

Status and Occurrence of Aleutian Tern (*Onychoprion aleuticus*) in British Columbia.

By Rick Toochin, Peter Hamel and Margo Hearne. Submitted: April 15, 2017.

Introduction and Distribution

The Aleutian Tern (*Onychoprion aleuticus*) has a remote breeding range throughout coastal Alaska and also in coastal areas of eastern Siberia (North 2013). In North America, this species breeding range is restricted to coastal areas of south and western Alaska (North 2013). Aleutian Tern breeding colonies often shift locations from year to year, especially in the north Bering and Chukchi Seas (Woodby and Divoky 1983, North 2013), and at small colonies and where mammalian predation occurred in a previous year (Nysewander and Barbour 1979, Baird 1986). Breeding colonies have been located along the coast of the Chukchi Sea as far north as Kasegaluk Lagoon in northwestern Alaska, on the Seward Peninsula and the Yukon-Kuskokwim River Delta, along the Alaska Peninsula, in widely scattered locations in the Aleutian Islands, in the Kodiak Archipelago, on the Kenai Peninsula and Copper River delta, and along the Gulf of Alaska as far east as Dry Bay (North 2013). The Aleutian Tern may breed farther south and east at Lituya Bay (Kessel and Gibson 1978) and is known to breed at Glacier Bay (North 2013).

The colonies in the northern Bering and Chukchi Seas are not occupied every year (North 2013). This species is a rare visitor to the Pribilof Islands in western Alaska (Gibson 1983a). Despite good coverage in recent decades, there are apparently no records from St. Lawrence Island in western Alaska (Fay and Cade 1959, Sealy *et al.* 1971).

On its breeding grounds, the Aleutian Tern frequently associates with Arctic Terns (*Sterna paradisaea*), in North America, and Common Terns (*Sterna hirundo longipennis*) in Siberia (North 2013). Its distribution and abundance, breeding phenology, and habitat use are fairly well known, but its behaviors are not well described, although the species seems to share behaviors common to most tern species (North 2013). Its molts and plumages, migrations, patterns of survival and mortality, and winter ranges are largely unknown (North 2013). This species was believed to winter in the North Pacific Ocean, but specimens from the Philippines, including sub-adults collected in May 1984, and sightings in Hong Kong of adults in the fall of 1992, support speculation that it winters in the South Pacific near Australia and the Philippines (Lee 1992, Hill and Bishop 1999, North 2013).

Outside of North America, the Aleutian Tern has breeding colonies located in Siberia on Sakhalin Island, the Kamchatka Peninsula, the Sea of Okhotsk (including Tauyskaya Bay near Magadan), and in the Bering Sea at Olyutorskiy Bay and on Karagin Island (Haney *et al.* 1991a, Kondratiev 1991, Litvinenko and Shibaev 1991, Schneider and Shuntov 1993, North 2013). The Aleutian Tern has been reported from St. Lawrence Bay on the Chukchi Peninsula, on August 25, 1879 (Nelson

1887b, Dement'Ev and Gladkov 1951, Portenko 1973). This species has been reported breeding, but not verified at Krest Bay on the Chukchi Peninsula (North 2013). In Japan, there is only evidence of possible breeding when an adult was found with an immature that was barely able to fly on southeastern Hokkaido Island on August 1980 (Brazil 1991). To date, there are no confirmed breeding records for Japan (Brazil 1991).

The winter range of the Aleutian Tern is still poorly known (North 2013). Until recently, this species was thought to winter in the North Pacific (Harrison 1983b, Clapp *et al.* 1993), possibly in the North Pacific Drift System (Kessel 1988). Reports for the non-breeding season include one bird “apparently at Sagami Bay, Honshu, Japan” based on an undated specimen, with 1 wintering on Sakhalin Island, and 1 off Hokkaido Island, Japan (Bent 1921, Dement'Ev and Gladkov 1951, Cramp 1985a).

The possibility that Aleutian Terns winter in the tropical western Pacific is suggested by specimens of sub-adults collected in the Philippines in the month of May (Lee 1992). Because sub-adults are unknown from breeding localities, these could represent summering non-breeders, wintering birds, or northbound migrants (North 2013). In addition, individuals and small flocks have been increasingly sighted in coastal waters around Hong Kong in the spring and during the fall (Hill and Bishop 1999). They have also been found around Singapore and the Indonesian islands of Karimun and Bintan between the months of October and April, and in the coastal waters of Java, Bali and Sulawesi during December (Hill and Bishop 1999). There have been flocks of up to 30 seen feeding off the Rialu Island in Indonesia, in the month of April (Cooper *et al.* 1999). The Aleutian Tern is also been recorded from the waters off Borneo in winter (Khang and Akira 2005). The fact that Aleutian Terns now appear regularly in the fall off Hong Kong suggests one possible route for southbound migrants (North 2013). It should be noted that North (2013) states that non-breeding adult and sub-adult Aleutian Terns were not found in the North Pacific, even during summer surveys.

South of Alaska, the Aleutian Tern is an accidental vagrant species with only a handful of records for British Columbia and none from Washington State (Wahl *et al.* 2005, WBRC 2016) south to California (Hamilton *et al.* 2007).

There is an incredible photographed record of an adult found and photographed at an Arctic Tern colony in Great Britain during late May and was speculated to have followed Arctic Terns north through the Atlantic Ocean from wintering areas in Antarctic waters (Dixey *et al.* 1981).

Identification and Similar Species

The identification of the Aleutian Tern is covered in all standard North American Field Guides. This species is a medium-sized tern measuring 34 cm in length, with a wingspan measuring 74 cm, and weighs 110 grams (Sibley 2000, Dunn and Alderfer 2011). The proportions of this species are similar to those of the Common Tern (*Sterna hirundo*), but the black bill is longer and narrower, with the wings looking longer and broader, and the tail streamers shorter (North 2013). The Common Tern is larger measuring 37 cm in length, with a wingspan of 76 cm, and weighs 120 grams (Sibley 2000, Dunn and Alderfer 2011). The Arctic Tern is also in a similar size range as the Aleutian Tern, measuring 39 cm in length, with a wingspan of 79 cm, and weighs 110 grams (Sibley 2000, Dunn and Alderfer 2011). The plumages of the male and female Aleutian Terns are similar, but adults do exhibit seasonal and age differences, but plumages are poorly known (North 2013).

Breeding plumaged adult (alternate plumage) and juvenile are the only plumages likely to be encountered in North America (North 2013). Adult birds that are in non-breeding plumage, also referred to as definitive basic plumage, are poorly known and documented (North 2013). Birds in this plumage are similar to breeding plumage adult birds, except the underparts are white, the crown is speckled with white, and the feathers on the mantle are speckled white, and the tail is gray with white sides (Cramp 1985a, Olsen and Larsson 1995). The Aleutian Tern is best separated from similar looking species by the dark bar on the secondaries (Olsen and Larsson 1995). Wings are pointed with the lengths of the primaries relative to the outermost, p10 (Cramp 1985a) and the tail is long with a moderately deep fork (Olsen and Larsson 1995). There is little or no geographic or sex-specific variation in appearance or molt strategies reported (North 2013).

The following descriptions of Aleutian Terns are taken from North (2013), unless otherwise stated.

Juvenile plumage is present primarily between July-October. The forehead and the crown down to the lores and eye are dark brown, but somewhat paler in front of the eye, streaked black on hind crown and auriculars; black bar on nape extending down to sides of neck. There is a dark spot in front of the eye. The mantle is dull black, with the feathers having 1 mm buff tips; the tertials have buff edges up to 3 mm wide. The back and upperwing secondary coverts are dark gray with fringes of feathers faintly buff. The rump is medium gray with broad, but ill-defined white feather-tips. The underparts are white, except for a lavender-gray to yellow-brown area on the side of the breast, forming a broken breast-band contiguous with similarly colored band around the neck behind a black nape band. The uppertail coverts are medium gray with broad, but ill-defined white to yellow-brown edges and tips. The rectrices are medium or pale gray with a black subterminal V-shaped mark inside the yellow-brown or buff tips. The inner webs of the medial rectrices (r2–r5) are mainly white (Cramp 1985a) or mostly gray according to Malling Olsen and Larsson (1995); the outermost rectrices (r6) are almost fully white except for a gray wash on the tip of the inner web

and buff-tinged tip with black subterminal spot on the outer web. The primaries are dark gray with a slight silvery cast, darkest on the feather tips, with the feather tips narrowly bordered with pale buff, and some buff that is wider on the inner primaries. The secondaries are dull black with a broad white border on the inner webs and feather tips. The upperwing primary coverts are dark gray and narrowly tipped with buff. The leading edge of the wing, underwing coverts, and axillaries are white. As this plumage becomes worn, the white of the feather bases becomes visible on the forehead and the crown, and the buff feather fringes of the upperparts become abraded and bleached to a pale-buff or off-white (Cramp 1985a). Unmolted juvenile primaries and secondaries also become sootier with wear through their first spring and summer, due to the wearing off of silvery "bloom" based on the frilled fringing barbules (Dwight 1901, Voelker and Museum 1996, Pyle 2008).

Immatures described by Lee (1992) showed a white collar, extensive white forehead, white underparts, and a gray tail with a white outer web on the outer tail-feather. The dark subterminal bar on secondaries reduced or absent on immatures, making this character less useful for identification than on adults. Aleutian Terns in juvenile plumage are among the darkest of medium-sized *Sterna* spp., except Sooty Tern (*Sterna fuscata*). In North America, the Aleutian Tern is distinguished from juvenile Arctic Tern by white outer web on the outer tail-feathers (blackish in Arctic), broad white leading edge of the wing, dark gray rump and uppertail-coverts, much darker upperparts, especially blacker dorsal area where the feathers have a wide yellow-brown fringe, and brownish hue on the forehead, crown, nape, and sides of breast; yellow-brown feather-tips are abraded during autumn and become whiter. The bill is tipped black, with much red to the base of the lower mandible; and the feet and legs are light reddish.

Birds in "First Basic" or "Basic I" plumage according to Humphrey and Parkes (1959) is present primarily between October–March. Birds in this plumage are poorly known and are not present on the breeding grounds. Birds at this age are best described by Lee (1992) whose descriptions are based on molting birds collected in May: crown black; white of forehead extends above and anterior to the eye; broad white collar separates dark feathering of posterior edge of crown from gray feathers of the back. The dorsal surface is gray with many fresh feathers having white tips, giving an overall mottled appearance. The rump is gray, slightly lighter than the ashy rump of the juvenile plumage. Some scapulars feathers have a faded coppery color. The secondaries are narrowly tipped with white in fresh plumage; white tips may wear away quickly (Lee 1992). The rectrices are entirely gray. The lateral and ventral surface is entirely white, lacking the pale tan on side of neck and chest exhibited in juvenile plumage.

Birds in first alternate plumage are present primarily between March–August. This plumage is poorly known and is not typically present on the breeding grounds. In most terns first alternate

plumage differs little from first basic plumage, with little or no blackish acquired on crown, but with 1-3 inner primaries and 1-3 inner and outer secondaries replaced, fresher, and frostier than the more worn first basic feathers in center of these tracts and very-worn remaining juvenile outer primaries (Pyle 2008). Descriptions of Lee (1992) are based on molting birds collected in May and support similar appearance to body feathers in first basic plumage and first alternate plumages.

Second Basic Plumage is present primarily between the months of September–February. This plumage is poorly known and is not present on the breeding grounds. In most terns this plumage is similar to definitive basic plumage except that upperwing lesser coverts can be washed dusky and outer rectrices may average shorter (Pyle 2008). It is unknown how these plumage features vary in second basic Aleutian Terns. Lee (1992) described one specimen collected in the Philippines in the month of May that may have been molting out of second basic plumage; it differed from first basic plumage in having fewer dorsal feathers tipped with white, the broader white tips were confined to the scapulars, rump and tail feathers mostly white, but with a few off-gray rectrices present, and outer rectrices were more pointed and intermediate in length between those of other first-year and adult Philippine specimens.

Second Alternate Plumage is present primarily between September–February. This plumage is also poorly known; in most terns this plumage is similar to definitive alternate plumage, but some individuals can have less-than-full black feathering in the lores and crown, while others can be indistinguishable from definitive alternate plumage. Lee (1992) described one specimen collected in the month of May that may have been acquiring second alternate plumage and was molting in dark feathers above the eye.

Definitive Basic Plumage is present primarily in the months of September–February. This plumage is also poorly known and is not present on the breeding grounds. Forehead and streak over eye to above rear of eye is white, contrasting with a black streak from the lores through the eye over the auriculars and with a black crown down to the auriculars and the central nape to form a white V-shaped pattern. Black lores finely speckled white, forecrown streaked white, and hind crown is finely spotted white. Chin and cheeks below the black lores and auriculars are white, grading into gray underparts on the throat. Mantle and back are pale slate gray; fresh feathers of the mantle and scapulars narrowly tipped with white; rump white. Pale collar may be conspicuous against gray mantle; collar white (Kennerley *et al.* 1993). Uppertail coverts and tail white; central uppertail coverts and inner rectrices (r1) sometimes distinctly tinged gray. The inner primaries and outer webs of the secondaries are medium gray, the latter with white edges on the tips, inner webs of secondaries dark gray. Outer primaries dark gray with a slight silver tint on the outer webs and broad white wedge on the bases on the inner webs, extending to about 5 cm from the tip on the

outer primaries. Dark gray streak about 2 mm along distal half of inner edge of the outer primaries, readily visible from below; trailing edges of the secondaries form a dark bar from beneath. The breast, belly, undertail coverts, leading edge of wing, underwing coverts, and axillaries white; axillaries sometimes tinged gray.

Definitive Alternate Plumage is present primarily between March-September. Similar to definitive basic plumage, but the lores, forecrown, and hind crown are glossy black, lacking white markings (Coues 1903). The white of forehead measures 7–13 mm wide by 20–24 mm long and extending into nasal fossae (Coues 1903); mantle and back pale slate gray (with faint brown tint at close range); breast and belly gray, sometimes with a hint of pink at onset of breeding. Up to 6 inner primaries and 7 inner and outer secondaries replaced, fresher, with paler bloom than basic primaries and secondaries (Pyle 2008); inner primaries described as translucent and with shafts of primaries pure white (Coues 1903). Replaced alternate outer rectrices may average longer than in definitive Basic Plumage.

In the context of British Columbia, this species should be carefully studied if encountered and all similar looking small terns should be ruled out in the process of identification.

Occurrence and Documentation

The Aleutian Tern is an accidental vagrant in British Columbia with all, but one record having been found on and around Haida Gwaii (Toochin *et al.* 2014). The first record for British Columbia and Canada was an adult found by Margo Hearne and seen by others 1 km south of Masset, in Masset Sound, Haida Gwaii, on May 30, 1983 (Hearne and Cooper 1987). The second record was an adult found freshly dead on the shores of Masset Sound, in Masset, on Haida Gwaii, by Andrea Gee on May 11, 1984 (Hearne and Cooper 1987). The skin was photographed and given to the Royal British Columbian Museum (M. Hearne Pers. Comm.). A full account of this record and the first record were written up in Canadian Field Naturalist by Hearne and Cooper (1987). The third record was an adult found by R. Wayne Campbell off Anthony Island, southwest of Haida Gwaii on June 6, 1987 (Campbell *et al.* 1990b). The fourth record for British Columbia was an adult found by A. G. Whitney near Flamingo Inlet, southwest of Haida Gwaii on May 25, 1989 (Campbell *et al.* 1990b). The fifth record for British Columbia was an adult found by Michael Bentley at coordinates 49.60°N, 142.10°W while conducting seabird surveys off Ucluelet aboard M. V. Tully on May 23, 1996 (Bowling 1996c, Toochin *et al.* 2014). This Aleutian Tern record is the furthest south along the west coast of North America that this species has been recorded. The sixth record for British Columbia is the only fall record recorded to date for the province. This involves 2 juvenile birds seen by Peter Hamel and Margo Hearne 10 minutes northeast of Lawn Pt. from BC Ferry at very close range on October 8, 2012 (Toochin *et al.* 2014). It is possible that this species ventures into the waters of British Columbia around Haida Gwaii more than is currently understood given the

close proximately of breeding colonies to the northwest on the Alaska Panhandle (P. Hamel Pers. Comm.).

The Aleutian Tern does breed up the Tatshenshini River along the Panhandle of Southeastern Alaska (P. Jones Pers. Comm.). This species has been photographed just yards from the British Columbia border by Biologist Peter Jones while conducting a river cruise of the area in early June 1994 (P. Jones Pers. Comm.). It is likely that future field work in the region might find future British Columbia records of Aleutian Tern and given that there are Arctic Tern colonies in the area, possible breeding records (P. Jones Pers. Comm.).

The Aleutian Tern generally arrives in Gulf of Alaska waters about 2 weeks before arriving in the Aleutian Islands (Kessel and Gibson 1978); therefore Kessel (1988) speculated that this species may winter in the North Pacific Drift System and arrive in Alaska via Alaska-Aleutian Stream. The Aleutian Tern arrives at the Copper River Delta and the Prince William Sound region, in southeastern Alaska, between the dates of April 20–May 7 (Isleib and Kessel 1973, Kessel and Gibson 1978, Holtan 1980, Mickelson *et al.* 1980); and there is also 1 record from late March (Sowl 1979). At the Kenai Peninsula and Kodiak areas, the Aleutian Tern arrives between the dates of May 4–16 (Kessel and Gibson 1978, Rosenberg 1986, North 2013). The Aleutian Terns arrive 1 week later than Arctic Terns (Nysewander and Barbour 1979, Baird 1986); with the mean arrival date in Homer, Alaska, occurring on May 11 (West 1994b). The Aleutian Tern arrives in the Aleutian Islands, Bristol Bay in southwestern Alaska, and both the Bering and Chukchi Seas between May 18–June 7 (Kessel and Gibson 1978).

There are far too few records to ascertain a definite vagrancy pattern from the British Columbia records. It does appear though that looking in the waters off Haida Gwaii in May and June by keen observers offers the best chance to encounter this species in British Columbia. The overall timing of the May and June records fits well with when Aleutian Terns arrive on their breeding grounds in the Aleutian Islands, Bristol Bay and the Bering and Chukchi Seas in Alaska (Kessel 1988). This route of arrival in Alaska via Alaska-Aleutian Stream arrival (Kessel 1988) is likely how birds arrived in Haida Gwaii and may well account for the bird found well off Ucluelet. Weather systems likely play a huge role in displacing birds into British Columbian waters (M. Meredith Pers. Comm.). There are likely to be future records from the waters off Haida Gwaii and it is possible that there will be future records from the waters off the west coast of Vancouver Island as more and more by keen observers look in these areas.

Table 1: Records of Aleutian Tern for British Columbia:

- 1.(1) adult May 30, 1983: Margo Hearne, mobs: 1 km south of Masset, in Masset Sound, Haida Gwaii (Hearne and Cooper 1987)
- 2.(1) adult May 11, 1984: Andrea Gee (specimen: RBCM 18367) on the shores of Masset Sound, Masset, Haida Gwaii (Hearne and Cooper 1987) [(Campbell *et al.* 1990b) has wrong date P. Hamel Pers. Comm.]]
- 3.(1) adult June 6, 1987: R.W. Campbell : off Anthony Island, southwest of Haida Gwaii (Campbell 1987d, Campbell *et al.* 1990b)
- 4.(1) adult May 25, 1989: A.G. Whitney : near Flamingo Inlet, southwest of Haida Gwaii (Campbell *et al.* 1990b)
- 5.(1) adult May 23, 1996 : Mike Bentley: off Ucluelet aboard M. V. Tully (49.60°N, 142.10°W) (Bowling 1996c, Kenyon *et al.* 2009)
- 6.(2) juveniles October 8, 2012: Peter Hamel, Margo Hearne: 10 minutes northeast of Lawn Pt., seen from BC Ferry (Toochin *et al.* 2014)

Acknowledgements

We wish to thank Don Cecile for editing the original manuscript. We also wish to thank Meteorologist Mitch Meredith of Environment Canada for his advice and knowledge on weather displacement of migratory birds. We also wish to thank Biologist Peter Jones for his interesting observation of Aleutian Terns near the British Columbia/Alaska border along the Tatshenshini River.

References

- Baird, P. A. 1986. "Arctic and Aleutian Terns." In *The breeding biology and feeding ecology of marine birds in the Gulf of Alaska.*, edited by P. A. Baird and P. J. Gould, 349-380. Final Rep. Principal Invest.: Environmental Assessment of the Alaskan Continental Shelf.
- Bent, A. C. 1921. Life histories of North American gulls and terns. U.S. Natl. Mus. Bull. No. 113.
- Bowling, J. 1996c. Spring migration – British Columbia-Yukon region. *North American Field Notes* 50: 321-327.
- Brazil, M. 1991. *The birds of Japan*. London: Christopher Helm.
- Campbell, R. W. 1987d. British Columbia wildlife – autumn report 1987. *B.C. Naturalist* 25(4): 6-7.
- Campbell, R.W., N. K. Dawe, I. McTaggart-Cowan, J. M. Cooper, G. W. Kaiser, and M. C. E. McNall. 1990b. *The Birds of British Columbia – Volume 2 (Nonpasserines [Diurnal Birds of Prey through Woodpeckers])*. Victoria: Royal British Columbia Museum.

- Clapp, R. B., P. A. Buckley and F. G. Buckley. 1993. "Conservation of temperate North Pacific terns." In *The status, ecology, and conservation of marine birds of the North Pacific.*, edited by K. Vermeer, K. T. Briggs, K. H. Morgan and D. Siegel-Causey, 154-162. Ottawa: Can. Wildl. Serv. Spec. Publ.
- Cooper, D., J. F. Cooper and E. Hagen. 1999. Feeding behavior of Aleutian Terns off Tanjung Balai, Indonesia. *Bulletin of the Oriental Bird Club* no. 29:48.
- Coues, E. 1903. *Key to North American bird*. Boston, MA: Dana Estes Co.
- Cramp, S. 1985a. *Handbook of the birds of Europe, the Middle East and North Africa*, vol. 4. terns to woodpeckers. New York: Oxford Univ. Press.
- Dement'Ev, G. P. and N. A. Gladkov. 1951. *Ptitsi Sovetskogo Soyuza [Birds of the Soviet Union]. Vol. 2. Israel, in 1968.*: Publishing House Sovetskaya Nauka, Moscow, USSR. [English translation by the Israel Program for Scientific Translations, Jerusalem.
- Dixey, A. E., A. Ferguson, R. Heywood and A. R. Taylor. 1981. Aleutian Tern: new to the western Palearctic. *Br. Birds* No. 74: 411-416.
- Dunn, J. L. and J. Alderfer. 2011. *National Geographic Field Guide to the Birds of North America*. National Geographic Society, Washington D.C. 574pp.
- Dwight, Jr., J. 1901. The sequence of molts and plumages of the Laridae (gulls and terns). *Auk* No. 18: 49-63.
- Fay, F. H. and T. J. Cade. 1959. An ecological analysis of the avifauna of St. Lawrence Island, Alaska. *University of California Publications Zoology* No. 63(2): 73-150.
- Gibson, D. D. 1983a. Alaska region. *Am. Birds* No. 37: 1017-1019.
- Hamilton, R. A., M. A. Patten, and R. A. Erickson. 2007. *Rare Birds of California: A work of the California rare bird record committee*. Western Field Ornithologists, Camarillo, California. 605pp.
- Haney, J. C., J. M. Andrew and D. S. Lee. 1991a. A closer look: Aleutian Tern. *Birding* No. 23: 346-351.

- Harrison, P. H. 1983b. Seabirds: an identification guide. Boston, MA: Houghton Mifflin Co.
- Hearne, M. and J. M. Cooper. 1987. Aleutian Tern (*Sterna aleutica*), a new bird for Canada. Canadian Field-Naturalist 101: 589-590.
- Hill, N. P. and K. D. Bishop. 1999. Possible winter quarters of the Aleutian Tern? Wilson Bulletin No. 111 (4): 559-560.
- Holtan, L. H. 1980. Nesting habitat and ecology of Aleutian Terns on the Copper River Delta, Alaska. Portland, OR: Final report, U.S. Forest Service, Pacific Northwest Forest and Range Experiment Station.
- Humphrey, P. S. and K. C. Parkes. 1959. An approach to the study of molts and plumages. The Auk No. 76 (1): 1-31.
- Isleib, M. E. and B. Kessel. 1973. Birds of North Gulf Coast-Prince William Sound region, Alaska. Biol. Pap. Univ. of Alaska No. 14.
- Kennerley, P. R., P. J. Leader and M. R. Leven. 1993. Aleutian Tern: the first records for Hong Kong. Hong Kong Bird Rep. no. 1992: 107-113.
- Kenyon, J. K., K. H. Morgan, M. D. Bentley, L. A. McFarlane Tranquilla, and K. E. Moore. 2009. Atlas of Pelagic Seabirds off the west coast of Canada and adjacent areas. Technical Report Series No. 499. Canadian Wildlife Service Pacific and Yukon Region, British Columbia.
- Kessel, B. 1988. Birds of the Seward Peninsula, Alaska: their biogeography, seasonality, and natural history. Fairbanks: Univ. of Alaska Press.
- Kessel, B. and D. Gibson. 1978. Status and distribution of Alaska birds. Stud. Avian Biol. no. 1.
- Khang, S. L. and M. Akira. 2005. First record of Aleutian Tern for Borneo. Birding ASIA No. 4: 60-61.
- Kondratiev, A. J. 1991. "Status of the seabirds nesting in northeast U.S.S.R." In Seabird status and conservation: a supplement., edited by J. P. Croxall, 165-173. ICBP Tech. Publ. No. 11.
- Lee, D. S. 1992. Specimen records of Aleutian Terns from the Philippines. Condor No. 94: 276-279.

- Litvinenko, N. and Y. Shibaev. 1991. "Status and conservation of theseabirds nesting in southeast U.S.S.R." In *Seabird status and conservation: a supplement.*, edited by J. P. Croxall, 175-193. ICBP Tech. Publ. No. 11.
- Mickelson, P. G., J. S. Hawkings, D. R. Herter and S. M. Murphy. 1980. *Habitat use by birds and other wildlife on the eastern Copper River Delta, Alaska.* Univ. of Alaska, Fairbanks: Unpub. rep., Alaska Coop. Wildl. Res. Unit.
- Nelson, E. W. 1887b. Report upon natural history collections made in Alaska between the years 1877 and 1881. U.S. Sig. Serv. Arctic Ser. No. 3, Pt. 1. Birds of Alaska.
- North, Michael R. 2013. Aleutian Tern (*Onychoprion aleuticus*), *The Birds of North America* (P. G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology [Online Resource] Retrieved from the Birds of North America: <https://birdsna.org/Species-Account/bna/species/aleter1> [Accessed: December 27, 2016].
- Nysewander, D. R. and E. Hoberg. 1978. The breeding biology of marine birds associated with Chiniak Bay, Kodiak Island, 1977. Environmental Assessment of the Alaskan Continental Shelf, Ann. Rep. Principal Invest., No. 3: 525-574.
- Olsen, K. M. and H. Larsson. 1995. *Terns of Europe and North America.* Princeton, NJ: Princeton Univ. Press.
- Portenko, L. A. 1973. *Birds of the Chukchi Peninsula and Wrangel Island.* Vol. 2. Washington, D.C.: Smithsonian Inst.
- Pyle, P. 2008. *Identification guide to North American birds. Part 2: Anatidae to Alcidae.* Point Reyes Station: Slate Creek Press.
- Rosenberg, D. H. 1986. Wetland types and bird use of Kenai lowlands. Anchorage, AK: Unpubl. rep., U.S. Fish Wildl. Serv.
- Schneider, D. C. and V. P. Shuntov. 1993. The trophic organization of the marine bird community in the Bering Sea. *Rev. Fish. Sci.* No. 1:311-335.
- Sealy, S. G., J. Bédard, F. H. Fay and M. D. F. Udvardy. 1971. New records and zoogeographical notes on the birds of St. Lawrence Island, Bering Sea. *Condor* No. 73: 322-336.
- Sibley, D. A. 2000. *The Sibley field guide to birds.* Alfred A. Knopf, New York. 545pp.

- Sowl, L. W. 1979. "The historical status of nesting seabirds of the northern and western Gulf of Alaska." In Conservation of marine birds of northern North America., edited by J. C. Bartonek and D. N. Nettleship, 47-73. Wildl. Res. Rep. 11: U.S. Fish Wildl. Serv.
- Toochin, R., J. Fenneman and P. Levesque. 2014. British Columbia rare bird records: January 1, 2014: 3rd Edition. [Online resource] Retrieved from <http://www.geog.ubc.ca/biodiversity/efauna/documents/BCRareBirdListJanuary2014XZBC.pdf> [Accessed: December 24, 2016].
- Voelker, G. and B. Museum. 1996. An hypothesis for seasonal color change in the genus *Sterna*. Journal of Avian Biology No. 27 (3):257-259.
- Wahl, T. R, B. Tweit, and S. Mlodinow. 2005. Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, Oregon. 436pp.
- WBRC. 2016. Washington Bird Records Committee – Summary of Decisions. Washington Ornithological Society, Seattle, WA. [Online resource] <http://www.wos.org/wbrccaccepteddec2014.pdf> [Accessed: December 16, 2016].
- West, G. C. 1994b. Spring arrival dates for Homer. Kachemak Bay Bird Watch No. 21:8-9.
- Woodby, D. and G. Divoky. 1983. Bird use of coastal habitats in Norton Sound. Environmental Assessment of the Alaskan Continental Shelf, Final. Rep. Principal Invest., Biological Studies No. 18: 353-704.