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SNOWY OWL PREDATION ON SHORT-EARED OWLS

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A problem confronting Snowy Owls (*Nyctea scandiaca*) in their southern incursions is the shortage of food. This difficulty is raised by the presence of other raptors that feed on small mammals. This note shows how little food is found by migrant Snowy Owls and indicates a complex temporary ecological solution.

At Tatoosh Island, Washington (48°24'N, 124° 44'W) on 25 November 1973, we observed a Snowy Owl near a cache of three dead Short-eared Owls (*Asio flammeus*). The latter appeared to have been killed and partially consumed. Their dorsal feathers had been ruffled, there were small wounds in the head, the pectoral musculature of two individuals had been eaten, and three of the six eyes devoured. We first saw the Snowy Owl when it was perched within 20 m of its alleged prey midden, during a time of severe food shortage for these large owls. In all, five Snowy Owls inhabited this small (6.5-ha) island. Of these, one was subsequently found dead, one was hand-caught by U.S. Coast Guard personnel, and the remaining three disappeared within 10 days. Total residence time of the owls on the island was less than three weeks, a further indication that this was unsuitable long-term habitat. The owls presumably left for the mainland, a distance of less than one mile.

The island vegetation consisted almost entirely of thicket, primarily salal (*Gaultheria shallon*) and salmonberry (*Rubus spectabilis*). There were only seven small trees on the island. No non-domestic mammals exist there, and the condition of the dead owls makes unlikely the implication of domestic cats. Other raptors, especially Bald Eagles (*Haliaeetus leucocephalus*), occasionally visited the island. The circumstances strongly suggest, however, that the Snowy Owl had killed the Short-eared Owls. W. S. Brooks (Notes on birds from East Siberia and arctic Alaska 1915, *in* A. C. Bent, Life histories of North American birds of prey, Part 2, U.S. Natl. Mus. Bull. 170, 1938) previously reported Snowy Owls eating Short-eared Owls which he had trapped.

Migrating Snowy Owls in the normal range of Short-eared Owls take similar prey items. Both species feed, perhaps preferentially, on small rodents (not known to occur on Tatoosh) and will also take small birds. The Snowy Owl has a broader diet and it appears to be more opportunistic (for instance, it has been known to eat fish and offal), especially during migration (A. K. Fisher, U.S. Dept. Agric. Bull. 3: 1–210, 1893). When a large raptor kills and feeds upon smaller raptors of the same trophic level, as has been often reported in the literature, the larger raptor in the process of procuring food also annihilates a potential competitor. We emphasize, however, that our data are too circumstantial to allow an evaluation of the importance of this benefit.

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EFFECTS OF MOLTING ON DUSTBATHING IN JAPANESE QUAIL (*COTURNIX COTURNIX JAPONICA*)

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Dustbathing has been proposed as a mechanism for eliminating ectoparasites from the plumage (Edminster 1947). Recently it has been suggested that dustbathing serves as a regulatory mechanism by which an optimum amount of oil is maintained on the feathers. When the amount of oil increases over some critical level, the bird dustbathes (Borchelt et al. 1973, Borchelt and Duncan 1974, Borchelt 1975). It has also been proposed that dustbathing is a method of applying heat to rapidly molting feather tracts that are not easily exposed to sunlight (Potter and Hauser 1974). To test this latter hypothesis, we induced molt in Japanese Quail (*Coturnix coturnix japonica*) and observed pre-molt and molt dusting behavior.

Four male and six female Japanese Quail were raised from chicks and kept in group cages. From 2–12 weeks of age, the chicks were intermittently provided with dusting material (dry sand). At 12 weeks of age each bird was placed in an individual wire cage (24 × 38 × 36 cm) with a metal tray floor. The sand was presented to the birds by filling the metal