

National Park Service

U.S. Department of the Interior

Everglades and Dry Tortugas National Parks



Early Detection, Rapid Response, and Containment of the Argentine Black and White Tegu Along a Suburban/Natural Area Interface

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With bonus species!



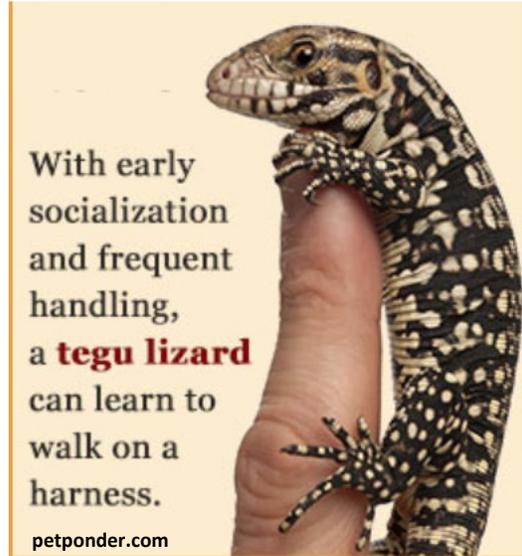
Argentine black and white tegu (*Salvator merianae*)



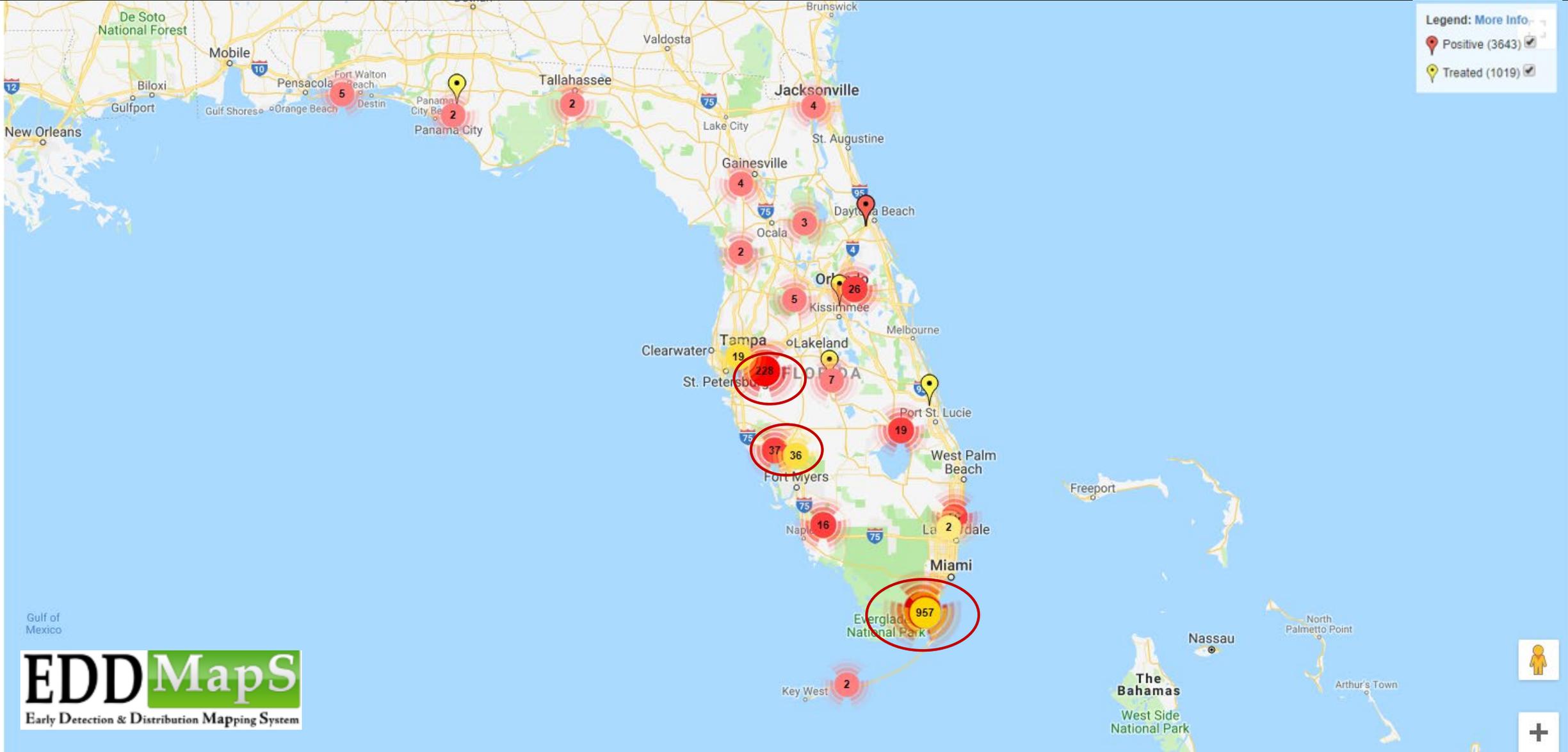
- Native to eastern Brazil, Paraguay, Uruguay, and northern Argentina
- Largest and most temperate tegu species
- Utilize burrows for shelter and nesting
- Average clutch size ~35
- Omnivorous and active foragers



Argentine black and white tegu (*Salvator merianae*)



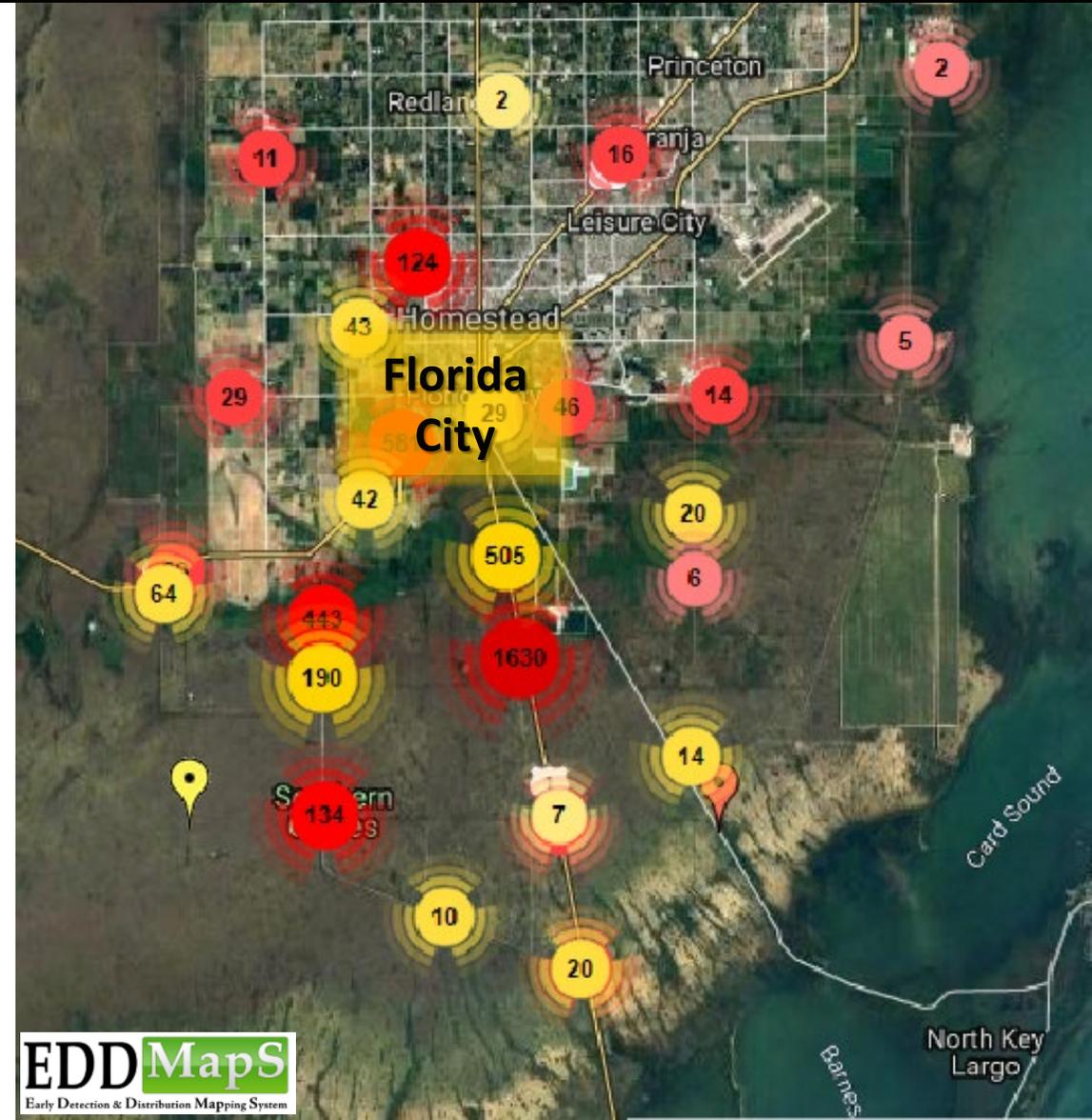
Argentine black and white tegu (*Salvator merianae*)





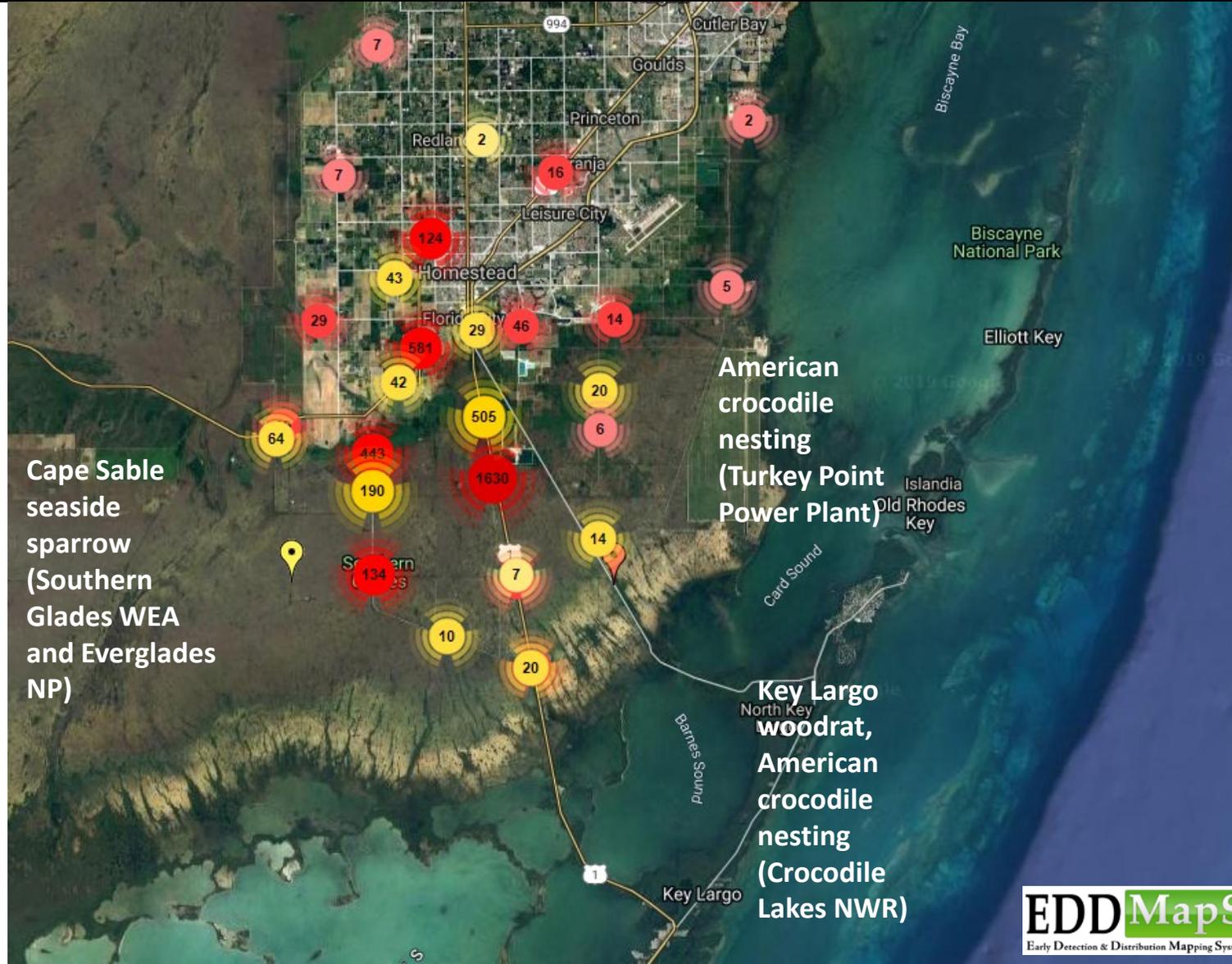
Tegu invasion landscape

- Determined to be breeding in 2008 in rural area near Florida City
- Tegus are utilizing disturbed areas with cover in natural, suburban, and agricultural areas
- Trapping began in 2009 and effort has expanded every year
- National Park Service, University of Florida, and Florida Fish and Wildlife Commission Contractor currently running over 300 traps



What's the problem with tegus?

- Habitat and diet generalists
- Found on levee and berm systems, in agricultural groves and fields, and in trailer parks
- Diet items include seeds, insects, fish, amphibians, reptiles, and mammals
- Especially fond of eggs



Listed species in Everglades National Park (ENP)

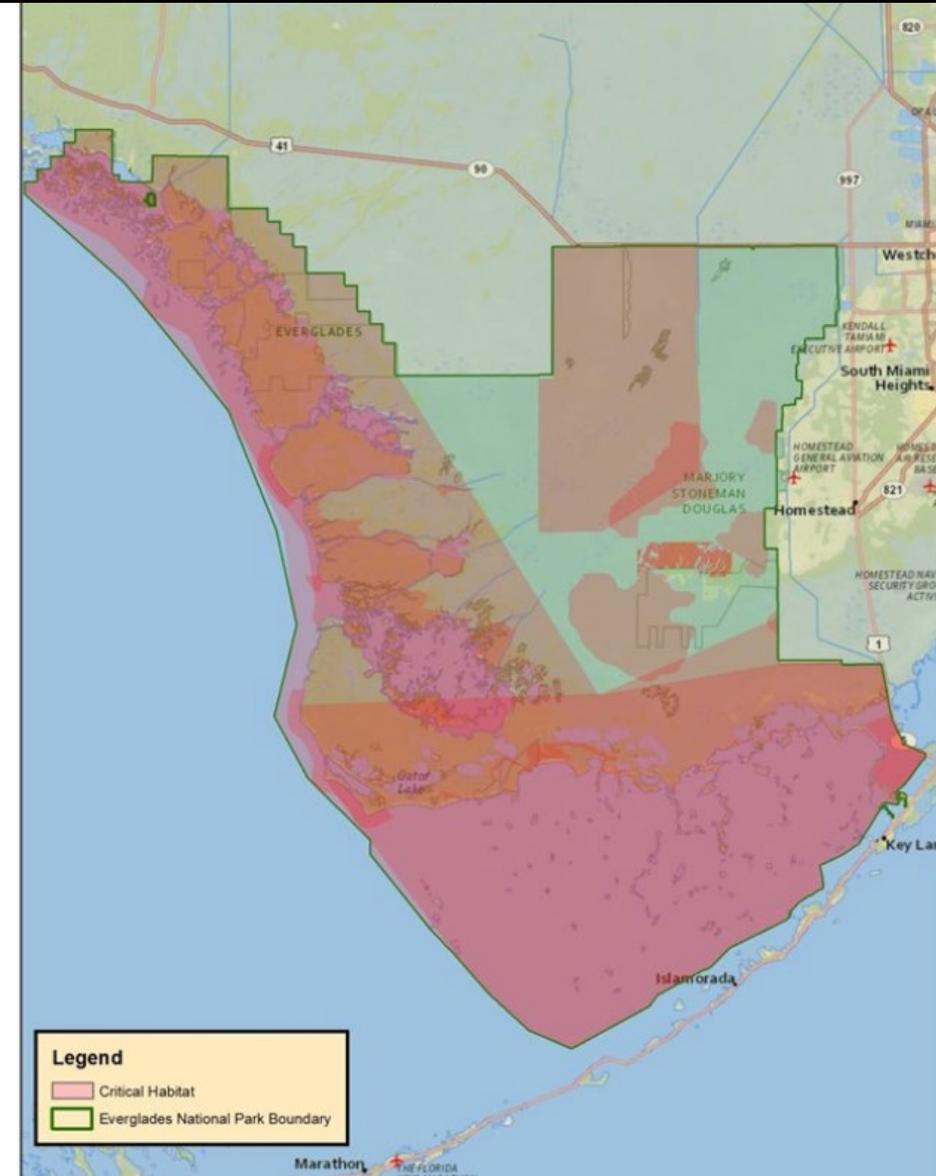


■ Federally listed

- 8 plants
- 6 invertebrates
- 3 fish
- 9 reptiles
- 10 birds
- 3 mammals

■ >50% of Park designated as critical habitat

■ ~180 state listed plants and animals



Goal is containment



INVASION CURVE

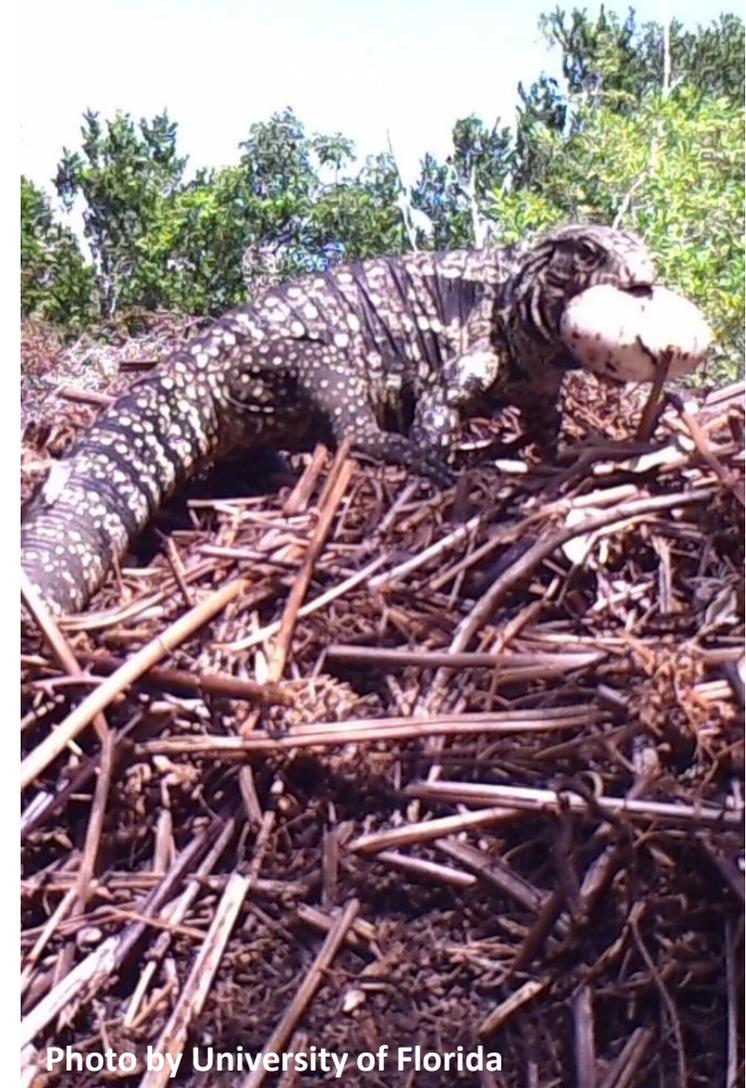
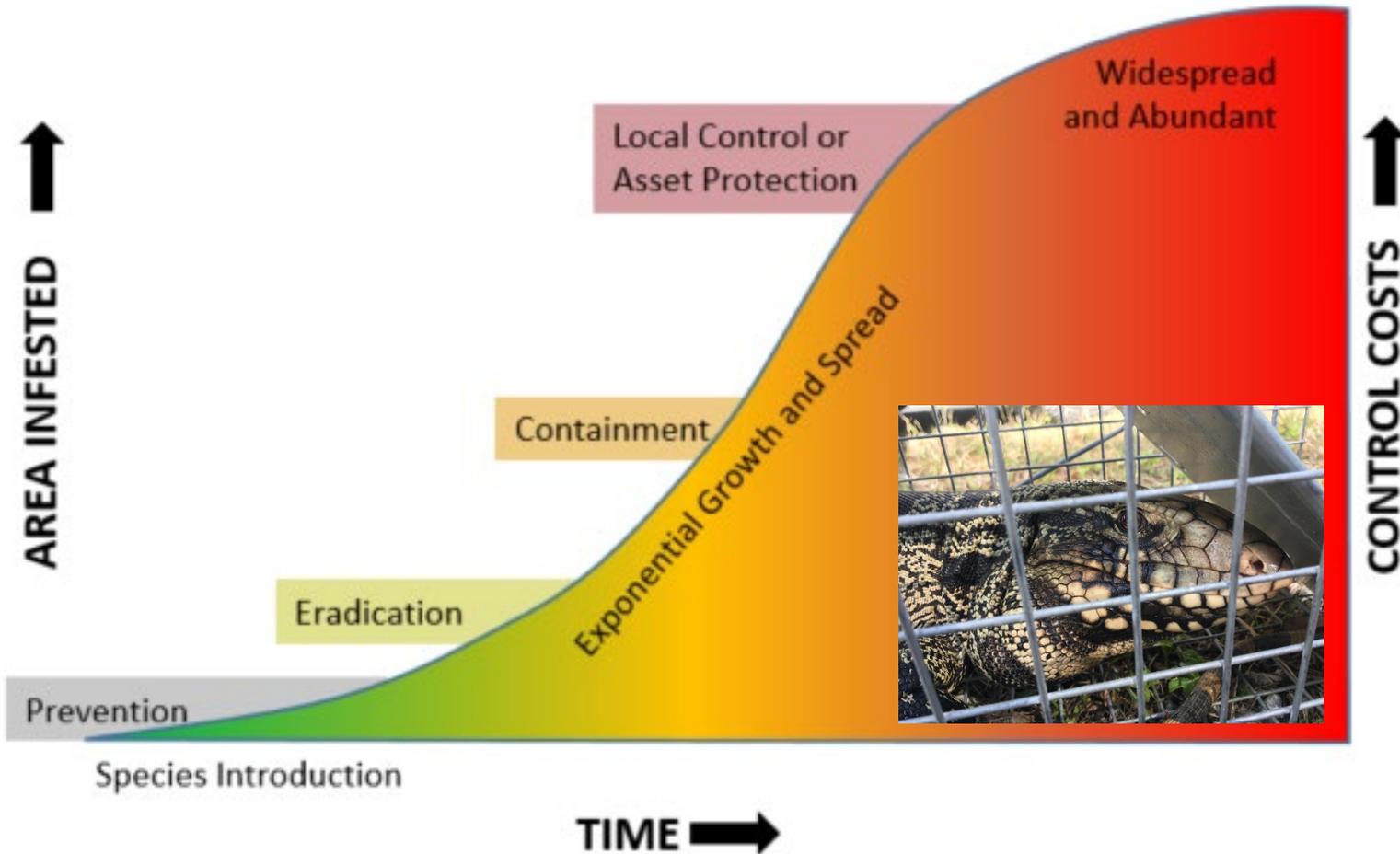
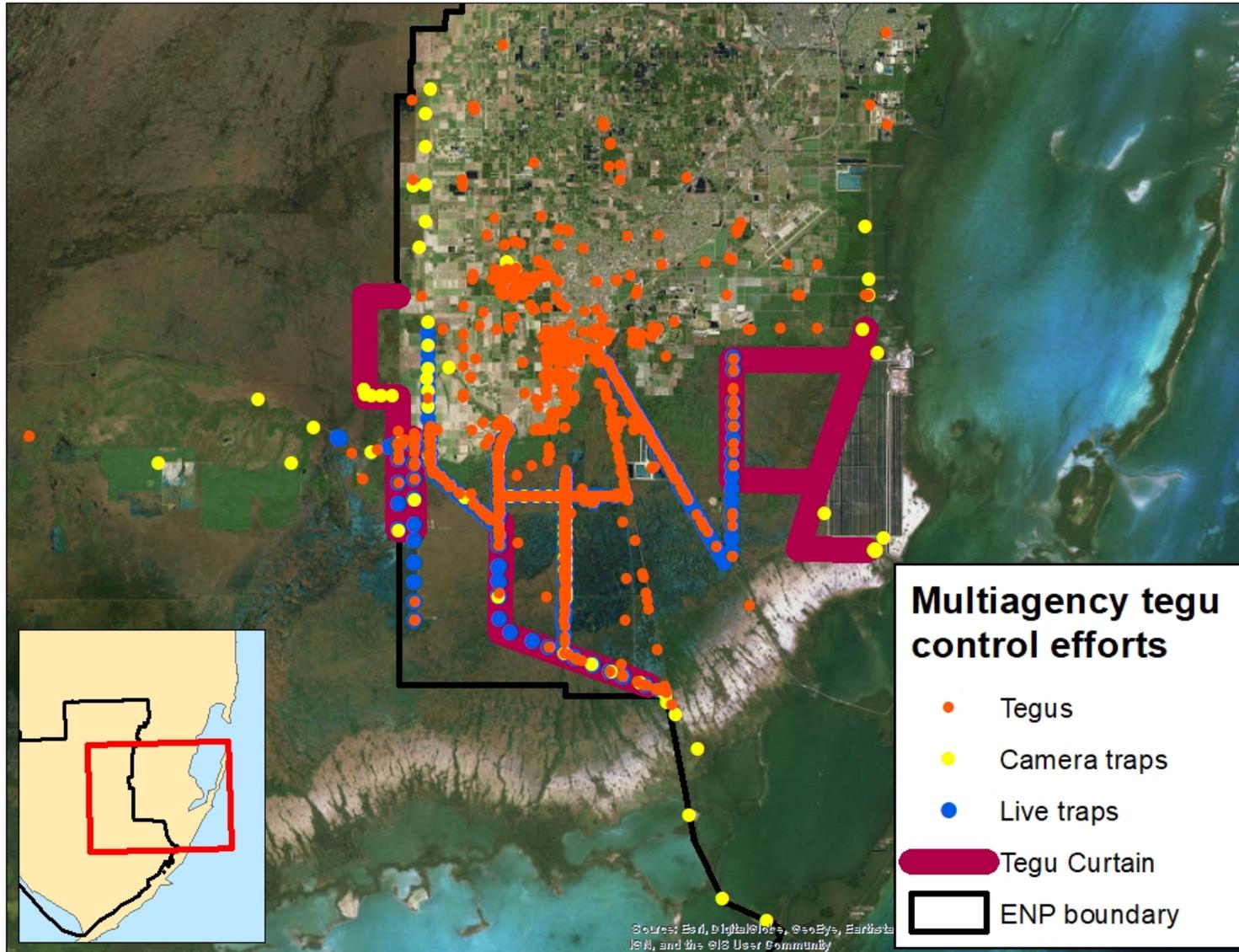
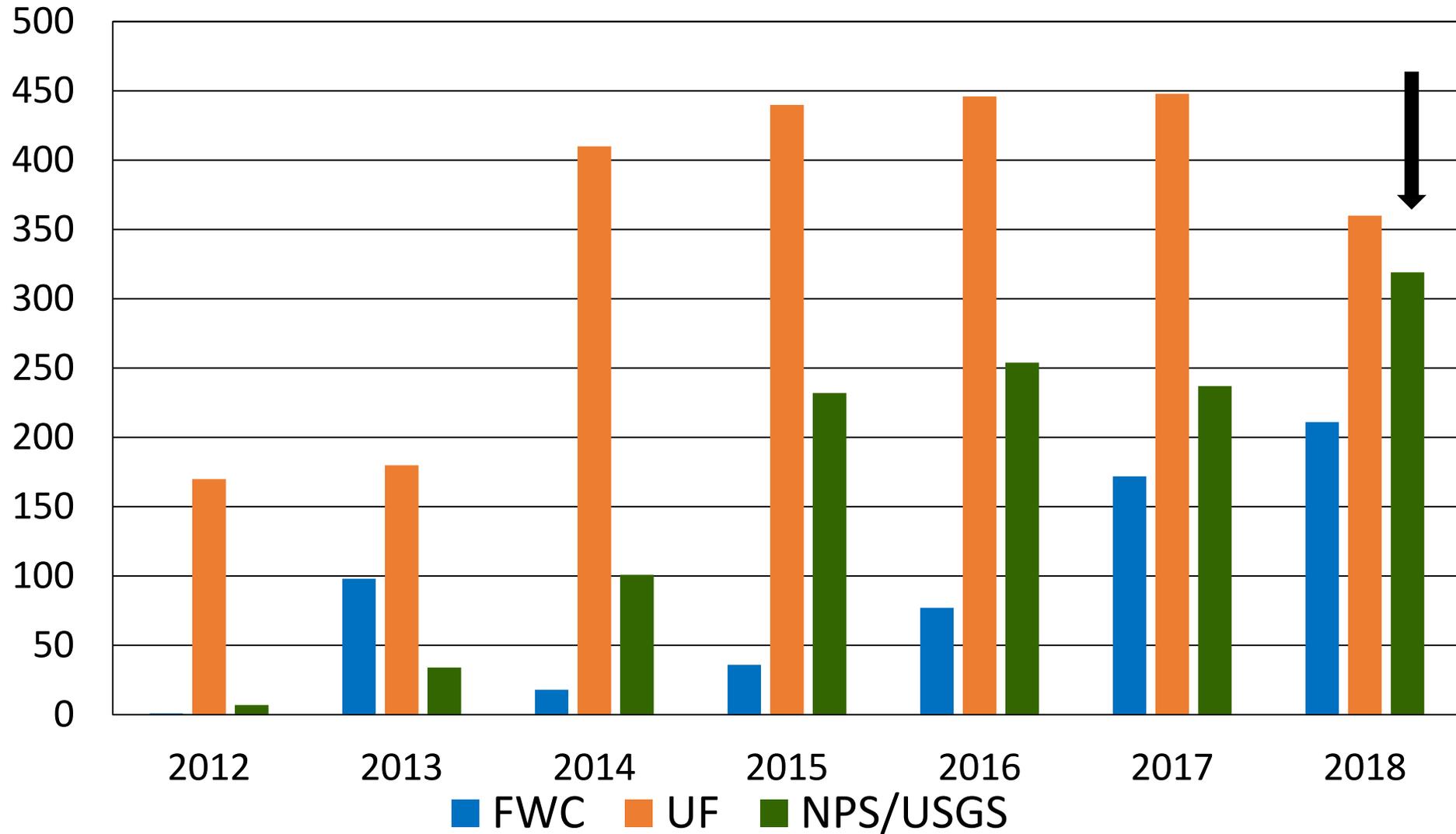


Photo by University of Florida

Live trapping and camera monitoring



Annual Tegu Removals (Trapped)

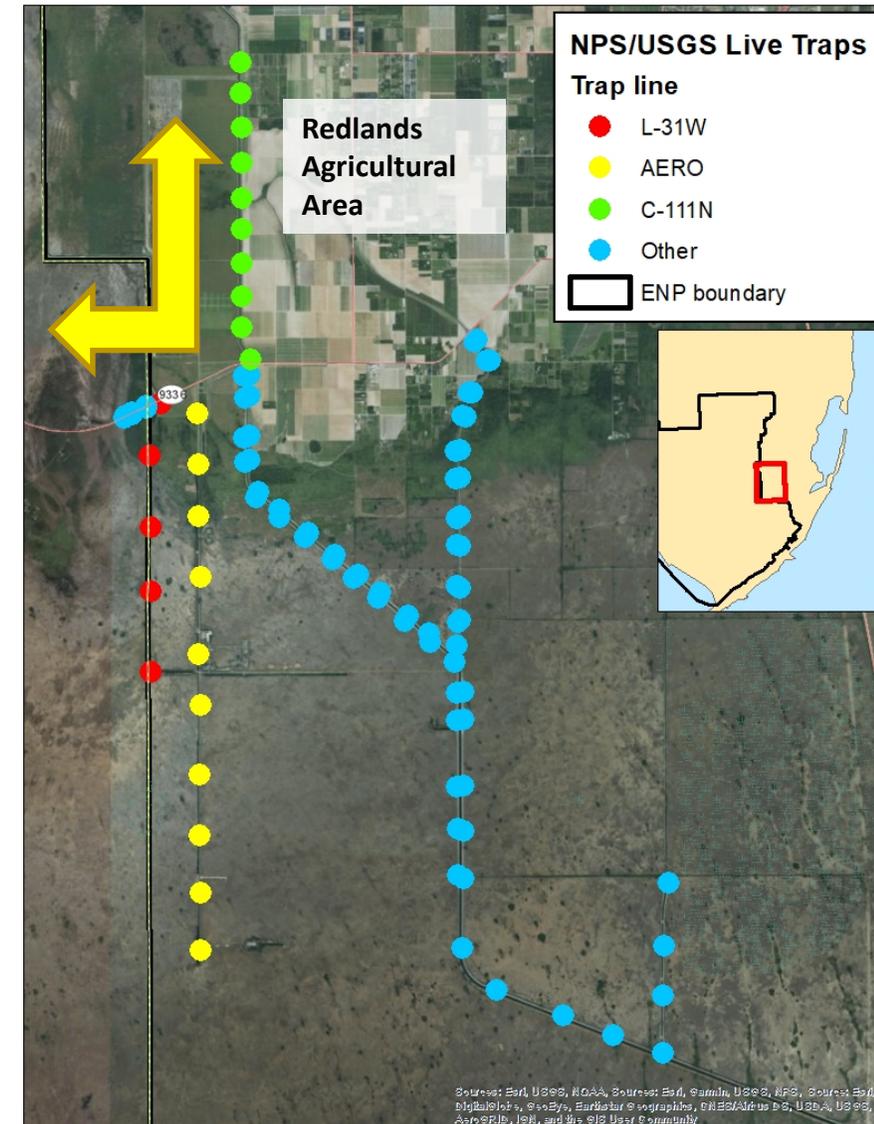




Traps on the western front (NPS/USGS)

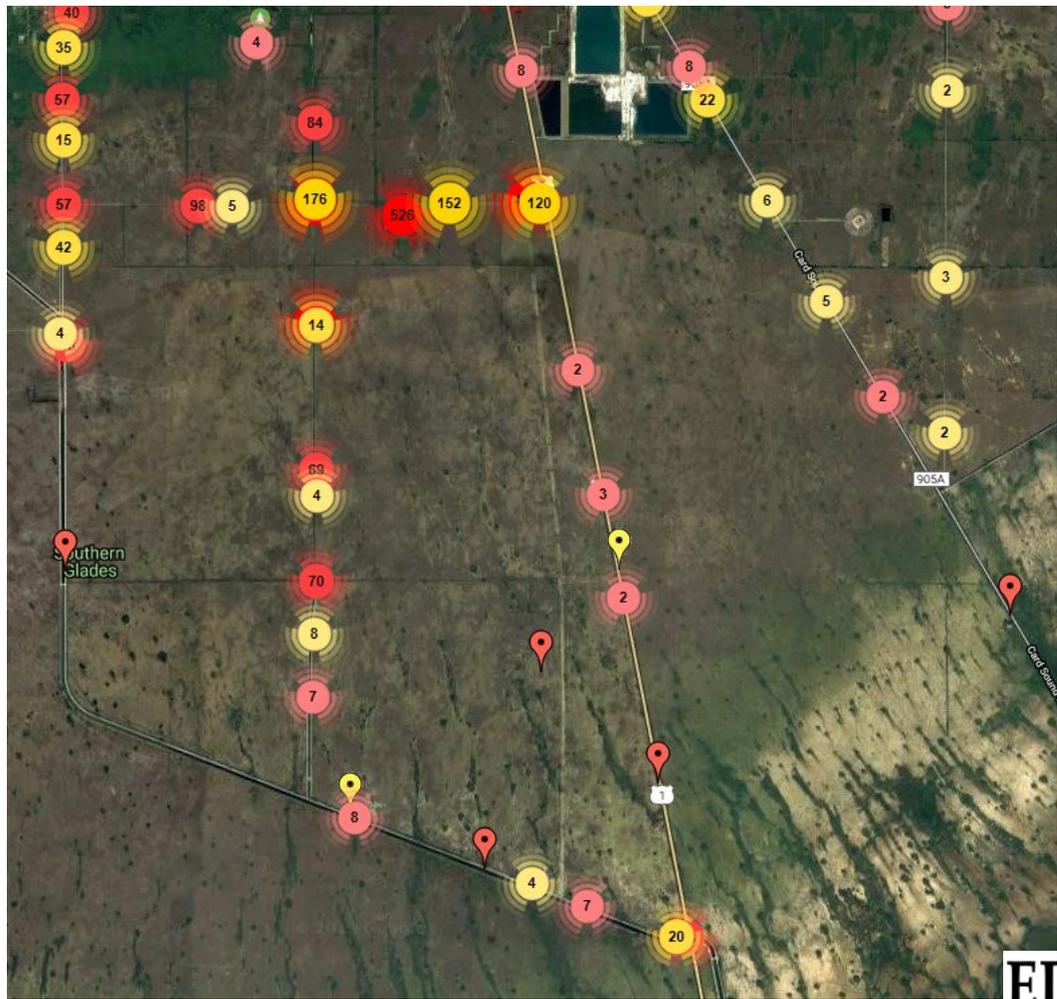
Tegus removed by trap line (number of traps)

	2014	2015	2016	2017	2018	April 2018	April 2019
C-111N	0	0	1 (11)	10 (14)	32 (16)	7 (17)	17 (14)
AERO	0	13	20 (17)	20 (10)	30 (12)	5 (12)	11 (10)
L-31W	1	4	5 (16)	3 (5)	22 (7)	2 (7)	11 (5)
Others	100	215	228 (136)	204 (74)	235 (83)	21 (88)	62 (75)
Total	101	232 (70)	254 (190)	237 (103)	319 (118)	35 (117)	101 (104)

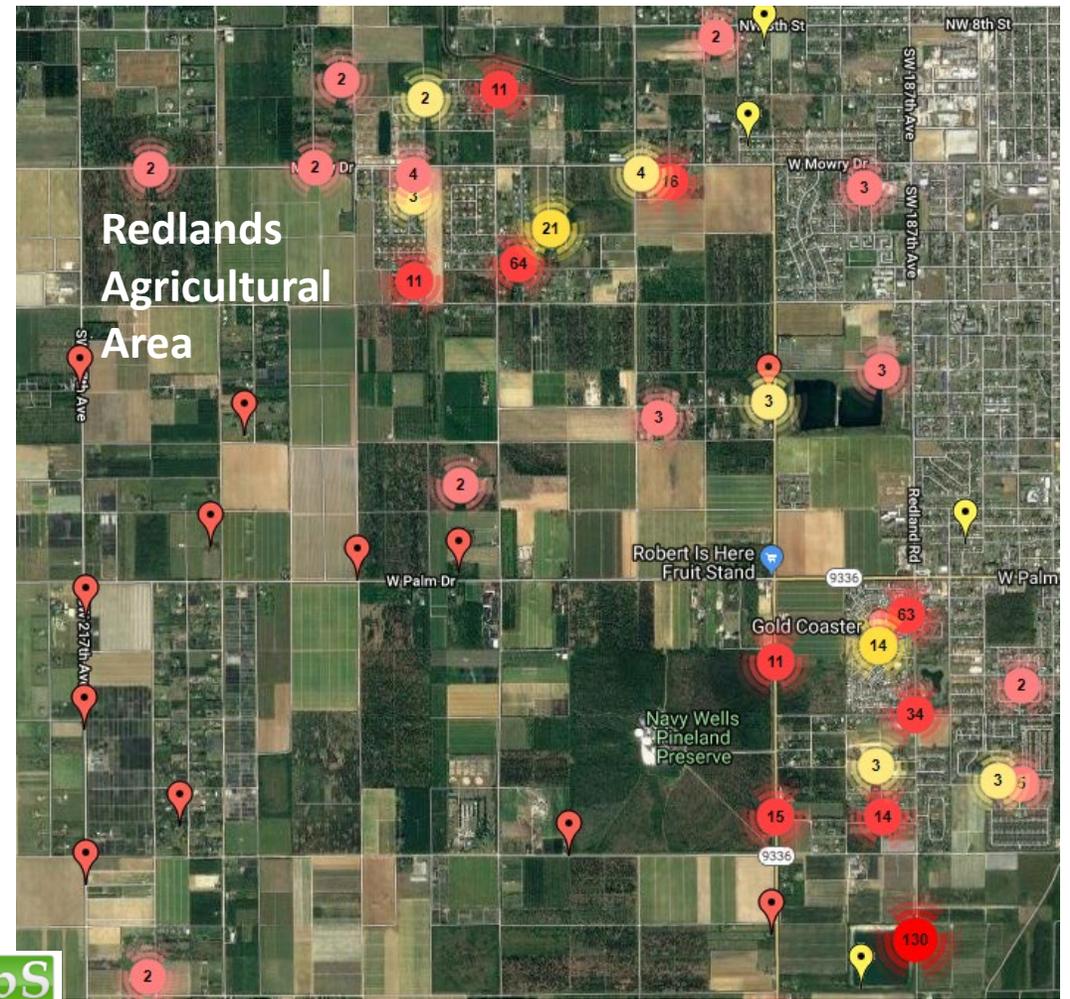


Challenges in the suburban/agricultural landscape

Tegus in sawgrass marsh ecosystem



Tegus in suburban/agricultural landscapes





Challenges posed by restoration

- C-111 spreader project is changing the landscape
- Plugs create land bridges into ENP



Photo by Mackenzie Cahill, NPS

Additional tools for suburban/ag landscape

- Outreach at local events
- FWC trap/loan program
- Detector dogs
- Telemetry
- Need for monitoring and EDRR plan for along park boundaries



What next? Traps, traps, traps, and more traps

- NPS add traps along ENP boundary
- FWC hire more private trappers
- More consideration needed on where to put traps
- Dogs and telemetry
- More engagement of community



Bonus species!

Iguanas and agamas



Green iguanas

(Iguana iguana)

- Green iguana sightings up within ENP
- Coming from suburban areas and from Florida Bay
- Found on several keys in Florida Bay
- Remain elusive and difficult to capture



Photo by NPS

Bonus species!

Iguanas and agamas



Black spiny-tailed iguanas (*Ctenosaura similis*)

- Sightings near Park boundary in 2018
- First sighting of black spiny-tailed iguana in the Park
- Coming from urban areas

EDDMapS
Early Detection & Distribution Mapping System



Photo by Arik Hartman, NPS

Agamas: Managing to “Contain”

Peter’s rock agama, aka
redhead agama

(Agama picticauda)

- Agama invasion of Flamingo maintenance yard
- Reporting went wrong
- “Eradication” went right
- They’ll be back



Final lessons



- Need more trapping/response capability
- Need more information on use of landscape
- Need outreach/inreach
- Need to formalize plans
- Need monitoring and EDRR for invasive species integrated in CERP projects



Photo by Brittany Mason, UF

Thank you!

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For more information on tegus:

- Thursday, Session 33
 - Sarah Cooke, UF
- Poster session one
 - Jenna Cole, UF
 - Justin Dalaba, UF
 - Andrew Gritzmaker, Broward College
 - Brittany Mason, UF

