

DISPLACEMENT OF COMMON NIGHTHAWK (*CHORDEILES MINOR*) EGGS AND YOUNG AT NATURAL NEST-SITES

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Abstract -- Common Nighthawk eggs were moved at three natural sites near Victoria, B.C., one clutch being moved three times. Two of these nest-sites were moved again after the young had hatched, and small young also moved at two other nest-sites.

Key words: *Chordeiles minor*, Common Nighthawk, egg movement, Victoria, young movement.

During periodic ecological and photographic studies on Arbutus/oak balds in the vicinity of Victoria, British Columbia from 1987 to 1996, I occasionally encountered nest-sites of Common Nighthawks (*Chordeiles minor*). I made periodic checks of many nests to record progress and breeding success. At several nest-sites, I found that nests containing either eggs or young were moved once or several times during the period from egg-laying to fledging of the young.

Gross (1940) suggested that nest displacement in Common Nighthawks was not unusual. He noted movements by small increments each time females returned and settled on their nests, pulling the eggs beneath them to resume incubation. Many of the observations cited by Gross were of nighthawks nesting on gravel and tar roofs, and he stated that in at least two instances, a recognizable trail was left in the pebbles by this gradual process. Warren (*vide* Gross 1940:213) stated that a female in Pennsylvania carried her eggs in her bill, one at a time, a distance of about 60 m., but apparently did not see the bird actually moving the eggs (Weller 1958). Gross's accounts of nestling nighthawks also indicate that short-distance movements of the young are common, possibly to seek shade or to escape pooling water after heavy rains.

On the other hand, studies of nesting by this species in natural surroundings make little mention of nest displacement. The majority of documented observations of nest displacement were at gravel-roof locations. Brigham (1989) and Guignet (1978) suggested that in populated areas of British Columbia, gravel roofs are a common nesting choice of nighthawks. Previous observers working at natural nest-sites may not have considered minor nest displacements important enough to note. However, in their thorough survey of B.C. nesting records, Campbell *et al.* (1990) mentioned only one report of the displacement of eggs, a case in which the female appeared to have sought more shade for the nest-site. M. K. McNicholl (personal communication), who studied nighthawks nesting in clear-cuts on central Vancouver Island, found no displacements of eggs except that some rolled just outside the nest when the incubating bird flushed.

The nest-sites found during my studies were all on flat benches or ledges in dry, steep, hilly terrain, consisting of

extensive Arbutus (*Arbutus menziesii*) and Ocean Spray (*Holodiscus discolor*), with Garry Oak (*Quercus garryana*) and occasional Douglas-firs (*Pseudotsuga menziesii*). The height of Arbutus ranged from 3 m. to more than 10 m. in hillside forests broken by numerous open or semi-open areas of grass, mosses (*Rhacomitrium canescens*, *Rhytidiadelphus*, *Polytrichum*, etc.) and exposed bedrock. Nest clearings ranged in size from 15 m² to slightly larger than 90 m².

The nighthawk nests were usually located on nearly flat, open ground with a litter of oak or Arbutus leaves. "Nests" were simply open spots on the ground without even a clearly visible depression in the leaves under the adult. Initially, eggs were laid at least 2 m. from the nearest tall shrub or tree. There was, however, a distinctive feature, such as a boulder, a fallen dead branch, or some exposed bedrock, within a metre of the nest, similar to the features found at most roost sites chosen by Common Poorwills (*Phalaenoptilus nuttallii*) (Wang and Brigham 1997).

H. J. Kmit and I first noted displacement at a nest found on 30 June 1988 below the crest of an Arbutus ridge about 15 km. northwest of Victoria. The nest contained two eggs resting on some yellow Arbutus leaves 30 cm. from a small branch that had fallen from the nearest Arbutus. Early on 3 July, we returned to photograph the adult on the nest and found that the eggs had been moved about 60 cm. east of the fallen branch. This nest was re-visited on 6, 13 and 15 July, when the eggs remained in the second location. On 17 July, the nest contained two very small young, on the same spot. From 15 to 23 July the area experienced extremely hot, clear weather with air temperatures above 30° C and surface temperatures over 40° C. On 23 July, the nest contained only one young nighthawk, which was about 60 cm. south of the original hatching position, in the shade of a low rock outcrop.

On 17 July 1989, H. J. Kmit and I found three nighthawk nests, one (#1), containing one egg, within 30 m. of the previous year's nest-site. Two new nest-sites (#2 and #3), each containing two eggs, were discovered only 30 m. apart about 350 m. higher up the ridge on gently sloping leaf litter in small clearings on either side of the crest. On 19 July, the egg in site #1 had been destroyed by mountain bikes, but the upper

nests were undisturbed. Site #2 contained two eggs, while site #3, with a large pyramidal boulder at its centre, contained two small young about two days old 1.25 m. east of the boulder.

Both of these nest localities received full sun from 10:00 to 15:00 or later. Except for the growth of the young, we found no change in either of these two nest-sites on any visit from 20 to 26 July. On 27 July, nest #2 contained two very small downy young, sheltering under the female about 65 to 70 cm. from its previous spot. Nest-site #3, with larger young, had been moved almost 2 m. around the pyramidal boulder, evidently to the side of the site receiving afternoon shade. On 3 August, both nests had been moved again, a distance of 30 to 50 cm., again to shadier sites. On 10 August, both sites were empty.

In 1991, I began work at a new study area about 1 km. from that of 1989-1990. The area consisted of two sites, one threatened by suburban development, the other about 500 m. away and isolated from the development. There were two nests on Site #1 on 3 July, one containing two eggs, the other one egg, but these were destroyed by 6 July, when I returned. At the second site, I found a single nest on 19 July with one freshly-laid (damp) egg, situated about 60 cm. from a large fallen branch beneath a large *Arbutus* tree. I re-visited this locality at two to three-day intervals, and found the site unchanged, still with only one egg, until 2 August. On 3 August, the egg had been moved approximately 70 cm. away from the fallen branch, and I noticed that there were two freshly-fallen smaller branches near the former nest-site, evidently brought down by wind. The new location was more open, receiving full sun from about 11:00 to 16:30. On 8 August, a nestling with many pin-feathers was situated more than 1.5 m. north of the last egg location, somewhat in the shade of the large *Arbutus* and near the fallen branches. On 15 August, the nest-site had been vacated.

Although I attempted to continue observations in 1992 and subsequently, the part of this area still accessible to me appeared to have been abandoned by nighthawks, presumably in response to increased human development on the slopes. At the end of June 1992, therefore, I began searching similar oak/*Arbutus* ridges about 2 to 3 km. from the previous study areas, nearer to Victoria at the boundary of Francis/King Regional parks. I found two nighthawk nests about 15 m. apart on adjacent domes among *Arbutus*, Oak and Ocean Spray thickets. Nest #1, at the edge of a power-line clearing, contained two eggs on 1 July. It was situated about 30 cm. from a fallen branch and 70 cm. from a well-decomposed Douglas-fir stump. No adult was present then or on 2 July, when the two eggs were about 15 cm. apart, suggesting that the nest had been abandoned. Early on 5 July, one egg had disappeared, and the second was gone by noon of the same day.

On 2 July, nest #2 was found in a small circular clearing of about 4 m. diameter with Ocean Spray bushes and small *Arbutus* surrounding it. One large fallen log, broken into several pieces and greatly decomposed, was along two sides of the nest-site, a feature not typical of any other nest-sites found in the region. The adult stayed very near this nest even when approached closely, but moved enough to reveal two eggs. Both eggs were still present on 6 July, but had been moved about 35 cm. towards an Ocean Spray bush, and away from the decaying logs. On 8 July, the eggs had been moved another 25 cm. closer to the Ocean Spray shrub so that the largest branches now overhung the nest. In early morning on 12 July, the nest-site had been moved again, about 60 cm. around the edge of the clearing, still in the shade of overhanging shrubs. It contained one egg and one downy young. At 15:00 on the same day, there were two downy young. From 12 through 26 July, when the nest was vacated, there were no further movements of the nest-site.

ACKNOWLEDGEMENTS

I am greatly indebted to M. K. McNicholl for his interest in these observations, and his editorial assistance through several drafts of this note. Thanks are also due to R. Mark Brigham and Kenneth H. Morgan for their editorial comments and suggestions.

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