

BLACK-LEGGED KITTIWAKE

TAXONOMY

Scientific name: *Rissa tridactyla* (Linnaeus, 1758)

Common name: Black-legged Kittiwake

Family: Laridae

Taxonomic comments:

Two races: *Rissa tridactyla tridactyla* (in Europe); and *R. t. pollicaris* (from the North Pacific). No information on genetic differences between subspecies, but *R. t. pollicaris* generally has a longer bill, slightly larger size, a better developed hind toe/claw, and more black in the primaries (Baird 1994).



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DESCRIPTION

Basic description: A small white gull.

General description:

A small white gull with grey mantle and wings. Outermost primaries tipped with black. Bill greenish-yellow; legs and feet generally black but vary to reddish orange (Grant 1986). Hind toe vestigial, especially in nominate race *R. t. tridactyla*. Tail slightly forked (Baird 1994). Red-legged Kittiwake (*R. brevirostris*) is generally more compact with shorter legs, shorter bill, darker wings and slightly darker back (Baird 1994).

Length (cm): 43

Weight (g): 421

Reproduction:

Eggs laid mostly in June at Semidi Islands, Alaska (Hatch and Hatch 1988). Clutch size 1-3 (usually 2). Incubation by both sexes, 23-32 days (Terres 1980). Young tended by both adults, depart nest at 36-53 days (average 42, see Hatch and Hatch 1990); can fly at about 38-48 days (Terres 1980); fledging begins in August in Alaska (Hatch and Hatch 1988). Only one brood per season. Rarely more than 1 chick survives to fledging (Braun and Hunt 1983). Nests in large colonies. In western Alaska, reproductive success generally was low or nil in years with cold spring weather (Murphy et al. 1991).

Ecology:

Ravens, raptors and *Larus* gulls regularly prey on eggs and chicks and at least sometimes on adults. Adult annual survivorship is generally about 93% in Alaska, but can be variable and tends to be lower (e.g., 80%) in Great Britain (Aebischer and Coulson 1990). Eggs are collected for subsistence consumption by Alaskan Natives (ADFG 2005).

Black-legged Kittiwake

One of the most widely distributed northern gulls (Baird 1994). During summer they nest on sheer cliff faces and may travel up to 75 km from nest sites to feed on invertebrates and surface schooling fishes (Baird 1994). Kittiwakes are particularly useful as bioindicators of marine foraging conditions because they are conspicuous, widely distributed, and readily monitored; like other seabirds, aspects of their foraging ecology, breeding biology and physiology are very sensitive to food availability (see sources in Kildaw et al. 2004).

Migration:

Occurs in winter in southern part of breeding range. Arrives in breeding areas late February-early March in south, April-May in north (Terres 1980). Fall migration from Beaufort Sea region apparently begins in late August (Johnson and Herter 1989). Migrates in response to waning food supply; usually moving over ocean and sometimes over inland waterways (Baird 1994).

Food:

Generally feeds on small fishes; sometimes on mollusks, crustaceans, and plankton. Feeds from surface, mostly at sea. May follow ships in large flocks to eat refuse; unlike many other gulls, does not frequent garbage dumps. Drinks salt water. Adults consume more invertebrates during years when fish food supply is limited (Baird 1994).

Phenology:

Diurnal.

Habitat:

Breeding: Nests on narrow ledges (often 10 to 30 cm wide) of steep cliffs along coasts or on islands, often in association with other seabirds; sometimes on ledges of buildings. In areas where cliffs are absent, individuals may share caves with murres (*Uria* spp.) or nest on boulders 1–4 m high (Baird 1994). Nest is a cup-like structure of seaweeds, mosses, grasses, and mud.

Non-breeding: Primarily pelagic, sometimes along seacoasts, bays and estuaries, casually on large inland bodies of water (AOU 1983).

STATUS

Global rank: G5 (27Nov1996)

Global rank reasons:

Secure – common, widespread and abundant.

State rank: S5B, S5N (21Dec2005)

State rank reasons:

Alaska breeding population at least 1.3 million birds. Population trend is variable; the majority of monitored colonies are stable although significant declines and increases have been noted at several colonies. Breeding habitat protected throughout most of range. Threats include contamination from oil spills, prey species depletion, human disturbance

at nesting colonies, and native and introduced predators on island colonies. Sensitive to environmental disturbance; effects of climate change on species' habitat and prey resources unknown, but of potential concern.

DISTRIBUTION AND ABUNDANCE

Range:

Global range:

Breeding: Circumpolar, primarily on islands and suitable shores of Arctic Ocean south to Aleutian Islands and southern Alaska, southeastern Canada, France, Kuril Islands, and Sakhalin, Russia.

Non-breeding: Western (Pacific) population primarily from pack ice edge south to Baja California, Mexico. In China along northern coast to Japan; small numbers in Korea and Turkestan. Eastern populations winter offshore from Newfoundland south to Florida and Gulf coast. European populations winter south to northwestern Africa. Casually in Hawaii, interior North America and Italy (Baird 1994).

State range:

Breeding: From Point Hope on the northwest coast; south on islands and the mainland coast to the southern Bering Sea; throughout the Aleutian Islands to the westernmost end; and east throughout southcoastal Alaska, Prince William Sound, the Gulf of Alaska and into Southeast Alaska (Baird 1994). Approximately 54% of the Alaska population breeds in the Gulf of Alaska, 41% in the Bering and Chukchi seas, and 5% in the Aleutian Islands (Sowls et al. 1978, Baird and Gould 1983).

Non-breeding: Pelagic. Generally moves south of ice edge (Gould et al. 1982, Baird 1994).

Abundance:

Global abundance:

Large global population estimated at 17 to 18 million birds (Wetlands International 2002). The Pacific subspecies has a breeding population of about 2.6 million individuals at colonies in the eastern North Pacific and adjacent seas (Baird 1994). The western North Atlantic population (Arctic Canada to Gulf of St. Lawrence) estimated at 900,000 birds. Western Greenland breeding population 300,000–600,000 individuals (Wetlands International 2002).

State abundance:

The Pacific subspecies has a breeding population of about 2.6 million birds at colonies in the North Pacific and adjacent seas (Baird 1994). In Alaska, more than 356 colony sites have been identified with a population of about 1,300,000 individuals (USFWS 2006). Most colonies contain fewer than 10,000 birds, but a few larger colonies support 50,000 or more. The larger colonies in Alaska are St. Matthew, Hall, Little Diomedea, and St. George Islands, Delarof Harbor in the Shumagin Islands, and Cape Newenham in Bristol Bay (Hatch et al. 1993, USFWS 2006).

Trends:

Global trend:

Global trends are variable (Baird 1994). Breeding populations increased in eastern Canada from 1970s through at least early 1990s (Chapdelaine and Brousseau 1992, Hyslop and Kennedy 1992) also increased in other parts of range (Lock 1987); Alaska population variable since the mid 1970s (Dragoo et al. 2004). Recent dramatic declines noted in Greenland colonies (Nyeland 2004). Increased markedly over much of range in northwestern Europe in the 1900s, spreading particularly southwards (Evans 1984); more recently, decreases reported throughout Europe (Barrett unpubl. data from Irons pers. comm.).

State trend:

Alaska population variable since the mid 1970s (Dragoo et al. 2004). Middleton Island, in the northern Gulf of Alaska, formerly supported about 160,000 birds, but has declined to fewer than 20,000 since 1980 (-7.5% per annum). There is evidence of population declines at some additional colonies in Alaska, while other colonies are stable or increasing. Since the 1970s, significant negative population trends reported for St. Paul (-4.0% per annum) and Chowiet Island in the Semidi Islands (-1.9%); and at Cape Pierce (-6.3%) since the 1990s. Significant increases at monitored colonies have been noted at Buldir Island in the Aleutian Islands (+7.9%) and colonies in Prince William Sound (+1.5%) (Dragoo et al. 2004). Agler et al. (1995) also reported an increasing trend for birds in Prince William Sound between 1990 and 1994 although numbers were low compared to population estimates made prior to the *Exxon Valdez* oil spill in 1972 and 1973. The other 13 colonies that are monitored in Alaska exhibited no significant population changes (Dragoo et al. 2004).

EXISTING PROTECTION

Global protection:

Protected under the Migratory Bird Treaty in the United States and Canada.

State protection:

Protected under the Migratory Bird Treaty in the United States and Canada. Much of this species' nesting habitat is protected in national parks, wildlife refuges or other reserves (ADFG 2005). In 1982, the Maritime National Wildlife Refuge expanded to include kittiwake nesting sites in the Pribilof Islands; this includes important breeding colonies on Bogoslof Islands and Buldir Island (Byrd and Williams 1993). Inaccessibility of breeding sites further protects this species from human disturbance.

CHALLENGES

Global challenges:

Potential threats include contamination of breeding and foraging habitat (e.g., from oil spills, contaminants such as mercury, and pesticides), depletion of prey species by commercial fisheries, and natural mortality from predation on eggs, chicks and adults, or

chick death by falling from nests in breeding colonies (Baird 1994). These threats are neither widespread nor imminent.

State challenges:

Current and potential threats in Alaska include contamination of breeding and foraging habitat (e.g., from oil spills, contaminants such as mercury, and pesticides), depletion of prey species by commercial fisheries, disturbance of nesting colonies by human activity, artificial enhancement of predator concentrations on or introduction of non-native predators to island colonies, and habitat alteration due to global climate change.

Oil spills: Oil spills pose a particular threat to seabird colonies in Alaska due to extensive petroleum extraction and transportation in the state. Because Black-legged Kittiwakes are surface feeders, they do not seem to be as directly impacted by oil pollution as other seabirds. However, large spills such as the 1989 *Exxon Valdez* oil spill in Prince William Sound resulted in substantial mortality. Following the *Exxon Valdez* spill, productivity at oiled kittiwake colonies decreased (from a mean 0.2 chicks/nest during 1984–1989 to 0.05 chicks/nest during 1990–1994) as a result of direct oiling of adults and/or indirectly by impacting prey populations; productivity in oiled areas had not improved 5 years after the spill, so effects may be long-lasting (Irons 1993, 1996).

Commercial fishing: During the breeding season, kittiwakes rely heavily on small schooling fishes as prey. Commercial harvest or bycatch of species such as capelin (*Mallotus villosus*) and walleye pollock (*Theragra chalcogramma*) is currently minimal, but could potentially affect availability of these important prey resources (Baird 1994). Commercial fishing and nearshore tourism activity near breeding colonies could result in disturbance of breeding birds (ADFG 2005).

Predation: Predation pressure can be intense at breeding colonies, although predation on adults appears to have little effect on overall population size and growth (Baird 1994); predators of eggs, chicks and adults include corvids, raptors and *Larus* gulls (Gill and Hatch 2002). Introduced rats pose a particular threat at Alaskan breeding colonies in the Aleutian Islands (ADFG 2005). Artificial enhancement of predator concentrations (e.g., congregations of gulls or eagles near garbage dumps) is also a threat at some colonies (ADFG 2005).

Climate change: Changes in habitat and prey abundance as a result of climatic warming may be enhanced at high latitudes; this is a potential threat to the species, which relies on arctic environments and is sensitive to environmental disturbance and variable prey populations.

RESEARCH AND INVENTORY NEEDS

Global research needs:

See State research needs.

State research needs:

Comparative studies of prey availability and distribution, food habits, energetics, and activity patterns are needed at both failing and productive colonies to identify factors that may be limiting breeding success (Hatch et al.1993). Study impacts of climate change on prey species' abundance and distribution. Impacts of introduced predators and human disturbance on breeding colonies unknown, needs study.

Global inventory needs:

See State inventory needs.

State inventory needs:

Continue monitoring colonies throughout Alaska to track population abundance, trends and colony productivity. See Hatch and Hatch (1988) and Hatch et al. (1993) for discussion of factors relevant to population monitoring. Monitor prey species' populations to better understand correlations between kittiwake productivity and forage fish trends.

CONSERVATION AND MANAGEMENT NEEDS

Global conservation and management needs:

See State conservation and management needs.

State conservation and management needs:

Continue current level or increase monitoring effort, and aim to maintain population at current size. Support efforts to minimize the incidence of fuel spills or other pollutant contamination near breeding and wintering islands, prevent rat infestations on colonial islands, and regulate or remove open trash sites which tend to concentrate avian predators near breeding colonies (ADFG 2005).

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