

WESTERN BIRDS



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BIRDS OF THE SHUMAGIN ISLANDS, ALASKA

ROBERT H. DAY, ABR, Inc.—Environmental Research & Services, P.O. Box 80410, Fairbanks, Alaska 99708-0410 (current address: 6303 SW Shady Side Avenue, Bentonville, Arkansas 72713–5186); rhday52@gmail.com

G. VERNON BYRD and EDGAR P. BAILEY*, Alaska Maritime National Wildlife Refuge, 2355 Kachemak Bay Drive, Suite 101, Homer, Alaska 996038021 (current address of Byrd: 1505 Lincoln Drive, Homer, Alaska 99603); byrdv2@gmail.com

ABSTRACT: We studied birds in the Shumagin Islands in 18 of the 37 years from 1970 to 2006 and synthesized all available information on birds of this area. A total of 126 forms of 125 species, including hypothetical species, has been recorded in the Shumagins, of which aquatic birds constitute 67% and terrestrial birds 33%. Overall, 52% of all forms breed, probably breed, or formerly bred; of these, aquatic birds represent 57% and terrestrial birds 43%. The avifauna is heavily weighted toward Nearctic (39% of all forms) and Beringian (32%) forms, followed by Holarctic (21%), Palearctic (6%), and Oceanian (2%) forms; breeding taxa are even more heavily weighted toward Beringian (46%) and Nearctic (40%) forms. The Shumagins have few breeding waterfowl, other freshwater birds, and shorebirds and are not on important flyways for any of these groups, despite lying near important spring and fall staging areas on the nearby Alaska Peninsula. The seabird and terrestrial avifaunas are diverse and similar to those in nearby areas, especially the eastern Aleutians. Populations of several seabird species in the Shumagins have declined substantially over the last 40 years. Two terrestrial species, the Pacific Wren (*Troglodytes pacificus*) and Pine Grosbeak (*Pinicola enucleator*), have expanded their breeding ranges into this area, and breeding distributions of some terrestrial birds in the outer Shumagins appear to be changing. Changes in range or breeding status have been caused, at least in part, by predation by introduced foxes, overgrazing by introduced cattle degrading already limited habitat, and the introduction of ground squirrels.

The Shumagin Islands (Figure 1) represent an important early part of Alaska ornithology: bird records date as far back as the voyage of Vitus Bering in 1741 and 1742, when Georg Wilhelm Steller recorded a list of birds at Nagai Island on 30 and 31 August 1741 (Golder 1925). The islands got their name from *St. Peter* crewman Nikita Shumagin, who died there. This archipelago lies between the heath-covered islands of the Aleutians and the shrub zone of the Alaska Peninsula and southern Kodiak Island; as a result, these islands are characterized by an interesting mixture of heath and shrub habitats and their

* Deceased.

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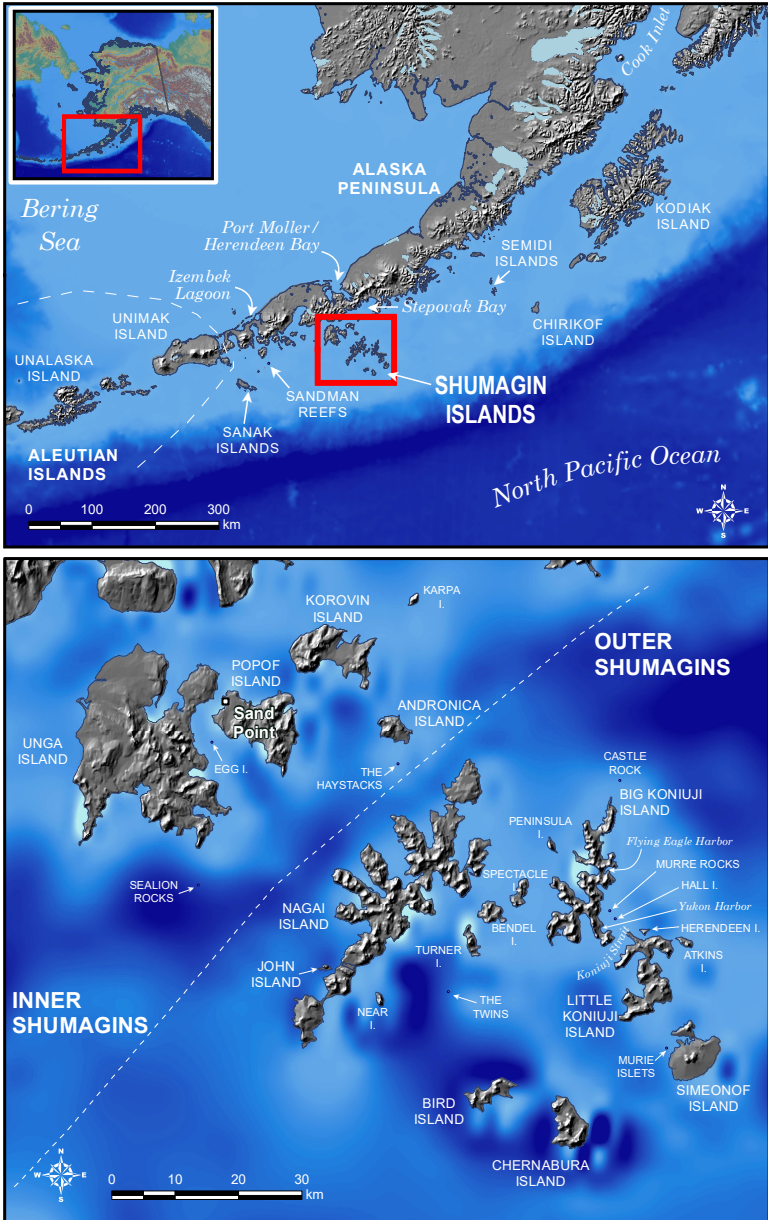


FIGURE 1. The Shumagin Islands, Alaska, and nearby areas.

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associated avifaunas. In addition, their position at or near the limits of the east-west distribution of some nesting alcids and at or near the southwestern limit of shrub-nesting passerines is of biogeographic interest.

Much of the historic information about birds in this region is fragmentary and based on short visits, usually to communities on Unga and Popof islands, by ornithologists associated with expeditions that stopped briefly while en route to other places in Alaska (Dall 1873, Bean 1882, Turner 1886, Seale 1898, Burroughs 1901, Chapman 1902, Keeler 1910, Wetmore 1911, Jaques 1930, Gabrielson 1944a, b, 1946; F. L. Beals field notes; also many museum specimens collected by C. H. Townsend from the 1880s to the 1910s). Since the 1970s, however, the frequency of bird observations has increased because most of these islands are now within the Alaska Maritime National Wildlife Refuge (AMNWR). We recorded data on the avifauna of the Shumagins during 18 years between 1970 and 2006, primarily while studying seabirds and eradicating introduced arctic and red foxes (*Vulpes lagopus* and *V. vulpes*, respectively) to allow native bird populations to recover. Here, we pool our data with scattered published and unpublished information to summarize what currently is known about this ornithologically interesting area.

STUDY AREA

Lying south of the Alaska Peninsula near its tip and separated by Unga Strait, which is ~15 km wide at its narrowest point, the Shumagin Islands comprise some 35 islands and named islets and nearby continental shelf (Figure 1). These islands range in size from Unga, the largest (~442 km²) and westernmost, to many islets <100 m long. Small parts of Unga and Popof and nearly all of the other islands are part of the AMNWR, which is administered by the U.S. Fish and Wildlife Service (USFWS). The remainder is privately owned, primarily by local Native corporations and individuals. Sand Point on Popof is the islands' only community currently inhabited; Unga village was occupied until 1969. We divide the archipelago into two main parts: the inner Shumagins (Unga, Popof, Korovin, Karpa, and Andronica islands, the Haystacks, and several small islands, islets, and rocks) and the outer Shumagins (Nagai, Big and Little Koniuji, Simeonof, Bird, and Chernabura islands and many small islands, islets, and rocks). The Koniuji group of the outer Shumagins, a site of intensive seabird studies, includes Castle Rock, Big and Little Koniuji, Herendeen, Atkins, and Hall islands and Murre Rocks.

The archipelago is complex geologically (Burk 1965). The inner Shumagins are a mixture of volcanic flows, breccias, conglomerates, sandstones, and geological oddities such as both petrified wood and gold/silver deposits on Unga. The outer Shumagins from Nagai to western Big Koniuji consist largely of metamorphic flysch, slate, and graywacke, which do not weather to form ledges and talus slopes suitable for nesting seabirds. Two outcrops on Nagai, most of Big Koniuji, and the remaining islands of the outer Shumagins are composed of granodiorite, a granitic rock that does provide ledges, crevices, and talus in which seabirds can nest. In addition, during the Pleistocene Epoch glaciers covered the outer Shumagins, especially the Koniuji group (Grantz 1963).

Ponds and other wetlands are limited except on Simeonof, which has numerous ponds and small marshes. Scattered ponds and marshes also occur

on Unga, Nagai, and Little Koniuji, and small tidal lagoons occur on Unga, Popof, Korovin, Nagai, and Big Koniuji.

The climate is cool, moist, overcast, and windy (Burk 1965). At Sand Point, the mean air temperature ranges from -0.6°C in February to 11.6°C in August and averages 4.8°C across the entire year. Mean monthly precipitation ranges from 6.1 cm in April to 16.0 cm in September and averages 9.5 cm; rain falls on average 145 days/year. Mean and maximal monthly wind speeds average 17.9 and 32.9 km/hr, respectively. The sea-surface temperature ranges from 3.3°C in March to 11.7°C in August and averages 6.9°C (USDOC 2020).

The islands' terrestrial habitat (Figure 2) is a mosaic of bare rock, lichens and mosses, grasses and herbaceous plants, shrubs, and introduced trees, a combination resulting from the effects of climate, recent glaciation, and the archipelago's distance from the Alaska Peninsula (Bailey 1978, Talbot et al. 2002, Daniëls et al. 2004). The area is naturally treeless, although a few Sitka spruces (*Picea sitchensis*) have been planted on Unga, Popof, Little Koniuji, and Simeonof. Medium to tall (up to $\sim 3\text{--}3.5$ m high) thickets of shrubs, Sitka alder (*Alnus viridis*), salmonberry (*Rubus spectabilis*), elderberry (*Sambucus racemosa*), and willow (*Salix* spp.) occur in the lowlands, primarily on the inner islands; on the outer islands shrubs are generally low (≤ 1 m) but grow to 2–2.5 m in protected areas. Other lowland vegetation consists of grasses (primarily *Leymus* and *Calamagrostis*), umbelliferous plants (primarily *Hera-cleum* and *Angelica*), and, occasionally, ferns (*Athyrium*). Above 250–300 m elevation, the vegetation is procumbent and composed of lichens, mosses, and heaths (e.g., *Empetrum*, *Vaccinium*). Offshore islets and rocks have the grass–umbellifer assemblage, and a few have small patches of shrubs.

Three to five species of terrestrial mammals are native to the Shumagins. The tundra vole (*Microtus oeconomus popofensis*) occurs only on the inner Shumagins, on Unga and Popof (Murie 1959, MacDonald and Cook 2009), Henderson (Bailey and McCargo 1984), and possibly Andronica (Fay and Sease 1985). The dusky shrew (*Sorex monticola*) occurs on Unga, Popof, and probably all of the medium-sized and large islands in the outer Shumagins (Murie 1959, Kenyon 1964, Sowl 1973, Bailey 1978, Byrd 2001, MacDonald and Cook 2009; Day pers. obs.). The North American river otter (*Lontra canadensis*) probably occurs throughout the archipelago (Bailey 1978, 1985, 1993a, 1994, Bailey and McCargo 1984, Byrd 2001, MacDonald and Cook 2009). The arctic ground squirrel (*Urocitellus parryii*) might have been native on some of the islands, both inner and outer (see Golder 1925, Eddingsaas et al. 2004) but is believed to have been introduced throughout the outer islands as food for foxes (Bailey 1993b). Currently, ground squirrels occur on Karpa and on nearly all larger islands in the outer Shumagins (Murie 1959, Kenyon 1964, Sowl 1973, Bailey 1978, 1993b, Byrd 2001; Day pers. obs.). The red fox was introduced to several islands but currently occurs only on Unga, where it is probably native (Bailey 1993b). Surprisingly, the brown bear (*Ursus arctos*), an excellent swimmer, does not appear to occur here.

Introduced terrestrial mammals include the two species of foxes, domestic cattle (*Bos taurus*), American bison (*Bison bison*), and house mouse (*Mus musculus*; Murie 1959, Bailey 1993b, 1994, MacDonald and Cook 2009). The arctic fox was introduced to ≥ 10 islands but disappeared naturally from all except Little Koniuji, Chernabura, and Simeonof, from which it was eradi-

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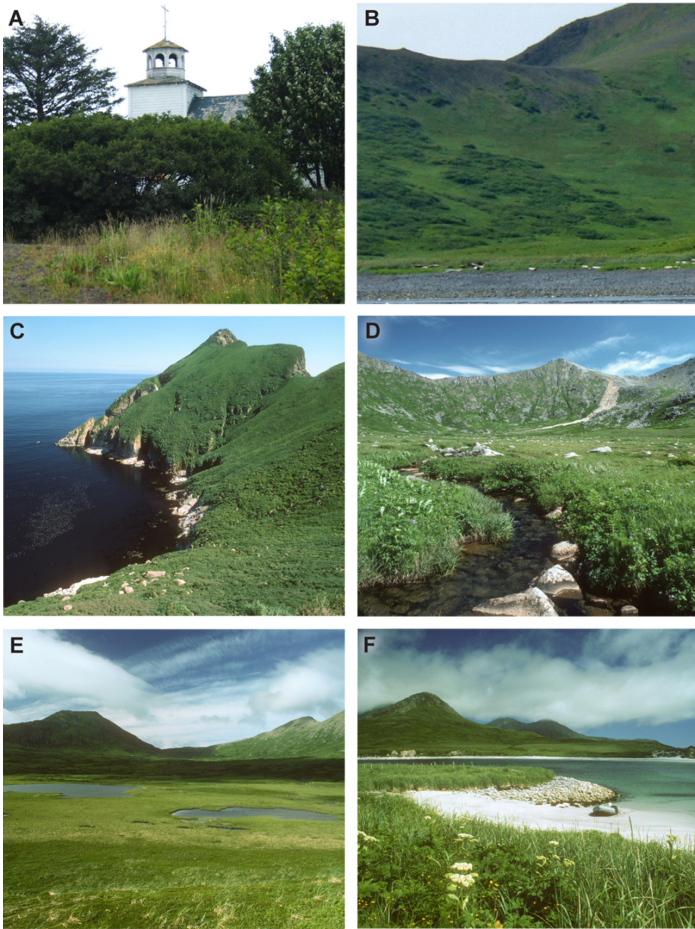


FIGURE 2. Main vegetation types of the Shumagin Islands, Alaska. (A) tall alder shrubs and introduced Sitka spruces at Sand Point, Popof I.; (B) grasslands and willow/alder shrub thickets ~2 m high, Bendel I.; (C) grass/umbellifer community and sea cliffs, Castle Rock; (D) upland heaths and unvegetated alpine areas, Big Koniuji I.; (E) ponds and marshes, Little Koniuji I.; (F) cobble and sand beaches, Little Koniuji I.

Photos by J. C. Williams, USFWS (A–B), and R. H. Day (C–F)

cated by the mid-1990s (Byrd et al. 1997; Jeffrey C. Williams pers. comm.). Domestic cattle were removed from Simeonof and Chernabura in 1985 and 1986, when a few were moved to Unga for subsistence use (Bailey 1994, Schroeder 1994, Roof and Porter 2014). Bison were transplanted to Popof in 1954 and currently live on the eastern, uninhabited portion of the island (Fall et al. 1993). Bailey (1994) reported the house mouse near the ranch house on Simeonof, inferring it escaped ashore in cargo from vessels supporting the

cattle ranch or from a shipwreck. Trapping there in 2001, however, did not catch any (Byrd 2001), so the mouse's current status is unknown.

Two species of pinnipeds breed in the Shumagins, the Steller's sea lion (*Eumetopias jubatus*) and harbor seal (*Phoca vitulina*), as well as the sea otter (*Enhydra lutris*). Other marine mammals occurring there include the common minke whale (*Balaenoptera acutorostrata*), humpback whale (*Megaptera novaeangliae*), killer whale (*Orcinus orca*), and harbor porpoise (*Phocoena phocoena*).

METHODS

We worked in and near the Shumagins in parts of 18 years: 1970, 1972–1973, 1976–1977, 1982, 1984–1988, 1990, 1993–1995, 1997, 2001, and 2006. Here we summarize the resulting information contained in both cited reports and unpublished field notes. We also summarize unpublished information from Alexander Wetmore in 1911 (Wetmore 1911), Frank L. Beals from 1941 to 1944 (field notes), Ira N. Gabrielson in 1946 (Gabrielson 1946), William L. Troyer in 1968 (Troyer 1968), David I. Eisenhower in 1973, Daniel D. Gibson in 1972, 1974, and 1995, Richard A. MacIntosh from 1973 to 1975, John E. Sarvis and Christian P. Dau in 1982, Kenneth Rose in 1983, Scott A. Hatch in 1995, William Stahl in 1995, Christopher Hoffman in February and March 2000, January 2001, and February and March 2002 (Hoffman 2000a, b, 2001, 2002a, b; for brevity, we use “Hoffman” and “winter 2000–2002” to refer to these five reports collectively), Andrew Maccormick in 2002 (Maccormick 2002), Byrd and Jeffrey C. Williams in 2006 (Byrd and Williams 2006), Nora A. Rojek and J. C. Williams in 2010 (Rojek and Williams 2010), and Brie Drummond in 2021 (Drummond 2021). We also incorporate data from Andrew Gronholdt, a resident of Sand Point for many decades, and unpublished surveys of several islands in 2011 (AMNWR unpubl. data). Some seabird-colony data are from the USFWS's North Pacific Seabird Colony Register (USFWS 2020), with the rest from reports and other sources cited in text. Before the 1970s, most effort focused on the inner Shumagins, whereas since the 1970s most has focused on the outer Shumagins. Overall, roughly 60–70% of the effort was in summer, so temporal coverage is better during the breeding season than at other seasons. The detailed summaries of the avifaunas of the north-central Alaska Peninsula (Herendeen Bay, Port Moller, and, especially, Nelson Lagoon) by Gill et al. (1981) and of the Aleutian Islands by Gibson and Byrd (2007) provide essential perspective for the data we report.

RESULTS

Conventions Used in Species Accounts

Subspecies follow Gibson and Withrow (2015), and, for species occurring annually, abundance categories follow Gibson and Byrd (2007): rare, uncommon, fairly common, common, abundant. Following DeCicco et al. (2017), we use the word “report” instead of “record” for unique or unusual sightings without specimen, photographic, or clearly descriptive documentation; these species should be considered hypothetical at this time. The primary migration

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period in the spring extends approximately from May to mid- or late June; in the fall, it extends from approximately early July to October.

Subspecific names without parentheses represent specimens identified to that level, whereas subspecies with parentheses are inferences based on zoogeography or other information (see Gibson and Byrd 2007). On the basis of data compiled at <http://www.vertnet.org/>, at least 375 specimens (skins, skeletons, whole bodies in preservative fluid, and/or eggs) from the Shumagin Islands are deposited at the following locations: American Museum of Natural History, New York, NY (AMNH); Academy of Natural Sciences of Philadelphia, Philadelphia, PA (ANSP); California Academy of Sciences, San Francisco, CA (CAS); Chicago Academy of Sciences, Chicago, IL (CHAS); Carnegie Museum of Natural History, Pittsburgh, PA (CM); Cornell University Museum of Vertebrates, Ithaca, NY (CUMV); Denver Museum of Nature and Science, Denver, CO (DMNS); Field Museum of Natural History, Chicago, IL (FMNH); Natural History Museum of Los Angeles County, Los Angeles, CA (LACM); Museum of Comparative Zoology, Harvard University, Cambridge, MA (MCZ); Museum of Vertebrate Zoology, University of California, Berkeley, CA (MVZ); James L. Slater Museum of Natural History, University of Puget Sound, Bellingham, WA (PSM); Santa Barbara Natural History Museum, Santa Barbara, CA (SBMNH); San Diego Natural History Museum, San Diego, CA (SDNHM); University of Iowa Museum of Natural History, Iowa City, IA (SUI); University of Alaska Museum of the North, Fairbanks, AK (UAM); Donald R. Dickey Bird and Mammal Collection, University of California, Los Angeles, CA (UCLA); University of Florida Museum of Natural History, Gainesville, FL (UF); University of Michigan Museum of Zoology, Ann Arbor, MI (UMMZ); U.S. National Museum of Natural History, Washington, DC (USNM); University of Washington Burke Museum, Seattle, WA (UWBM); Western Foundation of Vertebrate Zoology, Camarillo, CA (WFVZ); and Yale University Peabody Museum, New Haven, CT (YPM). In a few cases, specimens are discussed in publications, but we have been unable to locate those specimens at VertNet; we refer to those specimens as being in an unknown location.

Annotated List of Species and Subspecies

Anser canagicus. Emperor Goose. Uncommon in winter. Up to 22 birds were seen in winter 2000–2002 at Popof (C. Hoffman), where the latest record is of 7 birds 13 Apr 1973 (D. I. Eisenhauer); 143 birds were seen at Simeonof 25 Feb 1982 (J. E. Sarvis, C. P. Dau). **NOTES:** Both Murie (1959) and Sowl (1973) were told that this Beringian species winters at Simeonof, as it does throughout the Aleutian Islands and on both the Bering and Pacific sides of the Alaska Peninsula, northeast to the Kodiak archipelago (Eisenhauer and Kirkpatrick 1977, Gibson and Byrd 2007, Schmutz et al. 2020).

Branta bernicla (nigricans). Brant. Uncommon or rare in winter and spring. About 75–100 birds were seen at Sand Point 9 and 11 May 1944 (F. L. Beals), and Sowl (1973) reported that a few wintered at Simeonof. **NOTES:** This Beringian subspecies breeds in northeastern Russia and across western and northern Alaska; most Alaska birds stage in fall at Izembek Lagoon, on the Alaska Peninsula 120 km west of the Shumagins, before migrating to winter from Oregon to Mexico (Lewis et al. 2020); small numbers also winter at Izembek (Ward et al. 2009, Lewis et al. 2020).

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Branta hutchinsii (leucopareia). Cackling Goose. Uncommon in spring and fall. Flocks of 36, 26, and 40 were seen flying west past Bird Island 8–26 May 1984 (Bailey and McCargo 1984), 2 were at Simeonof 2 Jun 1994, and up to 4 stayed through the scientists' departure 24 Jun (Bailey 1994). On 16 May 1928 Jaques (1930) saw migrating to the southwest (i.e., toward the Aleutians) 3 flocks that he identified as subspecies *minima*, and Murie (1959) was told that Cackling Geese (unclear whether *leucopareia* or *minima*) occur at Simeonof in both the spring and fall. **NOTES:** Although the subspecies is unconfirmed, it is likely that these sightings represent *leucopareia*, which breeds in the Aleutians and the Semidi Islands and migrates through the Shumagins on passage to and from wintering areas in California (Byrd and Woolington 1983, Byrd 1998, Mini et al. 2011). Nevertheless, subspecies *minima*, which occurs at Izembek Lagoon in low numbers, may also occur in the Shumagins.

Cygnus columbianus (columbianus). Tundra Swan. Rare breeder; probably casual in winter. Nests have been recorded at Unga (summer 1983; K. Rose) and Simeonof (Bailey 1994, Byrd 2001), where there are large lakes. Breeding has not been confirmed elsewhere, but there are also summer records at Popof (1997; Day), Nagai (1741; Steller, *in Golder* 1925:80), Big Koniuji (Bailey 1985), Little Koniuji (Bailey 1993a), and Chernabura (Bailey 1994). Only 1 or 2 were seen at Popof in winter 2000–2002 (Hoffman). **NOTES:** This swan is a rare or uncommon breeder on the Alaska Peninsula (Dau and Sarvis 2002) and a locally common winter visitor in the easternmost Aleutians (Dau and Sarvis 2002, Gibson and Byrd 2007).

Spatula clypeata. Northern Shoveler. Casual in spring. One was seen at Simeonof 26 May 1994 (Bailey 1994). **NOTES:** This Holarctic species breeds in western Alaska (Gabrielson and Lincoln 1959) and on the Alaska Peninsula (Gill et al. 1981); it is rare or uncommon in spring and fall in the Aleutians (Gibson and Byrd 2007).

Mareca strepera. Gadwall. Uncommon breeder in the outer Shumagins. Nests in small numbers at Simeonof (1 brood 18–23 Jun 1968. W. L. Troyer; 2 nests 7 Jun 1984, Bailey and McCargo 1984; 2 nests 10 and 17 Jun 1994. Bailey 1994; 2 broods 13 Jul 2001, Byrd 2001) and possibly in the Koniuji group (1976, Day); birds assumed to be nonbreeders also summered at both locations. **NOTES:** In southwestern Alaska, this Holarctic species breeds to the tip of the Alaska Peninsula (Kessel and Gibson 1978, Gill et al. 1981) and probably is uncommon in the eastern Aleutians in the winter and spring (Gibson and Byrd 2007).

Mareca americana. American Wigeon. Casual in spring and winter. Lone pairs were seen at Big Koniuji 25 May 1985 (Bailey 1985) and Bird Island 4 Jun 1984 (Bailey). Also winters at Popof in some years (A. Gronholdt, Hoffman). **NOTES:** This Nearctic species breeds on the Alaska Peninsula (Gill et al. 1981) and occurs intermittently in the eastern Aleutians in winter (Gibson and Byrd 2007).

Anas platyrhynchos (platyrhynchos). Mallard. Uncommon breeder and resident. Nests, broods, or breeding behavior have been recorded at Popof (Gronholdt; pair believed to be breeding 14 May 1944, Beals), Simeonof (brood 20 Aug 1946, Gabrielson 1946; bird acting as if nesting Jun 1994, Bailey 1994; brood 13 Jul 2001, Byrd 2001), and probably Bendel (Bailey 1978). Birds assumed to be nonbreeders have been seen in the summer, sometimes in numbers, at Big Koniuji (Day), Little Koniuji (Bailey 1993a), Simeonof (Kenyon 1964, Byrd and Williams 2006; Troyer), and Chernabura (28 Jun 1994, Bailey). In the winter, Beals saw 2 pairs at Popof 2 Dec 1944 and indicated that this species is common at that time (Gabrielson and Lincoln 1959); Hoffman saw up to 21 birds there in winter 2000–2002. **NOTES:** Holarctic subspecies *platyrhynchos* is an uncommon to common breeder and resident on the Alaska Peninsula (Gill et al. 1981) and in the Aleutians (Gibson and Byrd 2007).

Anas acuta. Northern Pintail. Rare or uncommon in spring and summer; re-

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corded only in the outer Shumagins. Up to 8 birds were seen at Simeonof on dates ranging from 18 May (1994) to 17 Jul (1995) (Bailey 1994; Troyer, W. Stahl). **NOTES:** This Holarctic species breeds in small numbers on the Alaska Peninsula (Gill et al. 1981) and in the Aleutians (Gibson and Byrd 2007).

Anas crecca carolinensis and *A. c. crecca*. Green-winged Teal. Uncommon breeder, rare in winter; nests in the outer Shumagins. We collected no specimens and identified few birds to subspecies. Various publications (Kenyon 1964, Jones 1970, Bailey 1978, 1993a, 1994, Byrd 2001, Maccormick 2002, Byrd and Williams 2006) suggest that *carolinensis* is the breeding form and that *crecca* is a nonbreeding summer visitor. The species also winters at Popof in low numbers (Hoffman). **NOTES:** Nearctic *carolinensis* breeds commonly on the Alaska Peninsula (Jaques 1930, Gill et al. 1981) and is rare in winter in the eastern Aleutians, where nesting has been suspected on Unimak (Gibson and Byrd 2007). Palearctic *A. c. crecca* breeds throughout the Aleutians (Gibson and Byrd 2007) but apparently is rare on the Alaska Peninsula (Cold Bay, Izembek and Cinder River lagoons—Jaques 1930, Gill et al. 1981; C. F. Zeillemaker, UAM unpubl. data).

Aythya marila arctica. Greater Scaup. Uncommon breeding resident; occurs throughout the archipelago. Nests or broods have been reported from Unga (nest 18 Jul 1880; Bean 1882), Nagai (nest 16 Jun 1960; Kenyon 1964), Bendel and Spectacle (July 1977; Bailey 1978), and Simeonof (nest 16–18 Jun 1968, Troyer; 7 broods Jul 1995, Stahl; brood 16 Jul 2001, Byrd 2001; 3 broods 30 Jul 2006, Byrd and Williams 2006). Apparently nonbreeding birds are also common in summer at Korovin (Sowl 1973) and Simeonof (Gabrielson and Lincoln 1959, Kenyon 1964, Bailey 1994, Byrd and Williams 2006). Beals (*in* Gabrielson and Lincoln 1959) saw scaup wintering in the Shumagins, and Hoffman noted up to 217 unidentified scaup at Popof winter 2000–2002. **NOTES:** Nearctic subspecies *arctica* breeds and is resident on both the Alaska Peninsula (Gill et al. 1981) and the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (1), location unknown (1; see Gabrielson 1946).

Polysticta stelleri. Steller's Eider. Casual in summer and uncommon to common in winter. Dall (1873) saw it in the Shumagins in both the summer and March but stated that it was much less common there than in the eastern Aleutians. Gronholdt also saw the species regularly in the Shumagins in the winter, and up to 836 birds wintered near Popof 2000–2002 (Hoffman). **NOTES:** Steller's Eider winters in numbers from the eastern Aleutians to Kodiak Island (Gabrielson and Lincoln 1959, Forsell and Gould 1981, Gibson and Byrd 2007).

Somateria spectabilis. King Eider. Casual in summer and winter. About 100 females and subadult males summered throughout the Koniuji group in 1976 (Day), but the species has not been seen summering since. Two birds were seen at Popof in winter 2000–2002 (Hoffman). **NOTES:** In the winter, this Holarctic species is uncommon to fairly common in the eastern Aleutians (Gibson and Byrd 2007) and along the Alaska Peninsula (Powell and Suydam 2020) east to Kodiak Island (Gabrielson and Lincoln 1959, Forsell and Gould 1981).

Somateria mollissima (v-nigrum). Common Eider. Rare in summer and casual in winter. Six were seen at Big Koniuji May–Jul 1976 (Day), and several males were seen at Simeonof Jun 1960 (Kenyon 1964), but none have been recorded since then (Jones 1970, Bailey and McCargo 1984, Bailey 1994, Byrd 2001, Byrd and Williams 2006). In the winter, three were seen at Popof 31 Dec 2019 (L. Vitale, <https://eBird.org>). **NOTES:** The Beringian subspecies *v-nigrum* breeds in coastal northwestern North America and northeastern Siberia (Goudie et al. 2020); it is an uncommon to common breeder and resident on the Alaska Peninsula (Gill et al. 1981) and in the Aleutians (Gibson and Byrd 2007).

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Histrionicus histrionicus. Harlequin Duck. Common nonbreeding resident. Harlequins occur in the summer along shorelines throughout both the inner (Dall 1873, Murie 1959, Sowl 1973) and outer (Gabrielson 1946, Murie 1959, Kenyon 1964, Sowl 1973, Bailey 1993a, 1994, Byrd 2001, Byrd and Williams 2006) Shumagins. In the winter, ≥ 10 were seen at Big Koniuji Nov 1982 (Day), and up to 204 were seen at Popof in winter 2000–2002 (Hoffman). **NOTES:** This Holarctic species is an uncommon to common nonbreeding resident on the Alaska Peninsula (Gianini 1917, Gill et al. 1981) and the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** UMMZ (1).

Melanitta perspicillata. Surf Scoter. Casual in winter and spring. These scoters are seen at Popof in the winter but not every year (Gronholdt, Hoffman), and 4 were at Big Koniuji Nov 1982 (Day). In the spring ~40 were at Simeonof 8 May 1984 (Bailey), and a late-migrating pair was at Big Koniuji 6 Jun 1976 (Day). **NOTES:** This Nearctic species is an uncommon migrant on the Alaska Peninsula, occasionally occurring as late as June (Gianini 1917, Gill et al. 1981), and is intermittent in the Aleutians from fall to spring (Gibson and Byrd 2007).

Melanitta deglandi. White-winged Scoter. Common or abundant in winter, common migrant, and rare in summer. Up to 4 were seen in the Koniuji group in summer 1976 (Day), a flock of 9 was at Little Koniuji 4 Sep 1941 (Beals), and the species was abundant at Unga 25 Apr 1943 (Beals) and common in Unga Pass 13 May 1936 (Murie 1959). Up to 276 birds were seen at Popof in winter 2000–2002 (Hoffman). **NOTES:** This Nearctic species is rare on the Alaska Peninsula (Gill et al. 1981), with 2 breeding records on nearby islands (Withrow 2015), but fairly common in the eastern Aleutians in winter (Gibson and Byrd 2007).

Melanitta americana. Black Scoter. Abundant in winter and uncommon in spring and summer. Dall (1873) noted the species in spring and summer, and up to 60 were seen at Big Koniuji from early May to late Jun 1985 (Bailey 1985). At least 25 were at Big Koniuji in Nov 1982 (Day), and up to 640 were seen at Popof in winter 1944 (Beals) and 2000–2002 (Hoffman). **NOTES:** This Nearctic species breeds on the Alaska Peninsula (Gill et al. 1981) and is rare to uncommon in the Aleutians in the summer and uncommon to common there in the winter (Gibson and Byrd 2007).

Clangula hyemalis. Long-tailed Duck. Uncommon to abundant in winter and spring. Scattered groups occurred at Popof in Dec 1942 and as late as 7 May in 1944 (Beals), up to 749 were at Popof in winter 2000–2002 (Hoffman), and ≥ 40 were at Big Koniuji Nov 1982 (Day). Two late-departing birds were at Korovin 8 Jun 1973 (Sowl 1973), and one was at Big Koniuji (3–14 Jun 1976; Day). **NOTES:** This Holarctic species is rare in the summer and locally abundant in the winter on the Alaska Peninsula (Gill et al. 1981) and locally common to abundant in the eastern Aleutians in the winter (Gibson and Byrd 2007).

Bucephala albeola. Bufflehead. Uncommon in winter and spring. Up to 45 were at Popof in winter 2000–2002 (Hoffman), and up to 20 were at Big Koniuji in Nov 1982 (Day) and early May 1985 (Bailey). **NOTES:** This Holarctic species is a rare visitor, mainly in late winter and spring, on the Alaska Peninsula (Gill et al. 1981) and uncommon to fairly common in the eastern Aleutians in winter (Gibson and Byrd 2007).

Bucephala clangula (americana). Common Goldeneye. Casual in winter. Three unidentified goldeneyes seen at Popof in Feb 2000 (Hoffman) almost certainly were of this species. **NOTES:** This Nearctic subspecies is well known from Kodiak (Murie 1959), the Alaska Peninsula (Gill et al. 1981), and the Aleutians (Gibson and Byrd 2007).

Mergus merganser (americanus). Common Merganser. Uncommon nonbreed-

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ing resident; recorded only in the outer Shumagins. Two were at Big Koniuji 18 Jun 1985 (Bailey 1985), 2–4 were at Little Koniuji 30 May–15 Jun 1994 (Bailey), and up to 13 were at Simeonof (Bailey and McCargo 1984; Stahl). **NOTES:** The Common Merganser is not known to nest anywhere in southwestern Alaska (Gabrielson and Lincoln 1959) but occurs as a rare to uncommon nonbreeding resident on both the Alaska Peninsula (Gill et al. 1981) and the eastern Aleutians (Gibson and Byrd 2007).

Mergus serrator. Red-breasted Merganser. Fairly common resident throughout the archipelago though recorded nesting only in the outer Shumagins. Nests or broods were recorded at Little Koniuji 31 Jul 1976 (Day), Simeonof 24 May–30 Jul (Kenyon 1964, Bailey 1994, Byrd 2001, Byrd and Williams 2006; AMNWR unpubl. data), and Chernabura 24 Jun–14 Jul 1994 (Bailey 1994). In addition, reports of an alleged nest (7 Jun 1984; Bailey) and a brood (20 Jul 1995; Stahl) of Common Mergansers at Simeonof almost certainly were of Red-breasted Mergansers. The species also probably nests at Bendel (Bailey 1978). In winter, one bird was at Big Koniuji Nov 1982 (Day), and up to 11 unidentified mergansers were at Popof winter 2000–2002 (Hoffman). **NOTES:** This Holarctic species breeds and is a resident on both the Alaska Peninsula (Gill et al. 1981) and the Aleutians (Gibson and Byrd 2007).

Lagopus lagopus alexandrae. Willow Ptarmigan. Variably rare to common breeder and resident. Occurs on at least all of the larger islands in the archipelago, with nests, broods, or breeding behavior recorded at Popof (Dall 1873, Chapman 1902), Big Koniuji (Bailey and Norvell 1987, Maccormick 2002), Simeonof (Byrd 2001; Stahl), and Chernabura (Byrd 2001). Willow Ptarmigan also have been seen, and presumably nest, at Unga (Bean 1882), Nagai (Stejneger, *in* Golder 1925:81, Murie 1959, Bailey 1978, Bailey and Norvell 1987), Little Koniuji (Bailey 1993a), and Bird islands (D. D. Gibson). In some cases we suspect populations to have been depressed by introduced foxes: prior to fox eradication at Big Koniuji, only 8 birds were seen in May and Jun 1985 (Bailey), whereas, after eradication, 13 broods were seen in Jul 1987 (Bailey and Norvell 1987) and ≥ 100 adults and several broods and nests were seen in 1 week in Jul 1990 (Bailey). **NOTES:** Following Gibson and Withrow (2015), we regard *L. l. muriei* Gabrielson and Lincoln, 1949 (type locality Nagai Island), as a synonym of *L. l. alexandrae* Grinnell, 1909 (type locality Baranof Island), which breeds from southeastern Alaska to the Alaska Peninsula and in the Aleutians at Unimak (Gibson and Byrd 2007, Gibson and Withrow 2015). **SPECIMENS:** AMNH (16), UAM (4), UNSN (4), CM (1), LACM (1), UMMZ (1).

Lagopus muta nelsoni. Rock Ptarmigan. Rare to common breeder and resident. Occurs on at least all of the larger islands in the archipelago, although the alpine habitats this species frequents have received little attention. Consequently, nests, broods, or breeding behavior have been recorded only at Unga (Gabrielson and Lincoln 1959), Little Koniuji (Bailey 1993a), and Bird islands (1995; Gibson), but Rock Ptarmigan also have been seen, and presumably nest, at Popof (Gabrielson and Lincoln 1959), Peninsula Island (5 birds 24 July 1976; Day), Big Koniuji (1976; Day), Simeonof (Bailey 1994; Byrd, Gibson, Troyer), and Chernabura (Bailey 1994; Byrd, Gibson). **NOTES:** Like those of the Willow Ptarmigan, populations of the Rock Ptarmigan were apparently depressed by fox predation (e.g., at Bird Island; Bailey). The Beringian subspecies *nelsoni* breeds widely on the Alaska Peninsula (Gill et al. 1981), in the eastern Aleutians (Gibson and Byrd 2007), over most of mainland Alaska, and in northeastern Asia (Gibson and Withrow 2015). **SPECIMENS:** UAM (5), MCZ (2), USNM (2), CAS (1), location unknown (1; see Gabrielson and Lincoln 1959).

Podiceps auritus (cornutus). Horned Grebe. Probably rare in winter and spring. A flock of 6 was seen at Bird Island 8 May 1984 (Bailey). **NOTES:** This Nearctic subspecies is a rare migrant on the Alaska Peninsula (Gill et al. 1981) and rare or uncommon in the Aleutians in winter (Gibson and Byrd 2007).

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Podiceps grisegena (holboellii). Red-necked Grebe. Rare in winter and spring. Two birds were at Big Koniuji in Nov 1982 (Day), up to 6 were at Popof in winter 2000–2002 (Hoffman), and two late migrants were at Simeonof 4 Jun 1960 (Kenyon 1964). **NOTES:** This species nests on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and occurs in the western Gulf of Alaska and the Aleutians in winter (Gabrielson and Lincoln 1959, Gibson and Byrd 2007).

Streptopelia orientalis. Oriental Turtle-Dove. One report. A single bird was seen at Chernabura 24 Jun–14 Jul 1994 (Bailey 1994). **NOTES:** This eastern Palearctic species is accidental or casual in the western Aleutians (Gibson and Byrd 2007), and there is one record from the eastern Aleutians, of one at Unalaska in Jun and Jul 1995 (Gibson and Byrd 2007).

Cuculus canorus canorus. Common Cuckoo. One record. A pair was seen in aerial courtship at East Head, Popof, 21 Jun 1995 (Gibson 2018). Also, an unidentified *Cuculus* cuckoo was at Big Koniuji 15 Jul 1990 (Bailey). **NOTES:** The Common Cuckoo is intermittent in spring in the western and central Aleutians (Gibson and Byrd 2007). **SPECIMENS:** UAM (1).

Antigone canadensis (canadensis). Sandhill Crane. One record. Drummond (2021) noted a flock of 16 birds at Simeonof 12 Jul 2021. **NOTES:** This subspecies nests across most of northern North America and in the Russian Far East; it nests at Nelson Lagoon (Gill et al. 1981) and probably does at Unimak Island, in the far eastern Aleutians (Gibson and Byrd 2007).

Haematopus bachmani. Black Oystercatcher. Fairly common breeder and probable resident. Nests and roosts along shores throughout the archipelago, with nests or young recorded in June and July on both the inner (Dall 1873; Day) and outer Shumagins (Kenyon 1964, Moe and Day 1979, Bailey 1994, Byrd and Williams 2006). **NOTES:** Populations on Simeonof and Chernabura increased significantly after foxes were eradicated (Byrd et al. 1997, Byrd 2001). The Black Oystercatcher is also resident on the Alaska Peninsula (Gabrielson and Lincoln 1959) and most of the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (2), location unknown (1; see Dall 1873).

Pluvialis fulva. Pacific Golden-Plover. Rare or uncommon in spring and fall, one winter record. In the spring, 1 was collected at Popof 22 Jun 1872 (Dall 1873), 3 were seen and 1 was collected at Popof 5–6 May 1944 (Beals), 1 was at Simeonof 29 May 1994 (Bailey 1994), and 5 were at Bird Island 19 May 1984 (Bailey). In the fall, 25 were at Unga 18 Aug 1946 (Gabrielson 1946), and 1 was at Bird 22 Sep 1988 (Bailey). The only winter record is of one collected at Popof 15 Dec 1901 (Chapman 1902). **NOTES:** Gabrielson and Lincoln (1959:329–330) were unclear about the identity of golden-plovers from this area, but we believe that all occurring on the Shumagins are *P. fulva*. One specimen (CAS 74013; collected at Simeonof Island 7 May 1894) was identified as *P. dominica*, but we believe instead that it is *fulva*. It was collected with 5 other specimens of *fulva* at the same location on the same day. Its measurements are equivocal and the bird is molting heavily, precluding definitive identification. This primarily Palearctic species is a fairly common nesting bird and an annual migrant on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018, Alaska Shorebird Group 2019; R. E. Gill, Jr., in litt.) and is an annual migrant in the Aleutians (Gibson and Byrd 2007). In contrast, the American Golden-Plover (*P. dominica*) is unknown in the Aleutians (Gibson and Byrd 2007) and occurs as a breeder and migrant on the Alaska Peninsula only near its base (Ruthrauff et al. 2007; R. E. Gill, Jr., in litt.). **SPECIMENS:** MVZ (3), CAS (1), USNM (2), location unknown (1; see Chapman 1902).

Charadrius semipalmatus. Semipalmated Plover. Uncommon or fairly com-

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mon breeder; occurs throughout the archipelago but nests mainly on islands with sandy beaches. Nests, young, or nesting behavior have been recorded at Popof (2 small chicks 29 Jun 1997; Day), Simeonof (Kenyon 1964, Bailey 1994, Byrd 2001), and Chernabura (Bailey 1994). Probably nesting birds have also been seen at Unga (Coorumbung Estate, eBird), Big Koniuji (Day), Little Koniuji (Bailey 1993a), and Bird islands (Bailey). **NOTES:** Widespread on the Alaska mainland, this species nests in southwestern Alaska from the Alaska Peninsula (Gill et al. 1981) to the central Aleutians (Gibson and Byrd 2007).

Charadrius mongolus (stegmanni). Lesser Sand-Plover. One record. A female was photographed at Unga 2 Jun 1997 (A. Wilson, <http://www.oceanwanderers.com/Aleut.1.html>; accessed 13 Jan 2021). **NOTES:** The eastern Palearctic subspecies *stegmanni* has been recorded widely in coastal Alaska (see Gibson and Withrow 2015).

Numenius phaeopus (hudsonicus). Whimbrel. Uncommon in spring and fall. Recorded at Simeonof (3 in May and Jun 1994, Bailey 1994; up to 10 in mid-Jul 1995, Stahl; 18 on 16 Jul 2001, Byrd 2001; 4 on 15 and 16 Jul 2011, AMNWR unpubl. data), Bird (1 on 9 May 1984 and 2 on 8 Jul 1987, Bailey), Chernabura (up to 25 in early Jul 1994, Bailey 1994; ≥ 24 from 14 to 16 Jul 2001, Byrd 2001), and Unga (2 on 18 Aug 1994, S. Moske, eBird). **NOTES:** White-backed *N. p. variegatus* of eastern Asia is a rare or uncommon migrant in the western Aleutians (Gibson and Byrd 2007); dark-backed *hudsonicus* of the Nearctic nests and is an annual migrant on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996, Ruthrauff et al. 2007) and is the only subspecies identified in the Shumagins (Byrd).

Arenaria interpres interpres. Ruddy Turnstone. Casual in spring, rare in fall. The only spring record is of 1 bird at Simeonof 26 May 1994 (Bailey). In the fall, 6 were at Unga 10 Jul 1983 (Rose), 1 was at Simeonof 20 Aug 1946 (Gabrielson 1946), and 2–5 were there 13–16 Jul 2001 (Byrd 2001). **NOTES:** This Holarctic subspecies breeds in northwestern Alaska, across the Palearctic, and in northeastern North America (Nettleship 2020); it is an annual migrant on the Alaska Peninsula (Gill et al. 1981, Ruthrauff et al. 2007) and the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** MVZ (1).

Arenaria melanocephala. Black Turnstone. Casual in spring and fall. Although, on hearsay, Turner (1886:150) reported the Black Turnstone as “plentiful” at Unga, the only subsequent records are of 1 seen at Simeonof 5 Jun 1960 (Kenyon 1964) and 2 seen there 12 Jul 2021 (Drummond 2021). **NOTES:** This Beringian species nests primarily on the Yukon–Kuskokwim delta (Gabrielson and Lincoln 1959) but is also an annual migrant and nester on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996, Ruthrauff et al. 2007).

Calidris ptilocnemis (spp.). Rock Sandpiper. Rare in fall and intermittent or casual in spring. The only spring record is of “a few” at Bird Island in May 1984 (Bailey). Fall migrants have been recorded throughout the archipelago: at Unga and Popof (seen 23 Jul 1983; Rose), Turner (24 on 1 Aug 2006, Byrd and Williams 2006), Big Koniuji (1 on 5 Jul 1976, Day), Simeonof (5 on 20 Aug 1946, Gabrielson 1946; 19 from 13 to 16 Jul 2001, Byrd 2001), Bird (4 on 14 Jul 2001, Byrd 2001), and Chernabura (3 in early Jul 1994, Bailey; 3 from 14 to 16 Jul 2001, Byrd 2001). **NOTES:** Following Hellmayr and Conover (1948), Gabrielson and Lincoln (1959:368) stated that subspecies *couesi* is a breeding resident in the Shumagins, but no subsequent observations have suggested breeding; furthermore, all birds have been seen on beaches, not in inland nesting habitat, suggesting both an absence of nesting and that all birds were on passage. Subspecies *couesi* breeds on the Alaska Peninsula and in the Aleutians (Gill et al. 1981, Tibbitts et al. 1996, Gibson and Byrd 2007, Savage et al. 2018, Gill et al. 2020) and probably accounts for the Rock Sandpipers seen in

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the Shumagins, but subspecies *tschuktschorum* of the Bering Sea islands also may occur there on passage to and from areas where it winters in south-central Alaska.

Calidris minutilla. Least Sandpiper. Uncommon to common breeder. Nests, young, or breeding behavior have been recorded at Popof (27 Jun 1997, Day), Big Koniuji (summer 1976, Day), Little Koniuji (Bailey 1993a), Simeonof (Kenyon 1964; 18–23 Jun 1968, Troyer; Jun 1995, Stahl, Byrd 2001), Bird (15 Jun 1995, Byrd), and Chernabura (16 Jun 1995, Stahl). The Least Sandpiper also probably nests at Unga (≥ 10 birds 2 Jun 1997, S. Schuette, eBird) and Andronica (Jun 1984, Bailey). **NOTES:** A breeder and migrant on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996, Ruthrauff et al. 2007, Savage et al. 2018), this Nearctic species nests as far west as the eastern Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (4), ANSP (2), UAM (1), location unknown (1; see Dall 1873).

Calidris mauri. Western Sandpiper. Rare or uncommon in fall. Recorded at Unga (29 Jun to mid-Aug 1983, Rose; 4 on 16 Jul 2017, M. Tillinghast, eBird), Popof (~10 from 29 Jun to mid-Aug 1983, Rose; ≥ 12 on 29 Jun 1997, Day), Big Koniuji (juvenile 9 Aug 1976, 18 on 24 Aug 1976, Day), Simeonof (15 on 14 Jul 1994, Schroeder 1994; 46 from 13 to 16 Jul 2001, Byrd 2001), and Chernabura (~30 in late Jun 1994, Bailey 1994). **NOTES:** This Beringian species breeds in western Alaska and on the Bering Sea side of the Alaska Peninsula, where it is abundant in the fall (Gill et al. 1981, Tibbitts et al. 1996, Savage et al. 2018); it is intermittent in the fall throughout the Aleutians (Gibson and Byrd 2007).

Gallinago delicata. Wilson's Snipe. Uncommon local breeder. Nests, young, or breeding behavior have been recorded at Unga (Gronholdt, Rose), Popof (29 Jun 1997, Day), Andronica (Bailey 1978), and Simeonof (Bailey 1994, Schroeder 1994, Byrd 2001, Byrd and Williams 2006). **NOTES:** This Nearctic species breeds on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996, Savage et al. 2018) and the eastern Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (1).

Tringa incana. Wandering Tattler. Rare in spring and fall. In the spring, seen at Nagai (1 collected 16 May 1936, Murie 1959), Big Koniuji (1 on 10 Jun 1973, Sowl 1973; 3 in May and Jun 1985, 1 on 10 Jun 1989, Bailey), Little Koniuji (1 in May 1993, Bailey 1993a), and Simeonof (2 in May 1994, Bailey 1994). In the fall, seen at Big Koniuji (up to 4 from 28 Jun to 4 Aug 1976, Day; 17 Jul 1977, Bailey; 2 in Jul 1986, Bailey) and Simeonof (≥ 1 on 13 and 14 Jul 2001, Byrd 2001). **NOTES:** This Beringian species is rare in spring and fall on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996) and uncommon in spring and fall in the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (1).

Tringa flavipes. Lesser Yellowlegs. Casual in spring. One was seen at Simeonof 26 May 1994 (Bailey 1994). **NOTES:** This Nearctic species is an annual migrant on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996) and casual in spring and early summer throughout the Aleutians (Gibson and Byrd 2007).

Tringa melanoleuca. Greater Yellowlegs. Casual in fall. One bird was seen at Simeonof 19 Jul 1995 (Stahl). **NOTES:** In the fall, this Nearctic species is annual on the Alaska Peninsula (Gill et al. 1981, Tibbitts et al. 1996) and casual in the Aleutians (Gibson and Byrd 2007).

Phalaropus lobatus. Red-necked Phalarope. Rare breeder and fall migrant; probably more common than indicated here because of occurring principally at sea during migration. Nesting has been recorded only at Simeonof: up to 33 birds mid-Jul 1995 (Stahl); noted on 2 lakes, including 1 pair with young, 13–16 Jul 2001 (Byrd 2001). In the fall, 1 was seen at sea near the Haystacks 19 Aug 1946 (Gabrielson 1946). **NOTES:** The Red-necked Phalarope nests on the Alaska Peninsula (Gianini 1917,

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Gill et al. 1981, Savage et al. 2018) and in the Aleutians (Gibson and Byrd 2007) and migrates at sea throughout the region (Gould et al. 1982).

Phalaropus fulicarius. Red Phalarope. Uncommon in spring and fall; probably more common than indicated here because it occurs only at sea during migration. In the spring, seen at sea in the Shumagins 15–16 May 1928 (Jaques 1930), common there 23 May 1936 (Murie 1959), and 3 flocks of up to 50 birds each moved past Big Koniuji 5–9 Jun 1976 (Day). In the fall, many flocks of 10–100 birds each were seen at sea near Simeonof 19 Aug 1946 (Gabrielson and Lincoln 1959), and 2 birds were seen southwest of Unga 9 Sep 1973 (R. A. MacIntosh). **NOTES:** This Holarctic species migrates at sea throughout southwestern Alaska (Gabrielson and Lincoln 1959, Gould et al. 1982, Gibson and Byrd 2007). **SPECIMENS:** CAS (1).

Stercorarius pomarinus. Pomarine Jaeger. Rare in spring and fall; probably passes regularly during migration at sea. Spring records are of 1 on 23 May 1936 (Murie 1959), 3 on 2 Jun 1997 (A. Wilson and others, <http://www.oceanwanderers.com/Aleut.1.html>), and 1 at Simeonof 14 Jun 1995 (Gibson). In the fall, 1 was seen ~15 km south of Unga 10 Sep 1973 (MacIntosh). **NOTES:** This Holarctic species migrates through the region but nests only in the high Arctic (Gabrielson and Lincoln 1959, Gould et al. 1982); it is uncommon at sea in the Aleutians from the spring through the fall (Gibson and Byrd 2007).

Stercorarius parasiticus. Parasitic Jaeger. Uncommon spring and fall migrant and breeder, probably nesting on all major islands (Gabrielson and Lincoln 1959, Murie 1959, Kenyon 1964, Bailey 1978; see Table 1). Most summer birds are dark-phase, and most light-phase birds seem to be migrants, though we suspect single light-phase birds in mid-summer at Little Koniuji (1987, Bailey and Norvell 1987) and Chernabura (1995, Byrd) to have been breeding. Spring migrants have been seen at Popof (5 on 6 May 1944, Beals, in Gabrielson and Lincoln 1959) and Big Koniuji (1 bird 31 May 1976, Day). Summer records are from Unga (18 Aug 1994, S. Moske, eBird), Popof (2 on 29 Jun 1997, Day), Korovin and Nagai (Bailey 1978), and Little Koniuji (1 pair 31 Jul 1976, Day; 10 birds 25 Jul 1987, Bailey; May–Jun 1993, Bailey 1993a). The species is especially common at Simeonof (Kenyon 1964, Bailey 1994, Byrd 2001, Byrd and Williams 2006, Bailey, Troyer; high count ≥ 16 on 16 Jul 2001, Byrd 2001), Bird (Bailey and McCargo 1984, Bailey and Norvell 1987, Byrd; high count 10 pairs Jul 1990, Bailey), and Chernabura (Bailey 1994, Byrd 2001; high count “several” 9–12 and 15–17 Jun 1995, Byrd). In the fall, 5 birds were seen at Popof 26 Aug 1936 (Murie 1959). **NOTES:** This Holarctic species is widespread in southwestern Alaska, breeding both on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and in the Aleutians (Gibson and Byrd 2007).

Stercorarius longicaudus (pallescens). Long-tailed Jaeger. Casual nonbreeding summer visitor in the outer Shumagins. At least 1 was at Simeonof 13–16 Jul 2001 (Byrd 2001), and single birds were at Chernabura 28 Jun and 9 Jul 1994 (Bailey). **NOTES:** Subspecies *pallescens* is a widespread nester or visitor on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and is uncommon at sea in the Aleutians from the spring through the fall (Gibson and Byrd 2007).

Uria aalge (inornata) and *U. lomvia (arra)*. Common Murre and Thick-billed Murre. Both species are common local breeders and uncommon outside the breeding season. Approximately 270,000 birds of both species combined nested in the Shumagins in 1977 (Bailey 1978; also see Table 2). Subsequently populations decreased at 3 colonies: Karpa, Castle Rock, and Bird (Table 3). In contrast, the colony at the Twins increased, and a new colony was started by 2010 at Near. Fall sightings are of about 50 Commons in Popof Strait 8 Sep 1973 and many murrens 20–30 km southwest of Unga 9–10 Sep 1973 (MacIntosh). In winter, scattered birds, primarily Commons, were seen near Big Koniuji in Nov 1982 (Day), and up to 10 murrens at

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TABLE 1 Distribution of Nesting Seabirds Other than Alcids in the Shumagin Islands, Alaska^a

Island	Parasitic Jaeger	Black-legged Kittiwake	Short-billed Gull	Glaucous-winged Gull	Arctic Tern	Fork-tailed Storm-Petrel	Leach's Storm-Petrel	Northern Fulmar	Red-faced Cormorant	Pelagic Cormorant	Double-crested Cormorant	Unidentified/total cormorants
Unga	PB	B	—	B	—	—	—	—	B	B	—	B
Egg	—	B	—	B	—	—	—	—	—	—	—	—
Popof	PB	B	PB	B	B	—	—	—	PB	B	PB	B
Sealion Rocks	—	—	—	B	—	—	—	—	—	—	—	—
Korovin	PB	B	—	B	—	—	—	—	B	—	—	B
Karpa	—	—	—	B	—	—	—	—	PB	PB	—	B
Andronica	—	B	—	B	—	—	—	—	—	B	—	—
The Haystacks	—	B	—	B	—	B	—	—	B	B?	B	B
Nagai	PB	—	—	B	—	B	—	—	—	—	—	—
Peninsula	—	—	—	B	—	B	—	—	—	—	—	B
Spectacle	—	—	—	B	—	—	—	—	—	—	—	B
Bendel	—	—	B	B	—	—	—	—	—	—	—	—
Turner	—	—	—	B	—	—	—	—	—	—	—	—
The Twins	—	B	—	B	—	B	—	PB	B	—	B	B
Near	—	B	—	B	—	—	B	—	—	—	—	B
Castle Rock	—	B	—	B	—	B	B	PB	—	—	—	—
Big Koniuji	—	B	—	B	—	—	—	—	B	B	B	B
Murre Rocks	—	—	—	—	—	—	—	—	—	—	—	—
Hall	—	B	—	B	—	B	B	—	B	B	B	B
Herendeen	—	—	—	B	—	—	—	—	B	B	B	—
Atkins	—	—	—	B	—	—	—	—	—	—	—	—
Little Koniuji	B	—	—	—	—	—	—	—	—	—	—	—
Simeonof	B	—	B	B	B	B	B	—	—	B	—	—
Bird	B	B	—	B	—	B	B	PB	B	B	B?	—
Chernabura	B	—	B	B	B	—	—	—	—	—	—	—

^aB, breeding; PB, probably breeding; B?, breeding status unclear; —, not breeding.

a time, including some identified as Commons, were seen at Popof in winter 2000–2002 (Hoffman). **NOTES:** Several hundred Common Murre carcasses were found on beaches at Simeonof in May–Jun 1994 (Bailey 1994), indicating a large die-off the previous winter or spring. Both subspecies of the murre are Beringian in origin and nest locally throughout the region (Sowls et al. 1978, Gibson and Byrd 2007).

Cephus columba columba. Pigeon Guillemot. Common breeder; rare in winter. This species nests in low densities almost throughout the archipelago, being recorded everywhere except Egg and Sealion Rocks (Table 2). An estimated 9000 birds nested in the Shumagins in 1977 (Bailey 1978). The colonies at Hall and Atkins islands, formerly the largest in the archipelago, have decreased substantially (Table 4). In spite of the overall decline in numbers in the Shumagins, populations at Simeonof

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TABLE 2 Distribution of Nesting Alcids in the Shumagin Islands, Alaska^a

Island	Common Murre	Thick-billed Murre	Pigeon Guillemot	Marbled Murrelet	Kittlitz's Murrelet	Ancient Murrelet	Cassin's Auklet	Parakeet Auklet	Least Auklet	Crested Auklet	Rhinoceros Auklet	Horned Puffin	Tufted Puffin
Unga	B	B	B	—	—	—	—	—	—	—	—	B	B
Egg	—	—	—	—	—	—	—	—	—	—	—	B	B
Popof ^b	B?	B?	B	—	—	—	—	—	—	—	—	B	B
Sealion Rocks	—	—	—	—	—	—	—	—	—	—	—	—	—
Korovin	—	—	B	—	—	—	—	—	—	—	—	B	B
Karpa	B	B	B	—	—	B	—	—	—	—	—	B	B
Andronica	—	—	B	—	—	—	—	—	—	—	—	B	B
The Haystacks	B	B	B	—	—	B	B	PB	—	—	—	B	B
Nagai	—	—	B	—	—	—	B	B	—	—	—	B	B
Peninsula	—	—	B	—	—	B	—	B	—	—	—	B	B
Spectacle	—	—	B	—	—	—	—	B	—	—	PB	B	B
Bendel	—	—	B	—	—	B?	—	B	—	—	—	B	B
Turner	—	—	B	—	—	—	—	B	—	—	—	B	B
The Twins	B	B	B	—	—	B	B	B	—	B	—	B	B
Near	B	B	B	—	—	B	B	B	—	B	B	B	B
Castle Rock	B	B	B	—	—	B	B	B	PB	B	—	B	B
Big Koniuji	—	—	B	B	PB	—	—	B	—	B	—	B	B
Murre Rocks	—	—	B	—	—	B	—	B	—	—	—	B	B
Hall	—	—	B	—	—	B	B	B	—	—	—	B	B
Herendeen	—	—	B	—	—	—	B	B	—	—	—	B	B
Atkins	—	—	B	—	—	—	—	B	—	—	—	B	B
Little Koniuji	—	—	B	PB	PB	—	—	—	—	—	—	B	B
Simeonof	—	—	B	—	—	—	—	B	—	—	PB	B	B
Bird	B	B?	B	—	—	PB	—	B	—	—	—	B	B
Chernabura	—	—	B	PB	—	—	—	B	—	—	PB	B	B

^aB, breeding; PB, probably breeding; B?, breeding status unclear; —, not breeding.

^bThe identity of the murre nesting on Popof Island is uncertain.

and Chernabura increased as a result of the removal of introduced foxes (Table 4); for example, Gabrielson (1946) said the guillemot was common at Simeonof, but it was not reported there again until 1995, after which the population increased. Up to 9 birds at a time were seen near Popof in winter 2000–2002 (Hoffman). **NOTES:** The Nearctic subspecies *columba* nests widely in southwestern Alaska (Gabrielson and Lincoln 1959, Murie 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** SDNHM (2), UAM (2), USNM (1), location unknown (3; see Dall 1873 and Gabrielson and Lincoln 1959).

Brachyramphus marmoratus. Marbled Murrelet. Rare breeder and resident; found throughout but probably nests only in the outer Shumagins (Table 2). In the inner Shumagins, 2 were seen in Popof Strait 29 Jun 1997 (Day), and 1 was at Unga 29 Jul 2019 (Schuette, eBird). In the outer Shumagins, at Big Koniuji, a few birds were seen 11 Jul 1973 (G. J. Divoky pers. comm.), scattered birds, including a possible juvenile 18 Aug, occurred in summer 1976 (Day), and 2 birds were seen on 1 Jul 1986 (Bailey). Then from 11 Jun to 4 Jul 1990 a crew collected 21 specimens

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TABLE 3 Estimates or Counts of Murres at Selected Colonies in the Shumagin Islands, Alaska, by Year^a

Year	Colony					Bird	Source
	Karpa	The Haystacks	The Twins	Near	Castle Rock		
1973	240,000	30,000	200	0	8000	24,000	Sowl 1973
1976					8000		Moe and Day 1979
1977	220,000	9900	400	0	8000	24,000	Bailey 1978
1984						7000	Bailey and McCargo 1984
1990	80,000					7000	S. Hatch, USFWS 2020
1995		7774				“hundreds”	D. L. Boone data, SCC; Byrd ^b
2001					>>377 ^c		Byrd 2001
2006		2694			402		Byrd and Williams 2006
2010	1290		2570	354			Rojek and Williams 2010
2011 ^d		7642			1191	248	AMNWR unpubl. data

^aBoth species pooled; for a given island/colony and year, numbers of unidentified birds are added to those of unidentified birds.

^bBoone for the Haystacks, Byrd for Bird.

^cCount plus “hundreds on water near cliffs.”

^dThis appeared to be a year of breeding failure, so birds probably visited colonies irregularly.

(some in breeding condition) near the mouth of Flying Eagle Harbor, where the species was common and birds were heard calling while flying inland to suspected nest sites in a talus field above the harbor (J. F. Piatt in litt.). At Little Koniuji, 2 pairs were seen 2 Jul 1976 and several scattered birds were seen on other days that summer (Day), 2 were seen 1 Jun 1986 (Bailey), and 4 were seen 19 Jun 1993 (Bailey 1993a). In the outer Shumagins away from Big and Little Koniuji the only sighting is of 2 at Chernabura 15 July 2011 (AMNWR unpubl. data). In addition, almost all Marbled Murrelets seen on seabird transects in the Shumagins occurred near Big and Little Koniuji; a few also were seen near Andronica and in Unga Strait (North Pacific Pelagic Seabird Database data from J. F. Piatt and G. Drew in litt.). Up to 29 birds at a time were seen near Popof winter 2000–2002 (Hoffman), and 5 were seen there 21 Feb 2015 (F. Bottom, eBird). **NOTES:** This species breeds locally in alpine habitat near deep, protected bays along the Alaska Peninsula (Nelson 2020) and in

TABLE 4 Estimates or Counts of the Pigeon Guillemot at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony				Source
	Hall	Atkins	Simeonof	Chernabura	
1973	1500	2500	0		Sowl 1973
1976	1200	2000			Moe and Day 1979
1977	1200	2000	0	“scattered pairs”	Bailey 1978
1985	30				Bailey 1985
1994			6	42	Byrd et al. 1997
1995			7	69	Byrd et al. 1997
1995			54		B. Anderson, USFWS 2020
2001		184	206	119	Byrd 2001
2006		217			Byrd and Williams 2006
2011	71	73	218	187	AMNWR unpubl. data

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the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** AMNH (8), UWBM (2), CAS (1); 11 of the 21 specimens collected at Big Koniuiji in 1990 appear to be represented only by tissue samples.

Brachyramphus brevirostris. Kittlitz's Murrelet. Rare summer visitor and probable breeder. Occurs throughout the archipelago, most commonly at Big and Little Koniuiji. At Big Koniuiji, 3 birds were seen in late May 1985, 1 was seen in Jun 1985, 10 were seen 1 Jun 1986 (Bailey 1985, 1986), and 2 were seen 15 Jul 2001 (Byrd 2001). At Little Koniuiji, several were seen regularly May–Jun 1993, including a flock of 20 on 17 Jun 1993 (Bailey 1993a). Almost all Kittlitz's seen on seabird transects in the Shumagins have been near Big and Little Koniuiji, although a few also were seen near Andronica and in Unga Strait (Piatt and Drew in litt.). Also, two were seen at sea between Nagai and Sealion Rocks 14 Jun 1973 (Sowl 1973), and some were at the Haystacks and the Twins Jul 1977 (Bailey). **NOTES:** Like the Marbled Murrelet, Kittlitz's breeds locally in alpine habitat near deep, protected bays along the Alaska Peninsula and in the Aleutians (Gibson and Byrd 2007, Day et al. 2020a). **SPECIMENS:** AMNH (1).

Synthliboramphus antiquus. Ancient Murrelet. Common or abundant local breeder and uncommon fall migrant; nests primarily on the outer islands (Table 2). In 1976 and 1977 at least 33,000 birds nested on at least 8 of the Shumagins (Bailey 1978) and the species was seen at 2 other islands. It was abundant at Karpa (Bailey 1978), the Haystacks (Bailey 1978), the Twins (Bailey 1978), and Near (Bailey 1978). The numbers reported for Peninsula Island were 3000 (USFWS 2020), Castle Rock 30,000, (Moe and Day 1979), and Hall 3000 (Moe and Day 1979). Only a few were at Murre Rocks (Day). The Ancient Murrelet probably nests at Bird Island, where it was heard calling at night in Jun 1984 (Bailey and McCargo 1984) and a few were seen 13–15 Jun 1995 (Byrd). One chick seen at Bendel 31 Jul 2006 (Byrd and Williams 2006) could have come from nearby Peninsula Island. Large flocks seen in early summer probably represent birds aggregating between the laying of the first and second eggs: 2000 in Yukon Strait, Big Koniuiji, 7 Jun 1976 (Day); 5000 near Nagai 10 Jun 1973 (Sowl 1973); “many thousands” between Little Koniuiji and Chernabura 11–12 Jun 1973 (>190 murrelets/km²; Sowl 1973). During the summer Ancient Murrelets are also seen at sea, e.g., in Popof Strait 7 Jun 1973 and between Nagai and Sealion Rocks 14 Jun 1973 (Sowl 1973); within 9 km of Atkins 18 Jun 1995 (R. Merrick); near Simeonof, Chernabura, and Bird 13–16 Jul 2001 (Byrd 2001). In the fall, scattered birds were seen near Simeonof 19 Aug 1946 (Gabrielson 1946), and two were seen ~30 km southwest of Unga 9 Sep 1973 (MacIntosh). **NOTES:** Information on population trends is nonexistent. This Beringian species nests throughout southwestern Alaska (Gabrielson and Lincoln 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** USNM (2), UWBM (2), AMNH (1), SUI (1), UAM (1).

Ptychoramphus aleuticus aleuticus. Cassin's Auklet. Common or abundant local breeder, nesting primarily on the outer islands (Table 2); rare outside the breeding season. At least 46,000 birds nested in the Shumagins in 1977 (Bailey 1978), including, presumably, the Haystacks (Bailey 1978), the Twins (Bailey 1978), Near (Bailey 1978), Castle Rock (Moe and Day 1979, Byrd 2001, Byrd and Williams 2006), and Hall (Sowl 1973, Moe and Day 1979). Also seen near Nagai (14 Jun 1973; Sowl 1973) and Herendeen (11 Jun 1973; Sowl 1973). Scattered birds have been seen elsewhere throughout the islands in the spring and summer (Murie 1959, Sowl 1973, Byrd and Williams 2006), with up to 1057 within 9 km of Atkins on 18 Jun 1995 (Merrick). In the fall and winter, single auklets believed to be Cassin's were seen southwest of Unga 9 Sep 1973 (MacIntosh) and near Hall 19 Nov 1982 (Day), with scattered birds also seen just northwest of the Shumagins the following day (Day). **NOTES:** Information on population trends is nonexistent. Stejneger (*in* Golder 1925:80) speculated that either this species or *Cerorhinca* was the *taucher* seen by Steller at Nagai 30–31 Aug

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TABLE 5 Estimates or Counts of the Parakeet Auklet at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony						Source
	Castle Rock	Big Koniuji (Cape Thompson)	Big Koniuji (total)	Hall	Herendeen	Atkins	
1973	present	“common”		4000	9000	>5000	Sowl 1973
1976	14,000	2000	>11,000	3500	1600	4000	Moe and Day 1979
1977	14,000		2040	3500	1600	4000	Bailey 1978
2001	10,000+	50	2000				Byrd 2001
2006	3043	70		150	19	0	Byrd and Williams 2006
2011	782–1032 ^a	9		109	74	22	AMNWR unpubl. data

^aMaximal number includes a mixed-species flock of 250 Parakeet and Crested auklets offshore.

1741. Cassin’s Auklet nests locally throughout southwestern Alaska (Gabrielson and Lincoln 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** UAM (1), USNM (1).

Aethia psittacula. Parakeet Auklet. Widespread breeder in generally low densities from the Haystacks to all outer islands (Table 2). Bailey (1978) estimated the population at ~26,000 birds in 1977. However, numbers have declined substantially at Castle Rock, Cape Thompson on Big Koniuji, Hall, Herendeen, and Atkins (Table 5). **NOTES:** This Beringian species nests throughout southwestern Alaska (Gabrielson and Lincoln 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** UAM (28), USNM (2).

Aethia pusilla. Least Auklet. Rare summer visitor and probable breeder; seen only in the outer Shumagins (Table 2). On 24 Jul 1976 one bird flew from a probable nest site (small talus patch) on the northern side of Castle Rock, where Crested Auklets also nested (Moe and Day 1979, Day), but the species has not been seen there subsequently (Byrd and Williams 2006, AMNWR unpubl. data), so its present status is unclear. Four birds were seen at Simeonof 5 Jun 1960 (Kenyon 1964), and 5 were there 18–23 Jun 1968 (Troyer), but no nesting habitat is available. The remains of four Least Auklets were found in an eagle aerie at Herendeen in Jun 1960 (Kenyon 1964), and the wing of a freshly killed Least Auklet was found in an aerie near Koniuji Strait 30 August 1976 (Moe and Day 1979). The only record since the 1970s is of a flock of 20 seen at Bird 14 Jul 2001 (Byrd 2001). **NOTES:** This Beringian species, which is abundant in the Aleutians and Bering Sea region (Gabrielson and Lincoln 1959, Sowls et al. 1978, Gibson and Byrd 2007), nests as far east as the Semidi Islands (Hatch and Hatch 1983).

Aethia cristatella. Crested Auklet. Rare to abundant breeder; uncommon to abundant in winter. About 42,000 birds nested in 5 colonies at 4 islands, all in the outer Shumagins, in 1977 (Bailey 1978; also see Table 2). At possibly all colonies, however, the population has declined substantially. The Cape Thompson population on Big Koniuji has disappeared (Table 6), the small populations on the Twins and Near (Bailey 1978) may have disappeared by 2011 (AMNWR unpubl. data), and the population at Castle Rock has nearly disappeared. The largest former colony, at Yukon Harbor on Big Koniuji, has undergone the largest numerical decline (Table 6). Townsend (1913), who had visited other large auklet colonies in the Bering Sea, described this as one of the largest colonies he had seen—as large as the massive Least Auklet colony on the Pribilof Islands. The Yukon Harbor population, however, had nearly disappeared by the mid-1980s. This species forages widely in the southern

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TABLE 6 Estimates or Counts of the Crested Auklet at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony			Source
	Castle Rock	Big Koniuji (Cape Thompson)	Big Koniuji (Yukon Harbor)	
1973	0	present	60,000 ^a	Sowl 1973
1976	3500	4000	35,000 ^b	Moe and Day 1979
1977	3500	— ^c	39,000 ^c	Bailey 1978,
1984			7000	Bailey and McCargo 1984
1985			7000	Bailey 1985
1986			5000	Bailey 1986
2001	>20	0		Byrd 2001
2006	1			Byrd and Williamson 2006
2011	250–500 ^d	0		AMNWR unpubl. data

^a Includes 10,000 in Yukon Harbor and 50,000 in Koniuji Strait.

^b Includes Granite Cove subcolony.

^c Total for Big Koniuji, so includes Cape Thompson colony.

^d Maximal number includes a mixed-species flock of 250 Parakeet and Crested auklets offshore.

Shumagins during the summer (Gabrielson and Lincoln 1959, Sowl 1973, Byrd 2001, Bailey 1978). It also winters, sometimes in substantial numbers: 45–50 birds were seen near Big Koniuji, and scattered small flocks were seen in the northern Shumagins, 18–19 Nov 1982 (Day), and a flock of ~18,000 was seen in the Shumagins Feb 1972 (Byrd). However, the species was not seen near Popof in winter 2000–2002 (Hoffman). **NOTES:** This Beringian species nests locally throughout southwestern Alaska (Gabrielson and Lincoln 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** UAM (27), USNM (3), CAS (2), UWBM (2), AMNH (1), UMMZ (1).

Cerorhinca monocerata. Rhinoceros Auklet. Rare breeder (Table 2). In 1977, about 40 birds nested at Near (Bailey 1978), but there have been no subsequent records. Probably also nests at Simeonof, particularly on the Murie Islets (4 near them 14 Jul 1995, USFWS 2020; 30 birds 17 Jul 1995, S. A. Hatch; 7 birds 15–16 Jul 2011, AMNWR unpubl. data), and at Chernabura (2 birds 10 Jul 1994, Bailey; 5 birds 14–16 Jul 2001, Byrd 2001; 1 bird 15 Jul 2011, AMNWR unpubl. data). Up to 2 birds also have been seen at Spectacle (14 Jul 2011, AMNWR unpubl. data), Big Koniuji (early Jul 2002, McCormick 2002), and Bird (13–15 Jun 1995, Byrd); 3 birds were seen at sea within 9 km of Atkins 18 Jun 1995 (Merrick). **NOTES:** This Beringian species also nests near the Shumagins on the Sandman Reefs (Bailey and Faust 1980) and Semidi Islands (Hatch and Hatch 1983).

Fratercula corniculata. Horned Puffin. Common or abundant breeder and uncommon outside the breeding season; has nested on every island except Sealion Rocks (Table 2), with ~150,000 birds nesting in 1977 (Bailey 1978). Populations subsequently decreased at all 4 large colonies: Karpa, Near, Castle Rock, and the Koniuji Strait colony on Big Koniuji (Table 7). Conversely, populations appear to be increasing at both Simeonof and Chernabura (Table 7). In the fall and winter, hundreds were seen near Popof and Unga 8–10 Sep 1973 (MacIntosh), and 40–50 newly molted birds were seen at Big Koniuji 19 Nov 1982 (Day). **NOTES:** Recorded at Nagai as early as 30–31 Aug 1741 by Steller (Stejneger in Golder 1925:80). This Beringian species nests throughout southwestern Alaska (Gabrielson and Lincoln 1959, Murie 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** ANSP (1), location unknown (1; see Dall 1873).

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TABLE 7 Estimates of Counts of the Horned Puffin at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony				Source
	Karpa	Near	Castle Rock	Big Koniuijia	
1973	7000	7000	20,000	140,000	Sowl 1973
1976			60,000	63,000	Moe and Day 1979
1977	12,000	20,000	60,000	66,000 ^a	Bailey 1978
1985				>500	Bailey 1985
1986				2000	Bailey 1986
1990	5000				D. Dewhurst, USFWS 2020
2001	616		“10s of 1000s”		Byrd 2001
2006			1135–2800 ^b		Byrd and Williams 2006
2010		677			Rojek and Williams 2010
2011			255–555 ^c		AMNWR unpubl. data

^aEstimates for Koniuiji Strait and Granite Cove area except that for 1977, which is for the total island.

^bMaximal number includes a mixed-species flock of 1700 Horned and Tufted puffins offshore.

^cMaximal number includes a mixed-species flock of 300 Horned and Tufted puffins offshore.

Fratercula cirrhata. Tufted Puffin. Common or abundant breeder; rare outside the breeding season. This species has nested on every island except Sealion Rocks (Table 2), with a population estimated at ~190,000 in 1977. Populations have decreased substantially at the 5 largest colonies: Karpa, Castle Rock, Hall, Atkins, and Bird (Table 8). At Simeonof, where the species apparently did not nest in 1960 (Kenyon 1964) or 1977 (Bailey 1978), “a dozen burrows” were found in 1994 (Bailey 1994), and numbers increased thereafter, with about 130 birds counted in 2011 (AMNWR unpubl. data). In the fall and winter, birds were seen at sea near Unga and Popof 8–10 Sep 1973 (MacIntosh), and a few were at various points 19–20 Nov 1982 (Day). **NOTES:** Recorded at Nagai by Steller 30–31 Aug 1741 (Stejneger *in* Golder

TABLE 8 Estimates or Counts of the Tufted Puffin at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony					Source
	Karpa	Castle Rock	Hall	Atkins	Bird	
1970					“10s of 1000s”	Jones 1970
1973	10,000	85,000	2000	8000	23,000	Sowl 1973
1976	10,000	80,000	5200	12,000		Moe and Day 1979
1977		80,000	5200	12,000	16,000	Bailey 1978
1984					3000	Bailey and McCargo 1984
1985					0 ^a	Bailey 1985
1990	8000				0	S. Hatch, USFWS 2020
2001		“10s of 1000s”			“several hundred”	Byrd 2001
2006		2450–4150 ^b	“hundreds”	423		Byrd and Williams 2006
2010	3176					Rojek and Williams 2010
2011		994–1300 ^c	962	1372	239	AMNWR unpubl. data

^aProbable breeding failure.

^bMaximal number includes a mixed-species flock of 1700 Horned and Tufted puffins offshore.

^cMaximal number includes a mixed-species flock of 300 Horned and Tufted puffins offshore.

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1925:80). This Beringian species nests throughout southwestern Alaska (Gabrielson and Lincoln 1959, Murie 1959, Sowls et al. 1978, Gibson and Byrd 2007).

Rissa tridactyla pollicaris. Black-legged Kittiwake. Locally common breeder and resident. About 160,000 birds nested in the Shumagins in 1977 (Bailey 1978). The species has nested on at least 12 islands (Table 1). Nonbreeders roost on shores throughout the archipelago and are seen widely in both nearshore and offshore waters. The largest breeding colonies have been at the Haystacks, Castle Rock, Cape Thompson on Big Koniuji (Figure 3), and Bird Island. Populations have declined dramatically at Castle Rock and Bird, and the number of nests at Cape Thompson appears to have declined much more than has the population (Table 9). At the same time, new colonies have appeared since the 1970s at Popof and at Big Koniuji (Table 9). In the fall and winter, thousands were seen in Popof Strait 8 Sep 1973 (MacIntosh), and at least 200 were at Big Koniuji 19 Nov 1982 (Day). **NOTES:** Beringian subspecies *pollicaris* nests throughout southwestern Alaska (Murie 1959, Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** MSB (2), USNM (2), UWBM (1) location unknown (2; see Dall 1873).

Xema sabini. Sabine's Gull. Rare in fall; has probably also occurred in spring (Gould et al. 1982). One or two birds per day were seen migrating at sea near the Shumagins and nearby Alaska Peninsula 24 Sep–18 Oct 1973 (MacIntosh). **NOTES:** This Holarctic species nests as far south as upper Bristol Bay (Murie 1959) and migrates through southwestern Alaska to and from its winter range in the Pacific off South America (Day et al. 2020b).

Chroicocephalus philadelphia. Bonaparte's Gull. One report without details of a flock at Popof 20 Jun 1940 (Gabrielson 1944a). **NOTES:** The species does not nest beyond the tree limit at the base of the Alaska Peninsula (Gabrielson and Lincoln 1959), but it is a common visitor on the Bering Sea coast of the Alaska Peninsula



FIGURE 3. A small part of the Black-legged Kittiwake colony at Cape Thompson, Big Koniuji Island, July 2021. The numbers nesting here vary widely but are usually several thousand pairs.

Photo by Brie Drummond

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TABLE 9 Estimates or Counts of the Black-legged Kittiwake at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony				Bird Island	Source
	Popof (Popof Head)	Castle Rock	Big Koniuji (Cape Thompson)	Big Koniuji (Flying Eagle Harbor)		
1973		6000	4800	0	43,000	Sowl 1973
1976		11,610	10,690 (7904–7947 nests)	0		Moe and Day 1979, R. H. Day
1977	0	11,600	15,800 ^a		43,000	Bailey 1978
1984			— (7800 nests)			Bailey 1985
1985			12,000 (700 nests)			Bailey 1985
1986				— (33 nests)		Bailey 1986
1987	200			— (60 nests)		Bailey and Norvell 1987
1990	2000				9000	J. McCullough, USFWS 2020; S. Hatch, USFWS 2020 ^b
2001		575 (324 nests)	7566 (5345 nests)		— (125 nests)	Byrd 2001
2006		880 (228 nests)	10,023 (4749 nests)			Byrd and Williams 2006
2011		884 (92 nests)	6568 (1171 nests)		632 (38 nests)	AMNWR unpubl. data

^aEstimate is for total island, although the only colony known at that time was at Cape Thompson.

^bMcCullough for Popof, Hatch for Bird.

from spring through fall (Gill et al. 1981) and has been reported from the eastern Aleutians (see Gibson and Byrd 2007).

Chroicocephalus ridibundus. Black-headed Gull. One report without details of an adult at Unga 2 Jun 1997 (T. Lauro, <http://www.oceanwanderers.com/Aleut.1.html>). **NOTES:** This Palearctic species has been recorded widely in southwestern Alaska (Gibson and Withrow 2015) from the western Aleutians (Gibson and Byrd 2007) to the Alaska Peninsula (Bartonek and Gibson 1972, Gill et al. 1981).

Larus canus (kamtschatschensis). Common Gull. One report. Two at Unga Spit, Unga, 2 Jun 1997 were well described, including their size, which was noticeably larger than the Short-billed Gull, and their yellow eyes (D. Filby and J. Brodie-Good, <http://www.oceanwanderers.com/Aleut.1.html>). **NOTES:** The eastern Palearctic subspecies *kamtschatschensis* is rare in spring in the western Aleutians (Gibson and Byrd 2007). It has been recorded in the central Aleutians (Gibson and Byrd 2007) and as far north in the Bering Sea as St. Lawrence Island (Lehman 2019).

Larus brachyrhynchus. Short-billed Gull. Uncommon breeder and nonbreeding summer visitor; probably winters in small numbers. At Popof, 100–150 defensive birds were in a marsh 29 Jun 1997 (Day). At Bendel, ~300 pairs nested in 1977 (Bailey 1978), and the colony was still active in 1987 (Bailey) and 2006 (Byrd and Williams 2006), At Simeonof were 10–15 pairs in 1964 (Kenyon 1964) and 1994 (Bailey 1994),

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40 pairs in 2006 (Byrd and Williams 2006). At Chernabura were ~15 pairs in 1994 (Bailey 1994), ≥150 birds in 2006 (Byrd and Williams 2006), and ≥200 in 2011 (AMNWR unpubl. data; see also Table 1). Nonbreeders occur widely in summer (e.g., 100 in the Koniuji group in 1976, Day) and are particularly common at Little Koniuji (Bailey 1993a). **NOTES:** Short-billed Gulls nest the length of the Alaska Peninsula (Murie 1959, Gill et al. 1981), possibly west to Unimak Island, and are uncommon in winter as far west as the central Aleutians (Gibson and Byrd 2007).

Larus argentatus (smithsonianus). Herring Gull. Casual in spring. One subadult was seen near the Shumagins 15–16 May 1928 (Jaques 1930), and a one-year-old was seen near Nagai 14 May 1987 (Day). **NOTES:** Both the Nearctic *smithsonianus* and the distinctive Beringian *vegae* of the northern Bering Sea have been recorded in the eastern Aleutians (Gibson and Byrd 2007), but *smithsonianus* does not nest on the Alaska Peninsula (contra Gianini 1917).

Larus schistisagus. Slaty-backed Gull. One reported without details at Popof 10 Jun 2005 (K. Oeser, eBird). **NOTES:** This Beringian species is casual or intermittent at any season in the eastern Aleutians (Gibson and Byrd 2007).

Larus glaucescens. Glaucous-winged Gull. Locally common breeder and resident, nesting on every island/rock except Little Koniuji and Murre Rocks (Table 1). Non-breeders roost on shores and occur widely in both nearshore and offshore waters. In the 1970s the estimated nesting population in the Shumagins was 27,500–28,500 birds, of which ~25,000 were at Unga, Egg, Popof, Karpa, Nagai, and Hall (Bailey 1978). There are no recent counts for most of these colonies, but Glaucous-winged Gulls nest at 4 colonies on 3 islands where introduced foxes have been removed: Granite Cove and Flying Eagle Harbor on Big Koniuji, Simeonof, and Chernabura (Table 10). In the fall and winter, thousands were seen at sea between Popof and Unga 8 Sep 1973, some were seen ~30 km south of Unga 10 Sep 1973 (both MacIntosh), and at least 100 were at Big Koniuji 19 Nov 1982 (Day). **NOTES:** This widespread Beringian species is a common or abundant resident on the Alaska Peninsula (Gill et al. 1981) and the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** CM (1), MVZ (1).

Larus hyperboreus (ssp.). Glaucous Gull. Probably rare in spring or summer. Single second-year birds were seen among Glaucous-winged Gulls at Popof 20 May 1972 (Gibson) and at Hall 17 Jun 1976 (Day). **NOTES:** This Holarctic species winters throughout southwestern Alaska (Murie 1959), being rare in the Aleutians from fall

TABLE 10 Estimates or Counts of the Glaucous-winged Gull at Selected Colonies in the Shumagin Islands, Alaska, by Year

Year	Colony				Source
	Big Koniuji (Granite Cove)	Big Koniuji (Flying Eagle Harbor)	Simeonof	Chernabura	
1973		0	0		Sowl 1983
1976	0	28			Moe and Day 1979
1977		0	0	0	Bailey 1978
1984			~1100		Bailey and McCargo 1984
1986		~200			Bailey 1986
1987	30	340			Bailey and Norvell 1987
1995			1600		B. Anderson, USFWS 2020; Byrd 2001
2001			>750 ^a		Byrd 2001
2011			2581	1531	AMNWR unpubl. data

^aEstimate of birds just in colonies.

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to spring (Gibson and Byrd 2007). It is unclear whether these birds represent the eastern Palearctic subspecies *pallidissimus* or Beringian *barrovianus*.

Onychoprion aleuticus. Aleutian Tern. One report of two on northern Unga 2 Jun 1997 (A. Wilson, <http://www.oceanwanderers.com/Aleut.1.html>). **NOTES:** This species nests locally on the Bering Sea side of the Alaska Peninsula and in the eastern Aleutians (Gibson and Byrd 2007, Renner et al. 2015).

Sterna paradisaea. Arctic Tern. Rare to uncommon local breeder and summer visitor. This species nests on and near Popof, Simeonof, and probably Chernabura (Table 1) and occurs as scattered nonbreeders throughout the rest of the archipelago (e.g., two at Little Koniuji 31 Jul 1976, Day). At Range, an islet near Popof where Dall (1873) recorded nesting, hundreds nest in some years (Bailey 1978); 30 pairs were seen in 1984 (Bailey and McCargo 1984). Day found at least 12 birds and 1 nest inland on Popof 28 Jun 1997. The Arctic Tern nests in numbers at Simeonof, especially on the Murie Islets (~95 pairs 6 Jun 1960, Kenyon 1964; ~100 pairs Jun 1984, Bailey and McCargo 1984), but also inland in some years (e.g., 1968, Jones 1970; 2001, Byrd 2001; 2006, Byrd and Williams 2006). At Chernabura, it has been recorded during every visit (Bailey 1994, Byrd 2001, Byrd and Williams 2006, Stahl). The latest fall record is of ~50 birds seen 30 km southwest of Unga 9 Sep 1973 (MacIntosh). **NOTES:** This Holarctic species is a locally abundant nester and summer visitor on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018); it is an uncommon or rare migrant throughout the Aleutians, where it nests only on the central and western islands (Gibson and Byrd 2007). **SPECIMENS:** SDNHM (1), USNM (1), location unknown (2; see Dall 1873).

Gavia stellata. Red-throated Loon. Rare nonbreeding summer visitor, recorded as singles or pairs at Simeonof: 5 Jun 1960 (Kenyon 1964), late Jun 1968 (Troyer), 6 Jun 1987 (Bailey), May–Jun 1994 (Bailey 1994), and 20 Aug 1946 (Gabrielson 1946). **NOTES:** This Holarctic species both nests and winters on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and is an uncommon or fairly common breeder and rare wintering bird in the Aleutians (Gibson and Byrd 2007), so it probably winters in the Shumagins too.

Gavia pacifica. Pacific Loon. Rare to fairly common in spring, fall, and winter. In spring, one was seen at Simeonof 26 May 1994 (Bailey 1994), and 2 were seen in the Shumagins 2 Jun 1997 (A. Wilson and others, <http://www.oceanwanderers.com/Aleut.1.html>). In the fall, ~25 flew northeast up Unga Strait 10 Oct 1974, and the species was common in the same area 24 Sep–18 Oct 1975 (MacIntosh). Up to 8 unidentified loons, some probably the Pacific, were seen near Popof winter 2000–2002 (Hoffman), and one Pacific was seen there 20 Feb 2015 (F. Bottom, eBird). **NOTES:** This Nearctic species nests on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and occurs in the eastern Aleutians from fall to spring (Gibson and Byrd 2007).

Gavia immer. Common Loon. Uncommon nonbreeding resident. Recorded only in the outer Shumagins: Big Koniuji (1 bird 14–15 Jun 1976, Day), Simeonof (flock of 8 migrating 8 Jun 1960, Kenyon 1964; 1 bird 18–23 Jun 1968, Troyer; 1 found dead 2 Sep 1872, Dall 1873), Bird (single birds 21 May and 6 Jun 1984, Bailey and McCargo 1984), and Chernabura (one bird 24 Jun–14 Jul 1994, Bailey 1994). One was seen at Popof 4 Apr 2018 (D. Briem, eBird). **NOTES:** The lack of records from the inner Shumagins is surprising, as the species nests on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018), nests locally and winters in the Aleutians (Gibson and Byrd 2007), and winters commonly at Kodiak (Forsell and Gould 1981).

Gavia adamsii. Yellow-billed Loon. Rare in migration and summer. Three birds were seen in the Shumagins 2 Jun 1997 (A. Wilson and others, <http://www.oceanwanderers.com/Aleut.1.html>), 1 was seen near Chernabura 11 Jun 1973 (Sowl

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1973), and 1 basic-plumaged bird was at Big Koniuij 16 Aug 1976 (Day). **NOTES:** This Holarctic species is rare in the Aleutians from fall to spring (Gibson and Byrd 2007) and winters in the Kodiak area in small numbers (Forsell and Gould 1981), so it probably winters in the Shumagins too.

Phoebastria nigripes. Black-footed Albatross. Rare in summer. Seen in and near the Shumagins 16 May 1928 (Jaques 1930) and 8 Jun 1943 (Arnold 1948). Occasionally seen on the outer continental shelf just south of the Shumagins in Jul 1982, 1984, and 1985, although it was much more common over the shelf break than on the shelf itself (Day). **NOTES:** The Black-footed Albatross occurs in the Gulf of Alaska year round, primarily in oceanic water beyond the continental shelf (Gould et al. 1982, Day 2006); it is uncommon over oceanic water near the eastern Aleutians in the summer (Gibson and Byrd 2007).

Hydrobates furcatus furcatus and *H. leucorhous leucorhous*. Fork-tailed Storm-Petrel and Leach's Storm-Petrel. Both are locally abundant breeders, recorded nesting on at least 9 islands (Table 1). An estimated 20,000 birds of both species combined nested on 6 islands in 1976 and 1977: the Haystacks, Peninsula, the Twins, Near, Castle Rock, and Hall (Bailey 1978, Moe and Day 1979). In addition, the Fork-tailed was recorded at night around a ship at two points around Nagai in 1973 (Sowl 1973). Both species were heard vocalizing on the Murie Islets and on an unnamed islet just south of Simeonof 6 Jun 1984, and both were heard calling from cliffs at Bird Island 25 May 1984 (Bailey and McCargo 1984). Their absence from Simeonof itself was probably due to fox predation. Fork-tailed Storm-Petrels are seen at sea among these islands during the summer (Murie 1959; Day) and were recorded in the fall southwest of Unga 9–10 Sep 1973 (MacIntosh). **NOTES:** Both species nest locally in the western Gulf of Alaska (Sowls et al. 1978) and throughout the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** *furcatus*, SDNHM (1), UAM (1), USNM (1); *leucorhous*, USNM (4), UWBM (1).

Fulmarus glacialis rogersii. Northern Fulmar. Uncommon local breeder and resident, colonizing the outer Shumagins since 1984 (Table 1). At the Twins, ~50 birds were seen on cliffs 11 Jul 2010 (Rojek and Williams 2010); none had been seen earlier (Sowl 1973, Bailey 1978). On 10 Jul 1990, ~20 were seen on cliffs on southeastern Castle Rock (USFWS 2020, Bailey), where none were seen in 1976 or 1977 (Bailey 1978, Moe and Day 1979). But only 3 birds were there 17 Jul 2001 (Byrd 2001), and none were seen in 2006 (Byrd and Williams 2006) or 2011 (AMNWR unpubl. data). On Bird Island, in Jun 1984 ~100 fulmars appeared to be nesting west of Point Welcome (Bailey and McCargo 1984), where none had been seen in 1973 or 1977 (Sowl 1973, Bailey 1978). Yet only a few individuals were there 9 Jul 1990 (USFWS 2020) and 13 and 15 Jun 1995 (Stahl), and none were there in 2006 (Byrd and Williams 2006) or 2011 (AMNWR unpubl. data). The species occurs at sea in and around the Shumagins during the summer (Gabrielson 1946, Arnold 1948, Kenyon 1964, Sowl 1973, Byrd 2001, Day), fall ("low numbers" 15–30 km southwest of Unga 9–10 Sep 1973, MacIntosh), and winter ("low numbers" 18–19 Nov 1982, Day). **NOTES:** The Beringian subspecies *rogersii* is a locally abundant nester at the Semidi Islands (Hatch and Hatch 1983) and in the Aleutians (Gibson and Byrd 2007) and is common at sea throughout the region (Gould et al. 1982). **SPECIMENS:** AMNH (3), UWBM (1).

Ardenna tenuirostris. Short-tailed Shearwater. Uncommon to abundant non-breeding visitor from spring to fall. In spring, ~50,000 birds were seen off southwestern Nagai 14 May 1987, with several flocks of thousands each from Nagai to southeast of Simeonof (Day). Migrants were passing through the Shumagins at a rate of 500 birds/min on 2 Jun 1997 (A. Wilson and others, <http://www.oceanwanderers.com/Aleut.1.html>). Large flocks are recorded periodically in summer (e.g., ~2000 birds

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believed to be this species south of the Shumagins 8 Jun 1943, Arnold 1948; among the Shumagins Jul 1977, Bailey 1978; near Nagai 19 Aug 1946, Gabrielson 1946). In fall, many tens of thousands were seen ~30 km southwest of Unga 9–10 Sep 1973 (MacIntosh). **NOTES:** The Short-tailed Shearwater is common or abundant in the Gulf of Alaska and the Aleutians from the spring to the fall but is rare in the winter (Gould et al. 1982, Day 2006, Gibson and Byrd 2007). **SPECIMENS:** AMNH (2).

Ardenna grisea. Sooty Shearwater. Uncommon to common nonbreeding visitor in summer, rare in winter. Small numbers were seen near the Koniuji group late May 1976 (Day), large flocks were seen near Simeonof 4–9 Jun 1960, and the species was recorded as prey in Bald Eagle aeries at both Herendeen and Simeonof (Kenyon 1964). Bailey (1978) also saw large flocks feeding among the Shumagins in summer 1977. In the winter, only 10–20 birds were seen near Big Koniuji 17–19 Nov 1982 (Day). **NOTES:** The Sooty Shearwater occurs year round as a rare or uncommon visitor in the Gulf of Alaska (Gould et al. 1982, Day 2006) and the Aleutians (Gibson and Byrd 2007).

Urile urile and *U. pelagicus pelagicus*. Red-faced Cormorant and Pelagic Cormorant. Rare to common local breeders and residents; probably less common in winter. About 15,000 cormorants, including these two and *Nannopterum auritum*, nested in the Shumagins in 1977 (Bailey 1978), with the Red-faced being the most common and the Pelagic second in abundance (Gabrielson and Lincoln 1959, Murie 1959). Most counts did not distinguish the Red-faced and Pelagic, which often nest together, so we treat them together, except in the few cases in which only the Pelagic was recorded. The locations of cormorant colonies shift, and the birds' numbers vary wildly, hampering interpretation of population trends. The Red-faced and Pelagic have nested in mixed-species colonies on at least 7 islands: Unga, Korovin, the Haystacks, Big Koniuji, Hall, Herendeen, and Bird (Tables 1 and 11). In addition, unidentified cormorants, probably some of each species, have been recorded at the Twins (~2000 birds in 1973, Sowl 1973) and Karpa (20 birds in 1977, Bailey 1978). The Pelagic has also been recorded nesting at Popof, Andronica, and Simeonof. In the fall, "hundreds" of probable Red-faced were seen at sea between Popof and Unga 8 Sep 1973 (MacIntosh). In the winter, scattered birds of both species were seen in the Shumagins 18–19 Nov 1982 (Day), and up to 106 cormorants, at least some of which were identified as Pelagic, were seen near Popof winter 2000–2002 (Hoffman). **NOTES:** The two species of *urili* recorded by Steller at Nagai on 30–31 Aug 1741 were interpreted by Stejneger (*in* Golder 1925:80) to be *U. pelagicus* and *N. auritum*. Both species breed and are resident in the western Gulf of Alaska (Gabrielson and Lincoln 1959, Sowls et al. 1978) and the Aleutians (Gibson and Byrd 2007) **SPECIMENS:** *urile*, YPM (1); *pelagicus*, AMNH (4), PSM (1).

Nannopterum auritum cincinatum. Double-crested Cormorant. Rare to common local breeder; less common in winter. The least common cormorant in the Shumagins, the Double-crested occurs throughout the archipelago in the summer (Gabrielson and Lincoln 1959, Murie 1959) and has nested at 5 islands (Table 11): the Haystacks, the Twins, Big Koniuji, Hall, Herendeen, and possibly also Bird Island. Only 2 birds total were recorded wintering on 1 of 9 surveys near Popof winter 2000–2002 (Hoffman). **NOTES:** The Beringian subspecies *cincinatum* nests around the Gulf of Alaska and west to the eastern Aleutians (Sowls et al. 1978, Gibson and Byrd 2007). **SPECIMENS:** AMNH (1).

Pandion haliaetus (carolinensis). Osprey. Casual in spring and summer. Sowl (1973) was told by the ranch caretaker at Simeonof that he had shot a bird in May 1972, and one was seen at Bird 1 Jun 1984 (Bailey). **NOTES:** The Nearctic subspecies has not been collected or photographed in the Aleutians, but there are 4 sightings in May and Jun and 2 in Oct (Gibson and Byrd 2007).

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TABLE 11 Estimates of Counts of Cormorants at Selected Colonies in the Shumagin Islands, Alaska, by Year

Colony and year	Cormorant species				Source
	Red-faced	Pelagic	Double-crested	Unidenti-fied	
Unga					
1946	“several thousand pairs” (both species); 70% Red-faced	“several thousand pairs” (both species); 30% Pelagic			Gabrielson and Lincoln 1959
1973	5000 Red-faced + 2000 Red-faced/ Pelagic	2000 Red-faced/ Pelagic			Sowl 1973
1977	7000 birds (mostly Red-faced)	7000 birds (mostly Red-faced)			Bailey 1978
1994	0 birds ^a	32 birds ^a			J. F. Piatt, USFWS 2020
Popof					
1946		250 birds			Gabrielson 1946
1977				1200 birds	Bailey 1978
Korovin					
1973	1200 birds (Red-faced/ Pelagic)	1200 birds Red-faced/Pelagic)			Sowl 1973
1977	200 birds				Bailey data, SCC
Karpa					
1977				20 birds nesting	Bailey 1978
1990	200 birds	30 birds			D. Dewhurst, USFWS 2020
Andronica					
2010		140 birds/15 nests			Rojek and Williams 2010
The Haystacks					
1946	“big colony” (Red-faced/ Pelagic)	“big colony” (Red-faced/ Pelagic)			Gabrielson 1946
2006	181 birds/86 nests	11 birds/0 nests	6 birds		Byrd and Williams 2006
2011	1 bird	1 bird	76 birds/ 64 nests	13 nests	AMNWR unpubl. data
The Twins					
1973	2000 birds				Sowl 1973
2010	0 birds ^a	2 birds ^a	12 birds/6 nests ^a		Rojek and Williams 2010
Big Koniuji					
1976	95 nests	87 nests	17 nests	180 nests	Moe and Day 1979, R. H. Day

(continued)

Aquila chrysaetos canadensis. Golden Eagle. Rare breeder and probable resident. At Big Koniuji, an adult was in display flight 31 May and carrying nesting material 7 Jun 2002 (Maccormick 2002); the species has probably bred in other years also (Bailey 1985, Day). At Bird Island, Bailey noted downy chicks 9 May 1984 (Bailey and McCargo 1984) and 8 Jul 1987 (not 8 Jun, as written in Bailey and Norvell 1987) and adults at a previously used nest 9 May 1985 (Bailey 1985). Golden Eagles also have

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Colony and year	Cormorant species				Source
	Red-faced	Pelagic	Double-crested	Unidenti-fied	
1984	140 nests (mostly Red-faced)			140 nests (mostly Red-faced)	Bailey 1985
1985	40 nests (mostly Red-faced)				Bailey 1985
1986	270 nests	70 nests	30 nests	30 nests	Bailey 1986
2011	0 birds ^a	6 birds/2 nests ^a	54 birds/35 nests ^a	295 birds/158 nests ^a	AMNWR unpubl. data
Hall					
1987	>800 birds/400 nests	0 birds	>110 birds/55 nests		Bailey and Norvell 1987
2006	6 birds/3 nests	35 birds/12 nests			Byrd and Williams 2006
2011	0 birds	4 birds/0 nests	13 birds		AMNWR unpubl. data
Herendeen					
1960	“numbers” nested				Kenyon 1964
1976	0 nests	0 nests	0 nests		Moe and Day 1979
2006	0 birds	0 birds	27 birds		Byrd and Williams 2006
2011	1017 birds/638 nests	268 birds/142 nests	188 birds/99 nests	140 birds	AMNWR unpubl. data
Simeonof					
1946	“many hundreds”	“many hundreds”		“many hundreds”	Gabrielson 1946
1960	“several” birds/0 nests	“several” birds/0 nests		“several” birds/0 nests	Kenyon 1964
1968	0 birds	“a number of young”	2 birds	0 birds	W. L. Troyer
1977	0 birds			0 birds	Bailey 1978
1994	0 birds	50 birds	30 birds	0 birds	Bailey 1994
1995		60 birds	20 birds		W. Stahl
2001	0 birds	15 birds	“several” birds	0 birds	Byrd 2001
2011	0 birds	37 birds	51 birds	0 birds	AMNWR unpubl. data
Bird					
1970	0 birds	“large colony”			Jones 1970
1977	6000 birds (Red-faced/Pelagic)	6000 birds (Red-faced/Pelagic)			Bailey 1978
1984	a few believed to be nesting		a few believed to be nesting		Bailey and McCargo 1984

^aIncomplete count.

been seen, and may nest, at Unga, where Dall (1873) believed them to be resident; Popof and Nagai (both in 1988, Gronholdt); Peninsula Island (Jun–Jul 1976, Day), and Chernabura (3 pairs Jun–Jul 1994; Bailey 1994). Seen only once at Simeonof (Jun 1994, Bailey), despite many surveys over the years. **NOTES:** Probably nests on all islands with mountains and ground squirrels, which are an important prey (Katzner et al. 2020). Golden Eagles are resident on the Alaska Peninsula (Katzner

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et al. 2020); the Nearctic subspecies *canadensis* nests out to the tip of the peninsula (Bailey 1975) and probably in the eastern Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (1), WFFVZ (1).

Circus hudsonius. Northern Harrier. Casual in summer. One bird was seen at Simeonof 20 Jul 1995 (Stahl). **NOTES:** This Nearctic species is a rare nester on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and probably casual in the eastern Aleutians in the summer and fall (Gibson and Byrd 2007).

Haliaeetus leucocephalus. Bald Eagle. Uncommon to common breeder and resident. Widespread and conspicuous, nesting on all islands and many smaller islets and rocks; seen by virtually every visitor (e.g., Gabrielson and Lincoln 1959, Murie 1959). **NOTES:** The Bald Eagle is a common resident throughout southwestern Alaska (Gabrielson and Lincoln 1959, Murie 1959, Gibson and Byrd 2007). **SPECIMENS:** WFFVZ (4), UMMZ (3), UF (1), USNM (1).

Haliaeetus pelagicus. Steller's Sea-Eagle. Two reports lacking details of single adults at Simeonof 4 Oct 1979 (O. Vivion, *vide* J. E. Sarvis) and 4 Mar 1981 (Sarvis). **NOTES:** These records probably represent a single wide-ranging bird seen also at multiple locations on the lower Alaska Peninsula from 1977 to 1981 (Gibson and Byrd 2007).

Buteo lagopus sanctijohannis. Rough-legged Hawk. Rare, probably breeding only in the inner Shumagins, where tundra voles occur (MacDonald and Cook 2009). One was seen at Unga in 1936 (Murie 1959). At Popof, 1 was collected 18 Jul 1880 (Bean 1882), 1 light-morph bird was seen 21 Jun 1995 (Gibson), and a defensive pair (1 light-morph) was seen 28 Jun 1997 (Day). Rough-legged Hawks have also been seen at Andronica (1 on 6 Jul 1977, Bailey) and Big Koniuji (2 on 2 Jun 1976, Day; 1 on 15 May 1985, Bailey), but none were known to nest, and voles are lacking on those islands. **NOTES:** During the breeding season, the species specializes on lemmings (*Lemmus*, *Dicrostonyx*) and voles (*Microtus*, *Clethrionomys*) (Bechard et al. 2020). It nests on the Alaska Peninsula (Gianini 1917) and the eastern Aleutians (Gibson and Byrd 2007). **SPECIMENS:** WFFVZ (7), USNM (2); 8 of the 9 specimens are egg sets from Unga and Popof.

Bubo virginianus (lagophonus). Great Horned Owl. Rare breeder; residency status unclear. At Simeonof, one bird was heard calling the night of 13 Jul 2001 near a former ranch house, site of the island's only (planted) spruce trees (Byrd 2001). Two fledglings photographed in a small grove of planted spruce trees at the former Unga village, Unga, 5 Aug 2015 (Macaulay Library ML163672921; photograph by A. Boyle) confirm local nesting. In addition, birders on cruise ships visiting Unga saw 1 on 16 Jul and 3 on 15 Aug 2017, 1 on 18 Jun and 2 on 21 Aug 2018 (Schuette, eBird), and 2 on 1 Jul 2019 (Fabrice Schmitt, eBird). Schuette, who worked on cruise ships visiting Unga, related that the owls were a "well-known commodity" and that he also saw fledglings there; he reported no sign of a nest in the local spruce trees and thought that the owls nested on a sea cliff southeast of town. **NOTES:** This species has been recorded previously in southwestern Alaska at Chignik (6 records Jun–Sep; Narver 1970) and the Nelson Lagoon area (1 record Jul 1976; Gill et al. 1981). Subspecies *lagophonus* (includes *algistus*; Gibson and Withrow 2015) occurs in Alaska as far southwest as Bristol Bay (Gibson and Kessel 1997), although coastal records in western Alaska are primarily in the fall and winter. These Shumagin breeding records are >500 km from the edge of the known range in southwestern Alaska, at the limit of forest at the base of the Alaska Peninsula.

Bubo scandiacus. Snowy Owl. Casual. Beals saw 3 at Popof 8 May 1944 and was told, we suspect incorrectly, that they were resident and probably breeding (Gabrielson and Lincoln 1959; see also Murie 1959). **NOTES:** Since 1944 there have been

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no records of this species, which is casual in the winter and spring, but does not nest, on the Alaska Peninsula (Gill et al. 1981) and the eastern Aleutians (Gibson and Byrd 2007).

Asio flammeus flammeus. Short-eared Owl. Rare breeder. Eggs were collected at Unga 26 Jun 1893 (Gabrielson and Lincoln 1959). Single birds were seen at Popof 16 May 1936 (Murie 1959) and 12 Jun 1946 (Gabrielson 1946) but not afterward (Gibson, Day). Bailey (1994) found a nest at Simeonof 6 Jun 1994, and several sightings at Chernabura Jun–Jul 1994 (Bailey 1994) suggest nesting. **NOTES:** Holarctic subspecies *flammeus* nests on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and in the eastern Aleutians (Gibson and Byrd 2007). **SPECIMENS:** AMNH (1), USNM (1).

Megaceryle alcyon. Belted Kingfisher. Rare breeder and resident. At Popof, a nest was found in summer 1943 (Beals), and a presumably nesting bird was seen by a stream 27–28 Jun 1997 (Day). The species was not seen in the Koniuji group in 1976 (Day), but single birds were seen at Big Koniuji 7 May 1985 (Bailey 1985), 11–21 Jul 1987 (Bailey and Norvell 1987), and 19 Nov 1982 (Day). Bailey (1986) believed 2 pairs to be nesting there Jun–Jul 1986. Single birds were seen at Little Koniuji 25 Jun 1993 and 21 May 1995 (Bailey 1993a). **NOTES:** The kingfisher is a rare breeder and resident on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018, Beals) and in the eastern Aleutians (Gibson and Byrd 2007).

Falco rusticolus. Gyrfalcon. Rare as a nonbreeding visitor in spring and summer; seen only in the outer Shumagins. Probably the same individual was seen at Big Koniuji 9 and 22 May 1985 (Bailey), and single birds were seen at Simeonof 18–23 Jun 1968 (Troyer), 9 Jun 1994 (Bailey), and 16 Jul 2001 (Byrd 2001). **NOTES:** This Holarctic species is a rare nester and probably rare resident in the eastern Aleutians (Gibson and Byrd 2007), an uncommon breeding resident on the Alaska Peninsula (Gill et al. 1981), and a breeder at Chirikof Island (Withrow 2015).

Falco peregrinus (pealei). Peregrine Falcon. Uncommon breeder and probable resident. The only confirmed nesting record is at the southern end of Big Koniuji in 1976 (Moe and Day 1979). On the basis of repeated sightings in those areas, probable additional aeries on Big Koniuji are near Flying Eagle Harbor (Bailey and Norvell 1987) and Cape Thompson (Bailey 1985, Byrd and Williams 2006, Day, AMNWR unpubl. data). A pair seen sporadically at Castle Rock (Byrd and Williams 2006) presumably came from the suspected Cape Thompson aerie. The Peregrine Falcon has been recorded sporadically at numerous additional locations in both the inner (e.g., Unga, Karpa, Andronica, and the Haystacks; Gabrielson 1946, Rojek and Williams 2010, Gronholdt) and outer (e.g., Bendel, Turner, the Twins, Simeonof, and Bird; Gabrielson 1946, Kenyon 1964, Sowl 1973, Bailey 1994, Byrd and Williams 2006, Rojek and Williams 2010, Bailey, Byrd) Shumagins and probably breeds at some of them. **NOTES:** Subspecies *pealei* is widespread and resident in southwestern Alaska (Gabrielson and Lincoln 1959, Murie 1959, Gibson and Byrd 2007).

Lanius borealis (borealis). Northern Shrike. Casual in fall and winter. Gronholdt saw several in various years at Sand Point, and Bailey saw one chasing a Song Sparrow at Big Koniuji 20 Sep 1988 (Bailey 1988). **NOTES:** The Nearctic subspecies *borealis* is a rare probably breeding resident on the Alaska Peninsula (Gabrielson and Lincoln 1959, Savage 2018) and a casual or intermittent winter visitor in the eastern Aleutians (Gibson and Byrd 2007).

Pica hudsonia. Black-billed Magpie. Uncommon or fairly common breeder and resident. Widespread and conspicuous, nesting in alder and willow thickets throughout the archipelago, including smaller islands having shrubs, and occasionally on cliffs and in an old farmhouse (Dall 1873, Murie 1959, Kenyon 1964, Byrd

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2001, Bailey, Byrd, Day). Nests, eggs, or young recorded at Popof (eggs 14 Jun 1898, USNM), Big Koniuji (fledglings with half-grown tails 10 Jul 1976, Day; adults carrying food toward alder stand, presumably for young, 12 Jun 2002, Maccormick 2002), Simeonof (2 nests in willows Jun 1994, Bailey 1994; nest in old farmhouse 16 Jul 2001, Byrd 2001), and Bird islands (multiple nests, including one on ground, Jun 1994; Bailey 1994). Also seen in winter (Kenyon 1964, Beals). **NOTES:** The magpie is resident on the Alaska Peninsula (Gabrielson and Lincoln 1959, Murie 1959) and on Unimak Island (Gibson and Byrd 2007). **SPECIMENS:** USNM (4), AMNH (3), UAM (3), MCZ (2), CM (1), DMNS (1), PSM (1).

Corvus corax kamtschaticus. Common Raven. Fairly common breeder and resident, seen by every observer in the Shumagins. A widespread and conspicuous bird throughout the Shumagins, nesting on cliff ledges, primarily at higher elevations. Nests, eggs, or young recorded at Big Koniuji (family groups seen after 5–10 Jul in 1976, Day, and in Jul 1987, Bailey and Norvell 1987) and Simeonof (nests 5 Jun 1960, Kenyon 1964; 18–23 Jun 1968, Troyer; 6 Jun 1984, Bailey and McCargo 1984; May–Jun 1994, Bailey 1994). **NOTES:** The Beringian subspecies *kamtschaticus* is a breeding resident throughout southwestern Alaska and the Aleutian Islands (Gabrielson and Lincoln 1959, Gibson and Byrd 2007, Gibson and Withrow 2015, Withrow 2015). **SPECIMENS:** USNM (4), AMNH (3), UAM (3), MCZ (2), CM (1), DMNS (1), PSM (1).

Poecile atricapillus turneri. Black-capped Chickadee. Uncommon breeding resident, though no detailed information on nesting has been recorded. Recorded at Unga (Aug 1946, Gabrielson 1946; 29 Jul 2019, Schuette, eBird), Popof (in both summer and winter; Murie 1959, Beals, Day), Nagai (Murie 1959), and Big Koniuji (“small numbers” summer 1976, Day; May–Jun 1985 and Jul 1990, Bailey; Jun 2002, Maccormick 2002). **NOTES:** Subspecies *turneri* of central and southern Alaska nests in tall brush throughout the Alaska Peninsula (Gabrielson and Lincoln 1959, Murie 1959) and on Unimak Island (Gibson and Byrd 2007). **SPECIMENS:** USNM (9), LACM (1), location unknown (1; Beals field notes).

Riparia riparia (riparia). Bank Swallow. Uncommon widespread but local breeder with nesting colonies at Unga and Popof (Gabrielson and Lincoln 1959), Nagai (in 2010, Rojek and Williams 2010), Big Koniuji (in 1976, Day), Little Koniuji (in 1976, Day, and 1993, Bailey 1993a), Simeonof (in 1946, Gabrielson and Lincoln 1959; 1968, Troyer; 1994, Bailey 1994; 1995, Stahl; and 2001, Byrd 2001), Bird (in 2001, Byrd 2001), and Chernabura (in 1994, Bailey 1994, and 2001, Byrd 2001). **NOTES:** The species appears to be recovering after fox eradication, as Bank Swallows are now nesting in locations where foxes could dig out their burrows (Byrd 2001). The species also nests on the Alaska Peninsula and in the eastern Aleutians (Kessel and Gibson 1978, Gibson and Byrd 2007, Savage et al. 2018).

Tachycineta bicolor. Tree Swallow. Casual or rare local breeder, probably nesting on buildings. No nests have been recorded, but Tree Swallows have been observed at Popof 7 Jun 1973 (Sowl 1973) and 27–30 Jun 1997 (Day). At Big Koniuji, a pair copulated and was prospecting near temporary cabins but did not nest, 7–12 Jun 1976 (Day). At Simeonof, whose old buildings are collapsing, 10 were flying north 9 Jun 1960 (Kenyon 1964) and a few were seen May–Jun 1994 (Bailey 1994). **NOTES:** It is unclear whether the Tree Swallow still nests at former Unga village, where the old buildings are collapsing. It nests on man-made structures on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and in the eastern Aleutians (Gibson and Byrd 2007).

Hirundo rustica (erythrogaster). Barn Swallow. Formerly locally common, being numerous and presumably nesting at Popof on 7 July 1899 (see Keeler 1910:225). No subsequent records. **NOTES:** The Nearctic subspecies *erythrogaster* formerly

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nested as far southwest as Unalaska (Murie 1959, Gibson and Byrd 2007), in the eastern Aleutians, but its range contracted eastward sometime after the mid-1920s (Kessel and Gibson 1978).

Troglodytes pacificus (ssp.). Pacific Wren. Uncommon breeder and resident. Since Turner's (1886) observation at Unga in 1881, the species was not recorded again in the inner Shumagins until 2017 (2 birds at Unga 15 Jul; Schuette, eBird). After the first records in the outer Shumagins in 1976 and 1977, on Near (Bailey) and Big Koniuji (Day), the wren has now been seen in the summer on every larger island surveyed (Bailey 1985, 1986, 1993a, 1994, Byrd 2001, Maccormick 2002, Rojek and Williams 2010, AMNWR unpubl. data). **NOTES:** Except by Turner in 1881, the species went unrecorded in the Shumagins until 1976 (Bean 1882, Seale 1898, Keeler 1910, Wetmore 1911, Gabrielson 1944a, b, Gabrielson and Lincoln 1959, Murie 1959, Beals; also extensive collecting by C. H. Townsend), including by Gabrielson and Murie, who tried to collect wrens throughout southern Alaska for taxonomic studies. Because wren populations in this region experience significant die-offs in severe winters (Withrow 2015), the birds could have been missed when populations were very low, but the multiplicity of wrenless visits to the Shumagins from the 1880s to the 1970s makes that scenario improbable. The colonizing subspecies is either *kiskensis* from the Alaska Peninsula and Aleutians or (less probably) *semidiensis* from the Semidi Islands (Gabrielson and Lincoln 1959, Murie 1959; see also Gibson and Withrow 2015, Withrow 2015). The Pacific Wren is an uncommon breeder on the Alaska Peninsula (Gabrielson and Lincoln 1959) and throughout the Aleutians (Gibson and Byrd 2007); the Shumagin records represent an expansion of the species' breeding range within southwestern Alaska.

Catharus guttatus guttatus. Hermit Thrush. Uncommon breeder. Widespread and noticeable throughout the archipelago on islands with extensive alder thickets. Recorded, and presumably nests, at Unga (Gabrielson 1946), Popof (Gabrielson 1946, Murie 1959), Karpa (Bailey), Nagai (Stejneger in Golder 1925:81), Turner and Near (Jul 1977, Bailey), and in the Koniuji group at Big and Little Koniuji (1976, Day). The species has never been recorded on Simeonof (Kenyon 1964, Sowl 1973, Bailey 1994, Byrd 2001, Troyer) but has been at Bird (Jun 1970, 19 and 31 May 1984, Bailey; 15 Jun 1995, Byrd) and Chernabura (6 Jul 1994, Bailey 1994). **NOTES:** Subspecies *guttatus* nests in southwestern Alaska throughout the Alaska Peninsula and on Unimak Island (Gabrielson and Lincoln 1959, Gibson and Byrd 2007). **SPECIMENS:** USNM (3), UAM (1).

Turdus migratorius (migratorius). American Robin. One record, of one at Sand Point 7 Jun 1973 (Sowl 1973). **NOTES:** The species has been recorded on the Alaska Peninsula in late summer (Gill et al. 1981) and is casual in the central Aleutians in the fall (Gibson and Byrd 2007).

Anthus rubescens pacificus. American Pipit. Fairly common breeder and summer visitor. Widespread throughout the archipelago, primarily in alpine habitat (Gabrielson 1946, Gabrielson and Lincoln 1959, Murie 1959). Recorded nesting at Popof (June 1997, Day), Karpa and Near (Bailey 1978), Peninsula Island (nest Jul 1976, Day), Big Koniuji (Sowl 1973, Day), Little Koniuji (Bean 1882), Simeonof (Gabrielson 1946, Kenyon 1964, Bailey 1994, Byrd and Williams 2006, Stahl, Troyer 3 family groups 14–16 Jul 2001, Byrd 2001), Bird (May 1984, Bailey), and Chernabura (Byrd 2001; nest with 1 egg 3 Jul 1994, Bailey 1994). **NOTES:** Subspecies *pacificus* breeds also on the Alaska Peninsula and in the eastern Aleutians (Gabrielson and Lincoln 1959, Gibson and Byrd 2007). **SPECIMENS:** UAM (2), AMNH (1), USNM (1).

Pinicola enucleator flammula. Pine Grosbeak. Rare or uncommon but conspicuous local breeder and summer visitor. Occurs in tall shrub thickets on the inner Shumagins and in medium or tall shrubs at Big Koniuji. Apparently expanding

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its range from the alder zone on the Alaska Peninsula, the Pine Grosbeak was unknown in the Shumagins before the discovery of a pair suspected of nesting at Unga in summer 1983 (Rose). Four were seen there 16 Jul 2019 (Schuette, eBird). After single individuals were first seen at Popof 29 Jun 1983 (Rose) and Oct 1984 (Gronholdt), 8 birds were there 23 Jun 1995 (Gibson), and 3 were seen 27–28 Jun 1997 (Day). None were seen anywhere in the Koniuji group in 1976 (Day), but two were at Flying Eagle Harbor in Jun 1985 (Bailey 1985), and Bailey (1986) believed the species to be nesting there 11 Jun–12 Jul 1986; it was “well established” in Jul 1987 (Bailey and Norvell 1987). Subsequently, 2 were seen on southern Big Koniuji 14 Jun 2002 (Maccormick 2002), suggesting continuing southward expansion on the island. **NOTES:** The Beringian subspecies *flammula* breeds and is resident from southeastern Alaska to the Alaska Peninsula (Young and Adkisson 2020) and Unimak Island (Gibson and Byrd 2007). **SPECIMENS:** UAM (10).

Leucosticte tephrocotis griseonucha. Gray-crowned Rosy-Finch. Uncommon resident. Probably breeds throughout the archipelago. Recorded at Unga (Turner 1886, Gabrielson 1946; just-fledged young 15–16 Aug 1911, Wetmore 1911), Popof (Burroughs 1901), Karpa (Rojek and Williams 2010, Bailey), Nagai (Rojek and Williams 2010), Big and Little Koniuji and Hall (Bean 1882, Bailey 1993a, Maccormick 2002, Day), Simeonof (Troyer, Bailey 1994), Bird (Jones 1970, Bailey and McCargo 1984, Byrd), and Chernabura (Jones 1970, Bailey 1994). **NOTES:** Beringian subspecies *griseonucha* is resident in southwestern Alaska (Gabrielson and Lincoln 1959, Gibson and Byrd 2007). **SPECIMENS:** UAM (3), USNM (2).

Acanthis flammea flammea. Common Redpoll. Rare to common visitor, probably at any season, and probably erratic breeder. Formerly, this shrub-nesting species was believed to nest only on the inner Shumagins (Gabrielson 1946, Gabrielson and Lincoln 1959, Murie 1959), and it still nests at Unga (10 on 18 Jun 2018 and 29 Jul 2019; Schuette, eBird) and Popof (Jun 1997, Day). In the outer Shumagins, Sowl (1973) saw “a few” in central Big Koniuji 11 Jun 1973, but Day did not see any in the Koniuji group in 1976. By the mid- and late 1980s, however, the species was regular at Big Koniuji (15 May 1985, 25 Jun 1986, Bailey 1985, 1986; 17 Jul 1990, Bailey) and by 2002 it was common and conspicuous on southern Big Koniuji (Maccormick 2002). In the outermost islands, single birds have been seen at Simeonof (18–23 Jun 1968, Troyer; 13 Jul 2001, Byrd 2001; 30 July 2006, Byrd and Williams 2006) and Bird islands (16 May 1984, Bailey and McCargo 1984). **NOTES:** Holarctic subspecies *flammea* breeds on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and in the eastern Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (3), location unknown (1; Beals field notes).

Acanthis hornemannii (exilipes). Hoary Redpoll. One report, of one seen at Bird Island 16 May 1984 (Bailey). **NOTES:** The species might be a rare breeder on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and probably is casual in the eastern Aleutians (Gibson and Byrd 2007).

Spinus pinus (pinus). Pine Siskin. Casual. M. Tillinghast saw 6 at Unga 16 Jul 2017 (eBird); Beals saw about 15 in a grove of spruce trees on Popof 9 Mar 1942 and said that a naval officer saw 8–10 in the same grove 20 Apr 1943 (Gabrielson and Lincoln 1959). Bailey (1986) saw 2 at Big Koniuji. **NOTES:** The Pine Siskin is casual on the Alaska Peninsula from spring to fall (Kessel and Gibson 1978) and casual in the eastern Aleutians primarily from fall to spring (Gibson and Byrd 2007).

Calcarius lapponicus (alascensis). Lapland Longspur. Locally common or abundant summer breeder and migrant. Recorded at Unga (15 birds 29 Jul 2019, Schuette, eBird) and Popof (≥6 birds 27–30 Jun 1997, Day). The only longspurs recorded in the Koniuji group, 4 at Big Koniuji 14 May 1985 (Bailey 1985), were probably migrants. The species is a common to abundant breeder at Simeonof (Bailey 1994, Byrd

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2001, Byrd and Williams 2006, Troyer), Bird (Bailey and McCargo 1984, Byrd), and Chernabura (Jones 1970, Bailey 1994, Byrd 2001). The only fall record is of a flock of 12 at Popof 10 Sep 1973 (MacIntosh). **NOTES:** Beringian subspecies *alascensis* is a common to abundant breeder on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and the Aleutians (Gibson and Byrd 2007).

Plectrophenax nivalis townsendi. Snow Bunting. Uncommon breeder and probable resident. Occurs and probably nests on all islands with suitable alpine habitat. Recorded at Nagai (30–31 Aug 1741, Golder 1925), Big Koniuji (nested in rocky alpine areas in 1976, fledgling seen 29 Jul, Day), Little Koniuji (adult and 2 fledglings collected 16 Jul 1880, Bean 1882; 2 or 3 from 26 May to 14 Jun 1993, Bailey 1993a), Simeonof (first seen May–Jun 1994, when occasional in alpine areas, Bailey 1994; several, including fledglings, 13–16 Jul 2001, Byrd 2001), Bird (several in May and Jun 1984, Bailey and McCargo 1984; 15 Jun 1995, Byrd; 14 Jul 2001, Byrd 2001), and Chernabura (locally common Jun 1970, Bailey; 24 Jun–14 Jul 1994, Bailey 1994; pairs seen regularly mid-Jun 1995, Byrd; 2 birds 14–16 Jul 2001, Byrd 2001). The Snow Bunting does not appear to be common anywhere in the Shumagins, although biologists' observations have been less frequent in uplands than in the lowlands. **NOTES:** Beringian subspecies *townsendi* is resident in southwestern Alaska (Gabrielson and Lincoln 1959) and the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** USNM (3), MVZ (2).

Passerella iliaca unalascensis. Fox Sparrow. Fairly common local breeder. The earliest spring record is for 9 Apr (Beals in Gabrielson and Lincoln 1959). The species prefers tall alder thickets, as on Unga, Popof, and Nagai (Bean 1882, Gabrielson 1946, Murie 1959), but occurs on most or all islands with shrubs. It is fairly common in summer at Near (1977, Bailey 1978), Big Koniuji (1976, Day), Little Koniuji (1976, Day; 1993, Bailey 1993a), and Simeonof (1995, Stahl; 2006, Byrd and Williams 2006). At Simeonof, the Fox Sparrow was not recorded before 1995, in spite of surveys in the 1960s (Kenyon 1964, Troyer). It has been noted occasionally at Bird Island (7 May and 7 Jun 1984, Bailey and McCargo 1984) and Chernabura (Jun–Jul 1994, Bailey 1994; Jul 2001, Byrd 2001). **NOTES:** Subspecies *unalascensis* is an uncommon breeder on the Alaska Peninsula (Gabrielson and Lincoln 1959, Murie 1959, Gill et al. 1981, Savage et al. 2018) and Unimak Island and may breed irregularly farther west in the Aleutians (Gibson and Byrd 2007). **SPECIMENS:** UAM (8), AMNH (3), MCZ (3), USNM (3), CAS (1), PSM (1), location unknown (12; see Seale 1898:139, Murie 1959, Beals field notes).

Zonotrichia leucophrys gambelii. White-crowned Sparrow. Casual or rare in summer. Single birds have been recorded at Unga (29 Jul 2019, Schuette, eBird), Popof (16 May 1936, Murie 1959), Simeonof (13 Jul 2001, Byrd 2001), and Chernabura (14–16 Jul 2001; Byrd 2001). **NOTES:** Subspecies *gambelii* of northwestern North America breeds on the Alaska Peninsula (Gill et al. 1981) and is hypothetical in the Aleutians (Gibson and Byrd 2007).

Zonotrichia atricapilla. Golden-crowned Sparrow. Common or abundant breeder, nesting in alder thickets throughout the archipelago (Dall 1873, Bean 1882, Gabrielson 1946, Gabrielson and Lincoln 1959, Murie 1959, Kenyon 1964, Sowl 1973, Bailey and McCargo 1984, Bailey 1993a, 1994, Byrd 2001, Maccormick 2002, Day). Eggs were collected at Unga 22, 24, and 25 June 1895 (USNM), a pair was seen collecting nesting material at Big Koniuji 7 Jun 2002 (Maccormick 2002), and 3 fledglings were at Simeonof 30 Jul 2006 (Byrd and Williams 2006). **NOTES:** The Golden-crowned Sparrow breeds on the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and in the Aleutians as far west as Unimak, but singing males have been recorded farther west (Kessel and Gibson 1978, Gibson and Byrd 2007). **SPECIMENS:** USNM (5), UAM (3), AMNH (1), CAS (1).

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Passerculus sandwichensis sandwichensis. Savannah Sparrow. The most abundant passerine in the Shumagins, nesting in grasslands, especially those with scattered small shrubs. Recorded commonly at Unga (Jul 2019, Schuette, eBird), Popof (≥ 2 juveniles 27–29 Jun 1997, Day), Big Koniuji (nests found 25 and 27 Jun 1976, Day; 2002, Maccormick 2002), Little Koniuji (Bailey 1993a, Day), Hall (fledglings 29 Jul 2006, Byrd and Williams 2006), Simeonof (Kenyon 1964; 2 nests Jun 1994, Bailey; many fledglings Jul 2001, Byrd 2001), Bird Island (Jones 1970, Bailey and McCargo 1984), and Chernabura (Jones 1970; 2 nests Jun–Jul 1994, Bailey 1994; many fledglings mid-Jul 2001, Byrd 2001). **NOTES:** Gabrielson and Lincoln (1959) reported specimens from Popof in the late 1880s, including one *anthinus* and an intergrade between *anthinus* and nominate *sandwichensis*, although Gibson and Withrow (2015) have subsumed *anthinus* in *sandwichensis*. **SPECIMENS:** USNM (4), AMNH (3), UAM (2).

Melospiza melodia sanaka [including *semidiensis*]. Song Sparrow. Common and widespread breeding resident, recorded by every visitor (e.g., Dall 1873, Gabrielson and Lincoln 1959, Bailey 1978). Eggs, nests, or young have been recorded at “the Shumagins” (USNM egg set Jun 1895), Popof (USNM egg set 7 Jul 1899), Big Koniuji (4 eggs 28 May 2002, Maccormick 2002), and Simeonof (4 eggs 18–23 Jun 1968, Troyer); fledglings 13–16 Jul 2002, Byrd 2001). Other islands of record comprise Unga (29 Jul 2019, Schuette, eBird), Popof (Chapman 1902, Day), Little Koniuji (Bean 1882, Bailey 1993a), Simeonof (Gabrielson 1946, Kenyon 1964, Bailey 1994, Byrd 2001), Bird Island (Byrd 2001), and Chernabura (Bailey 1994, Byrd 2001). Several were seen at Big Koniuji 19 Nov 1982 (Day). **NOTES:** Beringian subspecies *sanaka* breeds on the Semidi and Shumagin islands, the western half of the Alaska Peninsula, and the eastern Aleutians (Gibson and Byrd 2007, Arcese et al. 2020). **SPECIMENS:** UAM (13), AMNH (12), USNM (6), CAS (2), LACM (2), MCZ (2), SDNHM (2), CHAS (1), CUMV (1), FMNH (1), SBMNH (1), location unknown (1; Beals field notes).

Leiothlypis celata (ssp.). Orange-crowned Warbler. One report. Bailey (1985) saw one at Big Koniuji 21 May 1985. **NOTES:** The species is a casual fall migrant at Cold Bay, near the tip of the Alaska Peninsula (Kessel and Gibson 1978) but has not been recorded in the Aleutians (Gibson and Byrd 2007).

Setophaga petechia rubiginosa. Yellow Warbler. Uncommon breeder, probably most common on the inner Shumagins, where tall alders grow. Four seen at Unga 15 Aug 2017 (Schuette, eBird), common at Popof 27–30 Jun 1997 (Day), and nesting at Big Koniuji (Maccormick 2002, Day) and Little Koniuji (thought to be breeding 10 June 1993, Bailey 1993a). Also recorded, without evidence of breeding, at Bird Island (Jones 1970; 15 June 1995, Byrd) and Chernabura (Jones 1970). The species has never been found at Simeonof, despite frequent surveys there (Kenyon 1964, Bailey 1994, Byrd 2001, Stahl, Troyer). **NOTES:** Coastal subspecies *rubiginosa* breeds on the Alaska Peninsula (Gabrielson and Lincoln 1959, Gill et al. 1981, Savage et al. 2018) and Unimak Island (Gibson and Byrd 2007).

Cardellina pusilla pileolata. Wilson’s Warbler. Uncommon breeder. Nests primarily in medium and tall alder thickets, so mainly in the inner Shumagins (Unga and Popof; Gabrielson 1946, Gabrielson and Lincoln 1959) and at Big Koniuji (Maccormick 2002, Day). Elsewhere, Wilson’s Warbler has been recorded only once at Simeonof (female 30 Jul 2006, Byrd and Williams 2006) and once at Bird Island (singing male 15 Jun 1995, Byrd, Gibson). **NOTES:** Subspecies *pileolata* of the intermountain West and Rocky Mountains extends northwest beyond the range of the Pacific coastal *chryseola* to Alaska, breeding as far west as the Alaska Peninsula (Gill et al. 1981, Savage et al. 2018) and Unimak Island (Gibson and Byrd 2007). **SPECIMENS:** UAM (3), PSM (1).

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Rejected Records

Himantopus mexicanus. Black-necked Stilt. We believe that the evidence for Gronholdt's claim of a stilt at Unga in Sep 1972 (Bailey 1978) is insufficient.

Aethia pygmaea. Whiskered Auklet. Beals's field notes for 4 Sep 1941 stating that this species is "reported in large numbers breeding on Little Koniujj" are clearly in error because it does not nest east of the Aleutians (Gibson and Byrd 2007).

Accipiter gentilis. Northern Goshawk. Gabrielson's (1946) report of one chasing sandpipers at Simeonof 20 Aug 1946 was not included by Gabrielson and Lincoln (1959).

DISCUSSION

This is the first summary of all information on the avifauna of the Shumagin Islands. To date, 125 species, plus 1 additional subspecies, of birds have been recorded in this archipelago. Of those taxa, 24 (19% of all taxa) are waterfowl, 16 (13%) are shorebirds, 37 (29%) are seabirds, 8 (6%) are other waterbirds (grebes, cranes, loons, and kingfishers), and 41 (33%) are terrestrial birds. At least 65 taxa (52% of all taxa) breed, probably breed, or formerly bred: 6 waterfowl (9% of all breeding taxa), 5 shorebirds (8%), 24 seabirds (37%), 2 other waterbirds (3%), and 28 terrestrial birds (43%).

The zoogeographic affinity of the Shumagins' avifauna (126 taxa) is strongly Nearctic (39% of all taxa) and Beringian (32%). The remaining taxa are Holarctic (21%), Palearctic (6%), or Oceanian (2%). The emphasis on Nearctic and Beringian taxa is accentuated among the 65 breeding taxa: 40% are Nearctic in origin and 44% are Beringian, with only one from the Palearctic, the Common Cuckoo, represented by a single instance of attempted breeding (Figure 4).

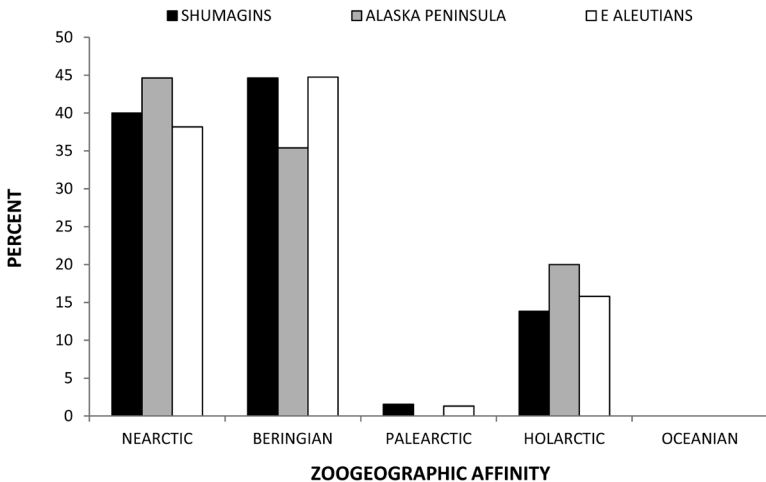


FIGURE 4. Proximate zoogeographic affinities of the breeding avifaunas of the Shumagin Islands and nearby areas in southwestern Alaska.

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The Shumagins are particularly important for nesting seabirds but are less so for migratory species, especially terrestrial birds. The diversity of migratory birds observed in the Shumagins appears to be lower than that seen in both the Port Moller–Nelson Lagoon–Herendeen Bay area of the southwestern Alaska Peninsula and in the eastern Aleutians, in part because of fewer observations in the Shumagins during migration periods. More importantly, however, the Shumagins also are out of the path of a main migration route like that seen on the Alaska Peninsula and in some parts of the Aleutians. For example, in the fall, the Bering Sea coast of the Alaska Peninsula provides important staging areas for many species that mostly or completely overfly the Shumagins, such as the Brant, Cackling Goose (*B. h. minima*), Pacific Golden-Plover, Dunlin (*Calidris alpina*), Long-billed Dowitcher (*Limnodromus scolopaceus*), Whimbrel, and Bar-tailed Godwit (*Limosa lapponica*; Gill et al. 1981, Reed et al. 1989). In the spring, the Shumagins provide a landfall of negligible importance to northbound transoceanic migrants that have almost reached the nearby Alaska Peninsula, which is as close as 15 km from the northern Shumagins and has extensive wetlands and mudflats (very limited in the Shumagins) that are important habitats for nesting and migrating waterfowl and shorebirds. These two groups are large components of the Alaska Peninsula's avifauna (Gill et al. 1981) but much smaller components of the Shumagins' avifauna. In addition, the Shumagins lie west of coastal and trans-Gulf migration routes in the central Gulf of Alaska (Isleib and Kessel 1989, Withrow 2015, DeCicco et al. 2017). Birds' primary migratory pathway in this region almost certainly is northeast–southwest, following the orientation of the Alaska Peninsula; a similar route has been posited for many birds that migrate to the Aleutians to breed (Gibson and Byrd 2007). Finally, the Shumagins also are at or near the eastern limit of the distribution of some nesting alcids and at or near the southwestern limit of brush-nesting passerines.

The Shumagins' location between the forests of much of mainland Alaska and the heath of the Aleutians leads to an interesting blending of breeding avifaunas. These islands also lie near an ill-defined area where the avifauna changes from being Nearctic-dominated (most of Alaska) to one that is more Beringian-dominated (most of the Aleutians and islands and coasts of the Bering Sea). Certain breeding species are oddly juxtaposed. For example, the Shumagins are the only place in the world where you can see Crested Auklets in display flights while listening to Black-capped Chickadees and Yellow and Wilson's warblers singing from nearby shrubs.

Avifaunal Comparisons

To put our work in the Shumagins in perspective, we have compared our records with those of two nearby areas: the north-central Alaska Peninsula and the eastern Aleutian Islands. We extend here those comparisons to the characteristics of the avifaunas as a whole. Field work has been extensive in both areas (Gill et al. 1981, Gibson and Byrd 2007), so the comparisons across this larger region should be robust.

A total of 184 taxa has been recorded across the 3 areas; of those taxa, 126 (69% of all taxa) have been recorded in the Shumagins, 130 (72%) have been recorded on the Alaska Peninsula, and 161 (89%) have been recorded in the eastern Aleutians. Altogether, 98 taxa (53% of all taxa) have been recorded

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in all 3 areas, and 139 (76%) have been recorded in at least 2 of the 3 areas, so many of the taxa are widespread through this region. The other 45 taxa (24% of the entire avifauna) are either migrants or accidental visitors that have been recorded only in 1 of the 3 areas. We suspect that the greater species richness in the eastern Aleutians and the fact that the eastern Aleutians account disproportionately for the taxa recorded in only 1 of the 3 areas reflects ornithologists' disproportionately greater field effort in the Aleutians than in the other areas.

Of the 98 taxa recorded in all 3 areas, 42 (43%) breed or probably breed in all 3, and 63 (64%) breed in at least 2 of the 3, but only 8 (8%) breed in only 1 of the 3, again demonstrating that a large component of the avifauna breeds widely through this region. The taxa that breed in only 1 of the 3 areas appear to reflect habitat characteristics found primarily in one area (e.g., the Sandhill Crane and some waterfowl and shorebirds in the extensive marshes of the Alaska Peninsula), unusual breeding records in some areas (e.g., the Great Horned Owl in the Shumagins), the retraction of the range of the Barn Swallow from the Shumagins and Aleutians, or taxa of restricted distribution (e.g., the Aleutian Cackling Goose, Eurasian Green-winged Teal, Whiskered Auklet, and Red-legged Kittiwake [*Rissa brevirostris*] in the Aleutians).

The numbers of taxa breeding in the 3 areas are surprisingly similar (65–76 in each), but their affinities differ (Table 12). The breeding avifauna of the Shumagins clearly is similar to that in the eastern Aleutians, in that 97% of the taxa breeding in the Shumagins also breed in the eastern Aleutians. In contrast, only 65% of the taxa breeding in the Shumagins also breed on the Alaska Peninsula. The breeding avifauna of the Alaska Peninsula is also more similar to that of the Aleutians (79% similar) than to that of the Shumagins (65% similar), but not dramatically so. Finally, the breeding avifauna of the eastern Aleutians is also more similar to that of the Shumagins (83% similar) than to that of the Alaska Peninsula (67% similar). To some extent, the lower similarity of the Alaska Peninsula's avifauna is caused by its more extensive aquatic and marsh habitats, as mentioned above. However, much of the similarity between the Shumagins and eastern Aleutians is driven by the larger number of breeding seabird species and the lower diversity of terrestrial birds in those two groups of islands.

Waterfowl, Waterbirds, and Shorebirds

Waterfowl, shorebirds, and other birds dependent on fresh water for nesting form moderate to minor components of the Shumagins' avifauna. Al-

TABLE 12 Similarity of the Breeding Avifaunas^a of Three Areas of Southwestern Alaska

Area	No. of taxa breeding	Taxa also breeding in		
		Shumagin Islands	Alaska Peninsula	Eastern Aleutian Islands
Shumagin Islands	65	—	42 (66%)	63 (97%)
Alaska Peninsula	65	42 (65%)	—	51 (79%)
Eastern Aleutian Islands	76	63 (83%)	51 (67%)	—

^aIncluding taxa breeding, probably breeding, formerly breeding, or breeding nearby.

though 48 taxa of these categories have been recorded, only 13 (27%) of them actually breed. Only Unga (which still has foxes) and Simeonof have extensive wetlands, only Unga, Little Koniuji, and Simeonof have lakes or ponds, and only Popof and Big Koniuji have streams large enough to support kingfishers.

Seabirds

The avifauna of the Shumagin archipelago is composed substantially of seabirds, much like that of the other islands lying south of the Alaska Peninsula such as the Semidi Islands (Hatch and Hatch 1983) and much like the Aleutians to the west: 37 taxa of 37 species. Many species are limited to the outer Shumagins (Tables 1 and 2), where the granodiorite rocks weather to form cliff ledges and crevices, talus slopes, and other seabird-nesting habitat. The large number of birds breeding in this area make it an important part of the Alaska Maritime National Wildlife Refuge. The diversity of nesting seabirds here is also high, and the suite of 13 species of nesting alcids is one of the most diverse, exceeded perhaps only by Buldir Island, in the western Aleutians (Byrd and Day 1986). Thus the Shumagins support a diverse and highly representative sample of Alaska's breeding seabirds. In addition, the Shumagins' colonies of Cassin's Auklet are important at a statewide level (USFWS 2020).

Nevertheless, the populations of several seabird species have declined over the 40 years of our study. The precise magnitude of change cannot be assessed from single counts in a season (most of our surveys), because of daily and seasonal variation in colony attendance by even the most visible and easiest to count species, the kittiwakes, murres, and, particularly, cormorants, of which the locations of colonies often shift from year to year. For species nesting in earthen burrows and rock crevices, populations are even more difficult to monitor. Nevertheless, the changes in numbers counted were so large ($\geq 90\%$ in many cases) that some nesting populations clearly have decreased: murres at Karpa, the Haystacks, Castle Rock, and Bird (Table 3), the Pigeon Guillemot at Hall and Atkins (Table 4), the Parakeet Auklet at several sites (Table 5), the Crested Auklet at Castle Rock, Cape Thompson, and Yukon Harbor (Table 6), the Horned Puffin at Castle Rock and Koniuji Strait on Big Koniuji (Table 7), the Tufted Puffin on Castle Rock and Bird (Table 8), and the Black-legged Kittiwake on Bird (Table 9). There are additional examples suggesting declines of many species at many other colonies, but the evidence is strongest in these cases, in our opinion. The few new and increased colonies are of murres at the Twins and Near (Table 3), the Pigeon Guillemot at Simeonof and Chernabura (Table 4), the Black-legged Kittiwake at Popof and Flying Eagle Harbor on Big Koniuji (Table 9), and the Glaucous-winged Gull at Big Koniuji, Simeonof, and Chernabura (Table 10). These increases, however, do not nearly compensate for the reduced numbers elsewhere. In addition, many of the new seabird colonies are of the Glaucous-winged Gull, one of the first species to recover after the removal of foxes (Byrd pers. obs.). In most cases, the causes for such large-scale declines in diverse seabirds are unclear, although marine regime shifts, which affect food availability and the trophic structure of marine food webs, may play an important role in the Gulf of Alaska; at least three regime shifts have been recorded since the mid-1970s (Agler et al. 1999, Anderson and Piatt 1999, Litzow 2006, Litzow

and Mueter 2014). In addition, vegetation overgrowing nesting crevices in the scree slope at Yukon Harbor on Big Koniuji (Renner et al. 2017) may have caused the decline of the large colony of Crested Auklets. The Yukon Harbor population had nearly disappeared by the mid-1980s, and Crested Auklets did not appear to be nesting there in 2021, although there was evidence that some birds were still visiting the colony (Drummond 2021). In addition, in 2021 the Crested Auklet was not recorded at either the Castle Rock or Cape Thompson colonies, where suitable nesting habitat remains yet the birds still disappeared. We speculate that the species may be disappearing from this eastern, warmer part of its range. Finally, the large declines in species that feed on different prey with different feeding strategies also suggest that food availability has declined on a broad scale and probably at multiple trophic levels.

Terrestrial Birds

Birds using primarily terrestrial habitats are the largest component (41 species of which 28 [68%] breed) of the avifauna and nest primarily in shrubs, in grass, and on the ground. Other habitats used by terrestrial birds include rock crevices, cliff ledges, sand banks, beached logjams, grass-umbellifer meadows, alpine dwarf, shrub mats, and buildings. In the inner Shumagins, 24–26 species of terrestrial birds have been recorded nesting on Popof and Unga islands, both of which lie ~15 km from the Alaska Peninsula. In the outer Shumagins, however, only 17–20 species nest on most islands, and only on Big Koniuji (22 species) does the species richness approach that of the inner Shumagins. Some species such as the Rough-legged Hawk, Great Horned Owl, and Tree Swallow nest only on the inner islands, some such as the Black-capped Chickadee and Pine Grosbeak nest from the inner islands to Big Koniuji in the outer islands, and others such as the Short-eared Owl, Pacific Wren, and Lapland Longspur nest primarily or only on the outer islands. In contrast, most of the other species nest or probably nest throughout the archipelago or nest sporadically throughout it.

To some extent, the apparent simplicity of the terrestrial avifauna may result from island-distance effects (MacArthur and Wilson 1967), making the diversity of the terrestrial nesting avifauna lowest in the outer Shumagins. These effects are most pronounced at Simeonof, Bird, and Chernabura, the three most remote islands in the archipelago. However, we suspect that the primary driver of this reduced diversity in these outermost islands is an island-distance effect on habitat.

The distribution of nesting hawks and owls in the Shumagins is determined largely by the distribution of prey. The vole-dependent Rough-legged Hawk is especially affected, in that tundra voles are found only on the inner Shumagins (Murie 1959, Bailey and McCargo 1984, Fay and Sease 1985, MacDonald and Cook 2009). Although the dusky shrew occurs on Unga, Popof, and probably all larger islands in the outer Shumagins except possibly Nagai (Murie 1959, Kenyon 1964, Sowl 1973, Bailey 1978, Byrd 2001, MacDonald and Cook 2009, Day), it is apparently too small a prey for these raptors. In contrast, the Short-eared Owl, which nests not only on Unga but also on Simeonof and probably Chernabura, prefers voles but also will take shrews and, in coastal areas, large numbers of birds (Wiggins et al. 2020).

Factors that likely affect the diversity of terrestrial birds in the Shumagin

Islands include a decrease in the diversity of vertical habitat structure on the outer islands. For example, alder shrub thickets are both extensive and tall (up to 3–3.5 m) on the inner islands (Figure 2) but are generally scattered and low (≤ 1 m) on the outer islands, although they grow in large stands and up to 2.5 m in protected areas as far out as Big and Little Koniuji. This contrast was noted by Jones (1970), who called the vegetation at Bird Island “impoverished” compared with that in the nearby Koniuji group. This decrease in structural habitat diversity is reflected by the absence of the Black-capped Chickadee southeast of Big Koniuji and the irregularity of the Hermit Thrush, Common Redpoll, Yellow Warbler, and Wilson’s Warbler on one or more of the outermost three islands. In contrast, the Lapland Longspur, which is dependent on grassland, is confined to the outermost islands, southeast of the Koniuji group. In addition, the southern Alaska Peninsula and Shumagin Islands emerged from glaciation around 12,000–10,000 years before present, and alder pollen appeared in the Shumagins only about 5000 years ago (Heusser 1983), suggesting that the shrub-nesting avifauna followed the expansion of the shrub zone fairly recently and may still be in the process of colonizing. Furthermore, the near restriction of tall- and medium-shrub habitat to the inner Shumagins probably is related to the inner islands’ proximity to the source of dispersal from the Alaska Peninsula, slightly warmer summer temperatures, and possibly greater winter snow cover than in the outer Shumagins, which are moderated by mild maritime temperatures in both summer and winter. These factors also probably influence the distribution and extent of tall-shrub habitat in the Aleutian Islands (Talbot et al. 2010) and elsewhere (Hallinger et al. 2010, Myers-Smith et al. 2011).

An Avifauna in Flux

During the 40 years of our field work in the Shumagins, the distribution and abundance of some species changed, some of them substantially. The breeding distributions of at least two species, the Pacific Wren and Pine Grosbeak, expanded into this region. We also saw some species expand their ranges into the outer Shumagins (e.g., Belted Kingfisher and Pine Grosbeak to Big Koniuji) or even the outermost three islands (see above). At least some of the changes that we observed resulted from local factors (the introduction and subsequent removal of introduced mammals) and/or broad-scale factors (changes in the distribution and abundance of some bird species).

As in the Aleutian Islands, introductions of foxes for fur farming (Bailey 1993b) adversely affected ground-nesting birds in the Shumagins through predation of adults, young, and eggs. Introduced cattle (on Simeonof and Chernabura) and ground squirrels (probably introduced on the outer islands) modified native plant communities, thus affecting bird habitat. In some cases, multiple introduced species on a single island, as of both cattle and foxes on Simeonof and Chernabura, affected the native avifauna extensively.

From the time they were first introduced in 1840 until their eventual disappearance (natural or planned) from most of the 12 islands by 1995 (see Bailey 1993b, Byrd et al. 1996), foxes probably decimated the larger ground-nesting birds such as waterfowl, gulls, oystercatchers, and some species of seabirds. As seen in the Aleutians (Byrd et al. 1994, Ebbert and Byrd 2002, Williams et al. 2003), breeding populations of some species such as the Black Oystercatcher,

Pigeon Guillemot (Byrd et al. 1997), and Glaucous-winged Gull (Bailey and Norvell 1987, Byrd 2001, Byrd and Williams 2006, AMNWR unpubl. data) increased after fox removal. We also suspect that recent increases in sightings of the Rhinoceros Auklet, Horned and Tufted Puffins, and Arctic Tern at Simeonof signal recolonization after the removal of foxes, albeit at rates slower than those seen in the oystercatcher, guillemot, and gull.

The removal of both foxes and cattle from Simeonof and Chernabura also has allowed the recovery of bird habitats, including shrubs (Bailey 1994), vegetative cover in wetlands and near the coast, and inland meadows. The resulting vegetative recovery and the elimination of predation from foxes has resulted in apparent population increases for a number of nesting species. In addition, shrub-nesting passerines such as the Hermit Thrush, Yellow Warbler, and Wilson's Warbler are likely to benefit from habitat recovery in these outermost islands.

In addition to the effects of the factors described above on birds' current distribution in the Shumagins, other, broad-scale changes in bird populations appear to be at play. For example, the Pine Grosbeak apparently is a recent colonizer of the western Alaska Peninsula and eastern Aleutians (see Gibson and Byrd 2007, Young and Adkisson 2020) that now also nests in the Shumagins. The species first was recorded at Unga in 1983 (K. Rose), then spread to Popof, where it first was recorded in 1984 (A. Gronholdt) and became well established by 1995 (D. D. Gibson). We have no data between Popof and Big Koniuji, where this species first was seen in 1985, and only at Flying Eagle Harbor (Bailey 1985); since then, it has expanded across a substantial part of the island, nesting to the southern end of the island by 2002 (Maccormick 2002). Similarly, the Belted Kingfisher expanded its range from the inner Shumagins to Big Koniuji sometime between 1976 and 1982 (Day) and first was recorded breeding around 1987 (Bailey and Norvell 1987). The colonization of the outer Shumagins by the Pacific Wren, probably in the early 1970s, and subsequent expansion within the archipelago to both the southeast and the west is another example; the record in 2017 of two birds at Unga, after an absence of nearly 150 years, indicates that the breeding range may be continuing to expand. Finally, the Great Horned Owl's colonization of the Shumagin Islands on or before 2015 is astounding and cannot be understood easily. The causes for such broad-scale changes in the range of species such as these are unclear, but they clearly are occurring over surprisingly short time scales.

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