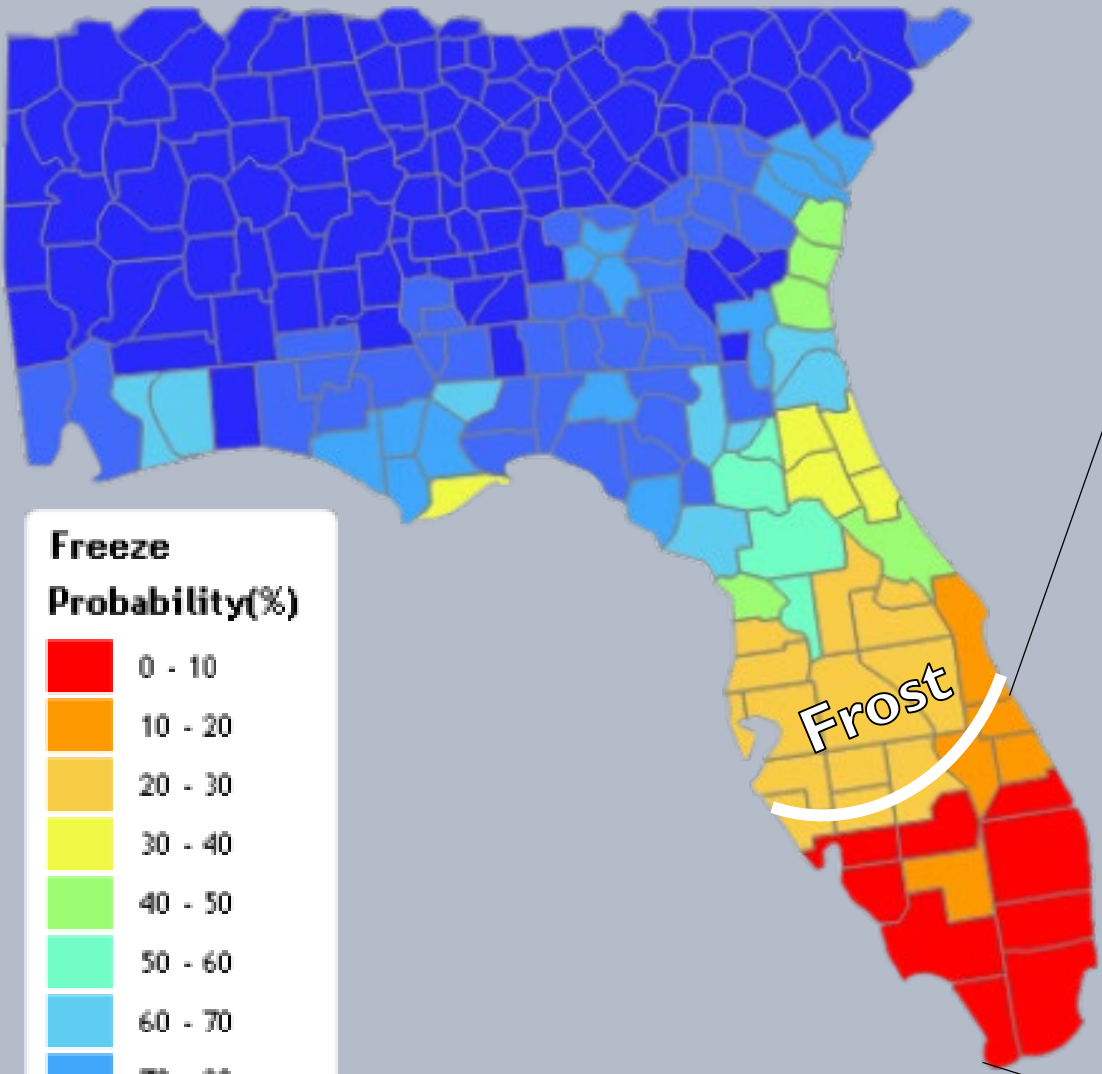


The Everglades Invasive Reptile and Amphibian Monitoring Program (EIRAMP) at the Arthur R. Marshall Loxahatchee National Wildlife Refuge



Nicole D. Jennings, Michael R. Rochford, and Frank J. Mazzotti
University of Florida IFAS Fort Lauderdale Research & Education Center, Davie, FL

Why Florida?

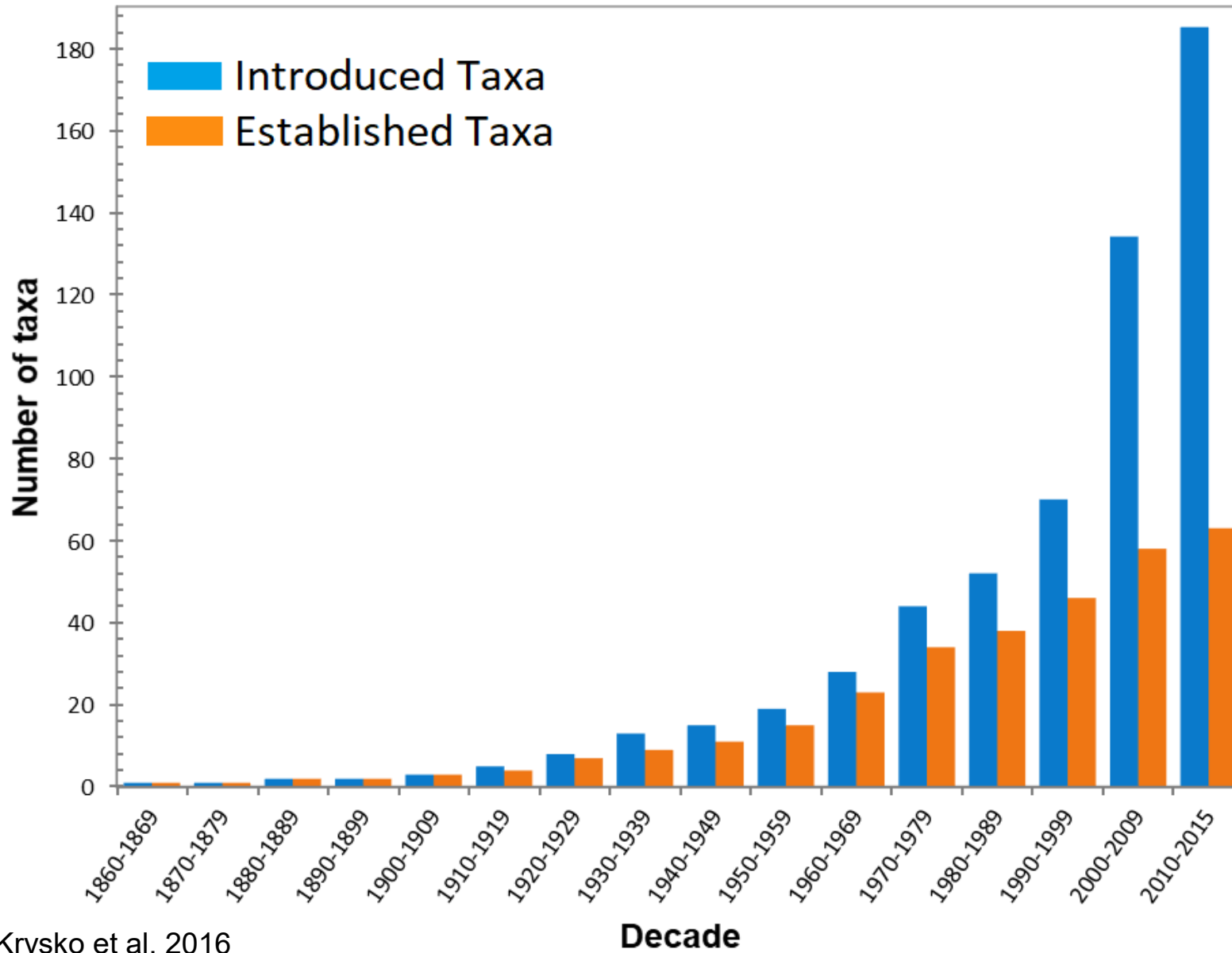


Freeze Probability(%)	
Red	0 - 10
Orange	10 - 20
Yellow-Orange	20 - 30
Yellow	30 - 40
Light Green	40 - 50
Green	50 - 60
Cyan	60 - 70
Blue	70 - 80
Dark Blue	80 - 90
Very Dark Blue	90 - 100

<http://agroclimate.org>



Why Are We Concerned?



Krysko et al. 2016

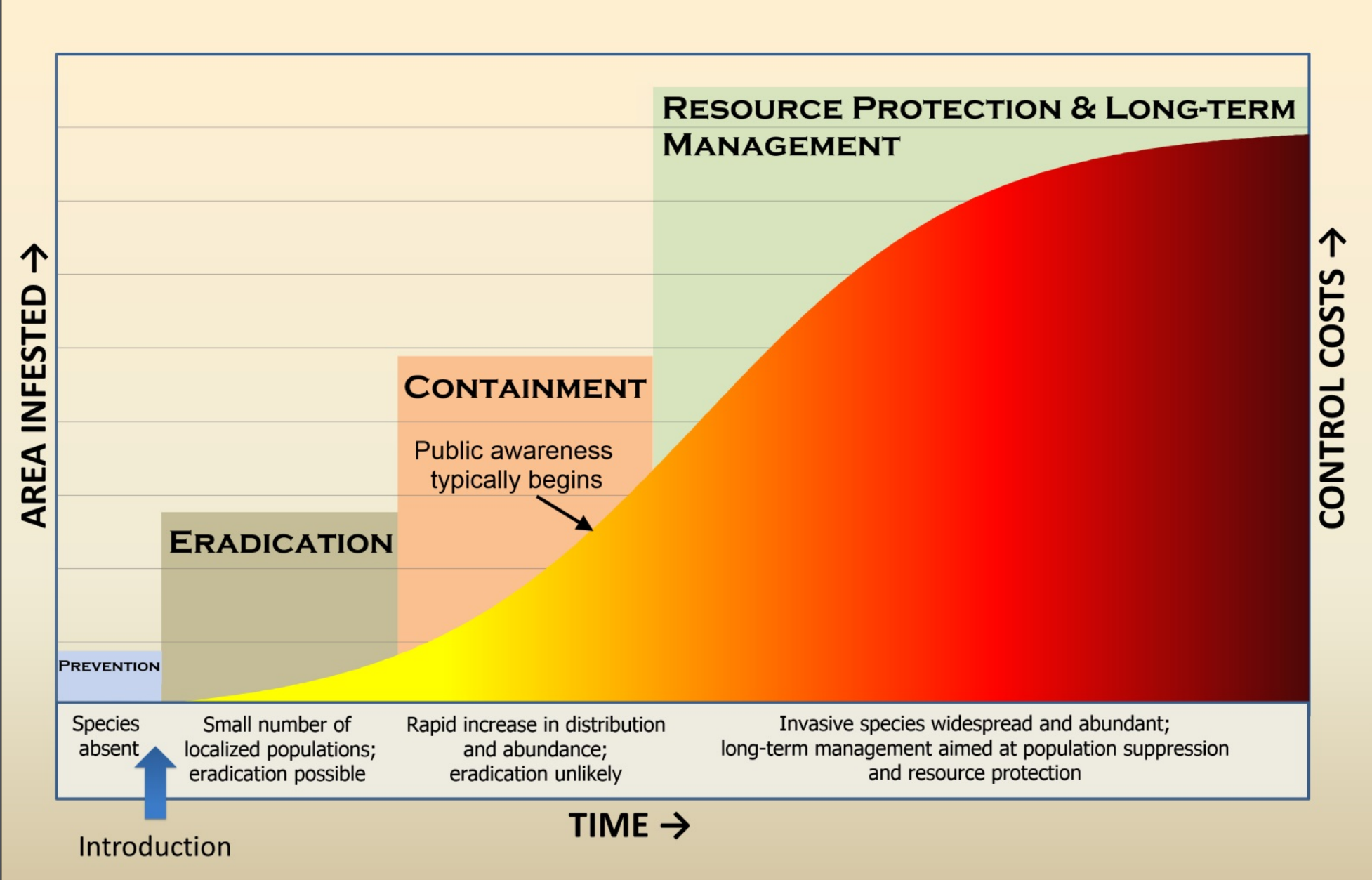
Everglades Invasive Reptile and Amphibian Monitoring Program (EIRAMP)

Objectives

- Capability for early detection and rapid response (EDRR) to new invasions
- Evaluate status and trends of nonnative and native species
- Determine effects of invasives to facilitate removal



Invasion Curve



EIRAMP Methods

- Road-cruising
- Visual Encounter Survey
- Vocalization Surveys at Checkpoints
- Rapid Response
 - Remove nonnatives if possible



Native Species

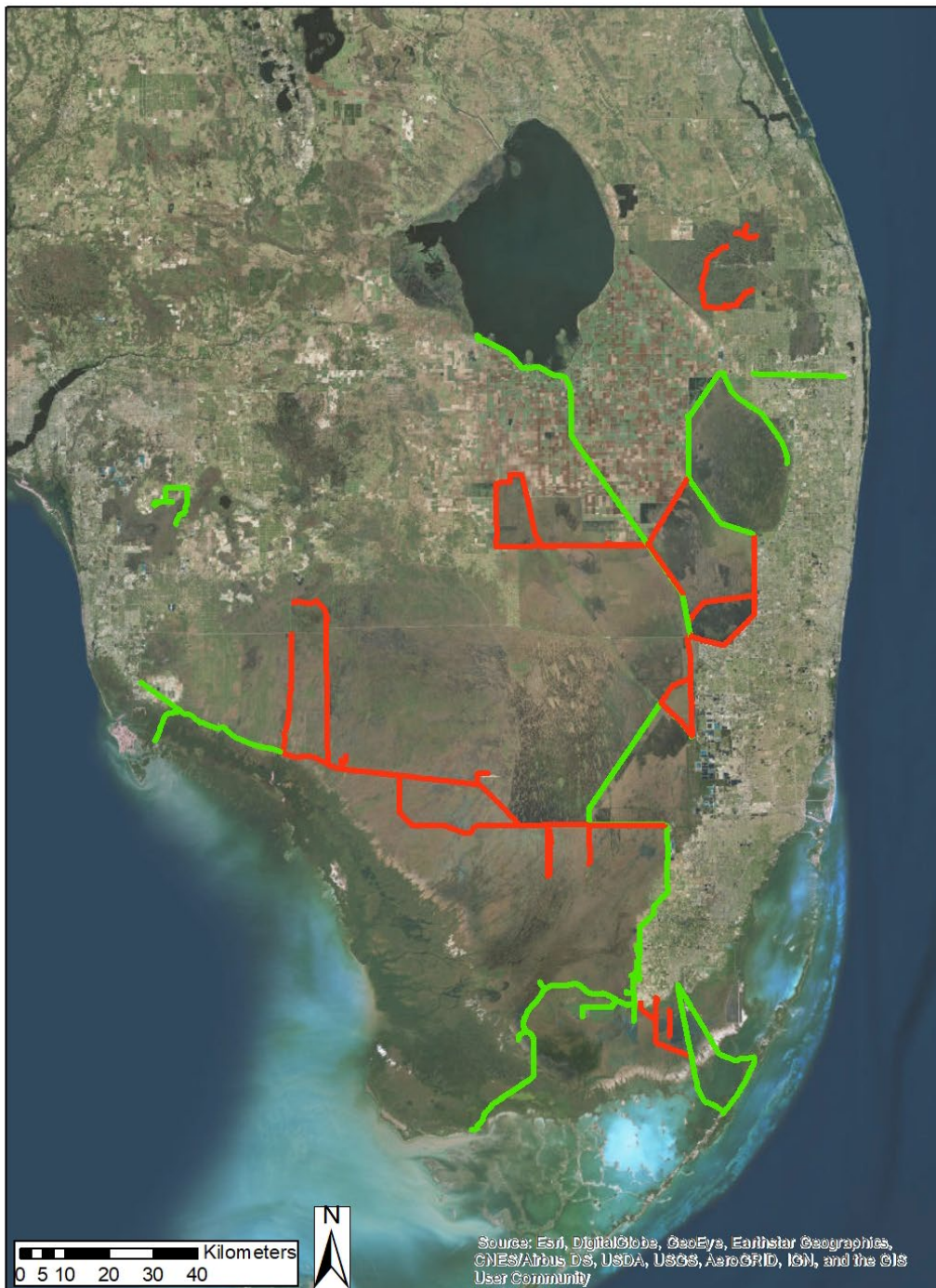


EIRAMP History

- Active Routes
- Inactive Routes

Activity (2011–2017)

- Over 3,200 nonnative animals removed
- 1,864 surveys of 28 routes
- 227 opportunistic surveys
- Over 100,000 trap nights
- 1,834 necropsies of 15 species
- 5,670 site surveys
- 496 person-hours of walking surveys
- 176 rapid responses to nonnative reptiles

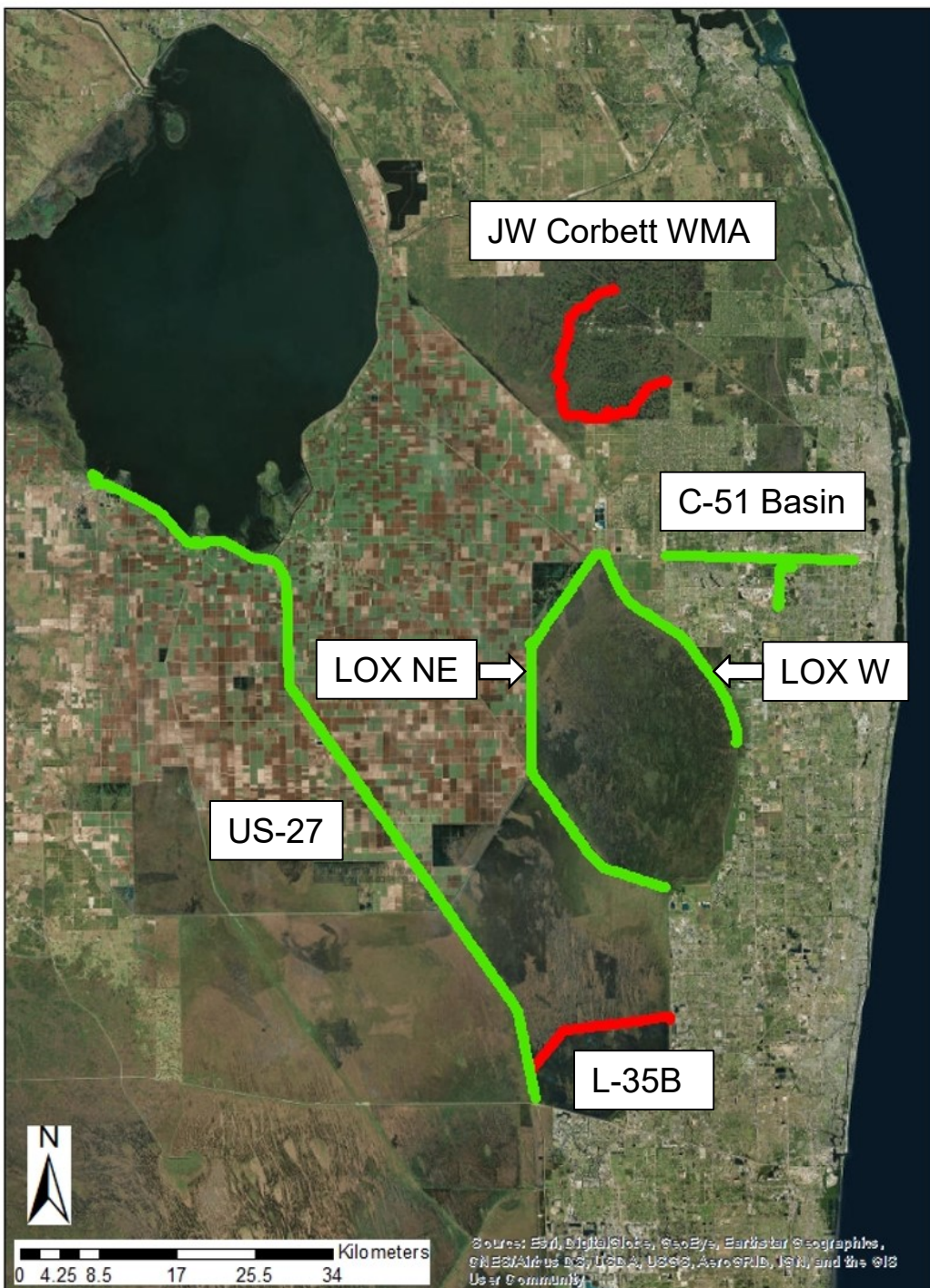


EIRAMP Near LOX

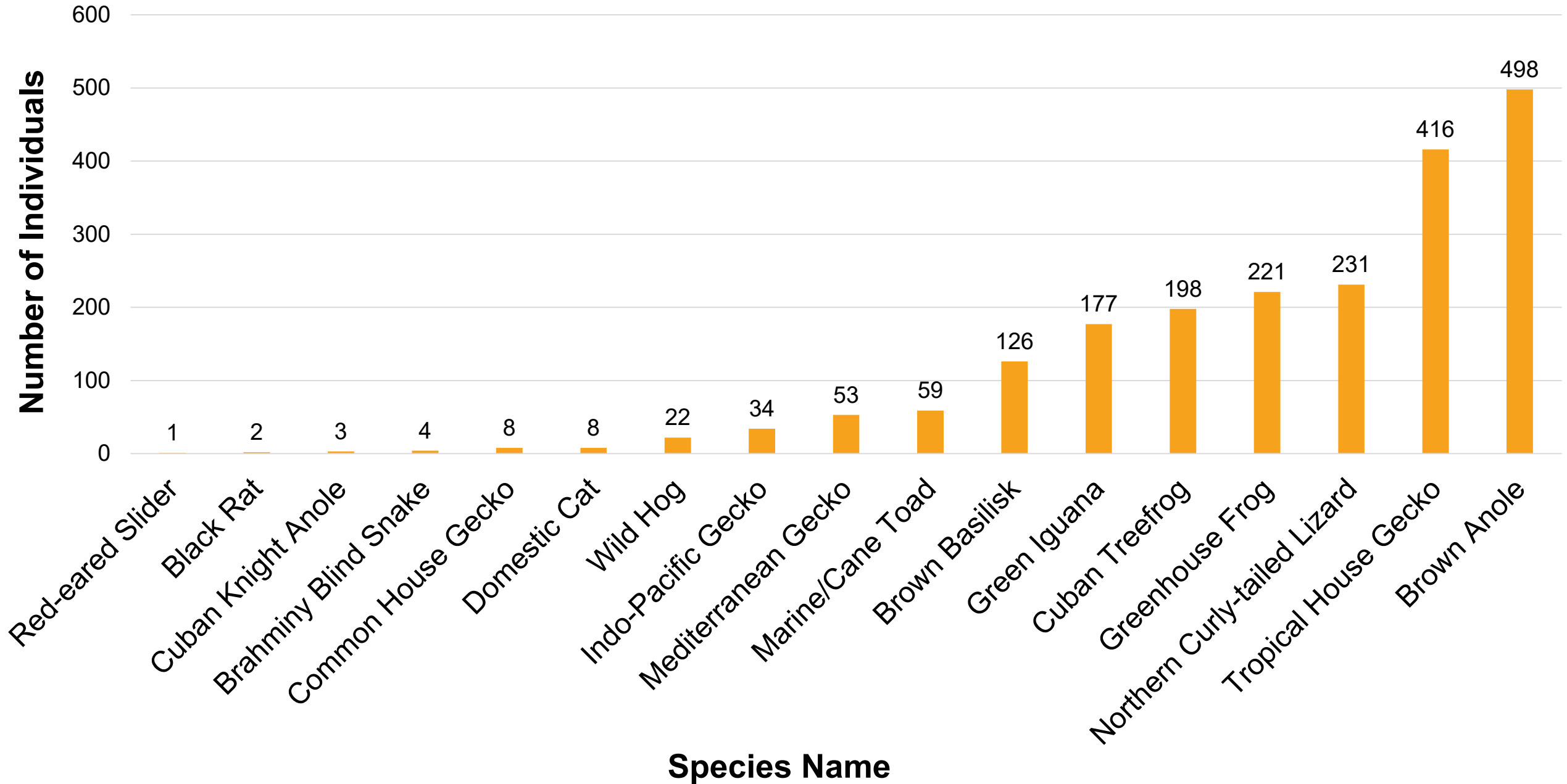
- Active Routes
- Inactive Routes

How long have we been monitoring?

- LOX West:** March 2011 - Present
- LOX North East:** May 2012 - Present



Non-native species found in Loxahatchee NWR



EIRAMP and LOX

Focus on three species

1. Burmese Python
(*Python bivittatus*)



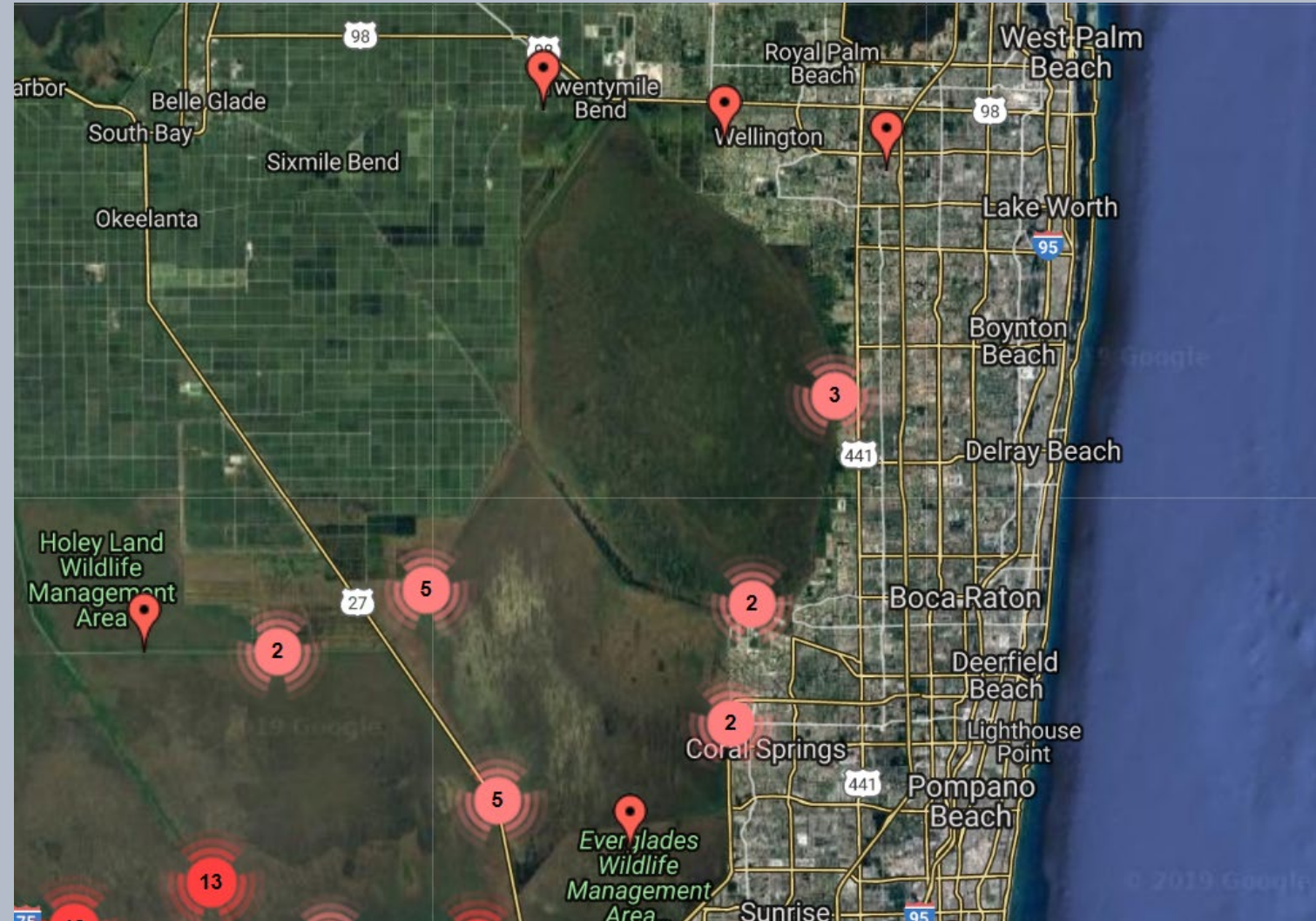
2. Nile Monitor
(*Varanus niloticus*)



3. Argentine Black and White Tegu
(*Salvator merianae*)



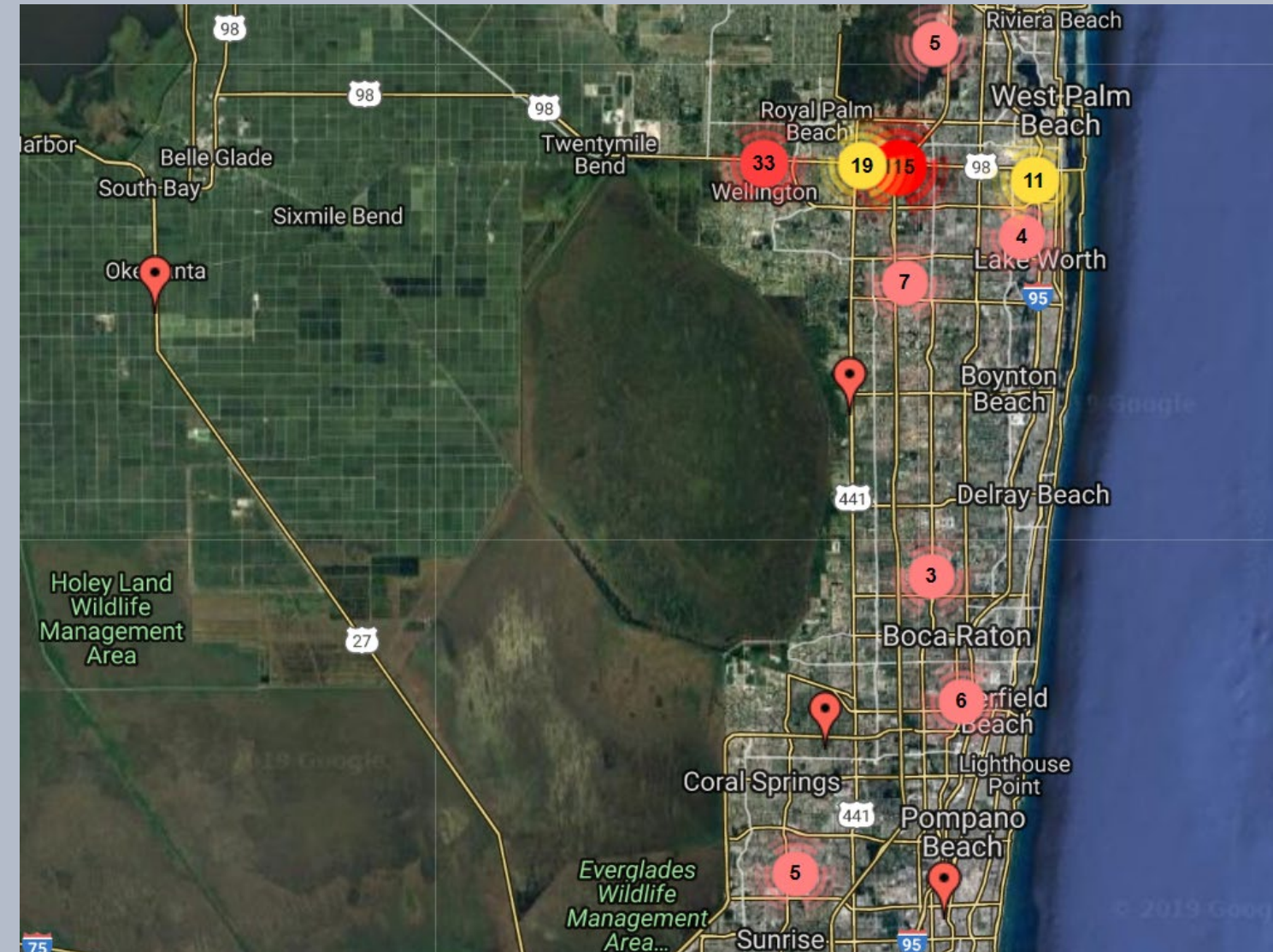
Pythons



- Native to S.E. Asia
- Large, generalist predator
 - Mammals, wading birds, alligators
- High fecundity
- Low probability of detection



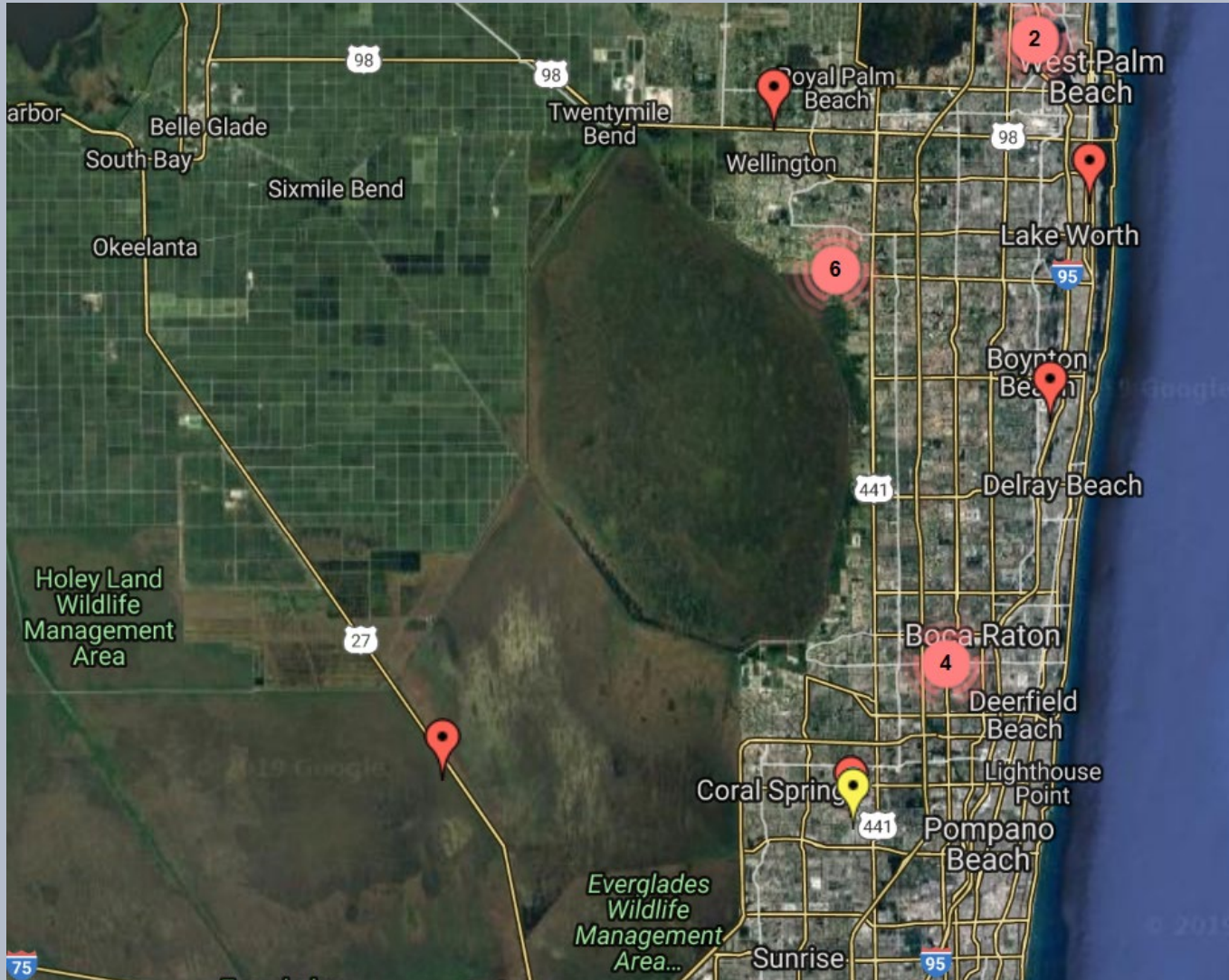
Nile Monitors



- Native to Sub-Saharan Africa
- Large, carnivorous predators
- Variable foraging behavior
- Semi-aquatic
- High fecundity
- LOX concern
- Surveys by FWC and UF



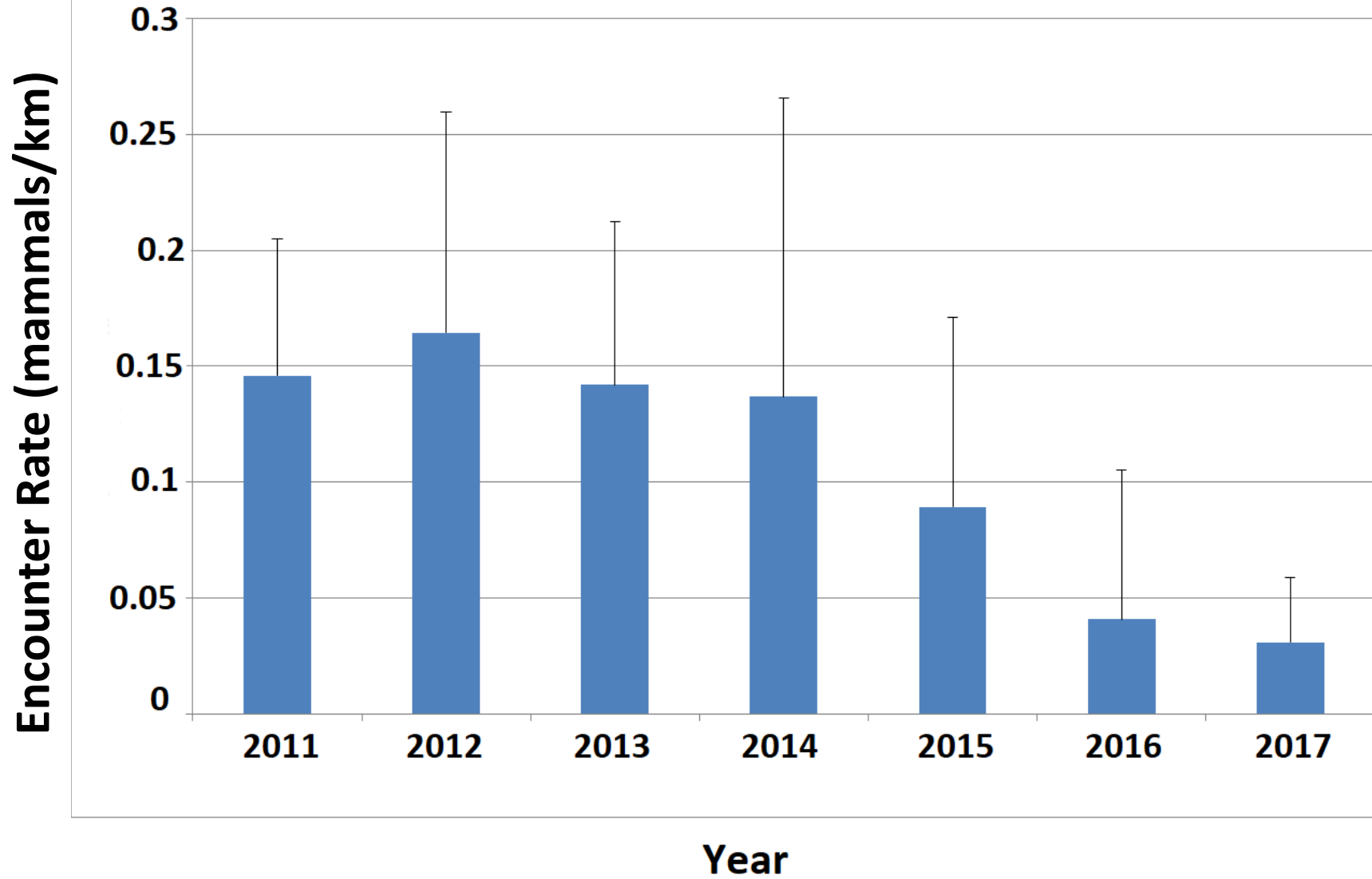
Argentine Black and White Tegus



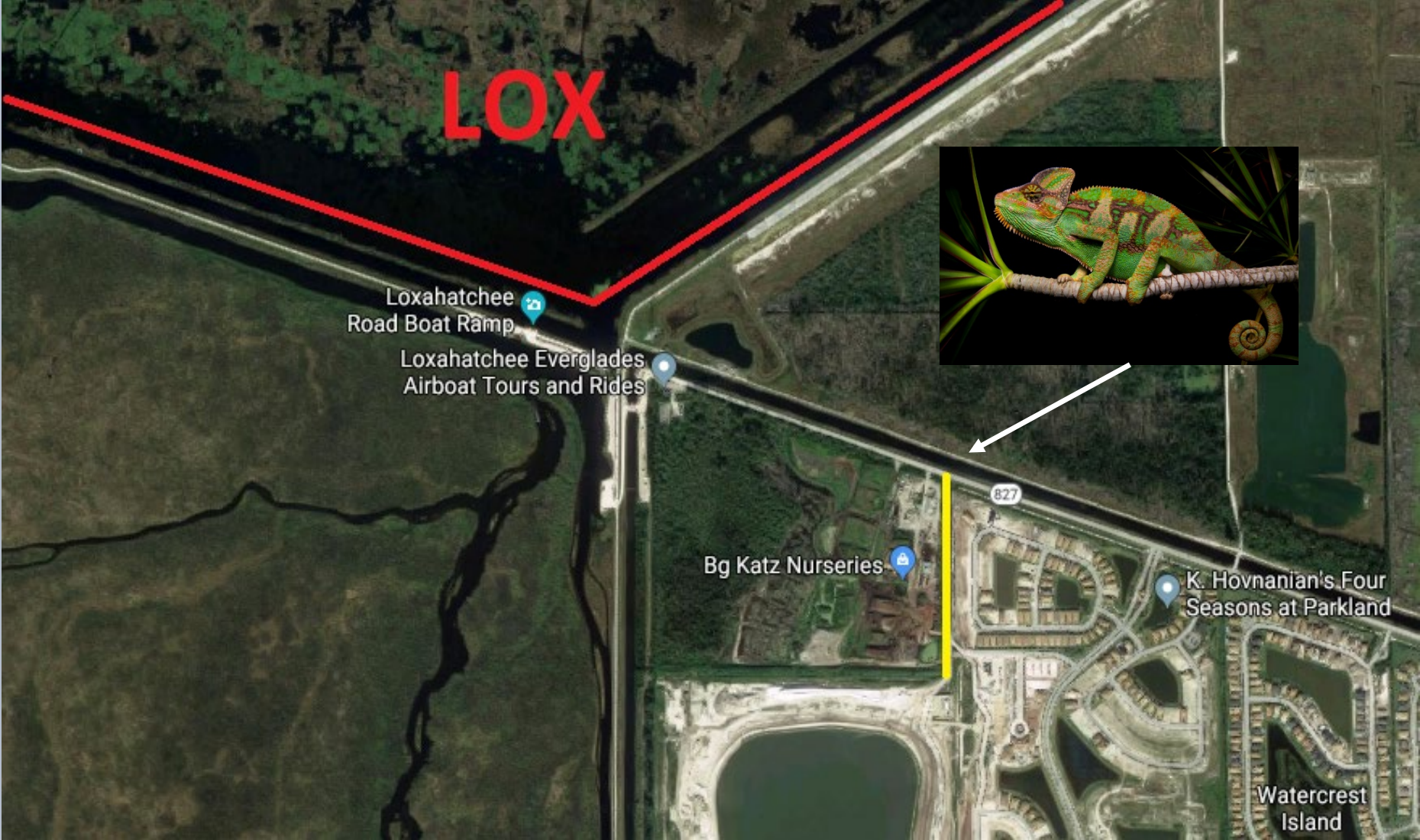
- Native to Brazil, Paraguay, Uruguay and Argentina
- Medium-sized omnivores
- Spread non-native plants
- Egg predators
- Tolerant to cooler temperatures



Mammal Encounter Rate on Loxahatchee NWR West Route



EDRR Success Story

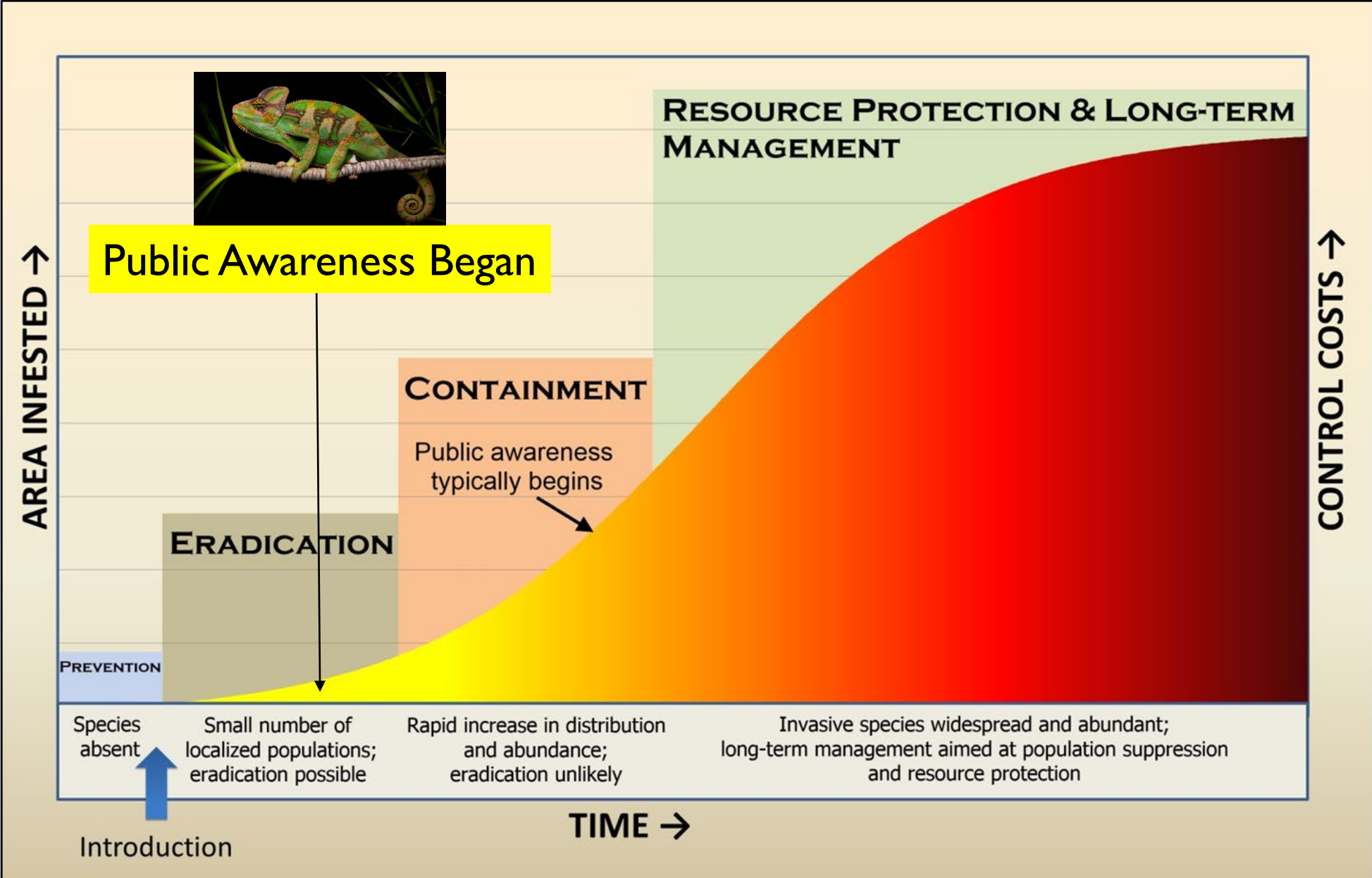


Veiled
chameleons
outside of LOX

■ LOX Boundary

■ Veiled Chameleons Found

EDRR Success Story



Summary and Implications

- EDRR makes a difference
 - Cost and time effective
 - Outreach
- Continue to monitor LOX
 - Determine impacts, increase monitoring efforts
- Stay vigilant about removal of priority invasives



WANTED!

NILE MONITORS

- Large (up to 7 feet) invasive lizard from Africa
- Dark in color with greenish-yellow stripes
- Forked black/blue tongue
- Most likely to be seen along canal banks
- Have long sharp claws, a powerful bite, and a long, muscular, whipping tail

IF OBSERVED PLEASE:

1. TAKE A PICTURE
2. NOTE THE LOCATION
3. PLEASE CALL:

1-888-I'VE-GOT-1
(Invasive Species Hotline)



Acknowledgments



UF UNIVERSITY of FLORIDA



THE CROC DOCS

