

RED-NECKED GREBE

TAXONOMY

Scientific name: *Podiceps grisegena* (Boddaert, 1783)

Common name: Red-necked Grebe

Family: Podicipedidae

Taxonomic comments:

Populations vary in bill and body size; European and West Asian birds substantially smaller than North American and East Asian birds. European and West Asian grebes also show darker back, cheeks, and neck, and less yellow in bill than East Asian and North American birds. Two subspecies recognized: *P. g. grisegena* for European and West Asian populations and *P. g. holboellii*, for East Asian and North American populations (Stout and Neuchterlein 1999).



DESCRIPTION

Basic description: A large grebe.

General description:

In all plumages, identified by its large size and robust bill with yellowish base. In breeding plumage, head has black cap and large, definitive pale-gray cheek patch extending upwards to behind eye. Foreneck and upper breast chestnut; belly pale; sides and flanks grayish. Upperparts dark brownish black. Wings dark, with two prominent white patches: one on secondaries, the other on leading edge of wing. In winter plumage, head has black cap; mouse-gray patch on ear-coverts; and white crescent extending from white chin and throat upward behind ear coverts. Overall appears somewhat dingy, with white or light gray foreneck blending to dark gray-black hindneck (Stout and Neuchterlein 1999).

Length (cm): 51

Weight (kg): 1.0

Reproduction:

Egg-laying peaks in June in many areas. Male and female in turn incubate usually 3-5 eggs for 22-27 days. Young are tended by both parents; independent probably at 8-10 weeks. Usually one brood/year. Usually nests solitarily, sometimes in loose colony.

Ecology:

Breeding territory size variable, reflects food supply and other ecological factors. Each breeding pair usually uses about 68-114 meters of shoreline and associated waters, where all activities take place (Palmer 1962). Occasionally pairs may nest as little as 9 meters apart.

Food:

Feeds on small fish where available, but also eats aquatic and land insects, crustaceans, mollusks, aquatic worms, tadpoles, salamander eggs and some vegetable matter. Eats feathers. A visual predator, pursues fish and other swimming prey underwater and plucks items off bottom and off vegetation. Fish may be the principle food item in winter (Stout and Neuchterlein 1999).

Migration:

Global migration:

Northward migration along U.S. Pacific coast starts in March; movements through western interior occur late April-May. Arrives in all except most northern breeding areas by May. Typically arrives at lakes in spring shortly before complete breakup of ice (late Apr-mid-May) (Stout and Neuchterlein 1999). Return to coastal wintering areas mostly complete by mid-November, though some linger on large inland lakes until late fall. Lake Ontario is an important spring stopover in the east.

State migration:

Peak migration through the northern Gulf of Alaska coast and Prince William Sound in late April to mid-May. Main migration is through interior Alaska in mid-May (Stout and Neuchterlein 1999). Fall arrivals to Alaskan coast begin mid-to late August and continue to late October.

Habitat:

Winters along seacoasts, bays, and estuaries. In migration, found on lakes, ponds, and rivers. Nests mainly on shallow, freshwater lakes (>2 ha.) or shallow protected marsh areas and secluded bays of larger lakes, usually with at least some emergent vegetation and fish populations (Stout and Neuchterlein 1999). Nest is usually in reeds along the margins of shallow lakes; made of dead and rotting reeds and flags, water mosses, etc. raised slightly above the surface of the water, and eggs are generally wet and almost awash (Gabrielson and Lincoln 1959). Sites are chosen for combination of shelter from wind and waves, availability of nest materials and anchorage, easy swimming access, proximity to open water, and distance from shore-bound predators (Stout and Neuchterlein 1999).

STATUS

Global rank: G5 (1996-11-20)

Global rank reasons:

Global rank reasons currently unavailable.

State rank: S4S5B, S4?N (2004-07-09)

State rank reasons:

Known breeding population about 12,000 birds. A 10% decline noted in Yukon Delta National Wildlife Refuge over a ten year period, and reduced lake occupancy in the Matanuska-Susitna (Mat-Su) Valley between 1987 and 1999 are of concern. Little is known of wintering and molting areas in the state. Threatened in the core of its range due to recent and rapid development in the Mat-Su region. Most susceptible during the breeding season to lake disturbance due to habitat destruction and motorized vehicle traffic.

DISTRIBUTION AND ABUNDANCE

Range:

Global range:

Holarctic. *Breeding*: Alaska, western and south-central Canada, south to Washington, Montana, northeastern South Dakota, Minnesota, rarely elsewhere in northern U.S.; Europe and northern Asia.

Non-breeding: Coastally from Alaska to southern California and Nova Scotia to central Florida (mainly north of Chesapeake Bay), casually along Gulf coast; also in Old World. Areas of highest winter density in North America include waters around Vancouver Island in the Strait of Georgia and the Bay of Fundy (Root 1988).

State range:

Breeding: North to Kobuk and Noatak Rivers and up river drainages to Brook's Range, occasionally sighted on the North Slope, south to Kenai Peninsula, Kodiak Island, and northern foothills of Chugach Mountains. On Seward Peninsula, breeds in east and southeast, as well as interior lowlands west into Imuruk Basin (Stout and Neuchterlein 1999, Mills, in prep.). Absent from the Aleutian Islands and Southeast Alaska during breeding season.

Non-breeding: Winters in coastal marine areas from the Aleutian Islands to Southeast Alaska; most commonly in southeastern Alaska where it is particularly abundant around Ketchikan and the Wrangell Narrows (Gabrielson and Lincoln 1959); fairly common in Prince William Sound, especially along the shores of Knight Island (Isleib and Kessel 1973).

Abundance:

Global abundance:

North American population likely greater than 45,000 birds; Alaska breeding population about 12,000 individuals. Canadian population estimated at 20,000, but likely inaccurate based on insufficient data (DeSmet 1982). More recently, minimum population estimates for the N.W. Territories exceeded 20,000 (Stout and Neuchterlein 1999).

State abundance:

Alaska breeding population about 12,000 individuals (Stout and Neuchterlein 1999). Population estimates derived from expanded breeding bird survey data were: Bristol Bay, approximately 1,070 birds (± 283 , 0.02 birds/km², 1993-94); 372 (± 134 , 0.02 birds/km², 1994) and 1,286 (± 259 , 0.03 birds/km², 1995) in Innoko National Wildlife Refuge (NWR); 1,481 (± 208 (SE), 0.11 birds/km², 1996) and 1,516 (± 222 , 0.08 birds/km², 1997) in Koyukuk and Kanuti NWR's, respectively; 1,197 (± 214 , 0.02 birds/km², 2001-2002) for the Tanana/Kuskokwim basin, 2,791 (± 359 , 0.18 birds/km², 1996-97) in Selawik NWR, and 4,215 (± 542 , 0.01 birds/km², 1989-1992), 3,380 (± 595 , 0.01 birds/km², 1991), and 5,516 (± 1242 , 0.02 birds/km², 1992) in the Yukon-Delta NWR (Platte and Butler unpubl. data). Surveys conducted in Prince William Sound in 1998 estimated 1,396 (± 763) birds during winter and 106 (± 101) during summer (Irons et al. 2000).

Trends:

Global trend:

No clear trend; historical information scarce. Extensive drainage of wetlands in pothole region of North America throughout the 20th century likely reduced numbers in southern portion of breeding range. Currently, probably stable. In Alaska, local breeding population on coastal zone of Yukon Delta National Wildlife Refuge declined about 10% per year between 1988 and 1998. Declines also noted in isolated populations on periphery of breeding range in eastern Wisconsin, southern Ontario, and at southern limits of Pacific wintering range (Stout and Neuchterlein 1999). Populations in Canada apparently are stable; on major wintering areas, apparently increased from the 1960s to at least the 1980s (DeSmet 1982).

State trend:

Local breeding population on coastal zone of Yukon Delta National Wildlife Refuge declined about 10% per year between 1988 and 1998. (Stout and Neuchterlein 1999). No clear trend for the remainder of the state. In the Matanuska-Susitna Valley, a general pattern of decreasing lake occupancy has been observed since 1987; significantly fewer lakes had grebes present in 1999 compared to 1987 (Mills, in prep.).

EXISTING PROTECTION

Global protection:

Listed as threatened in Wisconsin, otherwise no official status (Stout and Neuchterlein 1999).

State protection:

Breeding habitat protected in the following National Wildlife Refuges (NWR's): Kenai, Innoko, Koyukuk, Kanuti, Selawik, Tetlin, and Yukon-Delta, and in Yukon-Charley National Park and Preserve.

CHALLENGES

Global challenges:

Reduced productivity and population declines throughout North America have been attributed to organochlorine residues, recent increases in unnatural predators (raccoon), and human recreational activities (DeSmet 1987). Commercial gill-nets are a potential source of mortality. Habitat degradation on breeding range through development near and drainage of wetlands and potholes; vulnerable during winter to marine oil spills (Stout and Neuchterlein 1999).

Global climate may effect lake dynamics and phenology, particularly in northern breeding populations. Breeding pairs need 8-11 days between arrival and onset of clutch initiation. A late spring could potentially shift the onset date of clutch initiation well into summer, jeopardizing chick survival and fledgling success (Bucher 1997).

State challenges:

Commercial and subsistence gill-nets are potentially significant sources of mortality (Stout and Neuchterlein 1999). Entanglement in fishing line and plastic pollution is a problem in more urban areas. Their position near the top of the food chain makes grebes susceptible to ingestion of large concentration of pollutants. High levels of organochlorines, mercury, and other heavy metals are often found in adults, eggs, and young. (Stout and Neuchterlein 1999). Also vulnerable to marine oil spills.

Species is faced with a number of threats during the breeding season. Introduction of invasive fish species (e.g. Northern pike) could potentially alter the prey base at nesting lakes and negatively effect productivity (Marshbird Workshop 2001). Development and increasing recreational pressures are encroaching upon nesting sites, particularly in the Matanuska-Susitna Valley (Mills, in prep.). Development can result in habitat destruction, reduction or alteration of water levels, lake eutrophication due to fertilizer run-off and other toxic contamination, and increased predation. Motorized watercraft may cause disturbance at nest sites and potential abandonment and/or destruction of nests. This species is vulnerable to predation by Great Horned Owls (*Bubo virginianus*) and mink (*Mustela vison*) during incubation (Stout and Neuchterlein 1999). Common Loons (*Gavia immer*), muskrats (*Ondatra zibethicus*), and river otters (*Lontra canadensis*) have been noted as potential predators on Wasilla Lake (Randall 2002). Many nest failures have been attributed to predation by Bald Eagles (*Haliaeetus leucocephalus*) that nest near lakes in Anchorage (Mills 2000).

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RESEARCH AND INVENTORY NEEDS

Global research needs:

Basic information on winter ecology is lacking. Extent of by-catch in commercial fisheries is unknown and needs study.

State research needs:

Research needed on breeding and winter ecology. Extent of by-catch in commercial fisheries is unknown and needs study. Effects of changing lake levels in association with habitat destruction and /or global climate change needs study, as does the effect of introduced species on prey base.

Global inventory needs:

A comprehensive survey across North American breeding range is needed (Stout and Neuchterlein 1999). Breeding areas need to be monitored at regular intervals. Areas utilized by grebes during non-breeding season are poorly understood, including molting and wintering areas, when birds are concentrated.

State inventory needs:

Alaskan distribution is poorly documented. A comprehensive survey across Alaskan breeding range is needed. Breeding areas need to be monitored at regular intervals. Areas utilized by grebes during non-breeding season are poorly understood, including molting and wintering areas, when birds are concentrated.

CONSERVATION AND MANAGEMENT NEEDS

Global conservation and management needs:

See State conservation and management needs.

State conservation and management needs:

Lake preservation efforts should focus on protecting shallow bays with emergent vegetation from development (DeSmet 1982). Consider closing off prime nesting areas to motorized crafts to avoid nest damaging wakes and disturbance of incubating or brooding adults (Stout and Neuchterlein 1999).

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