



# Argentine Black and White Tegu Assessment in South Florida

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# From Argentina/Paraguay



Argentine Black and White Tegu  
(*Tupinambis merianae*)

**I speak  
Tegu**™

## Pets



# Tegu CITES Export Quotas

Argentina (mostly to Texas for cowboy boots)

2000: 1,732 live *merianae* and 262,000 *merianae/ rufescens* skins from Paraguay

2001: 1,500 live and 148,500 skins from Paraguay

2002: 1,500 live and 98,500 skins from Paraguay

2000–2006: ca. 13,400 live

From Kevin Enge



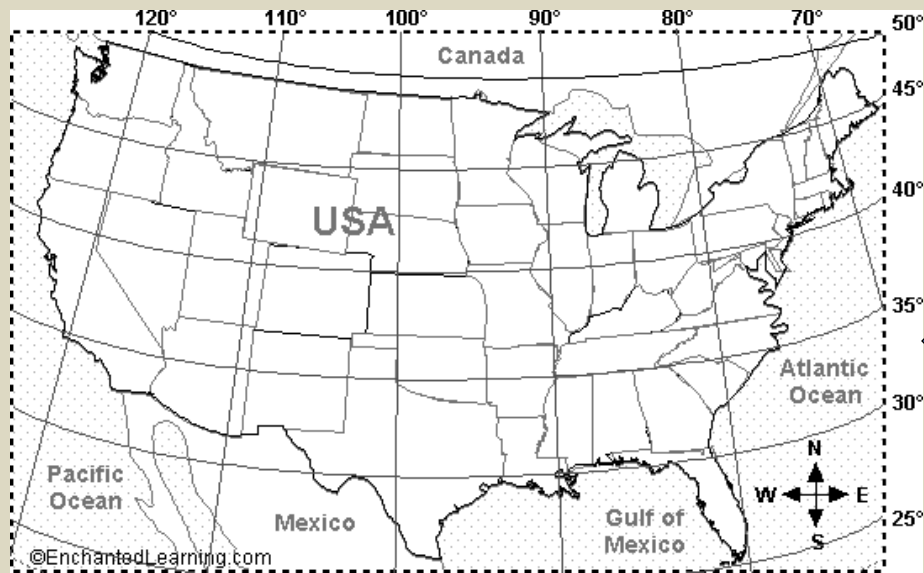
# Native Range

- Southeastern Brazil (to 11° latitude)
- Paraguay
- Uruguay
- Northern Argentina (as far south as 33–41° latitude)



From Kevin Enge

# Range



From Kevin Enge

# Habitat Preference

- Moist tropical forests, semi arid scrub forests, prairies, beaches, dunes and disturbed habitat (roadsides etc.)
- Terrestrial and found along freshwater/ocean edges (can submerge for extended periods)
- Rainfall ranges from 20 to 75 in per year, with a marked rainy/dry season
- Sea Level to 4100 ft.

# Habitat/Abundance

- Brazil Commonly observed foraging along beaches.
- Eastern Paraguay- River drainages, moist vegetational associations
- Uruguay- Stony meadows, river valleys and mountains.
- One of the most abundant lizards in southern Brazil.

# Biology

(Reproduction)

- Breed/Nest in March/April
- Females breed in third or fourth year
- 1 clutch of Eggs (30 average)
- Incubation period ~ 3 months/hatching in Jul/Aug
- Males range widely during the breeding season, scent marking a large area

# Growth

- Hatchlings are 7.5 – 9.5” TL — head and shoulders green colored until 1 month old
- Females start breeding when 3 – 4 years old in Argentina (females  $\geq 12$ ” SVL)
- Males grow larger than females, getting up to 20” SVL (57” TL) and weighing 18 lb.
- Can live up to 20 years



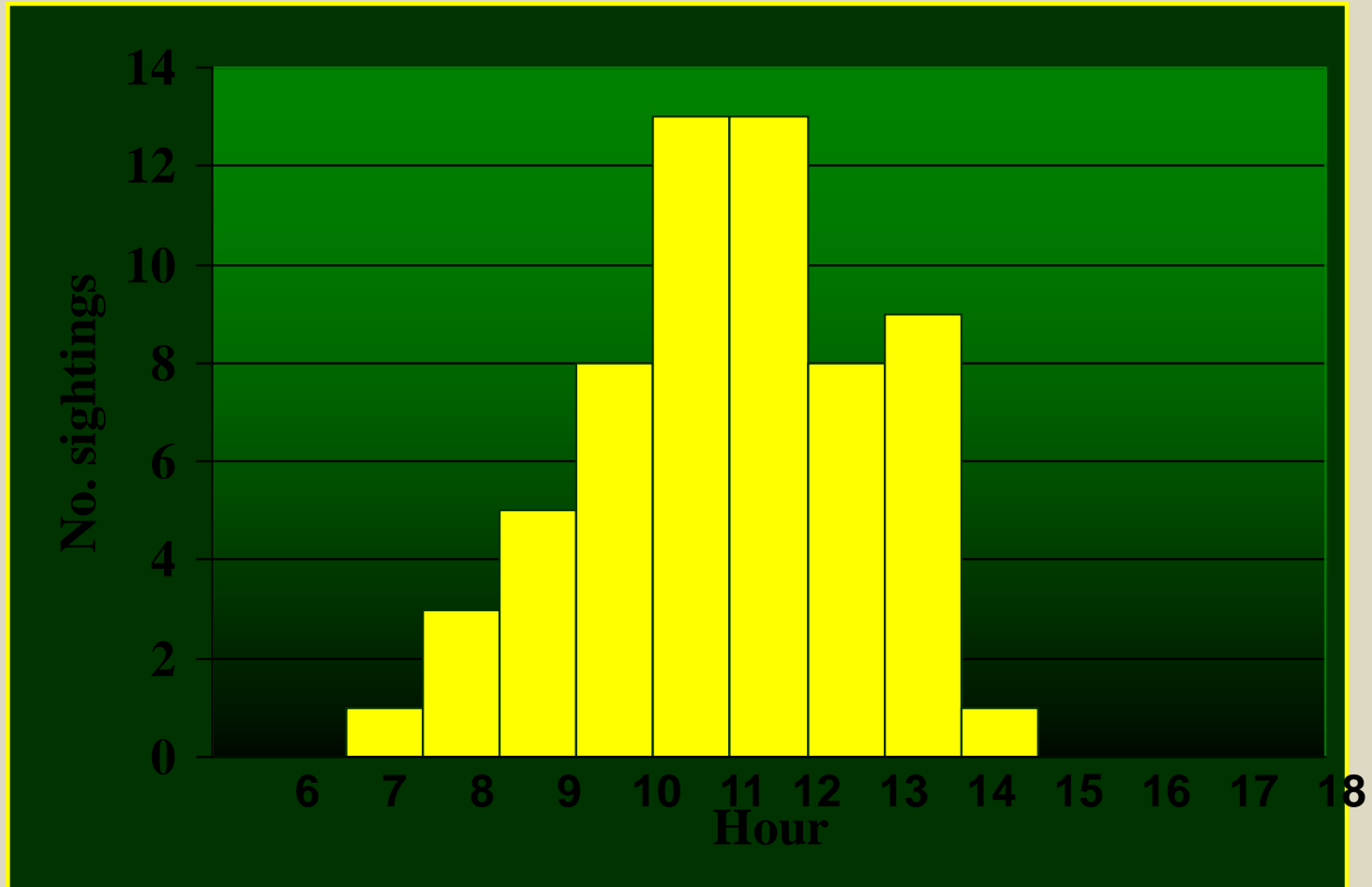
# Diet

- Omnivorous ( Fish, reptiles, birds, small mammals, eggs, carrion, millipedes, arachnids, insects, gastropods, fruit and seeds)
- Juveniles are mostly insectivorous



# Daily Activity Pattern

In Atlantic Forest, SE Brazil (van Sluys and Rocha, 1999)



From Kevin Enge

# Seasonal Activity

- Late Sep/early Oct – Feb = dormant in burrows, even if weather warm (fall activity period in Paraguayan tegus may be extended if nights are warm and rainfall abundant)
- Feb = emerge from brumation, even if chilly, and bask a lot before starting to feed
- Mar = breeding season, unless late cold front
- Apr = lay eggs
- Jul – Aug = eggs hatch, depending upon incubation temperature (60 – 90 days)
- Late Aug – early Sep = feed less and spend much of time in burrows, emerging mostly in early morning (juveniles probably active longer)

# Burrows

- Brumate in a sleeping chamber;
- Sleeping in smaller burrows.
- Dig their own burrows, use burrows of other animals, and live in drainpipes or culverts and under debris.

# Nest Burrows

- Female pulls vegetation into a shallow burrow to make an elaborate nest of dried grass and mulch, which she then attends
- Nest burrows are in well-drained soil at the base of trees, in clumps of tall grass or palmettos, or under fallen logs, debris

# Abundance

- Paraguay - Despite hunting (skin trade, meat) there has been no decline in the population

# Invasiveness

- Fernando de Noronha National Park, Brazil  
*Introduced to control rats (2 pair), Tegus threaten shorebirds and sea turtles (estimated 2-8 k individuals/17km<sup>2</sup> island)*
- Anchieta Island, Brazil  
*83 individuals/km<sup>2</sup>. 36% of ground nesting birds eggs preyed upon.*

# Predation/Potential Impacts

- Adult tegus will have few predators (Panther, Bobcat, Coyotes, Python etc.)
- Juveniles could potentially be preyed upon by a variety of mammals, birds, snakes
- Potentially impact American crocodile, Alligator, Eastern Indigo snake, Turtles, Key Largo Wood Rat etc.
- Assist in dispersal of invasive plant seeds (schinus etc.)
- Agricultural crops (tomatoes, strawberries etc.)

# Tegulandia



# ECISMA Tegu Assessment

## 2008

- First Identified (Sept. 2008)

## 2009

- Surveys/Trapping/Necropsy

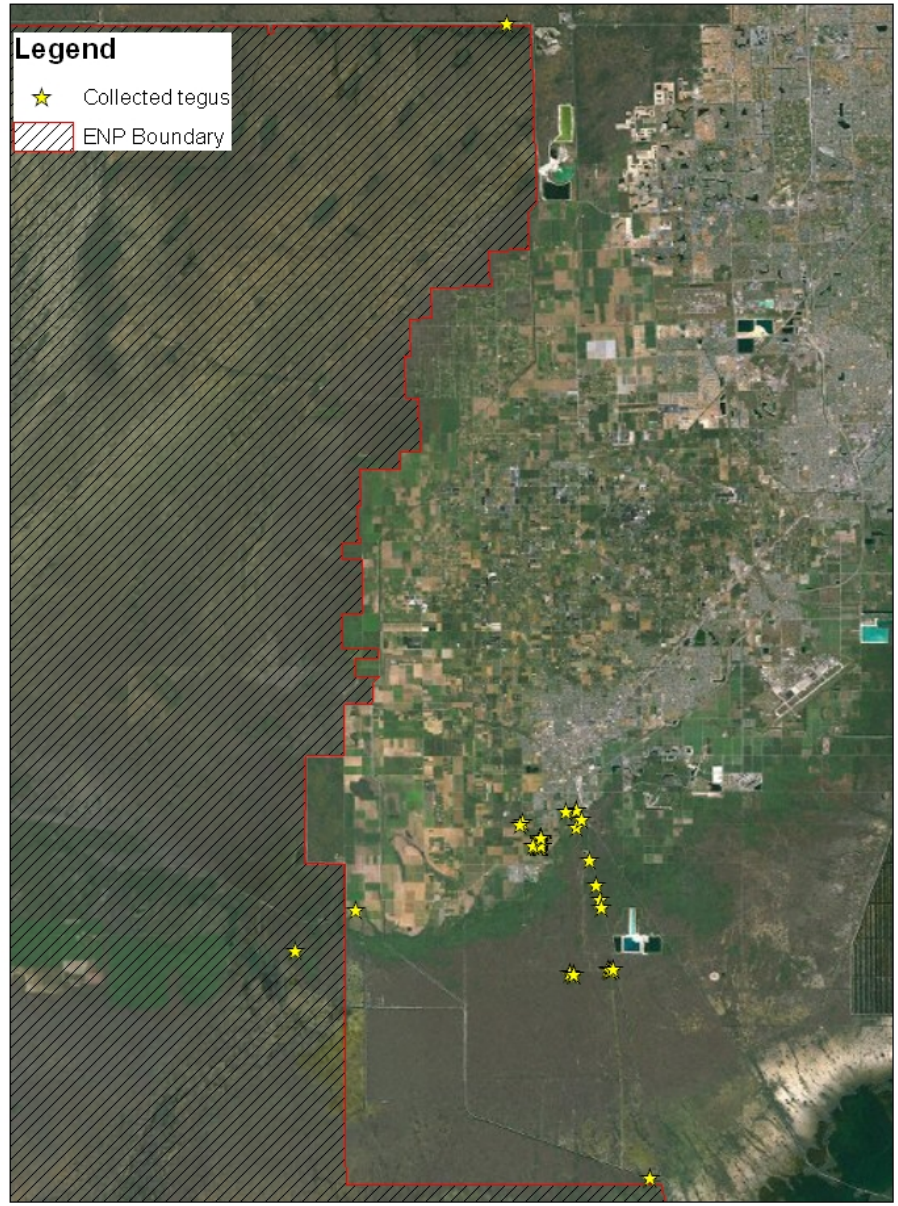
## 2010

- Surveys/Trapping/Necropsy

## 2011

- Surveys/Trapping/Necropsy
- Radio Telemetry
- Camera Traps
- Burrow Camera





Everglades CISMA

# Trapping

Modified/Regular Havaharts

Baits tested

- Squid/Fish
- Fruit
- Meat (Chicken, Beef)
- Marshmallows with Egg oil
- Eggs



# Trapping Locations

- C-111
- Rock Pit
- Trailer Park
- DJRF
- Reported Locations



## Tegu Capture Data

Year	Trapping	DOR	Other	Total Tegus
2009	12	1	0	13
2010	15	4	2	21
2011*	64	3	8	75

- 2009 Trapping Season July – Oct (Different baits)
- 2010 Trapping Season Apr – Oct (Marshmallow egg oil)
- 2011 Trapping Season Mar - (eggs)

# Radio Telemetry

- 5 Individuals
- 2 Captured/Released at C -111 (Males)
- 2 Captured/Released at Rock Pit (Male/Female)
- 1 Captured/Released at DJRF (Female)

Released Fall 2010



139774







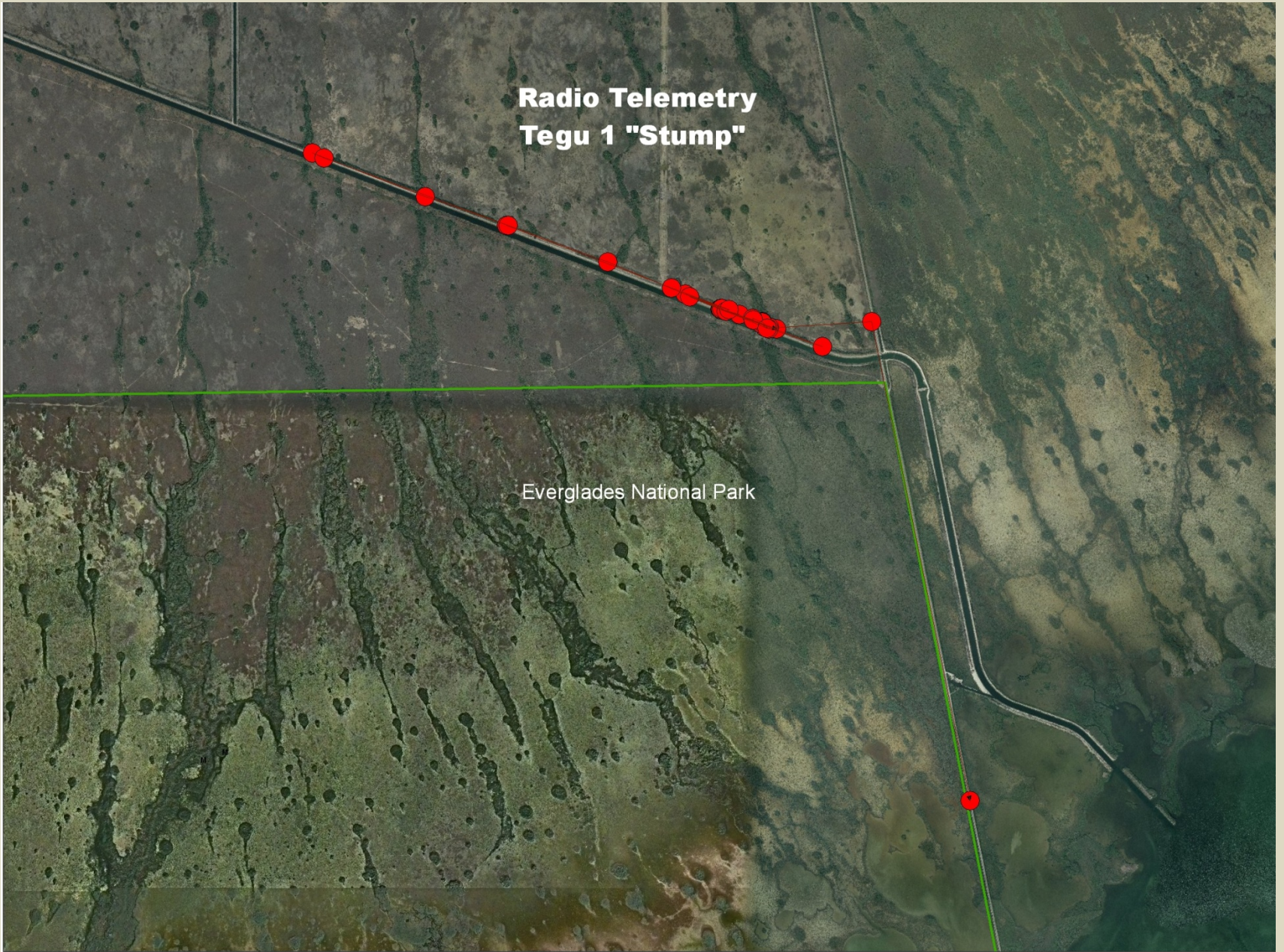


# Radio Telemetry

- 5 Individuals released in Fall 2010
- C- 111
  - One male last found east of US -1
  - One male DOR south of C- 111 (Manatee Bay)
- 2 Released at Rock Pit (Male/Female)
  - One plowed in farm field (fall 2010), re-released
  - Both re-captured in same area
- 1 Released at DJRF (Female)
  - Female re-captured in June

**Radio Telemetry  
Tegu 1 "Stump"**

Everglades National Park



# Camera Traps

- Objectives
  - Can we identify individual tegus by markings? (Population estimates)
  - Are Tegu's east of US 1 (potential impacts to American Crocodile)?
  - Identify tegu areas for additional trapping.
- Deployment (baited, corridor)
  - Rockpit (2)
  - Cemex Plant (east of US 1) (1)
  - Card Sound Road Area( 5)
  - DJRF (2)
- Results
  - Tegus can be individually identified
  - Tegus are present east of 18 mile stretch
  - Tegus not yet found east of Card Sound Road
  - Tegus will find/dig up eggs

2010-10-09 1:25:59 PM M 1/10

95°F

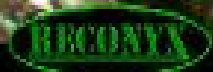


HC600 COVERT

RECONYX



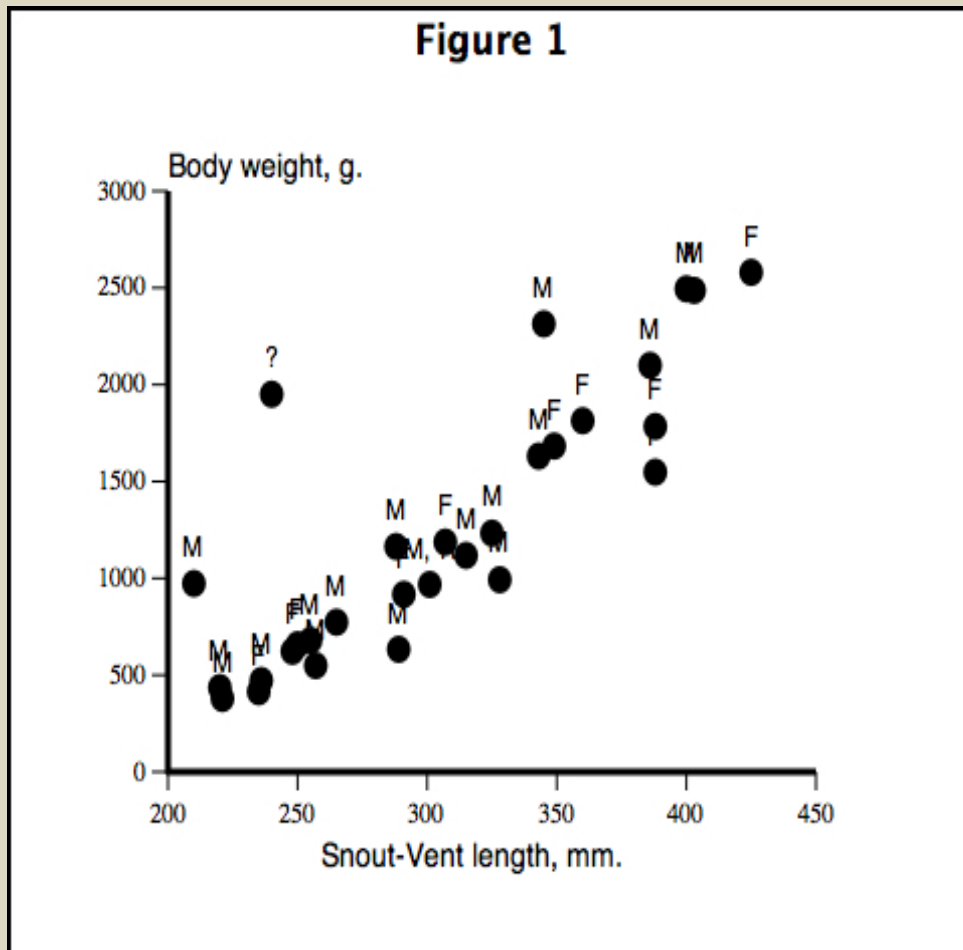
HC600 COVERT



# Necropsy

- Florida Atlantic University- Colin Hughes
- 30 individuals analyzed

# Size of Tegus collected



Smallest sexually mature male  
288 mm SVL.

Smallest sexually mature female  
248 mm SVL

Conclusion: Tegu population contains many sexually mature individuals.

# Diet, what fraction of Tegus have eaten particular items?

- Mammals  $7/30$
- Reptiles  $4/30$
- Bird  $4/30$
- Amphibians  $3/30$
- Insects  $25/30$
- Snails  $20/30$
- Fruits  $10/30$ 
  - 3 individuals had eaten mostly fruit.
- Plant Matter all

# Annual cycle of Tegus in Florida

- Individuals store fat in Fall
  - as much as 182 g per individual
- Spring males have enlarged testes, and much reduced fat stores
- Spring females retain fat longer.
  - while oocytes are small.
- Conclusions: Tegus are well adapted to our seasonality, storing fat, hibernating, then using fat for finding mates (males) or producing eggs (females).

# Burrow Cam

- Objectives
  - Identify Nest/Brumation burrow
  - Structure/Placement







# Burrows



- Nest Burrows
  - Vegetative debris
- Sleeping Burrow
  - Levees
  - Construction debris
  - Under Debris (Artificial cover)
  - Man Made Structure

## Conclusion:

- Tegus continue to expand in range and densities in Florida
- Little/no chance for eradication
- Management Plan needed

Will continue to evaluate as time/funds

black and white tegu (*Tupinambis merianae*) - EDDMapS Florida Distribution Page 1 of 2

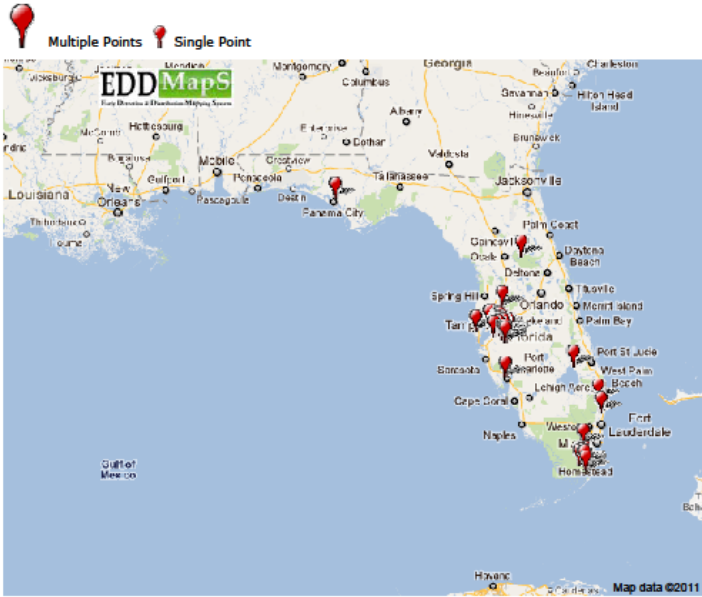


Distribution Maps   Report Sightings   Species Information   Tools & Training

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### black and white tegu

*Tupinambis merianae* Linnaeus, 1758



Center Latitude: 27.807340      Center Longitude: -82.221880  
Mouse Latitude: 31.071756      Mouse Longitude: -90.197754  
Click Latitude: 30.315988      Click Longitude: -85.616455

<http://www.eddmaps.org/florida/distribution/viewmap.cfm?sub=18346> 7/20/2011

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