



Invasive Plant Operations Overview

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Amy Peters, SFWMD



ECISMA Priority Plant Species

Long-term Management

- Air potato (*Dioscorea bulbifera*)
- Australian pine (*Casuarina* spp.)
- Brazilian pepper (*Schinus terebinthifolia*)
- Burma reed (*Neyraudia reynaudiana*)
- Cogongrass (*Imperata cylindrica*)
- Earleaf acacia (*Acacia auriculiformis*)
- Melaleuca (*Melaleuca quinquenervia*)
- Napiergrass (*Pennisetum purpureum*)
- Old World climbing fern (*Lygodium microphyllum*)
- Shoebuttan ardisia (*Ardisia elliptica*)
- Alligator weed (*Alternanthera philoxeroides*)
- Arrowhead vine (*Syngonium podophyllum*)
- Asian sword fern (*Nephrolepis brownii*)
- Catclaw vine (*Dolichandra unguis-cati*)
- Common Reed (*Phragmites*)
- Day jessamine (*Cestrum diurnum*)
- Golden pothos (*Epipremnum pinnatum*)
- Hawaiian Half-flower (*Scaevola sericea*)
- Inch plant (*Tradescantia zebrina*)

- Japanese climbing fern (*Lygodium japonicum*)
- Jaragua (*Hyparrhenia rufa*)
- Jasmine (*Jasminum* spp.)
- Java plum (*Syzygium cumini*)
- Kalanchoe (*Kalanchoe* spp.)
- Lantana (*Lantana strigocamara*)
- Latherleaf (*Colubrina asiatica*)
- Mother in-law's tongue (*Sansevieria trifasciata*)
- Napier grass (*Pennisetum purpureum*)
- Oyster plant (*Tradescantia spathacea*)
- Para grass (*Urochloa mutica*)
- Primrose willow (*Ludwigia peruviana*)
- Rosary pea (*Abrus precatorius*)
- Seaside Mahoe (*Thespesia populnea*)
- Sewer vine (*Paederia cruddasiana*)
- Surinam cherry (*Eugenia uniflora*)
- Thatching grass (*Hyparrhenia hirta*)
- Torpedo grass (*Panicum repens*)
- Tuberous sword fern (*Nephrolepis cordifolia*)
- Umbrella tree (*Schefflera actinophylla*)
- Wedelia (*Wedelia trilobata*)

- West Indian marsh grass (*Hymenachne amplexicaulis*)
- Wild taro (*Colocasia esculenta*)
- Winged yam (*Dioscorea alata*)

Containment

- Wright's nutrush (*Scleria lacustris*)
- Dalechampia (*Dalechampia scandens*)
- Lumnitzera (*Lumnitzera racemosa*)

Eradication (?)

- Black sage (*Varronia curassavica*)
- Wright's nutrush (*Scleria lacustris*)



2020/2021 Newly Detected Plant Species

Miami-Dade County

Rousselia humilis (Rousselia)



EDRR WEED ALERT

Rousselia (*Rousselia humilis*)

SMALL, STICKY PLANT WITH SUPER-STICKY SEEDS, GROWS ON ROCKS IN MOIST SHADY HABITAT. CAN BE WEEDY IN MOWED URBAN LAWNS.

HIERBA PEQUENA Y PEGAJOSA, CON SEMILLAS MUY PEGAJOSA. CRECE ENCIMA DE LAS PIEDRAS EN LA SOMBRA, Y TAMBIEN EN PATIO CHAPIADO DE CASAS

NATIVE TO: WEST INDIES, MEXICO, CENTRAL AMERICA

SMALL: LEAVES TO 1CM WIDE

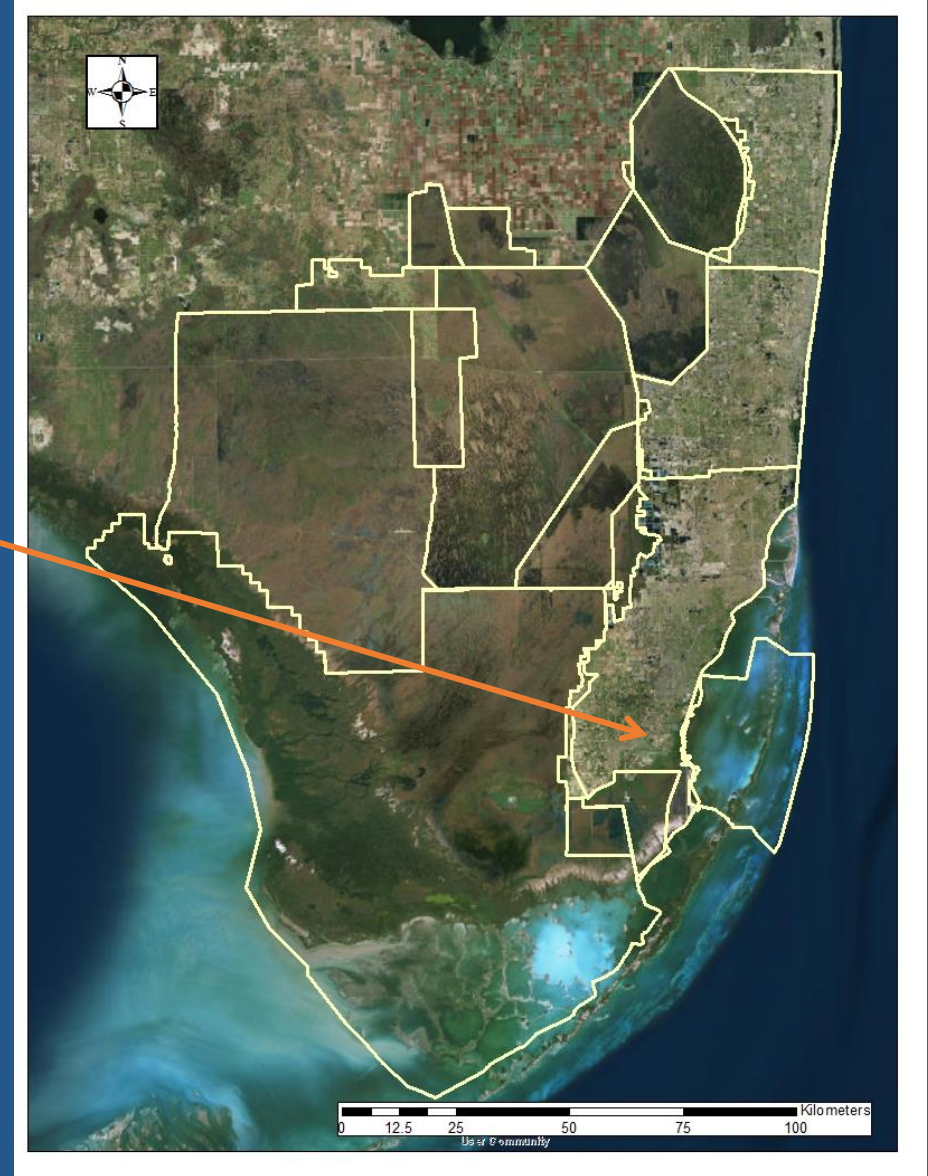


Rousselia has been found in undisturbed rare fern habitat in these Miami preserves:

- Hattie Bauer
- Ross Addition

No Herbicide
Remove by hand, picking up every little piece, put in plastic bag

No Quimica
Remover a mano, y echar cada pedacito en una bolsa plastica.



2020/2021 Newly Detected Plant Species Broward County

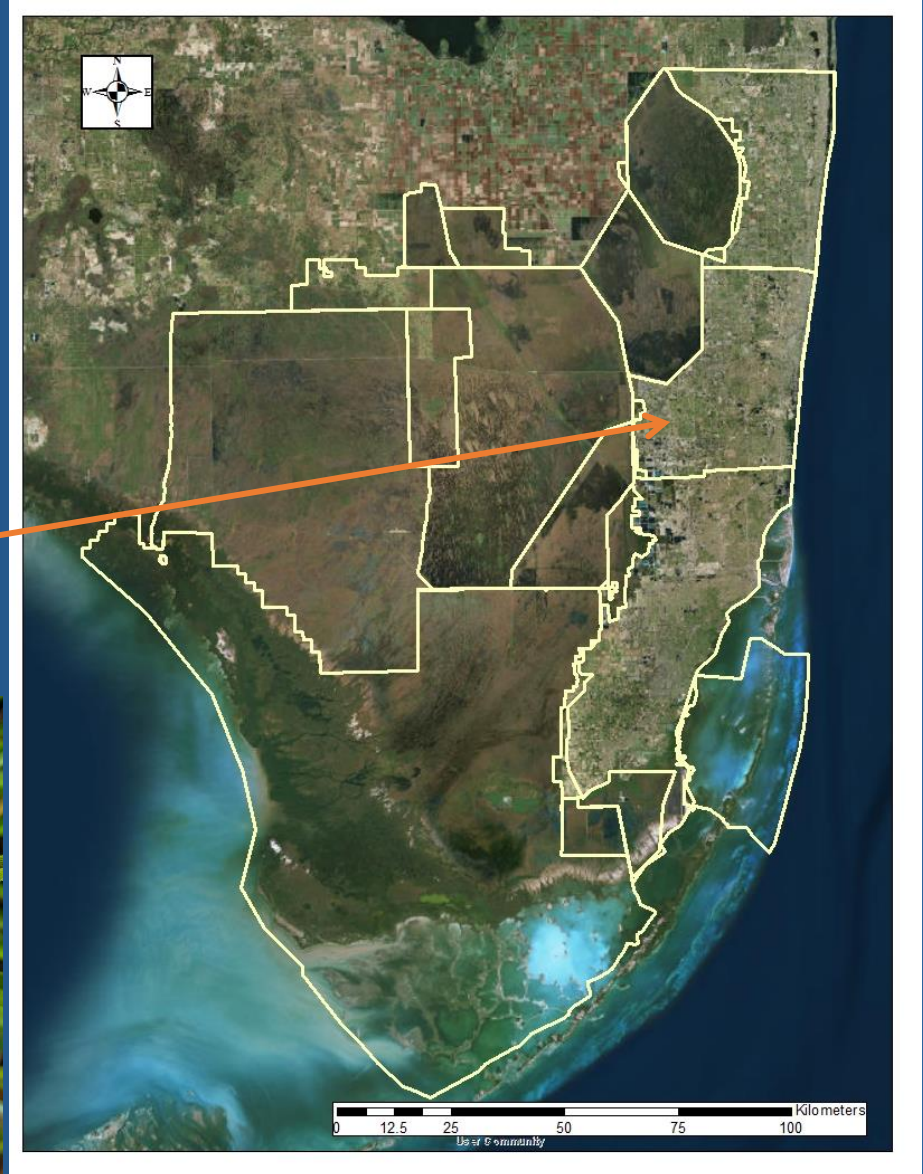


Azadirachta indica
(Neem Tree)

Eugenia coronata
(Elephant's sweetberry)

*Handroanthus
chrysotrichus*
(Golden Trumpet Tree)

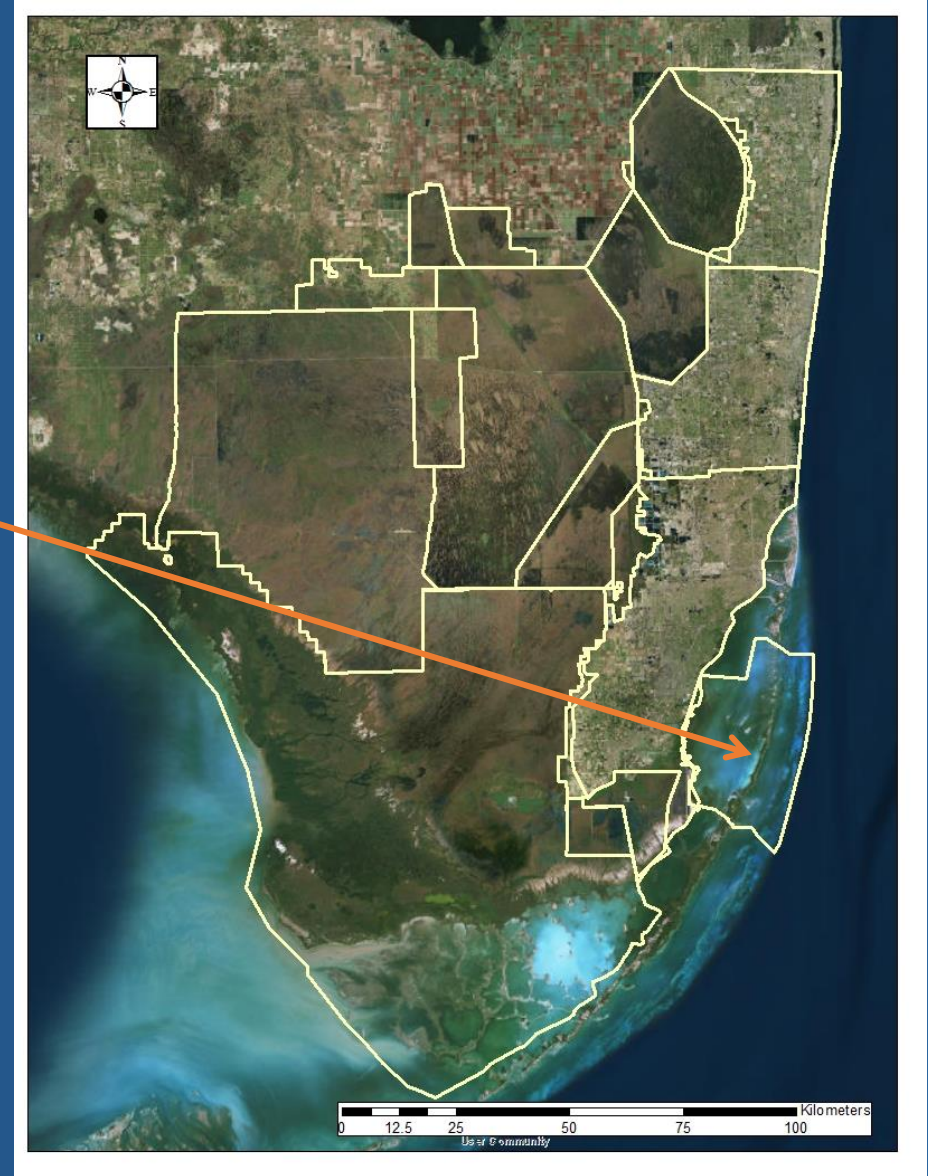
Cyperus entrerianus
(Deep-rooted flatsedge)



2020/2021 Newly Detected Plant Species

Biscayne National Park

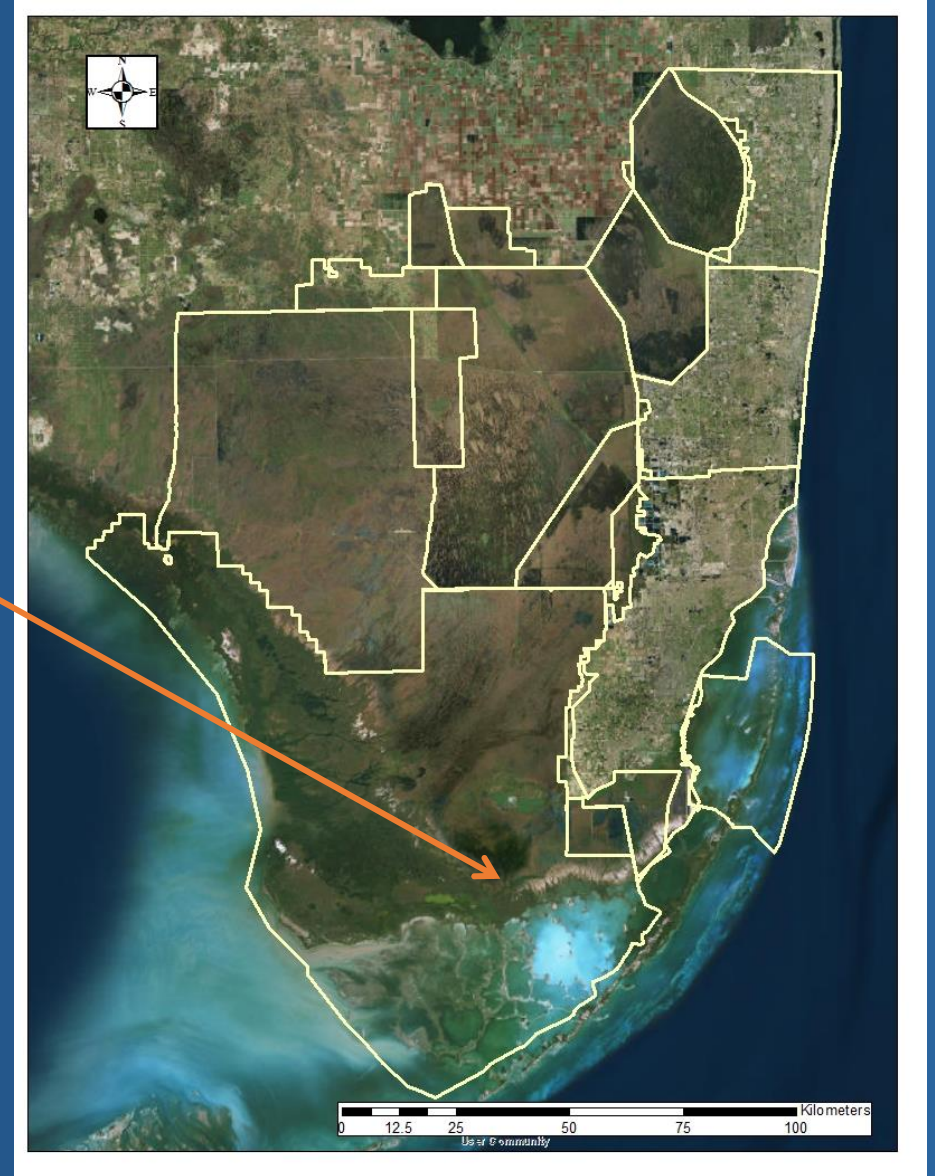
Ficus benghalensis (Banyan Tree)



2020/2021 Newly Detected Plant Species

Everglades National Park

Alternanthera pungens (khakiweed)



2020/2021 Newly Detected Plant Species

Nothing new to report

Big Cypress National Preserve

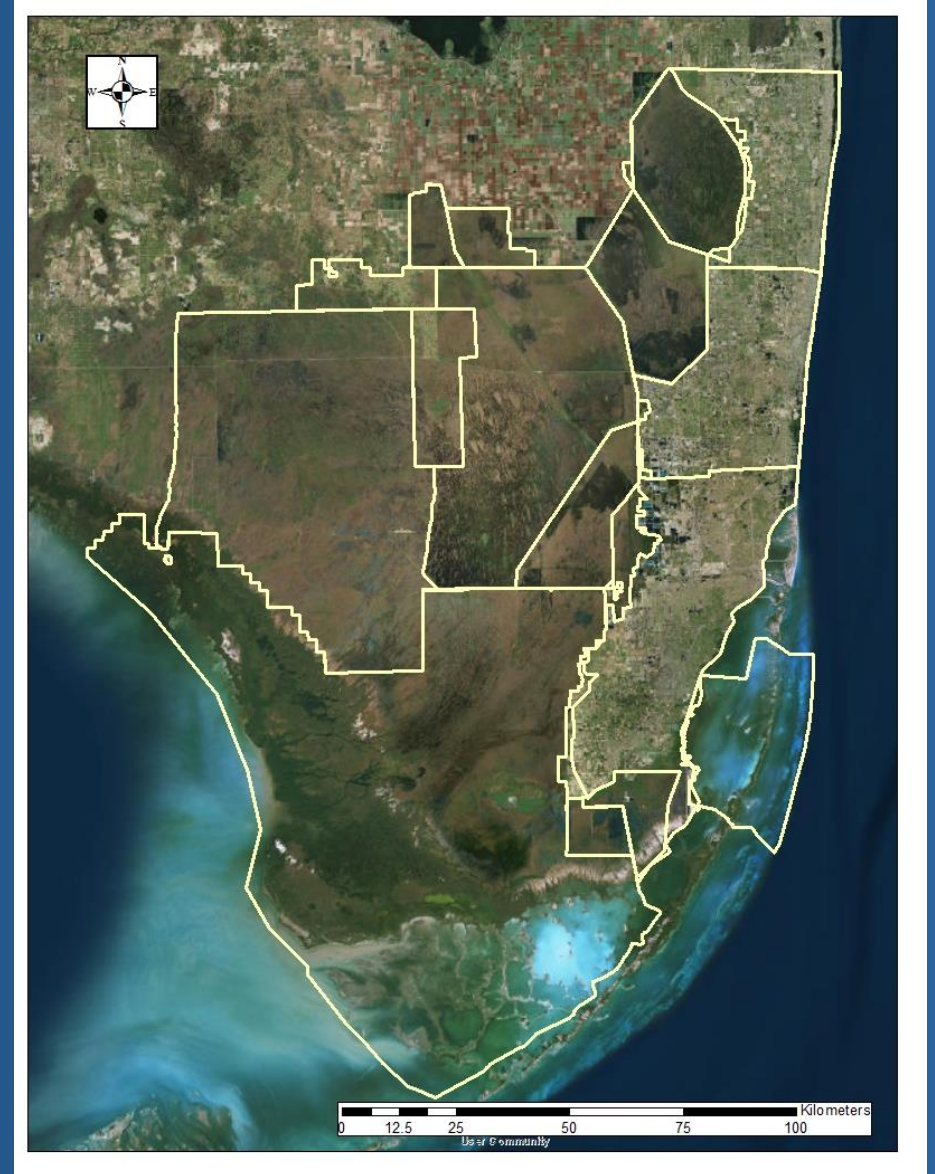
Florida Fish and Wildlife Conservation
Commission (FWC)

Loxahatchee National Wildlife Refuge

South Florida Water Management District
(SFWMD)



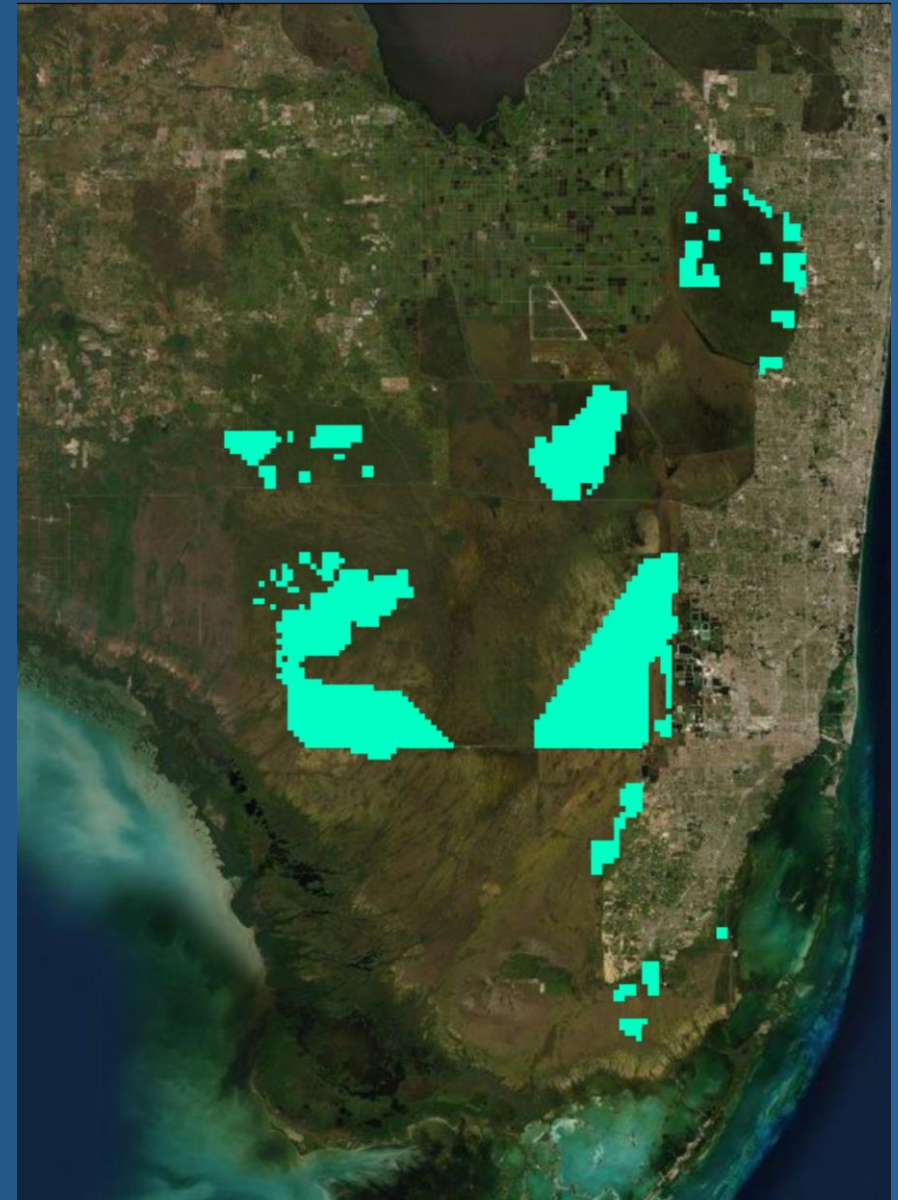
Everglades Cooperative Invasive Species Management Area



2020/2021 Treatments: *Melaleuca*

Melaleuca treatments

- Predominantly re-treatment and maintenance control
- Initial treatments at:
 - Big Cypress NP
 - Everglades NP



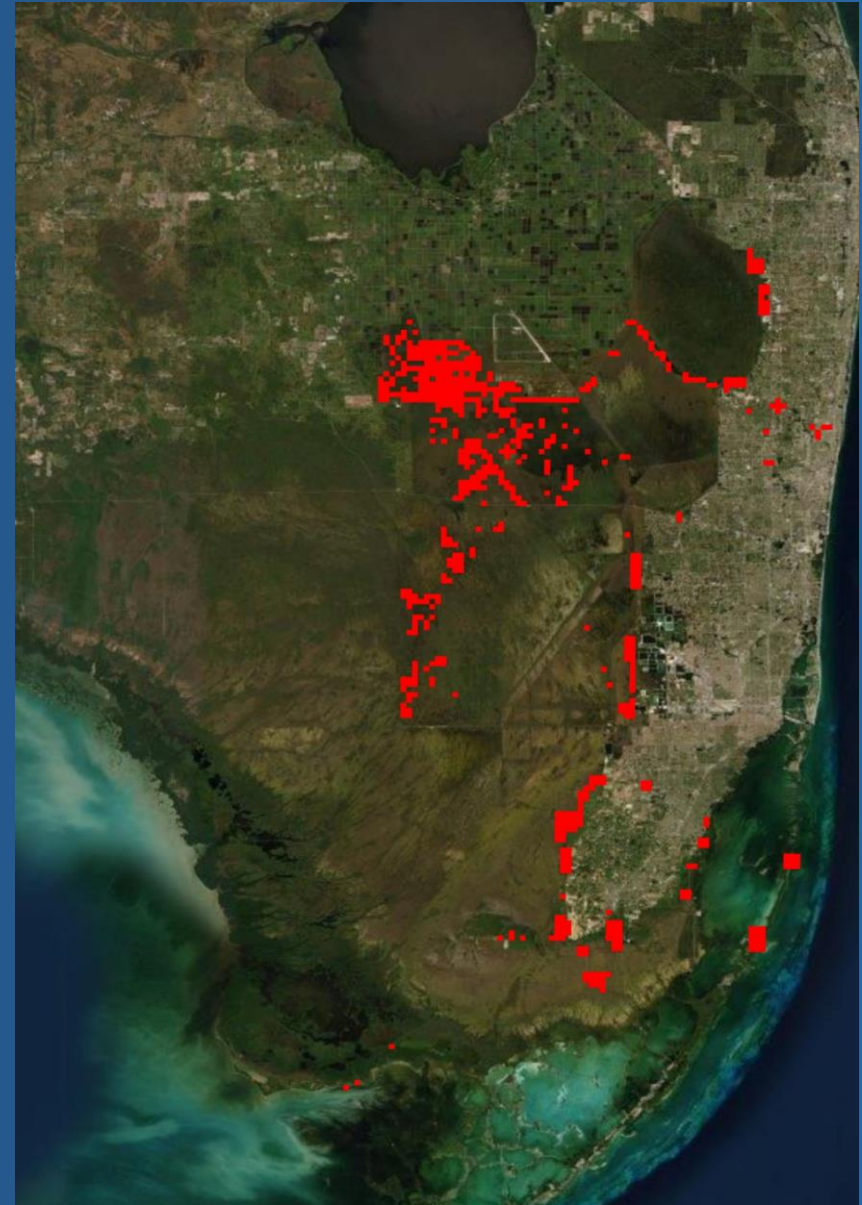
2020/2021 Treatments: Brazilian pepper

Brazilian Pepper Treatments

All agencies reported some treatment

Majority of treatment in:

- Everglades & Francis S. Taylor WMA
- Holey Land WMA
- Rotenberger WMA
- ARM Loxahatchee National Wildlife Refuge
- SFWMD (75% of sites)



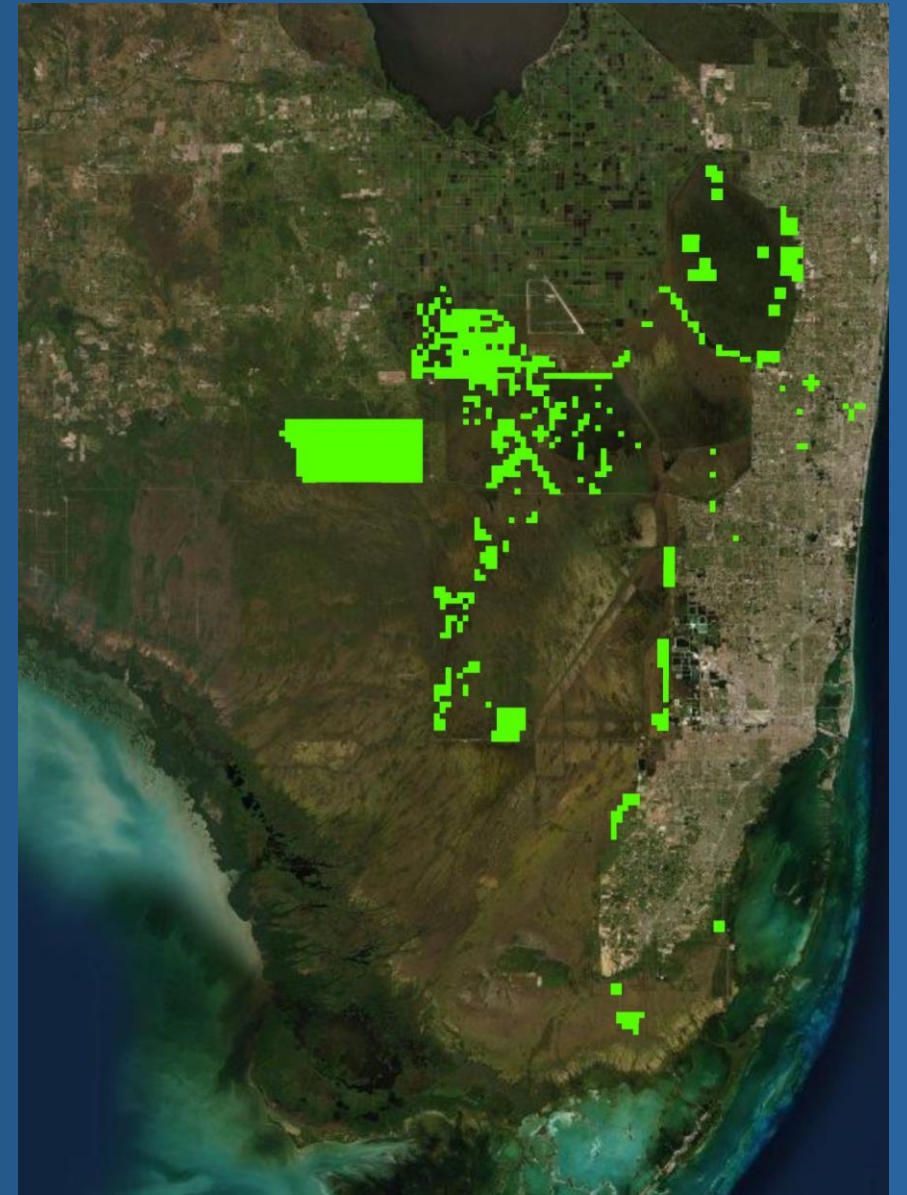
2020/2021 Treatments: *Lygodium*

Old World climbing fern Treatments

Most areas had some treatment

Majority of treatment in:

- Everglades & Francis S. Taylor WMA
- Holey Land WMA
- Rotenberger WMA
- Big Cypress National Preserve
- WCA 3B, South Glades



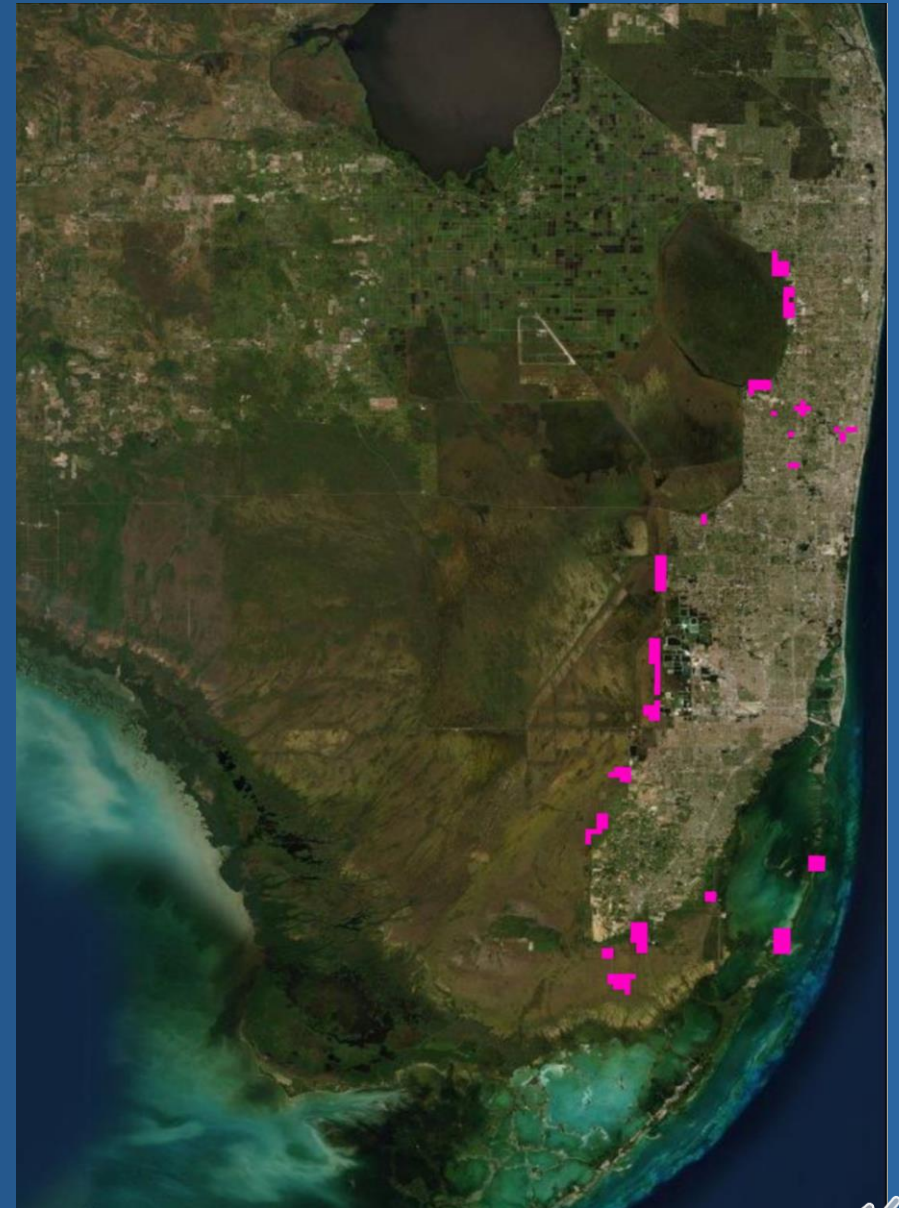
2020/2021 Treatments: Casuarina

Australian pine Treatments

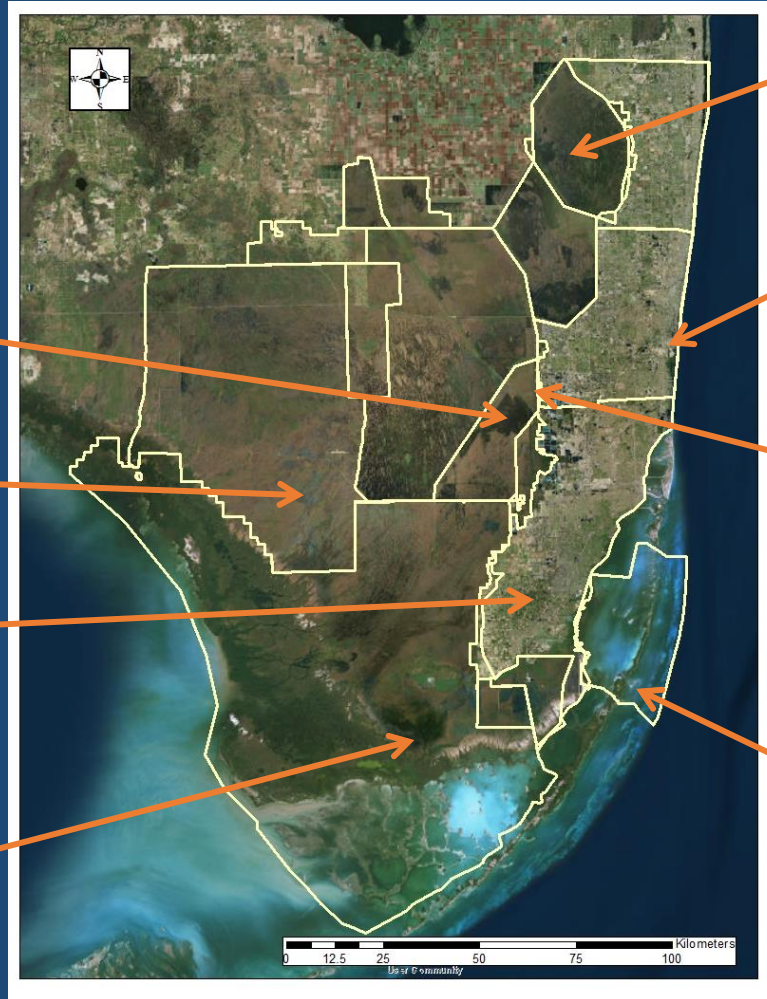
50% of agencies reported some treatment

Majority of treatment in:

- ARM Loxahatchee National Wildlife Refuge
- Biscayne National Park
- Everglades National Park
- SFWMD (60 % of sites)



2020/2021 Treatments: Other plant species



FWC

para grass, torpedo grass, west Indian marsh grass, napier grass, day jessamine, castor bean, Cuban bulrush, primrose willow

BICY NP

shoebutton ardisia

Miami-Dade Co.

shoebutton ardisia, air potato, umbrella tree, carrotwood, earleaf acacia

EVER NP

shoebutton ardisia

USFWS

shoebutton ardisia, Java plum, bishopwood, earleaf acacia, climbing cassia, giant brake fern

Broward Co.

bishopwood, oyster plant, Surinam cherry, shoebutton ardisia, kalanchoe spp., arrowhead vine, Java plum, pothos, rosary pea, winged yam, air potato, mother's in-law tongue

SFWMD

Java plum, black olive, primrose willow, date palm, shoebutton ardisia, napier grass, carrotwood, umbrella tree

BISC NP

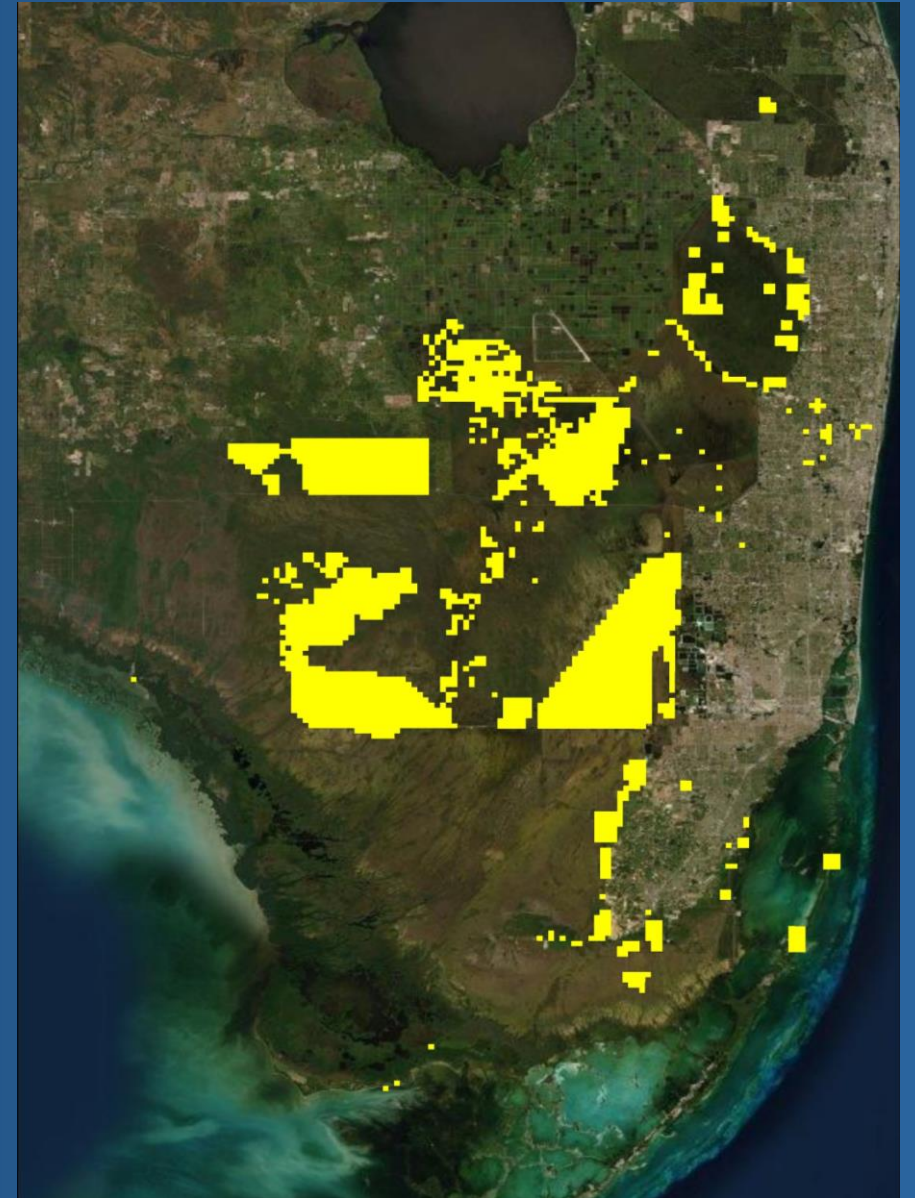
seaside mahoe, latherleaf, scaevola



2020/2021 Treatments: Combined

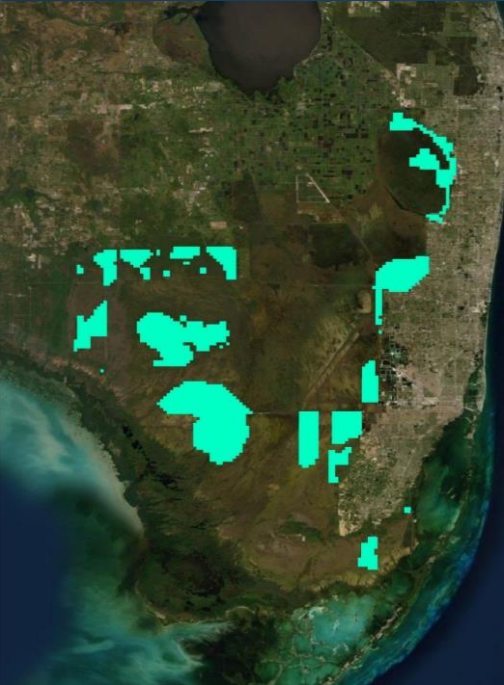
ECISMA partners and cooperators swept well over 550,000 acres for invasive plant treatment between 1 July 2020 and 30 June 2021

~ \$12 Million was spent on invasive plant treatments

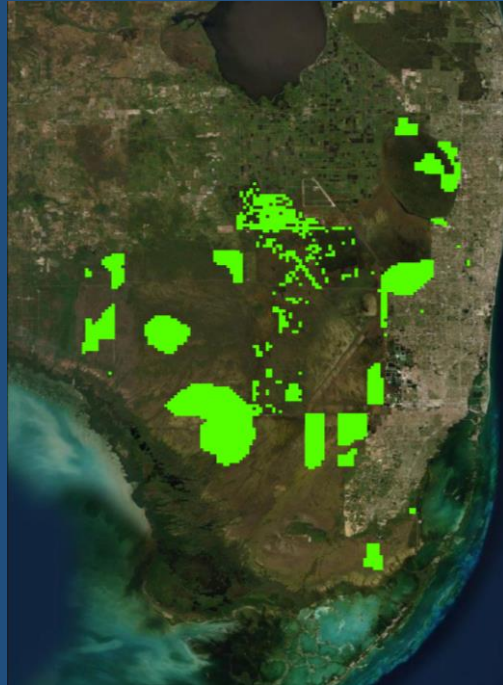


2021/2022 Proposed Treatments

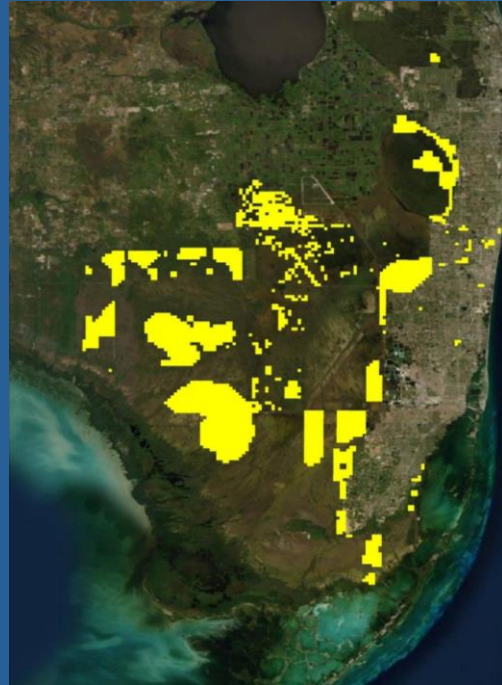
Melaleuca



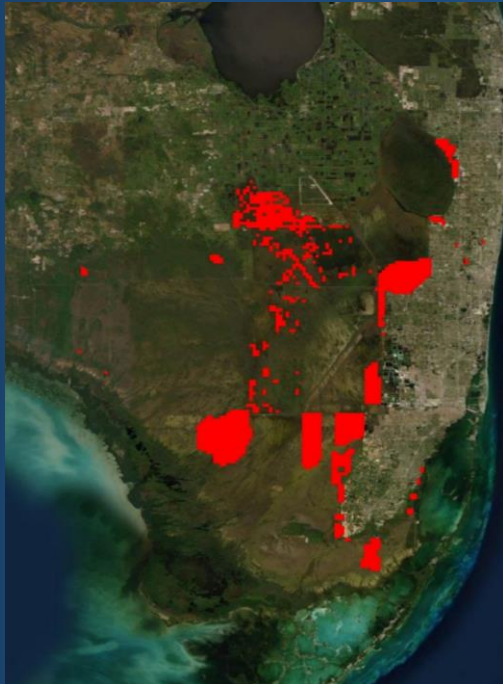
Lygodium



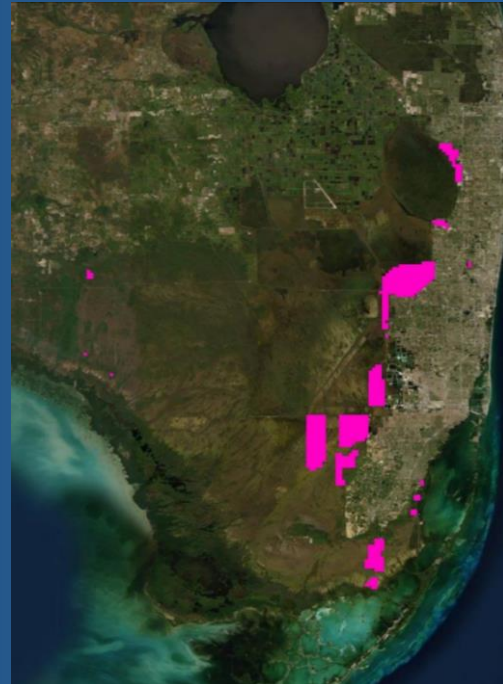
All species



Brazilian pepper



Australian pine

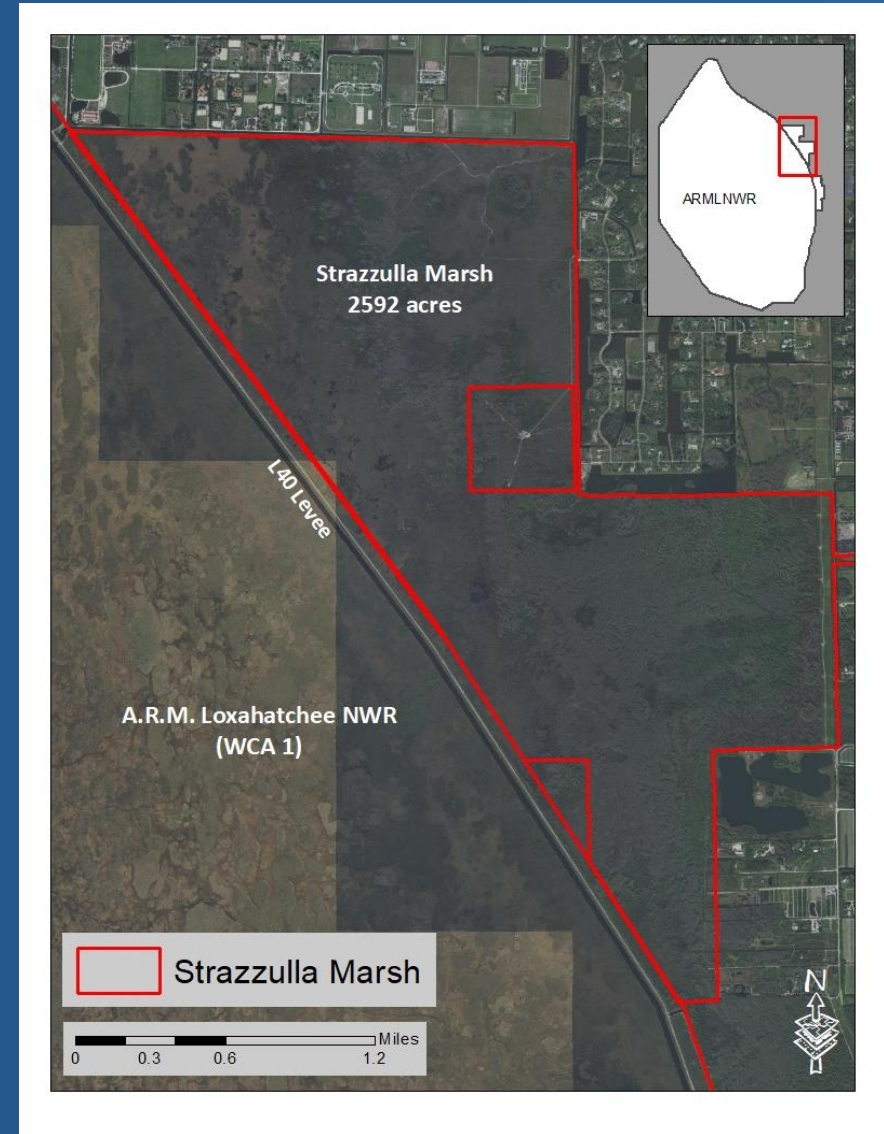


Highlights for 2020/2021

United States Fish and Wildlife Service- Strazzulla Marsh tract

Acquired in 2018- Was heavily infested with Schinus, Lygodium, and Melaleuca

- Initial treatment completed and 75% follow-up (~2,592 acres)



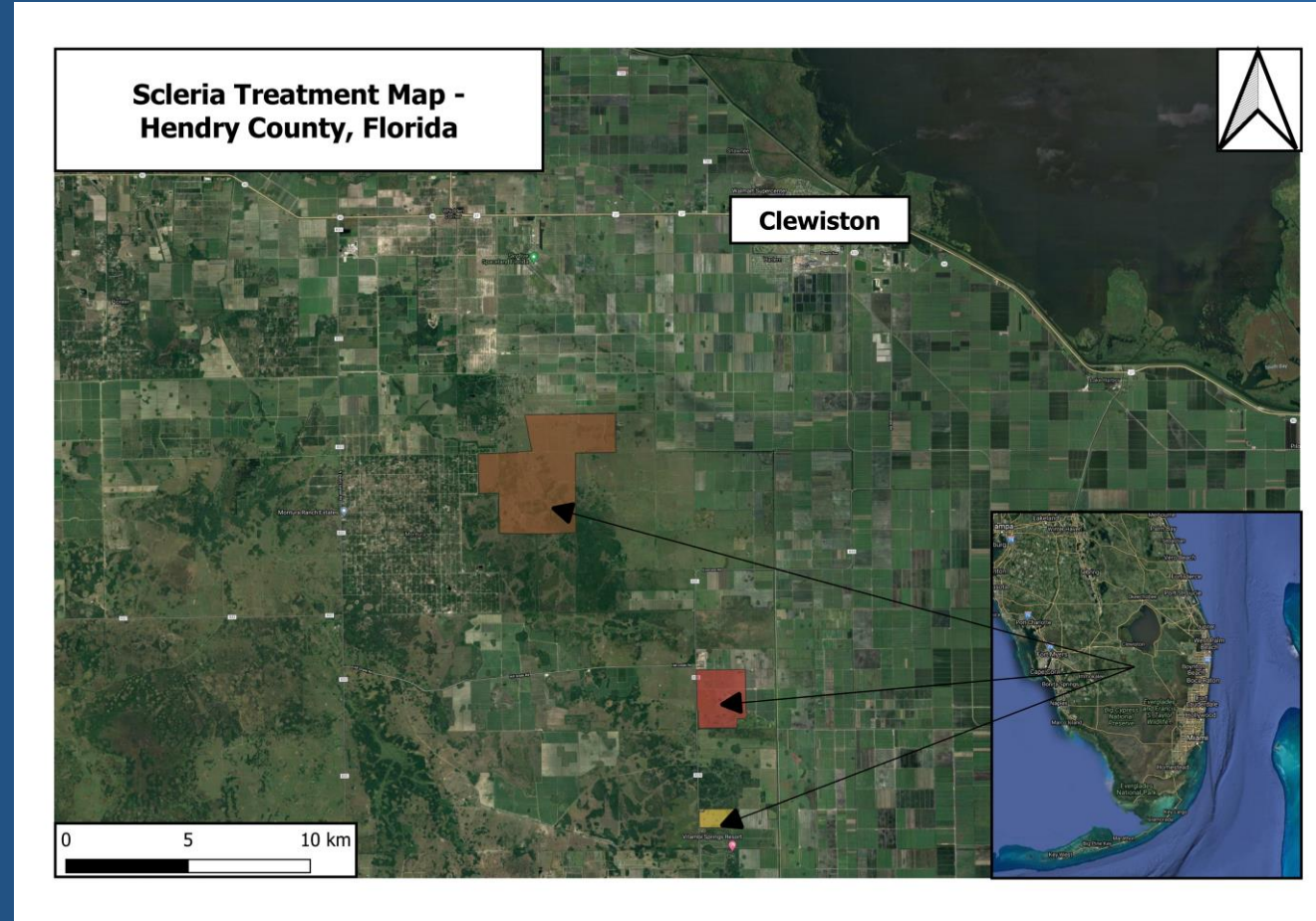
Everglades Cooperative Invasive Species Management Area

Melissa Juntunen

Highlights for 2020/2021

Army Corps of Engineers- Hendry County *Scleria eggersiana* and *Scleria lacustris* re-treatment

*Considered an ECISMA Early Detection Rapid Respond



Everglades Cooperative Invasive Species Management Area

Ian Markovich
and Jessica Spencer

Highlights for 2020/2021

Broward County- *Dalechampia scandens* update
First observed in 2000 needs frequent monitoring and re-treatment
Seems to be fire adapted and pollination performed exclusively by exotic orchid bee (*Euglossa viridissima*).



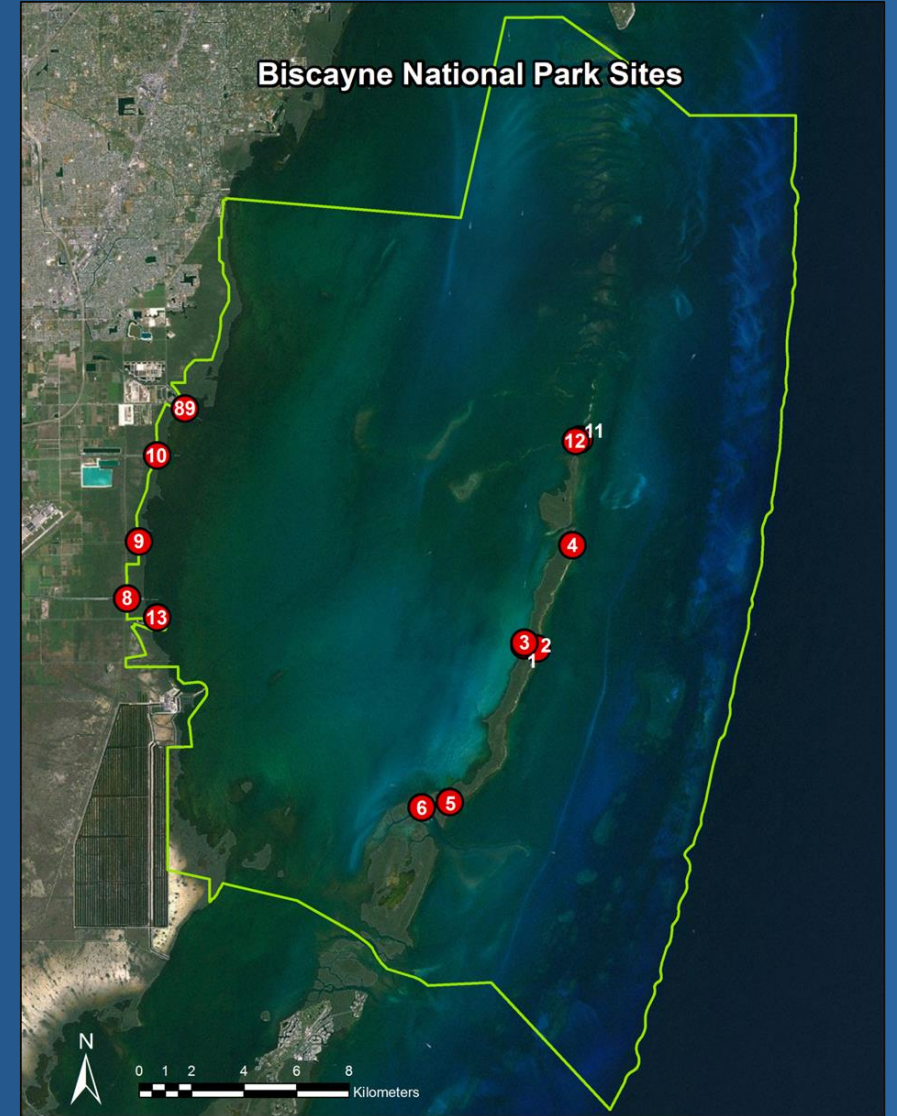
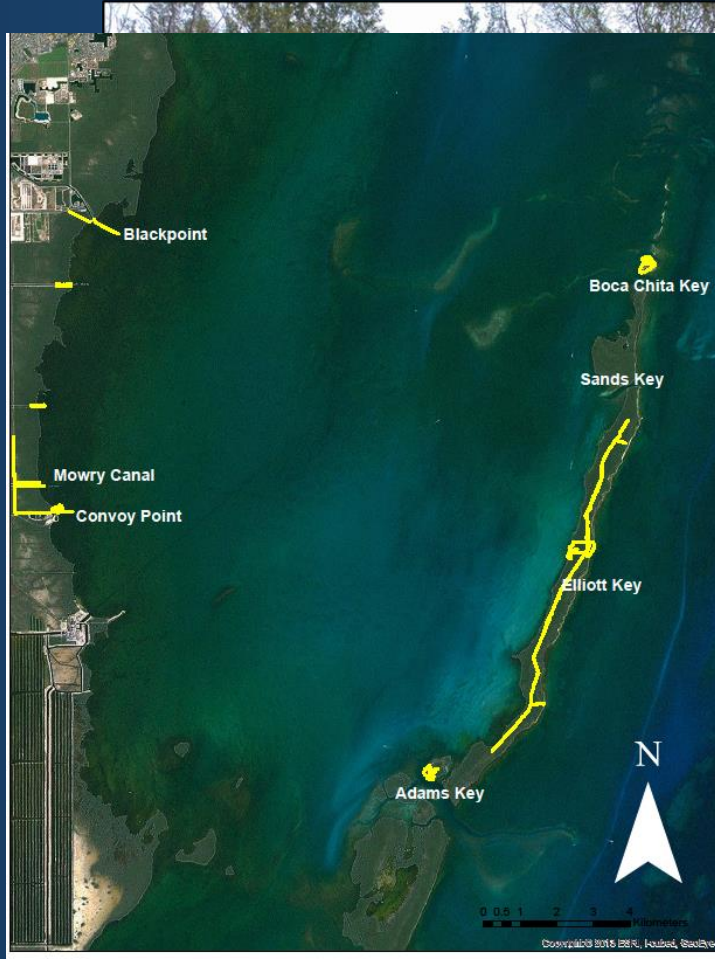
Highlights for 2020/2021

Miami-Dade County – Thanks Gwen and Jane



Highlights for 2020/2021

Biscayne National Park-Corridors of Invasiveness

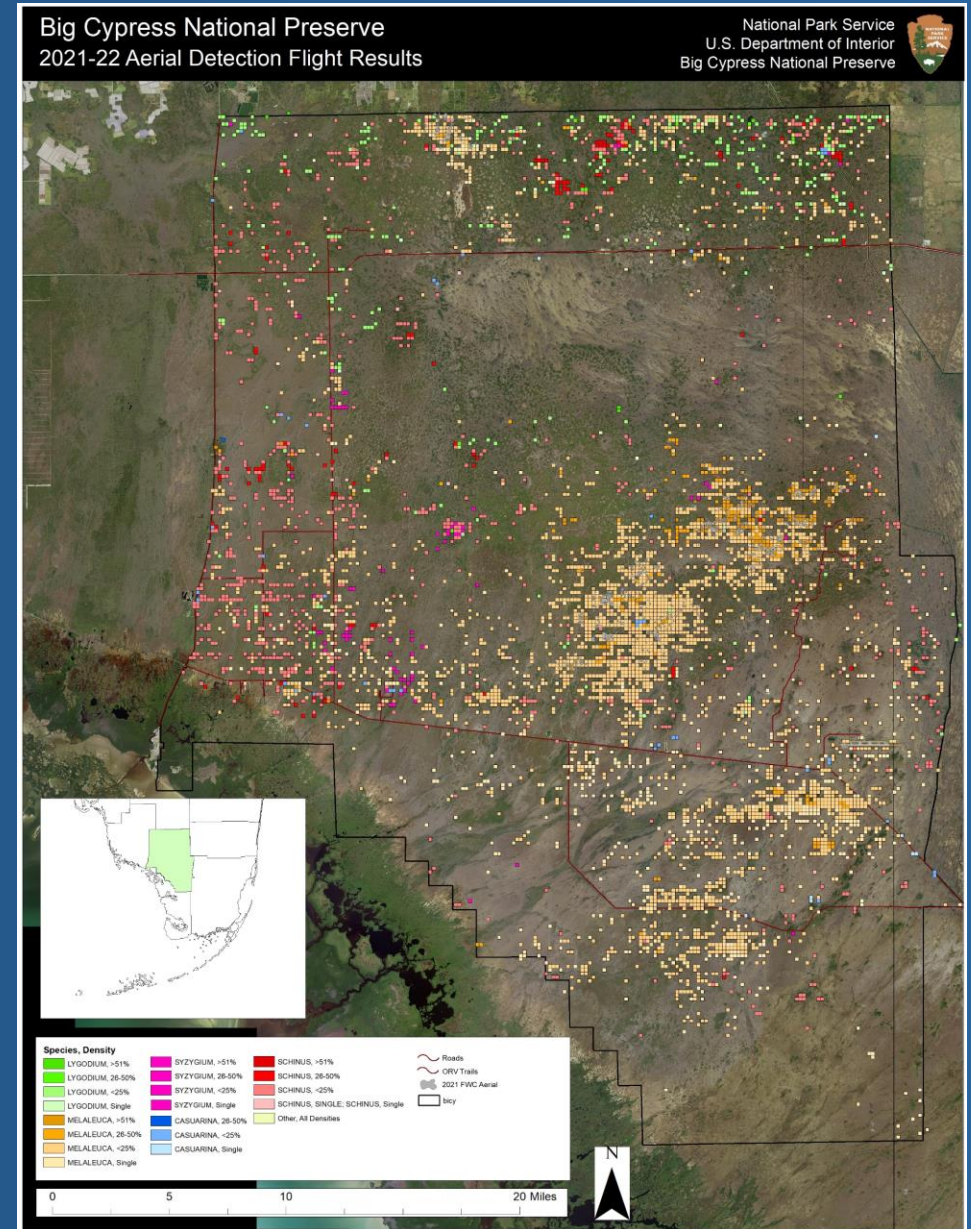


Everglades Cooperative Invasive Species Management Area

Brooke Shamblin
and Shelby
Money Smith

Highlights for 2020/2021

Big Cypress National Preserve Mapping

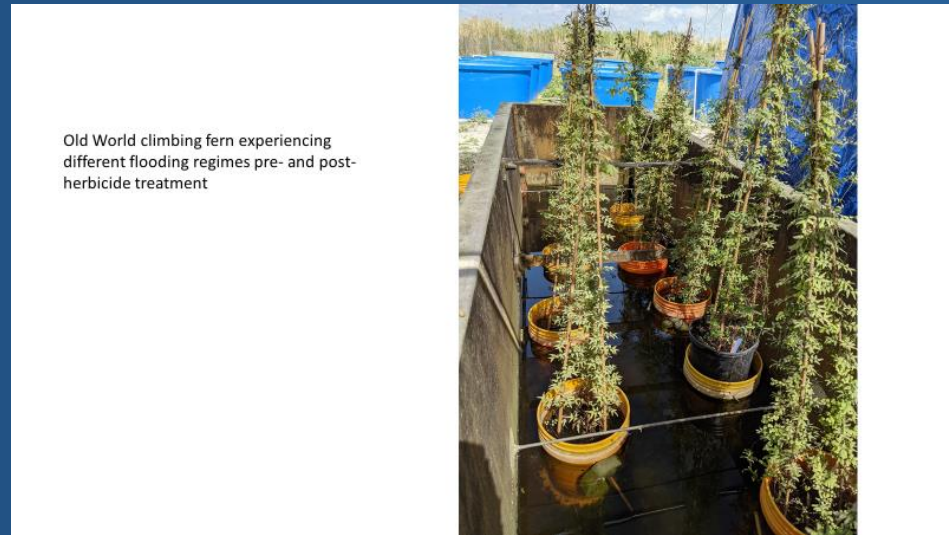
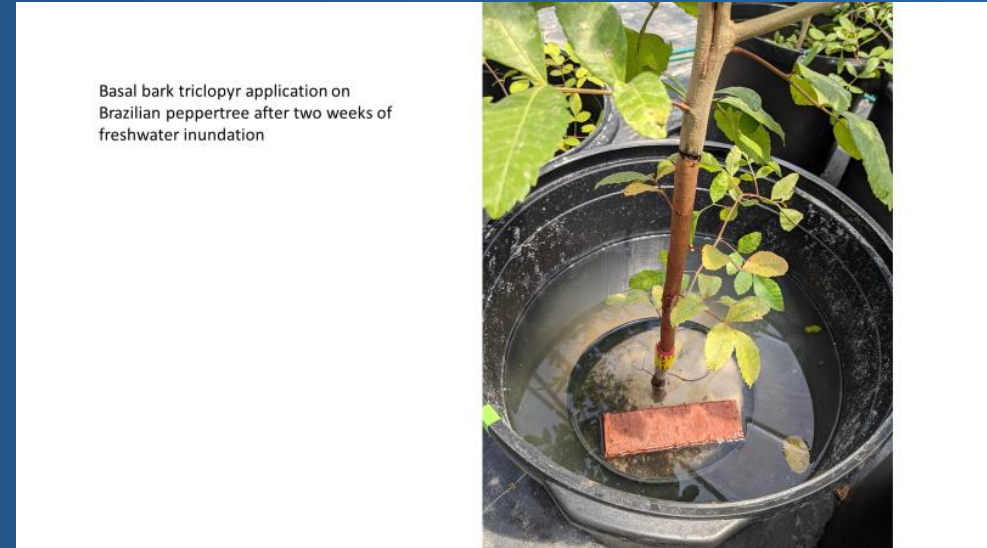


Highlights for 2020/2021

Everglades National Park- Partnership with University of Florida- Impacts of Hurricane Irma on invasive plants



Photos. A-Setting up the flyine and hyperspectral camera and, B-conducting a pass to collect data from a site off of the Rowdy Bend Trail in Everglades National Park.



Luke Flory, Drew Hiatt, and Candice Prince



Everglades Regional Invasive Plant Monitoring

- Systematic Reconnaissance Flights (SRF) conducted across the ECISMA footprint on 5-year intervals
- **Objective:** Estimate abundance and distribution of four priority invasive species: Australian pine, melaleuca, Brazilian pepper and Old World climbing fern.
- The 2020 SRF cycle
 - Began in the fall of 2019, completed Spring 2021 (Pandemic delays).
- Ground-truthing is underway; final data analysis not completed.



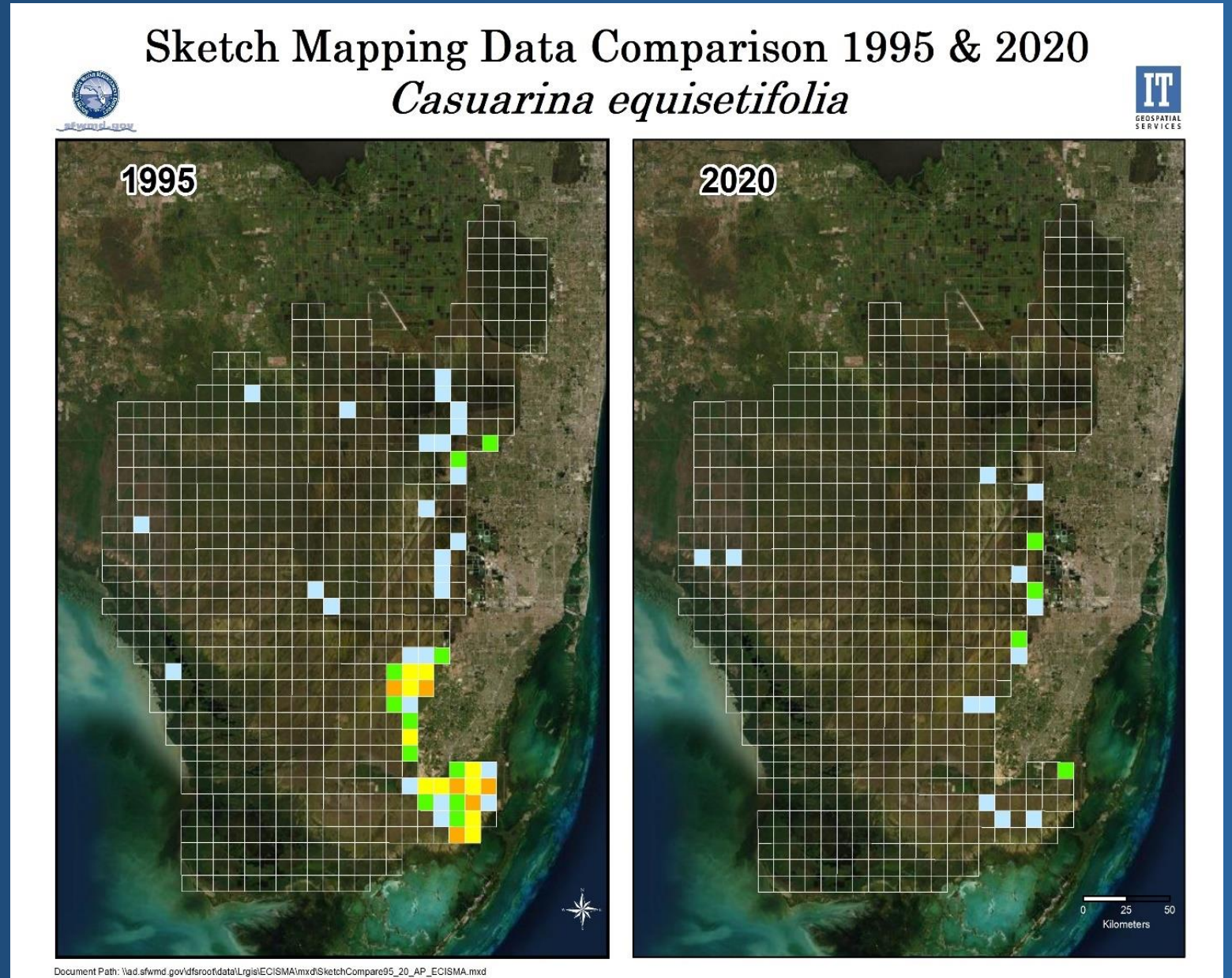
Australian Pine

Preliminary Data



Everglades Cooperative Invasive Species Management Area

LeRoy
Rodgers



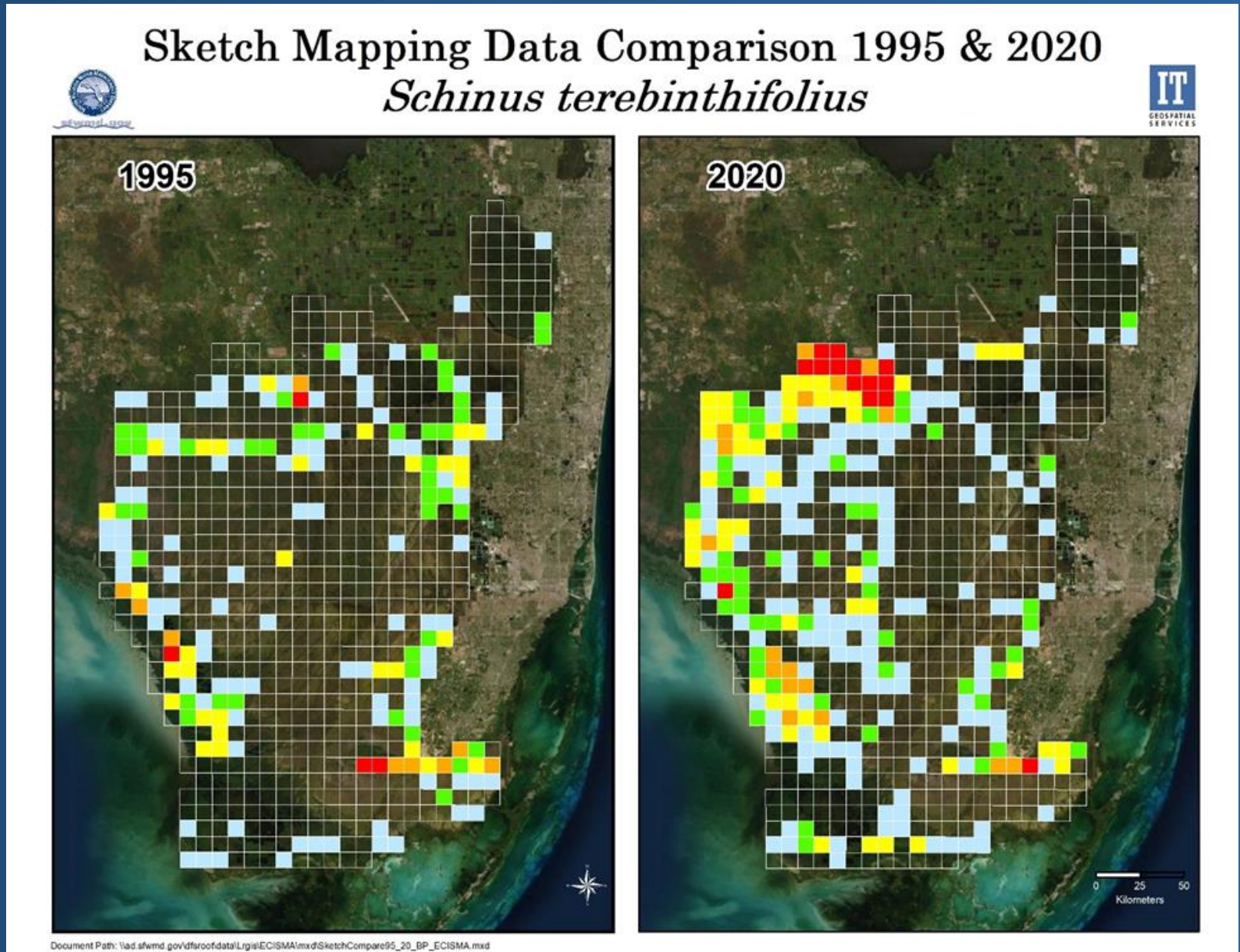
Brazilian Pepper

Preliminary Data



Everglades Cooperative Invasive Species Management Area

LeRoy
Rodgers

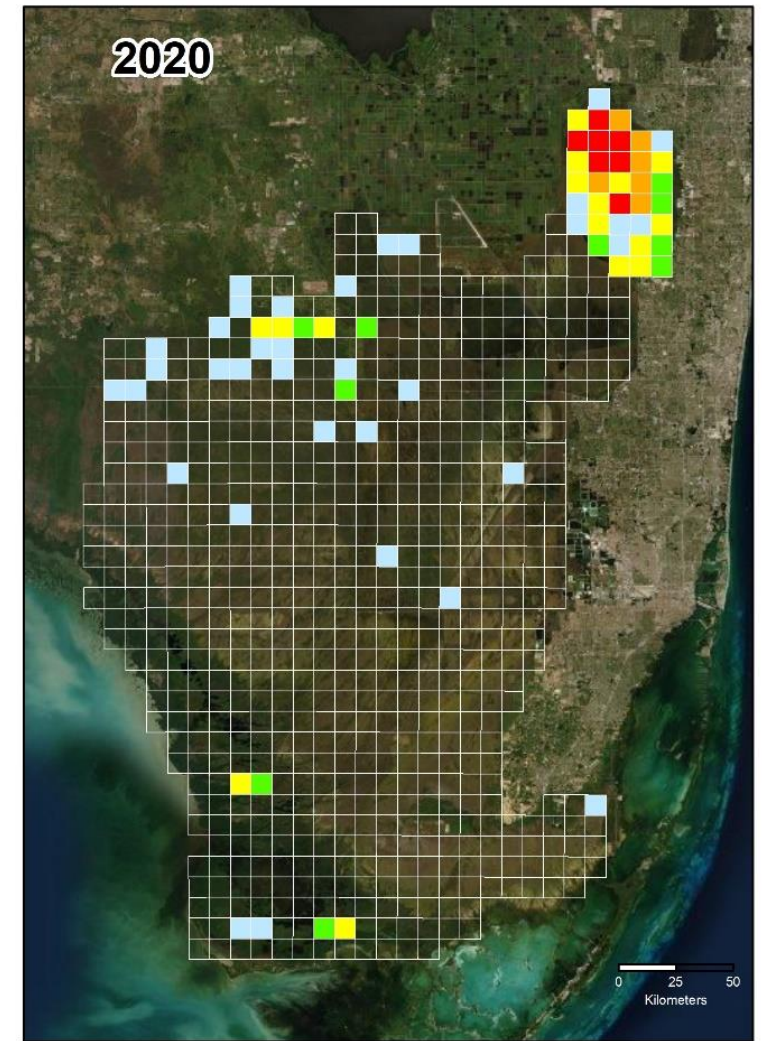
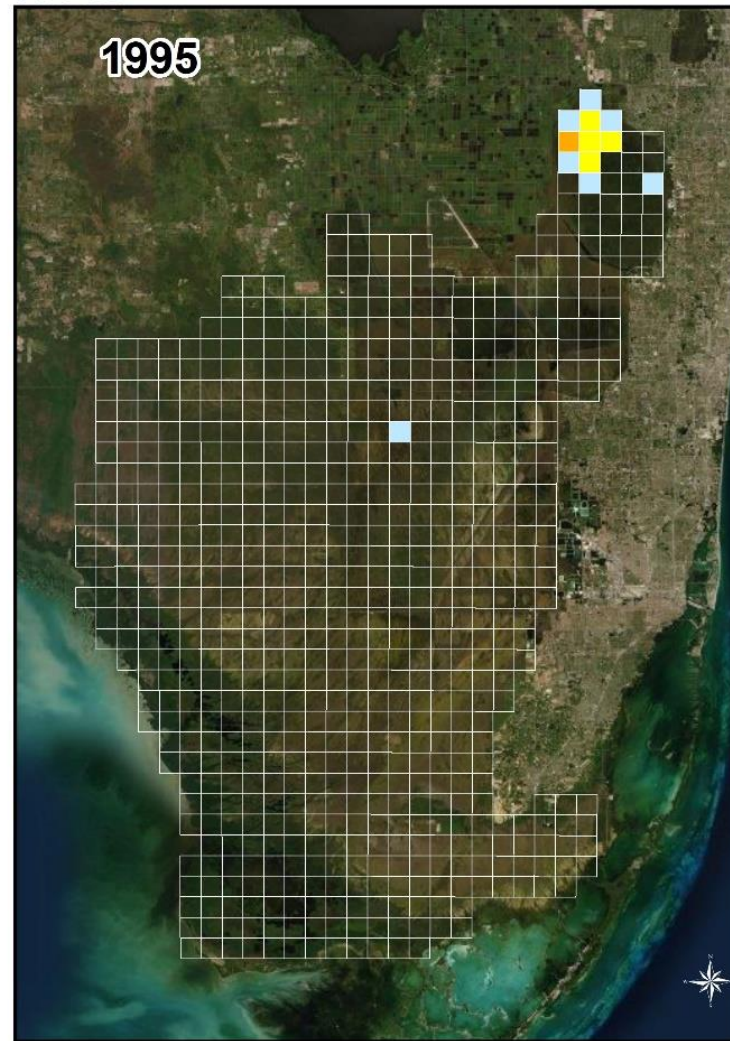


Old World Climbing Fern

Preliminary Data



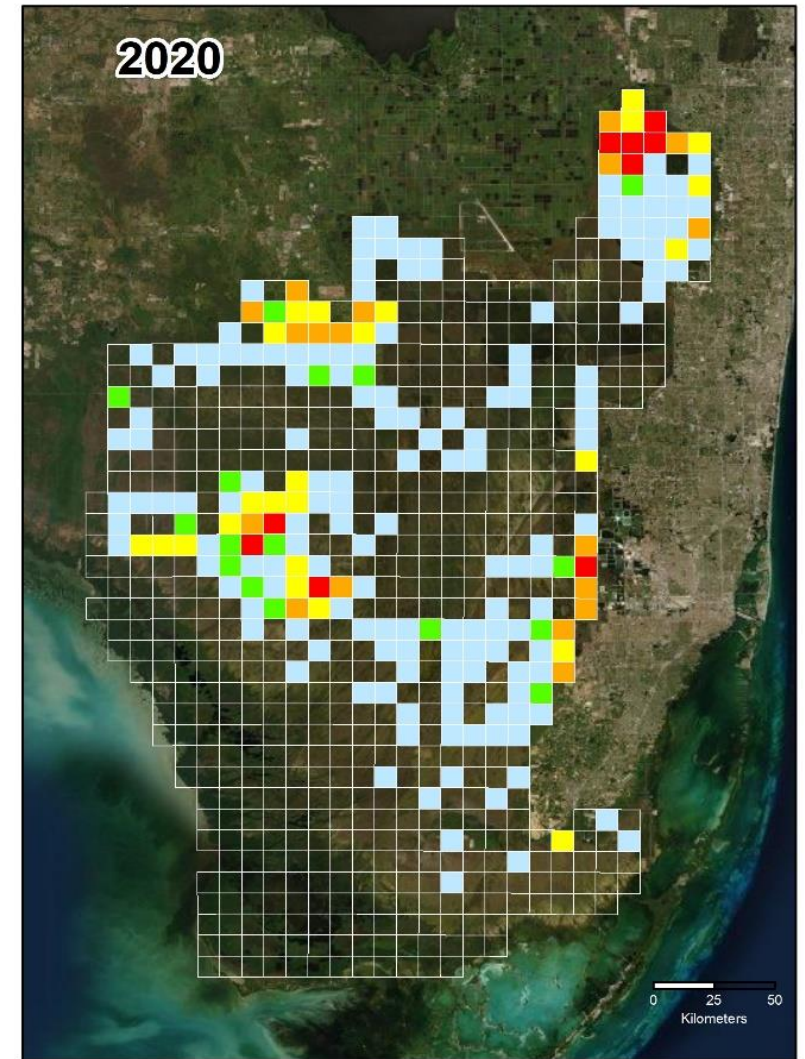
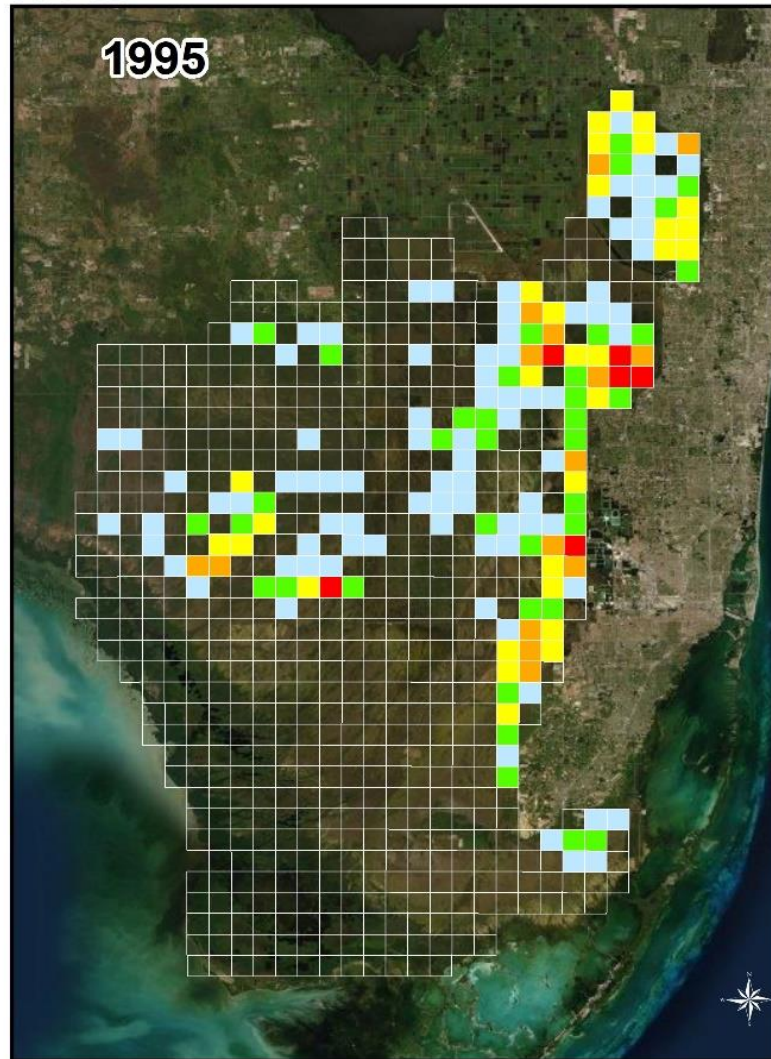
Sketch Mapping Data Comparison 1995 & 2020 *Lygodium microphyllum*



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Sketch Mapping Data Comparison 1995 & 2020

Melaleuca quinquenervia



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Melaleuca

Preliminary Data



Everglades Cooperative Invasive Species Management Area

LeRoy
Rodgers

Everglades Cooperative Invasive Species Management Area

Melissa Juntunen- USFWS
Ian Markovich- USACE
Jessica Spencer-USACE
Erik Eckles- Broward County
Bradley Lovett- Broward County
Billy Snyder- Big Cypress National Preserve
Shelby Moneysmith- Biscayne National Park
Brooke Shamblin- National Park Service

Thank you & Questions

Joy Klein- Miami-Dade County
Ryan Brown- SFWMD
Rachel Taylor- FWC
Luke Flory- University of Florida
Drew Hiatt-University of Florida
Candice Prince- University of Florida



Think locally, Act neighborly
invasive species know no boundaries!

