

## PREDATION BY THE SONORAN WHIPSNAKE ON BIRDS IN SOUTHWESTERN NEW MEXICO

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Snake predation of bird eggs and nestlings is well documented (e.g., Best 1974, Skutch 1976, 1999, Nolan 1978, Finch 1981, Facemire and Fretwell 1980, Rodriguez-Robles 2002), and there are accounts of adult birds being killed by snakes, particularly rat snakes (*Elaphe* spp.) and Gopher Snakes (*Pituophis catenifer*), at nest sites (e.g., Blem 1979, Joern and Jackson 1983, Brown and Brown 1996, Stake 2001). Away from nests, rattlesnakes (*Crotalus* spp.) reportedly have preyed on adult birds ranging in size from the Field Sparrow (*Spizella arborea*; in Best 1974) to the Northern Bobwhite (*Colinus virginianus*; Bendire 1895), but more unusual are observations of nonvenomous snakes capturing birds older than fledglings. Skutch (1989) rescued a female Scarlet-rumped Tanager (*Ramphocelus passerinii*) from the jaws of a 1-m-long unidentified green snake in Costa Rica, and here I report attempts at predation on four passerines and two hummingbirds by the Sonoran Whipsnake (*Masticophis bilineatus*). Agile and capable of very rapid movement, this frequently arboreal serpent generally inhabits riparian woodlands, rocky bajadas, and madrean woodland in southeastern Arizona (Bezy and Anderson 2003) and southwestern New Mexico (pers. obs); its range in Mexico extends south in canyons and on mountain slopes to Oaxaca. All encounters were at the Bioresearch Ranch (TBR) headquarters, within the Central Peloncillo Research Natural Area, 12 km south-southeast of Rodeo, Hidalgo County (31° 50' N, 109° 01' W), in the madrean archipelago of mountains in far southwestern New Mexico. The surrounding vegetation consists primarily of madrean evergreen woodland (Brown 1994) at an elevation of 1648 m. A feeding station at the headquarters generally attracts large numbers of birds, and the observed whipsnake attacks occurred near feeders. Following is a brief account of these encounters.

The first was on 5 May 2002 as an adult male House Finch (*Carpodacus mexicanus*) landed at a water dish beneath a Fragrant Sumac (*Rhus aromatica*). As the finch landed, a large Sonoran Whipsnake (~1.5 m) lying concealed in a runway of the Yellow-nosed Cotton Rat (*Sigmodon ochrognathus*) rapidly lunged and grasped the bird by its right wing and flank. Considerable distress calling and flapping of the left wing did not deter the predator. As I approached, the whipsnake released the finch and rapidly retreated; the finch flew away.

The second occurrence was at the same site on 18 May 2002, and it appeared to involve the same snake. As the snake laid horizontally on a branch of a Catclaw Mimosa (*Mimosa aculeaticarpa*), an adult male Black-headed Grosbeak (*Pheucticus melanocephalus*) landed at the branch's tip. The whipsnake attacked, grasping the grosbeak as it did the House Finch. Dropping to the ground, the snake appeared to be receiving considerable abuse from the free and flapping left wing, but it did not release its grip. Upon my approach the snake released the bird and disappeared, but within 15 min it returned, lying horizontally on a nearby Fragrant Sumac branch.

On 27 August 2002 a smaller Sonoran Whipsnake (~1.2 m) captured a migrant juvenile Rufous Hummingbird (*Selasphorus rufus*). From a position on a horizontal branch of a Mexican Manzanita (*Arctostaphylos pungens*), it rapidly charged and grabbed the wing and flank as the hummingbird landed on the branch. Dropping to the ground, it released the bird as I approached; the victim flew away but was listing to one side. The snake was back on the same branch after 20 min.

On 17 September 2002 apparently the same snake was on the same manzanita branch, and in the same manner it captured another juvenile Rufous Hummingbird.

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Again upon my approach the snake released the hummingbird and retreated; within 30 min it was back on the same branch.

I observed no attempted whipsnake predation in 2003 (perhaps because of an infestation of the White-nosed Coati, *Nasua narica*, at the feeding station), but on 23 October 2004 I heard wing-flapping beneath a thicket of the Apache Plume (*Fallugia paradoxa*). There, an immature White-crowned Sparrow (*Zonotrichia leucophrys*) was in the jaws of a smaller whipsnake (~0.6 m). The snake retreated as I approached, but it did not release the sparrow. The snake carried the bird into a burrow of the Rock Squirrel (*Spermophilus variegatus*).

On 28 April 2005, a small (~0.6 m) whipsnake lunged from a low catclaw branch, grasping a Pine Siskin (*Carduelis pinus*) that was foraging on the ground ~25 cm away. On my approach the snake did not release the bird but climbed into a Whitethorn Acacia (*Acacia constricta*). After I captured the snake it released the siskin.

These and other observations suggest the Sonoran Whipsnake is an efficient predator of free-flying juvenile and adult birds. On 28 August 1994, near Portal, Cochise County, Arizona (ca. 26 km NW of TBR), Alan Craig and Narca Moore-Craig (pers. comm.) watched a Sonoran Whipsnake descend a Desert Sumac (*R. microphylla*) with a dead Lark Sparrow (*Chondestes grammacus*) in its mouth, and on 16 July 2005, in Portal, Richard Webster (pers. comm.) saw a whipsnake capturing an adult male Lesser Goldfinch (*Carduelis psaltria*) as it approached a feeder (Figure 1). The whipsnake is described as a consumer of nestling birds, lizards, and frogs (Degenhardt et al. 1996); to this list, free-flying juvenile and adult birds can be added, as the Sonoran Whipsnake has little problem capturing small birds, particularly where birds concentrate at feeding and watering sites. All whipsnake observations reported here



Figure 1. Sonoran Whipsnake with captured Lesser Goldfinch at Portal, Arizona, 16 July 2005.

Photo by Richard E. Webster

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were at feeding stations, demonstrating how bird feeding may attract predators and increase the potential for predation.

The larger whipsnakes I saw capturing birds in 2002 have not been seen since spring 2003. In summer 2003, and remaining through winter 2004, some 25 coatis occupied the headquarters' feeding station, suggesting these snakes either vacated the area or became prey for these mammalian omnivores.

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