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PREDATION OF RED-COCKADED WOODPECKER YOUNG BY A CORN SNAKE

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During the 1995 reproductive season we monitored 85 Red-cockaded Woodpecker (*Picoides borealis*) cavity tree clusters on Eglin Air Force Base (EAFB), Florida. The cluster of interest (0500D) consisted of four active cavity trees and housed one female and three males. Cluster 0500D was located in wet pine flatwoods, and all cavity trees were longleaf pines (*Pinus palustris*) with a dense understory dominated by saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), and wiregrass (*Aristida beyrichiana*).

On 12 May 1995 we flushed a Red-cockaded Woodpecker from a tree in cluster 0500D. We found three eggs in the cavity (cavity height = 8.5 m; orientation = 280°), and on 18 May 1995 we observed one egg and two hatchlings of one to two days old. We (LFP and D. L. Mickelson) climbed the tree to band the hatchlings on 22 May, but found a red-phase corn snake (*Elaphe guttata guttata*) in the cavity and the egg and hatchlings gone. Two days later, we inspected the cavity and the corn snake was gone. Although this case is circumstantial, it is probable that the snake ate the Red-cockaded Woodpecker egg and hatchlings.

Subsequent visits to the cluster revealed that the banded adult male that was roosting in the nest tree had disappeared. The male no longer roosted in the tree and was not seen with the group for the rest of the 1995 reproductive monitoring season, but he reappeared with the group over a year later. No other Red-cockaded Woodpeckers were observed roosting in the nest tree, and the group did not attempt to renest in 1995.

There are other reports of snakes preying on Red-cockaded Woodpeckers. Jackson (1978) documented gray rat snake (*E. obsoleta spiloides*) predation on Red-cockaded Woodpecker nestlings in Mississippi. Neal et al. (1993) reported that a black rat snake (*E. o. obsoleta*) took three Red-cockaded Woodpecker nestlings in Arkansas. Jackson (1994) referred to the corn snake as "a likely predator" of Red-cockaded Woodpeckers, but Walters (1990) suggested that the loss of Red-cockaded Woodpecker nests to snakes is rare.

One factor that may minimize depredation of Red-cockaded Woodpeckers by rat snakes is the effectiveness of the resin barrier (Jackson 1974, Rudolph et al. 1990). In this case, there was less resin flow on the nest tree because the cavity had been recently completed. The corn snake also may have avoided the resin barrier by climbing either of two adjacent trees whose limbs overlapped those of the nest tree.

Although we have collected nesting data for five years at EAFB, only two other corn snakes have been observed in Red-cockaded Woodpecker cavities (L. F. Phillips Jr., pers. obs., J. Auckland, pers. comm.), but both cavities were inactive. Of 277 Red-cockaded Woodpecker nests monitored from 1992-1996, 197 (71.1%) successfully produced at least one fledgling. It is unknown how much of a role predation plays in the nest failures, thus additional research is needed to determine whether snake predation is frequent enough to justify predation control measures.

We provide circumstantial evidence that a Red-cockaded Woodpecker nest on EAFB was depredated by a corn snake. Although corn snakes have been observed to use Red-cockaded Woodpecker cavities on the Apalachicola National Forest (J. J. Kappes Jr., pers. comm.) and EAFB, they have not previously been reported as predators of Red-cockaded Woodpeckers or their nests.

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LITERATURE CITED

- JACKSON, J. A. 1974. Gray rat snakes versus Red-cockaded Woodpeckers: predator-prey adaptations. *Auk* 91:342-347.
- JACKSON, J. A. 1978. Predation by a gray rat snake on Red-cockaded Woodpecker nestlings. *Bird-Banding* 49(2):187-188.
- JACKSON, J. A. 1994. Red-cockaded Woodpecker (*Picoides borealis*). *In: The Birds of North America*, No. 85. (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.
- NEAL, J. C., W. G. MONTAGUE, AND D. A. JAMES. 1993. Climbing by black rat snakes on cavity trees of Red-cockaded Woodpeckers. *Wildl. Soc. Bull.* 21:160-165.
- RUDOLPH, D. C., H. KYLE, AND R. N. CONNER. 1990. Red-cockaded Woodpeckers vs rat snakes: the effectiveness of the resin barrier. *Wilson Bull.* 102:14-22.
- WALTERS, J. R. 1990. The Red-cockaded Woodpecker: a "primitive" cooperative breeder. Pages 67-101. *In: Cooperative Breeding Birds: Long-term Studies of Ecology and Behavior*. P. B. Stacey and W. D. Koenig (eds.). Cambridge Univ. Press, Cambridge.