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In Focus

Burmese pythons in southern Florida's Everglades

By Betsie Blumberg

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Figure 1. Lynn Scarlett, former Deputy Secretary of the Interior, and Roger Hammer, Miami-Dade County naturalist, encounter a Burmese python in Everglades National Park in April 2008.

BURMESE PYTHONS (*Python molurus bivittatus*) are colonizing Everglades National Park and areas around the park in southern Florida (fig. 1, above). These snakes were probably released by pet owners when they grew too big to be pets; they reach a length of 23 feet (7 m) and a weight of almost 200 pounds (90 kg), much larger than any snakes native to Florida, which they can outcompete as predators. They threaten native ecosystems because they eat many species of birds, mammals, and reptiles, including species of concern such as the Key Largo wood rat (*Neotoma floridana smalli*) and three wading birds, the limpkin (*Aramus guarauna*), the white ibis (*Endocemus albus*), and the wood stork (*Mycteria americana*). The wild python population has been estimated to number in the thousands. Its containment is part of the restoration effort for the Florida Everglades.

A workshop of invasive-snake management experts held in 2005 identified priorities in managing the python invasion. The resulting Python Science Support Team was formed to determine the status and extent of the python population, investigate movement and habitat use, refine methods to estimate potential impacts, and capture and remove pythons. Previous experience in dealing with invasive snakes is limited. In the Pacific islands of Guam the invasive brown tree snake, and on the island of Ryuku the habu, seriously disrupted the existing ecology. Methods used to address those invasions must be modified to accommodate the characteristics of the Everglades habitat and the python.

Many institutions and agencies are participating in python research. The South Florida–Caribbean Cooperative Ecosystem Studies Unit collaborators in this project are the Critical Ecosystems Studies Initiative (CESI) Everglades–Research, U.S. Geological Survey Greater Everglades Priority Ecosystems Science, and the University of Florida. In addition to park funds, python research funding is coming from the U.S. Fish and Wildlife Service (trap development in the Florida Keys) and the South Florida Water Management District (trap development). Davidson College partnered in thermobiology research and the Smithsonian Institution partnered in feather identification for diet analysis.

The Python Science Support Team is focusing on research using radiotelemetry, diet analysis, and thermal research. Radiotelemetry enables the team to follow the movements of snakes that have been implanted with very high-frequency radio transmitters. These implanted “Judas” snakes lead the team to other pythons that are then captured and euthanized. One Judas snake led researchers to a nest, confirming that the pythons are breeding within the park.

Thermal research involves implanted temperature-sensitive data loggers along with the radio transmitters. Temperature data recorded every 30 minutes indicate which microhabitats the snakes are using, and when they are in the water or basking in the sun. This information suggests the best times to capture the pythons. It also provides data that can be used in a model predicting the number and type of prey the snake needs to eat, because these reptiles’ metabolic rate is dependent on temperature.

National Park Service personnel euthanize the snakes, and University of Florida researchers analyze the contents of their digestive tracts. The list of species that have been found in the pythons’ gut includes bobcat (*Felis rufus*) and white-tailed deer (*Odocoileus virginianus*) as well as the four species of concern.

The Python Science Support Team’s research is broadening understanding of the python’s behavior and impact on the Everglades. This is leading to the development of methods of containment that may be applied to others areas, such as Big Cypress National Preserve and the Florida Keys, and to other invasive nonnative snakes in southern Florida, such as the boa constrictor (*Boa constrictor*).

For more information

Harvey, R. G., M. L. Brien, M. S. Cherkiss, M. Dorcas, M. Rochford, R. W. Snow, and F. J. Mazzotti. 2008. Burmese pythons in south Florida: Scientific support for invasive species management. Document WEC242. Wildlife Ecology and Conservation Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Accessed 2 June 2009 fromhttp://edis.ifas.ufl.edu/UW286.

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