

Natural Resources Management

Burmese Pythons

National Park Service
U.S. Department of the Interior

South Florida Natural Resources Center
Everglades National Park



Burmese python, *Python molurus bivittatus*
Photo by Roy Wood, ENP

Fanciful legends of exotic snakes prowling the Everglades have persisted since the late 1800s. Today, sightings of large serpents in the wilds of south Florida are all too real. Nonnative Burmese pythons have become a widespread problem with over 1,900 individuals captured since 2000.

Trade in exotic pets is big business. Adding to the number of snakes that are captive-bred in the United States for this purpose, nearly 112,000 Burmese pythons (*Python molurus bivittatus*) were imported since 1990. In recent years, more than 1,900 pythons have been captured in Everglades National Park (ENP) and surrounding areas. Park staff oversaw the removal of nearly 370 such snakes in 2009 alone.

Native to Southeast Asia, Burmese pythons were introduced to the park from captive animals that were either accidentally or intentionally released. Prior to 2008, anyone could walk into a flea market and purchase a 20-inch baby snake for just \$20. Within a year, though, that baby could grow to 5 feet or more, a size that requires substantial quantities of live mice and even rabbits to maintain. When full grown, these reptiles could reach 20 feet or longer and weigh more than 200 pounds, large enough to tempt even well-intentioned pet owners to release their now-unwanted pythons into the wild.

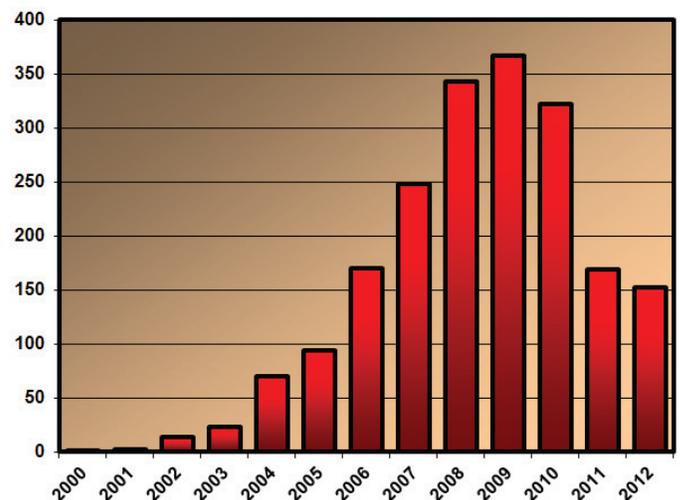
Ecological Consequences

Large Burmese pythons are known to prey on a wide variety of native wildlife, including rodents, raccoons, rabbits, bobcats, deer, House Wrens, Rails, White Ibises, and Limpkins. This disruption of the natural food chain has potentially serious impacts to the ecosystem and may threaten many additional species in the very near future. Of particular concern is their predation of protected species we are attempting to recover, like the American alligator, American Wood Stork, and Key Largo wood rat.

Being semi-aquatic in nature, Burmese pythons are proving quite adaptable in the many environments of the Everglades. As they disperse, they vie directly with native wildlife for habitat and food. Pythons can easily out-compete many full-grown native snakes,

dwarfing them even at a very young age. Bobcats and pythons occupy similar areas and experience a significant overlap of prey. And colonies of nesting birds, when disturbed by foraging pythons, may suffer impacts resulting from the eventual abandonment of nest sites. Scientists continue to investigate how native animal populations will be impacted as Burmese pythons spread across the landscape.

For years, park staff suspected pythons were reproducing in the Everglades. Numerous small hatchlings had been found that were unlikely to have been released by people, and several females were captured carrying from 30 to 50 fertile eggs. In 2006, scientists confirmed their suspicion by uncovering the first of several nests since found in the wilds of south Florida. This is of considerable concern, as it is believed that ecological impacts are likely to grow in step with continued reproductive success and dispersal.



Number of pythons removed from Everglades National Park and surrounding areas over the past decade. Data provided by Skip Snow, ENP

Investigation & Control

Never before have snakes this large established themselves beyond their natural range. Furthermore, no introduced population of reptiles has ever been successfully eradicated anywhere on earth. Thus, the unprecedented invasion of Burmese pythons in Everglades National Park mandates that managers investigate experimental new methods of monitoring and control.

It is said you should understand your enemies, and park scientists are trying to do just that. With funding from the Critical Ecosystem Studies Initiative (CESI), they have implanted large pythons with radio tracking devices and re-released them into the park. The goal is to obtain information about the behavior of these exotic snakes and their habitat use. By observing the tagged pythons in the wild, scientists have learned that these animals adapt well to a variety of vegetation communities. During the breeding season, these “Judas” animals can lead scientists to aggregations of untagged pythons, a challenge that would otherwise be nearly impossible to surmount in a wilderness area nearly twice the size of the state of Rhode Island.

Understanding the movements and preferred habitats of Burmese pythons is only the first step in control. Scientists are investigating new methods of detecting and capturing these large, elusive reptiles. Efforts are currently underway to better engage field personnel and the general public in the visual search for, reporting of, and removal of pythons. Tracking dogs have proven successful in finding problem snakes in other parts of the world, and researchers are evaluating their effectiveness against pythons in south Florida. Even the use of thermal imagery is being investigated as a possible detection tool.

Passive methods of control are also being tested. Scientists have developed several potential trap designs and are currently evaluating the effectiveness of each. Researchers are also beginning to investigate the use of pheromones as a possible attractant. During reproduction, males are attracted to these chemical cues when emitted by females. In conjunction with an effective trap design, these chemicals may one day prove to be another useful control tool.

Though complete eradication of pythons in south Florida is unlikely, population control may be possible over select areas.



Over the past decade, personnel have recovered over 1,900 pythons from the park and surrounding areas. Study of captured specimens gives us a better understanding of the biology of pythons and their impacts on the park. Scientists and park managers are currently exploring new methods of controlling pythons, including the use of specialized traps to aid in their capture.

Photos by ENP

Education, Prevention, Early Detection, and Rapid Response

Burmese pythons have already proven themselves a significant management challenge in the Florida Everglades, but the problem will worsen if additional species are released into the wild. That's why Everglades National Park partners with a variety of federal, state, local, tribal, and non-governmental organizations to broadly communicate the dangers associated with introducing nonnative species into natural areas. In recent years, the park has helped develop a variety of materials—including field guides, exhibits, online trainings, and school curricula—about invasive species. Fostering public awareness through education can be the most cost-effective strategy against unwanted species.

Though important, education alone cannot prevent the arrival of all nonnative plants and animals. The proliferation of global commerce presents numerous pathways for the introduction of foreign species, often requiring legal measures to safeguard against new invasions. The National Park Service supports measures recently enacted by the Florida Fish and Wildlife Conservation Commission to prohibit the personal possession of certain reptiles—including Burmese pythons. New rules recently enacted by the US Fish and Wildlife Service also prohibit the importation and interstate movement of these and several other large constrictors. And in recent years, amnesty programs have been developed to provide owners with a responsible means to surrender unwanted exotic wildlife without fear of penalty.

Past experience has shown that early detection and a rapid response can help successfully eradicate some invasive organisms. By promptly reporting sightings of nonnative species, everyone can help prevent their establishment in south Florida's natural areas.



YOU
can help stop the spread of invasive species by reporting sightings, responsibly disposing of unwanted pets, and helping educate others! Visit

WWW.DONTLETITLOOSE.ORG

for more information about what you can do.