



Florida Kingsnake (*Lampropeltis floridana*) Consumes a Juvenile Burmese Python (*Python molurus bivittatus*) in Southern Florida

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The Burmese Python (*Python molurus bivittatus*) is an invasive constrictor established across southern Florida. These snakes are dietary generalists with large home ranges and broad habitat requirements (see review in Guzy et al. 2023). Pythons feed on a wide array of vertebrates, primarily mammals and birds (Romagosa et al. 2023), and their introduction has had severe impacts on native species and ecosystems in the region (e.g., McCleery et al. 2015; Reichert et al. 2017; Taillie et al. 2021). Documented predators of pythons in Florida include

the American Alligator (*Alligator mississippiensis*) (Snow et al. 2006; Mazzotti et al. 2011; Smith et al. 2016; Currylow et al. 2023), Gulf Coast Indigo Snake (*Drymarchon kolpobasileus*) (Andreadis et al. 2018), American Crocodile (*Crocodylus acutus*) (Godfrey et al. 2021), Bobcat (*Lynx rufus*) (McCollister et al. 2021), and the Florida Cottonmouth (*Agkistrodon conanti*) (Bartoszek et al. 2021; Currylow et al. 2023). Herein we describe the first observation of a Florida Kingsnake (*Lampropeltis floridana*) consuming a Burmese Python.



Figure 1. First record of a Florida Kingsnake (*Lampropeltis floridana*) consuming a neonatal Burmese Python (*Python bivittatus*) in Big Cypress National Preserve, Florida, USA (A). Close view showing the food bolus at midbody (arrow) caused by the python. Photographs by Peter Crawford, University of Florida (A), and Jacquelyn Guzy, U.S. Geological Survey (B).

As part of a study to characterize hatchling python survival in southern Florida, we tracked neonatal Burmese Pythons, surgically implanted with a Holohil model RI-2CM radiotransmitter (6.2 g; 164–167 MHz, Holohil Systems, Ltd., Ottawa, Ontario, Canada) using standard surgical procedures (e.g., Hale et al. 2017). The habitat at the location comprised low-elevation swamp dominated by cypress (*Taxodium* spp.), pinelands by pine (*Pinus* spp.), and mixed prairie/marsh forest within Big Cypress National Preserve in Collier County, Florida, USA.

One of the neonatal female Burmese Pythons hatched on 7 August 2022 and weighed 100.3 g. This python was given a transmitter and released on 2 September 2022; at this time, the python was approximately one month old and SVL = 63.7 cm. At 0747 h on 10 September 2022, just eight days after release, we tracked the python in an area of slightly elevated ground dominated by Cocoplum (*Chrysobalanus icaco*) and sparse Bald Cypress trees (*Taxodium distichum*). The python was not visible, and the radiotransmitter signal was strongest at the ground surface, indicating that the snake was underground. As we searched the surrounding area, we noted the signal strength and direction shifted approximately 3 m to a new area dominated by young cypress trees and ~20 cm of water. At this time, we observed a Florida Kingsnake in the water where the signal was strongest. To confirm that the signal was coming from the kingsnake, we hand-captured the animal, observed a small food bolus at midbody (Fig. 1), and confirmed the peak transmitter signal was originating from the kingsnake. The kingsnake was immediately released at the point of capture.

At 1212 h on 12 September 2022, we tracked the transmitter, leading us to a location approximately 17 m northeast of our prior observation. The kingsnake was located, captured, weighed (210 grams), and measured (SVL = 88.6 cm, total length = 100 cm) prior to release at the site of capture. We subsequently tracked the kingsnake every 2–3 days until the transmitter was passed in feces. We recovered the transmitter at 0908 h on 26 September 2022, 122 m northwest of where the kingsnake was initially discovered 14 days earlier in a prairie marsh and cypress habitat, in ~15 cm of water.

Florida Kingsnakes are dietary generalists and consume snakes, including their own species, as well as lizards, amphibians, turtle and bird eggs, birds, and mammals (Ernst and Ernst 2003; Krysko and Smith 2005). In wetland habitats, such as our study site, their primary diet is comprised of aquatic snakes and turtle eggs (Blanchard 1921; Winne et al. 2007). This is the first time a wild kingsnake has been documented to have consumed a Burmese Python. However, because Burmese Pythons extensively use aquatic habitats (see review in Guzy et al. 2023), native kingsnakes may frequently encounter and feed on hatchling pythons. Yet, such observations are likely to be rare without directed search efforts,

because kingsnakes are secretive and spend much of their time in burrows or hidden under grass, rocks, or cover objects (Krysko and Enge 2019). Native species expanding their diet to include invasive Burmese Pythons could have ecological impacts for both species (e.g., disease transmission, mortality; Currylow et al. 2023). While our results indicate hatchling pythons are vulnerable to kingsnake predation, Burmese Pythons have also altered host-parasite dynamics by introducing a non-native lung parasite to native snake species in southern Florida, including Florida Kingsnakes (Miller et al. 2018, 2020). Future research documenting the prevalence of Burmese Pythons in Florida Kingsnake diets may be useful for understanding population impacts and disease-transmission.

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