

Mute swan

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The **mute swan** (*Cygnus olor*) is a [species](#) of [swan](#), and thus a member of the [waterfowl](#) family [Anatidae](#). It is native to much of [Europe](#) and [Asia](#), and (as a rare winter visitor) the far north of [Africa](#). It is also an [introduced species](#) in [North America](#), [Australasia](#) and southern Africa. The name 'mute' derives from it being less vocal than other [swan](#) species.^{[\[2\]](#)[\[3\]](#)[\[4\]](#)} Measuring 125 to 170 cm (49 to 67 in) in length, this large swan is wholly white in plumage with an orange [bill](#) bordered with black. It is recognisable by its pronounced knob atop the bill.



Taxonomy



Mute swan in flight



Flock in flight

The mute swan was first formally described by the German naturalist [Johann Friedrich Gmelin](#) as *Anas olor* in 1789, and was transferred by [Johann Matthäus Bechstein](#) to the new genus

Cygnus in 1803. It is the [type species](#) of the genus *Cygnus*.^[5] Both *cygnus* and *olor* mean "swan" in [Latin](#); *cygnus* is related to the [Greek](#) *kyknos*.^{[6][7]}

Despite its Eurasian origin, its closest relatives are the [black swan](#) of Australia and the [black-necked swan](#) of South America, not the other Northern Hemisphere swans.^[2] The species is [monotypic](#) with no living [subspecies](#).^{[2][4]}

Evolution

Mute swan subfossils, 6,000 years old, have been found in post-glacial peat beds of [East Anglia](#), Great Britain.^[8] They have also been recorded from Ireland east to Portugal and Italy,^[9] and from France, 13,000 [BP](#) (Desbrosse and Mourer-Chauvire 1972–1973).^[full citation needed] The [paleosubspecies](#) *Cygnus olor bergmanni*, which differed only in size from the living bird, is known from fossils found in [Azerbaijan](#).^[citation needed]

Fossils of swan ancestors more distantly allied to the mute swan have been found in four U.S. states: California, Arizona, Idaho and Oregon.^[10] The timeline runs from the [Miocene](#) to the late [Pleistocene](#), or 10,000 BP. The latest find was in Anza Borrego Desert, a national park in California.^[10] Fossils from the [Pleistocene](#) include *Cygnus paloregonus* from Fossil Lake, Oregon, Froman's Ferry, Idaho, and Arizona, referred to by Howard in *The Waterfowl of the World* as "probably the mute type swan".^[11]

Description



"Polish swan" on the right



Finding food underwater

Adults of this large swan typically range from 140 to 160 cm (55 to 63 in) long, although can range in extreme cases from 125 to 170 cm (49 to 67 in), with a 200 to 240 cm (79 to 94 in) wingspan.^{[4][12]} Males are larger than females and have a larger knob on their bill. On average, this is the second largest waterfowl species after the [trumpeter swan](#), although male mute swans can easily match or even exceed a male trumpeter in mass.^{[4][13]} Among standard measurements of the mute swan, the wing chord measures 53–62.3 cm (20.9–24.5 in), the tarsus is 10–11.8 cm (3.9–4.6 in) and the bill is 6.9–9 cm (2.7–3.5 in).^[4]

The mute swan is one of the heaviest flying birds. In several studies from [Great Britain](#), males (known as *cobs*) were found to average from about 10.6 to 11.87 kg (23.4 to 26.2 lb), with a weight range of 9.2–14.3 kg (20–32 lb) while the slightly smaller females (known as *pens*) averaged about 8.5 to 9.67 kg (18.7 to 21.3 lb), with a weight range of 7.6–10.6 kg (17–23 lb).^{[4][14][15][16][17]} While the top normal weight for a big cob is roughly 15 kg (33 lb), one unusually big Polish cob weighed almost 23 kg (51 lb) and this counts as the largest weight ever verified for a flying bird, although it has been questioned whether this heavyweight could still take flight.^[18]

Young birds, called cygnets, are not the bright white of mature adults, and their bill is dull greyish-black, not orange, for the first year. The down may range from pure white to grey to buff, with grey/buff the most common. The white cygnets have a [leucistic](#) gene. All mute swans are white at maturity, though the feathers (particularly on the head and neck) are often stained orange-brown by iron and tannins in the water.^[19]

The [morph](#) *immutabilis* ("Polish swan") has pinkish (not dark grey) legs and dull white cygnets; as with white [domestic geese](#), it is only found in populations with a history of domestication.^[20]

Behaviour



[Play media](#)

Mute swans courting

Mute swans nest on [large mounds](#) that they build with waterside vegetation in shallow water on islands in the middle or at the very edge of a [lake](#). They are monogamous and often reuse the same nest each year, restoring or rebuilding it as needed. Male and female swans share the care of the nest, and once the cygnets are fledged it is not uncommon to see whole families looking for food. They feed on a wide range of vegetation, both submerged aquatic plants which they reach with their long necks, and by grazing on land. The food commonly includes agricultural crop plants such as [oilseed rape](#) and [wheat](#), and feeding flocks in the winter may cause

significant crop damage, often as much through trampling with their large webbed feet, as through direct consumption.^[21]

Unlike [black swans](#), mute swans are usually strongly territorial with just a single pair on smaller lakes, though in a few locations where a large area of suitable feeding habitat is found they can be colonial. The largest colonies have over 100 pairs, such as at the colony at [Abbotsbury Swannery](#) in southern England, and at the southern tip of [Öland](#) Island, [Ottenby](#) Preserve, in the coastal waters of the [Baltic Sea](#), and can have nests spaced as little as 2 m (7 ft) apart.^{[20][22]} Non-mated juveniles up to 3–4 years old also commonly form larger flocks, which can total several hundred birds, often at regular traditional sites.^[23] A notable flock of non-breeding birds is found on the [River Tweed](#) estuary at [Berwick-upon-Tweed](#) in northeastern England, with a maximum count of 787 birds.^[24] Once the adults are mated they seek out their own territories and often live close to ducks and gulls, which may take advantage of the swan's ability to reach deep water weeds, which tend to spread out on the water surface.^[citation needed]

The mute swan is less vocal than the noisy whooper and Bewick's swans; they do, however, make a variety of grunting, hoarse whistling, and snorting noises, especially in communicating with their cygnets, and usually hiss at predators trying to enter their territory.^[citation needed] The most familiar sound associated with mute swan is the vibrant throbbing of the wings in flight which is unique to the species, and can be heard from a range of 1 to 2 km (0.6 to 1 mi), indicating its value as a contact sound between birds in flight.^[20] Cygnets are especially vocal, and communicate through a variety of whistling and chirping sounds when content, as well as a harsh squawking noise when distressed or lost.



Nesting in early spring, [Aabach \(Greifensee\)](#) in [Wetzikon](#), Switzerland



Egg, Collection [Museum Wiesbaden](#)

Mute swans can be very aggressive in defence of their nests. Most defensive attacks from a mute swan begin with a loud hiss and, if this is not sufficient to drive off the predator, are followed by a physical attack. Swans attack by smashing at their enemy with bony spurs in the wings, accompanied by biting with their large bill. The wings of the swan are very powerful, anecdotally reported to exert enough force to break an adult man's leg.^[25] Large waterfowl, such as [Canada geese](#), (more likely out of competition than in response to potential predation) may also be aggressively driven off, and mute swans regularly attack people who enter their territory.^[26] The cob is also responsible for defending the cygnets while on the water, and will sometimes attack small watercraft, such as canoes, that it feels are a threat to its young. The cob will additionally try and chase the predator out of his family territory, and will keep animals such as foxes and raptors at bay. In [New York](#) (outside its native range), the most common predators of cygnets are [common snapping turtles](#).^[26] Healthy adults are rarely predated, though [canids](#) such as [coyotes](#), [felids](#) such as [lynxes](#), and [bears](#) can pose a threat to infirm ones (healthy adults can usually swim away from danger unless defending nests) and there are a few cases of healthy adults falling prey to [golden eagles](#).^{[27][28]}

The familiar pose with neck curved back and wings half raised, known as busking, is a threat display. Both feet are paddled in unison during this display, resulting in more jerky movement.^[29]

Breeding

Mute swans lay an average of four eggs, and the female broods for 36 days. The cygnets do not reach the ability of flight before an age of 120 to 150 days: this limits the distribution of the species in the northern edge of its range, as the cygnets must learn to fly before the waters freeze.

Distribution and habitat



Landing on a canal in Ireland

The mute swan is found naturally mainly in temperate areas of Europe across western Asia, as far east as the [Russian Maritimes](#), near Sidemi.^[30]

It is partially [migratory](#) throughout northern latitudes in Europe and Asia, as far south as north Africa and the Mediterranean. It is known and recorded to have nested in Iceland and is a vagrant to that area, as well as to Bermuda, according to the U.N. Environmental Programme chart of international status chart of bird species, which places it in 70 countries, breeding in 49 countries, and vagrant in 16 countries.^[citation needed] While most of the current population in Japan is

introduced, mute swans are depicted on scrolls more than a thousand years old, and wild birds from the mainland Asian population still occur rarely in winter. Natural migrants to Japan usually occur along with whooper and sometimes Bewick's swans.^{[[citation needed](#)]}

The mute swan is protected in most of its range, but this has not prevented illegal hunting and [poaching](#). It is often kept in captivity outside its natural range, as a decoration for parks and ponds, and escapes have happened. The descendants of such birds have become naturalised in the eastern [United States](#) and [Great Lakes](#), much as the [Canada goose](#) has done in Europe.^{[[citation needed](#)]}

World population

Native populations



Mute swans on the [River Thames](#) at [Richmond](#)

The total native population of mute swans is about 500,000 birds at the end of the breeding season (adults plus young), of which 350,000 are in the [former Soviet Union](#).^[2] The largest single breeding concentration is 11,000 pairs in the [Volga Delta](#).^[3]

The population in the United Kingdom is about 22,000 birds, as of the 2006–2007 winter,^[31] a slight decline from the peak of about 26,000–27,000 birds in 1990.^[3] This includes about 5,300 breeding pairs, the remainder being immatures.^[32] Other significant populations in Europe include 6,800–8,300 breeding pairs in Germany, 4,500 pairs in Denmark, 4,000–4,200 pairs in Poland, 3,000–4,000 pairs in the Netherlands, about 2,500 pairs in Ireland, and 1,200–1,700 pairs in Ukraine.^[3]

For many centuries, mute swans in Britain were domesticated for food, with individuals being marked by nicks on their webs (feet) or beaks to indicate ownership. These marks were registered with the Crown and a Royal Swanherd was appointed. Any birds not so marked became Crown property, hence the swan becoming known as the "Royal Bird". It is quite possible that this domestication saved the swan from being hunted to extinction in Britain.^{[33][34][34]}

Populations in western Europe were largely exterminated by hunting pressure in the 13th–19th centuries, with the exception of semi-domesticated birds maintained as [poultry](#) by large landowners. Better protection in the late 19th and early 20th centuries allowed birds to return to most or all of their former range.^{[35][36]} More recently in the period from about 1960 up to the early

1980s, numbers declined significantly again in many areas, primarily due to [lead poisoning](#) from birds swallowing discarded [fishing sinkers](#) made from [lead](#). After lead weights were replaced by other less toxic alternatives, mute swan numbers increased again rapidly.^[3]

Introduced populations

Since being introduced into North America, the mute swan has increased greatly in number, to the extent that it is considered as an [invasive species](#). Populations introduced into other areas remain are small, with around 200 in Japan, less than 200 in New Zealand and Australia, and about 120 in South Africa.^[2]

North America



Three mute swan cygnets swimming in the [Lake Geneva](#)

The mute swan was introduced to North America in the late 19th century. Recently, it has been widely viewed as an [invasive species](#) because of its rapidly increasing numbers and adverse effects on other [waterfowl](#) and native [ecosystems](#). For example, a study of population sizes in the lower [Great Lakes](#) from 1971 to 2000 found that mute swan numbers were increasing at an average rate of at least 10% per year, doubling the population every seven to eight years.^[37] Several studies have concluded that mute swans severely reduce densities of submerged vegetation where they occur.^[38]

In 2003, the [U.S. Fish and Wildlife Service](#) proposed to "minimize environmental damages attributed to Mute Swans" by reducing their numbers in the [Atlantic Flyway](#) to pre-1986 levels, a 67% reduction at the time. According to a report published in the [Federal Register](#) of 2003^[39] the proposal was supported by all thirteen state wildlife agencies which submitted comments, as well as by 43 bird conservation, wildlife conservation and wildlife management organisations. Ten [animal rights](#) organisations and the vast majority of comments from individuals were opposed. At this time mute swans were protected under the [Migratory Bird Treaty Act](#) due to a court order, but in 2005 the United States [Department of the Interior](#) officially declared them a non-native, unprotected species.^[40] Mute swans are protected in some areas of the U.S. by local laws, as for example in [Connecticut](#).^[41]

The status of the mute swan as an introduced species in North America is disputed by the [interest group](#) "Save the Mute Swans".^[42] They assert that mute swans are native in the region and

therefore deserving of protection. They claim that mute swans had origins from Russia and cite historical sightings and fossil records. These claims have been rejected as specious by the [U.S. Department of the Interior](#).^[40]

Oceania

The mute swan had absolute protection in New Zealand under the [Wildlife Act 1953](#) but this was changed in June 2010 to a lower level of protection. It still has protection, but is now allowed to be killed or held in captivity at the discretion of the Minister of Conservation.^[43]

A small feral population exists in the vicinity of [Perth](#), Australia, however is believed to number less than 100 individuals.

Cultural references

[The Threatened Swan](#) (c. 1650) by [Jan Asselijn](#)



1956 Finnish stamp with a mute swan

A mute swan was shown on the [2004 commemorative Irish Euro coin](#) to mark [the accession of the 10 new member states](#) which occurred during the Irish [Presidency of the European Union](#).

The mute swan has been the national bird of [Denmark](#) since 1984. Prior to that, the [Skylark](#) was considered Denmark's national bird (since 1960).

The fairy tale "[The Ugly Duckling](#)" by [Hans Christian Andersen](#) tells the story of a cygnet ostracised by his fellow barnyard fowl because of his perceived homeliness. To his delight (and to the surprise of others), he matures into a graceful swan, the most beautiful bird of all.

Today, the [British Monarch](#) retains the right to ownership of all unmarked mute swans in open water, but [Queen Elizabeth II](#) only exercises her ownership on certain stretches of the Thames and its surrounding tributaries. This ownership is shared with the [Vintners'](#) and [Dyers'](#) Companies, who were granted rights of ownership by the Crown in the 15th century.^[44]

The mute swans in the [moat](#) at the [Bishops Palace](#) at [Wells Cathedral](#) in [Wells, England](#) have for centuries been trained to ring [bells](#) via strings attached to them to beg for food. Two swans are still able to ring for lunch.^[45]

The pair of swans in the [Boston Public Garden](#) are named Romeo and Juliet after the [Shakespearean couple](#); however, it was found that both are female.^[46]

[Camille Saint-Saëns](#) composed a movement called *Le Cygne* in *The Carnival of the Animals*. It is played by solo cello and two pianos and represents a swan gliding over the water (cello) and the ripples it creates (pianos).

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