

HAWK-OWL SPRUCE GROUSE ENCOUNTER IN THE NORTHWEST TERRITORIES

L. KILIAAN, Canadian Wildlife Service, 4999 - 98 Avenue, Edmonton, Alberta.
T6E 2X3

On 6 January 1982 I was recording snow measurement around Halliday Lake, NWT (61° 22'N, 108° 55'W). The weather was bright and sunny with the temperature between -25° and -30° C. The site was characterized by rolling topography with glacial till over Cambrian Shield bedrock. The trees were 75 to 80-year-old stands of Black Spruce (*Picea mariana*) dominant over White Pine (*Pinus contorta*) and birch (*Betula* sp.).

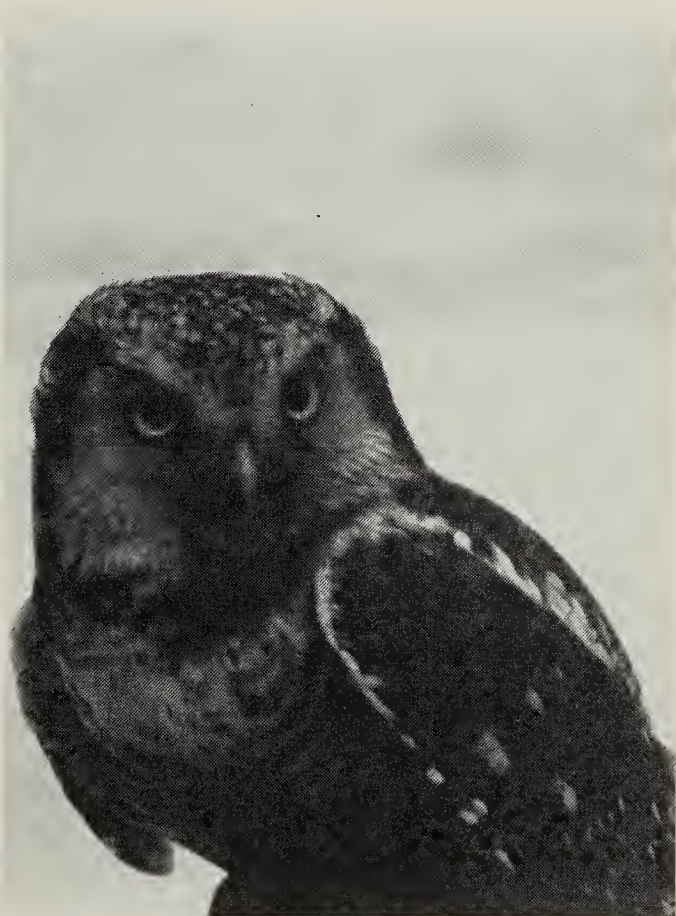
On top of a ridge at 1200 h, I encountered a trail in the soft snow apparently made by a bird flapping its wings but unable to take off. I followed the trail, occasionally observing body feathers and drops of blood. After about 10 min the trail ended where a dead Spruce Grouse lay in the snow. The grouse was warm, limp and still intact with some blood on its back, neck and breast.

Above it, in the top of a Black Spruce, a Northern Hawk-Owl excitedly was calling. Not wanting to stress it I decided not to examine the grouse for cause of death.

Back-tracking revealed where the owl hunched on the walking grouse. In ensuing struggle, it appeared that the owl rode the flapping grouse until all was made. The grouse appeared to have been pushed down in the soft snow by the weight of its attacker and probably was unable to regain solid footing.

Audubon quotes Richardson in the *Fauna Boreali Americana*: "The Hawk Owl is a common species throughout the fur countries from Hudson's Bay to the Pacific. In summer it feeds principally on mice and insects but in the snow-clad regions in the winter, it preys mostly on Ptarmigan." Bent quoted Fischer that in summer, hawk owls feed mainly on small mammals and subsist on Ptarmigan in winter.²

The diurnal hunting behaviour of the hawk owl was noted by Mikkola and Huhtala et al.⁵ Mikkola states that when populations of voles are normal, most of the owls winter in the north, but



Hawk Owl

Stan Shadick

when voles peak in the south, hawk owl invasions may occur into the areas of abundance.⁵ Hawk owls have been known to penetrate central Europe at such times.

Mikkola published an analysis of Northern Hawk-Owl diet in Norway, Finland and Murmansk province in Russia.⁵ In winter, when vole populations were low and in areas of thick snow cover limiting access to small mammals, voles comprised 41% of the diet. Birds, especially Willow Ptarmigan, were 32% of the diet. At nest sites in spring and summer mammals made up 96% and birds 1%, respectively.

Kertell in his Alaskan hawk-owl study of behaviour and breeding biology documented that juvenile Snowshoe (Varying) Hare and Red Squirrels comprised 20% of the biomass and Cricetidae 74% (includes most of the mice and voles) made up 74%.⁴

Mean body weights are: Willow Ptarmigan 550 g, juvenile hares 325 g, Red Squirrel 160 g and Cricetidae 23 - 34 g. With a Hawk-Owl mean body weight of 295 g, this observation indicates that hawk-owls can take relatively large non-dangerous prey almost double their weight.⁵

A predator, possibly raising young and trying to survive harsh weather, must utilize available prey. That is exactly what the Halliday Lake hawk-owl was doing. The 32-cm snow pack (decreasing its access to small mammals), cold temperatures and general scarcity of prey animals above the snow were all the incentives the little diurnal hunter needed to pounce when it saw the large Spruce Grouse walking through the snow.

In spring and early summer the hawk-owl switches to what is then available, easy to catch and to carry to its nest,

such as voles, squirrels, juvenile hares and small birds.

The winter sighting at Halliday Lake might not be unusual, since a check of Christmas Bird Counts in America and Birds (National Audubon Society) showed sporadic hawk-owl sightings at similar latitudes to Halliday Lake. Anchorage, Alaska (61°00'N 149°51'W), in 1985, one; Matanuska Valley, Alaska (61°36'N 149°15'W) in 1986 and 1987, one each year; Marsh Lake, Yukon Territory (60°30'N 134°30'W), in 1985, one.

Acknowledgements

This observation was made during a caribou winter range study, funded by the Canadian Wildlife Service and the Department of Indian and Northern Affairs, Canada. D.C. Thomas, G. Holm and U. Banasch edited this paper.

¹ AUDUBON, J.J. 1967 (1981 Edition). The birds of America 44:112-113. Dover Publ., Inc., N.Y.

² BENT, A.C. 1938 (1961 Edition). The histories of North American birds of prey. Bull. 170, U.S. National Mus. 375-384. Dover Publ., Inc., N.Y.

³ HUHTALA, K., E. KORPINAKI, and J. PULLAINEN. 1987. Foraging activity and growth of nestlings in the hawk-owl: alternative strategies under northern conditions. Biology and conservation of Northern Forest Owls Symposium Proc, Feb. 1987: 152-156.

⁴ KERTELL, K. 1986. Reproductive biology of Northern Hawk Owls in Denali National Park, Alaska. *Raptor Research* 20:91-101.

⁵ MIKKOLA, H. 1972. Hawk Owls and their prey in northern Europe. *British Birds* 65:453-460.

⁶ NATIONAL AUDUBON SOCIETY 1987. Am. Birds 35(4), 36(4), 38(4), 39(4), 40(4). Christmas bird counts.