

BLACK GUILLEMOT - CEPPHUS GRYLLE

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Charadriiformes Family: Alcidae Genus: Cepphus
Species: C. grylle

Habitat:

Biomes: Black guillemots are typically restricted to rocky shores where they utilise the cliffs, crevices and boulders for their nests, and the inshore waters to hunt for benthic prey items. Nests on rocky coastlines; forages in near-shore waters.

Distribution:

In US: The Black Guillemot is a Circumpolar species distributed in the boreal, low arctic and high arctic regions of the north Atlantic and arctic oceans and breeding between 43° and 82°N. In North America they can be found as far south as the Gulf of Maine and New England and across parts of the northern coast of North America as far as Alaska

In Other Countries: In Europe and Asia they are found from the British Isles and Northward across the northern coast of Asia. They are one of the few birds to breed on Surtsey, Iceland, a new volcanic island. In the UK it is a fairly common breeding bird in western and northern Scotland and Ireland. In the rest of Great Britain they only breed at St. Bees Head in Cumbria, the Isle of Man and on east Anglesey in north Wales.

Holistic Description: A Black-And-White bird of the northern seas, the Black Guillemot breeds along the coasts of Canada and Greenland. Unlike other members of the puffin family, it prefers to forage in relatively shallow near-shore waters. The black guillemot or **tystie** is a medium-sized seabird of the alcid family, Alcidae, native throughout northern Atlantic coasts and eastern North American coasts. It is resident in much of its range, but large populations from the high arctic migrate southwards in winter.

Species Richness: 5 SUBSPECIES

Population Dynamic: CHECK THREATS

Evolution and Systematics:

Evolution: Very limited fossil record for guillemots. Fossil deposits of extinct *Cepphus olsoni* from late Miocene–early Tertiary found at Oceanside and Laguna Nigel, CA.

Systematics: Bill length becomes shorter south to north; increasing amount of white south to north. Birds breeding in w. North America have longer bills on average than birds breeding in e. Canadian Arctic and have all-white greater coverts. In contrast to e. North America and Western Atlantic, populations in Eastern Atlantic show strong cline in size, with wing length decreasing south to north, largest in Baltic Sea population; bill size decreases and amount of white in plumage increases south to north as in Western Atlantic.

Number of Species: 5 SUBSPECIES

Number of Genera: 5 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 11.8-12.6 in (30-32 cm) Weight: 11.3-17.1 oz (320-485 g)

Wingspan: 20.5-22.8 in (52-58 cm)

Coloration: The English common name “Black Guillemot” references their strikingly black breeding summer plumage which is totally black except for a large white patch on the upper side of their wings. During the summer plumage, their legs, feet and inside of the mouth are all a bright coral-red, and their beak is a black. Adults lose their summer plumage in an early fall moult where their upper plumage become barred with light grey and white, their head is a pale grey, their underparts white, and legs and feet a pale red. They retain their white wing patch, black beak and red inside their mouth.

General Body Features: Medium-sized to small waterbird. Thin, straight bill. Large white wing patches. Bright red feet. Relatively long, thick neck. All black with white wing patches in summer. Mostly white with dusky back in winter.

Special Features of the Body: NONE, CHECK ADAPTATIONS IN DIET

Special Features of the Head and Sensory Organs: NONE, CHECK ADAPTATIONS IN DIET

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: NONE, CHECK ADAPTATIONS IN DIET

Any Special Internal Anatomy: NONE, CHECK ADAPTATIONS IN DIET

Sexual Dimorphisms: NONE, CHECK ADAPTATIONS IN DIET

Differences Between Juvenile Stage and Adult: Similar to nonbreeding adult, but with more mottling on head and neck, and black markings breaking the white wing patches. Juveniles and immatures can easily be identified by the spotting of the white wing patch with grey or brown feathers and is easy to see even at far distances in the field.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: They dive for food from the surface, swimming underwater. They mainly eat fish and crustaceans, also some mollusks, insects and plant material. In courtship display, male stands upright, points bill down, and walks around female with exaggerated steps. Shows various lunges, turns of the head, and other posturing in territorial interaction with other Black Guillemots. Dives under water to capture prey, using its wings to swim. Small prey swallowed under water; larger items brought to surface.

Locomotion: Walks and runs upright on tarsi, makes small jumps or hops from rock to rock on shore, but may move quickly in hunched position. Wings also used to aid in climbing rock faces. Strong flight characterized by rapid wing beats generally within several meters of water, although capable of acrobatic flight during aerial (conspecific) chases or when pursued by kleptoparasites. Takes off from land or water easily, but may dive rather than fly upon rapid approach of boats. Uses wings for swimming underwater, probably assisted by feet.

Communication and Perception: The call in the breeding season is a high whistle. High-pitched, thin twitters and piping calls. Alarm call is a loud, wavering whistle.

Home Range: Varies with geographic location and substrate type. Pairs territorial around nest site and on nearby perching rocks, although pairs sometimes share common entrance to 2 different nest chambers. Nesting-territory sizes generally 1 to several square meters. Nonbreeding individuals or pairs may occupy and defend sites for entire season.

Degree of Sociality: Frequently described as only “moderately gregarious” or “loosely colonial” owing to small colony size throughout much of range. Adults demonstrated a form of social hierarchy on Nordre Rønner, with aggressive pairs excluding subordinates from breeding sites

Level of Aggression: May contest burrow “territories,” perch rocks, and mating attempts with conspecifics via bill-jabbing, biting, wing beating, and clawing. Most social interactions either agonistic or courtship; perch rocks near nest site and communal roosts near water are foci for Black Guillemot social behavior. No significant relationship between reproductive status or gender and frequency of agonistic displays.

Migration: Boreal and low-arctic populations generally sedentary; remain close to breeding colonies in winter, while high-arctic populations migrate to areas of open water (polynyas and leads) and pack-ice edges. Variable depending on geographic location.

Predators:

Predators: Herring Gulls, Great Black-backed Gulls, Hooded Crows, Snowy Owls, Peregrine Falcons, Gyrfalcons, Great Skuas, American Crow, Raccoons, Ermine, River Otter, Mink, Brown Rats, Black Rats, and Bluefish.

Anti-Predator Defenses: Periodic “scares” or mass flights away from colony without obvious cause. Black Guillemots fly, dive, or do both to escape kleptoparasites or potential predators. Ermine predation on adults and eggs in Hudson Bay colonies impacted productivity by nest-site abandonment prior to or after egg-laying; ermine presence negatively correlated with breeding density. Otter predation in colonies on Mousa may have delayed reproduction in one year.

Diet and Nutrition:

Adult Diet: Fish, crustaceans, and marine invertebrates. Varies both seasonally and geographically; includes benthic and pelagic fish. Also wide variety of invertebrate species, including crustaceans, annelids, mollusks in shallow inshore waters.

Juvenile Diet: ^^^^ (Blennies, Sea Scorpions, Cod, Sandlances, Rock GUNNELS, Pricklebacks, and Sculpins)

Special Adaptations for Getting Prey: Dives for food using wings for propulsion. Smaller prey may be swallowed underwater; larger prey generally brought to surface before swallowing. Feeds mostly on benthic prey, but will opportunistically take fish and nektonic invertebrates in water column. Also forages at nets of small trawlers, taking sand lance from mesh or as they escape.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Generally monogamous; one case of polygyny in Alaska.

Mating Season: January to March

Courtship: **Circling.** Male assumes upright stance with neck erect, bill pointed downward; issues staccato vocalization; struts around female raising feet with exaggerated movement. Generally on land, but circling may also begin on water. Receptive female may stand and circle male in hunched posture. Female attempting to avoid male's advances stands, walks away a short distance, and lies down again, with bill oriented up and toward male. **Invitation-Settling.** Female lies down after Circling, stretches neck out horizontally with bill pointing outward, tail pointed up; maintains this posture throughout copulation. Female may assume normal head posture or orient bill toward male if male hesitates or pads with feet for too long before copulating

Territoriality: Pairs territorial around nest site and on nearby perching rocks, although pairs sometimes share common entrance to 2 different nest chambers. Nesting-territory sizes generally 1 to several square meters. Nonbreeding individuals or pairs may occupy and defend sites for entire season.

Mating: Following invitation, male mounts female, pads with feet up and down on her back while maintaining upright posture, works his way posterior along female's back, lowers his tail, and makes cloacal contact. Female often terminates copulation when she stands and dislodges male. Male may terminate copulation by pecking female's head; she then stands, dislodging him. Female sometimes interrupts copulation by standing if an intruder approaches. Preening often follows copulation, with male concentrating on belly feathers and female focusing on feathers around cloaca. Copulation by pairs with 2-egg clutches ceased soon after first egg laid, while copulation by pairs with only a single egg continued up to 12 d following egg-laying.

Nesting: Nest may consist of shells, pebbles, seaweed, and bones, or egg may be laid directly on rock with no nest material at all. Placed on rocky coast, often under overhang or boulder, or in a cavity. Nests may be rudimentary and include small pebbles, dry vegetation, seaweed, feathers, bird bones, fish bones, sea-urchin skeletons, or mollusk shells; or eggs may be laid on bare earth or stone. Adults typically nest along rocky coastline under boulders, scree, and overhangs; in cavities in boulder beaches, in earth-lined holes under tree roots, or in fissures in cliff faces.

Egg-Laying: Egg Length: 58.5 mm Egg Width: 39.6 mm Egg Mass: 47.9 g Egg Color: Background color of dull white to creamy to pale bluish green; generally marked with regular blackish-brown to lavender or lilac-gray spots distributed over surface of egg, which often coalesce into irregular blotches or ring on larger end of egg. Eggshell Thickness: 0.388 mm Clutch Size: 1-2 eggs Incubation Period: 29.2 days

Hatching and Incubation/Gestation: Chicks semiprecocial. Large chicks had proportionally more yolk reserves at hatching than did small chicks.

Development: ^^^^

Parental Care: Chicks may be brooded for 1–4 d after hatching, possibly as long as long 5–6 d in higher latitudes. Thereafter, adults spend night on water and return in early morning. Varies depending on geographic location, brood size, chick age, year, and individual adult. Chicks fed in nest from first day of hatching until fledging. Adults carrying food may fly straight into nest site or sit on water for prolonged periods with food items in their bills, or sit on rocks in communal roosts, or fly off in large circles out to sea often several times before returning to land beside nest site. Adults on water frequently seen dropping prey item, grabbing it again, and repeatedly biting and manipulating with bill, possibly to kill prey prior to feeding it to chicks.

Lifespan: Around 10 years of age, up to 27 years old.

Conservation:

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: Lack of accurate census data makes determination of population trends difficult. The North American Waterbird Conservation Plan estimates a North American population of 100,000-200,000 breeding birds, and this species rates a 9 out of 20 on the Continental Concern Score. They are listed as a Species of Lowest Concern, and are not on the 2014 State of the Birds Watch List. The Black Guillemot is more susceptible to ingestion and biomagnification of marine pollution than other alcids because it takes prey from shallow water or at the sea floor. Studies have shown accumulation of mercury, pesticides, and crude oil residues in body tissues and eggs. Oiling of feathers from spills at sea usually results in death. Global warming may also affect populations. Melting ice caps do play a role in the loss of habitat that this bird faces.

Conservation Efforts: ^^^^^

Extra Facts:

1. The Black Guillemot carries fish crosswise in its bill. Some adults seem to show a preference for the direction in which the fish heads point; this "handedness" may be related to the selection of foraging sites.
2. The Black Guillemot can stay underwater for up to 2 minutes and 20 seconds.
3. The Black Guillemot shows a considerable amount of geographic variation in the amount of white in its winter plumage. Higher-latitude populations show more white background color than do southern populations, and can be nearly pure white with black wings.
4. The Black Guillemot breeds colonially, with different densities at different sites. Colonies tend to be smaller in the southern portion of breeding range, perhaps because prey is more widely distributed. In the high Arctic, where food is more concentrated, some colonies have 2,000-10,000 pairs.
5. The oldest Black Guillemot recorded was over 27 years old when it was recaptured and rereleased during banding operations in Alaska.

Notable Species:

1. *C. g. mandtii* – (Lichtenstein, 1822): northeast Canada to Svalbard to northern Siberia and northern Alaska
2. *C. g. arcticus* – (Brehm, 1824): northeast United States, southeast Canada & south Greenland to the Ireland and Britain, southern Scandinavia and the White Sea
3. *C. g. islandicus* – (Hørring, 1937): Iceland
4. *C. g. faroeensis* – (Brehm, 1831): Faroe Islands
5. *C. g. grylle* – (Linnaeus, 1758): Baltic Sea