



22<sup>nd</sup> Annual Meeting

# Regional Assessment of Priority Plant Management

Elena Suarez, Broward Co.

Hillary Cooley, NPS

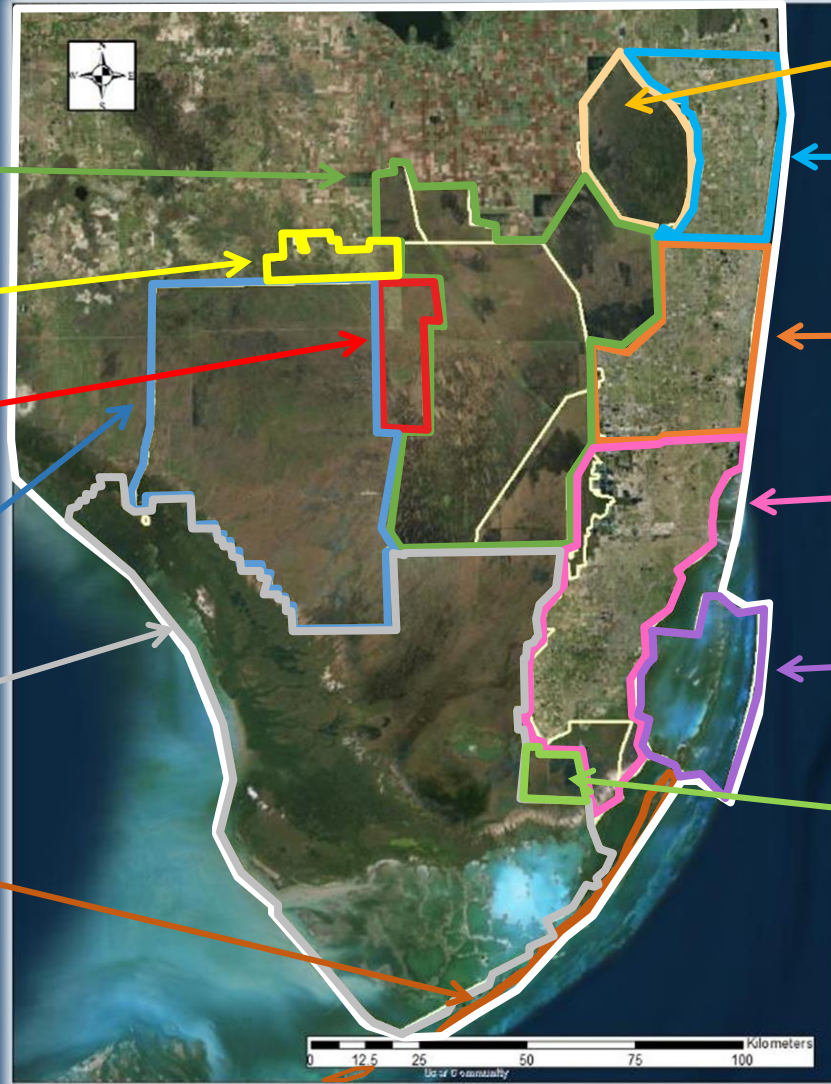
Amy Peters, SFWMD

Jimmy Lange, Fairchild

LeRoy Rodgers, SFWMD

# ECISMA Footprint

South Florida Water Management District



USFWS-Loxahatchee

Palm Beach County

Broward County

Miami-Dade County

Biscayne National Park

Southern Glades WEA

Everglades Complex  
Wildlife Management Areas

Big Cypress Reservation

Miccosukee Reservation

Big Cypress National Preserve

Everglades National Park

Monroe County



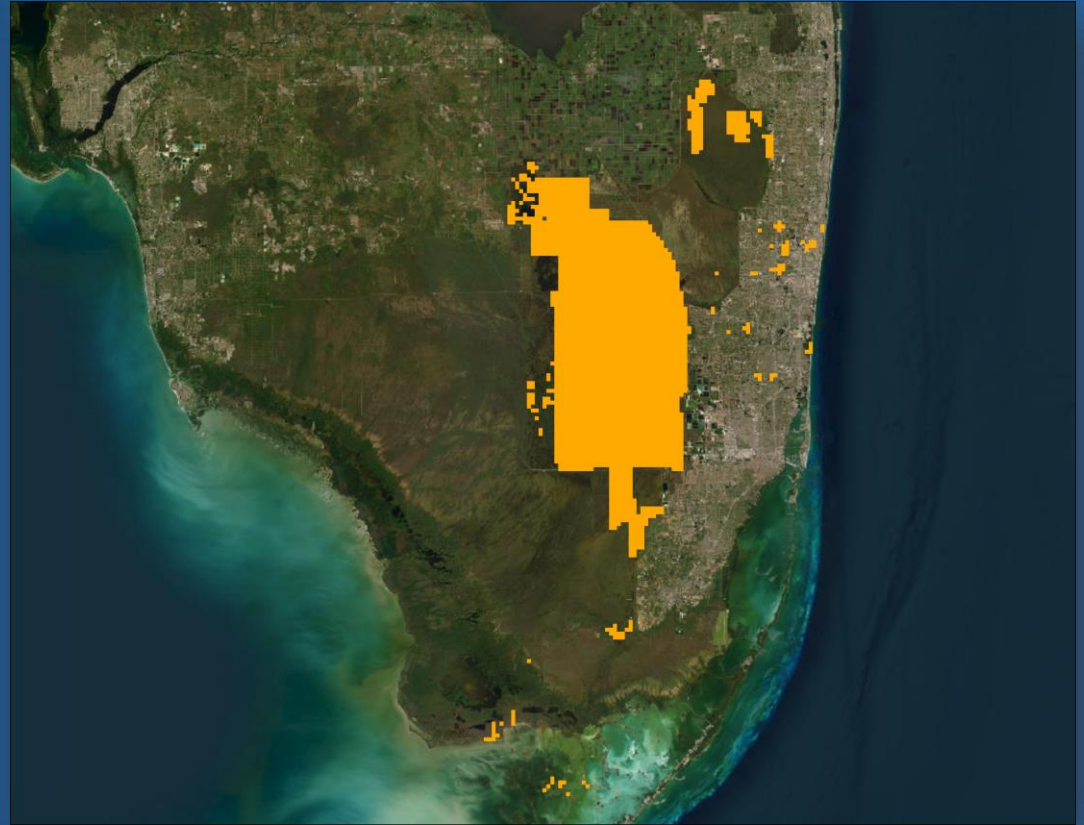
Everglades Cooperative Invasive Species Management Area

## 2024/2025 Combined Treatments



Total Acres Treated: 571,800  
Total Treatment Costs: \$14,925,323.00

## 2025/2026 Proposed Treatments



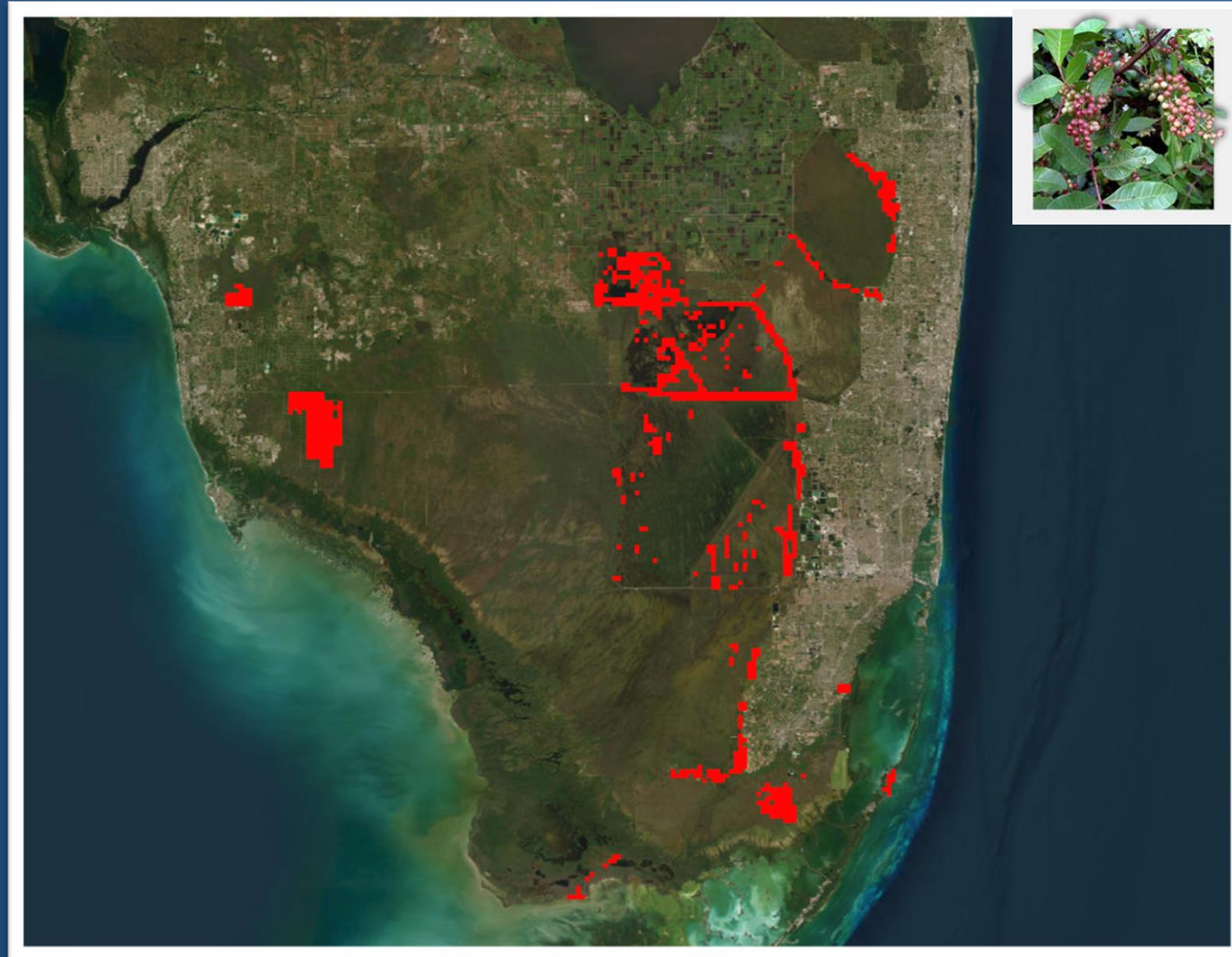
Total Acres Planned: 666,193



# 2024/2025 Combined Treatments: Brazilian pepper (*Schinus terebinthifolia*)

Acres Treated: 218,440

Treatment Costs: \$761,370

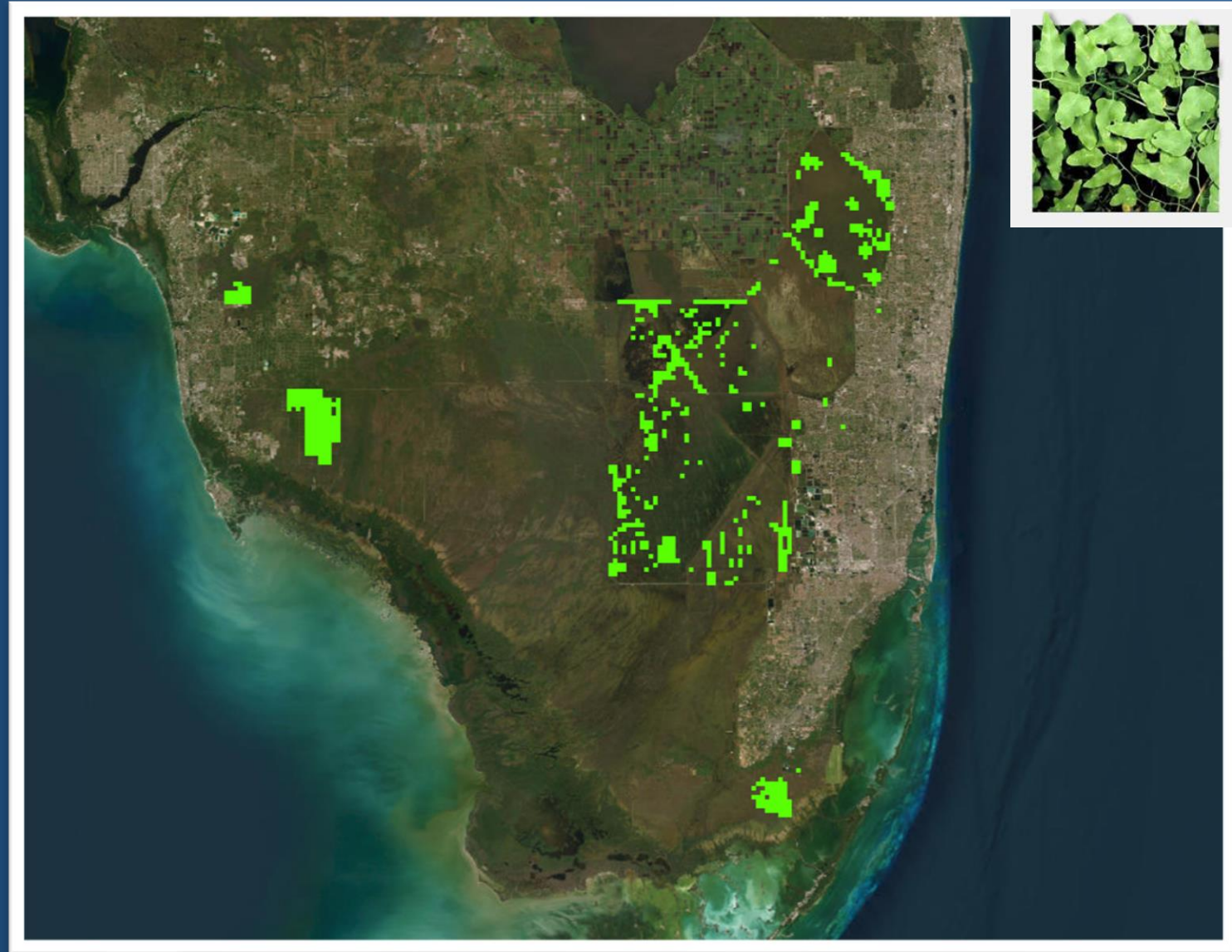


Everglades Cooperative Invasive Species Management Area

# 2024/2025 Combined Treatments: Old world climbing fern (*Lygodium microphyllum*)

Acres Treated: 179,398

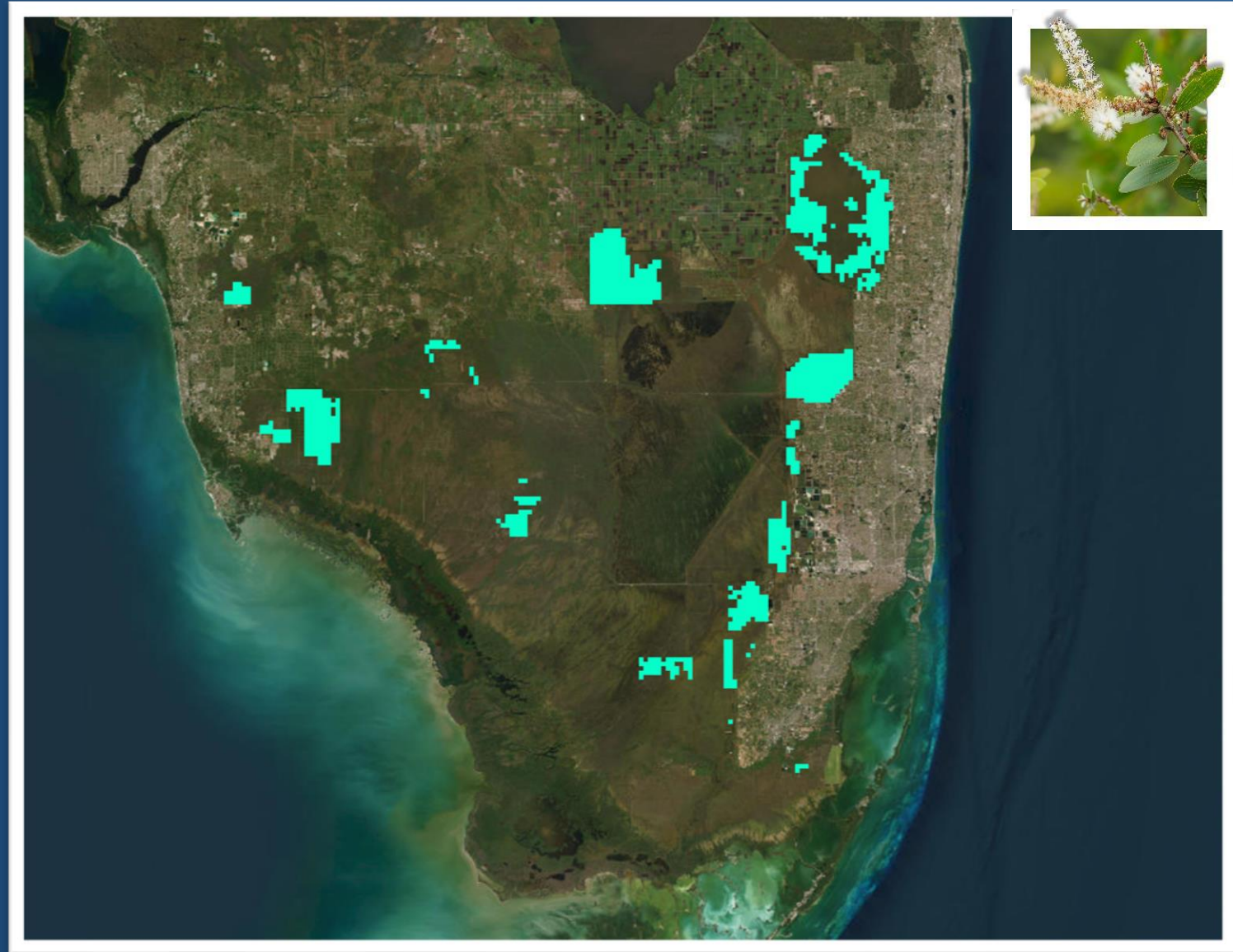
Treatment Costs: \$1,789,630



# 2024/2025 Combined Treatments: (*Melaleuca quinquenervia*)

Acres Treated: 265,637

Treatment Costs: \$8,429,088

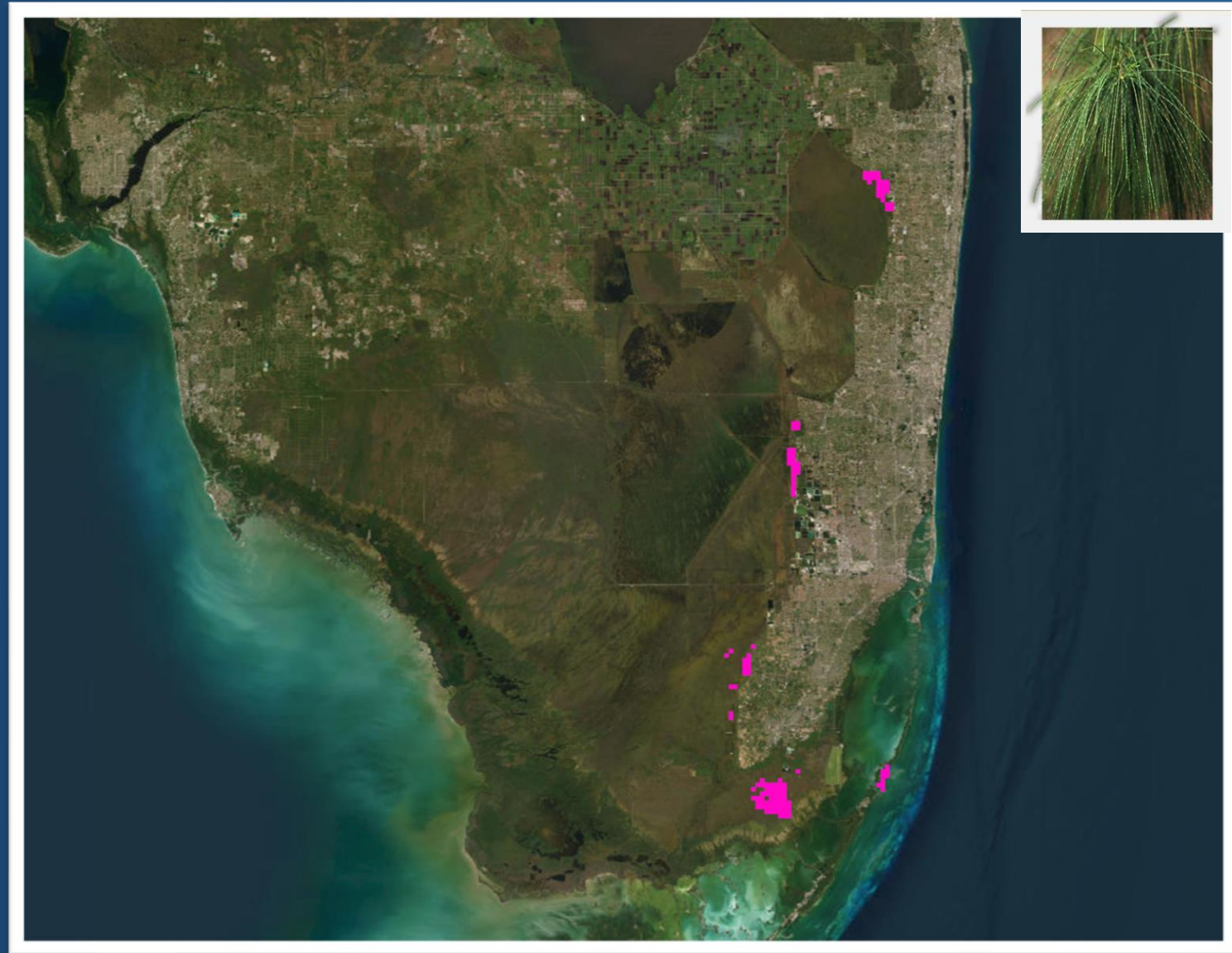


Everglades Cooperative Invasive Species Management Area

# 2024/2025 Combined Treatments: Australian pines (*Casuarina spp.*)

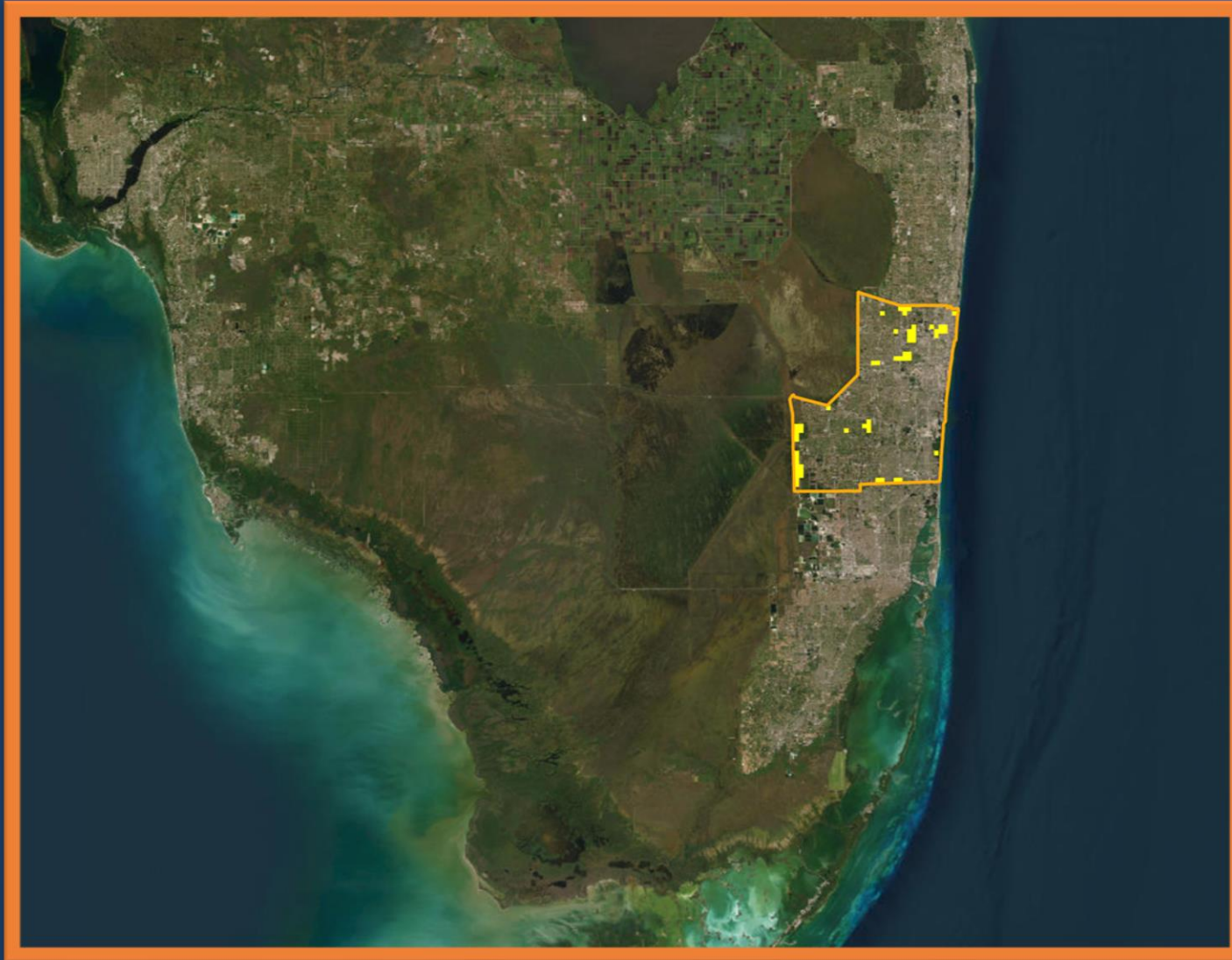
Acres Treated: 31,135

Treatment Costs: \$27,026.00



Everglades Cooperative Invasive Species Management Area

# 2024/2025 Treatments: Broward County



Treatment Cost:  
\$341,107.00

Acres Treated:

- 139 acres (contracted)
- 556 acres (in-house)



Everglades Cooperative Invasive Species Management Area

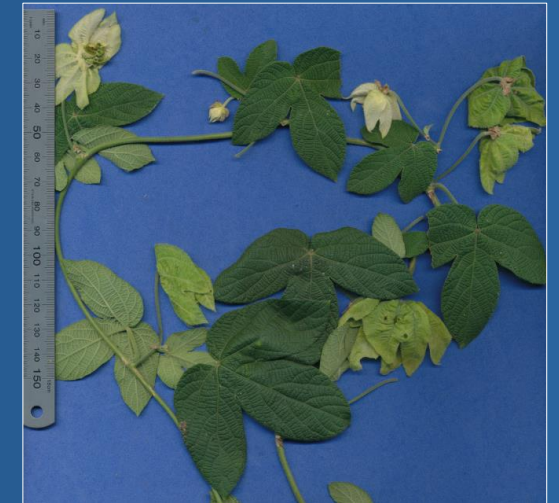
# 2024/2025 Treatments: Broward County

## Priority Species:

- Air-potato (*Dioscorea bulbifera*)
- Arrowhead vine (*Syngonium podophyllum*)
- Australian pine (*Casuarina equisetifolia*)
- Bishopwood (*Bischofia javanica*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Carrotwood (*Cupaniopsis anacardioides*)
- Earleaf acacia (*Acacia auriculiformis*)
- Golden pothos (*Epipremnum aureum*)
- Java plum (*Syzygium cumini*)
- Rosary pea (*Abrus precatorius*)
- Shoebutt ardisia (*Ardisia elliptica*)
- \*Spurgecreeper (*Dalechampia scandens*)
- Surinam cherry (*Eugenia uniflora*)
- Umbrella tree (*Schefflera actinophylla*)

## Newly Detected Species:

- Mountain soursop (*Annona montana*)
- Giant granadilla (*Passiflora quadrangularis*)
- Jeweled maiden fern (*Thelypteris opulenta*) \*EDRR
- Yellow thistle (*Emilia praetermissa*)
- Red flame (*Strobilanthes reptans*)
- Dwarf ambulia (*Limnophila sessiliflora*)
- Marvel grass (*Dichanthium annulatum*)
- Australian bluestem (*Bothriochloa bladhii*)
- Pepper elder (*Peperomia pellucida*)



*Dalechampia scandens*



# 2024/2025 Treatments: Broward County - Highlight



Black sage (*Varronia curassavica*) – considered eradicated from Miramar Pineland



Brazilian Pepper Thrips at Tree Tops Park



# 2024/2025 Treatments:

# PALM BEACH COUNTY ERM

*Priority Species:*

- Air-potato (Dioscorea bulbifera)*
- Areca palm (Dyopsis lutescens)*
- Arrowhead vine (Syngonium podophyllum)*
- Australian-pine (Casuarina equisetifolia)*
- Balsam pear (Momoridica charantia)*
- Bishopwood (Bischofia javanica)*
- Brazilian pepper (Schinus terebinthifolia)*
- Carrotwood (Cupaniopsis anacardioides)*
- Chinese violet (Asystasia gangetica (L.)T.Anderson subsp. gangetica)*
- Cogongrass (Imperata cylindrica)*
- Earleaf acacia (Acacia auriculiformis)*
- Golden pothos (Epipremnum pinnatum)*
- Hydrilla (Hydrilla verticillata)*
- Indian crabgrass (Digitaria longifolia)*
- Java plum (Syzygium cumini)*
- Kalanchoe (Kalanchoe spp.)*
- Madagascar periwinkle (Catharanthus roseus)*
- Melaleuca (Melaleuca spp.)*
- Napiergrass (Pennisetum purpureum)*
- Natal grass (Melinis repens)*
- Old World climbing fern (Lygodium microphyllum)*
- Oyster-plant (Tradescantia spathacea)*
- Pangolagrass (Digitaria eriantha)*
- Paragrass (Urochloa mutica)*
- Peruvian Primrosewillow (Ludwigia peruviana)*
- Pink tabebuia (Tabebuia heterophylla)*
- Rosary pea (Abrus precatorius)*
- Seaside Mahoe (Thespesia populnea)*
- Shoebuttan ardisia (Ardisia elliptica)*
- Showy rattlebox (Crotalaria spectabilis)*
- Smooth rattlebox (Crotalaria pallida)*
- Surinam cherry (Eugenia uniflora)*
- Tropical girdlepod (Mitracarpus hirtus)*
- Torpedograss (Panicum repens)*
- Umbrella tree (Schefflera actinophylla)*
- West Indian marsh grass (Hymenachne amplexicaulis) \*EDRR*
- Yellow nutgrass (Cyperus esculentus)*
- Durban crowfootgrass (Dactyloctenium aegyptium)*
- Council tree (Ficus altissima)*
- Lady-of-the-night cactus (Cereus hexagonus)*
- Fountain Grass (Pennisetum setaceum) \*EDRR*
- Sacramento burrbark (Triumfetta semitriloba)*
- Climbing dayflower (Commelina diffusa)*
- West Indian almond (Terminalia catappa)*
- Guinea Grass (Urochloa máxima)*
- Simpleleaf Chastetree (Vitex trifolia)*
- Nephrolepis brownii (Asian sword fern)*
- Nephrolepis cordifolia (Tuberous sword fern)*
- Wild bushbean (Macroptilium lathyroides)*



# 2024/2025 Treatments: Palm Beach County (ERM) - Highlight

- PBC ERM hosted 2 ECISMA & TCCISMA joint workdays
- Prosperity Oaks Natural Area
  - Cerulean flax lily (*Dianella ensifolia*)
  - 15 acres of hydric hammock
- Loxahatchee Slough Natural Area
  - Tropical nutrush (*Scleria microcarpa*)
  - Eggers nutrush (*Scleria eggersiana*)



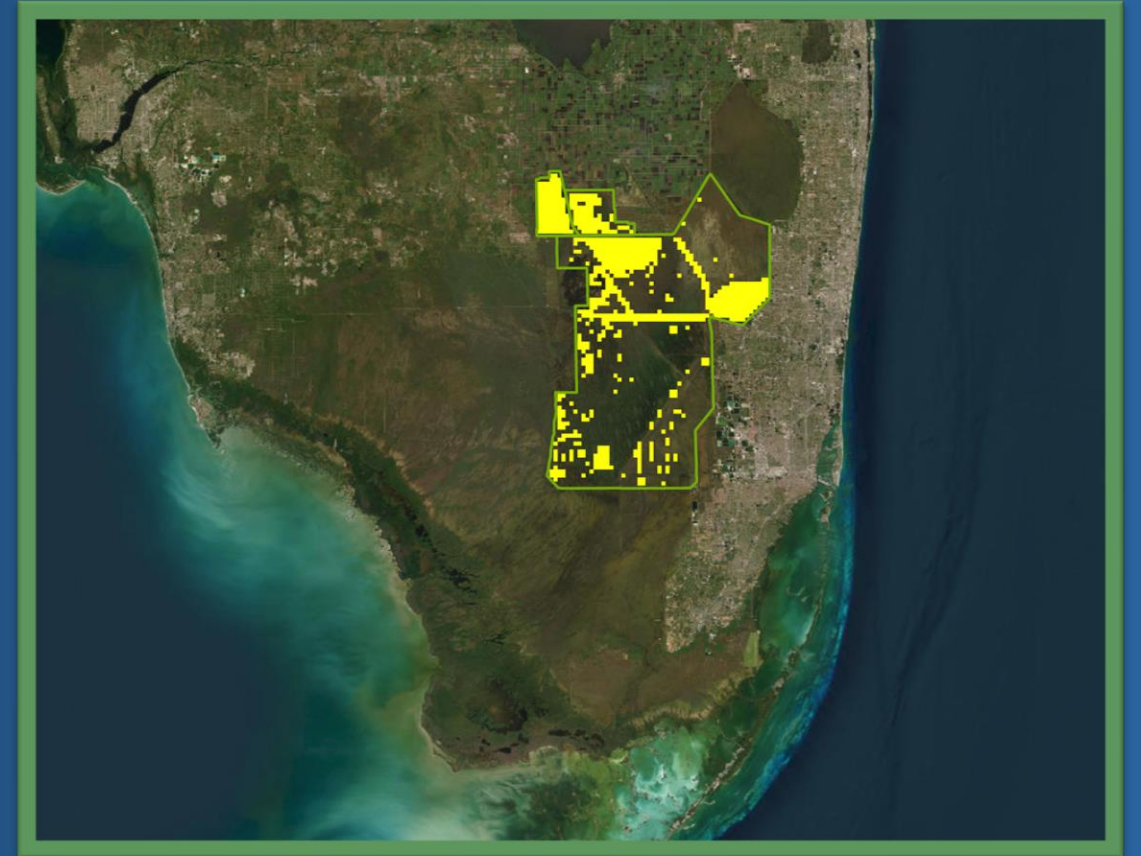
# 2024/2025 Treatments: FWC Everglades Complex Wildlife Management Areas (ECWMA)

Treatment Cost: \$1,239,991.00

Acres Treated: 11,006

## Priority Species:

- Arrowhead vine (*Syngonium podophyllum*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Castorbean (*Ricinus communis*)
- Cogongrass (*Imperata cylindrica*)
- Cuban bulrush (*Cyperus blepharoleptos*)
- Dayflowering jessamine (*Cestrum diurnum*)
- Java plum (*Syzygium cumini*)
- Lantana (*Lantana strigocamara*)
- Melaleuca (*Melaleuca quinquenervia*)
- Napiergrass (*Pennisetum purpureum*)
- Old World climbing fern (*Lygodium microphyllum*)
- Paragrass (*Urochloa mutica*)
- Peruvian Primrosewillow (*Ludwigia peruviana*)
- Torpedograss (*Panicum repens*)
- West Indian marshgrass (*Hymenachne amplexicaulis*)
- Wild taro (*Colocasia esculenta*)
- Wright's nutrush (*Scleria lacustris*)



Everglades Cooperative Invasive Species Management Area

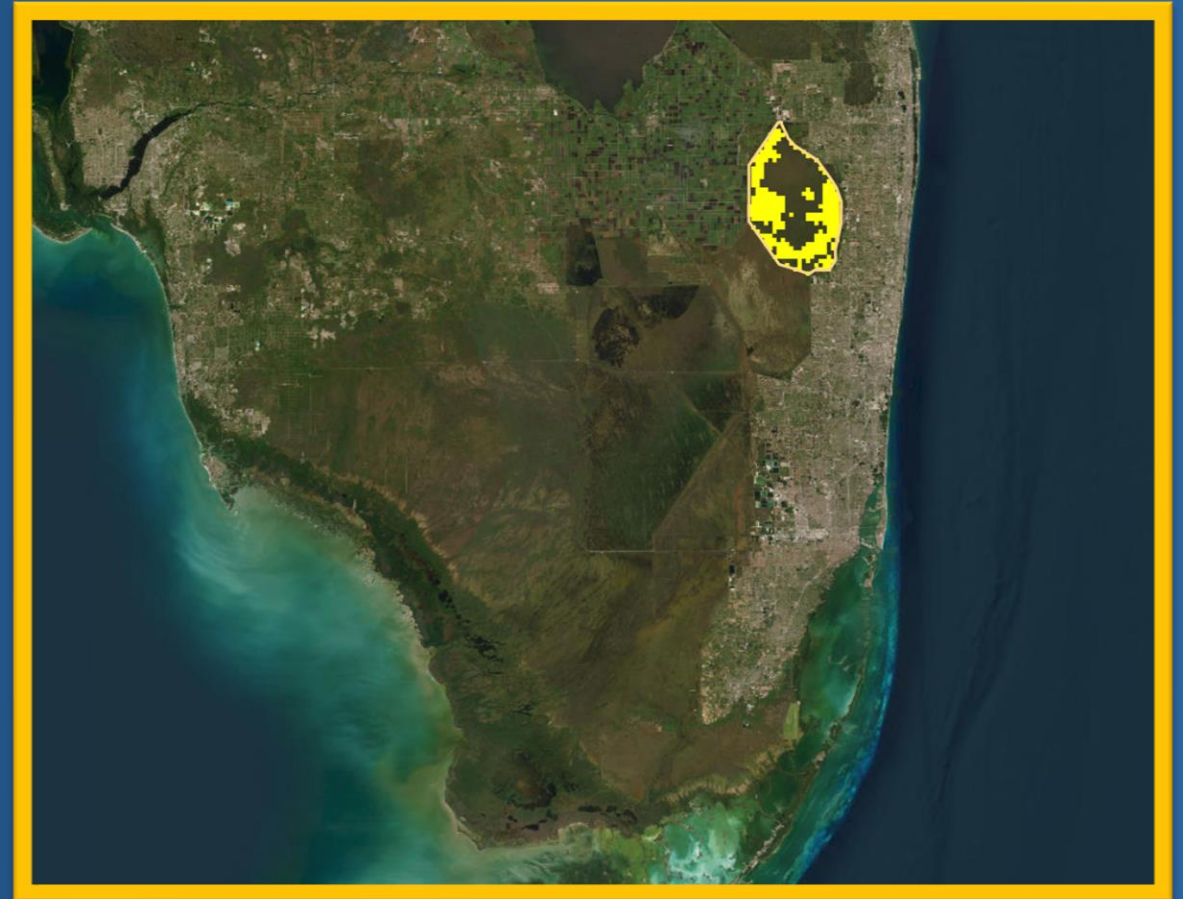
# 2024/2025 Treatments: Loxahatchee (USFWS)

## Priority Species:

- Old World climbing fern (*Lygodium microphyllum*)
- Melaleuca (*Melaleuca quinquenervia*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Nutrush species (*Scleria* spp.)
- Shoebuttan ardisia (*Ardisia elliptica*)
- Bishopwood (*Bischophia javanica*)

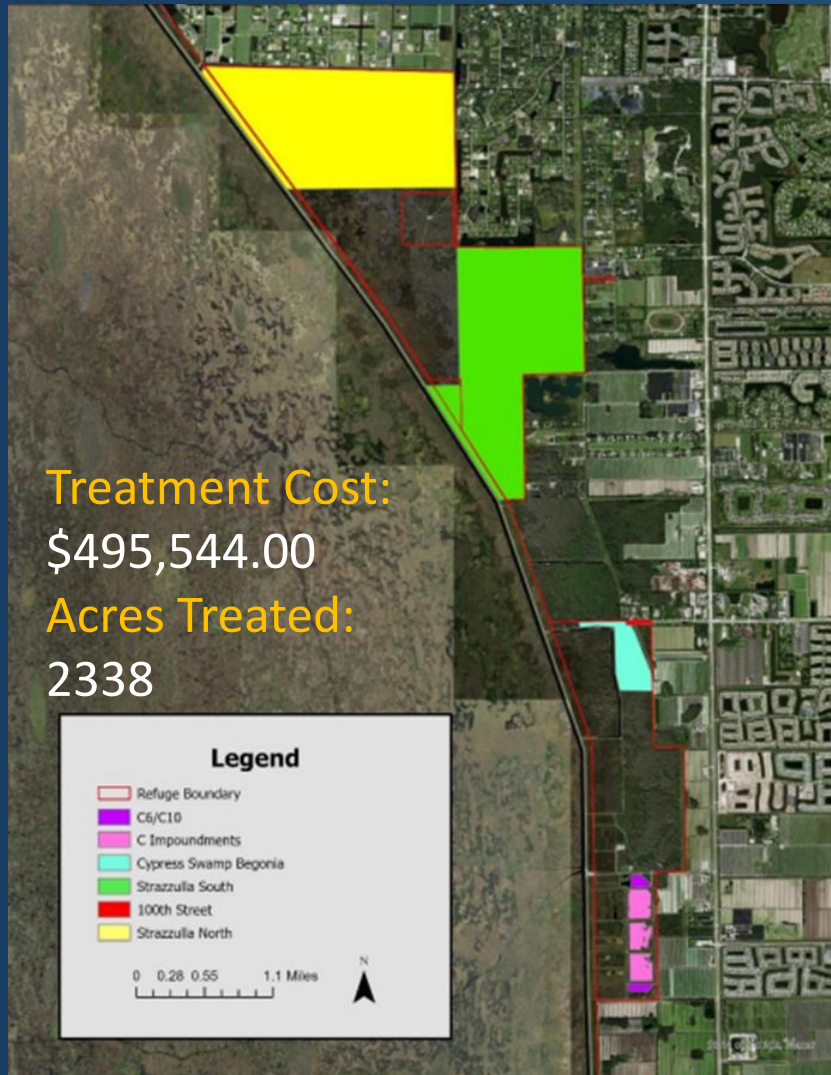
## Newly Detected Species:

- Clubbed begonia (*Begonia cucullata*) \*rediscovered in 2024, small isolated population was discovered in 2025
- Fireweed (*Erechtites valerianifolius*; New to continental US)

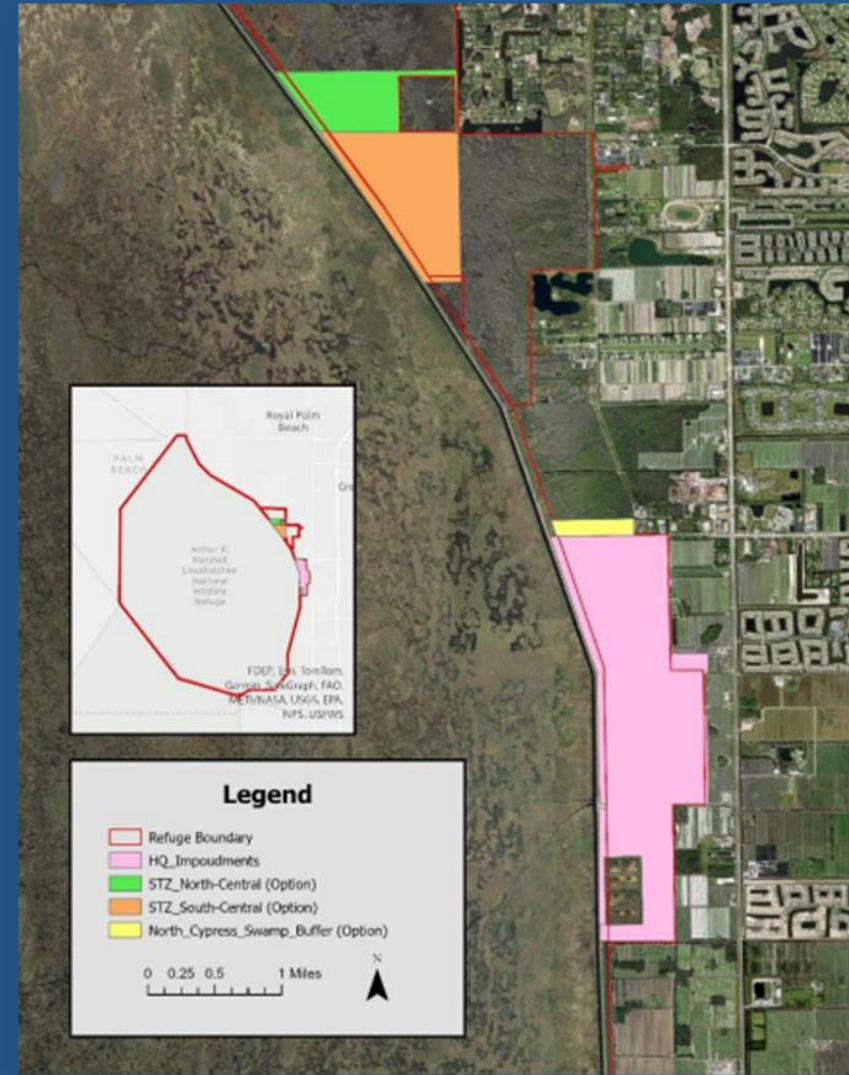


# Loxahatchee (USFWS)

Perimeter Treatments 24/25



Planned Treatments 25/26



## Treatments 24/25: Loxahatchee (USFWS) Highlight



A mosaic burn in the interior of ARM Loxahatchee NWR. Julia Izzo/USFWS



Everglades Cooperative Invasive Species Management Area

# 2024/2025 Treatments: Big Cypress National Preserve

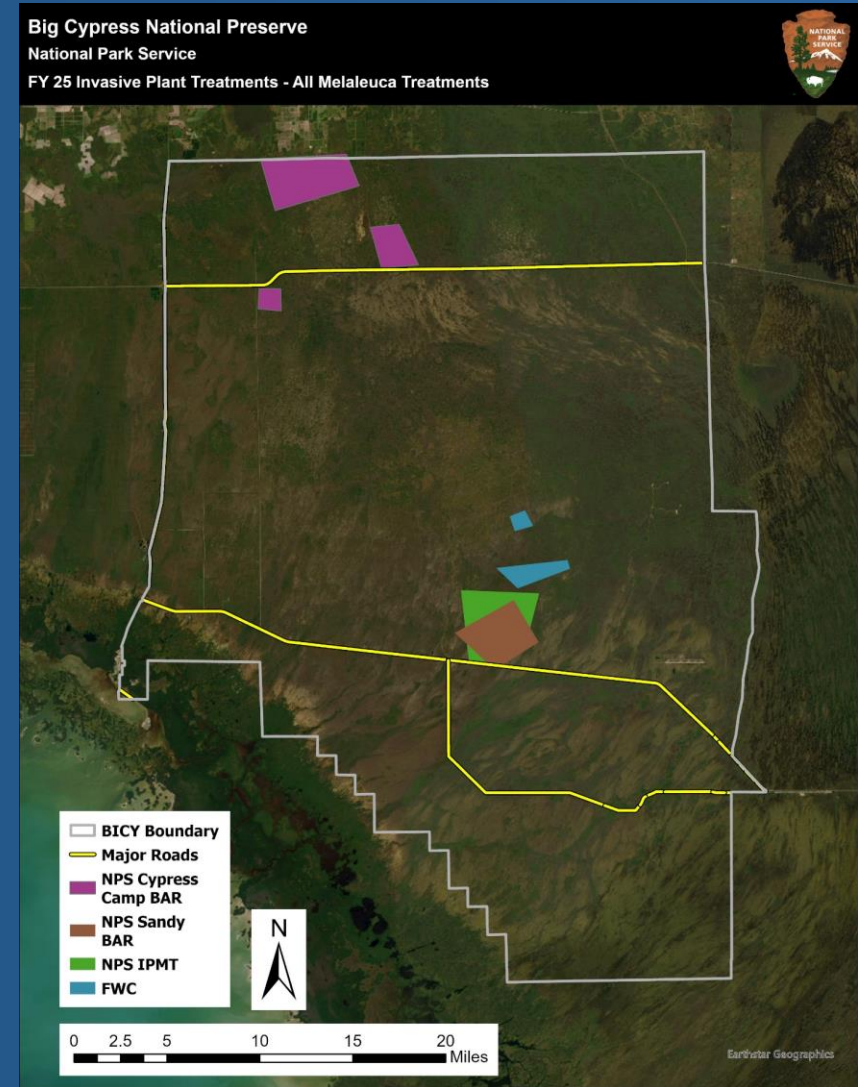
Priority Species: Melaleuca

Newly Detected Species: Wright's nutrush (*Scleria lacustris*)

Treatment Cost: \$1,140,100

Acres Treated:

- 26,500 (gross acres covered)
- 90 acres (infested)



Thank you Billy Snyder- NPS photo

Everglades Cooperative Invasive Species Management Area



# 2024/2025 Treatments: Biscayne National Park

## Priority Species:

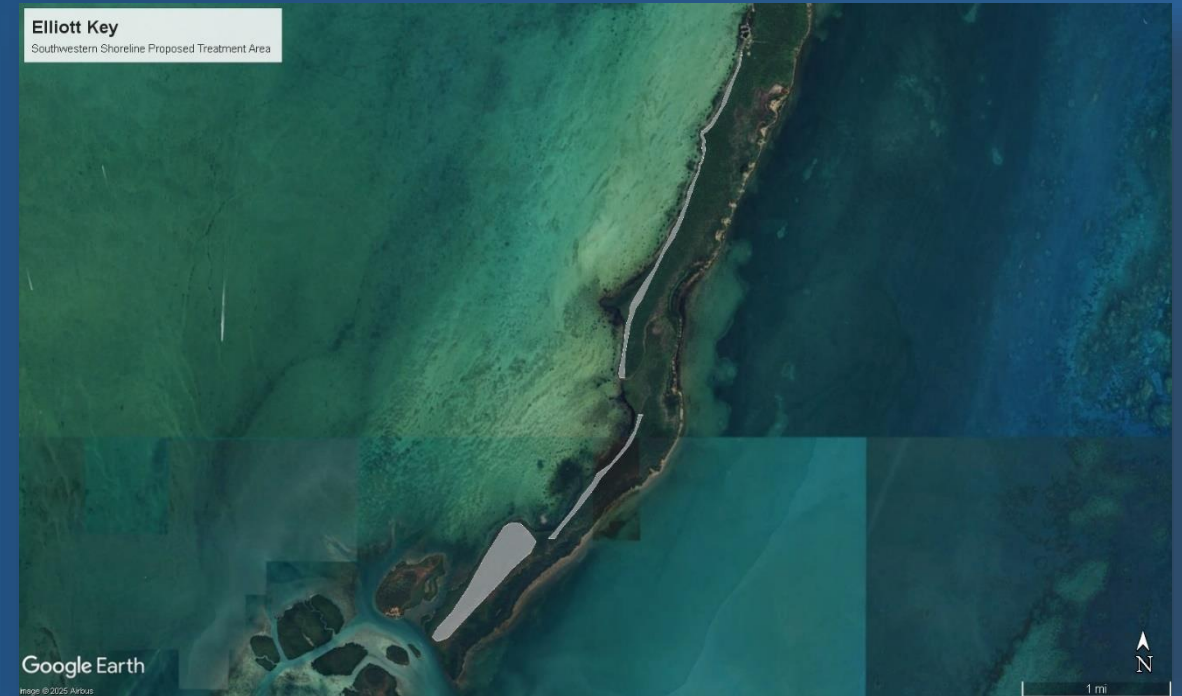
- Beach naupaka (*Scaevola sericea*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Latherleaf (*Colubrina asiatica*)
- Portia tree (*Thespesia populnea*)
- Snake plant (*Dracaena trifasciata*)

Treatment Cost: \$89,362.00

## Acres Treated:

- 380 acres (contracted)
- 72 acres (in-house)

## Planned Treatment



Everglades Cooperative Invasive Species Management Area

# 2024/2025 Treatments: Everglades National Park

## Priority Species:

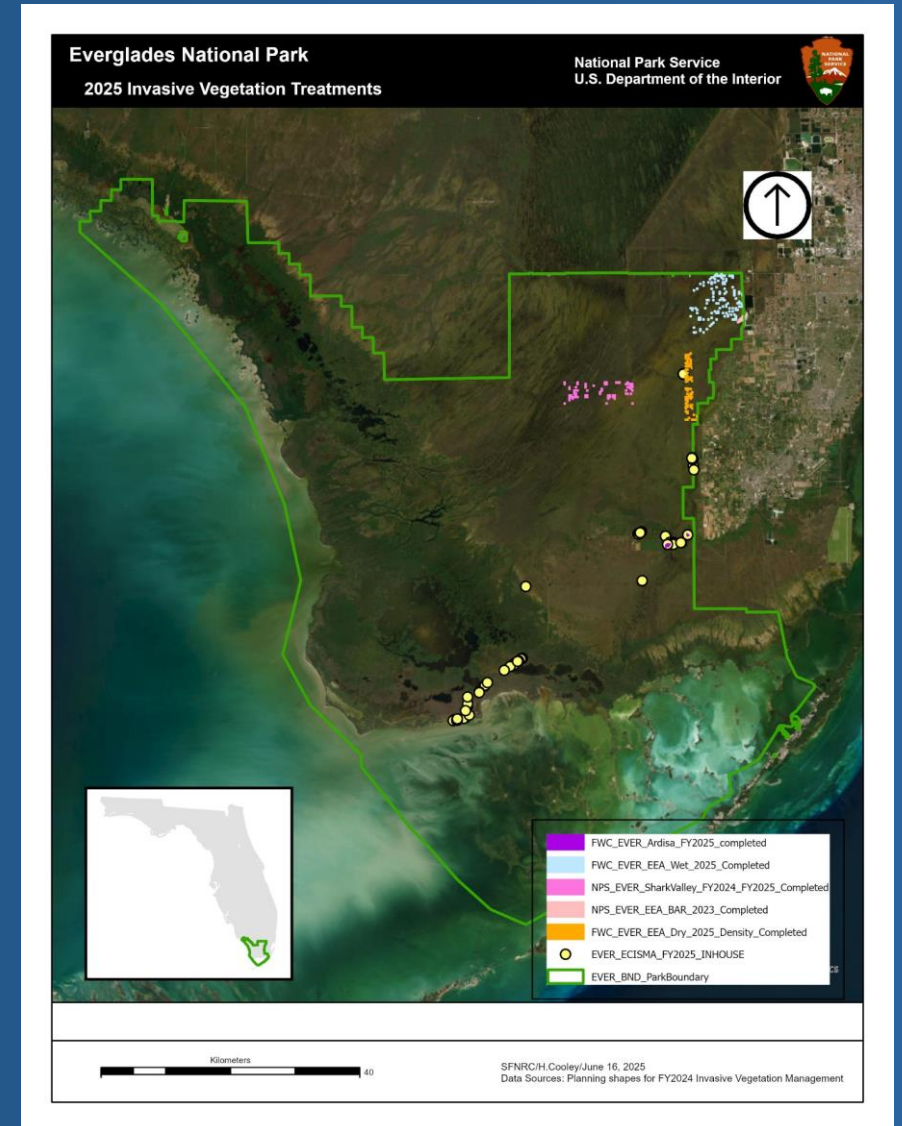
- Australian-pine (*Casuarina equisetifolia*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Melaleuca (*Melaleuca quinquenervia*)
- Old World climbing fern (*Lygodium microphyllum*)
- Shoebuttan ardisia (*Ardisia elliptica*)

Newly Detected Species: Hairyflower wild petunia (*Ruellia ciliatiflora*)

Treatment Cost: \$632,508.00

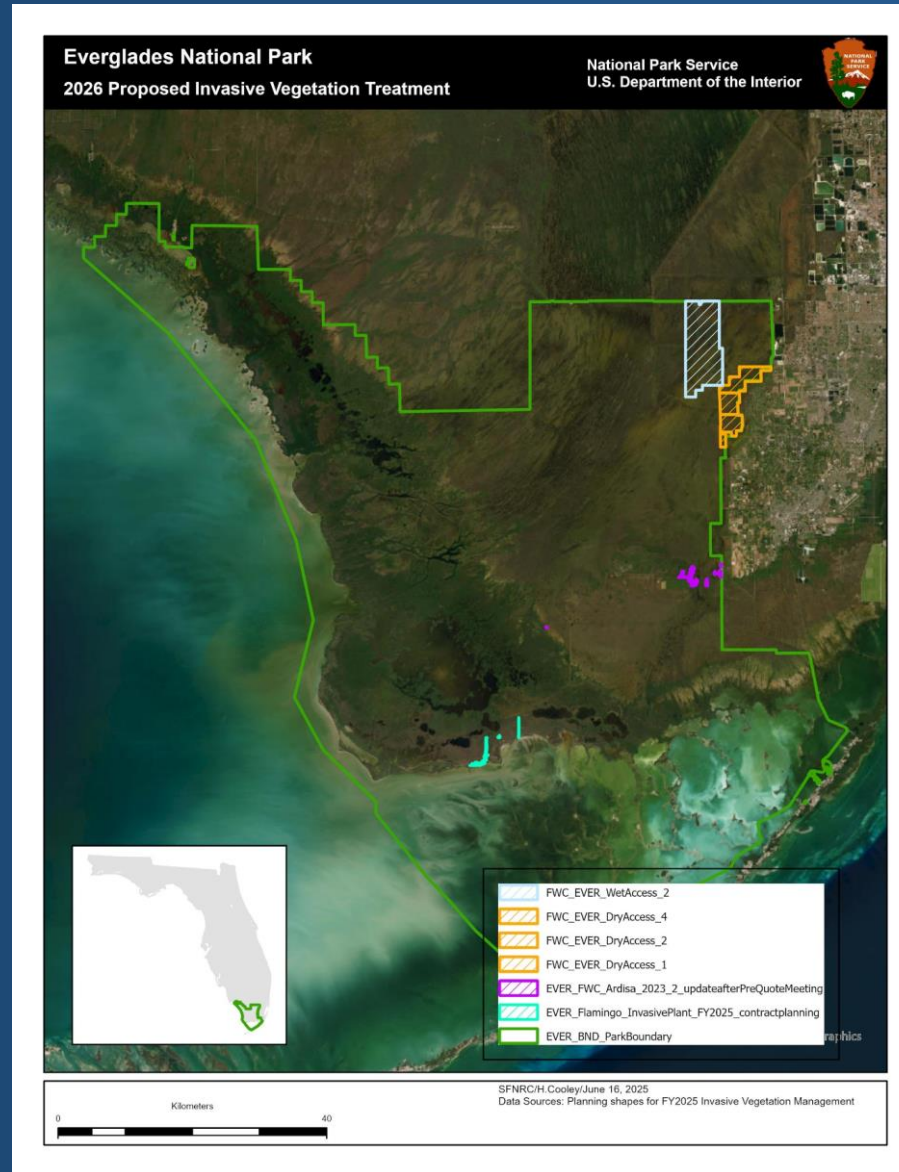
## Acres Treated:

- Gross Acres Swept- 4,556
- Canopy Acres Treated- 261

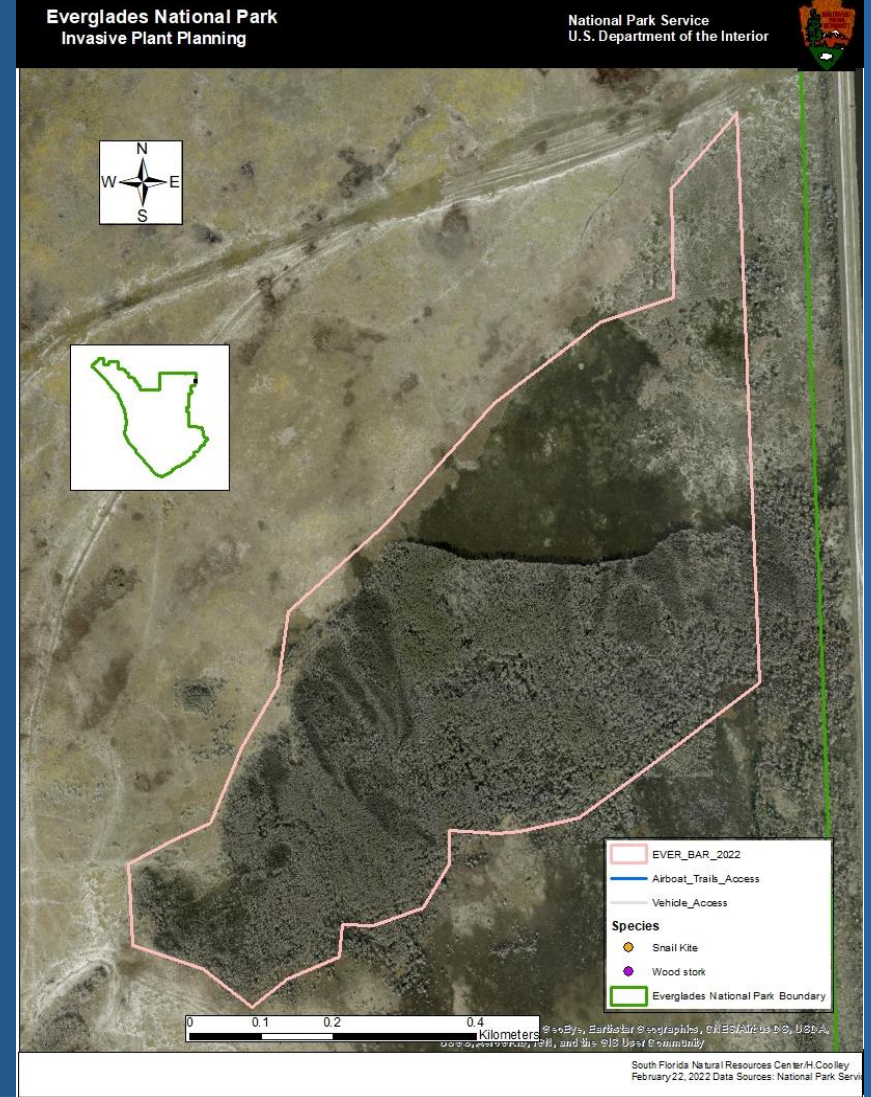


Everglades Cooperative Invasive Species Management Area

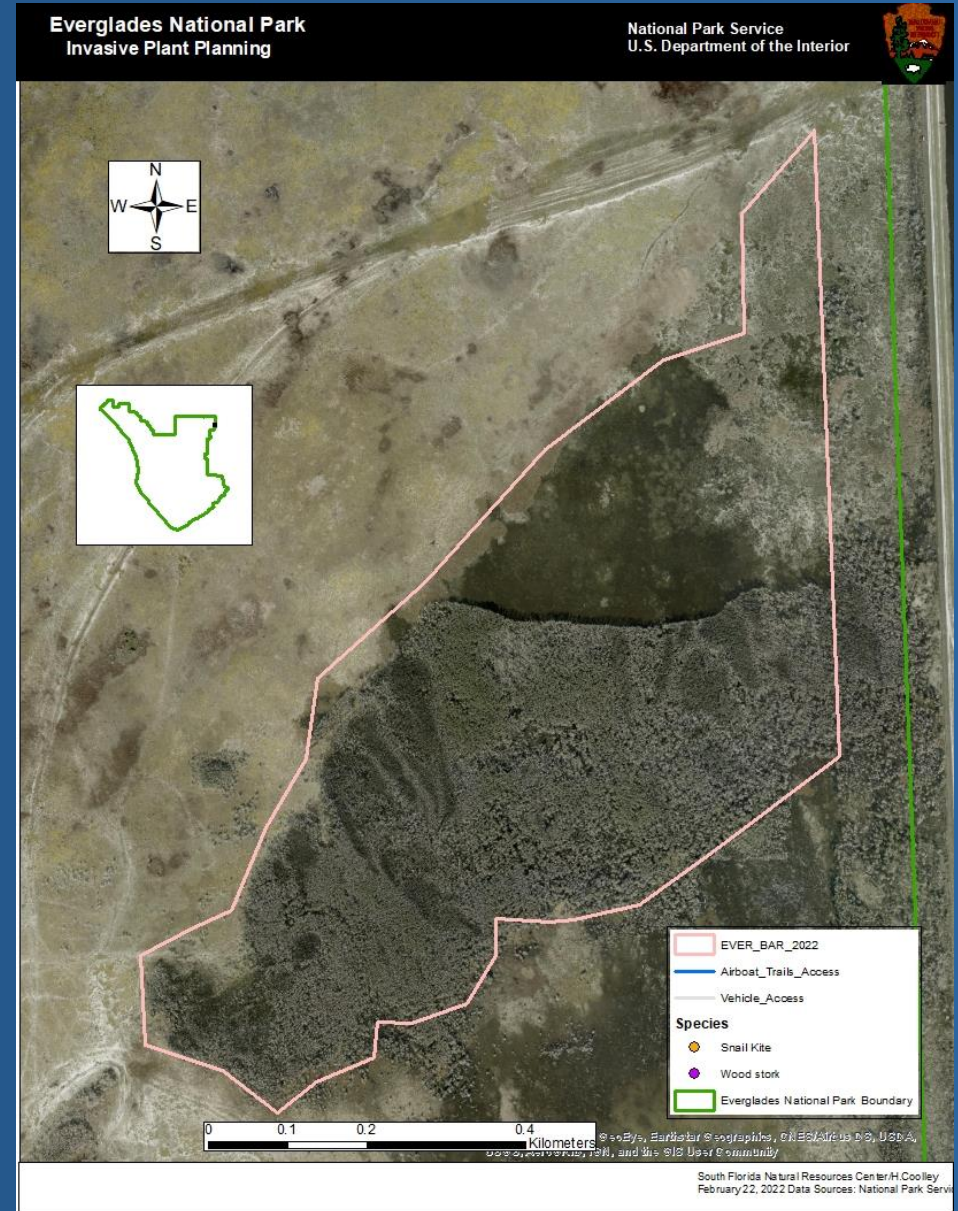
# Planned Treatments 25/26: Everglades National Park



# Everglades Cooperative Invasive Species Management Area Everglades National Park- Highlight

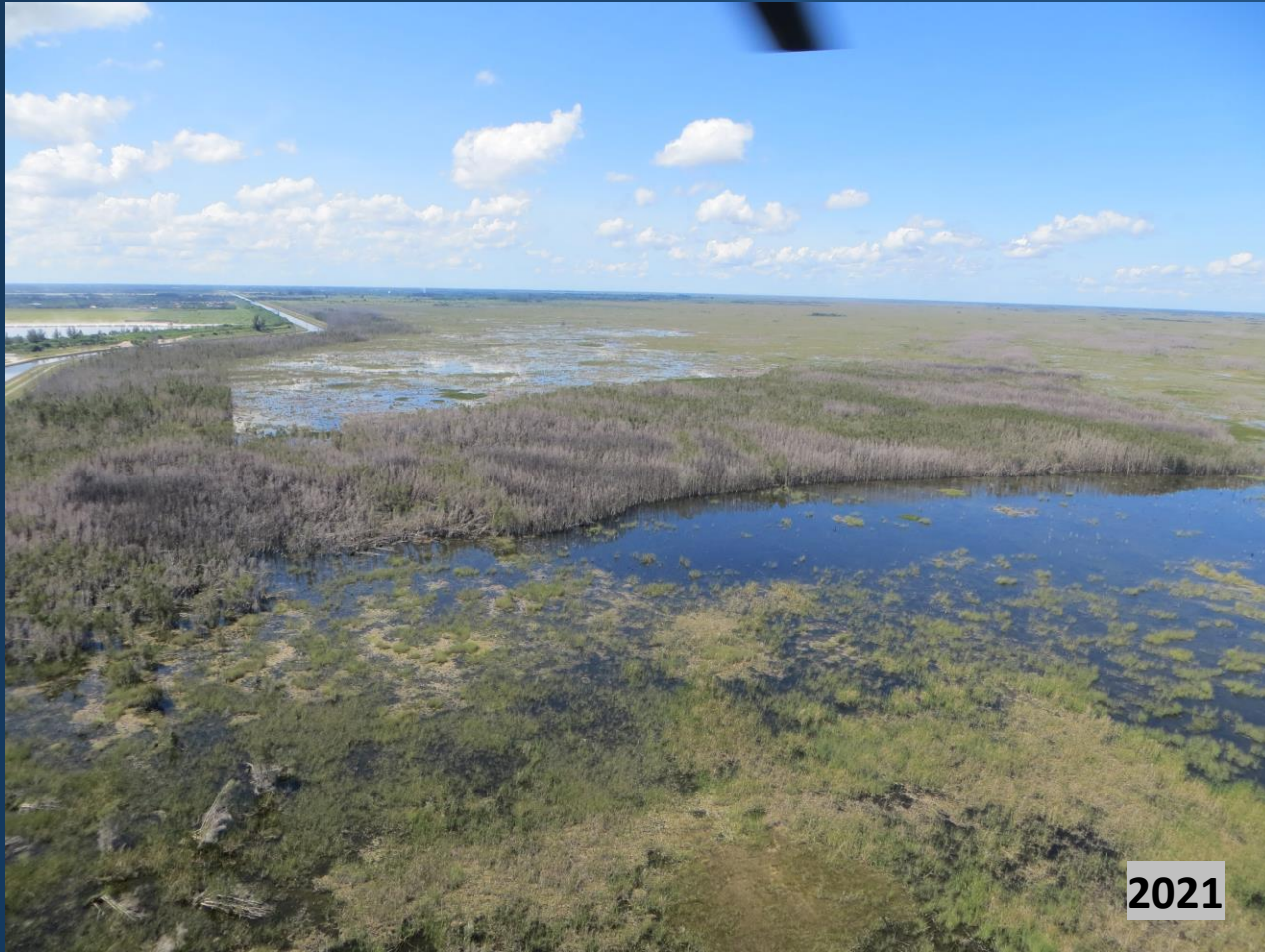


# Everglades Cooperative Invasive Species Management Area



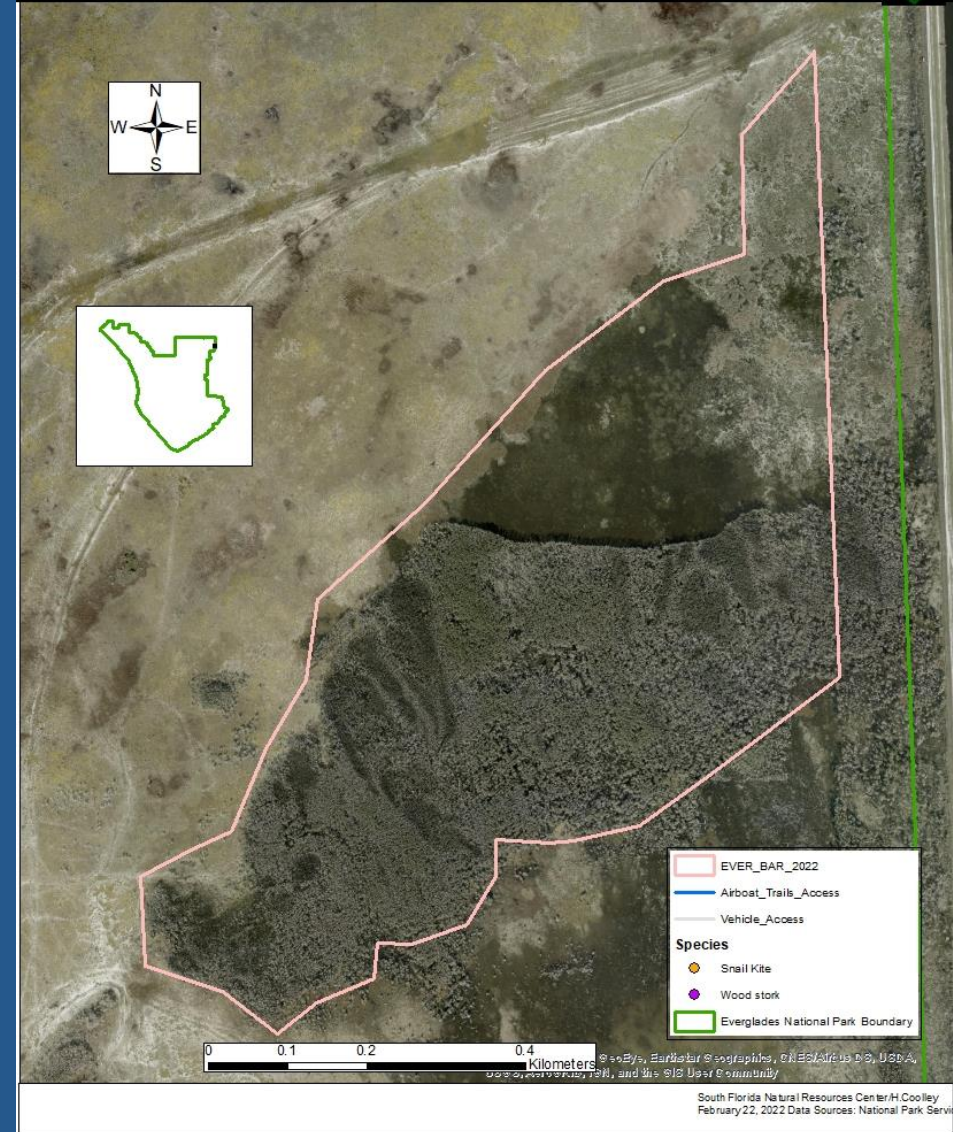
# Everglades Cooperative Invasive Species Management Area

# Everglades Cooperative Invasive Species Management Area



Everglades National Park  
Invasive Plant Planning

National Park Service  
U.S. Department of the Interior



# Everglades Cooperative Invasive Species Management Area

# Everglades Cooperative Invasive Species Management Area



Everglades Cooperative Invasive Species Management Area

# 2024/2025 Treatments: Everglades National Park – Hole in the Donut

## Priority Species:

- Brazilian pepper (*Schinus terebinthifolia*)
- Burma reed (*Neyraudia reynaudiana*)
- Cogon grass (*Imperata cylindrica*)
- Napier grass (*Pennisetum purpureum*)
- Guava (*Psidium guajava*)
- Peruvian primrose-willow (*Ludwigia peruviana*)
- Rosary pea (*Abrus precatorius*)
- Shoebuttan ardisia (*Ardisia elliptica*)
- Signalgrass (*Urochloa mutica*)
- Torpedo grass (*Panicum repens*)

Treatment Cost: 3293 \*hours worked

Acres Treated: 1300

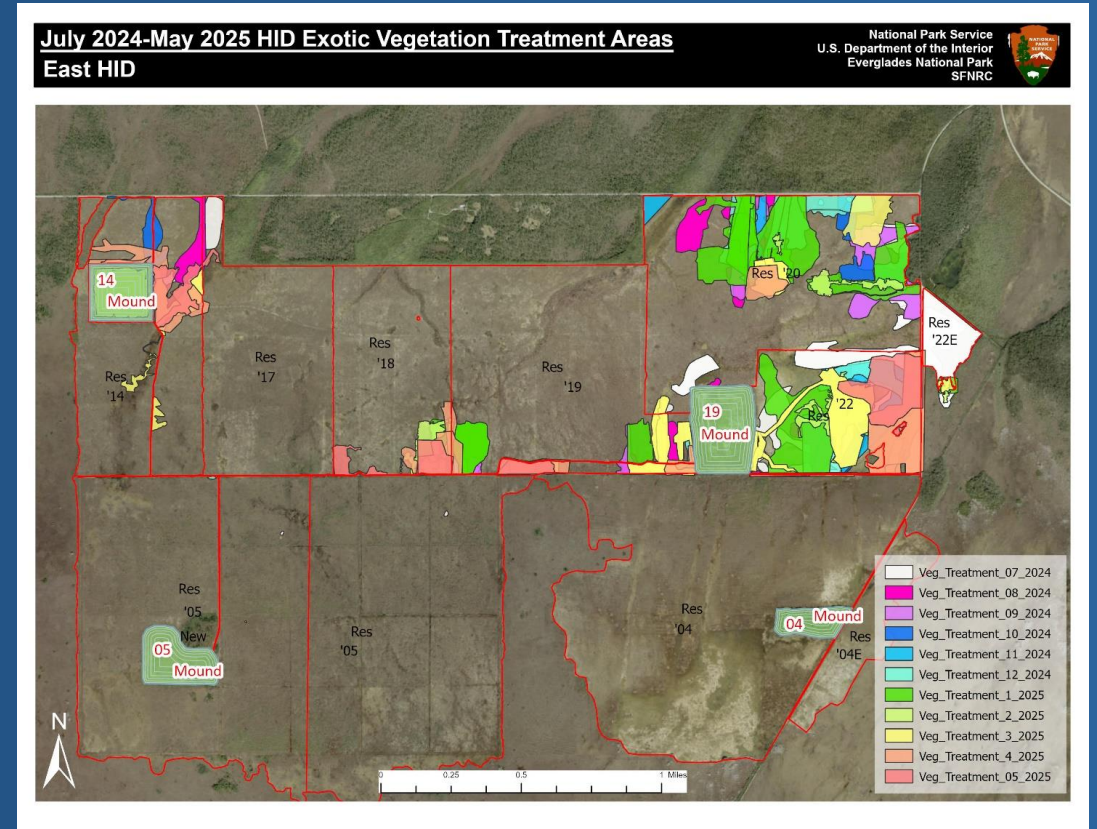
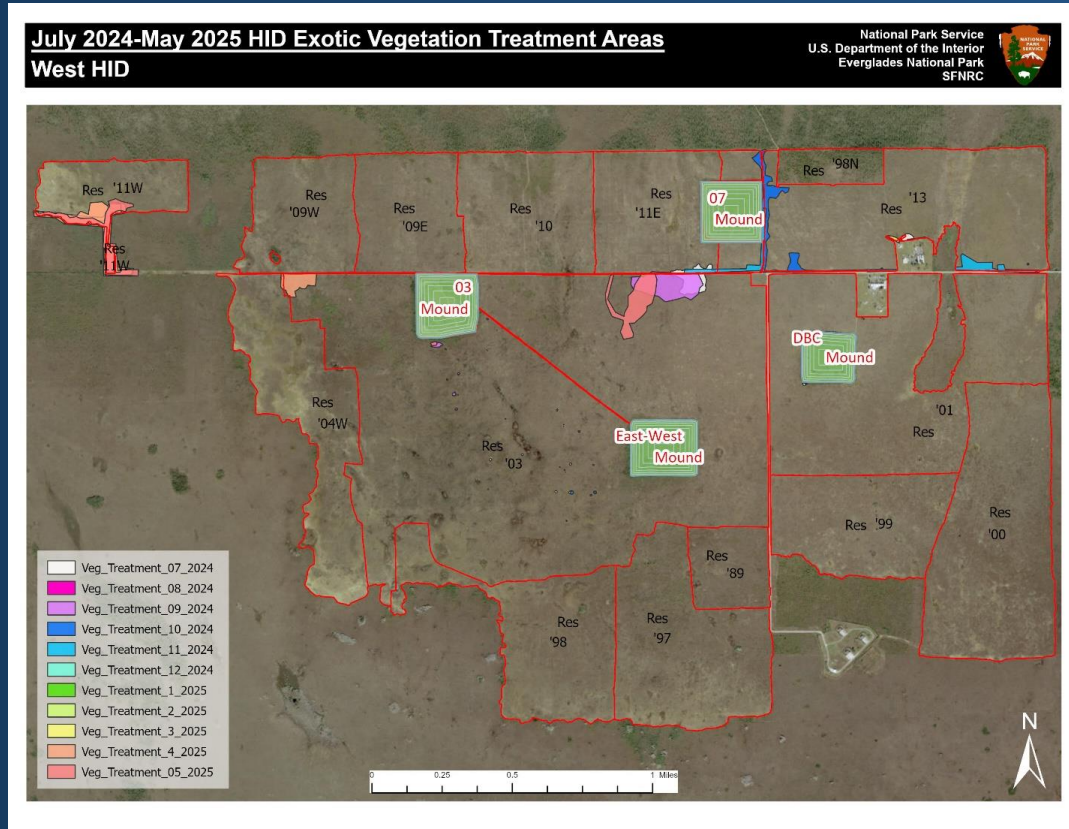


Thank you Jonathan Taylor- NPS photo

Everglades Cooperative Invasive Species Management Area



# Completed Treatments 24/25: Everglades National Park – HID



More work is planned for FY2026.



# 2024/2025 Treatments: South Florida Water Management District

## Priority Species:

- Australian pine (*Casuarina equisetifolia*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Cogongrass (*Imperata cylindrica*)
- Crested floating heart (*Nymphoides cristata*)
- Green hygro (*Hygrophila polysperma*)
- Melaleuca (*Melaleuca quinquenervia*)
- Mission grass (*Cenchrus polystachios*)\*
- Napier grass (*Cenchrus purpureus*)
- Old World climbing fern (*Lygodium microphyllum*)
- Primrose willow (*Ludwigia peruviana*)
- Roundleaf toothcup (*Rotala rotundifolia*)
- Shoebuttan ardisia (*Ardisia elliptica*)
- Torpedograss (*Panicum repens*)
- West Indian marsh grass (*Hymenachne amplexicaulis*)\*
- Wright's nutrush (*Scleria lacustris*)\*



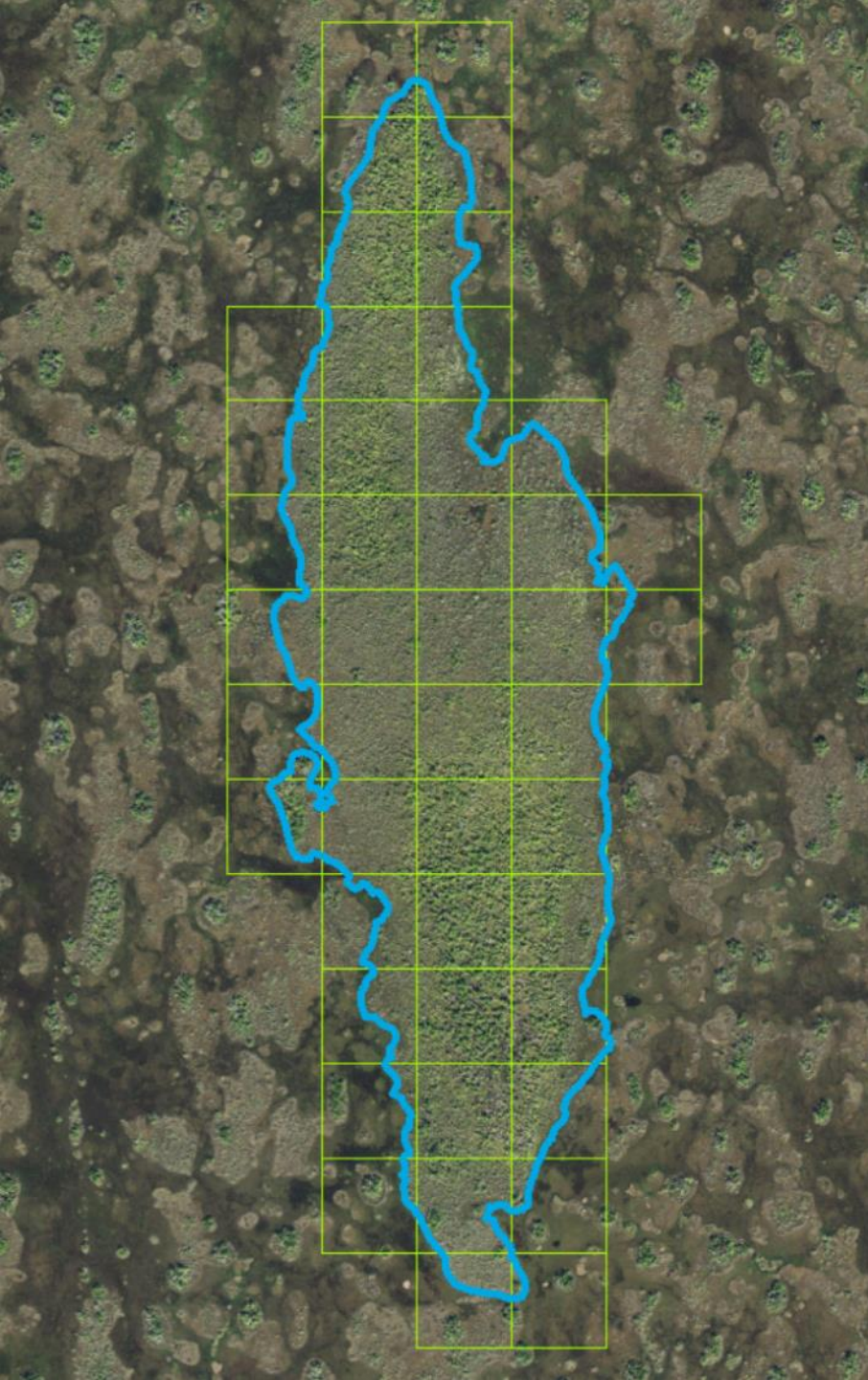
Treatment Cost: \$10,986,710

Acres Treated: 84,793

Photo from: DYK: SFWMD Leading the Charge Against Invasive Melaleuca Trees | South Florida Water Management District



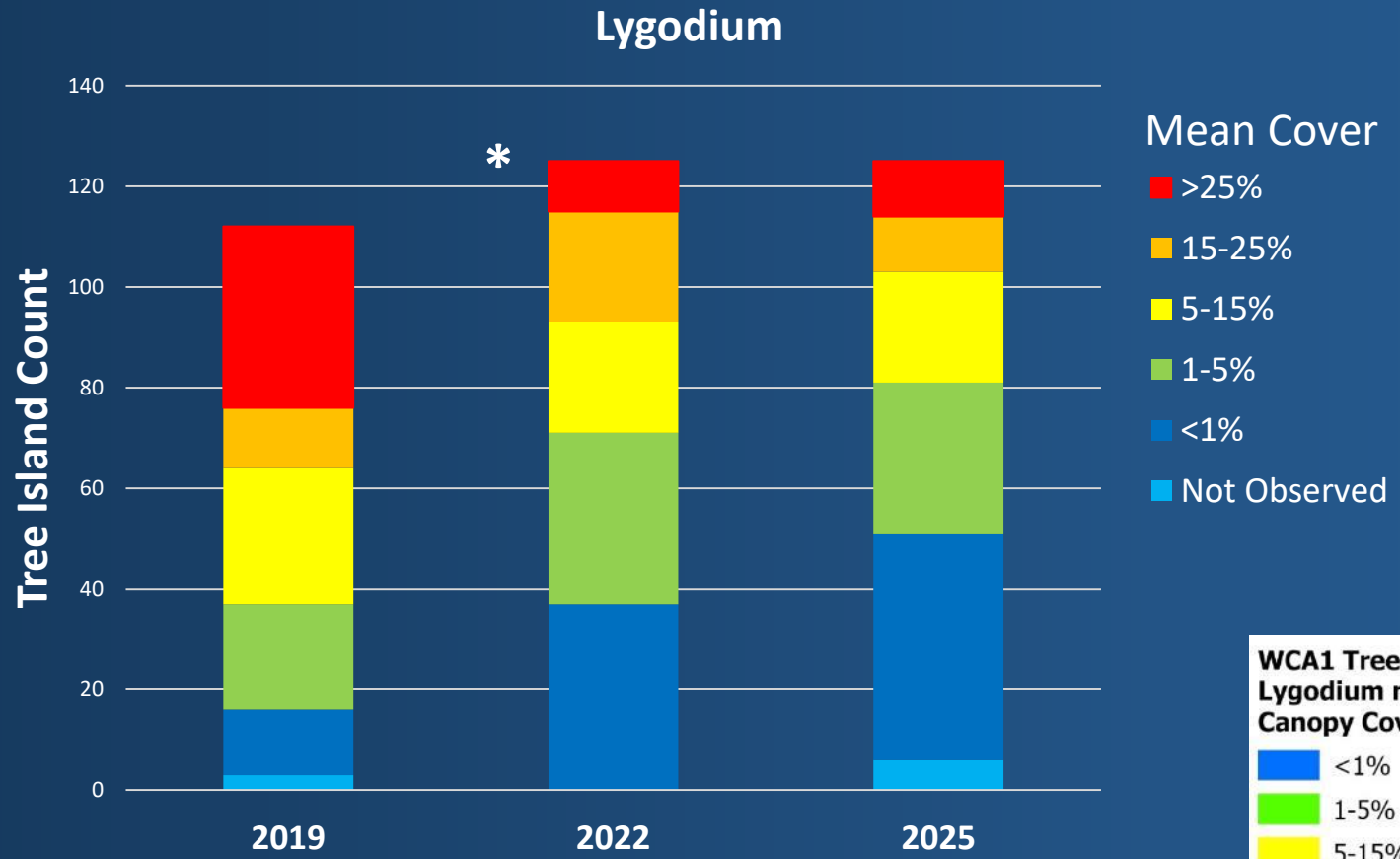
Everglades Cooperative Invasive Species Management Area



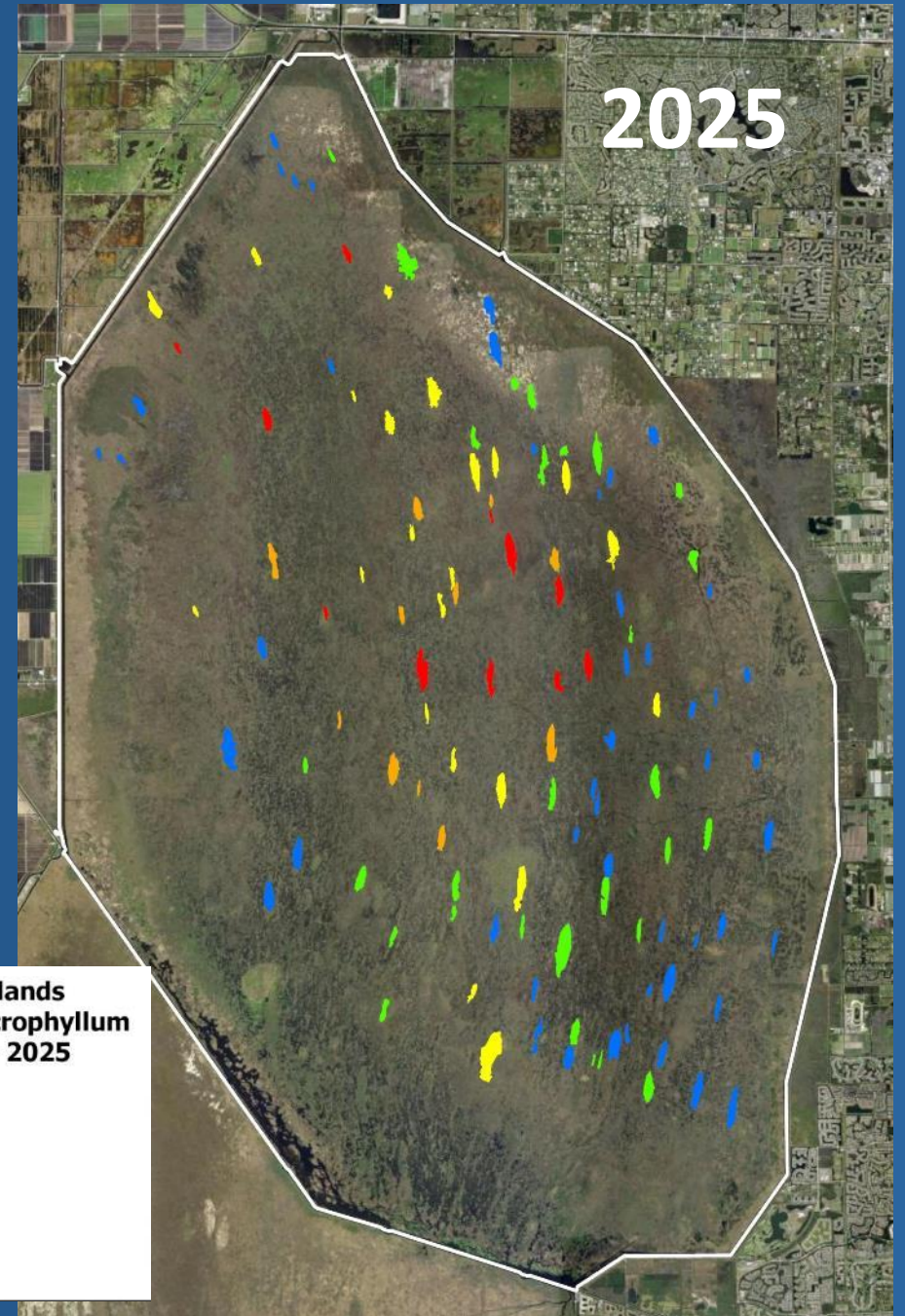
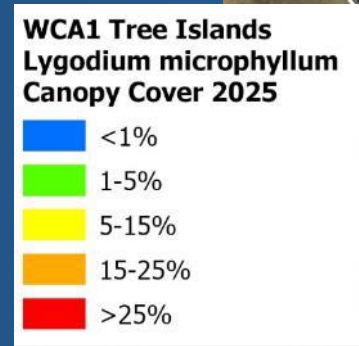
# Loxahatchee NWR/ WCA 1 Strand Island Monitoring

- **Detailed assessments of critical tree island habitat**
- **Assessed all strand islands >8 ac.**
  - Invasive species cover
  - Canopy integrity
  - 126 strand islands
- **100 m grid**
- **Two independent observations**

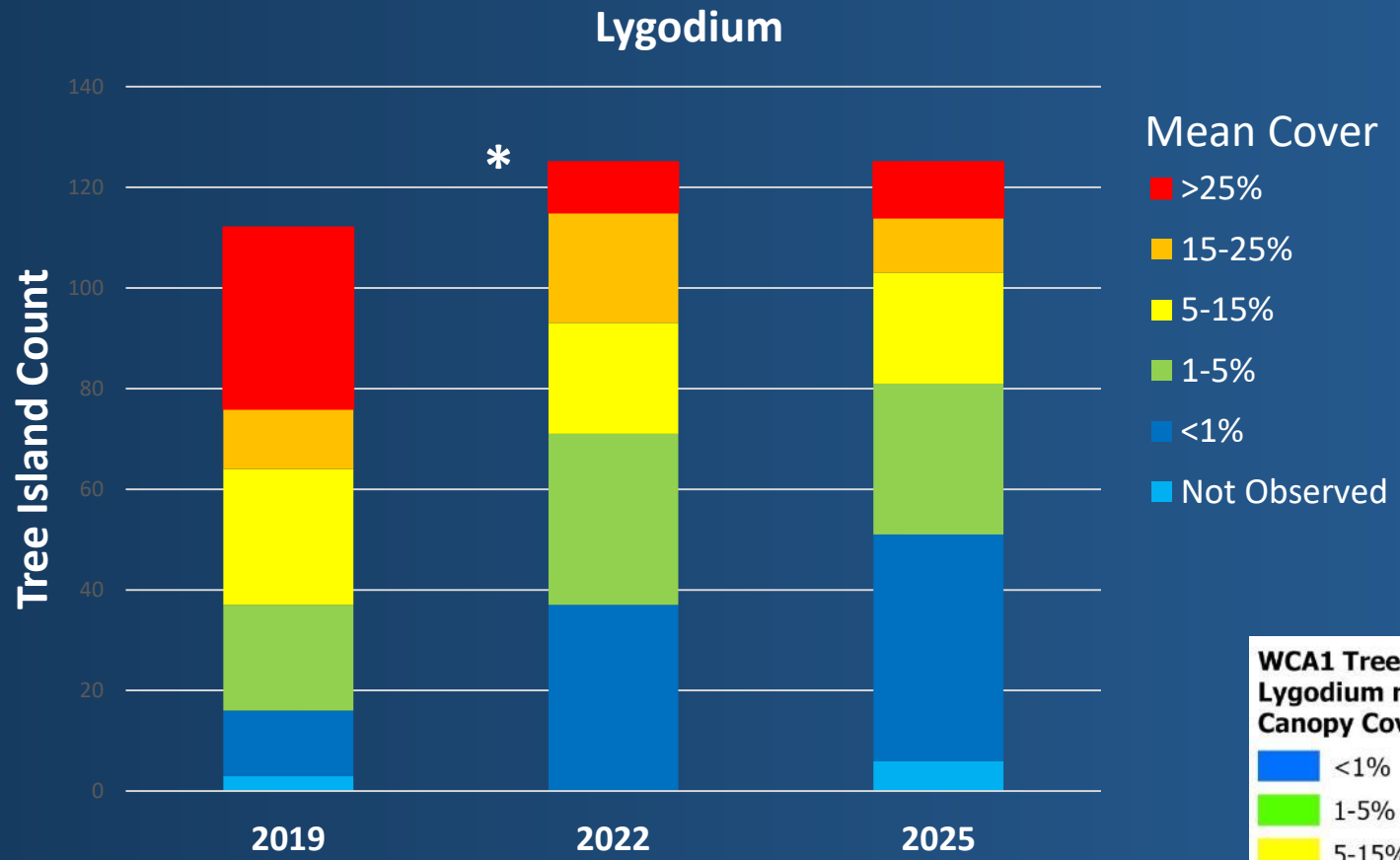
# Strand Island Monitoring



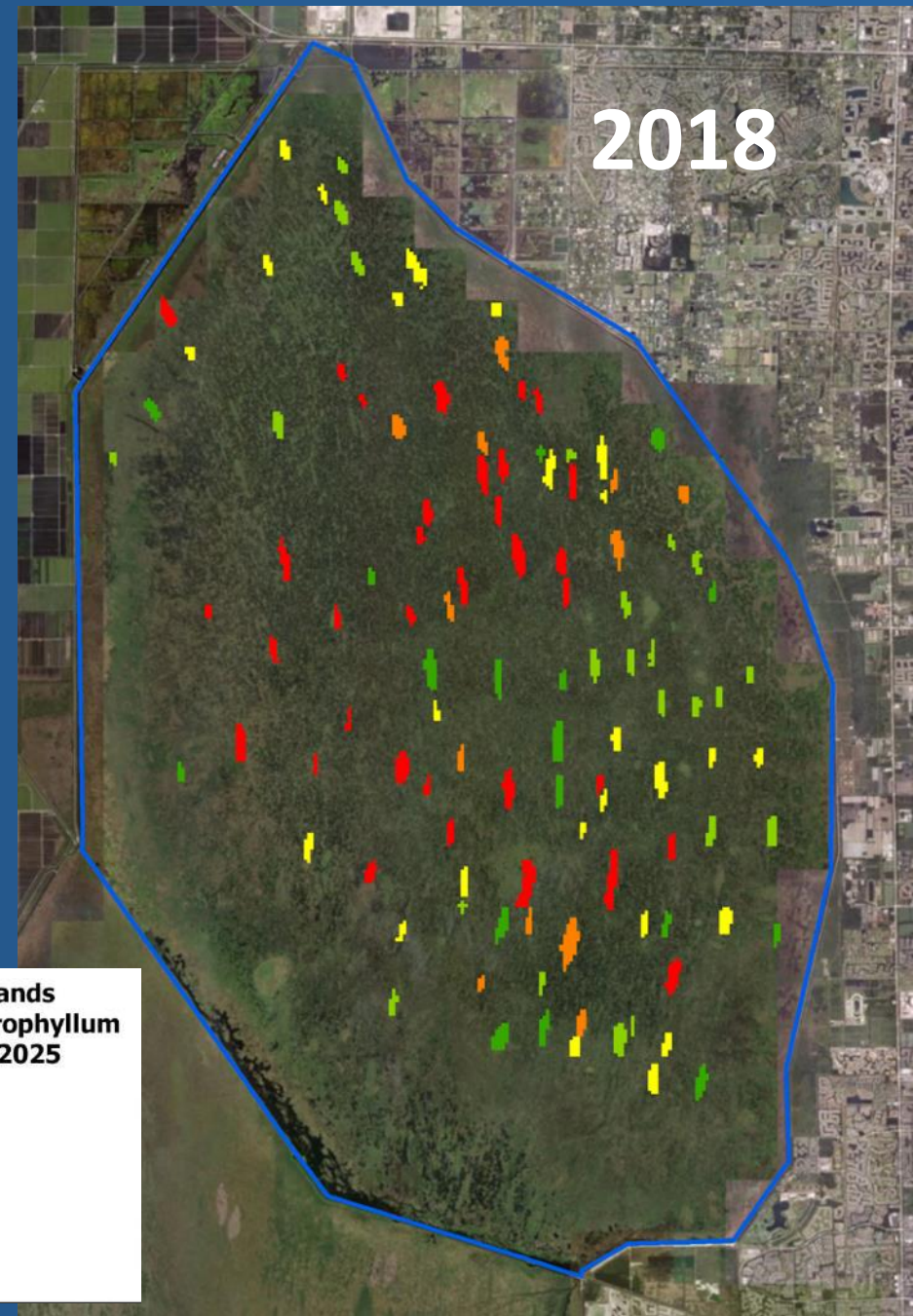
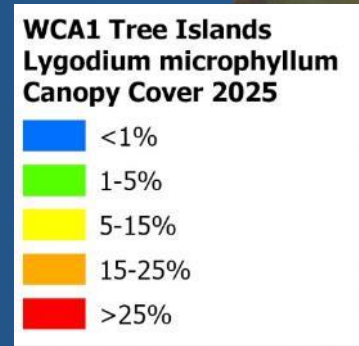
\* 13 islands added in 2022



# Strand Island Monitoring

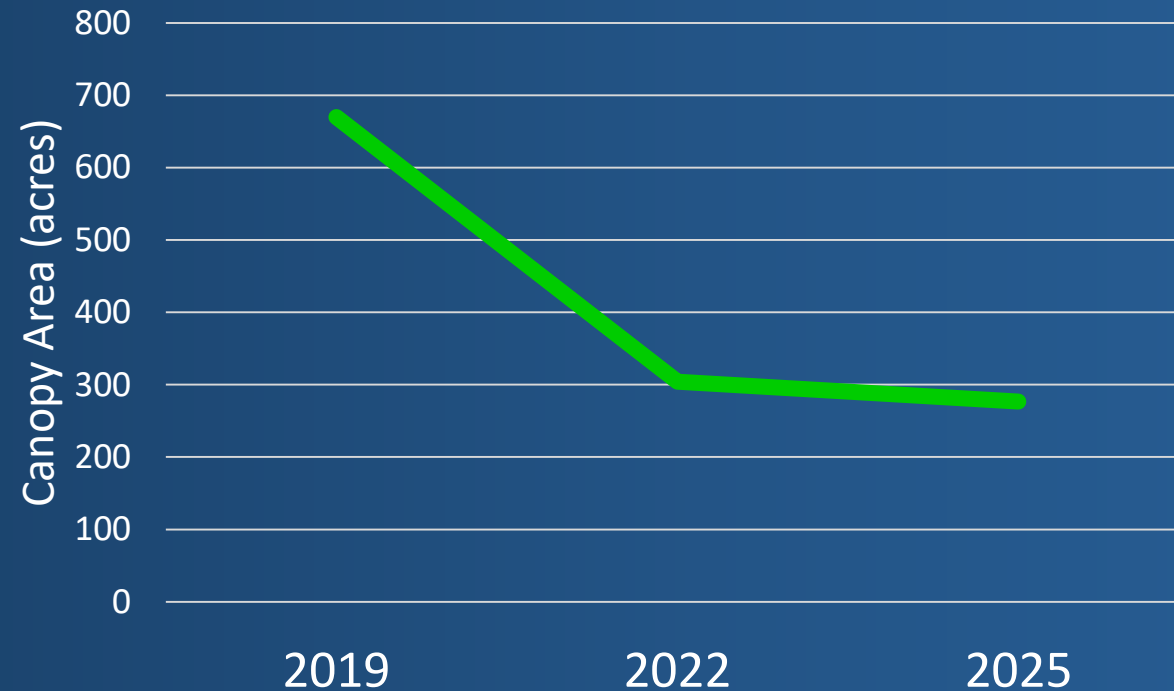


\* 13 islands added in 2022



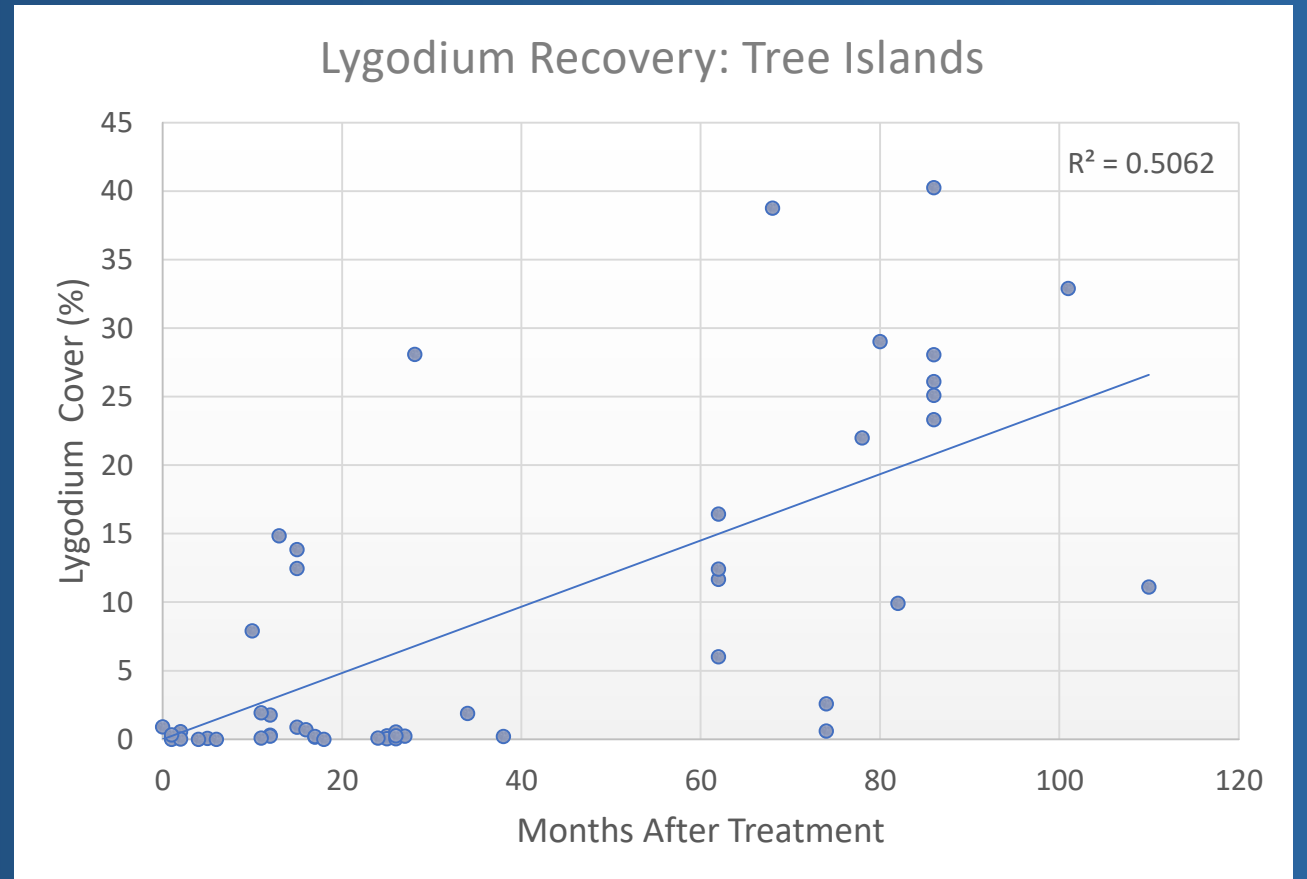
# Strand Island Monitoring

## Lygodium Canopy Area



# Lygodium Recovery

- Post-herbicide treatment recovery rates highly variable
- Retreatment recommended within three years
- Factors influencing recovery?
  - Previous treatment history
  - Hydroperiod
  - Plant community factors



# Strand Island Monitoring

## Lygodium Observations (2018 – 2025)

- Number of island with moderate to high infestation declining
  - 54% decrease in islands with >25% mean cover
- Number of islands with low infestations increased
  - 119% increase in islands with less than 5% mean cover
- Maintenance Control on target
  - 90% of islands below 5% in 2022 remained below in 2025
- Canopy acres decreasing Refuge-wide
- Recovery rates are highly variable



# 2024/2025 Treatment/ Restoration Highlights: Miami-Dade County

## Priority Species:

- Burmared (*Neyraudia reynaudiana*)
- Brazilian pepper (*Schinus terebinthifolia*)
- Australian pine (*Casuarina equisetifolia*)
- Madagascar periwinkle (*Catharanthus roseus*)
- Mexican clover (*Richardia grandiflora*)
- Golden pothos (*Epipremnum aureum*)
- Syngonium (*Syngonium podophyllum*)
- Heartleaf philodendron (*Philodendron hederaceum*)

Restoration activities have focused on:

- **“scraping” of degraded, invaded pine rocklands with substantial replanting/seeding efforts**
- Focused treatments around rare plants in coastal strand following Rx fire.
- Employed Enloe methods on epiphytic aroid vines in rockland hammock of Hattie Bauer



# 2024/2025 Treatment/ Restoration Highlights: Miami-Dade County

## Priority Species:

- Burmared ( *Neyraudia reynaudiana* )
- Brazilian pepper ( *Schinus terebinthifolia* )
- Australian pine ( *Casuarina equisetifolia* )
- Madagascar periwinkle ( *Catharanthus roseus* )
- Mexican clover ( *Richardia grandiflora* )
- Golden pothos ( *Epipremnum aureum* )
- Syngonium ( *Syngonium podophyllum* )
- Heartleaf philodendron ( *Philodendron hederaceum* )

Restoration activities have focused on:

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- **Focused treatments around rare plants in coastal strand following Rx fire.**
- Employed Enloe methods on epiphytic aroid vines in rockland hammock of Hattie Bauer



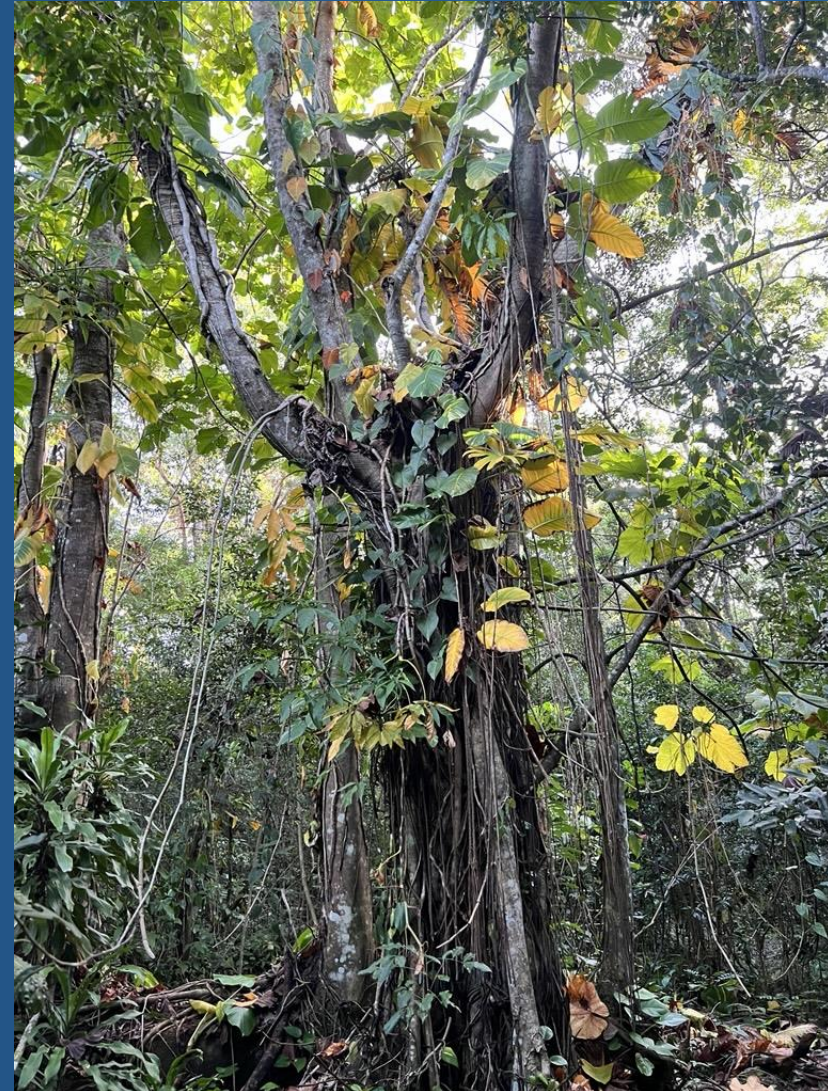
# 2024/2025 Treatment/ Restoration Highlights: Miami-Dade County

## Priority Species:

- Burmareed (*Neyraudia reynaudiana*)
- Australian pine (*Casuarina equisetifolia*)
- Madagascar periwinkle (*Catharanthus roseus*)
- Mexican clover (*Richardia grandiflora*)
- **Golden pothos (*Epipremnum aureum*)**
- **Syngonium (*Syngonium podophyllum*)**
- **Heartleaf philodendron (*Philodendron hederaceum*)**

Restoration activities have focused on:

- “scraping” of degraded, invaded pine rocklands with substantial replanting/seeding efforts
- Focused treatments around rare plants in coastal strand following Rx fire.
- **Employed Enloe methods on epiphytic aroid vines in rockland hammock of Hattie Bauer**



# 2024/2025: Newly Detected Species - ECISMA

## BICY

- Wright's nutrush (*Scleria lacustris*)

## Broward County

- Mountain soursop (*Annona montana*)
- **Giant granadilla (*Passiflora quadrangularis*) \*EDRR (proposed)**
- **Jeweled maiden fern (*Thelypteris opulenta*) \*EDRR**
- Yellow thistle (*Emilia praetermissa*)
- Red flame (*Strobilanthes reptans*)
- Asian marshweed (*Limnophila sessiliflora*)
- Marvel grass (*Dichanthium annulatum*)
- Australian bluestem (*Bothriochloa bladhii*)
- Pepper elder (*Peperomia pellucida*)

## ENP

- Hairyflower wild petunia (*Ruellia ciliatiflora*)

## ARM Loxahatchee NWR

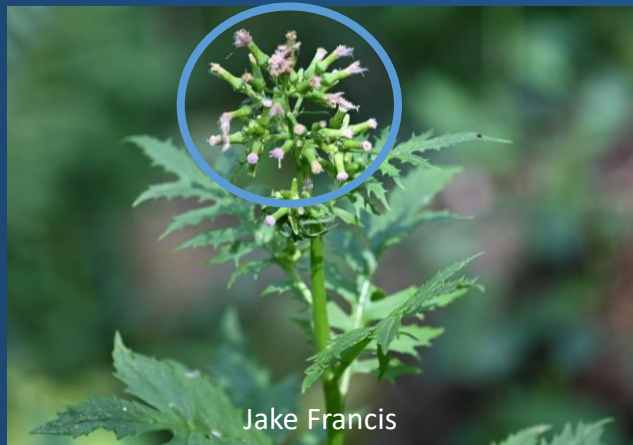
- **Fireweed (*Erechtites valerianifolia*) \*EDRR (proposed)**

## Miami-Dade (private)

- **Yellow velvetleaf (*Limnocharis flava*) \*EDRR (proposed)**



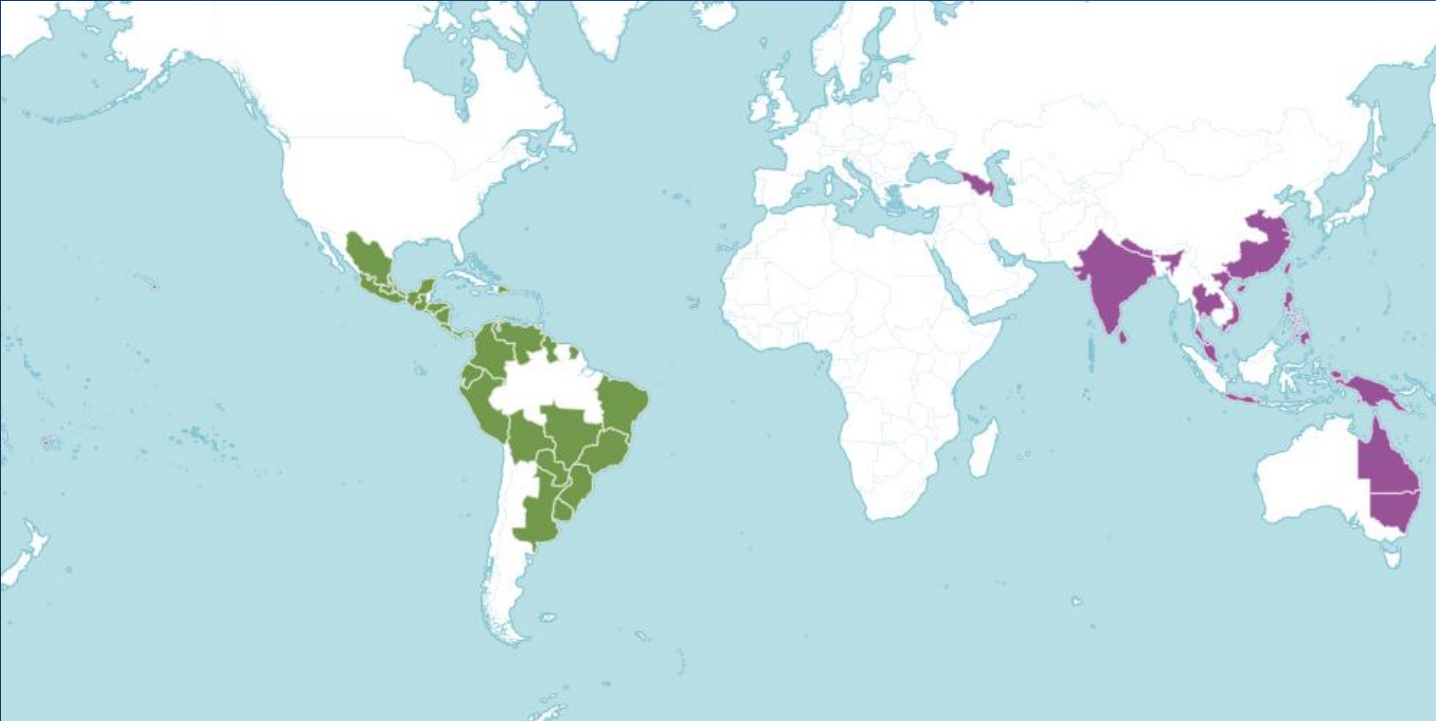
## 2024/2025: Newly Detected Species – *Erechtites valerianifolius*



- New to continental US
- First observed in May, 2025
- Large, erect forb (to 2m), quite similar to native *E. hieracifolius*
- Corolla lavender
- Prominent calyculi (bractlets beneath receptacle; not present in *Emilia* et al.)
- Cauline leaves distinctly petiolate, deeply lobed
- Lobed entire length vs basal half in *C. crepidoides* (to 1m)
- Inflorescence not “nodding”



## 2024/2025: Newly Detected Species – *Erechtites valerianifolius*



- Found in disturbed, open areas of cypress swamp in Loxahatchee NWR
- Native to New World Tropics
- Introduced species (and an aggressive weed) in tropical Asia, many of the Pacific islands, and parts of Australia (Belcher, 1956)
- predilection for moist, wetland ecosystems (CABI)
- Potentially spread with agriculture (apparently arrived to Indonesia with coffee beans)



# 2024/2025: Newly Detected Species – *Passiflora quadrangularis*



- New to continental US
- Native to SA
- Single site in north Broward
- Cultivated ornamental/food
- 4-angled (quadrangularis), winged stem
- Very large leaves/flowers/fruits
- 3 pairs of glands on petiole
- Large, foliaceous stipules
- Very fast-growing/aggressive
- Clearly dispersing by seed



# 2024/2025: Newly Detected Species – *Passiflora quadrangularis*



## 2024/2025: Newly Detected Species – *Limnocharis flava*



Michael Wolf



- Newly naturalized in continental US
- Federal Noxious Weed
- Private tree farm in south Dade
- Showy yellow flowers borne on short pedicels in terminal inflorescence
- Similar ecology to *Sagittaria*, *Pontedaria* et al.



# 2024/2025: Newly Detected Species (St. Lucie County)

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## EDRR ALERT

*Centipeda minima* – “spreading sneezeweed”



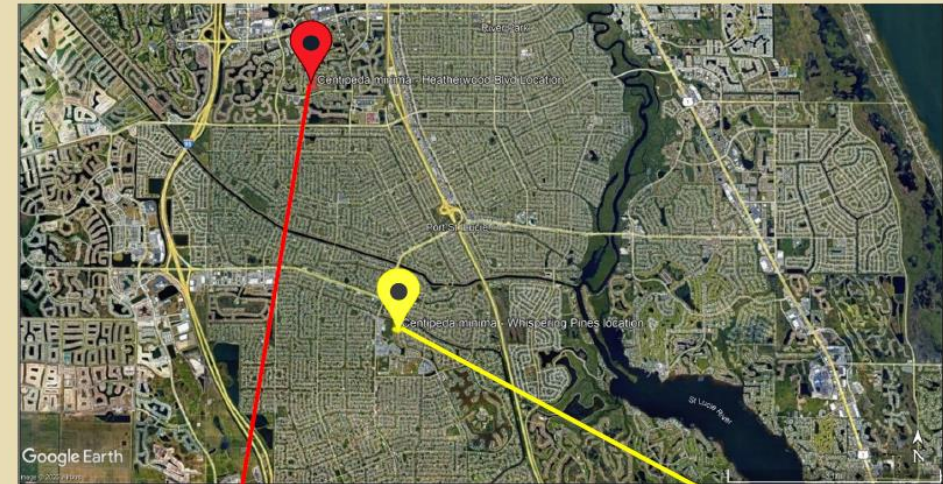
*Centipeda minima* growth form and close up of leaves and inflorescence.

Photo credits: Ian Markovich, US Army Corps of Engineers

This annual plant in the Aster family was recently reported from 2 locations in St. Lucie County, representing the first time this species has naturalized in the United States. The UF IFAS Assessment ran a Weed Risk Assessment and determined that it was a high risk of invasion in North, Central and South Florida (<https://>

### Locations of *Centipeda minima* in Port St. Lucie

Red and yellow pins indicate the two locations of *C. minima* naturalizing in St. Lucie County



## Questions

