

# RED-NECKED GREBE - PODICEPS GRISEGENA

## The location of its legs near its vent, making the bird awkward on land.

**Taxonomy:** Kingdom: Animalia Phylum: Chordata Class: Aves Order: Podicipediformes Family: Podicipedidae Genus: Podiceps Species: P. grisegena

### **Habitat:**

**Biomes:** In North America, Red-necked Grebes breed chiefly in Canada and Alaska, mostly on shallow freshwater lakes in lowland areas, especially sheltered areas that have some marsh vegetation around the edges and little disturbance or human activity. Some pairs nest in small lakes, bogs, and ponds or even in large ditches or borrow pits, and some nest in wetlands of montane valleys at higher elevations. Migrants may show up on almost any body of water inland in spring or fall, though most appear on larger lakes. Wintering birds frequent mostly cold, shallow waters along ocean coastlines. Along coasts, they tend to forage more actively during higher tides. On several occasions during very cold winters, when the Great Lakes have frozen over completely, large numbers of Red-necked Grebes have appeared across eastern North America in interior locations where they're not normally observed.

### **Distribution:**

**In US:** Washington, Oregon, Idaho, Montana, North Dakota, South Dakota, Wyoming, Minnesota, Wisconsin, Michigan.

**In Other Countries:** Europe and Asia

**Holistic Description:** Red-necked Grebes are boldly plumaged waterbirds with pale cheeks and a dagger-like yellow bill that contrasts with a sharp black crown often likened to a toreador's cap (sometimes raised into a short crest). In breeding plumage, the neck is a rich brick red. The species breeds on northerly lakes and winters mainly along ocean coastlines, usually singly but sometimes in small groups. During spring migration, flocks may form on large lakes, and pairs begin their boisterous courtship displays well before reaching breeding lakes farther north.

**Species Richness:** 2 SUBSPECIES

**Population Dynamic:** NONE, NO TRENDS

### **Evolution and Systematics:**

**Evolution:** Reported from several Pleistocene localities. (Fossil History)

**Systematics:** Also known as Holboell's Grebe or Gray-cheeked Grebe. Geographic variation described with NOTABLE SPECIES.

**Number of Species:** 2 SUBSPECIES

**Number of Genera:** 2 SUBSPECIES

### **Physical Characteristics:**

**Size and Length:** Length: 16.9-22.1 in (43-56 cm) Weight: 28.2-56.4 oz (800-1600 g)

**Wingspan:** 24.0-34.6 in (61-88 cm)

**Coloration:** Nonbreeding birds are mostly dark gray above, paler below, with pale cheeks and sides of neck. Breeding adults have a rusty red breast and foreneck, with a smart black cap and sharply defined white cheek. Immatures are similar to nonbreeding adults but head pattern is less distinct.

**General Body Features:** Large grebe with long neck and fairly stout, straight bill. Breeding adults have a black cap ending sharply at gray-white cheeks and a chestnut-red neck. Note that the eye is not red. Breeds in shallow freshwater lakes and other marshes. Like other grebes, places nest on floating mass of vegetation. A thickset waterbird, similar in size to many ducks, but with a longer neck and a heavy, pointed bill.

**Special Features of the Body:** The brown plumage or feather covering is one of the most basic adaptations of these birds, allowing them to camouflage themselves among marsh vegetation

**Special Features of the Head and Sensory Organs:** The cone-dense retinas of their eyes mark for yet another interesting adaptation of these water birds. It allows them to locate prey underwater.

**Dentition:** Lamellae and Gizzard

**Special Features of the Limbs and Digits:** LOCOMOTION

**Any Special Internal Anatomy:** Pied billed grebes have a special oil gland often situated at the base of their tail. These birds preen their feathers with the secretion from the gland, thereby turning their feathers waterproof.

**Sexual Dimorphisms:** Males average larger than females, but sexes are not always distinguishable by size. Sexes otherwise alike in appearance.

**Differences Between Juvenile Stage and Adult:** In Juvenile plumage, identified by brownish-red foreneck and 2 prominent, diagonal black bands on side of head.

### **Behavior:**

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Red-necked Grebes feed by diving, then swimming beneath the water to capture prey with the bill. While resting, they often preen their plumage, sometimes swallowing the small feathers from their flanks. Red-necked Grebes form monogamous pairs, usually during stopovers on spring migration (possibly earlier), as they begin to molt into breeding plumage and commence courtship. Most arrive at breeding lakes already mated and continue their ritualized displays, called “ceremonies,” which maintain the pair bond. As with other grebes, each ceremony involves a series of stereotyped postures and movements, executed in a specific sequence. These are called the discovery ceremony, weed ceremony, and greeting ceremony. More than other grebes in the genus Podiceps, Red-necked pairs are highly vocal, giving a “whinny-braying” call during courtship and also when driving away other grebes or waterbirds from their territories. In some locations, however, pairs nest very close to one another, probably in areas where food is abundant. Aggressive behavior includes chases in which opponents patter and flap across the water, thrusting the bill forward and hunching over; and a spread-wing display in which opponents rear up on the water, facing one another. Male and female select their nest site together, and both build the nest, incubate the eggs, and care for the young. Pairs usually separate after the young are fully fledged, at about four weeks of age. Migration occurs both during the day (at least over water, as on the Great Lakes and Chesapeake Bay) and at night, sometimes in loose aggregations, as with loons. Wintering birds are usually solitary but sometimes congregate where food is plentiful or in preparation for migration.

Locomotion: **This species does not normally occur on land. Its movements are awkward; shuffles forward on breast by kicking feet.** Also able to stand erect on toes and walk a few steps before dropping onto breast. Flaps wings when attempting to run. Outside of migration period, rarely flies. Requires long running taxi on water to become airborne. In windless conditions, taxi distance of about 50–60 m and average taxi time of 5.6 s. Fast, direct flight with rapid wing beats. Flies with neck stretched and head held level with or slightly below body line, legs and feet outstretched behind. No direct measurements of flight speed. Observed flying with and at same speed as Blue-winged Teal. **60 km/hr.** Strong swimmer and diver. On surface, swims with alternating strokes of feet. Underwater, swims rapidly with simultaneous thrusts of feet, more slowly with alternating strokes. Holds wings against body. Usually spreads feet laterally to some degree, especially in underwater swimming, in which feet may be raised to or above midline of body. Makes foraging dives from upright position; dives range from “level” to “springy.”

Communication and Perception: Males and females give a rapid, whinnying trill that sometimes becomes a louder braying or honking (during courtship or conflict), mostly on the breeding grounds. Mated pairs sometimes purr softly, and birds warning or attacking other waterbirds occasionally hiss. Wintering birds are seldom vocal, but they may call occasionally on calm days in late winter and early spring, as the breeding season approaches.

Home Range: Type A territories (mating, nesting, and feeding in defended area) and less frequently Type B territories (mating and nesting in defended area) are established by pairs. **CHECK TERRITORIALITY**

Degree of Sociality: Territorial during breeding season. In some areas, territories are very small, and concentrations of nesting birds are semicolonial. Often gregarious during non breeding and migration seasons.

Level of Aggression: Aggressive during breeding season, attacking conspecifics during courtship and in defense of territory. Often initiates swimming and diving chases, even after intruder begins to swim away. Males are more likely to initiate attacks than females.

Migration: Medium-distance migrant. Migrates both during the day (over water) and at night (both over land and water).

#### **Predators:**

Predators: Great Horned Owl, Mink, Peregrine Falcon, American Crow, Common Raven, Gulls, Bald Eagle, American Coot, Raccoon, Muskrat, Northern Pike, Largemouth Bass.

Anti-Predator Defenses: Males and females drive off potential predators when they approach nest (see Social and interspecific behavior, above). Incubating birds defend nests from egg predators by jabbing with bill and giving Hissing Call (see Sounds: vocalizations, above). Typically covers eggs with nest material before leaving nest when approached by mammalian predators. When humans approach nest, sometimes exhibits displacement behavior, preening back- and belly feathers with agitated motions. Gives Alarm Call (see Sounds: vocalizations, above) when retreating from predators, especially if chicks are present. Moves out into open-water areas to avoid predators, and dives in response to threat. Mobbing behavior not reported.

#### **Diet and Nutrition:**

Adult Diet: Red-necked Grebes feed mostly on fish and crustaceans, along with some insects. They hunt visually in relatively clear water, from the top of the water to the bottom, if they can reach it. Sometimes, like loons, they submerge their heads partially while floating, scanning for prey, which they capture by diving and then grasping rapidly with the bill. They swallow small fish whole, headfirst, usually while still underwater. When they catch larger fish or crustaceans, Red-necked

Grebes normally return to the water's surface and prepare for swallowing the prey item by shaking and biting it. During winter, they eat fish and occasionally shrimp. When nesting, they consume almost any sort of aquatic animal or insect available, including smaller fish, salamanders, frogs (including tadpoles), amphipods, leeches, crayfish, small clams, damselflies, dragonflies, spiders, and many sorts of aquatic beetles and flies.

**Juvenile Diet:** On North American lakes with fish, invertebrates are the main diet of young during first few weeks, but they decrease in importance and are replaced by fish thereafter.

**Special Adaptations for Getting Prey:** NONE, CHECK ADAPTATIONS

### **Reproduction:**

**Mode of Reproduction:** Monogamous

**Mating System:** Seasonal monogamy. Pair bond is established and maintained through complex, ritualized courtship ceremonies similar to those of other Podiceps. Highly vocal in courtship, more so than other Podiceps; gives Whinny-Braying during many courtship activities.

**Mating Season:** March to May

**Courtship:** Whinny-Braying, Cat Display, Bouncy Dive, Ghostly Penguin Posture, Weed Dance, Penguin Dance, and Head Turning.

**Territoriality:** Single pairs may occupy entire small lakes, but nest densities at some sites within larger lakes can be high, producing semicolonial conditions.

**Mating:** Pair copulate after constructing platform, which may or may not become the nest. Rarely attempt copulation off platform on submerged logs. Female (or male in reverse mounting) springs onto platform, performs Inviting Display with crests flattened and neck stretched low to water and gives purring calls. Bird in water gives soft calls and may poke at rear of bird giving Inviting Display before mounting. Mounts, giving loud Rattling Call. Female may raise head slightly during copulation. With paddling feet, male then slides over head and neck of female and splashes into water in Postcopulatory Water-treading.

**Nesting:** Nests are set near or on sheltered lakeshores, in emergent or floating aquatic vegetation. Most pairs also build additional nestlike structures for copulation. Male and female both build the nest, a bulky pile of aquatic plants that is anchored to emergent plants or piled directly on the lake bottom and built up. Most of the nest mound lies underwater. The central portion above water is lower than the edges, to contain the eggs. Nests average about 44 inches across, with a depression of about 6 inches across and 1.6 inches deep.

**Egg-Laying:** Clutch Size: 1-9 eggs Egg Length: 53.3 to 55.7 mm Egg Width: 34.5 to 36.1 mm Incubation Period: 28 days Egg Color: Light blue, often fading to chalky white within 24 h of being laid.

**Hatching and Incubation/Gestation:** Downy and active; chicks immediately climb onto parent's back, where they spend most of their time until they are 10 to 17 days old.

**Development:** Semi Precocial. At hatching, yolk sac is completely enclosed, and feathers are enclosed in silvery sheath. Chick immediately climbs onto back of incubating parent, snuggling beneath scapular feathers while down dries.

**Parental Care:** Nearly continuous during first week. Back-brooding by both sexes occurs mostly on nest while eggs remain and later on water until chicks are 10–17 d old. Parents shake chicks off back by rising up and flapping wings. Non Brooding parent brings food and feeds it directly to young, or more rarely, gives it to brooding parent, which then feeds young. Parents regularly feed small feathers to young, which actively beg for them. Small prey items, especially insect larvae, are fed to young in first week. Parent approaches with food giving Grunting Call (see Sounds: vocalizations, above), which stimulates back-brooded chicks to emerge from feathers of brooding adult and beg. Hungry chicks peep with mouth somewhat open and have pronounced Begging Posture: neck stretched forward, head and open mouth angled upward. Chick snatches food from parent's bill with sideways jerk of head, manipulates it in bill, and swallows it whole.

**Lifespan:** Up to 11 years old.

### **Conservation:**

**Official Federal Status:** Least Concern

**Special Statutes in Individual States:** NONE

**Threats:** Red-necked Grebes are fairly common. Populations were stable between 1968 and 2015 and grew by an estimated 3.7% per year in the last decade of that period, according to the North American Breeding Bird Survey. The group estimates a global breeding population of 160,000 and rates the species a 10 out of 20 on the Continental Concern Score, indicating a species of low conservation concern. The species is sometimes killed in fishing nets during the nonbreeding season and is vulnerable to contamination by marine pollutants, including organochlorine pesticides and heavy metals, which have been found in adults and eggs. Disturbance and destruction of wetlands, especially in the southern portions of the breeding range,

has reduced nesting areas available. As with Horned Grebe, there is some evidence that the breeding range of Red-necked Grebe is contracting northward in North America.

Conservation Efforts: ^^^^

**Extra Facts:**

1. Red-necked Grebes winter mostly in northern climes, but wandering birds have reached Bermuda and the Hawaiian Islands.
2. In 1989, birders organized a study of autumn migration at Whitefish Point, Michigan, on Lake Superior. They were surprised to discover that a large migration of Red-necked Grebes passed by there during the daytime. Most scientists had assumed that this species migrated at night like many other grebe species. Whitefish Point Bird Observatory has documented over 21,000 Red-necked Grebes in a single season at their lake watch.
3. Like other grebes, the Red-necked Grebe ingests large quantities of its own feathers. The stomach retains two distinct masses (balls) of feathers, and their function is unknown. One hypothesis suggests that the feathers help protect the lower digestive tract from bones and other hard, indigestible material. The Red-necked Grebe also feeds its feathers to its young.
4. The Red-necked Grebe migrates over land strictly at night. It sometimes migrates over water or along coasts by day, in large flocks.
5. The oldest recorded Red-necked Grebe was at least 11 years old when it was found in Minnesota, the same state where it had been banded.

**Notable Species:**

The red-necked grebe has two subspecies, the nominate subspecies *P. g. grisegena* in Europe and western Asia, and *P. g. holboellii* (Holboell's grebe, named for Danish explorer of Greenlandic birds Carl Peter Holbøll) in North America and eastern Siberia. The east Asian birds have slightly smaller bills than the American form, although the differences are too small to merit separation as a third subspecies.

**North American (and eastern Asian) nesters are of subspecies *holboellii*, sometimes called Holboell's Grebe, which has a yellower bill and paler back, cheeks, and neck than the smaller western Eurasian birds (subspecies *grisegena*).**