TABLE 2
FREQUENCIES OF HOMING BY AUDUBON'S SHEARWATERS AND MANX SHEARWATERS IN RELATION TO STAGE OF BREEDING

		Night of return		
	Number[1]	1–2	3–4	5–10
Manx, early[2]	50	0.160	0.110	0.017
Audubon's, Little Tobago	16	0.063	0.125	0.071
Manx, late[2]	50	0.040	0.070	0.077
Audubon's Los Roques	17	0.059	0.118	0.024

[1] The numbers of Audubon's are for first releases more than 100 km from home and exclude 6 birds that lost egg or chick or could not be extracted from deep crevices (as well as 2 birds released for the second time).
[2] The figures for Manx are calculated from the percentages given in Table 7 of Matthews (ibid.) for the first sorties of birds that later returned from at least one additional release.

Guadeloupe; one returned from Barbados on the first night (i.e. better than 10 km/hour), the other did not get back from Antigua before the end of checking on the 5th night. Overall, the late Audubon's from Los Roques performed better than the late Manx, although those released inland (at Anaco) did least well of all the releases. Any further work on Audubon's Shearwaters at these sites must take account of the two impediments of (unexplained) egg loss and the inaccessibility of some of the nesting crevices.

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The Skylark in Washington.—Skylarks (*Alauda arvensis*) were introduced to the Pacific Northwest in 1902 or 1903 when about 100 birds were released on Vancouver Island's Saanich Peninsula north of Victoria, British Columbia (Sprot 1937, Godfrey 1966). An additional 49 birds were released in the same vicinity about 10 years later (Scheffer 1935, Godfrey 1966). The species had become established by the mid-1930s when Grinnell (1936) reported finding 40 birds on an abandoned airfield north of the city. Sprot (1937) estimated the population as 219 Skylarks where he found the birds most commonly in farm fields in the fall of 1936. Scheffer (1955) noted that Skylarks were common in appropriate habitats adjacent to Victoria, and he stated that the population apparently had not fluctuated over the preceding years. Godfrey (1966) reported an estimate of about 1,000 individuals present on Saanich Peninsula in March 1962.

The Saanich Peninsula lies about 18 km west of San Juan Island, Washington (see Figure 1) where the species was first reported by Bruce (1961) and then by Wahl and Wilson (1971) who reported locating two nests in the meadows bordering the island's south coast. We collected two adult male Skylarks on 15 and 17 March 1972, 9 km south of Friday Harbor, Washington in San Juan Island National Historical Park, some 500 m southeast of Pickett's Redoubt in the American Camp Unit. These specimens are in the National Museum of Natural History (NMNH

Nos. 566507, 566508) and represent the first specimens of the species taken in the state of Washington.

In addition to the birds collected, we counted 27 males displaying over the fields south and east of the redoubt. Wahl and Wilson (1971) estimated about 12 pairs present there in the spring of 1970. We counted 63 individuals during a census in August 1973 in the fields comprising the southern half (250 ha) of the 518-ha American Camp Unit. We recorded two individuals about 500 m from the unit's western boundary, but our surveys in the comparable habitats elsewhere on the island have not yet revealed the species outside the locale of the American Camp Unit.

We found that displaying activities begin in late January and continue into June with the greatest intensity occurring during March and April. The birds display throughout the day in all kinds of weather except during the occasional gale force winds that buffet the island. Small groups of larks can be flushed from the fields at any season.

The island's present Skylark population appears largely confined to the vicinity of the National Park's American Camp Unit where it inhabits the "moss-moor" fields typical of habitats densely populated by the European rabbit *Oryctolagus cuniculus*, a resident mammal introduced to the island in the mid-19th century. The moss-moor community is a stabilized vegetal association apparently caused by the rabbit's foraging activities; urine deposition induces changes in the plant species composition during periods of high rabbit populaton densities (Thomas 1946). The moss-moor meadows of the American Camp Unit are characterized

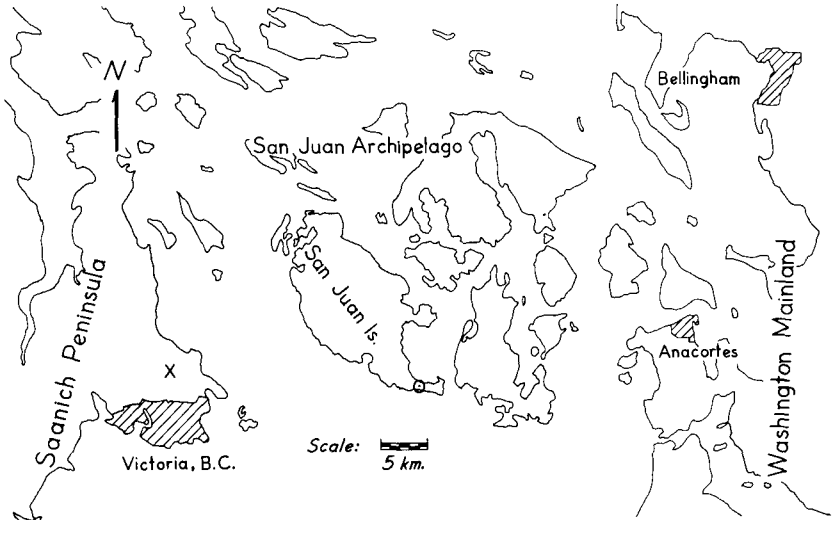

Figure 1. Map of the San Juan Archipelago, Washington. X indicates approximate locality of Skylark population on Saanich Peninsula. Circle with dot shows location of Skylark population on San Juan Island where specimens were collected.

by the dominant presence of mosses (*Polytrichum* sp.), grasses (*Festuca bromoides* and *Aira caryophyllea*) with small stands of thistles (*Cirsium* sp.), bracken fern (*Pteridium aquilinum*), and the nettle (*Urtica disca*). Isolated patches of wild rose (*Rosa nutkana*) and snowberry (*Symphoricarpos albus*) may be found at the field perimeters. The predominant native breeding birds found in these fields are Savannah Sparrows (*Passerculus sandwichensis*), Vesper Sparrows (*Pooecetes gramineus*), Western Meadowlarks (*Sturnella neglecta*), and Brewer's Blackbirds (*Euphagus cyanocephalus*). In addition the rabbit population attracts wintering concentrations of Bald Eagles (*Haliaeetus leucocephalus*), Golden Eagles (*Aquila chrysaetos*), Red-tailed Hawks (*Buteo jamaicensis*), and an occasional Rough-legged Hawk (*Buteo lagopus*) or Marsh Hawk (*Circus cyaneus*). Red-tailed Hawks, Bald Eagles, Cooper's Hawks (*Accipiter cooperii*), and Great Horned Owls (*Bubo viginianus*) are resident breeding raptors. An overview of this tract gives one the impression of a short-grass prairie with rabbit warrens instead of prairie dog towns dotting the landscape.

We consider that Skylarks are now established permanent residents of San Juan Island, Washington, having emigrated from the introduced populations on nearby Saanich Peninsula. The spread of these birds from San Juan Island to adjacent islands in the archipelago is probable since a number of those islands have comparable farm and grasslands, and they lie north and east of San Juan in the path of the prevailing winds (Figure 1). Should Skylarks subsequently reach the mainland (33 km east of San Juan Island) they could become potential agricultural pests as Deignan (1934) reported happening in New Zealand where the species was also introduced. Thorough investigations in appropriate farm and grassland habitats of other large islands in the San Juan Archipelago may reveal that Skylarks are already present.

We wish to thank C. R. Stoddard, Superintendent, San Juan Island National Historical Park, Friday Harbor, Washington, for granting us permission to collect specimens in the Park. These observations were made while conducting studies of the introduced rabbit under contract from the U. S. National Park Service, Pacific Northwest Region, to the University of Washington (Contract No. CX-9000-0098).

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Human incursion and nesting sites of the Belted Kingfisher.—In North America the Belted Kingfisher (*Megaceryle alcyon*) is typically regarded as a bird of river and stream courses as well as pond and lake edges. Nesting sites are usually in mud or sand banks caused by water erosion, but in north central Minnesota, a unique situation prevails.

Itasca State Park, at the headwaters of the Mississippi River, and the surrounding region are dominated by a rough and uneven terrain left by Pleistocene glaciation. The park, established in the late 1890s, is characterized by mature pine, spruce, and maple-basswood forests, and hundreds of lakes and ponds dominate the landscape. Natural nesting habitat for the Belted Kingfisher is limited, but the plentiful waters should assure the species an ample food supply.

A current study being conducted on aspects of the breeding biology of the Belted Kingfisher has shown that the species does, in fact, breed in the Itasca region. During the breeding seasons of 1970, 1972, and 1973, 25 nests were found, 84% of them in habitats that are the result of human incursion (Table 1).

Bent (1940, U.S. Natl. Mus. Bull. 176: 111), Roberts (1932, The birds of Minnesota, vol. 1, Minneapolis, Univ. Minnesota Press, pp. 657–661), and Cornwell (1963, Condor 65: 426) have reported that kingfishers prefer an exposed soil surface devoid of vegetation for nesting. My experiences support their findings. Only 16% of the nests in this study were on natural slopes, and these were excavated in mud slides formed by beaver (*Castor canadensis*). Of nine nests Cornwell (ibid.) studied in the Itasca region, only one was in a natural site.

Such observations suggest that the breeding population of Belted Kingfishers in the Itasca region would be limited by features of the natural terrain, but human incursion creates an artificial situation that supports the current population. Nesting sites that formerly supported breeding kingfishers for several years have recently been vacated. Erosion often transforms vertical embankments into talus slopes covered by sod and woody shrubs. The future of the breeding population of Belted Kingfishers

TABLE 1
BELTED KINGFISHER NESTING SITES IN THE ITASCA REGION, MINNESOTA

Year	Gravel pits and sanitary land fills	Roadcuts	Natural sites	Total
1970	3	2	2	7
1972	6	1	1	8
1973	4	5	1	10
E total	13	8	4	25
E %	52	32	16	100