

Eastern Gartersnake as a nest predator of American Redstart

By Michael Patrikeev

Every year uncountable numbers of bird eggs and nestlings are lost to a multitude of nest predators. Ground nesting birds are often considered to be most at risk, but species building their nests in shrubs and trees are not immune from nest predation either.

In this note, I report a rare observation of predation by an Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) upon one week-old nestling American Redstarts (*Setophaga ruticilla*) in northern Bruce Peninsula, Ontario. American Redstarts occupy a range of coniferous, mixed and hardwood habitats on the peninsula, where they are one of the most common warblers (Cadman *et al.* 2007, pers. obs.). American Redstarts usually place their nests at 1.8 – 15 m above the ground, with some as low as 0.3 m (Peck and





Figure 1. Female American Redstart (*Setophaga ruticilla*) attending nest with small young. Bruce Peninsula, Ontario. 25 June 2011. Photo by Michael Patrikeev.

James 1987). The nests are often camouflaged with bark stripes, lichen and moss (Peck and James 1987), but do not present a challenge for an experienced observer.

On 20 June 2011, I found a nest of American Redstart next to a trunk of a small eastern white cedar (*Thuja occidentalis*) in a dry eastern white cedar dominated forest west of Shouldice Lake, Municipality of Northern Bruce Peninsula. The nest was built about 1.8 m above the ground and, at the time of finding, it contained four newly hatched young.

Below: Figure 2. Eastern Gartersnake
(*Thamnophis sirtalis sirtalis*) with a week-old
nestling of American Redstart in its mouth.

Bruce Peninsula, Ontario. 27 June 2011.

Photo by Michael Patrikeev.

Right: Figure 3. Eastern Gartersnake
swallowing a nestling of American Redstart.

Bruce Peninsula, Ontario. 27 June 2011.

Photo by Michael Patrikeev





Figure 4. Singing male American Redstart.
Bruce Peninsula, Ontario. 25 June 2011.
Photo by Michael Patrikeev.

The nest was revisited on 25 June 2011 when the young were approximately six days old and photographed from a blind placed 4 – 5 m away from the nest (Figure 1). Something was clearly amiss when I returned to this nest on 27 June 2011, around 1800 hrs, to take additional photos. Both male and female showed agitation in the vicinity of the nest, but did not approach it closely. Only when I entered the blind and looked at the nest through the lens did I understand the cause of their alarm: a snake's head was projecting from the nest. A quick examination of photographs revealed that the nest robber was an Eastern Gartersnake that was working its jaws trying to swallow the limp, possibly dead body of a week old nestling (Figure 2).

Though any nest loss is lamentable, seeing a nest predation is a rare opportunity. In my twenty-five year career as an ornithologist and bird photographer, I have witnessed nest predation less than a half a dozen times, never by a snake. While I struggled with myself whether to document the predation event or hurry to the rescue of the remaining young, the gartersnake had finally engulfed the unfortunate redstart (Figure 3). At my approach, the gartersnake



immediately dropped to the ground and crawled away, but not before I noticed four little lumps on its body. So it had eaten all four young! I checked the nest, just to confirm my suspicions, and found it empty.



The Eastern Gartersnake is widely distributed in Bruce Peninsula (Oldham and Weller 2000, pers. obs.). It is a feeding generalist with preferences for amphibians and earthworms, which may make up 35 – 90% of its diet in most populations, although slugs, fish,

mice and occasionally bird eggs and nesting birds are also eaten (Ernst and Ernst 2003). Some bird eggs and nestlings eaten by the gartersnake were of species nesting on or near the ground (i.e. sparrows, wrens, gulls and terns), but nests of species nesting at least some

distance above the ground in shrubs and trees (i.e. finches, thrushes, warblers) were also robbed (Ernst and Ernst 2003). However, finding a nest placed at 1.8 m above the ground is probably a very rare feat for this species.

The Eastern Gartersnake normally finds its food by following scent trails, with vision supplementing olfaction during the capture (Ernst and Ernst 2003). In the case of the redstart, the snake might have been attracted by the scent of fecal sacs that the adult redstarts would have deposited nearby, but the snake still would have to work out the source and catch the scent of the nest or the young from the ground. The male redstart often remained by the nest after feeding the young and frequently sang from branches and twigs just below the nest (Figure 4). However, it is unlikely that such activity would have attracted a snake.

Eastern Gartersnakes do not suffocate their prey; they normally seize it in their mouth and swallow it as quickly as

possible. The young redstart, captured by the snake, did not struggle when the photographs were taken; it might have already died of suffocation (its head was in the snake's mouth), or succumbed to the snake's saliva, which may have venomous properties (Ernst and Ernst 2003). This species often chews on its prey before swallowing it (as it was seen in this case) and Ernst and Ernst (2003) speculated that the saliva's enzymes may help to immobilize prey. Many climbing snakes seek out birds and their nests purposefully, and Eastern Foxsnake (*Pantherophis gloydi*) is a known nest predator of the redstarts (Sturm 1945, Stevenson and Anderson 1994). However, predation by Eastern Gartersnakes on nests of this species is likely a very rare occurrence. The majority of nest failures in American Redstarts are attributed to mammalian and avian predators such as Red Squirrels (*Tamiasciurus hudsonius*), Blue Jays (*Cyanocitta cristata*), feral and domestic cats, etc. (Bent 1953, Sherry and Holmes 1997).



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Literature Cited

Bent, A.C. 1953. Life histories of North American wood warblers. U.S. National Museum Bulletin 203.

Ernst, C. H. and E. M. Ernst. 2003. Snakes of the United States and Canada. Smithsonian Institution Press, Washington, D.C. 668 pp.

Beck, D. Lepage and A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto. 706 pp.

Oldham, M.J. and W.F. Weller. 2000. Ontario Herpetofaunal Atlas. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. <http://nhic.mnr.gov.on.ca/MNR/nhic/herps/ohs.html>.

Cadman, M.D., D.A. Sutherland, G.G. Peck, G.K. and R.D. James. 1987. Breeding birds of Ontario, nidiology and distribution. Volume 2: Passerines. Life Sciences Miscellaneous Publications. Royal Ontario Museum, Toronto.

Sherry, T.W. and R.T. Holmes. 1997. American Redstart (*Setophaga ruticilla*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/277doi:10.2173/bna.277>

Stevenson, H.M. and B.H. Anderson. 1994. The birdlife of Florida. University of Florida Press, Gainesville.

Sturm, L. 1945. A study of the nesting activities of the American Redstart. Auk 62:189-206.

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