



# Everglades Cooperative Invasive Species Management Area

2018 EVERGLADES INVASIVE SPECIES SUMMIT

## University of Florida Reptile Research, Monitoring, and Outreach



Michael R. Rochford, Edward F. Metzger III,  
Jennifer H. Nestler, and Frank J. Mazzotti



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EvergladesCISMA.org



# Projects

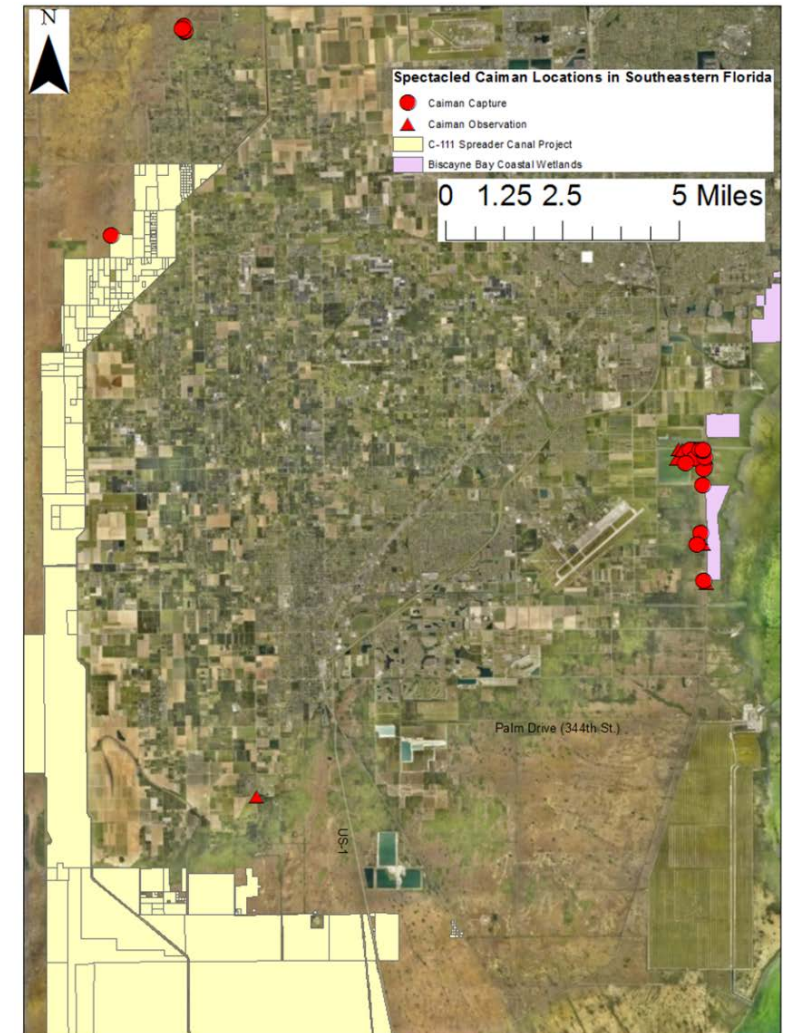
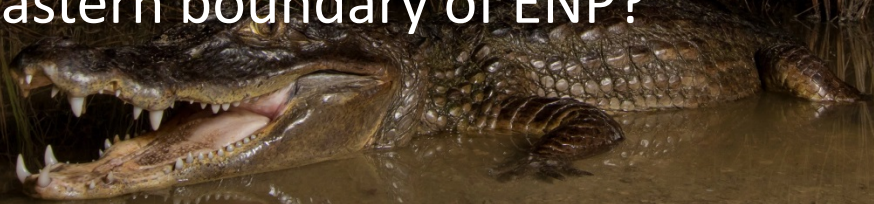
- Caiman Removal and Necropsy
- Green Iguana Removal and Levee Damage Assessment
- Northern African Python Surveys
- Early Detection & Rapid Response
- Nile Monitor Surveys and Habitat Assessment
- Everglades Invasive Reptile and Amphibian Monitoring Program (EIRAMP)
- Burmese Python Data Analysis





# Caiman Removal

- 43 surveys (October 2017 - June 2018)
- 26 caiman removed
  - 10 adults
  - 16 juveniles
- 140 removed by UF since Dec 2012
- Very few remain in HARB
  - Core population now closer to Biscayne Bay Coastal Wetlands
  - Eastern boundary of ENP?





# Caiman Diet and Necropsy

Diet: 96 prey items

- 24 insects
- 18 plants
- 15 reptiles
- 10 gastropods
- 8 crustaceans
- 7 worms
- 5 fish
- 3 mammals
- 3 gastroliths
- 2 amphibians
- 1 piece of plastic

Prey species	Common name	Native or nonnative	Source
<i>Lepomis macrochirus</i>	Bluegill	Native	Ellis (1980)
<i>Centropomus undecimalis</i>	Common snook	Native	Ellis (1980)
<i>Megalops atlanticus</i>	Atlantic tarpon	Native	Ellis (1980)
<i>Phalacrocorax auritus</i>	Double-crested cormorant	Native	Ellis (1980)
<i>Lithobates sphenoccephalus</i>	Southern leopard frog	Native	Ellis (1980)
<i>Poecilia latipinna</i>	Sailfin molly	Native	Ellis (1980)
<i>Gambusia holbrooki</i>	Eastern mosquitofish	Native	Ellis (1980)
<i>Tilapia mariae</i>	Spotted tilapia	Nonnative	Ellis (1980)
<i>Ameiurus nebulosus</i>	Brown bullhead	Nonnative	Ellis (1980)
<i>Amphiuma means</i>	Two-toed amphiuma	Native	This study
<i>Didelphis virginiana</i>	Virginia opossum	Native	This study
<i>Nerodia clarkii</i>	Salt marsh snake	Native	This study
<i>Nerodia fasciata</i>	Southern water snake	Native	This study
<i>Thamnophis sauritus</i>	Ribbon snake	Native	This study
<i>Storeria victa</i>	Florida brown snake	Native	This study
<i>Chelydra serpentina</i>	Common snapping turtle	Native	This study
<i>Basiliscus vittatus</i>	Brown basilisk	Nonnative	This study
<i>Rattus rattus</i>	Black rat	Nonnative	This study
<i>Hoplosternum littorale</i>	Brown hoplo	Nonnative	This study



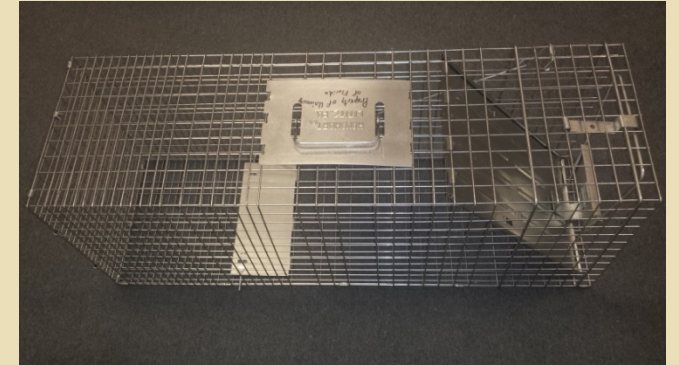
- Reproduction
  - Female with developing follicles captured 07 May 2018
  - Males with sperm captured 15 January 2018 and 25 April 2018



# Green Iguana Removal

## Manual Removal

- C-11 canal (Griffin Road)
- Shine trees at night
- 808 iguanas removed
- 30 surveys



## Trap Tests

- Broward County Parks
- 5 trap types + “Trapper Mark trap”
- 38 iguanas removed
- 2,304 trap nights





# Green Iguana Levee Damage Assessment

- Damage Assessment Map
  - Created damage scale (1-5)
  - Rank damage along canals
  - Not all damage from iguanas
- Quantify burrow density and substrate displacement



- Removed 222 from G-15 in 11 surveys
  - May-June 2018





# Northern African Python Surveys

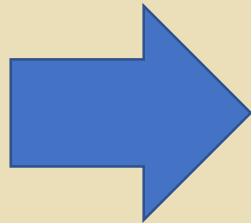
- 140 surveys (October 2017 – May 2018) in Bird Drive Basin
- 66 refuges checked during surveys
  - *Coluber* nested under one
- Zero pythons
- Opportunistic Survey 06 July 2018: potential remains of NAP
  - Molecular work in progress to determine ID



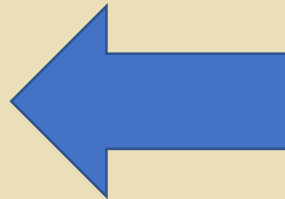


# Early Detection & Rapid Response

- Morelet's Crocodile (*Crocodylus moreletii*)
  - Removed From Boca Raton golf course
  - Lived there two years before reported



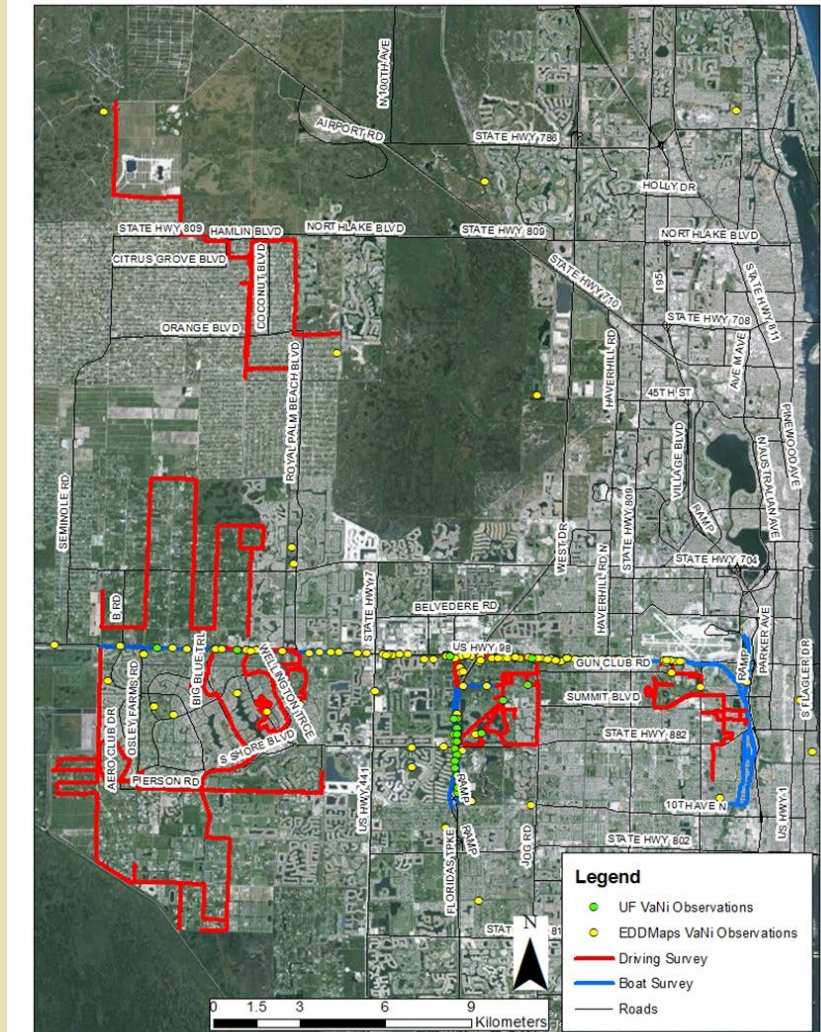
- East Indian Brown Mabuya (*Eutropis multifasciata*)
  - New population in Broward County





# Nile Monitor Surveys and Habitat Assessment

- Found 4 hatchlings along C-51 near turnpike
  - 2 removed by FWC, more subsequently
- Surveys in new areas near known monitor locales
  - Assess Habitat
  - New subpopulations?
- Targeted outreach
  - Confirmed reports





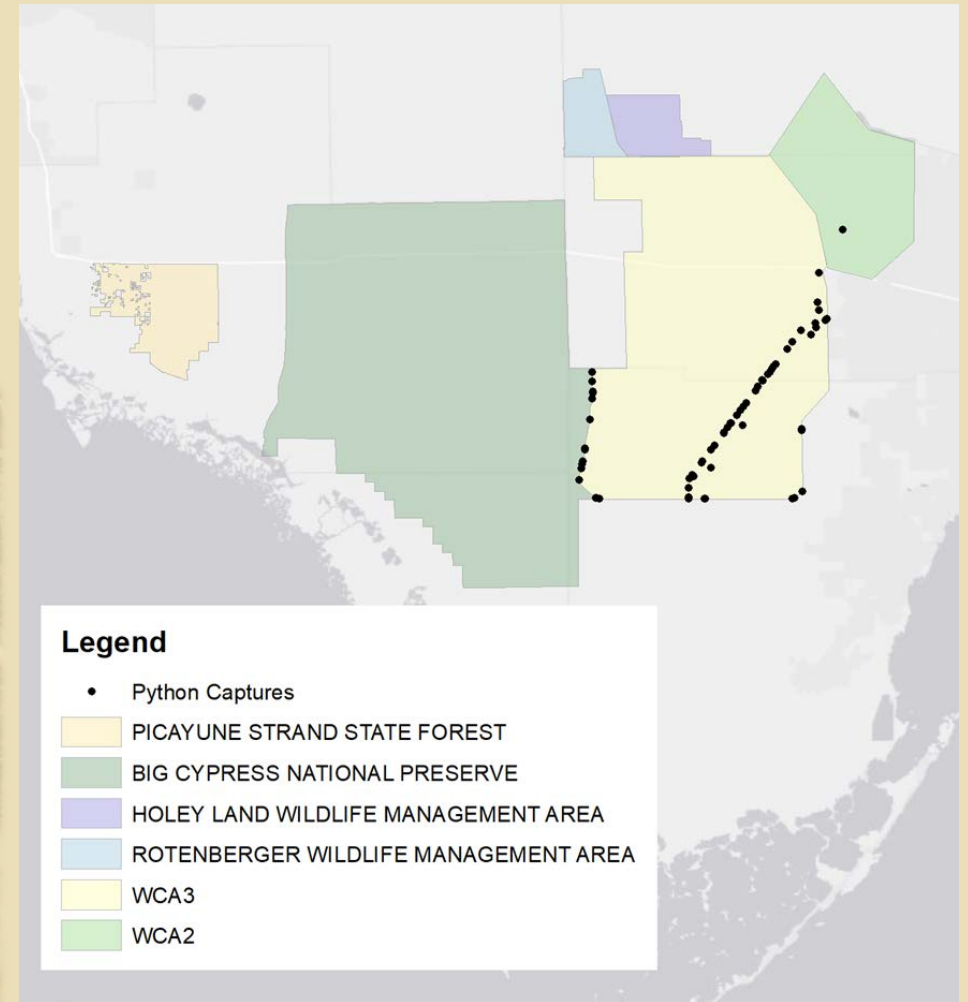
# Everglades Invasive Reptile & Amphibian Monitoring Program (EIRAMP)

- 2018 survey focus:
  - US-27 to Lake Okeechobee (Burmese Pythons)
  - C-51 (Nile Monitors)
  - A.R.M. Loxahatche N.W.R. (Nile Monitors & Burmese Pythons)
  - Eastern Everglades (Burmese Pythons and Argentine Tegus)
    - Refuges
  - ENP Main Park Road (Burmese Pythons (long-term dataset))
- Tegus and Caiman near South Dade and Biscayne Bay Wetlands



# Burmese Python Data Analysis

- Improving data collection:
  - Allows us to look at ROI
    - Distance!
  - Improve capture probability
  - Look at trends





# Acknowledgements



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