

Seminole Tribe of Florida Department of Conservation

Invasive Species Updates

Sergio C. Gonzalez



**ENVIRONMENTAL
PROTECTION OFFICE**



DOC and Invasive Species

- DOC created in 2025
 - Forestry
 - Fish and Wildlife
 - Animal Wildlife Services
 - Mosquito Control
- Work across all tribal lands
- Forestry – team of 3
- Fish and Wildlife – team of 6
- Animal Wildlife Services – team of 4



Fish and Wildlife

- Distribution and relative abundance of wildlife across Tribal lands
- Understanding impacts of invasive species on prey base
- How does hydrology influence movement and community interactions?



Exotic Vegetation

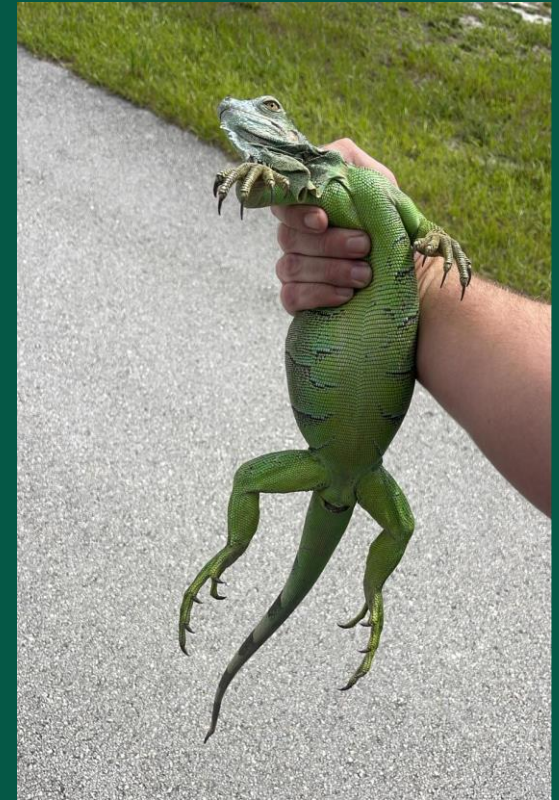
- Thousands of acres of exotics treatments
 - Thousands of acres of contract work
 - Targets Melaleuca, Lygodium, Brazilian Pepper, Cogon Grass
- Inhouse treatments :
 - Cogon grass
 - Wright's nutrush - EDRR
 - Downy rosemyrtle - EDRR
 - Peruvian primrose
- Other problematic species
 - Wetland nightshade
 - Parah, Napier, Burma reed
 - West Indian Marsh Grass
 - Air potato
 - Arrowhead vine



Iguana removal on the Hollywood Reservation



- Whole DOC effort
- EDRR on other reservation
 - Including house calls
- Other exotics lizards:
 - Agamas
 - Curly tails
 - Ameivas



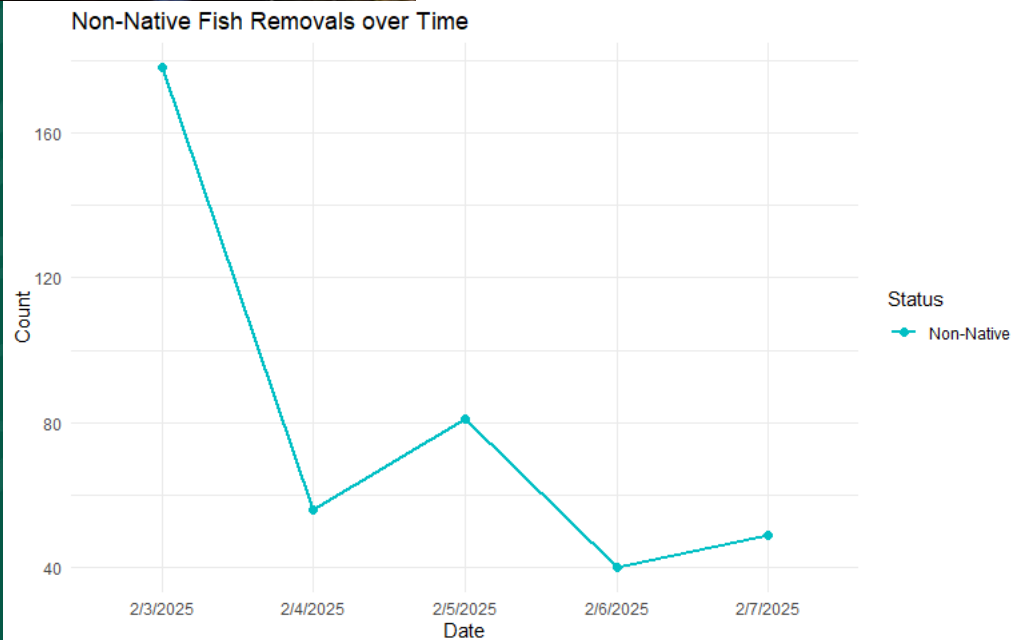
Invasive Fish

- Baseline Fyke netting data
- How do native and invasive fish disperse through the Big Cypress system?
- Outcompeting in the system or better disperser?





5 days
404 invasive fish removed
7 species
Approximately 40/60 split





Eel Traps

- Combination of minnow traps and variety of “eel traps”
- Set along canals and ditches
- No swamp eels (yet)
- Detected Spiny Spotfin Eels at two independent locations



Burmese Pythons

- Staff capturing pythons consistently
 - Plus records from community and other departments
- Mobile data collection app
- Community education
- Planning on capture training workshop
- Telemetry work coming soon



New Department of Conservation update on Burmese pythons on Big Cypress Reservation

BY SERGIO GONZALEZ
Wildlife Biologist, Dept. of Conservation
and
CRAIG VAN DER HEIDEN
Director, Dept. of Conservation

The story of the Burmese python (*Python molurus bivittatus*) invasion in south Florida is not a new one. The first documented Burmese python capture in the Everglades was in 1979. Burmese python establishment in the Everglades is believed to have resulted from a combination of multiple intentional pet releases and accidental escapes over several decades. The released individuals, being well adapted to life in a marsh environment began breeding and increasing in numbers. In such a vast wilderness, with few roads crossing it, early detection was nearly impossible until their numbers were large enough to be detected with increasing frequency. Biologists and outdoor enthusiasts also noticed declines in native wildlife populations by the 2000s. Today, small mammals, such as marsh rabbits, opossums, and raccoons are rare in the southern Everglades. In 2013, the Federal government banned the importation and interstate transport of pythons. Despite this, the species still remained popular in the pet trade and among collectors in Florida, until the State of Florida declared it (and other large snakes) a prohibited species in 2021.

The establishment of the species in Florida has been problematic because of the sheer amount of prey they need to consume to reach their enormous adult size. Adults captured in Florida are typically between 3 and 15 feet long and can weigh over 100 pounds. While we have many species of snakes in Florida, our native wildlife did not evolve with large predators and has



DOC biologists Joe Andreoli, Tommy Kelly and Jon Pinkas work as a team to gradually pull the pythons from a hole.

recruiting volunteers to search for pythons across south Florida. In 2017, the Florida Fish and Wildlife Conservation Commission launched a "Python Contractor" program, hiring individuals to search and remove exotic snakes. The South Florida Water Management District followed suit, rolling out a similar program a couple of years later. Despite the thousands of pythons removed from roadsides and levees each year, the impact to the population as a whole is still

(male, weighing 48 pounds), but the other four were found together in what is known as a "breeding ball". During the breeding season, females leave a pheromone trail that attracts nearby males and results in a tangle of snakes as males vie for the female. The increased movement during the breeding season sometimes aids in the detection of this cryptic species and also presents the opportunity to remove reproductive females before they can lay eggs.



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Photo credit: Division of Conservation, Florida Department of Environmental Protection



▼ Date & Time(s)

Date * Start Time

End Time Capture Time

Map *

▼ Location data

Reservation *

BC BR CC FP HW
 IM LL TA

Location in Rez *

▼ Observers

Observer 1 (initials) * Observer 2 (initials)

Behavior

Distance from water (m)

▼ Weather info

Air Temp (F) % Cloud Cover

Weather

Hi Temp for the Day Lo Temp for the Day



▼ Environmental info

Vegetation

Description of Microhabitat

Microhab T (F)

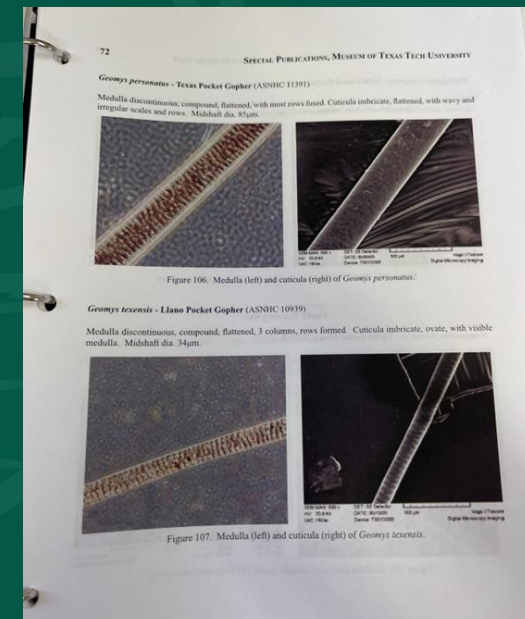


- Burrow
- Levee-Canal Bank
- Levee-Wood Line
- Manmade-Debris
- Manmade Structure
- Mulched Plant Material
- Pasture
- Roadside-Canal Bank
- Roadside-Wood Line
- Tall Reeds
- Tree Canopy
- Water

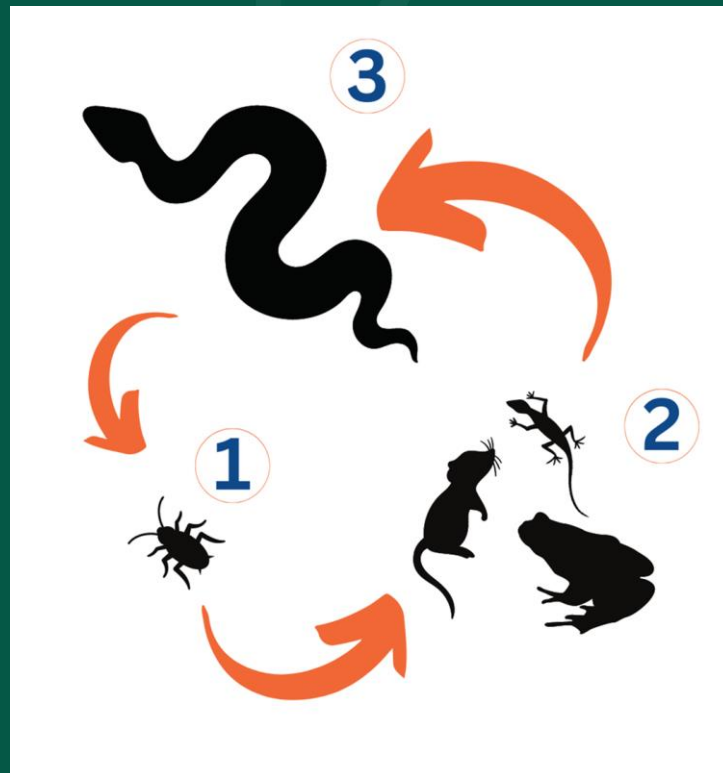
In the lab



- Standard measurements
- Reproductive potential
- Gut contents



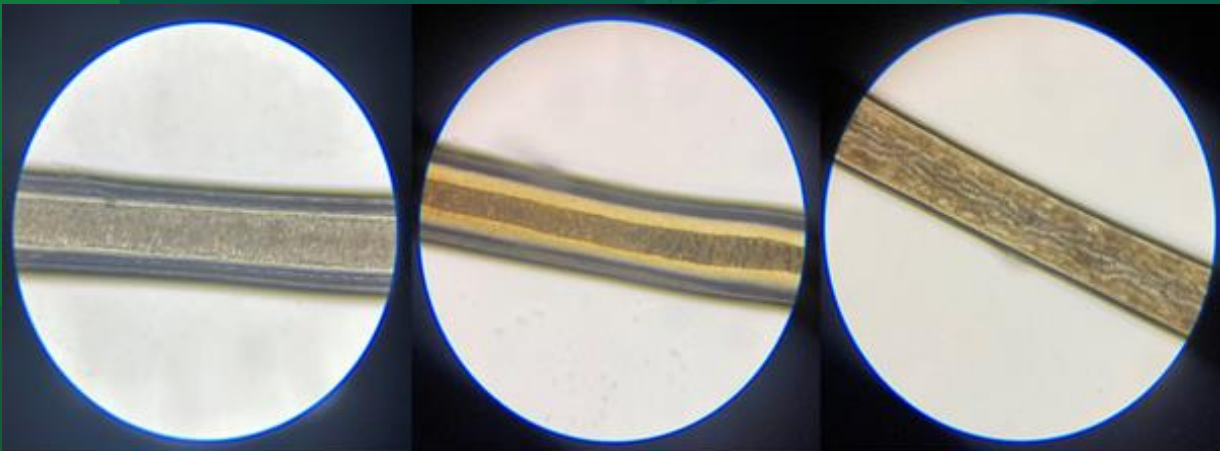
Lung health – pentastomes (snake lung worm)



The Monax Hunter's Guide to:
**VETERINARY
PARASITOLOGY**

Gut contents analysis

- Began a specimen library for identification of specimens in gut contents
- Opportunistic species detections
- The usual suspects



Left to right: Skunk hair, raccoon hair, marsh rabbit hair under magnification.



Outreach



- Python awareness presentations
- National Invasive Species Awareness Week presentations
- Youth fishing events

Future directions

- Wet season recolonization patterns of native and non-native fish
- Heavily focus on retreatment intervals of exotic vegetation
- Tease apart python impacts from other ecological factors
- Future sentinel snake project
- Expand community awareness and involvement





DEPARTMENT OF CONSERVATION

Thank you!



DOCSTAFF@semtribe.com

SERGIO C. GONZALEZ

FISH AND WILDLIFE MANAGER

O. (954) 965-4380 EXT. 11133

M. (954) 544-7591

E. SERGIOGONZALEZ@SEMTRIBE.COM

A. 1601 NW 136TH AVENUE

SUITE A-100

SUNRISE, FL 33323