

OBSERVATIONS OF NEST PREDATION BY COOPER'S HAWKS ON VANCOUVER ISLAND, BRITISH COLUMBIA

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Abstract -- Nest predation by Cooper's Hawks (*Accipiter cooperii*) is rarely observed and has largely been inferred from prey deliveries or bird remains found at hawk nests. Here I describe two independent observations of breeding male Cooper's Hawks raiding nests of American Robin (*Turdus migratorius*) on southern Vancouver Island, British Columbia.

Key words: nest predation, Cooper's Hawk, *Accipiter cooperii*, American Robin, *Turdus migratorius*, Vancouver Island.

Juvenile birds and mammals comprise a significant proportion of the breeding diet of the Cooper's Hawk (*Accipiter cooperii*) across its North American range (Rosenfield and Bielefeldt 1993). In Michigan, 74% of avian prey deliveries and bird remains found at Cooper's Hawk nest sites were young of the year, of which 10% were nestlings (Bielefeldt et al. 1992). Meng (1959) twice observed a male Cooper's Hawk delivering passerine nestlings to its own young. Nest-robbing is likely a common foraging tactic employed by this hawk during the breeding period, but has rarely been observed. Linduska (1943) and Nelson (1968) reported the only direct observations of nest predation by this accipiter. Increasingly, nest cameras are being employed by researchers to help determine the causes of passerine nest failures. In some of these studies, accipiters have been shown to be an important nest predator (McCallum and Hannon 2001, Williams and Wood 2002). Here I describe two direct observations of nest predation by different breeding male Cooper's Hawks in urban Greater Victoria, on southern Vancouver Island, British Columbia (48° 27' N, 123° 20' W).

The first observation occurred on 19 July 1997 while I monitored an active Cooper's Hawk nest site located in a wooded area on the campus of the University of Victoria. Both parents were present and actively feeding their four fledged but still dependent young. At 10:35 PST, while watching one of these fledglings eat a recently delivered American Robin (*Turdus migratorius*) nestling, my attention was drawn to the agitated calls of a pair of adult robins located about 50 m away in a wooded ravine. Through binoculars I could see an unbanded adult male Cooper's Hawk perched on a limb near the broken top of a 6-metre-tall snag. About 40 cm from this hawk was a robin nest built amongst the ivy-covered trunk of the snag. The hawk faced the nest, but appeared distracted by the parent robins which were both repeatedly diving at it. At one point the hawk made a "ka-ka-ka" call, presumably in response to this harassment. Within seconds it abruptly moved towards the nest, snatched a nestling in one of its talons, and immediately departed with both adult robins in close pursuit. The hawk flew quickly from view and at 10:38 I heard the excited begging calls of fledgling hawks on the edge of the ravine, suggesting a prey delivery had occurred. Although unable to observe these hawks from my location,

I presumed the adult male had delivered the nestling I had just seen taken from its nest. The robin nest was located approximately 170 m away from the Cooper's Hawk nest tree and was just beyond the area that the fledgling hawks had been observed to range.

On inspection, the robin's nest still contained a single nestling estimated to be about 9 days of age. The surviving young appeared to be of the same age class as the nestling I had observed earlier (10:28 - 10:35) being eaten by a fledgling hawk and had possibly been taken from this same nest. From 10:40 - 12:00, I continued to monitor the robin nest from a distance to determine if the Cooper's Hawk would return for the remaining nestling. The hawk did not return during this period and the nestling was still present in its nest when last checked at 20:00 the following day.

The second nest-robbing incident occurred on 27 July 1997 near my residence in the Cadboro Bay area of Saanich. As in the first predation event, my attention was initially drawn by alarm calls of an adult American Robin, as well as several Chestnut-backed Chickadees (*Poecile rufescens*). These birds were located about 30 m away from me in a neighbouring yard. On closer investigation, a colour-banded adult male Cooper's Hawk was observed perched in the top of a low tree. The hawk flew between several trees and appeared to be actively hunting. From the distressed behaviour of the robin, I presumed it had young close by. The hawk did not appear to have located its intended prey when first observed and may have been cueing on the excited response of this solitary adult robin. At 15:00, as I watched it through binoculars, the hawk disappeared into the foliage to emerge moments later with a robin-sized bird in its talons. It quickly flew from view with the adult robin pursuing it. Less than 1 minute later I saw the hawk emerge from cover carrying its prey in the direction of its own nest, located approximately 375 m distant. This marked hawk was known to have three dependent fledglings.

Following the hawk's departure, I checked the area and found a robin nest situated about 5.5 m above the ground in a small tree. At 15:13, while inspecting the contents of this nest with a pole-mirror, the hawk returned to within about 1 m of the nest but was apparently frightened away by the mirror. On this second visit, the hawk flew directly to the

robin nest from the general direction of its own nest. Close inspection of the nest revealed a solitary nestling, which I estimated to be about 10 days of age. Unfortunately, I was unable to continue monitoring this nest but when I rechecked it at 17:35 the following day, it was empty, with no sign of an adult robin in the vicinity. Presumably the hawk had returned to take this last nestling, as it was too young to have fledged during the intervening period.

The perch-and-scan hunting technique employed by the Cooper's Hawk is an effective and economical method of finding prey and may predispose active passerine nests to detection by this predator (Bielefeldt et al. 1992). Robin nestlings are fed at a rate of 35 - 40 times/day and become more vocal with age (Sallabanks and James 1999). Research on other passerines has shown that predation risk increases with nestling age (Pietz and Granfors 2000), possibly the result of an increased rate of parental feeding and more vocal young.

In both of these predation events, the parents were present but ineffective in preventing predation of their nests. Moreover, parental behaviour in the second incident may have assisted the hawk in locating the nest. Robins with recently fledged young behave similarly (personal observation) and through experience Cooper's Hawks probably learn to exploit this behaviour to locate these vulnerable prey. As was demonstrated in the latter incident, once occupied nests are discovered, breeding hawks may return until all young are taken thereby maximizing their own reproductive efforts. Male Cooper's Hawks do most of the hunting during the breeding period (Meng 1959, Rosenfield and Beilefeldt 1993) and nest-robbing could be a common foraging strategy employed by this sex.

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