ECISMA Outreach 2015 – 2016

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EVERGLADES CISMA

Outreach Achievements

- **New Products & Publications**
- **Exhibits & Presentations**
- **Public Participation Events**
- **Agricultural Pest Eradication & Outreach**
- **Public Outreach Surveys**

Products & Publications

EVERGLADES CISMA

www.evergladesinvasives.org
www.evergladescisma.org

UF UNIVERSITY of FLORIDA

The University of Georgia

EVERGLADES CISMA

Online Events Calendar

EVERGLADES CISMA

UF IFAS Fact Sheets

The Argentine Black and White Tegu in South Florida
Population Growth, Spread, and Containment

Florida's Reptilian Invasion

The accumulation of exotic reptiles and amphibians in Florida has been called a "runaway train" that has yet to be controlled (Meshaka 2011). The state is home to more nonnative species of reptiles and amphibians than anywhere else in the world. South Florida is especially at risk because of its subtropical climate, large areas of disturbed habitats, and thriving trade in exotic pets. Although pythons have received the majority of public attention, invasive lizards also pose a significant threat to south Florida's native wildlife and ecosystems.

The Argentine black and white tegu (*Salvator merianae*, formerly *Tupinambis merianae;* Harvey et al. 2012) was introduced to Florida through the pet trade and has established breeding populations in Hillsborough County (central Florida) and Miami-Dade County (south Florida). The tegu is one of the largest lizard species in the Western Hemisphere, growing up to four feet in total length. Females lay an average of 35 eggs per year starting at age three or four. Tegus have survived below-freezing temperatures in Florida by burrowing during the winter months (McEachern et al. 2015). The tegu's broad habitat use and omnivorous diet create the potential for severe ecological impacts.

More Tegus in More Areas

Collaborative interagency efforts to assess the south Florida tegu population through surveys, trapping, radio-tracking, and removal began in 2009 within the Everglades Cooperative Invasive Species Management Area (ECISMA). Since then, Argentine black and white tegus have grown in number and expanded their range in south Florida. Figure 1 shows the number of tegus removed per year by ECISMA cooperators. Both the number of tegus removed and the effort expended to catch them have increased. These totals do not include tegus removed by private trappers, some of whom reported removing more than 400 in one year.

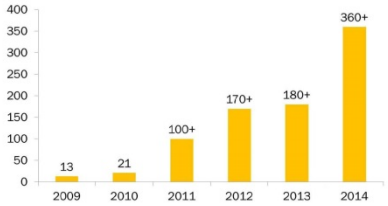

Figure 1. Tegus removed by year (2009–2014) by Florida Fish and Wildlife Conservation Commission, University of Florida, and partners within the Everglades Cooperative Invasive Species Management Area.
Source: Florida Fish & Wildlife Conservation Commission

Argentine black and white tegu (*Salvator merianae*)
Photo: Robin Bijlani, University of Florida

The south Florida tegu population is centered in Florida City and Southern Glades Wildlife and Environmental Area, about six miles from Everglades National Park (Figure 2). Tegus are dispersing from this core area. To the east, they are approaching the Turkey Point Power Plant site, a nesting area of federally threatened American crocodiles (*Crocodylus acutus*). To the west and south they are advancing toward Everglades National Park and the Florida Keys (Figure 2). Levees facilitate tegus' spread into vulnerable habitats that would otherwise be isolated from terrestrial invaders (Klug et al. 2015).

Recent tegu sightings west of the Everglades Agricultural Area and south of the Caloosahatchee River suggest that southwest Florida may also be vulnerable to invasion.

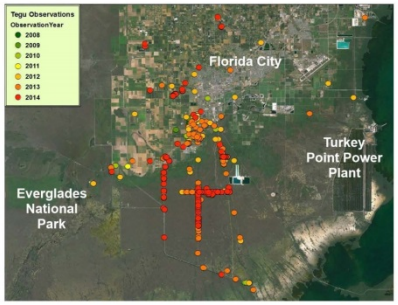

Figure 2. Tegu locations by year in southern Miami-Dade County.
Source: Florida Fish and Wildlife Conservation Commission. 2014. Exotic species database. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL (accessed December 1, 2014)

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Institute of Food and Agricultural Sciences
IFAS Publication Number WEC-360
November 2015

Ecological Risk Assessment for Invasive Wildlife in Florida

Global trade and travel transport plants and animals from native ranges to new ecosystems. About 10–20% of *nonnative (exotic, alien)* species that arrive in new locales become *invasive*, meaning they are likely to harm the environment, economy, or public health. **Preventing the introduction of invasive species** is the most effective way to protect native biodiversity and ecosystem integrity. Once an invader begins to establish and spread, its control costs increase rapidly (Figure 1).

The United States lacks adequate regulation and implementation of laws for cross-border species trade, resulting in most nonnative species entering the country unchecked (Jenkins et al. 2007). Florida ports are the entry points for about half of the reptiles, arachnids, insects, and crustaceans imported into the United States (Romagosa 2011; Figure 4). These arrivals, coupled with the state's hospitable climate and habitats, have made Florida home to more invasive species than any other state but Hawaii. While it is too late to prevent the invasion of Burmese pythons and Argentine black and white tegus (Figure 2), action is needed to prevent other potentially destructive species from establishing (Figure 3).

Ecological risk assessment is estimates the probability of an ecological event occurring and evaluates subsequent consequences. For invasive species, a risk assessment addresses the questions *"How likely is a species to become invasive?"* and *"What can go wrong if it does become invasive?"* Scientists explore a species' characteristics to determine its potential to invade new areas and cause negative impacts.

Risk assessment can be applied at various stages of the invasion process, most notably prevention and eradication (Figure 1). In the prevention phase, risk assessment is essential to develop screening procedures and regulate importation. After species are introduced, risk assessment remains critical to identify priority species for early detection and rapid response (EDRR). This fact sheet focuses on the development of risk screening tools for both prevention and EDRR.

Figure 2. The Burmese python (*Python molurus bivittatus*, left) and Argentine black and white tegu (*Salvator merianae*, right) already have established populations in Florida. These predators threaten native wildlife and have the potential to disrupt entire ecological communities.
Photos: Thomas A. Rahill, Liz Barraco, Florida Fish and Wildlife Conservation Commission

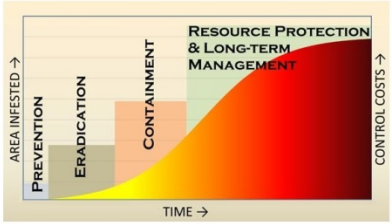

Figure 1. The invasion curve shows that eradication becomes less likely and control costs increase as an invasive species spreads over time
Adapted from Invasive Plants and Animals Policy Framework, State of Victoria, Australia, Department of Primary Industries, 2010.

Figure 3. The green anaconda (*Eunectes murinus*, left) and Chinese water dragon (*Physignathus cocincinus*, right) have been found in the wild in Florida, but with no evidence of breeding. If they establish, these species could have severe ecological impacts. Photos: ...

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EVERGLADES CISMA

Exhibits & Presentations

EVERGLADES CISMA

Everglades Seafood Festival
Feb. 12–14, 2016

CISMA
Everglades Cooperative Invasive Species Management Area

EVERGLADES CISMA

20th Annual Southwest Florida CISMA Invasive Species Workshop Feb. 24, 2016

- Dennis Giardina: Exotic mangroves
- Jenny Eckles: Invasive wildlife in SW FL
- Christen Mason: Exotic plant removal operations

Southwest Florida CISMA Cooperative Invasive Species Management Area

Southwest Florida
Cooperative Invasive Species Management Area

CISMA
Everglades Cooperative Invasive Species Management Area

EVERGLADES CISMA

Native Plant Day
John Pennekamp State Park, Key Largo
April 9, 2016

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Everglades Cooperative Invasive Species Management Area

BROWARD COUNTY FLORIDA

EVERGLADES CISMA

Public Participation Events

EVERGLADES CISMA

- 1,066 participants, 106 pythons removed
- ECISMA table at events
  - Invasive Species Awareness Festival (Jan. 16)
  - Awards Ceremony (Feb. 27)
- 47 In-Person Trainings
- 510 people received trainings
  - From 29 FL counties and 15 U.S. states

2nd Annual

- 60 runners

Race Against Invasives 5K 2016

CISMA
Everglades Cooperative Invasive Species Management Area

EVERGLADES CISMA

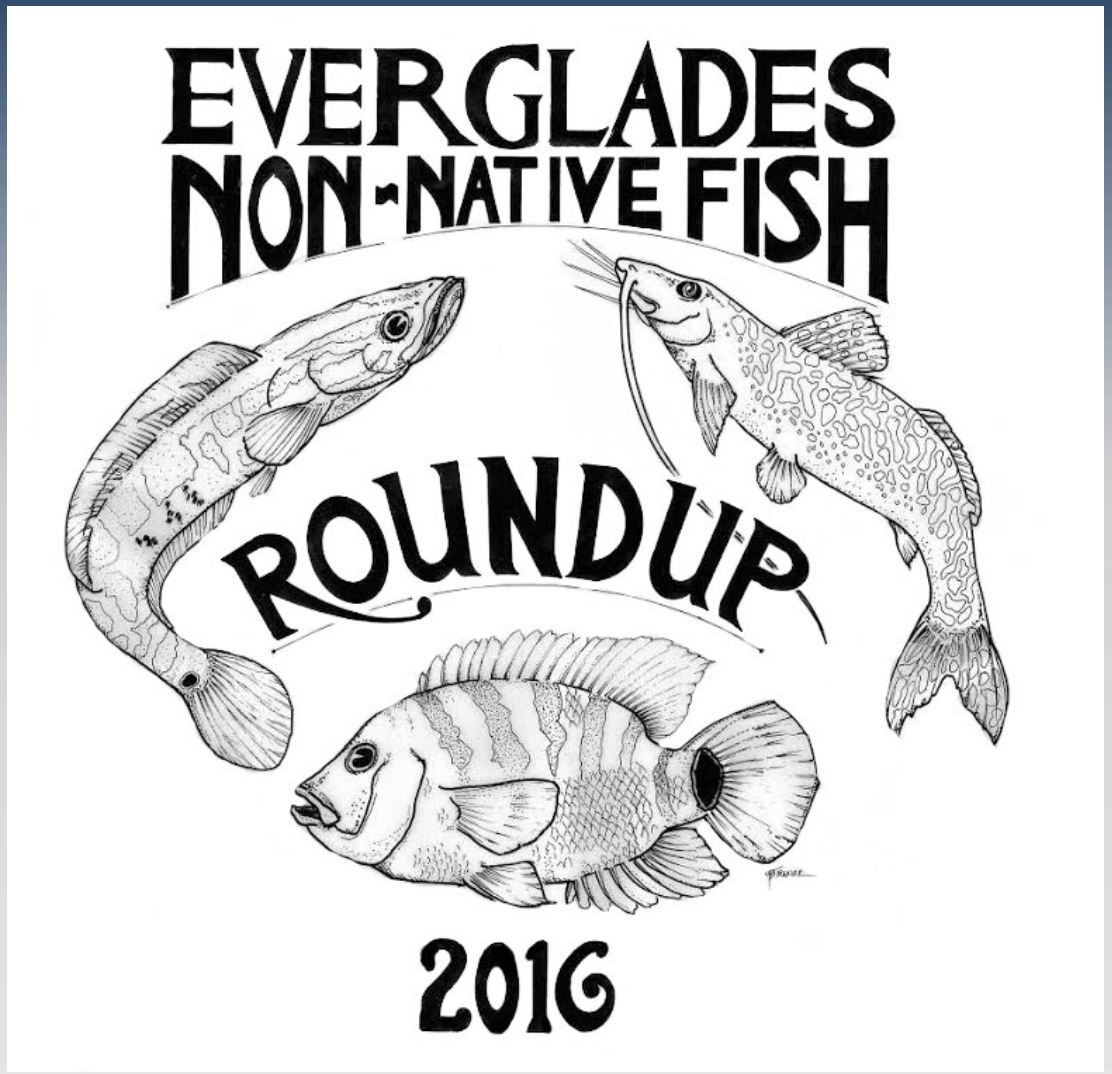
Zoo Miami Pet Amnesty Day
March 12, 2016

80 animals surrendered

- 25 turtles
- 19 birds
- 11 mammals
- 10 tortoises
- 8 snakes
- 6 lizards
- 1 crocodilian

EVERGLADES CISMA

- 38 participants
- 130 reports
- 22 nonnative fish species



7th Annual

- 65 anglers
- 3 locations
- 543 pounds of fish caught

CISMA
Everglades Cooperative Invasive Species Management Area

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Agricultural Pest Eradication & Outreach

EVERGLADES CISMA

Giant African Land Snail

- Four lighted panel ads in Dadeland Mall
- Clear Channel billboard (Palmetto Expressway, Oct.)
- 30-second radio ads, 15-second video ads (IHeart Radio, WIOD AM/FM)
- Community cultural forum
- Press briefing (Sept. 9)

EVERGLADES CISMA

Oriental Fruit Fly

- Detected Aug. 2015 / Eradicated Feb. 2016
- 99-square mile quarantine area
- Stakeholders: growers, packers, shippers, landscapers, and ornamental nursery growers
  - Workshops and meetings (>1000 stakeholders)
  - Newsletter articles
  - Bilingual fact sheets
  - Power Point presentations
  - Office, phone, email consultations

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Public Outreach Surveys

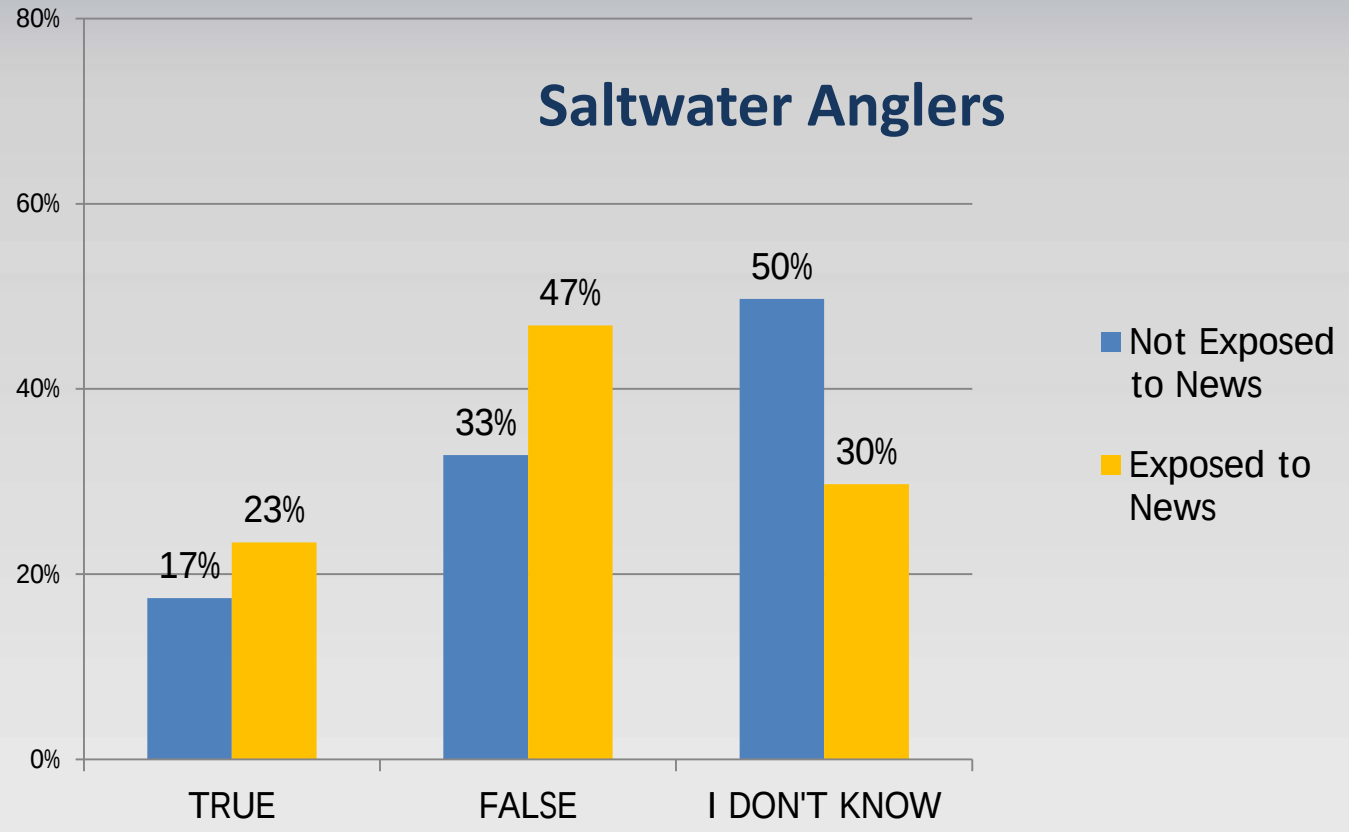
EVERGLADES CISMA

2 Human Dimensions Research Studies

- Knowledge, Attitudes, and Behaviors toward Lionfish
  - PRE survey: January 2015
  - POST survey: September 2015
  - 3 populations: FL SCUBA divers, saltwater anglers, general public
- Knowledge and Attitudes about Burmese pythons and the 2016 Python Challenge™
  - PRE survey: January 2016
  - POST survey: March 2016
  - 2 populations: 2016 Python Challenge™ participants, general public

Lionfish Survey Results

"*True or False?* You must have a recreational fishing license to legally remove lionfish in Florida using a spear or handheld net."



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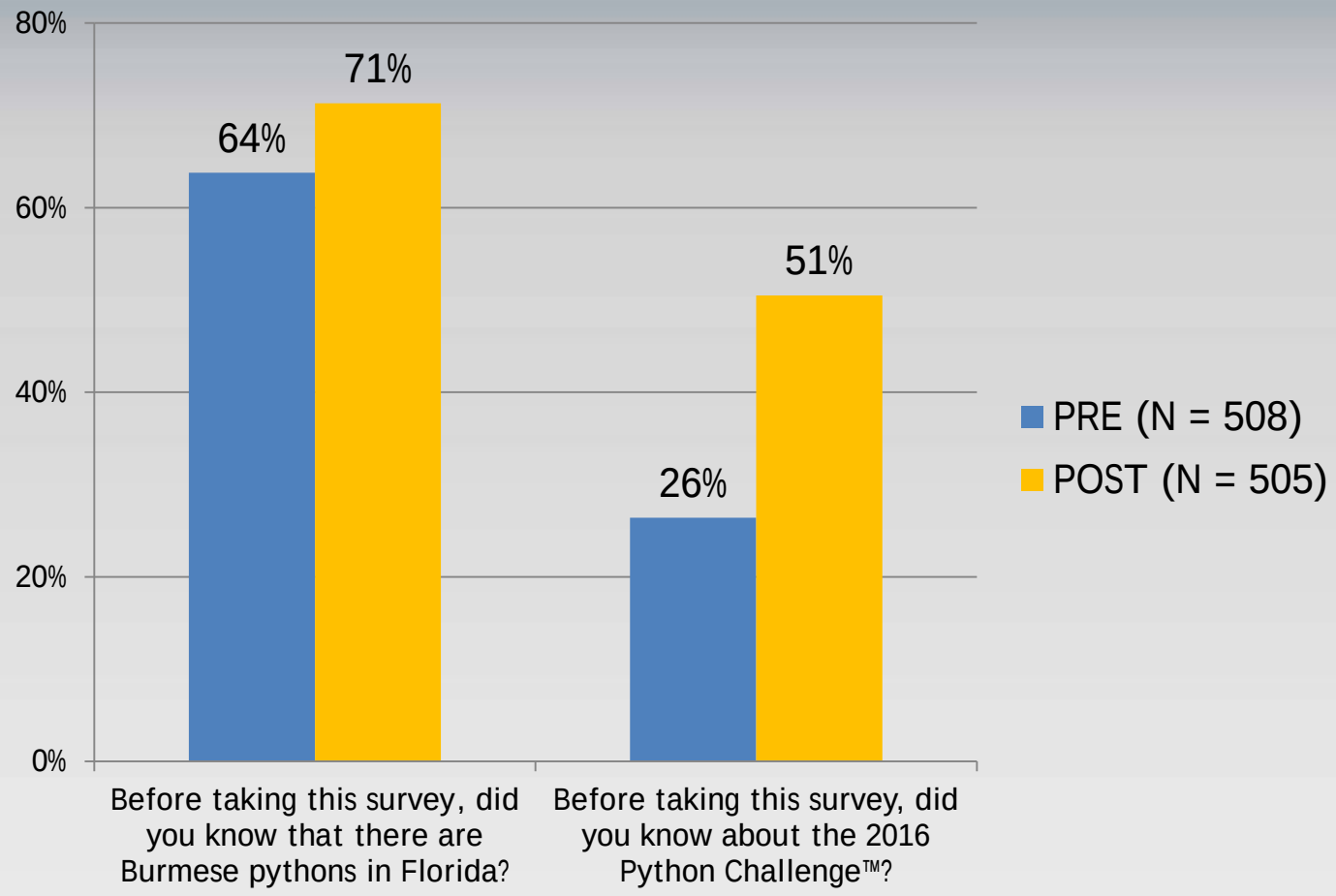
Python Challenge™ Survey Results

GENERAL PUBLIC :



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Thank you!

ECISMA Outreach Volunteers and Collaborators