

Invasive Burmese pythons shown to be reducing marsh rabbit population in Everglades

18 March 2015, by Bob Yirka



Marsh Rabbit (*Sylvilagus palustris*) at Green Cay wetlands, Delray Beach, Florida. Credit: Tomfriedel/birdphotos.com, Wikipedia, CC BY 3.0

(Phys.org)—A small team of researchers working in the Florida Everglades, with affiliations to several institutions in the state, has found that an invasive species of snake, the Burmese python, appears to be responsible for a drastic decline in marsh rabbit populations in the park. In their paper published in *Proceedings of the Royal Society B*, the team describes how they placed rabbits in a section of the park and monitored how they were killed to finger the culprit.

Marsh rabbits are native to the Everglades, and like most rabbits reproduce at a very high rate (approximately six litters each year, with each litter having multiple young). Because of that, scientists have been skeptical about a single predator being capable of dramatically reducing their numbers.

But still, something has, of that there has been no doubt. Marsh rabbits are very nearly disappearing from some areas—many have blamed the Burmese python, a large snake that has been in the news a lot of late due to the many problems it has created for animals and humans alike in south Florida. In this new effort, the researchers sought to learn whether the blame for the rabbit decline could be attributed solely to the arrival of the pythons.

The researchers released 80 marsh rabbits into two different parts of the park—in parts known to be heavily populated by pythons and in parts where no pythons were living. By retrieving the carcasses of dead rabbits over a nine month period, the researchers were able to determine what killed them. In the areas where there were no pythons, other predators proved to be the primary killer. But in areas where there were a lot of pythons, they found that the snakes accounted for approximately two thirds of those that were killed, which the researchers note, is not sustainable over a long period of time—that means at the current rate, the pythons are going to eliminate marsh rabbits (and possibly other animals) entirely from the park.

The researchers conclude that Burmese [pythons](#) are a serious threat to the ecosystem in the park and that the threat will likely spread as the [snake](#) extends its range.

More information: Marsh rabbit mortalities tie pythons to the precipitous decline of mammals in the everglades, *Proceedings of the Royal Society B*, rspb.royalsocietypublishing.org/lookup/doi/10.1098/rspb.2015.0120

Abstract

To address the ongoing debate over the impact of invasive species on native terrestrial wildlife, we conducted a large-scale experiment to test the

hypothesis that invasive Burmese pythons (*Python molurus bivittatus*) were a cause of the precipitous decline of mammals in Everglades National Park (ENP). Evidence linking pythons to mammal declines has been indirect and there are reasons to question whether pythons, or any predator, could have caused the precipitous declines seen across a range of mammalian functional groups.

Experimentally manipulating marsh rabbits, we found that pythons accounted for 77% of rabbit mortalities within nine months of their translocation to ENP and that python predation appeared to preclude the persistence of rabbit populations in ENP. On control sites, outside of the park, no rabbits were killed by pythons and 71% of attributable marsh rabbit mortalities were classified as mammal predations. Burmese pythons pose a serious threat to the faunal communities and ecological functioning of the Greater Everglades Ecosystems that will likely spread as python populations expand their range

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