



Sea Duck Information Series

Barrow's Goldeneye (*Bucephala islandica*)

French: *Garrot d'Islande*

Description

Barrow's goldeneyes are chunky mid-sized sea ducks with short necks, a relatively large rounded head, and a short gray-black bill. Males are markedly larger than females; males are about 48 cm (19 in) and females about 43 cm (17 in). Spring weights for males average 1278 g (2.8 lbs.) and 818 g (1.8 lbs.) for females.

Male Barrow's goldeneyes in breeding plumage have an iridescent purplish-black head with a crescent-shaped white patch between bill and eye, white sides, belly, and breast, and black back, wings and tail. They also sport a series of seven white chevrons along their sides. Females have a dark chocolate-brown head, slate-gray back, wings, and tail, and white flanks, belly and chest. Immatures and eclipse (molting) plumage males resemble females.

Both males and females have bright amber irises, hence "goldeneye". In flight, their wingbeat is rapid and they make a distinctive whistling sound – they are also called "whistlers". Both males and females have a white patch on their secondary (inner) wing feathers and a white bar above that on the inner upper wing that is more distinct on adult males than on females or immatures.

Barrow's goldeneyes can be most easily distinguished from common goldeneyes by the male's crescent-shaped white patch on its bill, the steeper angle between bill and forehead, and shape of head – Barrow's have steeper foreheads than common goldeneye, which have sloping foreheads more like canvasbacks.

Barrow's goldeneyes are named for John Barrow (1764-1848), a British arctic explorer.

Range

The breeding range of Barrow's goldeneyes is generally restricted to areas west of the Rocky Mountains from Montana to Alaska, and to a core breeding area in the east on the high plateau along the north shore of the St. Lawrence estuary and gulf. There is no evidence of exchange between the eastern and western populations.



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Male Barrow's Goldeneye

The core of the western Barrow's breeding population is in interior areas of British Columbia. Their primary breeding range extends northward through southern Yukon into southcentral Alaska. Elsewhere within their western range, they are found locally or in lower densities.

Wintering areas in the west are coastal and extend from Kodiak archipelago, Alaska, south into Washington, with more localized occurrences south to San Francisco Bay and open waters of northwestern states. Most eastern Barrow's winter in the St. Lawrence estuary with smaller wintering populations along the Gaspé Peninsula, the Maritime provinces, and Maine.

Habitat and Habits

Barrow's goldeneyes breed primarily on alkaline to freshwater lakes and to a lesser extent on subalpine lakes, beaver ponds, and small sloughs in western mountain and intermountain areas. In Quebec, they prefer small fishless lakes that are found above 500 m (1600 ft) elevation.

Both males and females are territorial during the breeding season. Females nest in tree cavities, including abandoned pileated woodpecker nest cavities, or in artificial nest boxes. They usually

return to the same nest site in subsequent years. They lay a clutch of 6-12 eggs (average = 9), which they incubate for about 30 days.

The downy young are precocial and can dive immediately after they hatch for food, including insect larva and crustaceans. Mortality of young is high in the first couple weeks of life. Primary causes of death include adverse weather shortly after hatch and avian predators.

Male goldeneyes leave the female during nesting and fly to molting areas, often to more northern areas beyond their breeding range. Satellite telemetry has indicated that migration of males from breeding to molting areas is direct and swift, with some birds covering 1000 km (620 mi) in 2 days.

Known important male molting sites include Old Crow Flats in Yukon, a few lakes in northeast Alaska, and coastal areas of northern Quebec and Labrador. Aggregations of molting females have been observed in the breeding areas of central British Columbia.

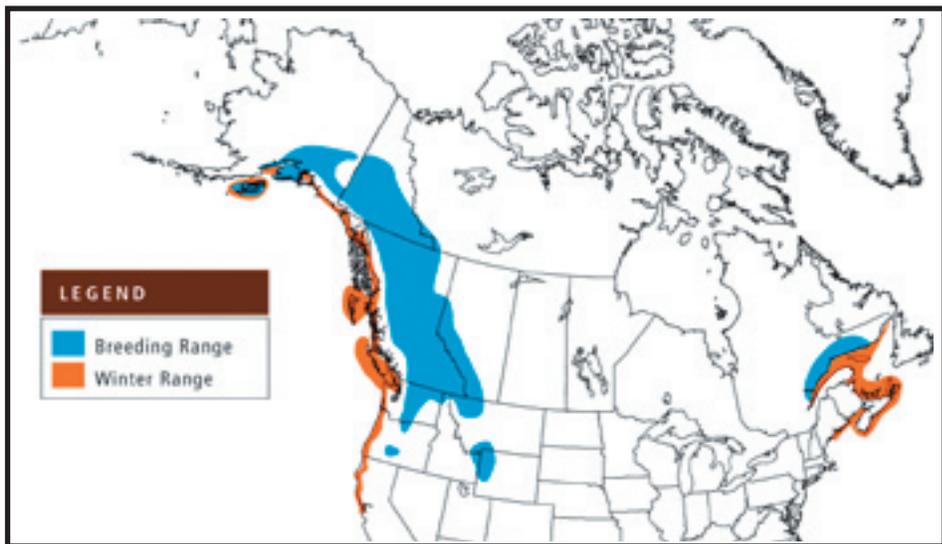
Molting goldeneye are flightless for about 30 days while they grow new flight feathers. Males and females usually return to the same molting area in subsequent years.

Barrow's goldeneyes generally move south late in the fall season, remaining on inland areas, usually

near their molting area, until freeze-up. Because males and females molt in different areas, they likely have different fall staging areas, but reunite on wintering areas.

Barrow's goldeneyes winter mostly in marine habitats, including bays, inlets, harbors and rocky shores. They feed in shallow water, primarily on mussels but also clams, crustaceans, and fish eggs. A few spend the winter on ice-free inland lakes, ponds, and rivers. Most wintering birds depart for breeding areas from mid-March to early April.

They are generally monogamous and form pairs while on wintering grounds. Females do not breed until their third year or later, but younger birds will return to their natal area during the breeding season to prospect for future nest sites.



Distribution of Barrow's Goldeneye in North America

Population Size and Status

The western population has been crudely estimated at about 200,000 - 250,000 birds. A large proportion of the breeding population is in interior British Columbia. They are not surveyed well by traditional surveys and better monitoring of this species is needed. The eastern population is estimated to number around 4000 birds.

Population trend is believed to be stable on both the east and west coasts, but the small size of the eastern population has earned it a designation of "Species of Special Concern" in eastern Canada.

Management and Conservation

Availability of suitable cavity nest sites may affect population size. Logging activities may remove older trees and snags that provide most of the nest cavities and may increase predation at remaining cavities. Currently, the greatest threats from forest harvest are in British Columbia. Because Barrow's goldeneyes readily use nest boxes, properly designed and

located nest boxes can increase nest site availability and can be used to augment breeding populations.

Other potential threats to Barrow's goldeneyes on wintering areas include oil spills, since these birds are tied so closely to intertidal habitats, and pollutants from agricultural and industrial sources that may bioaccumulate in their preferred shellfish foods. Fish introduction in the fishless lakes where they breed is also a threat.

Hunting pressure on the western population is generally low. Sport harvest is estimated at less than 5000 birds, mostly from Alaska, British Columbia, and Washington. Estimates of subsistence harvest are also light, with less than 3000 birds harvested in Alaska.

Hunting is a concern for the eastern population, but harvest data there are quite poor due to small sample sizes. Hunting has been closed in areas heavily used by Barrow's goldeneyes.

More information about this species is clearly needed, including links between breeding, molting,

and wintering areas, and size of populations. Recent research includes breeding ecology studies in British Columbia and satellite telemetry studies in Quebec.

References and Resources

Eadie, J. M., J.-P. L. Savard, and M. L. Mallory. 2000. Barrow's Goldeneye (*Bucephala islandica*). *In* The Birds of North America, No. 548 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
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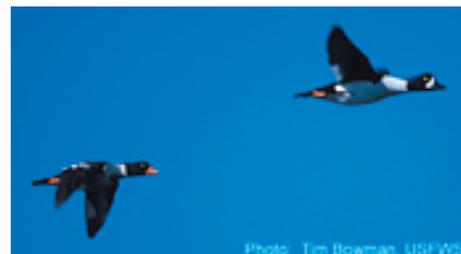


Photo: Tim Bowman, USFWS



The Sea Duck Joint Venture is a conservation partnership under the North American Waterfowl Management Plan

To learn more about the Sea Duck Joint Venture (SDJV), visit seaduckjv.org or contact:

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