardisia japonica

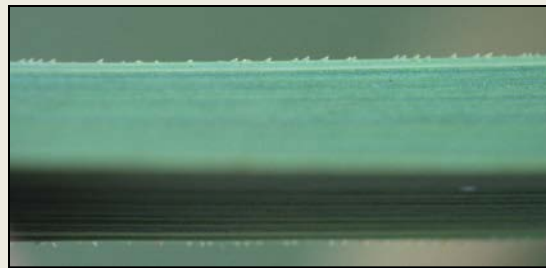
- Very common in nursery trade
 - ✓ Japanese ardisia
 - ✓ Marlberry
 - ✓ Maleberry
 - ✓ Tom's thumb (Martha Stewart)
- Hardiness zones 7-9



Wright's nutrush

(Scleria lacustris)

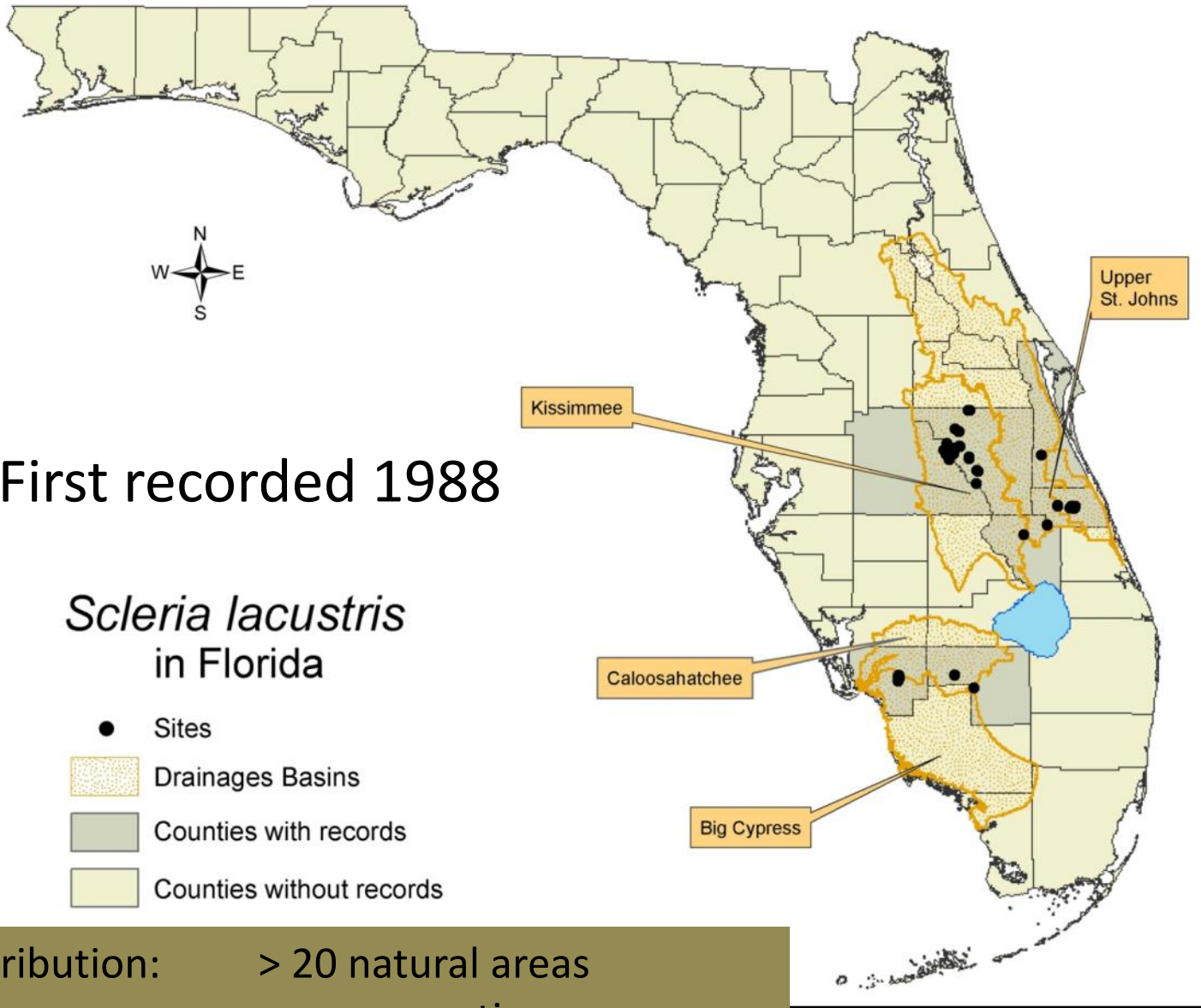
- Wetland sedge w/edges & prickles leaf/stem/all margins
- Tall: 0.75 - 2.40m
- Leaves wide: 1 - 2.5cm
- Stems thick: 1.5 - 2.5cm
- Native: Africa & Neotropics



Stem with prickles

Blood red stems, base, roots





First recorded 1988

Scleria lacustris
in Florida

- Sites
- ▨ Drainages Basins
- ▭ Counties with records
- ▭ Counties without records

Distribution: > 20 natural areas
seven counties
four major drainage basins

Diquat (Reward) trials on Wrights nutrush

Objectives: Prevent seed production

Minimize application rate/impact on native perennials

➤ Field trials 2009

- 2.0% May
 - ✓ 100% control
- 0.5% August
 - ✓ 98% control

➤ Container trials 2009



% Reward® Applied	% <i>Scleria</i> Tissue Destruction
0.5	100 ^A
0.25	100 ^A
0.125	98 ^B
0.0625	95 ^C

BCWMA 2011-12 Field Trials

Backpack sprayer 25, 2011

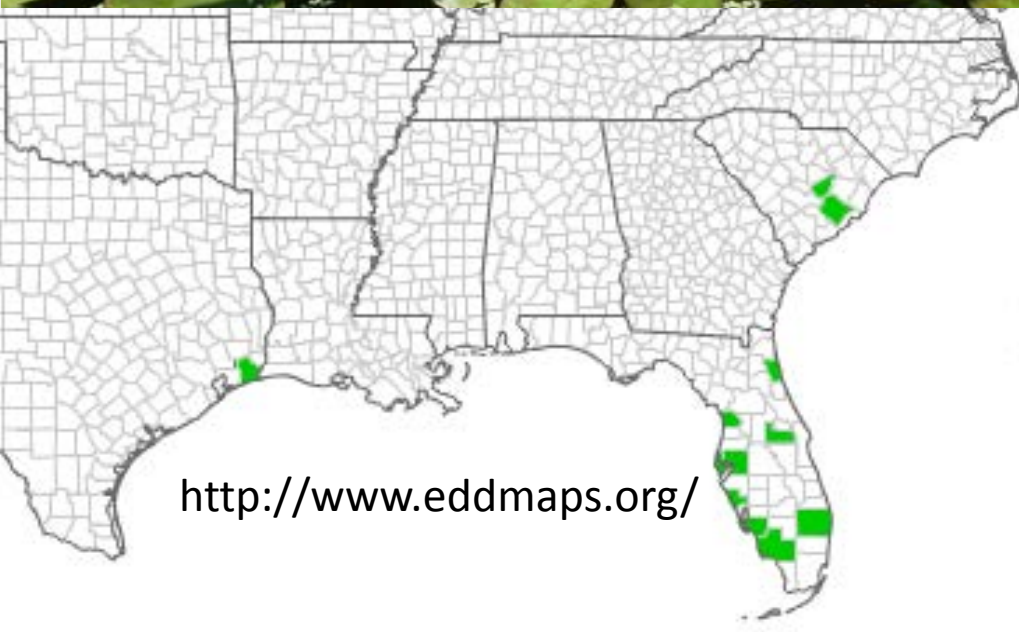
Percent cover (live tissue)

Reward (% product)	Wright's <u>nutrush</u>		<u>Maidencane</u>		<u>Beakrush</u>	
	Pre-trt	Post-trt	Pre-trt	Post-trt	Pre-trt	Post-trt
0.000	80 (3)	80 (3) ^a	2 (2)	4 (2) ^b	2 (1)	2 (1)
0.025	90 (2)	17 (6) ^b	13 (4)	13 (4) ^{ab}	5 (3)	5 (3)
0.050	85 (2)	8 (4) ^{bc}	28 (9)	28 (9) ^a	4 (2)	4 (2)
0.100	85 (2)	3 (1) ^c	18 (7)	18 (7) ^{ab}	8 (4)	8 (4)



Crested Floating Heart (*Nymphoides cristata*)

1996 Collier County
2006 Lake Marion SC
2010 Lake Okeechobee

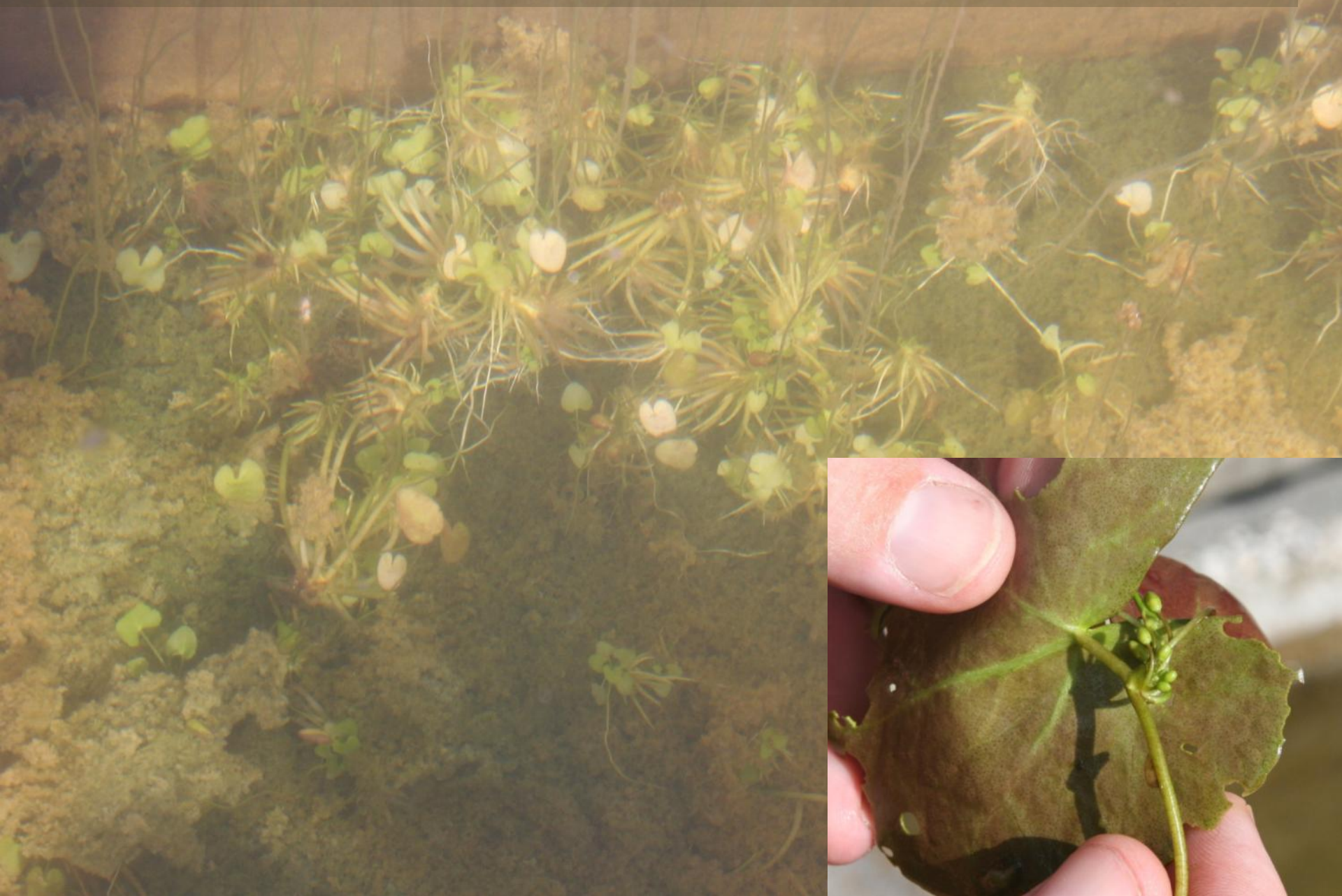


<http://www.eddmaps.org/>





Crested floating heart vegetative reproduction





Nymphoides cristata
Eutaw Cree South Carolina

AUG 5 2009

Nymphoides cristata
Fakaunion Canal, Collier Co.



Field trials for control of *Nymphoides cristata*

Imazamox	Foliar	0.5 lb ae/ac	Poor
Imazamox	Injected	0.40 ppm	Poor
Triclopyr	OTF	2.50 ppm	Poor
Triclopyr	Injected	3.0 ppm	Poor
2,4-D	Granular	2.0 ppm	Poor
Glyphosate	Foliar	3.75 lb ae/ac	Poor
Glyphosate + imazapyr	Foliar	3.75 lb ae/ac + 0.25 lb ae/ac	6 weeks control
Endothall	injected	2.0–3.0 ppm	Good ?

Evaluation of herbicides to control *N. cristata* in concrete tanks

	Rate (mg/l)	Visual 6-wat	Dry wt 8-wat
Untreated			50 (4) ¹
Triclopyr	2.50 ²	55 (5)	28 (4)
Imazamox	0.40 ²	78 (2)	12 (1)
Flumioxazin	0.40 ²	88 (3)	12 (3)
Topramazone	0.20 ²	93 (2)	2 (.3)
Endothall	0.25	78 (3)	27 (1)
Endothall	0.50	93 (2)	9 (1)
Endothall	1.50	99 (2)	0
Endothall	2.50	100 (0)	0

¹Average of 4 replications (SE)

²Highest rate tested

Questions

