

**Program Name:** An Integrated Early Detection, Rapid Response, Management, and Monitoring Program for Everglades Invasive Reptiles and Amphibians  
**Project Name:** **Improve probability of detection and removal of pythons and other invasive reptiles**  
**Project ID:** 2703  
**Lead Agency:** University of Florida, funded by the SFWMD, supported by USGS

**Strategy and Biennial Report Objective Addressed:** 2-B.3

**Invasive Species Strategic Action Framework Goal:** 3

**Measurable Output(s):**

Probability of detection is estimated using various statistical and modeling approaches from repetitive, spatially referenced field surveys targeted towards specific taxa. Improvement of detection probabilities through adaptive management and structured decision making can be measured.

**Project Synopsis:**

Estimates of probability of detection are used to calculate unbiased estimates of occupancy, density, and abundance. Detection probability is the probability of detecting the species given that it is present. Estimates of occupancy, density, and abundance are the basis for developing performance measures to determine effects of management plans on invasive exotic animals. We can also look at probability of detection in relation to factors such as season, time of day, habitat, weather conditions, and method of survey (among others) to refine and improve our ability to detect pythons.

For pythons we need a method for estimating abundance or occupancy that accounts for imperfect detection. The problem is there are no models for abundance where animals are removed when observed without any marked animals being released. This means we need a way to increase captures to a point where we can estimate these things, and this means we need to boost detection probability, not just the numbers that are detected. To do this we plan on evaluating current capture records to determine if there are better circumstances for detecting pythons. In addition we will evaluate new techniques such as eDNA analysis for their potential for increased detection

However, we do have data with increased rate of capture for tegus, chameleons, and perhaps monitors that may allow for estimation of detection probability. Those data also will be analyzed as part of this project.

**Current Status:** Initial development. Currently funded through fiscal year 2014/15.

**Project Schedule:**

Start Date: March 2008  
 Finish Date: Will be determined on availability of funds

**Detailed Project Budget Information**

	2013/14	2014/15	2015/16	2016/17	2017/18	Balance to Complete	Total
<b>Federal</b>							
<b>State (SFWMD)</b>		25,000	25,000*	25,000*	25,000*	\$75,000	
<b>UF</b>	5,000	5,000	5,000	5,000	5,000		
<b>Total</b>	<b>5,000</b>	<b>30,000</b>	<b>30,000</b>	<b>30,000</b>	<b>30,000</b>	<b>75,000</b>	<b>200,000</b>

\*Dependent on availability of funds.

**Contact:** Frank Mazzotti, [fjma@ufl.edu](mailto:fjma@ufl.edu), Mike Cherkiss, [mcherkiss@usgs.gov](mailto:mcherkiss@usgs.gov)

**Hyperlink:** <http://crocdoc.ifas.ufl.edu/projects/eiramp/>