

= Red @-@ throated loon =

The red @-@ throated loon or red @-@ throated diver (*Gavia stellata*) is a migratory aquatic bird found in the northern hemisphere . The most widely distributed member of the loon or diver family , it breeds primarily in Arctic regions , and winters in northern coastal waters . Ranging from 55 ? 67 centimetres (22 ? 26 in) in length , the red @-@ throated loon is the smallest and lightest of the world 's loons . In winter , it is a nondescript bird , greyish above fading to white below . During the breeding season , it acquires the distinctive reddish throat patch which is the basis for its common name . Fish form the bulk of its diet , though amphibians , invertebrates and plant material are sometimes eaten as well . A monogamous species , the red @-@ throated loon forms long @-@ term pair bonds . Both members of the pair help to build the nest , incubate the eggs (generally two per clutch) and feed the hatched young .

The red @-@ throated loon has a large global population and a significant global range , though some populations are declining . Oil spills , habitat degradation , pollution and fishing nets are among the major threats this species faces . Natural predators ? including various gull species , and both red and Arctic foxes , will take eggs and young . The species is protected by a number of international treaties .

= = Taxonomy and etymology = =

First described by Danish naturalist Erik Pontoppidan in 1763 , the red @-@ throated loon is a monotypic species , with no distinctive subspecies despite its large Holarctic range . Pontoppidan initially placed the species in the now @-@ defunct genus *Colymbus* , which contained grebes as well as loons . By 1788 , however , German naturalist Johann Reinhold Forster realized that grebes and loons were different enough to warrant separate genera , and moved the red @-@ throated loon (along with all other loon species) to its present genus . Its relationship to the four other loons is complex ; although all belong to the same genus , it differs more than any of the others in terms of morphology , behaviour , ecology and breeding biology , and may be the basal lineage of the genus . It is thought to have evolved in the Palearctic , and then to have expanded into the Nearctic .

The genus name *Gavia* comes from the Latin for " sea mew " , as used by ancient Roman naturalist Pliny the Elder . The specific epithet *stellata* is Latin for " set with stars " or " starry " , and refers to the bird 's speckled back in its non @-@ breeding plumage . " Diver " refers to the family 's underwater method of hunting for prey , while " red @-@ throated " is a straightforward reference to the bird 's most distinctive breeding plumage feature . The word " loon " is thought to have derived from the Swedish *lom* , the Old Norse or Icelandic *lómr* , or the Old Dutch *loen* , all of which mean " lame " or " clumsy " , and is a probable reference to the difficulty that all loons have in moving about on land .

= = Description = =

The red @-@ throated loon is the smallest and lightest of the world 's loon species , ranging from 53 to 69 cm (21 to 27 in) in length with a 91 ? 120 cm (36 ? 47 in) wingspan , and weighing 1 ? 2 @.@ 7 kg (2 @.@ 2 ? 6 @.@ 0 lb) . Like all loons , it is long @-@ bodied and short @-@ necked , with its legs set far back on its body . The sexes are similar in appearance , although males tend to be slightly larger and heavier than females . In breeding plumage , the adult has a dark grey head and neck (with narrow black and white stripes on the back of the neck) , a triangular red throat patch , white underparts and a dark grey @-@ brown mantle . It is the only loon with an all @-@ dark back in breeding plumage . The non @-@ breeding plumage is drabber with the chin , foreneck and much of the face white , the top of the head and back of the neck grey , and considerable white speckling on the dark mantle .

Its bill is thin , straight and sharp , and the bird often holds it at an uptilted angle . Though the colour of the bill changes from black in summer to pale grey in winter , the timing of the colour change does not necessarily correspond to that of the bird 's overall plumage change . The nostrils are narrow

slits located near the base of the bill , and the iris is reddish . One of the bird 's North American folk names is pegging @-@ awl loon , a reference to its sharply pointed bill , which resembles a sailmaker 's awl (a tool also known as a " pegging awl " in New England) .

Like the other members of its genus , the red @-@ throated loon is well @-@ adapted to its aquatic environment : its dense bones help it to submerge , its legs ? in their set @-@ back position ? provide excellent propulsion and its body is long and streamlined . Even its sharply pointed bill may help its underwater streamlining . Its feet are large , its front three toes are fully webbed , and its tarsus is flattened , which reduces drag and allows the leg to move easily through the water .

When it first emerges from its egg , the young red @-@ throated loon is covered with fine soft down feathers . Primarily dark brown to dark grey above , it is slightly paler on the sides of its head and neck , as well as on its throat , chest , and flanks , with a pale grey lower breast and belly . Within weeks , this first down is replaced by a second , paler set of down feathers , which are in turn replaced by developing juvenile feathers . The juvenile 's plumage is similar to that of the adult , though with a few distinguishing features . It has a darker forehead and neck , with heavy speckling on the sides of the neck and the throat . Its back is browner and less speckled , and its underparts are tinged with brown . Its eyes are reddish @-@ brown , and its beak is a pale grey . Though some young birds hold this plumage until mid @-@ winter , many quickly become virtually indistinguishable from adults , except for their paler bills .

In flight , the red @-@ throated loon has a distinctive profile ; its small feet do not project far past the end of its body , its head and neck droop below the horizontal (giving the flying bird a distinctly hunchbacked shape) and its thin wings are angled back . It has a quicker , deeper wingbeat than do other loons .

= = = Voice = = =

The adult red @-@ throated loon has a number of vocalisations , which are used in different circumstances . In flight , when passing conspecifics or circling its own pond , it gives a series of rapid yet rhythmic goose @-@ like cackles - kaa @-@ kaa @-@ kaa or kak @-@ kak @-@ kak , at roughly five calls per second . Its warning call , if disturbed by humans or onshore predators , is a short croaking bark . A low @-@ pitched moaning call , used primarily as a contact call between mates and between parents and young , but also during copulation , is made with the bill closed . The species also has a short wailing call - aarOOao ? aarOOao ? , which descends slightly in pitch and lasts about a second ; due to strong harmonics surrounding the primary pitch , this meowing call is more musical than its other calls . Another call ? a harsh , pulsed cooing that rises and falls in pitch , and is typically repeated up to 10 times in a row ? is used in territorial encounters and pair @-@ bonding , and by parent birds encouraging their young to move on land between bodies of water . Known as the " long call " , it is often given in duet , which is unusual among the loons ; the female 's contribution is longer and softer than her mate 's .

Young have a shrill closed @-@ bill call , which they use in begging and to contact their parents . They also have a long call used in response to (and similar to that of) the long call of adults .

= = = Similar species = = =

At medium to close range , an adult red @-@ throated loon in either breeding or non @-@ breeding plumage is usually easily recognised . However , in certain light conditions , at certain times in its moulting cycle or at greater distances , it may be mistaken for another species ? most commonly the black @-@ throated loon , but also occasionally the great crested grebe . It shows more white on the head and neck than does the black @-@ throated loon , and ? provided it is not sitting low in the water ? tends to show more white on the flanks as well . If it is sitting lower in the water , so that the white on the flanks is reduced to a patch on the rear flank (thus resembling the pattern of the black @-@ throated loon) , that patch tends to be less clearly defined than the comparative patch on the black @-@ throated .

= = Habitat and distribution = =

The red @-@ throated loon breeds primarily in the Arctic regions of northern Eurasia and North America (generally north of 50 ° N latitude) , and winters in northern coastal waters , sometimes in groups of considerable size . More than 4 @,@ 400 spend the winter in a loose concentration on the eastern part of the German Bight , for example . Unlike other loons , it regularly uses very small freshwater lakes as breeding sites .

In North America , it winters regularly along both coasts , ranging as far south as the Baja California Peninsula and the Gulf of California in north @-@ western Mexico ; it has been recorded as a vagrant in the interior Mexican state of Hidalgo . Some of its folk names in north @-@ eastern North America ? including cape race , cape brace , cape drake and cape racer , as well as corruptions such as scapegrace ? originated from its abundance around Cape Race , Newfoundland . In Europe , it breeds in Iceland , northern Scotland , north @-@ western Ireland (a few pairs only) , Scandinavia and northern Russia , and winters along the coast as far south as parts of Spain ; it also regularly occurs along major inland waterways , including the Mediterranean , Aegean and Black Seas , as well as large rivers , lakes and reservoirs . It has occurred as a vagrant as far south as Morocco , Tunisia and the Gambia . In Asia , it breeds in the northern stretches of Siberia , and winters along the Pacific coast as far south as China , Japan and Taiwan . It has occurred as a vagrant in Mongolia .

= = Behaviour = =

Because its feet are located so far back on its body , the red @-@ throated loon is quite clumsy walking on land ; however , it can use its feet to shove itself forward on its breast . Young use this method of covering ground when moving from their breeding pools to larger bodies of water , including rivers and the sea . It is the only species of loon able to take off directly from land . If frightened , it may submerge until only its head or bill shows above the surface of the water .

The red @-@ throated loon is a diurnal migrant , which travels singly or in loose groups , often high above the water . In eastern North America (and possibly elsewhere) , it tends to migrate near the coast rather than farther offshore ; Siberian populations travel for hundreds of miles over land en route to their southern European wintering grounds . It is a strong flier , and has been clocked at speeds between 75 and 78 kilometres per hour (47 and 48 mph) . Like all members of its family , the red @-@ throated loon goes through a simultaneous wing moult , losing all its flight feathers at once and becoming flightless for a period of three to four weeks . However , unlike other loons ? which undergo this moult in late winter ? the red @-@ throated loon loses its ability to fly sometime between late summer and late autumn .

= = = Food and feeding = = =

Like all members of its family , the red @-@ throated loon is primarily a fish @-@ eater , though it sometimes feeds on molluscs , crustaceans , frogs , aquatic invertebrates , insects , fish spawn or even plant material . It seizes rather than spears its prey , which is generally captured underwater . Though it normally dives and swims using only its feet for propulsion , it may use its wings as well if it needs to turn or accelerate quickly . Pursuit dives range from 2 ? 9 m (6 @.@ 6 ? 29 @.@ 5 ft) in depth , with an average underwater time of about a minute . Its fish diet increases the red @-@ throated loon 's vulnerability to persistent organic pollutants and heavy metals , both of which bioaccumulate , thus potentially causing greater problems for long @-@ lived species (such as the loon) at or near the top of the food chain . Its main diet has also led to several of the loon 's British folk names , including " sprat borer " and " spratoon " .

For the first few days after hatching , young red @-@ throated loons are fed aquatic insects and small crustaceans by both parents . After 3 ? 4 days , the parents switch to fish small enough for the young birds to swallow whole . By four weeks of age , the young can eat the same food ? of the same size ? as their parents do . Young birds may be fed for some time after fledging ; adults have

been seen feeding fish to juveniles at sea and on inland lakes in the United Kingdom , hundreds of kilometres from any breeding areas .

= = = Breeding and survival = = =

The red @-@ throated loon is a monogamous species which forms long @-@ term pair bonds . Both sexes build the nest , which is a shallow scrape (or occasionally a platform of mud and vegetation) lined with vegetation and sometimes a few feathers , and placed within a half @-@ metre (18 in) of the edge of a small pond . The female lays two eggs (though clutches of one and three have also been recorded) ; they are incubated for 24 ? 29 days , primarily by the female . The eggs , which are greenish or olive @-@ brownish spotted with black , measure 75 mm × 46 mm (3 @. @ 0 in × 1 @. @ 8 in) and have a mass of 83 g (2 @. @ 9 oz) , of which 8 % is shell . Incubation is begun as soon as the first egg is laid , so they hatch asynchronously . If a clutch is lost (to predation or flooding , for example) before the young hatch , the red @-@ throated loon usually lays a second clutch , generally in a new nest . The young birds are precocial upon hatching : downy and mobile with open eyes . Both parents feed them small aquatic invertebrates initially , then small fish for 38 ? 48 days . Parents will perform distraction displays to lure predators away from the nest and young . Ornithologists disagree as to whether adults carry young on their backs while swimming with some maintaining that they do and others the opposite .

In the wild , the oldest known red @-@ throated loon lived for more than two decades ; it was found , oiled and dead , on a beach in Sweden 23 years and 7 months after it had been ringed (banded) .

= = Conservation status and threats = =

Although the red @-@ throated loon is not a globally threatened species , as it has a large population and a significant range , there are populations which appear to be declining . Numbers counted in U.S. Fish and Wildlife Service surveys in Alaska show a 53 % population decline between 1971 and 1993 , for example , and counts have dropped in continental Europe as well . In Scotland , on the other hand , the population increased by some 16 % between 1994 and 2006 , according to surveys done by the Royal Society for the Protection of Birds and Scottish Natural Heritage . In 2002 , Wetlands International estimated a global population of 490 @, @ 000 to 1 @, @ 500 @, @ 000 individuals ; global population trends have not been quantified .

The red @-@ throated loon is one of the species to which the Agreement on the Conservation of African @-@ Eurasian Migratory Waterbirds (AEWA) applies ; in the Americas , it is protected by the Migratory Bird Treaty Act of 1918 . Oil spills , habitat degradation , and fishing nets are among the main threats this species faces . Because it tends to migrate close to shore ? generally within 20 kilometres (12 mi) of land ? it may be detrimentally affected by the construction of near @-@ shore wind farms ; studies indicate a high level of avoidance of wind farm areas , though deaths due to direct strikes with the turbines appear to be uncommon . High levels of mercury in the environment have led to reproductive failures in some areas , including parts of Sweden . Studies in Sweden have also shown that they may be adversely impacted by the acidification of lakes , as the fish on which they prey are susceptible to low pH . On the breeding grounds , Arctic and red foxes are major predators of eggs , while great skuas , Arctic skuas and various species of Larus gulls (including great black @-@ backed gulls and glaucous gulls) are predators of both eggs and young .

The species is known to serve as host for at least 51 species of parasites , most of which are roundworms (nematodes) , flatworms (digeneans) and tapeworms (cestodes) carried internally ; a single species of louse is its only known external parasite . It is also known to sometimes carry significant populations of diatoms (microscopic phytoplankton) on its contour feathers . The red @-@ throated loon is susceptible to avian influenza and Type E botulism , and is regularly killed by the ingestion of neurotoxins produced by " red tide " algal blooms . During a 2007 bloom , large numbers of the birds also died of hypothermia , after their plumages became matted by a protein

byproduct of the algae , which reduced the insulating properties of their feathers .

= = In human culture = =

Used as a food source since prehistoric times , the red @-@ throated loon is still hunted by indigenous peoples in some parts of the world today . Eggs as well as birds are taken , sometimes in significant numbers ; during one study on northern Canada 's Igloolik Island , 73 % of all red @-@ throated loon eggs laid within the 10 km² (3 @.@ 9 mi²) study site over two breeding seasons were collected by indigenous inhabitants of the island . In some parts of Russia , red @-@ throated loon skins were traditionally used to make caps and various clothing decorations , including collars . The species was also central to the creation mythologies of indigenous groups throughout the Holarctic . According to the myth ? which varies only slightly between versions , despite the sometimes @-@ vast distances that separated the groups who believed it ? the loon was asked by a great shaman to bring up earth from the bottom of the sea . That earth was then used to build the world 's dry land .

As recently as the 1800s , the behaviour of the red @-@ throated loon was used to forecast the weather ; according to the conventional wisdom of the time , birds flying inland or giving short cries predicted good weather , while those flying out to sea or giving long , wailing cries predicted rain . In the Orkney and Shetland islands of Scotland , the species is still known as the " rain goose " in deference to its supposed weather @-@ predicting capabilities . The people of the Faroe Islands believed that if the red @-@ throated loon miaowed like a cat , then rain was imminent , while a call of gaa @-@ gaa @-@ gaa or turkatrae @-@ turkatrae predicted fine weather .

Bhutan , Japan , Åland (an autonomous region of Finland) , and the Union of the Comoros have issued stamps featuring the red @-@ throated loon .