



Predation on an Invasive Burmese Python Nest by Vultures in Southern Florida

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Native to Southeast Asia, Burmese Pythons (*Python bivittatus*), large constrictors capable of growing to more than 5 m in length (Krysko et al. 2012), are an established invasive species in the Everglades, and previous studies have documented significant effects on native wildlife, including declines in meso-mammalian populations (Holbrook and Chesnes 2011; Dorcas et al. 2012) and introduction of an invasive Asian lung parasite (*Railietiella orientalis*), which has infected native snakes (Miller et al. 2018; Miller et al. 2020). Burmese Pythons exhibit high fecundity, producing clutches of as many as 98 eggs (Currylow et al. 2023). After oviposition, pythons are known to exhibit maternal care by coiling around the eggs during incubation to prevent desiccation, performing shivering thermogenesis to regulate embryonic temperatures, and actively defending the eggs from potential predators (Hutchison et al. 1966; Snow et al. 2010;

Stahlschmidt and DeNardo 2010). Due to the cryptic nature of Burmese Pythons and their use of concealed nesting sites, little is known about nest predators in python’s native and introduced ranges. In Florida, the only documented instance of python nest depredation was by a Bobcat (*Lynx rufus*) captured on a game camera (Currylow et al. 2022).

On 30 May 2023, while tracking Burmese Pythons as part of an ongoing radiotelemetry scout-snake program conducted by the University of Florida (UF), a tagged python (SVL = 237 cm; mass = 17.1 kg) was discovered tightly coiled (i.e., brooding) around a clutch of recently deposited eggs. The nest was in a dense patch of Limpograss (*Hemarthria altissima*) at the base of the L-68 levee in the Francis S. Taylor Wildlife Management Area, Broward County, Florida, USA (26.13635, -80.46043), approximately 2 m from freshwater marsh habitat. The thick vegetation provided total conceal-



Figure 1. Tagged Burmese Python (*Python bivittatus*) nest discovered on 5 May 2023 in the Everglades and Francis S. Taylor Wildlife Management Area in southern Florida. The nest is concealed beneath a thick layer of Limpograss (*Hemarthria altissima*) with only the head of the snake exposed (arrow). Photograph by James Whelpley.



Figure 2. In situ photograph of the disturbed nest and eggs of a tagged Burmese Python (*Python bivittatus*) observed on 6 June 2023 after predation by vultures. The vegetation has been disturbed exposing the nest cavity and the eggs were displaced. Vultures were observed consuming the remaining egg contents. Photograph by James Whelpley.

ment of the tagged female and her eggs (Fig. 1). Visual confirmation of the presence of eggs was possible only after moving the upper layers of the vegetation. Based on our previous movement data and visual observations of this python, the approximate date of oviposition was 23 May 2023. On 6 June 2023, per our research permit, we returned to the nest site to remove the eggs prior to hatching to prevent the escape of any hatchlings as invasive Burmese Pythons are a prohibited invasive species in Florida. At this time, we observed at least four vultures scavenging the nest and actively feeding on the eggs. On our approach, the vultures fled quickly, preventing positive species identification. Both Black Vultures (*Coragyps atratus*) and Turkey Vultures (*Cathartes aura*) are found in South Florida and both species have been observed on the L-68 levee. As we approached the nest, we observed that the thick layer of Limpograss covering the eggs had been disturbed exposing the interior nest cavity. The Limpograss covering the eggs was disturbed, likely by the vultures. We documented at least 17 eggs, three of which were displaced from the nest with only shell fragments remaining. The remaining 14 eggs were still in the nest cavity, all of them punctured with their contents either exposed or absent (Fig. 2), suggesting total or partial consumption by the vultures. We found the female python submerged in shallow water about 12 m from the nest. Upon further inspection, we found no signs (e.g., fur, scales, tracks, or scat) indicating other potential predators or scavengers beside the vultures. In addition, the punctures on the eggs were consistent with those produced by a vulture's beak. The destruction and consumption of egg contents precluded determination of the embryonic stage of development. However, based on the oviposition date, we infer that the eggs were at least 14 days post-oviposition. According to embryonic staging criteria developed for the closely related *Python sebae* (Boughner et al. 2007), embryos at this stage of development measured 10–13.5 cm in total length and weighed 0.82–1.6 g.

Although Turkey Vultures are best known for olfactory foraging, Black Vultures also have been found to use olfactory cues to find potential food (Grigg et al. 2017; Santos et al. 2023). Despite the foraging habits of vultures being widely studied, little is known about vultures scavenging on eggs of snakes. However, Black Vultures and Turkey Vultures are known to consume eggs of crocodylians (Platt et al. 2014; Rainwater et al. 2024), and Soberón et al. (2002) observed Turkey Vultures excavating a shallow American Crocodile (*Crocodylus acutus*) nest, removing the eggs, and consuming the embryos.

Because the python eggs were concealed beneath, the vultures likely used scent to locate the nest. However, whether the python left the nest site due to disturbance by the vultures or if it left the nest for other reasons and presented a scavenging opportunity for the vultures is unknown. Currylow et al. (2022) observed a Bobcat via a camera trap preying on a

Burmese Python nest after the female temporarily left the eggs unguarded. However, the frequency and duration of brooding pythons leaving a nest remain largely unknown and that generally is considered a rare occurrence (Stahlschmidt and DeNardo 2010; Smith et al. 2024). Although Currylow et al. (2022) recorded instances of pythons briefly leaving nests, such instances are likely infrequent, as nest attendance by brooding females provides protection for the eggs against both predators and environmental stressors. Human disturbance, such as the placement of camera traps near nest sites, could prompt female pythons to temporarily abandon their nests, potentially increasing vulnerability to predation. Given the proximity of the python we observed to the nest after its disturbance and that the vultures were actively consuming eggs upon our arrival, two scenarios seem probable: The python was forced from the nest by the presence of multiple vultures (or an unknown disturbance) or the python temporarily left the nest of its own volition and the vultures opportunistically preyed on the unguarded eggs. Regardless, to the best of our knowledge, this observation is the first recorded instance of a native avian species preying on a Burmese Python nest in Florida.

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