

## ATTEMPTED PREDATION AT A PILEATED WOODPECKER NEST BY A GRAY RATSNAKE

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Predation plays an important role in the nest success of many bird species (Martin 1993), and as a result birds have evolved numerous behaviors to avoid nest predation. Perhaps one of the most successful nesting behaviors is the excavation of nest cavities (Martin and Li 1992). Because cavities are often constructed several meters above ground, cavity nests are usually only vulnerable to flying predators and those with well-developed climbing abilities.

Birds comprise 22 to 53 percent of the diet of the Eastern Ratsnake (*Elaphe obsoleta*; taxonomy follows Crother (2001) (Ernst and Ernst 2003)) and this snake's exceptional ability to climb allows it to be an effective predator of cavity-nesting birds (e.g., Jackson 1970, Neal et al. 1993). Eastern Ratsnakes have a unique cross section with the ventral surface being the widest part of the body. Wide ventral scales and lateral keels enable these snakes to grip irregularities of the bark on trees (Gans 1974).

Mullin and Cooper (2002) showed that Eastern Ratsnakes (subspecies not specified) could not climb Nuttall oaks (*Quercus nuttallii*), a tree characterized by smooth bark. Another study found that Texas Ratsnakes (*E. o. lindheimeri*) could not cross a shaved portion of bark 91.4 cm wide on pine trees (Saenz et al. 1999). However, Black Ratsnakes (*E. o. obsoleta*) and Gray Ratsnakes (*E. o. spiloides*) have been known to climb barkless, limbless trees (Jackson 1970, 1977). Jackson (1976) found the Gray Ratsnake to be more arboreal than the Black Ratsnake, potentially making it the more efficient predator of cavity-nesting birds.

Multiple accounts document predation by Gray Ratsnakes on cavity nesting birds, including the endangered Red-cockaded Woodpecker (*Picoides borealis*) (Jackson 1978). Although there has been an interaction documented between a Black Ratsnake and a Pileated Woodpecker (*Dryocopus pileatus*) (Noland 1959), to our knowledge no previous records exist of Gray Ratsnakes attempting to prey on Pileated Woodpecker nestlings. Here we report our observations of such an attempt.

While conducting fieldwork for the U.S. Geological Survey Amphibian Research and Monitoring Initiative program, we observed a Gray Ratsnake attempt to depredate a Pileated Woodpecker nest at approximately 1105 on 11 May 2004 at the Lower Suwannee National Wildlife Refuge (29°22'19.4"N, 83°02'34.3 W). Because of the sound of wing flapping and repeated Pileated Woodpecker calls, our attention was drawn to an adult Pileated Woodpecker on a snag about 25 m away from us. It was interacting with a large Gray Ratsnake that had climbed the snag to a height of about 7 m. The snake was approximately 20 cm away from a Pileated Woodpecker cavity entrance in the snag, with the bird between its presumed nest and the snake. We observed the snake and the bird "duel" for several seconds before the snake fell to the ground. Dueling consisted of the woodpecker flapping its wings and bobbing its head up and down. In response to the bird's actions, the snake withdrew the anterior portion of its body into an "S" shape, held its position for a few seconds, then lifted its head away from the trunk of the snag and

fell into a clump of saw palmetto (*Serenoa repens*) at the base of the tree. We do not know if the snake deliberately dropped from the tree as a result of the aggressive bird or if it lost its grip on the smooth snag. We ran to the base of the tree and positively identified the snake as *Elaphe obsoleta spiloides*. We estimated its length as about 1.2 m; it was apparently unharmed by the fall.

Upon closer inspection of the snag, we noticed there were four large and numerous smaller cavity holes. Later the same day, we observed a pair of adult Pileated Woodpeckers repeatedly enter and exit the cavity where the snake/bird altercation occurred. We did not hear begging chicks nor did we observe young woodpeckers, so we assume the cavity contained eggs or very young chicks. Most of the snag (40.1 cm DBH) was smooth and bark only adhered to the lower 1.5 m of the trunk. The primary upland habitat type in the area was flatwoods with planted slash pine as the dominant canopy species. The pines were thinned approximately 12 years ago and the site was burned in May 2003. Dominant understory plants included saw palmetto, gallberry (*Ilex glabra*), and blueberries (*Vaccinium* spp.).

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