

2000 Progress Report
Northwest Ecological Research Institute
Common Nighthawk Project

00-07

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Objectives:

- Investigate if both common nighthawk parents share in brooding eggs and young.
- Determine if young nighthawks continue to roost at their nest site after fledging age.
- Develop and test a survey protocol to census common nighthawks.
- Write and distribute an educational brochure for landowners on common nighthawk breeding ecology.
- Note other anecdotal information that emerges while observing nighthawk behavior.

Project Sites and Survey Summary:

Project sites were within the Wind River watershed on the west side of the Cascade Range in Washington. The nest and roost sites are within a 1/4 mile of Trout Creek and within three air miles of each other. All nest sites were in scattered tree or open habitat with a bracken fern ground cover. Presence of nighthawks was determined by using a combination of identifiable sounds as well as sightings of individuals or of feathers and fecal coils. Site visits ranged two to five days apart throughout the breeding season from June through early September 2000.

- Industrial timberland at Trout Creek and Wind River confluence (1 nest in a 300-acre, 12-year old Douglas-fir plantation, originally clear-cut harvest). Nest was randomly found by Susan James, Underwood Conservation District employee. This nest site sustained trauma in early July. One nestling, very close to fledging age, was found dead along a well-used animal and human trail. I never relocated the family unit after this discovery.
- Planting Creek Tree Orchard (1 nest found in a 30-acre genetic tree orchard).
- Yew Nursery (1 nest found in a 5-acre fenced yew nursery).
- A fourth roost site was found in late July (young recently fledged) on the inside edge of a fenced old-growth Douglas fir stand adjacent to expansive nursery fields.

Volunteers:

- Stewart Fletcher assisted in locating nest sites and in conducting time studies of territorial diving nighthawks.
- Dave Shaw assisted in documenting dates and time of territorial diving displays during dawn at the old-growth roost site.

Results:

- At the nest sites, female adults were consistently seen brooding eggs or young during our revisits at all times of the day. Brooding adults were easily sexed by plumage characteristics. A female lacks the male's white sub-terminal tail patches and has a buff-colored throat patch while a male's throat is white.

Results (continued):

- Young nighthawks regularly roosted in the vicinity of their nest sites for 41 days post-hatch at Planting Creek Orchard and the Yew Nursery sites. After this age and until they migrated in early September, the young nighthawks began roosting elsewhere as well (unknown locations) but continued to use old roost sites on occasion. I continued to check previous roost locations for the presence of fecal coils and feathers to determine if the nighthawks were still using these ground roosts on occasion. Fecal coils are unique and easy to identify as belonging to a common nighthawk. During each of these visits, I removed the fecal coils and feathers at roost sites so I could determine reuse when I returned.
- Roost sites were within 100 feet of the nest site at the Yew Nursery and 120 feet at the Planting Creek Orchard. Typically, fledglings roosted either side-by-side or within three feet of each other when flushed, but several occasions were noted when only one fledgling flushed. At the Planting Creek Orchard, one roost site was regularly used.
- Adult territorial displays (loud booming sound made by aerial diving and air rushing through the primary feathers) were most intense during dawn and sunset. Dawn displays were generally shorter in duration than those occurring at sunset. Surveying is best completed during sunset for this reason. Time studies were conducted during these visits to correlate the number of dives to the particular period in the breeding cycle: more dives per 5-minute period occurred earlier in the breeding cycle. The earliest time recommended to start surveying is during the egg incubation period when males have clearly established their territories. Territorial displays continued throughout the breeding season at all sites. In fact, this behavior helped determine if the nighthawks were still present at the end of the breeding season prior to migration. Through contact with a local Partners-in-Flight Chapter, I learned that a protocol for surveying nighthawks was tested two years ago. I will field-test the protocol in 2001 with the knowledge gained this summer.
- The educational brochure on nighthawk breeding ecology is scheduled for completion in March 2001 and will be mailed to NERI.

Behaviors and Interesting Findings:

- Territorial diving displays readily assist in locating nests. This behavior determines approximate nest areas which reduces overall search time and area. We used this method at the Yew Nursery and to find the old-growth roost. The accuracy of this method may be reliable within five acres; however, this needs further testing.
- The female nighthawk at Planting Creek Orchard nested at the same location (within inches) of a 1999 nest site.
- The industrial timberland site had the greatest amount of nighthawk activity. We noted at least eight territorial nighthawks diving in one section of this large plantation adjacent to Trout Creek and Wind River.
- The female at Planting Creek Orchard stopped roosting alongside her nestlings just before fledging age. This is unusual behavior when compared to other nest site observations during this and previous years. Typically, females continue to roost with young for many days post-fledge. I must note this behavior affected my ability to relocate the nestlings; they remain motionless during the period they are flightless.
- Trauma sustained at a nest site may disrupt the predictability of roost patterns and locations. The adult female was still present and defended the roost site when a dead nestling was discovered; however, no fecal coils or nighthawk flushes were subsequently found in the vicinity.
- The Planting Creek Orchard female was first discovered when she had laid the first of two eggs, and I monitored them until hatching. This provided valuable data on hatch times.
- At Planting Creek Orchard, one nestling vehemently defended its nest-mate by hissing and spreading its wings apart when I reached to band them. The usual behavior during the flightless period is to remain motionless.
- Once chicks hatched from eggs at two nest sites, the egg fragments remained undisturbed and within several feet of the nest site throughout the breeding season.

Outlook for 2001 Project:

- Contact key nighthawk experts cited in journal articles to determine effective capturing techniques of brooding adults at nest sites. Incorporate these capture techniques to band and potentially recapture adults to study nest-site fidelity.
- Implement a survey technique tested by Bob Altman of Avifauna Consulting in 1999 for surveying common nighthawks in the Willamette Valley. Receive surveyor assistance from the Columbia Gorge Audubon Society.
- Place radio transmitters on several nestlings (3 maximum) to track their roost sites.
- Set up a blind at one nest site to observe behavior around the clock.
- Presentation at the Society of Northwestern Vertebrate Biology Annual Meeting in March 2002.
- Submit technical article to the Northwestern Naturalist journal in 2002.