

THE SUBSPECIES OF THE NORTHERN SAW-WHET OWL ON THE QUEEN CHARLOTTE ISLANDS: AN ISLAND ENDEMIC AND A NONBREEDING VISITANT

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Two strongly differentiated subspecies of the Northern Saw-whet Owl (*Aegolius acadicus*) are recognized by the American Ornithologists' Union (1957), *A. a. brooksi*, restricted to the Queen Charlotte Islands (known also as Haida Gwaii), British Columbia, and nominate *acadicus*, widespread elsewhere in North America.

I examined specimen and photographic records of the subspecies of the Northern Saw-whet Owl from the Queen Charlotte Islands and nearby British Columbia and Alaska to determine the extent of the range of *brooksi* and determine the seasonal distribution of nominate *acadicus* on the Queen Charlotte Islands. Records of *acadicus* on the Queen Charlotte Islands have not been compiled, and the inter-island distribution of *brooksi* has not been ascertained. Godfrey (1986:328) stated that Northern Saw-whet Owls (presumably *brooksi*) occur in "the northern Queen Charlotte Islands," but the entire archipelago was shaded on his range map. Cowan (1989) stated that *brooksi* is found only on Graham and Moresby islands, the two largest islands of the archipelago.

The Queen Charlotte Islands comprise the most isolated archipelago off the Pacific coast of Canada. The islands are separated from the mainland of British Columbia by about 80 km and from the nearest Alaska islands, Forrester and Dall, by about 70 km and 50 km, respectively. The isolation of the Queen Charlotte Islands is reflected in their being the home of several endemic subspecies, some strongly differentiated. Seven have been described so far: in addition to *A. a. brooksi*, *Picoides villosus picoideus* (Osgood, 1901) (Hairy Woodpecker), *Cyanocitta stelleri carlottae* Osgood, 1901 (Steller's Jay), *Certhia familiaris stewarti* Webster, 1986 (Brown Creeper), *Catharus ustulatus phillipsi* Ramos, 1991 (Swainson's Thrush), *Ixoreus naevius carlotte* (Phillips, 1991) (Varied Thrush), and *Pinicola enucleator carlottae* Brooks, 1922 (Pine Grosbeak). Individuals of some of these disperse or migrate to a greater or lesser extent to the mainland in the winter. Several other distinctive subspecies occur on the islands as well as elsewhere in the humid Pacific Northwest.

TREATMENT OF RECORDS

I sought specimens through correspondence with many museums in North America and England (see Acknowledgments). I assembled 217 specimens: 90 were from the Queen Charlotte Islands (84 of *brooksi*, 6 of *acadicus*) and 127 were reference specimens of nominate *acadicus* taken in Alaska and elsewhere in British Columbia. Documentation of breeding of nominate *acadicus* in nearby Alaska is confirmed by specimens of a juvenile

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(MVZ 24409) and incubating female (USNM 241692) taken on Forrester Island. I examined all specimens except for 13 from Alaska (12 identified by D. D. Gibson, one by R. C. Banks). Three records from the Queen Charlotte Islands (two of *brooksi* that were captured and released and one privately held specimen of *acadicus*) were confirmed from photographs deposited in the Royal British Columbia Museum Photo-Duplicate File.

The subspecies are separable in the field (Figures 1 and 2), but, unfortunately, field observers have not noted the subspecies when reporting sightings, probably because they are not aware that *acadicus* occurs on the Queen Charlotte Islands in some seasons. I used sight records, therefore, only when they provided documentation of occurrence on the small islands of the archipelago. I assumed these sightings were all of *brooksi*; they were made primarily by seabird biologists between April and June when *acadicus* is not present on the Queen Charlotte Islands (see later). Sight records of Northern Saw-whet Owls in winter on the Queen Charlotte Islands (e.g., Hamel 1983), a time when *acadicus* has been recorded there, were not included.

A. a. brooksi differs strikingly from *acadicus* in its darker coloration, particularly on the breast and facial disk (Figures 1 and 2). Everywhere *acadicus* is white, *brooksi* is buff (Tawny Olive, Smithe 1975–1981). All of the browns are much deeper and richer in *brooksi* than in *acadicus*. Should *brooksi* occur off the Queen Charlotte Islands, therefore, it should be recognized readily. No intergrades between the two subspecies have been



Figure 1. Northern Saw-whet Owl (*Aegolius acadicus brooksi*) on Langara Island, Queen Charlotte Islands, British Columbia, 5 April 1971.

Photo by Spencer G. Sealy

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Figure 2. Northern Saw-whet Owls. From left to right, *A. a. brooksi* (CMN 14053), male, Masset, Queen Charlotte Islands, 5 July 1919; *A. a. brooksi* (QCIM 8.1), male, 15 km south of Tlell, Queen Charlotte Islands, December 1978; *A. a. acadicus* (RBCM 15015), male, Peachland, British Columbia, 7 November 1952; *A. a. acadicus* (RBCM 13014), male, Merville, British Columbia, 6 November 1953.

identified. Females are larger than males in both subspecies, and the subspecies are about the same size (Cannings 1993).

STATUS ON THE QUEEN CHARLOTTE ISLANDS

Graham and Moresby Islands

I examined 84 specimens of *brooksi* and two photographs (RBCM Photos 1208, 1209) of live *brooksi* from the Queen Charlotte Islands. All but one of these records are from Graham and Moresby islands. Most individuals in basic plumage were taken from September to March, whereas those in juvenal plumage were collected between late June and September (Figure 3). The subspecies *brooksi* was named and described by Fleming (1916) on the basis of three adult females and one juvenile, all taken in 1915 on Graham Island. No specimens have been taken off the Queen Charlotte Islands. All subsequent specimens of this subspecies taken since 1915 were collected on the two largest islands, Graham and Moresby. This is not surprising because most of the human population on the islands is centered

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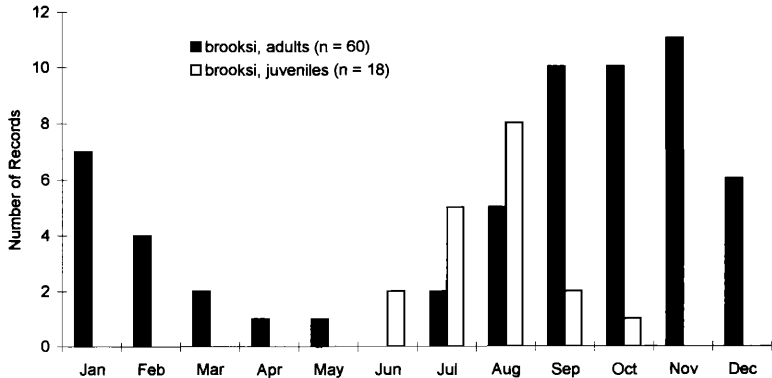


Figure 3. Monthly distribution of dates of specimens and photographs of Northern Saw-whet Owls (*A. a. brooksi*) taken on the Queen Charlotte Islands. Three newly fledged juveniles taken by Patch (1922) from each of two broods on 5 and 21 July 1919 are considered as single records.

there, so specimens are more likely to be salvaged there, and the early efforts by ornithologists to collect Saw-whet Owls were concentrated on these two islands. Records from some of the smaller islands have been made since 1965 and are predominantly sightings made during censuses and studies of nesting Ancient Murrelets (*Synthliboramphus antiquus*).

In addition, five specimens (2 females, 3 males, all first-year) and one photograph (RBCM Photo 1207) of nominate *acadicus* have been obtained on Graham or Moresby island. One of these, ironically, is the first specimen of a Northern Saw-whet Owl from the Queen Charlotte Islands, a male taken on 12 December 1896 (not 19 December, see Deignan 1961) at Masset by Rev. J. H. Keen. On the basis of this single (type) specimen (USNM 168171), Osgood (1901) described a new subspecies, *scotaea*. Ridgway (1914) and subsequent authors treated *scotaea* as a synonym of nominate *acadicus*; it remained for Fleming (1916) to describe the endemic subspecies correctly.

The five other records of *acadicus* from the Queen Charlotte Islands fall between 12 October and 11 January: male (AMNH 754293), 11 January 1915; unsexed (RBCM Photo 1207), January 1965, Sandspit; male (UMZM 959), 10 November 1978, Sandspit; female (QCIM 60), December 1979; and female (QCIM B-190), 12 October 1984, Tlell. The period in which these specimens were collected is outside the breeding season of both *brooksi* and *acadicus* by several weeks, judging from the dates of records of juveniles (Figure 3). Therefore, mainland Saw-whet Owls occasionally reach the Queen Charlotte Islands during post-breeding movements or migration (Brooks and Swarth 1925). Specimens collected on the Bering Sea islands of St. Lawrence and St. Paul in October and November (Kessel and Gibson 1978) demonstrate even more extreme vagrancy of this subspecies.

Vagrant Northern Saw-whet Owls are known to cross wide expanses of open ocean elsewhere (e.g. Sladen 1966, DeSante and Ainley 1980, Soucy

1982, Amos 1991). Stable-isotope analysis of tissues derived from 16 specimens of *brooksi* and two of *acadicus* from the Queen Charlotte Islands revealed that the diet of *acadicus* showed little marine protein compared with that of *brooksi*. These results suggest that individuals of *acadicus* do not remain long on the islands (Hobson and Sealy 1991). The origin of individuals of *acadicus* on the Queen Charlotte Islands should not be assumed to be from nearby source populations (see DeSante and Ainley 1980).

Small Islands

Northern Saw-whet Owls, assumed to be *brooksi*, have been seen or mist-netted on four small islands and one island group of the Queen Charlotte Islands, from Langara Island in the north to Kunghit Island in the south (Figure 4). I could not locate one specimen taken on Langara Island (Campbell 1969). These records add the following islands to the species' known range on the Queen Charlotte Islands: Limestone, Reef, Lyell, and Kunghit. Additional investigations likely will reveal Saw-whet Owls on other islands of the archipelago as well.

Langara Island.—Noting that the call notes of *brooksi* are quite different from those of *acadicus*, Darcus (1930) stated that in 1927 he saw *brooksi* by day in the dense woods on Langara and Graham islands and heard it at night. Campbell (1969) considered Saw-whet Owls to be common on the grassy meadows at Dadens, and his party collected one specimen of *brooksi*. During the early morning of 5 April 1971, I mist-netted and photographed an individual of *brooksi* along the upper beach of Beal Cove (RBCM Photo 1209, Figure 1).

Limestone islands and Reef Island.—Gaston (1992, pers. comm.) made numerous references to Saw-whet Owls taking Ancient Murrelet chicks during their passage from their burrows to the sea. On 31 May 1996, R. Wayne Campbell and a group of naturalists watched one Saw-whet Owl pick up and fly away with a downy murrelet and observed a second owl eating a murrelet chick.

Lyell Island.—Blood et al. (1979) heard Saw-whet Owls at two sites, mist-netted one individual, and observed them hunting Ancient Murrelet chicks at Dodge Point. Between 20 April and 20 May 1982, Rodway et al. (1988) heard single Saw-whet Owls calling at night, one around their camp on a small peninsula west of Dodge Point, and one in the Ancient Murrelet colony at Dodge Point.

Kunghit Island.—On 27 November 1980, Mary Morris (pers. comm.) startled a sleeping Saw-whet Owl on the lower branches of a spruce tree about 1.5 m above the ground.

A. a. brooksi is unrecorded as a vagrant on the mainland. The breadth of prey used by this population (Sealy, unpubl. data), which includes considerable marine-derived food taken during the nonbreeding season (Hobson and Sealy 1991), possibly provides a stable food supply for these owls and, hence, individuals are not forced to leave the islands (see Korpimäki 1986). Individuals of *brooksi*, however, possibly move to the coastlines of the large islands (see Hobson and Sealy 1991) during the nonbreeding season as most specimens were collected or found dead

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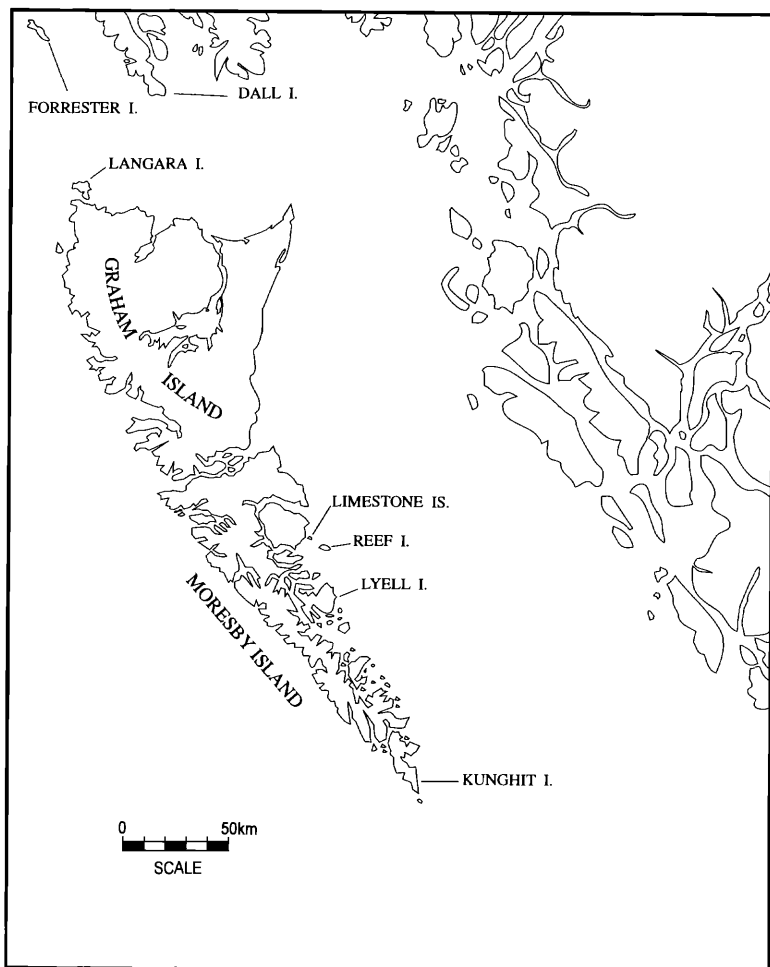


Figure 4. The Queen Charlotte Islands, showing Graham and Moresby islands and the four small islands and one island group on which Saw-whet Owls have been recorded.

along the coastal highway then, when such movements likely occur. Nesting is somewhat later on the Queen Charlotte Islands than in south-eastern Alaska and on the mainland of British Columbia, with juveniles occurring into October rather than only to September.

SUMMARY

There are two field-identifiable subspecies of the Northern Saw-whet Owl, *Aegolius acadicus acadicus*, widespread on the mainland, and the strikingly

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darker *A. a. brooksi*, endemic to the Queen Charlotte Islands, British Columbia. The endemic subspecies occurs on some small islands as well as the two large ones, Graham and Moresby, but not off the Queen Charlotte Islands. It feeds heavily on intertidal invertebrates and Ancient Murrelet chicks. Juveniles of *brooksi* were taken into October rather than only to September, as in *acadicus* in nearby Alaska and mainland British Columbia. Examination of 90 specimens and two photographs of live Saw-whet Owls from the Queen Charlotte Islands revealed six records of vagrant *acadicus* from 12 October to 11 January.

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