

# ENGAGING SOCIETY IN EVERY STEP OF THE SCIENTIFIC PROCESS

A PLEA FOR NEW EXTENSION APPROACHES

FOR THE

#GATORGOOD

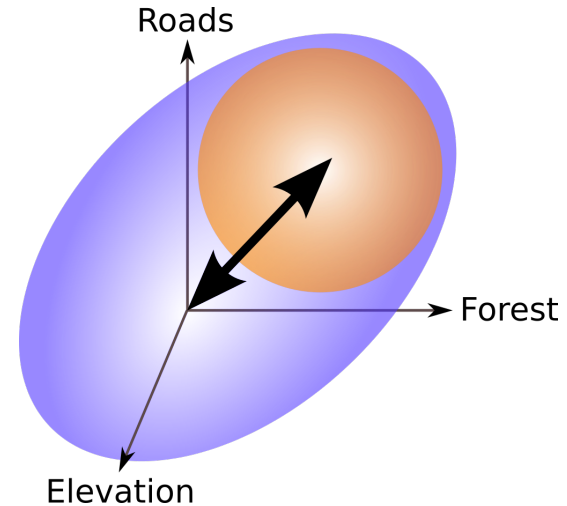
**MATHIEU BASILLE**

FORT LAUDERDALE RESEARCH AND EDUCATION CENTER

# LANDSCAPE ECOLOGY

- Animal distribution

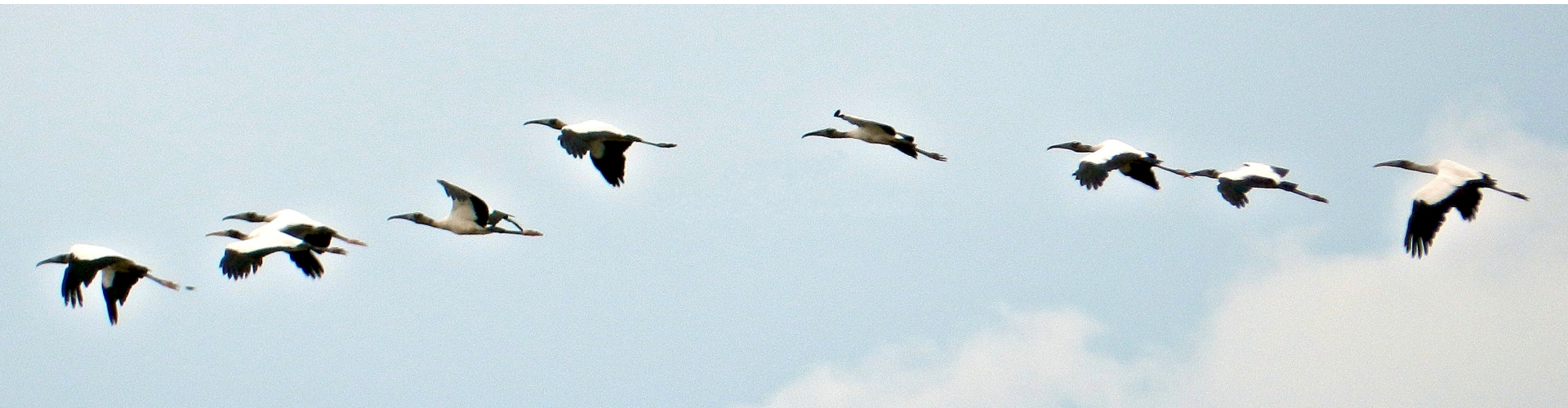
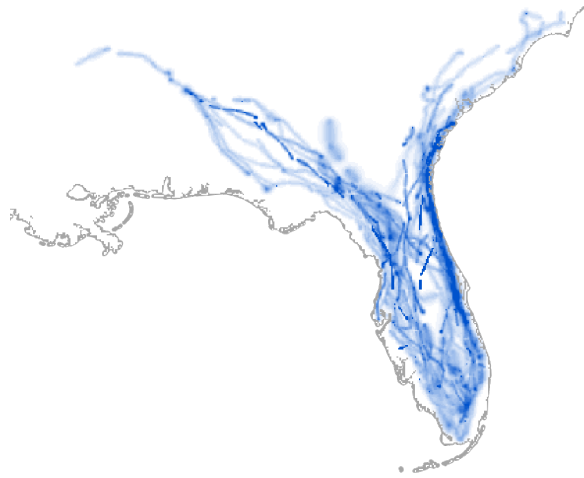
- Ecological niche
- Movement



- Environmental effects

- Climate change
- Urbanization

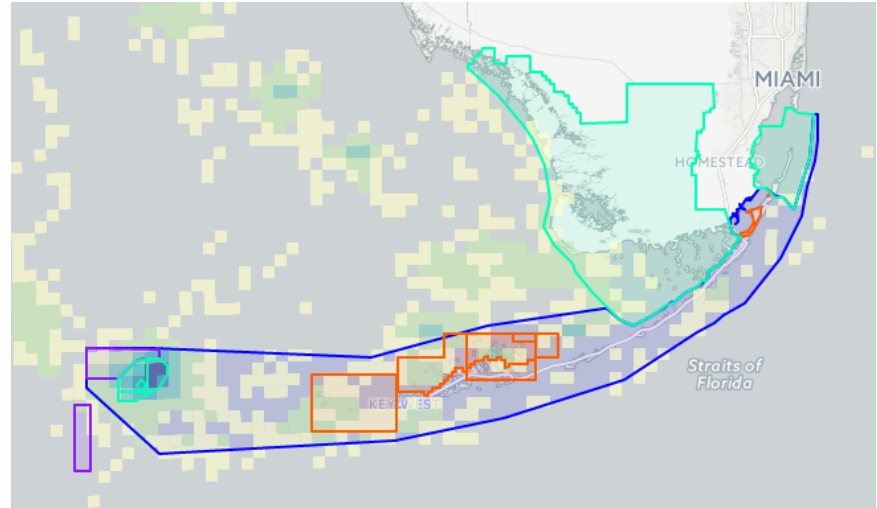
# WOOD STORK



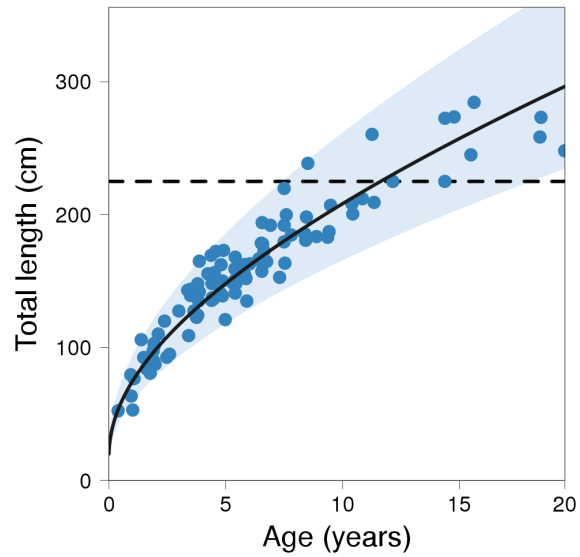
# RACCOONS



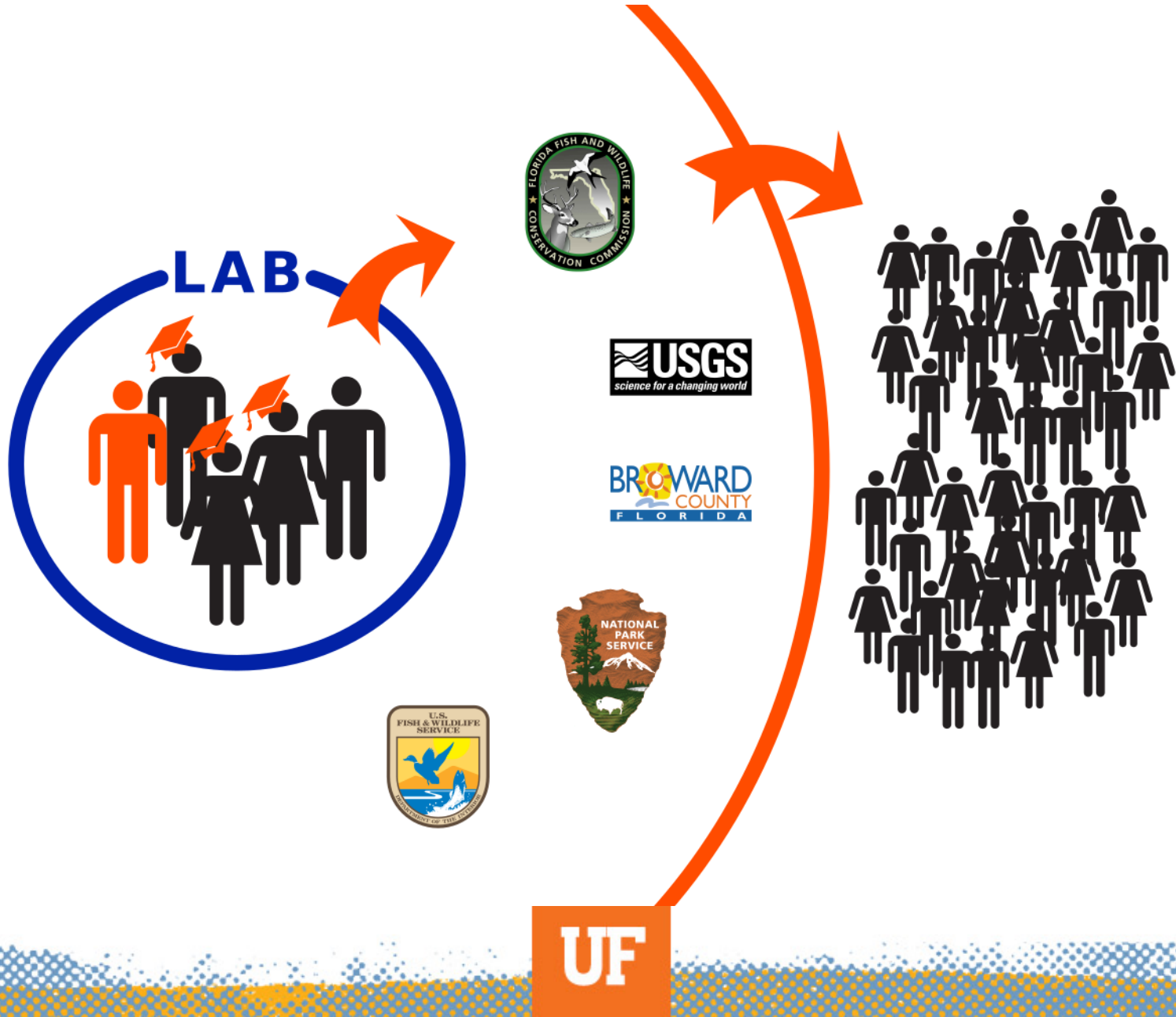
# SEA TURTLES



# AMERICAN CROCODILES



# ENGAGING SOCIETY IN EVERY STEP



# WORKSHOP: MOVEMENT DATA

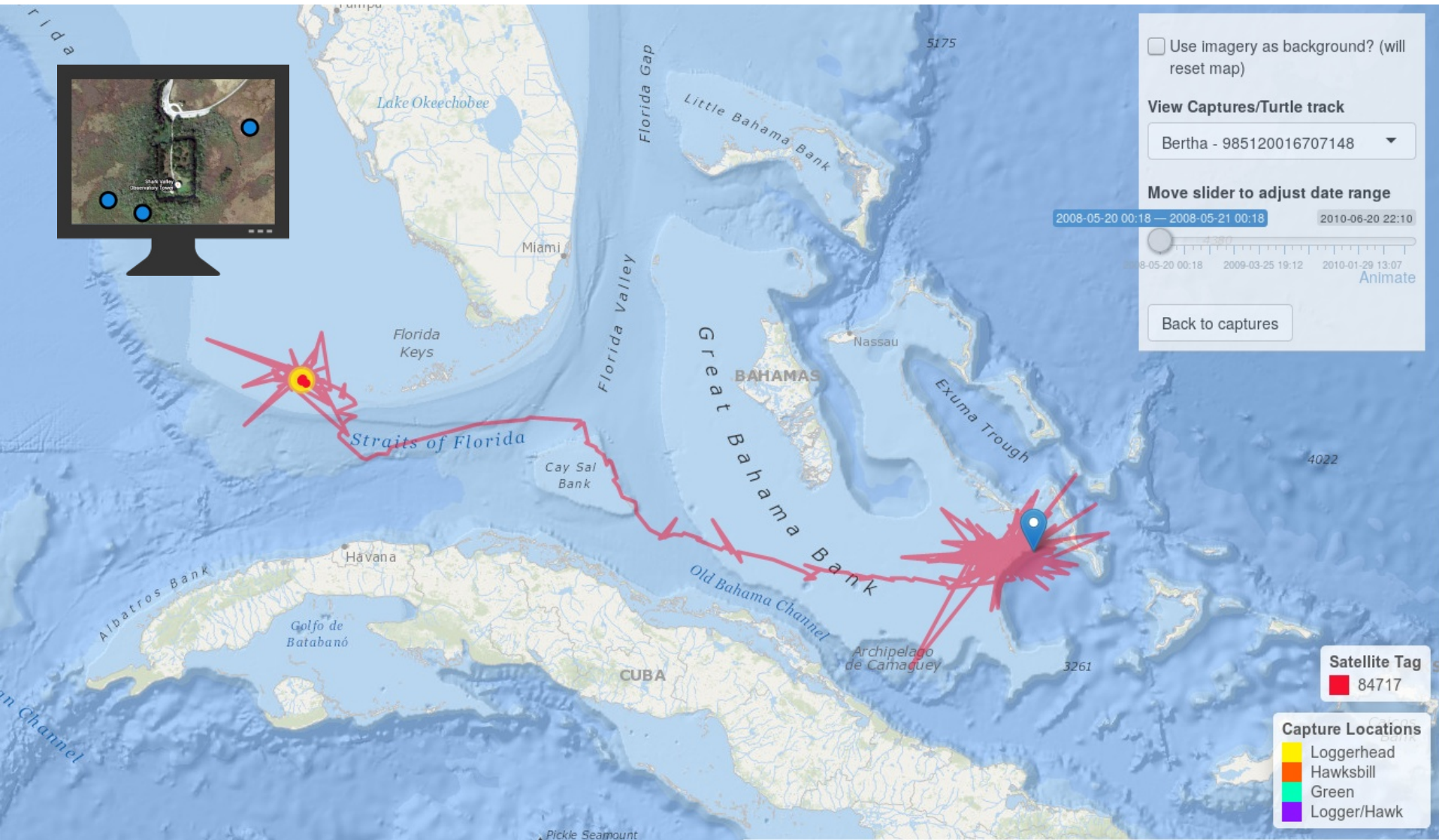


8-12 May 2017

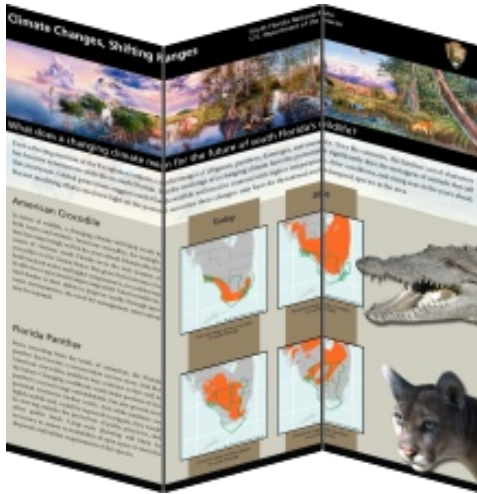
- *Seats available!*



# WEB TOOLS FOR MAPPING/MANAGEMENT



# CLIMATE CHANGE, SHIFTING RANGES



**UF IFAS Extension**  
University of Florida

## Considerations for Building Distribution Models<sup>1</sup>

David N. Bucklin, Mathieu Basille, Stephen J. Waring, and James I. Watling<sup>2</sup>

### Introduction

Climate plays an important role in the distribution of species, and past periods of climate change have responded with species' range contraction and expansion (Pearson and Dawson 2003). Among other tools and conservation practitioners can use "climate models" to predict the effects of future climate on wildlife. These models determine the relative species occurrences and current climate (for precipitation patterns) using mathematical models that can then be used to produce maps that highlight areas where climate in the future is similar to climate in areas currently occupied (Figure 1).

Climate envelope models fall within a broader class of models called species distribution models that incorporate all types of environmental variables, including climate, habitat type, land use, geology, and other factors. From this point we will use species distribution models to refer to all models in this class (the variables included). These envelope models require occurrence data as the only input data. While acquiring and preparing these data is a straightforward procedure, scientists using SDMs

building species distribution models. Each of the following sections describe the manuscript publication choices for more information on any particular study or associated reference.

Figure 1. Simplified representation of a climate envelope model. Hypothetical species in this example, the species occur within a certain range of temperature and precipitation, ranging from blue (cooler and wet) to red (warmer and drier). The model highlights suitable areas for the species based on temperature and precipitation. The hypothetical future climate of suitable areas for the species is shown in the bottom right. As shown, the model predicts that the species' range will shift to the right.

**I. Choice of Contemporary Data**

When using SDMs to determine relationships between species and the current climate, the user first chooses a contemporary climate dataset. To determine the best choice of contemporary climate dataset, we used two different research datasets to build the models: the Climate Research Unit (http://www.met.rdg.ac.uk/) and WorldClim (http://www.worldclim.org/). Both datasets use long-term weather station observations for each to create maps of average monthly temperature and precipitation. However, the research groups that distribute the data use different techniques to create them, and the datasets do not match exactly in geographic coverage either, as shown in Figure 2.

**A Guide to Living with Climate Change**  
Venetia S. Briggs, Rebecca...

**Sharing the Land**  
Relate it home to live in forests and wetlands (glades), surrounded small rodents. When people and wild cat Center and University camera traps" placed in a variety of these

**UF IFAS Extension**  
University of Florida

## Climate Changes, Shifting Ranges<sup>1</sup>

Larry Perez, James I. Watling, David Bucklin, Mathieu Basille, Frank J. Mazzotti, Stephanie Romachach, and Laura Brandt<sup>2</sup>

### What does a changing climate mean for the future of south Florida's wildlife?

Even a fleeting incursion of the Everglades centers colored orange of alligators, panthers, dolphins, and manatees. Over the centuries, the familiar cast of characters has become accustomed with life in south Florida. But the workings of a changing climate have the potential to significantly alter the membership of animals that call this area home. Global projections suggest south Florida wildlife will need to withstand higher temperatures, drier conditions, and rising seas in the years ahead. Can south Florida wildlife will need to withstand higher temperatures, drier conditions, and rising seas in the years ahead? Can south Florida wildlife will need to withstand higher temperatures, drier conditions, and rising seas in the years ahead? Can south Florida wildlife will need to withstand higher temperatures, drier conditions, and rising seas in the years ahead?

1. This document is WEC313, one of a series of the Wildlife Ecology and Conservation Department, UF/IFAS Extension. First published in EDIS January 2017. Visit the EDIS website at <http://edis.ufl.edu>.

2. David Bucklin, biological scientist, and Mathieu Basille, assistant professor, UF/IFAS Fort Lauderdale Research and Education Center, Davie, FL; Stephanie Romachach, research ecologist, U.S. Geological Survey, Davie, FL; James I. Watling, assistant professor, U.S. Fish and Wildlife Service, Davie, FL; Frank Mazzotti, professor, UF/IFAS Fort Lauderdale Research and Education Center, Davie, FL; and James Watling, assistant professor, John Camel University, Umeå, Sweden, 901 418.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other IFAS Extension publications, contact your county UF/IFAS Extension office. U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Florida County Commissioners' Cooperative 904-1. Please, don't use IFAS Extension.



# bioblitz WILDLIFE IN MY BACKYARD



**bioblitz**

UF



*Help us help you!*