

# Everglades National Park

Burmese Pythons  
*Python molurus bivittatus*

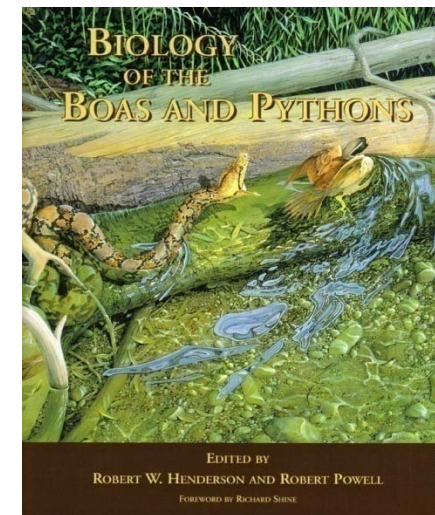
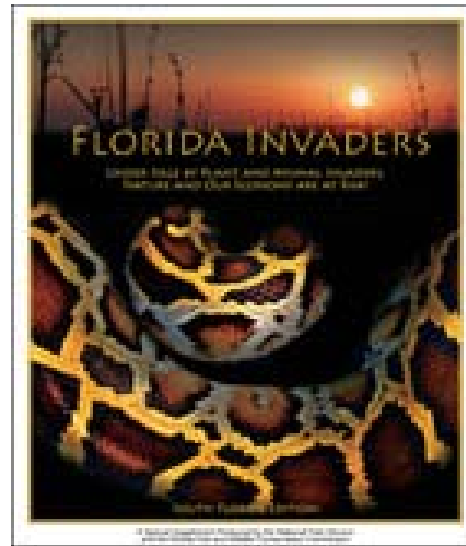
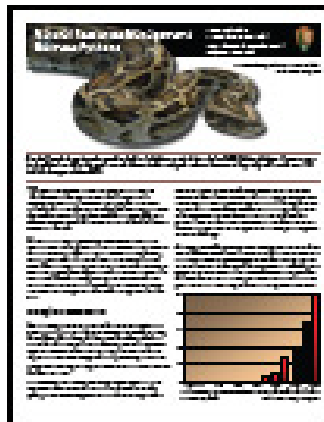
Skip Snow  
National Park Service



# History/Background

[www.FloridaInvaders.org](http://www.FloridaInvaders.org)

[www.nps.gov/ever/naturescience/burmesepythonresearch.htm](http://www.nps.gov/ever/naturescience/burmesepythonresearch.htm)



The Biology of Boas and Pythons

2007 Henderson, R.W., Powell, R., Eds, Eagle Mountain, Utah, Eagle Mountain Publishing.

# Priority Animal Species

## • Priority Animals

- **Burmese python** (control, containment, incipient eradication)
- Common boa (status and distribution)
- Spectacled caiman (status and distribution)
- Feral pig (local control – high value tree islands/cultural sites)
- Starlings (local control– Long Pine Key and native cavity nesters)
- Common myna (status and distribution)
- Sacred ibis (monitoring)

## • Newly Detected Animal Species

- Nile monitor (proximity alert – candidate for eradication?)
- Tupinambis species (Gold tegu, Black and White tegu – proximity alert - candidates for eradication?)



# Invasive Species Programs

- **Task Name**
  - **A Study of the Movements and Habitat Use of Burmese Pythons in the Southern Everglades**
- **Description**
  - Conduct strategic field studies of python life history to inform development of control techniques. Effective sighting and spacing of traps must accommodate habitat use, size, and movement rates of the pythons.
- **Objective**
  - Radio telemetry is the best method for determining habitat use and extent and timing of movements of snakes. This task tags 20-30 adult pythons each with two vhf beacon radio transmitters. Satellite and gps tags are in development.
- **Partners**
  - USGS, UF, SFWMD, and Davidson College
- **Start/End Dates**
  - Ongoing
- **Status**
  - Assigned
- **Funding (FY):**
  - CESI (NPS) Funds: \$76,200 + \$8,295 and USGS Funds: \$50,800
- **Annual Summary:**
  - 9 animals out – 29 total so far



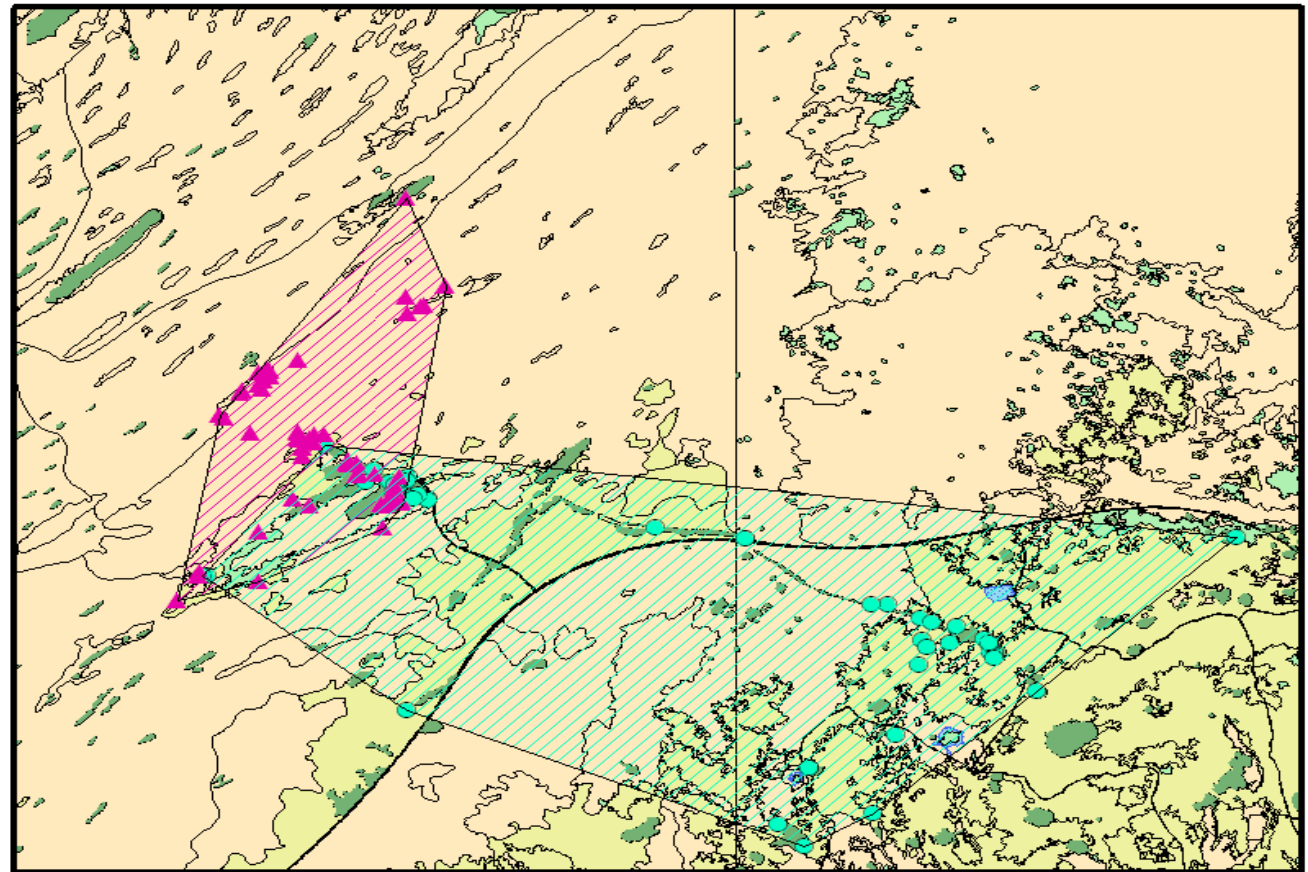
# Invasive Species Programs

## Pythons RT5 & RT17

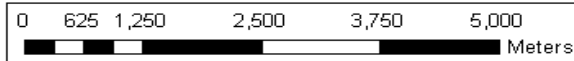
RT5: 15 Mar 2007 - 19 Mar 2008  
RT17: 25 Mar 2008 - 25 Mar 2009

### Legend

- RT17
- ▨ RT17 Home Range
- ▲ RT5
- ▨ RT5 Home Range
- Forest
- Prairie
- Scrub/Shrub
- Savannah
- Water
- Main Park Road



All points determined by fixed-wing aerial telemetry.



# Invasive Species Programs

29 males  
25 females  
1 undetermined/egg  
fertile but rotten  
55 eggs for a total  
egg mass of 10.530 kg



Female w/eggs removed 28 May 2009

25.25432897 -80.82650636



lat 25.255156° lon -80.855427°

Atlas  
nt of Environmental Protection

Google

2004

Eye alt 12.73 km

# Invasive Species Programs

- **Task Name**
  - **Control of Burmese Pythons in Greater Everglades Ecosystems**
- **Description**
  - Provide science support to development of control measures for non-native invasive Burmese pythons
- **Objective**
  - Develop and deploy an effective python trap array and synthesize results on natural history of pythons in an adaptive framework to improve trapping, and to recommend additional control methods. This has a mainland component and a North Key Largo component (only the mainland component is included in the funding description)
- **Partners**
  - USGS, USFWS, UF, SFWMD, and Davidson College
- **Start/End Dates**
  - Ongoing
- **Status**
  - Assigned
- **Funding (FY):**
  - CESI (NPS) Funds: \$52,500; USGS \$75,000; SFWMD \$43,500
- **Annual Summary:**
  - Controlled trap design testing continues.
  - First field array to be deployed in August.



# Invasive Species Programs



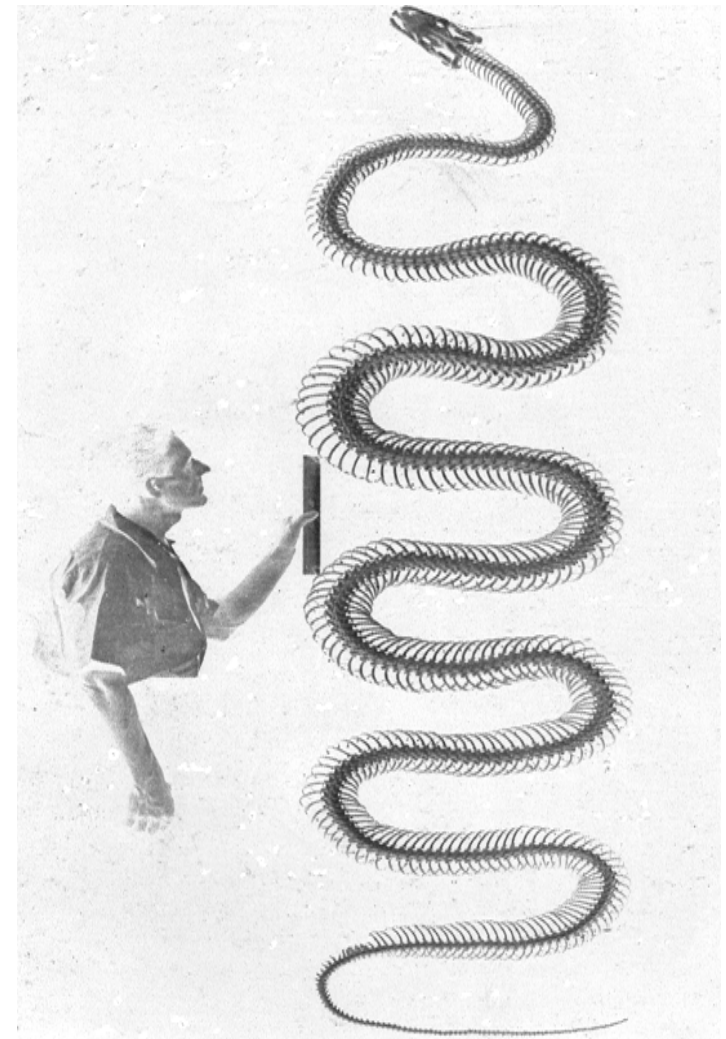
# Invasive Species Programs

- **Task Name**
  - Risk Assessment
- **Description**
  - An invasive species risk assessment for giant constrictor snakes: possible ecological and economic impact to Florida, especially Everglades National Park, and potential distributional limits in the continental United States.
- **Objective**
  - Provide a study that will contribute significantly to the US Fish and Wildlife Service's need for information to conduct injurious species review under the Lacey Act, as well as contribute to the information needs of the Florida Fish and Wildlife Conservation Commission.
- **Partners**
  - USGS, USFWS
- **Start/End Dates**
  - March 2007/end date pending review
- **Status**
  - Completed. Release pending USGS policy review (maybe late summer early fall)
- **Funding (FY):**
  - NPS \$27,000 USFWS \$12,000
- **Annual Summary:**
  - n/a



# Invasive Species Programs

Giant constrictors: biological profiles and an importation risk assessment for nine large species of pythons, anacondas, and the boa constrictor



Robert N. Reed and Gordon H. Rodda  
USGS Fort Collins Science Center  
2 Mar 2009

# Invasive Species Programs

- **Task Name**
  - **Use Designated Agents to Remove Pythons from Public Lands**
- **Description**
  - Develop programs which make use of employees as well as volunteers, herp-enthusiasts, and other non-government “agents” to search for and remove pythons from public lands. This includes the collection of a minimum amount of data such that the program’s effectiveness can be evaluated.
- **Objective**
  - Strive for local suppression of pythons in areas that are regularly visited.
- **Partners**
  - ENP has been working with FWC, SFWMD, and BICY
- **Start/End Dates**
  - Ongoing
- **Status**
  - Coordinated and permitted program under development.
- **Funding (FY):**
  - Unfunded
- **Annual Summary:**
  - The park’s current program of non-government “designated agents” accounted for the removal of 140 pythons in the last 12 months.

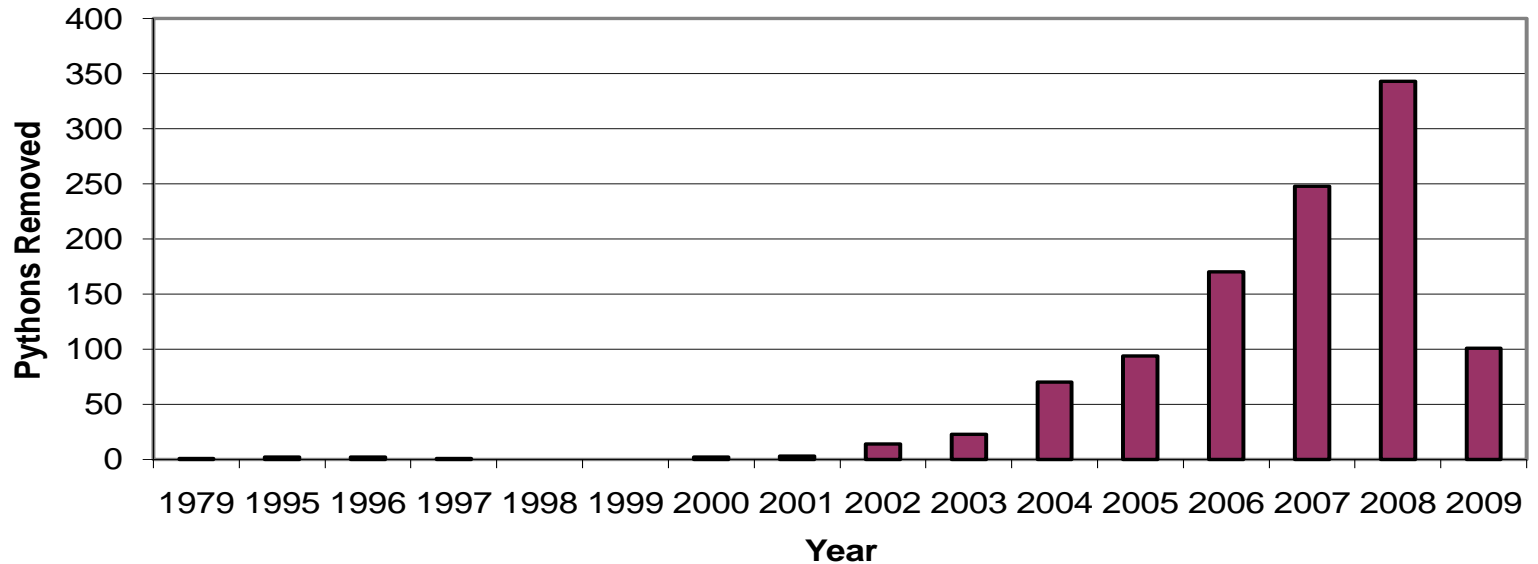


# Invasive Species Programs



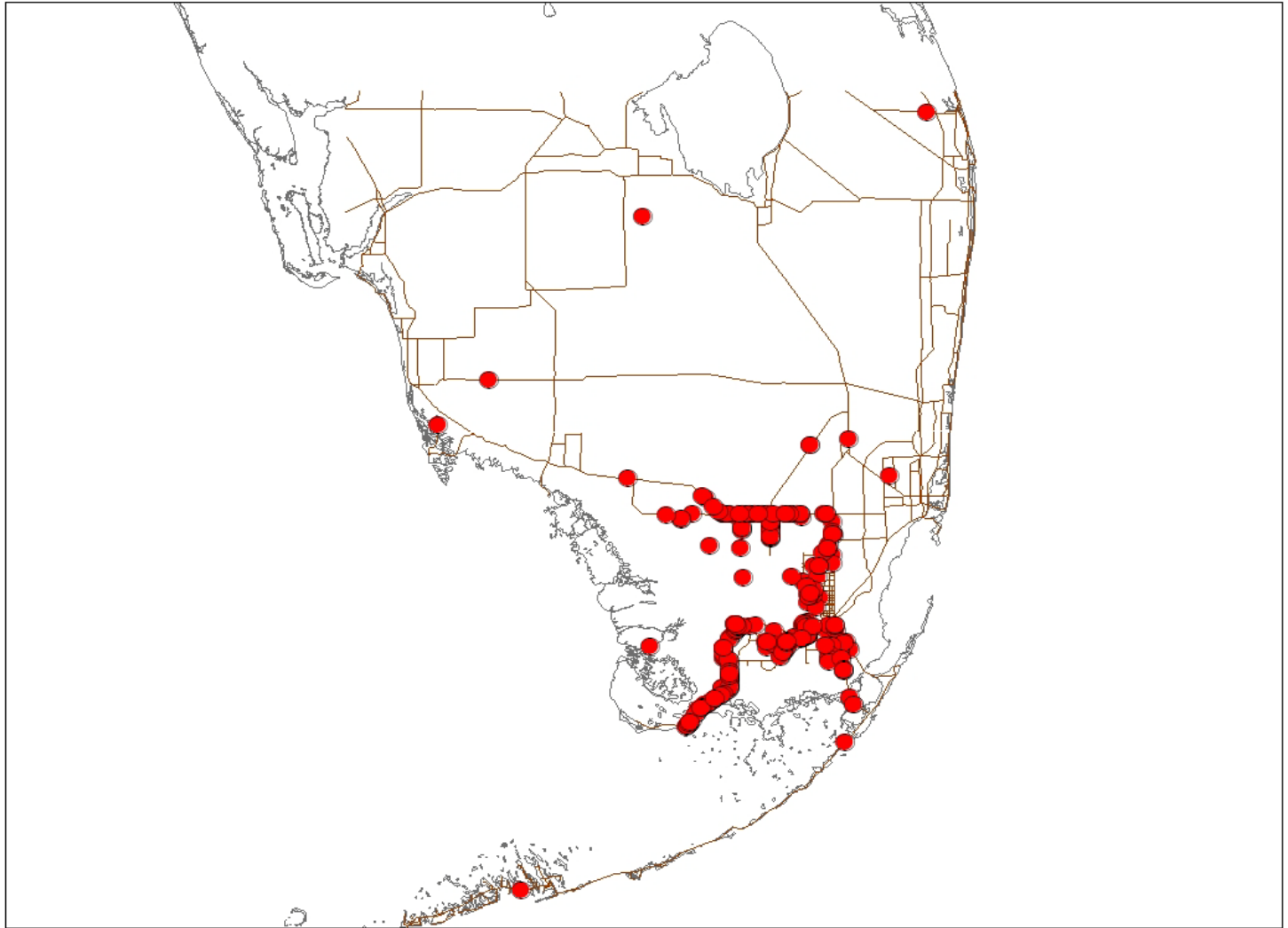
# Invasive Species Programs

## Pythons Removed \*



\* As of 6 July 2009

# Fiscal Year Treatments: July 2008 – June 2009



# Invasive Species Programs

- ENP is cooperating with USGS on additional genetics work (USGS funded) 10K
- ENP participated in Zoo Amnesty Day, sponsored by FWC and Metro Zoo, in March 2009 and several other outreach events including Everglades Day at Fairchild TG. The park printed 30,000 copies of the newspaper insert “Florida Invaders” for \$5,195 and 10,000 Don’t Let It Loose Stickers for \$1,613
- ENP is providing 10K towards USDA study of python attractants.
- ENP is providing in kind services and partial transportation costs for catching and delivering pythons to Dr. Mike Dorcas for climate tolerance study at SREL in South Carolina
- ENP is cooperating with Malone College in Ohio in a lab study of python pheromones recently funded by the Hoover Foundation (40K)
- The USGS and ENP are currently conducting an assessment of mercury bioaccumulation of pythons in Everglades National Park, and initial results show that many of the individuals are quite elevated in concentration.



# Innovations and Successes

