



Burmese Python Research at SREL



Assessing the Risk of Invasive Burmese Pythons in the Southeastern United States

Michael E. Dorcas, John D. Willson, and J. Whitfield Gibbons

In Collaboration With:

USGS, National Park Service, University of Florida, and Davidson College

Project Overview:

Introduced Burmese pythons are firmly established in southern Florida, where they pose a serious threat to native wildlife. Pythons are expanding their range northward through the Florida peninsula and predictive models



Based on climate indicate that suitable habitat for Burmese pythons exists across the majority of the southeastern United States. The python study at SREL examines the biology of pythons in a region cooler than southern Florida, but well within the predicted region of suitable climate. This study will provide information critical to assessing the risk these snakes pose to ecosystems in the southeastern United States.



Based on climate indicate that suitable habitat for Burmese pythons exists across the majority of the southeastern United States. The python study at SREL examines the biology of pythons in a region cooler than southern Florida, but well within the predicted region of suitable climate. This study will provide information critical to assessing the risk these snakes pose to ecosystems in the southeastern United States.

The Species:

Burmese pythons (*Python molurus bivittatus*), are native to Southeast Asia and can reach lengths greater than 20 feet. Pythons are long-lived (15 – 25 years), behavioral, habitat, and dietary generalists that are capable of producing clutches of 8 – 107 eggs. Pythons are powerful constrictors and prey upon a variety of large vertebrates. In Florida, introduced pythons have been recorded eating raccoons, bobcats, white-tailed deer, wading birds, domestic animals, and American alligators. In Asia, this species occurs in a variety of habitats from humid rainforests to arid, seasonal areas of northern India and Nepal. In Florida, they are semi-aquatic and may retreat to water in cool weather.



16-foot female python captured in
Everglades National Park



The Problem:

Burmese pythons are frequently kept as pets in the United States and apparently some were intentionally released or escaped in southern Florida during the last few decades. Pythons are now firmly established and reproducing within Everglades National Park and its vicinity and pose a serious threat to native wildlife.



Python populations in Everglades National Park have increased exponentially since the 1990's and are expanding into the Keys and northward up the Florida Peninsula. Predictive models based on climate indicate that suitable habitat for pythons exists across most of the southeastern United

States¹. However, other studies have suggested limited range expansion possibilities for pythons² resulting in considerable debate regarding the risk this species poses to the southeastern United States.

The Study:

The Burmese python study at SREL examines the ability of pythons to survive in a region with winter temperatures that are appreciably cooler than southern Florida, but well within the area of suitable climate predicted by one model. In June 2009, 10 male pythons of various sizes were collected from Everglades National Park and were introduced to the snake-proof enclosure at SREL. The enclosure is surrounded by a 7-ft smooth-walled fence set in 20-inch deep concrete with an inward sloping lip at the top of the fence to prevent snakes from scaling the walls. The interior of the enclosure includes a pond surrounded by terrestrial habitat with brush piles, shrubby vegetation, and other cover for snakes. Additionally, the enclosure contains several subterranean hibernacula at varying depths to allow snakes to retreat underground in winter.



Prior to release within the enclosure, each snake was surgically implanted with a radiotransmitter, allowing us to monitor each snake's location within the enclosure. Additionally, a micro-datalogger was implanted that records each snake's temperature at hourly intervals. Snakes are checked daily and their exact location and micro-habitat use are monitored regularly. Once per month, snakes are captured, measured, and weighed to track their body condition and overall health. Data on snake health, behavior, habitat use, and thermal biology within the enclosure will shed light on the risk that Burmese pythons pose to temperate regions of the United States.



Photos by:

J.D. Willson, Kristen Cecala, Shannon Pittman,
R. Wayne VanDevender, National Park Service



¹Rodda et al. 2008. *Biological Invasions* 11:241-252.

²Pyron et al. 2008. *PLoS One* 3(8) e2931.