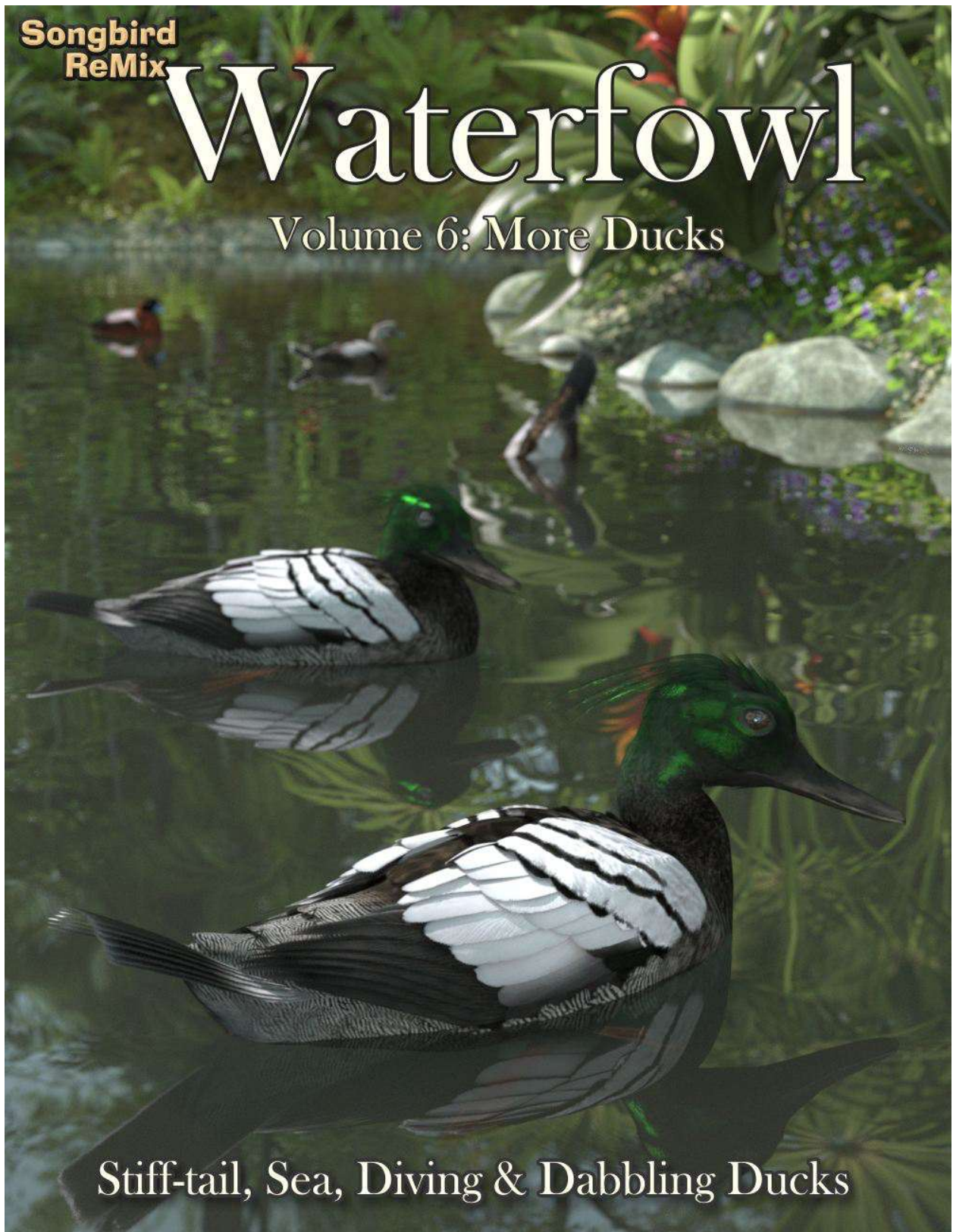


Songbird
ReMix

Waterfowl

Volume 6: More Ducks



Stiff-tail, Sea, Diving & Dabbling Ducks

Avian Models for 3D Applications

Characters and Texture Mapping by Ken Gilliland

Songbird ReMix

Waterfowl v6: More Ducks

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Songbird ReMix

Waterfowl v6: More Ducks

Introduction

There are two distinct groups of Ducks; Dabbling Ducks and Sea/Diving Ducks. They are divided into the two groups mostly by behavior.

This set includes a mix of both types of Duck. It has a good variety of stiff-tailed ducks as well as a couple exotic looking Mergansers. It includes more common favorites like the Eiders and Scoters, as well as the iconic, first recorded bird to go extinct in North America, the Labrador Duck.

As with all Songbird ReMix birds, the models come with a huge host of morphs that allow the bird to go from a perched position to full flight and mimic all of their natural behaviors. There are two versions of this set for native support in Poser and DAZ Studio. Materials have been tuned to support Iray, Superfly and Firefly renderers.

Overview

The set is located within the **Animals : Songbird ReMix** folder. Here is where you will find a number of folders, such as **Bird Library**, **Manuals** and **Resources**. Let's look at what is contained in these folders:

- **Bird Library:** This folder holds the actual species and poses for the "premade" birds. Birds are placed into a "type" folder (such as "Birds of Prey (Order Falconiformes)" which for example would hold falcons, hawks and eagles). The birds for this set can be found in the following folder(s):
 - **Waterfowl (Order Anseriformes)**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - **Bird Base Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species of bird. With using physical renderers such as Iray and Superfly, SubD should be turned to at least "3".

Poser Use

Select **Figures** in the **Runtime** Folder and go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer *Firefly or Superfly* folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**.

DAZ Studio Use

Go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer (*3Delight or Iray*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same

folder- **Bird Library : (Type) : Poses**. **Note:** Using the "Apply this Character to the currently selected Figure(s)" option **will not** properly apply the correct scaling to the bird selected. It is better to delete the existing character first and load the one you want to use.

Physical-based Rendering

Iray and **Superfly** requires more CPU and memory horsepower than the legacy renderers because of ray-trace bounces and higher resolution meshes needed for displacement. Poser's **Superfly** renderer will require that the "Min Transparent Bounces" be set to at least 16 and that the "Max Transparent Bounces" be set to at least 32 in render settings. Superfly renders may show artifacts in the head area. This is a known Poser issue and may be addressed in the future. Increasing the SubD may minimize this issue.

Poser Rendering with Ambient Occlusion Lighting

Because of the high use of specular maps and quirks in Poser rendering in the Waterfowl series, ambient occlusion lighting may produce unexpected results such as a seams, grid patterns and odd shadowing. Seams appear to show up on neck lines when rendered at a distance, but not when close-up. Grids sometimes appear on close-up renders but not at distances.

The Ambient Occlusion lighting does not appear to add to the realism in rendering of the waterfowl so it is suggested that it not be used, if these issues appear.

Where to find your birds

Type Folder	Bird Species
Waterfowl (Order Anseriformes)	Blue-billed Duck Maccoa Duck White-headed Duck Masked Duck Red-breasted Merganser Brazilian Merganser Long-tailed Duck White-winged Scoter Common Eider Baer's Pochard Canvasback

Where to find your poses

Type Folder	For what species?
Waterfowl (Order Anseriformes)	All Ducks

Morphs and their Use

All Songbird ReMix models have morphs that change the look of the loaded model to achieve additional movements and expressions that joint movements can't achieve. These are referred to in the Songbird ReMix model as "Action Morphs". Other morphs that are included can subtly or sometimes dramatically, alter the model to resemble specific waterfowl species. These morphs are referred to as "Creation Morphs".

Here is a brief explanation of where the morphs are found and what they do:

BODY section:

- **Action Morphs**
 - **Common Controls**
 - BillOpenClose- Controls the opening and closing of the bill
 - EyesFwdBack - Controls the forward and backward movement of the eyes
 - EyesUpDwn - Controls the up and down movement of the eyes
 - EyeLidsCloseOpen - Controls the opening and closing of both eyelids
 - Neck Length- Allows retracting and extending of the neck. ERC controls also link the ThinnerNeck morph (Found in the BODY/Creation Morphs menu) to thicken the neck in retraction and thin the neck on extension.
 - BreastIn- Pulls the breast of the bird inwards and outwards. Besides species shapes, this morph could be used to simulate breathing and is used as a hidden ERC control to bring the breast in during flight.
 - Unspread Feet- Brings the webbed feet to a folded position (as they'd be, for instance in flight).
 - WingsFold- Puts both Wings into a folded position. The control allows the WingsDroop control to work and also activates the CoverWingFold fluff morph.
 - **Wing and Tail Controls**
 - These controls allow both wings or each individual wing to perform numerous wing actions and also the Tail feather actions like fanning, cupping and bending.
 - PintailBendUp- This morph is specifically used for Pintail Duck species (bending only the two middle tail feathers when extended in the pintail morph) and shouldn't be used with other species.
 - **Neck Bending**
 - These controls allow global bending, twisting and moving side-to-side of the seven neck sections. Partial bending controls can also be found in each individual neck section.
 - **Head Controls**
 - Exp-Smile- Creates a smile expression
 - Exp-Frown- Creates a frown expression

- **Bill Movement Section**- has individual controls for upper and lower mandibles. The BillOpenClose uses both of the morphs in this section and these morphs will NOT work unless BillOpenClose is set to 0.
- **Eyelid Movement Section**- has individual controls for upper and lower eyelid on both eyes, as well as EyeWink controls for both eyes. The EyeWink controls use the upper and lower eyelid morphs and the EyeLidsCloseOpen control uses BOTH EyeWink controls.
- **Tongue Movement Section**- various morphs control the movement of the tongue.
- **Fluff Morphs**
 - CrestLength- Controls the Length of the crest (top of duck's head)
 - CrestFrontUp- Pulls the forehead part of the crest forward/up
 - CrestTopUp- Pulls the middle part of the crest forward/up
 - CrestBackUp- Pulls the back part of the crest forward/up
 - JowlFluffOut- Pulls the feathers under the eye area (jowls) out.
 - ThroatFluff- Pulls the feathers on the throat area out.
 - Back Ruffle- Ruffles the transparency feathers on the back of the bird
 - BreastFluff- Controls the transparency feathers on the breast of the bird
 - ThighFluff- Controls the transparency feathers on both thighs of the bird
 - RumpTopFluff- Controls the transparency feathers on the topside rump/tail of the bird
 - RumpBtmFluff- Controls the transparency feathers on the underside rump/tail of the bird
 - RumpSidesFluff-Reduces the Fluff on the sides of the rump
 - **Fluff Over Folded Wings**
 - CoverWingFold- Moves Breast and Flank Fluffs to partially cover the lower edge of the folded wings. It is automatically turned on with the WingsFold control and turned off when the WingsDroop is used. You can also turn off this control by dialing it to -1.
 - FlankFluffOut- Pulls the feathers on the flanks (below each wing) out.
 - FlankFluffExpand- Enlarges the Flank Feathers to better hide the folded wing edges ([see Tutorial](#))
 - FlankFluffDroop- Droops Flank Feathers
 - PullTopFlankFeathers & 2- Pulls tops of Flank Feathers in and out
 - **Fluff Under Folded Wings** (Note: The Flank control will not work properly with the Mandarin Male Duck)
 - TuckAllFluff- Tucks all Fluff Controls found in this section under the wings
 - TuckBreastFluff- Tucks Breast Fluff sides in under the wings
 - TuckBackFluff- Tucks Back Fluff sides in under the wings
 - TuckFlankFluff- Tucks Flank Fluff sides in under the wings
 - TuckRumpFluff- Tucks Rump Fluff sides in under the wings

- **Specific Species Morphs**
 - King Eider Specific- These morphs control the King Eider Special Morphs.
 - Mandarin Duck Specific- These morphs control the Mandarin Duck Special Morphs.
 - Merganser Specific- These morphs control the Merganser Special Morphs.
 - Pintail Specific- These morphs control the Northern Pintail's extended Pin feathers. **This is used also with the Long-tailed Duck.**
 - Wood & Mandarin Duck Specific- These morphs control the Wood Duck Crest. The Mandarin Ducks also use these.
- **Correction Morphs**
 - Adj-BackHeadIn- removes lump from the back of head that might occur in some poses.
 - Adj-ThroatIn- removes lump from the throat that might occur in some poses.
 - Adj-BHLRemove- fills a dip in the back of the head that might occur in some poses.
 - Adj-RumpThinner- thins the Rump, hip and tail sections to prevent folded wing intersections that might occur in some poses.
- **Creation Morphs**
 - LegLength- Allows control of Leg Length (This control is not working properly in DAZ Studio and the dial has been hidden in Studio versions)
 - StubbyTalons- Decreases or increases the length of the talons on the webbed feet.
 - ThinnerNeck- Decreases or increases the thickness of the neck. This morph is also used as a hidden ERC control to add thickness to the neck when the NeckLength control (found in BODY/Action Morphs) is used.
 - BreastCrease- Creates a center crease on the breast.
 - RumpSleeker- Controls the size of the rump.
 - RumpTopWidth- Controls the transparency feathers on the topside rump/tail of the bird width.
 - RumpBtmExtend- Controls the transparency feathers on the underside rump/tail of the bird length.
 - **Species Shapes**- These morphs create very specific looks to resemble certain species of Waterfowl and include Bufflehead, King Eider Male, Mandarin Female and Male, Mergansers, Muscovy, Shoveler, Smew, Wigeon and Wood Duck.
 - **Head Shaping**
 - **Head Shapes**- These morphs control the shape of the head.
 - Hd-BrowsOut- Pulls the area above each eye outwards.
 - Hd-BackSq- Adds mass to the back of the Head.
 - Hd-BackDwn- Reduces mass to the back of the Head.
 - Hd-CrownUp- Raises the Crown of the Head.
 - Hd-ForeheadLow- Reduces the forehead extending to the bill.

- Hd-ForeheadFwd- Adds to the forehead extending to the bill.
 - Hd-ForehdCtrOut- Adds to the forehead center between the bill.
 - Hd-JowlsExpand- Expands the cheeks of the duck.
 - Hd-HideEar- Removes the ear holes.
- **Eye Shapes-** These morphs can change the appearance of the eyes.
 - EyesDilate- Controls the pupil size of the eyes
 - Ey-SocketOut- Pushes the eyelids and Sockets out further. This is useful if the eye size is larger than the default setting by moving the eyelids to fit the scaled eyeballs.
 - Ey-BigEyes- This control creates larger eyes on the model. Through ERC controls, it scales the eyes to 120% and expands the eye sockets using a combination of its own morph plus the Ey-SocketOut morph.
- **Bill Shapes-** These morphs can change the appearance of the bill.
 - Bill-Length- Controls the length of the entire bill.
 - Bill-UprLength- Controls the length of the upper bill.
 - Bill-LwrLength- Controls the length of the lower bill.
 - Bill-Point- Brings the end of the bill to a point.
 - Bill-Merganser- Creates the narrow bill of a Merganser.
 - Bill-Scaup- Creates the bill of a Scaup.
 - Bill-Scoter- Creates the bill of a Scoter.
 - Bill-Shoveler- Creates the bill of a Shoveler.
 - Bill-Slope- Adds or reduces the slope of the upper bill.
 - Bill-TipFoward- Extends the center portion of the tip of the upper bill.
 - Bill-TipBulb- Creates a bulbous tip on the upper bill.
 - Bill-TipBulbTop- Makes the bulbous tip on the upper bill more pronounced.
 - Bill-TipHook- Creates a stronger hook on the upper bill.
 - Bill-NoseBridge- Lessens the slope of the bill to the forehead.
- **Nostril Shapes**
 - Nostril-Fwd- Moves the nostrils on the bill forward.
 - Nostril-Size- Controls the size of the nostrils on the bill.
 - Nostril-Ridge- Adds a ridge to the nostrils on the bill.
 - Nostril-Slit- Creates slit-shaped nostrils on the bill.
 - Nostril-Tear- Creates tear-shaped nostrils on the bill.
- **Tongue Shapes**
 - Tng-Length- Controls the length of the tongue.
 - Tng-Width- Controls the width of the tongue.
- **Wing Shapes-** These morphs control the shape of the wings.
 - WingSpan- Allows control of Wing Length
 - WingPoint, lWingPoint and rWingPoint - Makes a pointed wing shape.
- **Tail Shapes-** These morphs control the shape of the tail feathers

- Pintail- Lengthens the middle two Tail feathers.
- Round- Rounds the Tail feathers.
- Length- Controls the length of the Tail feathers.
- Width- Controls the width of the Tail feathers.
- PointEnds- Makes Tail feathers have pointed ends.
- SquareEnds- Makes Tail feathers have square ends.
- **Scale**- Controls the size of the model

Working with Fluff Controls

In this example we see that the Flank Fluffs haven't adequately covered the folded wings. To correct this, go under the **"Feather Fluff Controls"** and select the **"FlankFluffExpand"** morph.



Songbird ReMix

Waterfowl v6: More Ducks

Field Guide

Blue-billed Duck

Maccoa Duck

White-headed Duck

Masked Duck

Red-breasted Merganser

Brazilian Merganser

Long-tailed Duck

White-winged Scoter

Common Eider

Baer's Pochard

Canvasback

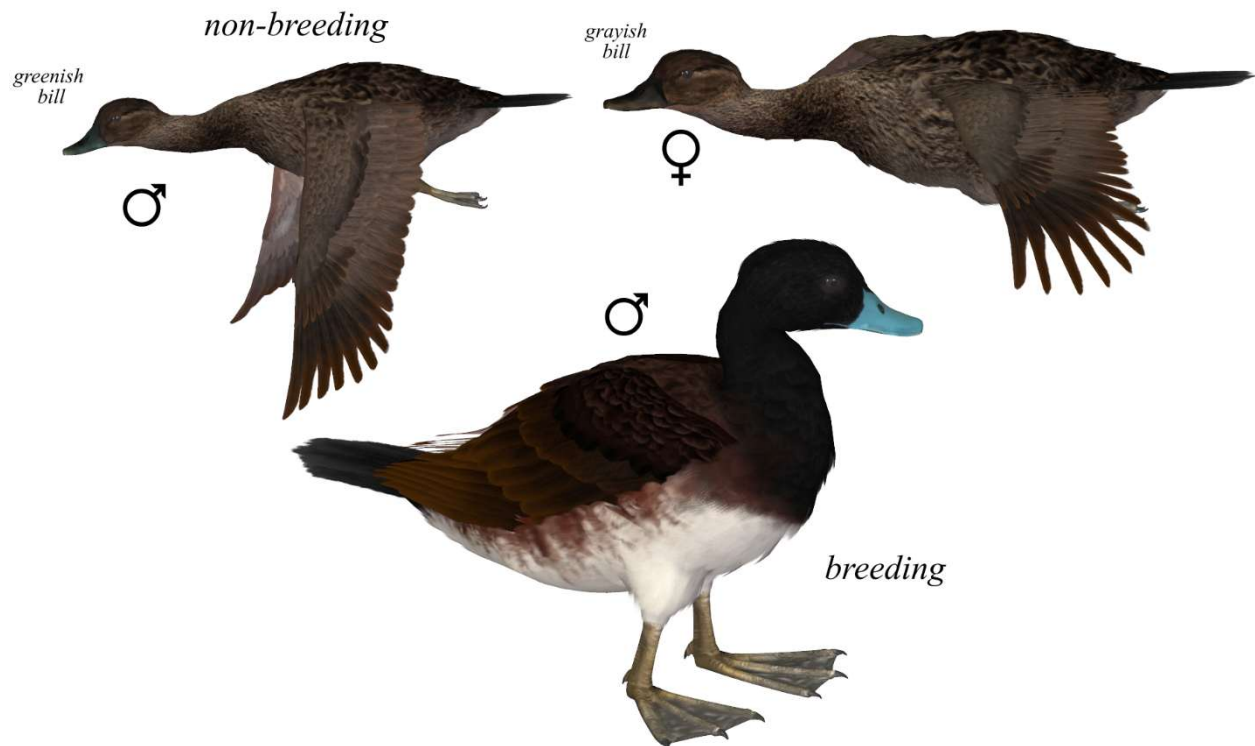
Common Name: Blue-billed Duck

Scientific Name: *Oxyura australis*

Size: 13.8-17.3 inches (35–44 cm); Wingspan: 23.6 inches (60 cm)

Habitat: Oceania; it breeds in southwestern and southeastern Australia and Tasmania. In winter, its range expands to northwestern, central and eastern Australia.

It prefers shallow freshwater marshes, swamps and lakes with extensive bordering reedbeds and other dense vegetation. Outside the breeding season, it is seen on larger lakes, sewage ponds, lagoons and wide rivers, including some saltwater bodies of water (but very seldom on marine waters).



Status: Least Concern to Threatened. **Global population:** 11,000 - 19,000 adult individuals with a stable population trend. Currently considered “Near Threatened” and “Threatened” at state level in both Victoria and New South Wales. It is widespread and rather uncommon, though can be locally common in some areas. The main historical threat has been an over-use of surface water for agriculture, but the capacity of the species both to use deeper reservoirs and take advantage of inland flooding means this is probably not having an ongoing influence. Its mobility means they can seek out refuges such as the Western Treatment Plant at times of drought. Hunting has also been considered a threat but this species is not a legal game species in any Australian jurisdiction and key hunting wetlands are closed if they support significant

concentrations of this duck. Recreational boating and introduced fish may also cause some issues. In the future, climate change and increasing frequency of drought may impact this species.

Diet: Seeds and vegetative parts of aquatic plants and aquatic insects and their larvae (such as chironomids, caddisflies, dragonflies and water beetles) form the bulk of its diet. It may also feed on mollusks, crustaceans, and arachnids.

It feeds mostly by sieving bottom debris while diving (usually for under 10 seconds). It also dabbles on surface and strips seeds from overhanging plants. It is very rarely ever seen on land. It forms large, loose flocks, especially in non-breeding season.

Nesting: Sexes are dimorphic. The male has a glossy jet-black head, contrasting with its chestnut body. The lower breast and belly are silver-gray, with silvery-white under-tail and dark brown wings (no speculum), with off-white under-wings. The bill is sky-blue, and the legs and feet are mid-gray. Its eyes are dark brown. The female is separated from other *Oxyura* species by the lack of strong facial pattern. The female is uniform medium gray, with fine barring or vermiculations, except the paler under-parts. Its bill is dark horn; the other bare-parts colorations are the same as the male. Non-breeding (eclipse) males and juveniles resemble female; however, former usually has a dark green bill with horn blotching at its tip. Young males achieve fully adult plumage color at 6–10 months.

The breeding season is variable. Continuous, opportunistic breeding is probably normal, although it mainly occurs during austral spring and summer. The mating system is polygamous, with pair-bond duration only lasting period between copulation and egg laying. In single pairs; nest is deep bowl, domed, made usually of dead leaves, sometimes lined with sparse down, in dense vegetation over water, on shoreline or on islets in lakes. It can be single- or double-brooded, with replacement clutches. Usually 5–6 pale green eggs are laid. The incubation period lasts about 24–27 days and is performed by the female alone. Chicks leave nest after one day and have grayish-brown to black down above, whitish below, with indistinct paler dorsal spots and pale stripe behind the eye, a grayish-black bill, dark gray to greenish legs and feet, and blackish-brown eyes. Fledging occurs after about 8 weeks, and is tended solely by the female. She defends them vigorously for the first 12 days, with the young wholly independent 60 days after hatching.

Cool Facts: The health of wetland ecosystems can be determined by the abundance of waterbird species. A decline in bird numbers provides a warning that the natural ecological functioning of the freshwater system is at risk. Despite short term gains for farmers through permanent flooding, sustainability of wetland systems would decrease. Any long-term decrease in the population of waterbirds such as *O. australis*, which continue to breed yearlong, irrespective of drought conditions by seeking out suitable habitat, would make excellent indicators for wetland health. Any long-term decrease in the duck's population would therefore be caused by habitat loss through factors such as salinity and overgrazing more so than drought.

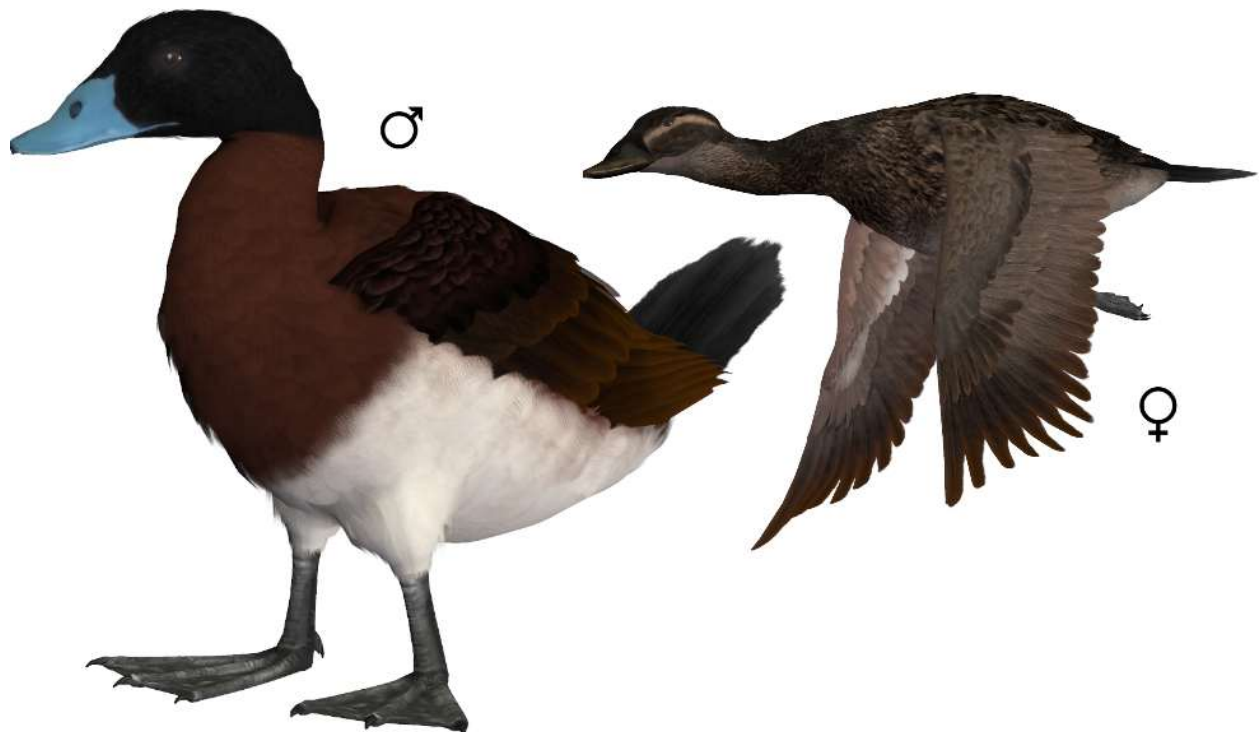
Common Name: Maccoa Duck
Scientific Name: *Oxyura maccoa*

Size: 18-20 inches (46-51 cm); Wingspan: 31-35 inches (78-90 cm)

Habitat: Africa; found in east Africa from Eritrea southward to northern Tanzania. Also found in southern Africa from Namibia and Zimbabwe southward to Western Cape Province (South Africa).

Outside of the breeding season, Maccoa ducks tend to occupy inland waters - ranging from fresh to brackish - which are filled with nutrients. This includes lakes, ponds, salty flooded water pans, dams, river mouths, and even sewage ponds. All of these places provide ample space for the Maccoa to land, take off, and of course, dive underwater for its food.

While breeding, these ducks enjoy similar habitats to those described above, but with one exception. A critical component of breeding grounds for Maccoas is the presence of both open freshwater and some adjacent emerging vegetation. These ducks have been found to especially prefer *Typha* species in their breeding habitats, and will usually build their nests in hidden bundles of these reeds.



Status: **Endangered.** **Global population:** 30,000–55,000 adult individuals with a decreasing population trend. Pollution is the primary concern, as species feeds mainly on benthic invertebrates, and is therefore vulnerable to bio-accumulation of pollutants than other duck species, while habitat loss through drainage and conversion of wetlands

for agriculture is also a significant threat, as are rapid changes in water level that result from landscape changes such as deforestation. High levels of accidental mortality in gill nets has been recorded, while competition with alien benthic fish and habitat alteration by introduced plants pose less serious threats.

Diet: Seeds of aquatic plants (e.g. *Persicaria* and *Polygonum* sp.), plant debris and aquatic invertebrates (insects and their larvae).

They feed almost exclusively by sieving bottom ooze while diving. Occasionally, they forage in cattle feedlots. More than 50% of each day is spent resting, especially in late morning and late afternoon, and probably spends nocturnal hours exclusively sleeping. It has observed in flocks of up to 200 birds in Ethiopia, exceptionally up to 1000 elsewhere during non-breeding season.

Nesting: The breeding male stands out with its cobalt blue bill extending from a completely black head and throat. The breast and back are chestnut colored while the under-parts are often grayish-brown, the rump is dark brown, and the tail and feet are black. In flight, the male's off-white under-wing feathers and white axillaries can be seen. Non-breeding males closely resemble the females, except for a few points: a darker crown and hints of chestnut color on its back. The female is less colorful. It boasts a grayish-black bill with a light tip, and a light brown face with a dark crown and cheek stripe, and an off-white throat. The female also has a light brown breast, darker brown back, off-white under-parts, black feet and black tail feathers. As with many birds, juvenile ducks have similar plumage to adult females. However, their tail feathers are slimmer and notched, and their crowns are a darker brown.

Breeding season is variable according to locality and water levels, but usually extended; in Transvaal (South Africa) all months (peaking September–December); southwestern portion of the Cape, July–April (peaking September–November); Eastern Africa, March–April and July–October.

The mating system is promiscuous and polygynous with no pair-bonds, but males are highly territorial defending linear areas of up to 80 m, sometimes with up to eight females in attendance. In single pairs or loose groups, they nest usually 5–40 m apart with the nest made by female alone. The nest is constructed with adjacent plant matter, lined with down, sometimes with ramp to cup over water, in thick vegetation (reeds or sedges). The clutch is 4–12 (usually 5–6) bluish-white eggs. The incubation period 25–27 days and performed by female alone. Chicks have grayish-brown down above, white below and on face, with olive-gray to black bill, legs and feet, and brown eyes. The fledging period appears to be about 5 weeks. Desertion, both before and during incubation is common. Rising water levels may destroy some clutches.

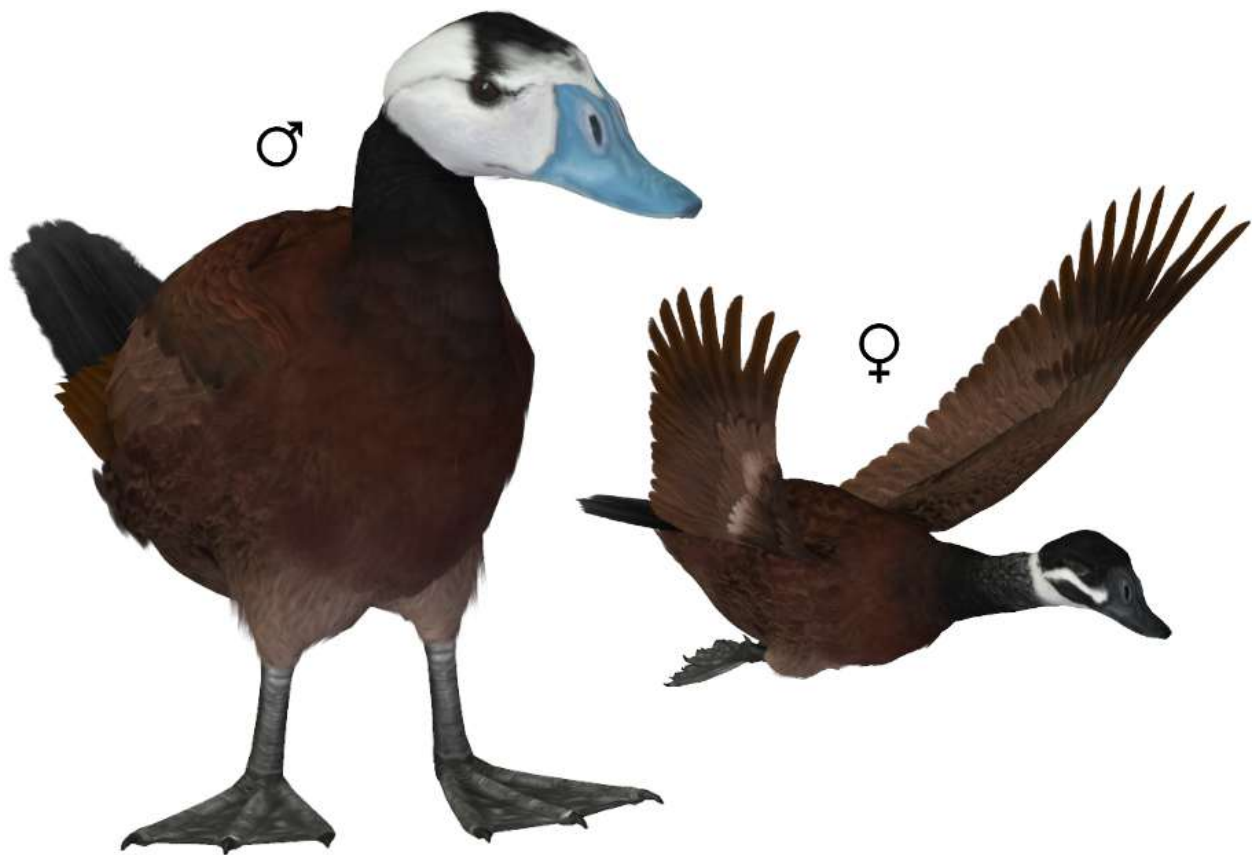
Cool Facts: As members of the stiff-tailed duck group, Maccoas are often found wading in the water with their tail feathers cocked upwards.

Common Name: White-headed Duck
Scientific Name: *Oxyura leucocephala*

Size: 18 inches (45 cm)

Habitat: Eurasia and Africa; it has a highly fragmented distribution in the central and southwestern Palearctic, from south of Lake Baikal in the east, to northwestern Africa and the Iberian Peninsula in the west. Populations in north-central Asia are migratory, and spend the winter in the Middle East, Türkiye, and southeastern Europe. There are sedentary populations in Spain and northwestern Africa.

It is a highly aquatic species that is found in a variety of wetlands throughout the year, including natural and man-made habitats, and they exhibit seasonal variations in habitat use. The bulbous base of the bill contains large salt-excreting glands, which are considered an adaptation to brackish and saline habitats. It breeds in a variety of wetlands, including freshwater, brackish, alkaline, and eutrophic lakes with emergent vegetation used for nesting. Wintering sites generally have a larger surface area and lower cover of emergent vegetation compared to breeding sites, and include saline lakes in regions where freshwater areas freeze.



Status: **Endangered**. **Global population:** 5,300 - 8,700 individuals with a declining population trend. This duck is considered endangered due to a large reduction in

populations in the last 10 years. Most of this decline is due to habitat loss and hunting, but interbreeding of the Spanish population with the introduced ruddy duck (*Oxyura jamaicensis*) is a more recent threat. This has led to the attempted eradication of the American species from western Europe.

The white-headed duck is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies, and the International Union for Conservation of Nature has rated the bird's conservation status as being "endangered".

Diet: The main food sources for both adults and immatures are midge larvae (Diptera, Chironomidae) and seeds of aquatic plants.

It dives under water and feeds on aquatic vegetation as well as some animal matter. It is more likely to swim away from a perceived threat than to fly.

Nesting: Adult males have a grey and reddish body, a blue bill and a largely white head with a black cap and neck. Adult females have a gray-brown body with a white face and a darker bill, cap, and cheek stripe.

The mating system of the White-headed Duck is characterized as male-dominance polygyny, in which males compete for females by sorting out positions of dominance. Courtship behaviors are increasingly intense, from relaxed flotilla-swimming to head-high-tail-cock, sideways hunch, kick-flap, and side-ways-piping. During the early breeding season, the males move to open water close to emergent vegetation selected for nesting. In these areas, fighting between males is common and dominance hierarchies are established. First breeding takes place when females are two years old. Females nest over water and their eggs are very large in relation to female size, which may be related to semi-parasitic nesting or to highly precocial ducklings that are tended by the female only for 1–3 weeks.

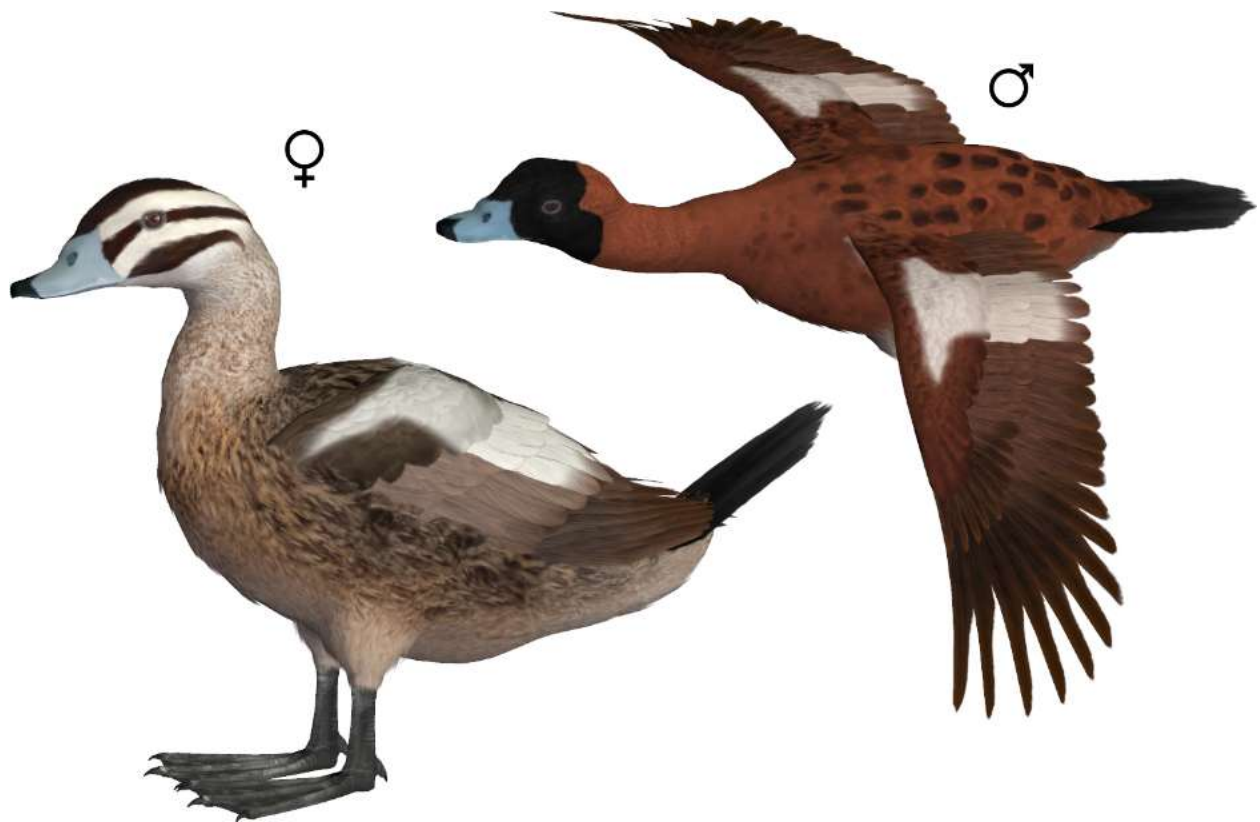
Cool Facts: The white-headed duck was originally described as *Anas leucocephala* by Giovanni Antonio Scopoli in 1769. This charismatic bird is used as a flagship for wetland conservation in several countries in its range, and reintroductions have been attempted in Hungary, Italy, France, and Mallorca Island (Balearic Islands, Spain).

Common Name: Masked Duck
Scientific Name: *Nomonyx dominicus*

Size: 17.3-20.1 inches (44-51 cm); Wingspan: 30 inches (76 cm)

Habitat: North and South America; found from southern Texas and Mexico to South America and also in the Caribbean. It is primarily not migratory but they have been reported as very uncommon vagrants in the southernmost United States, along the Mexican border and in Florida.

They are associated with swamps, marshes, streams, stock ponds, and rice fields heavily overgrown with emergent vegetation, reeds, and rushes. They especially favor freshwater wetlands with floating vegetation.



Status: Least Concern. **Global population:** 16,000 - 200,000 adult individuals with a stable population trend. Their numbers increase following wet cycles that create new wetlands with emergent vegetation. Populations on several islands in the West Indies appear to have declined, primarily as a result of habitat destruction, and to a lesser extent, shooting and egg predation by rats.

Diet: Seeds, roots, stems, and leaves of aquatic plants. They also eat aquatic insects and crustaceans.

They feed by diving. These ducks are usually very secretive. It frequently dives (rather than flies) into dense vegetation to avoid predation.

Nesting: Breeding adult males have a rust-colored body with a black face and mottled wings. Adult females, winter males, and juveniles have a barred brownish gray body, with two horizontal, dark-colored stripes running through the buff-colored face.

The Masked Duck has a long breeding season with nests are found from October until August, June until October in the West Indies, and April to September in Venezuela. The nest is a deep cup usually built near water, sometimes roofed over and containing 4 to 8 eggs. Males are believed to play a minor role in rearing the young.

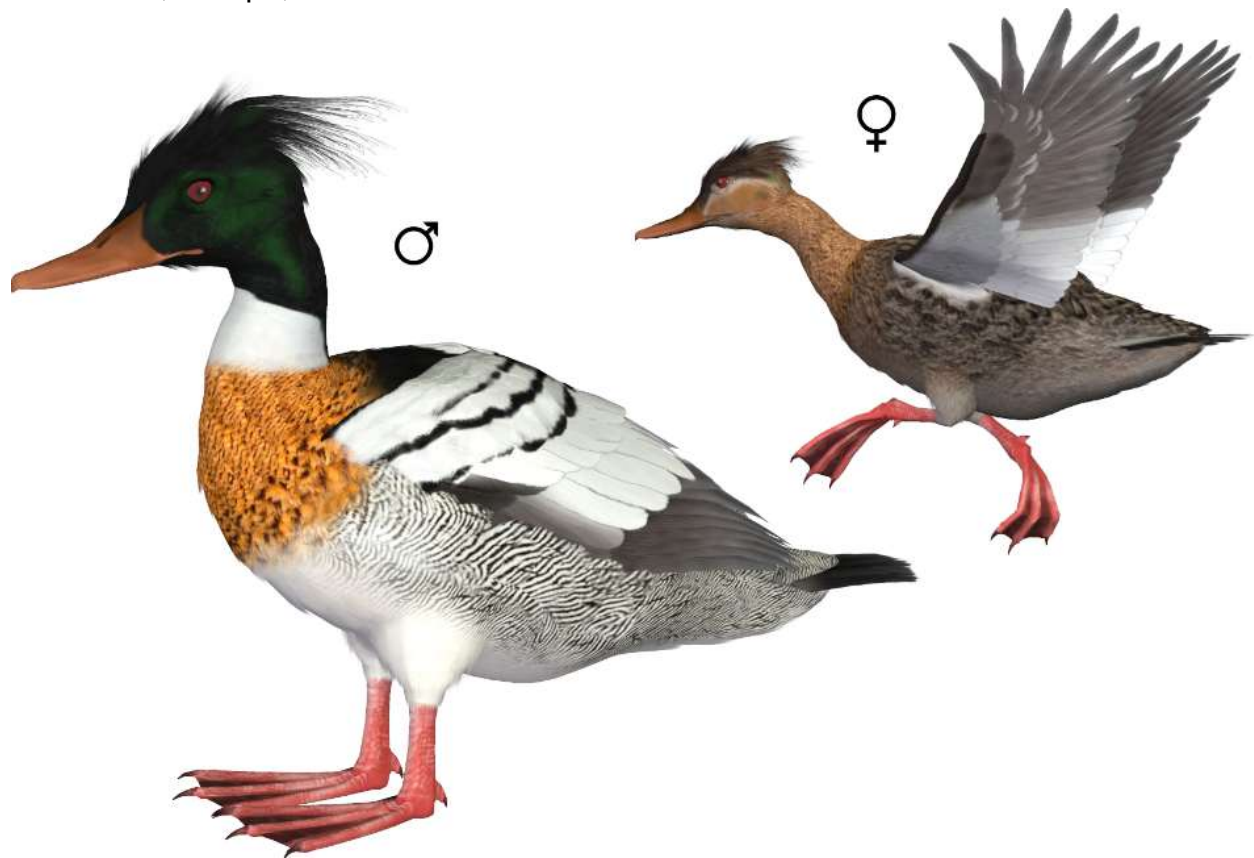
Cool Facts: The only member of the genus *Nomonyx*, it is intermediate between the rather primitive Black-headed duck (*Heteronetta*) and the very apomorphic true stiff-tailed ducks.

Common Name: Red-breasted Merganser
Scientific Name: *Mergus serrator*

Size: 20-25 inches (51-64 cm)

Habitat: Northern Hemisphere; it is native to much of the temperate to subarctic Northern Hemisphere. It is mostly migratory and northern breeders winter in coastal waters further south. Populations in parts of northwestern Europe with oceanic climates (Iceland, Ireland, Britain, Norway, and Baltic Sea islands) are largely resident or disperse only short distances. Outside of the breeding season, it forms flocks, which tend to be smaller during spring migration than they are in autumn migration and in winter.

Its breeding habitat is freshwater lakes and rivers across northern North America, Greenland, Europe, and the Palearctic.



Status: Least Concern. **Global population:** 1,000,000+/- adult individuals. It is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies. The species is also considered a game bird under the Migratory Bird Treaty between the United States and Canada. This means that the species gets some protection, though hunting it is legal in North America in certain seasons and places determined by local hunting regulations. However, few hunters are interested in the species and relatively few birds are harvested.

The species is widespread and common enough to be given conservation status of least concern by the IUCN, though populations in some areas may be declining. Threats include habitat loss through wetland destruction, exposure to toxins such as pesticides and lead, and becoming bycatch of commercial fishing operations. Anglers and fish farmers have also persecuted the species, which they regard as a competitor, though the impact of this on the species' population overall is not known; illegal persecution by fisheries interests is significant in Britain, particularly Scotland.

Diet: Mostly small fish, but also consume aquatic insects, worms, crustaceans, and amphibians.

Red-breasted mergansers dive and swim underwater.

Nesting: In breeding plumage (fall-early summer), the male has dark head (dark metallic green in the face and black elsewhere) with elongated feathers at the rear of the head that form long, shaggy, double-pointed crest. Its dark head is bordered below by a white collar around the neck and reddish-brown breast that is speckled with black. There is a tuft of feathers at the sides of the breast that is black with large white centers forming band of white patches that lie over the forewing (when at rest). The sides and flanks are grayish with the remaining under-parts, white. The back is black with a dull greenish sheen, the outer scapulars white, and the rump through the tail grayish. The wings are black with white patches across inner wing (secondaries and coverts). The bill is long, narrow, and serrated with a hooked tip and red with a black tip. The feet are red-orange.

The female is largely grayish brown becoming whitish on the chin, throat, breast, and belly. The head and upper neck are dark olive brown to cinnamon merging with a dingy breast and grayish-brown lower neck and back. The female has a shaggy crest similar in shape to male. The female plumage remains similar throughout year.

The male non-breeding plumage (late spring and early summer to early fall) closely resembles female but the white on inner forewing is more extensive, the crown is darker, and feathers on the upper-parts, breast, sides, and flanks have broad gray fringes. Immature male and female resemble the adult female, but the male may have scattered blackish feathers in its plumage.

Male red-breasted mergansers show a highly stereotypic metronomic courtship display, in which they stretch, bend and contract their necks, often in synchrony by several males together, showing their crests alternately fanned and straight; females watch from nearby to select their preferred mate, and often chase or even attack the males. Display, which takes place while swimming, starts in mid-November, and continues until June or rarely July.

It nests in sheltered locations on the ground near water, often, but far from always, close to estuaries or sea coasts. Incubation takes 28 to 35 days. After hatching, young leave the nest within 24 hours.

Cool Facts: The red breast that gives the species its common name is only displayed by males in breeding plumage.

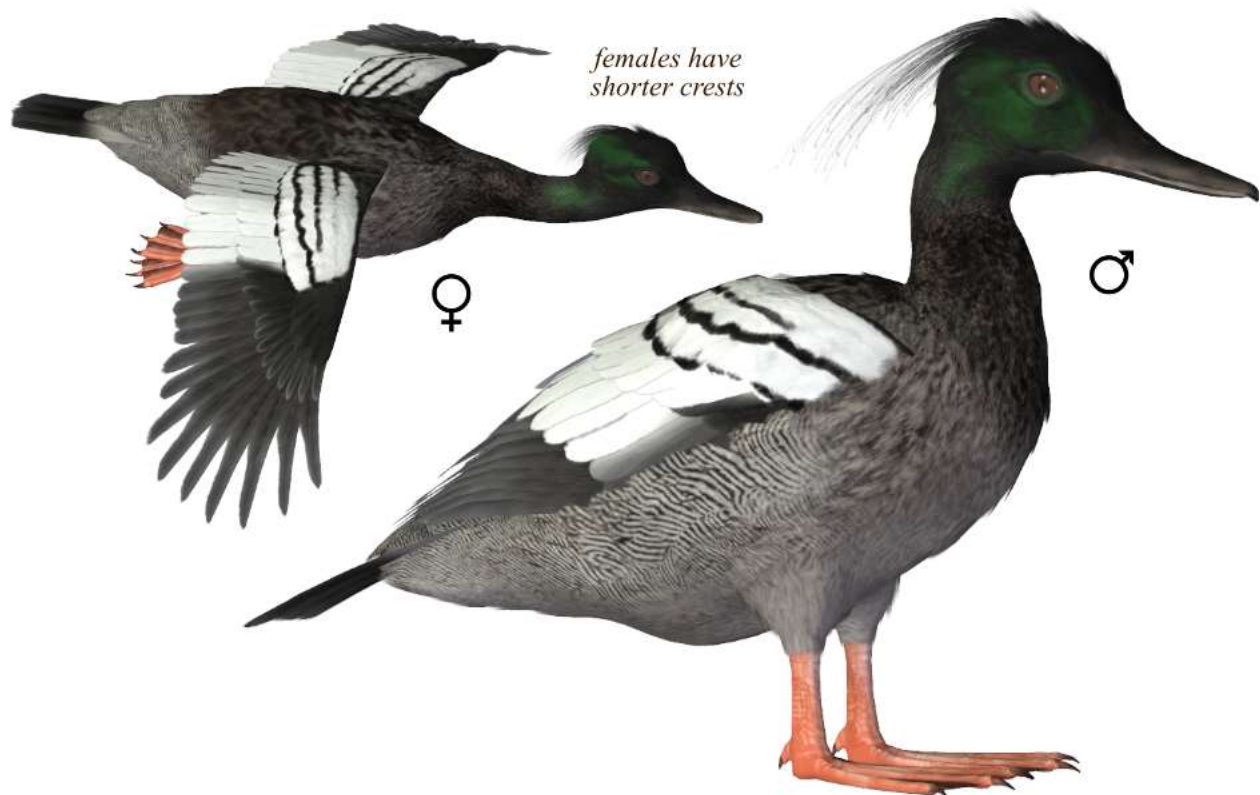
Common Name: Brazilian Merganser
Scientific Name: *Mergus octosetaceus*

Size: 21.7-26.8 inches (55-68 cm)

Habitat: South America; its distribution is restricted to the center-south of Brazil, and parts of Paraguay and Argentina.

It inhabits clean rivers and streams, with rapids and still waters, bordered by forests and with fish abundance.

Status: **Critically Endangered**. **Global population:** 50-249 adult individuals. Recent records have proved the population size is larger than it was supposed, although it is not possible to make a good estimate of its population size. Nevertheless, the remaining population is still extremely small and severely fragmented, and several threats continue to cause declines. Pollution and habitat destruction are the main causes in this bird's decline.



In 2006, the Brazilian Ministry of Environment (MMA) published the Action plan for the Brazilian Merganser Conservation, a strategic document with guidelines for conservation actions in long term. In 2008, the Instituto Terra Brasilis started a project to mark and monitor Brazilian Merganser individuals using color rings and radio transmitters in the Serra da Canastra region, state of Minas Gerais. We believe the

coming results will lead to a major contribution to improve our knowledge about this species, in particular in its territoriality, migration and dispersal.

Diet: Mostly small fish, but also consume aquatic insects, worms, crustaceans, and amphibians.

They feed basically on prey they capture during dives. Very often, before diving, they search for their prey swimming with just their heads submerged. Dives can last 15 to 20 seconds, and even 30 seconds in deeper pools.

Nesting: It is a slender, dark, medium-sized duck, with a typically long crest on the rear of the head. Its back and wings are grayish brown. The head and neck darker with metallic dark green reflections. Its breast is pale gray with narrow darker stripes. The color of the underparts becomes paler towards the abdomen. The wing white mirror is visible during flight and it is also commonly observed when the birds are resting or swimming. The head crest is longer in the males than females. The bill is thin, narrow and serrated.

It is monogamous. The same pair seem to live together for a long time, if not throughout their lives. Males court females on the water; the copulation is also on the water. When the female is ready to accept the male, she lowers her head and extends the body horizontally. Then, the male mounts the female grasping her crest with the beak.

They nest in holes of trees and rock formations, and in river banks. The entrance to the nest cavity is located from 2 to 25 m above the water. Only the female incubates, and she leaves the nest twice per day to feed. The male spends most time resting or feeding nearby, constantly vigilant, but sometimes flies off, departing the area for several hours. The female lays up to eight eggs, which are incubated for about 34 days. When leaving the nest, the female covers the eggs with her down feathers.

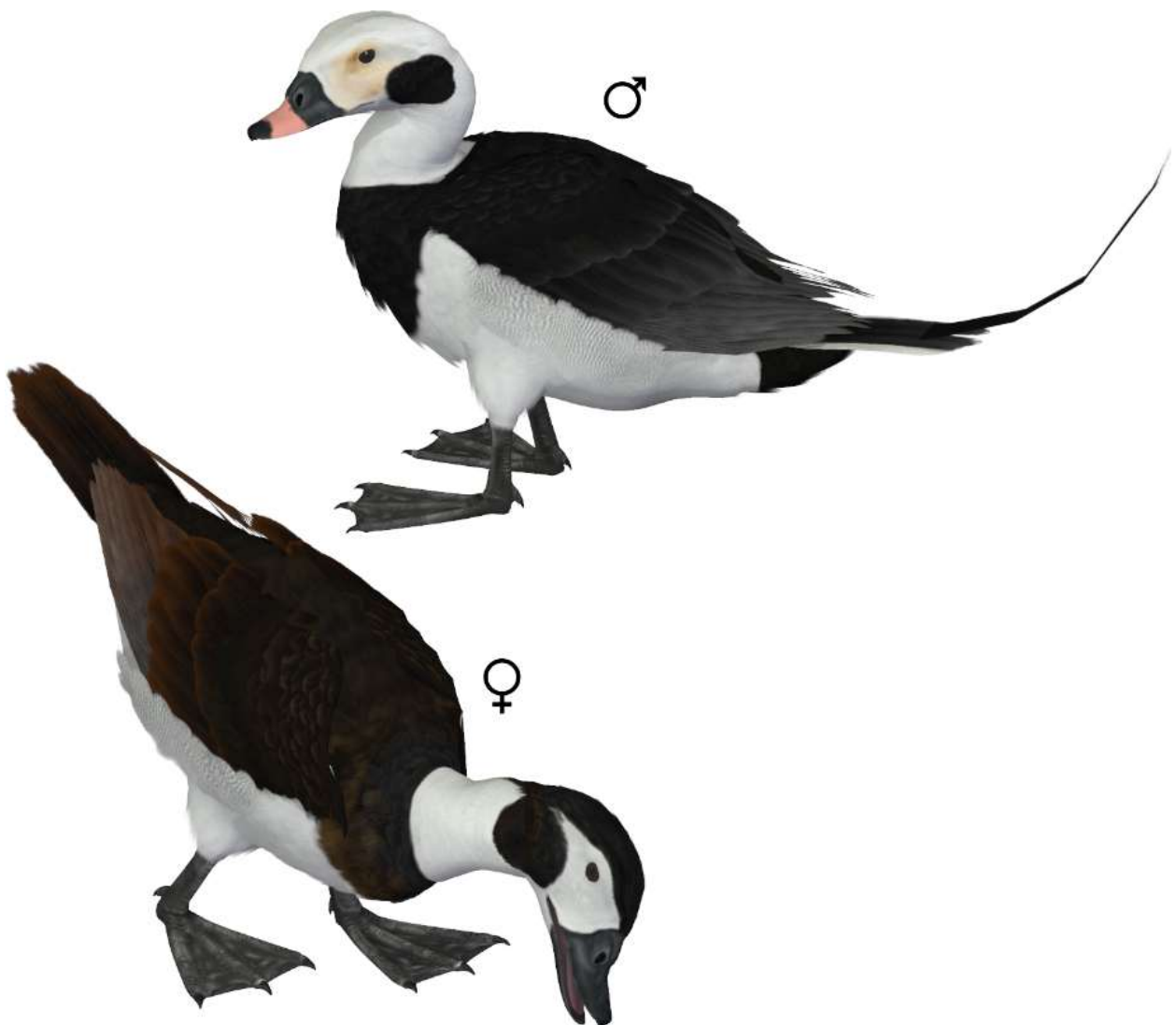
The ducklings leave the nest in the following day after hatching. The ducklings are encouraged to abandon the nest by the mother's call. The family stays together all the time; the parents constantly keep the young between them. The parents provide the ducklings with fishes and invertebrates. They feed their young directly into their beaks, or they place caught fish in the water after shaking it in order the ducklings can catch it. After 10 days of life, young were observed fishing on their own, reducing the need for food provided by their parents. The young are able to perform short flies when they are around 2 months old. They generally stay with their parents about six months. Many young die in these first months of life.

Cool Facts: The Brazilian Merganser is one of the most threatened waterfowl in the world and one of the most threatened birds in the Americas.

Common Name: Long-tailed Duck
Scientific Name: *Clangula hyemalis*

Size: 16-18.5 inches (40-47 cm) (measurement without the male central 2 pairs of elongated rectrices)

Habitat: Northern Hemisphere; they breed on tundra across northern Eurasia (in Russian Siberia, Kamchatka, and Karelia), the Faroe Islands, Finland, parts of southern Greenland, Iceland, Norway, as well as across northern North America (Alaska and northern Canada). In the winter, they are found on and near large bodies of seawater, such as the Northern Pacific Ocean, the North Atlantic Ocean, Hudson Bay and the North American Great Lakes. Small numbers are found on the Missouri river.



Their breeding habitat is in tundra pools and marshes, but also along sea coasts and in large mountain lakes in the North Atlantic region, Alaska, northern Canada, northern Europe, and Russia.

Status: Vulnerable. **Global population:** 3,200,000 to 3,750,000 adult individuals with a declining population trend. It is still hunted across a large part of its range. There has been a significant decline in the number of birds wintering in the Baltic Sea (90,000 a year), partly due to their susceptibility to being trapped in gillnets. The effects of chronic oil pollution from small-scale oil discharges in non-breeding areas is a significant threat as Long-tailed Ducks form large aggregations that overlap with major shipping and oil transportation routes. Further expansion of such activity in the northern part of the range is likely to increase the scope of this threat. It is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies.

Diet: On breeding grounds, larval and adult aquatic insects, crustaceans (amphipods, fairy shrimp, cladocerans), fish roe, and vegetable matter. On saltwater wintering grounds, locally common epibenthic crustaceans, especially amphipods, mysids, and isopods. Bivalves, gastropods, fish, and fish eggs also important at some sites. On freshwater wintering grounds, amphipods usually important, followed by fish and mollusks or oligochaete worms,

The long-tailed duck is gregarious, forming large flocks in winter and during migration. Although they usually feed close to the surface, they are capable of diving to much deeper depths.

Nesting: Long-tailed Ducks have three seasonal plumages, instead of the normal two. Males are larger than females. It is a plump duck with a short neck. The plumage is in almost continuous change between spring and fall. The brightest plumage is attained in winter, when it is generally whiter. The male, at this season, is mostly white with a blackish patch on the ear-coverts and gray face-sides, the black wings with elongated white scapulars (from November through April, and brown, thereafter). There is a broad black band across the lower neck and breast, it has a black back and rump, gray-white flanks, and a white lower belly. The tail is black with a central 2 pairs of rectrices greatly elongated and the outermost rectrices tinged white. The bill is black with a broad subterminal pinkish band, the legs and feet are gray and the irises are orange.

The female is mostly brownish-black above in autumn/winter, with white face contrasting with black ear-coverts, and brown scapulars (that are shorter than in the male). Its bill is gray-green and irises are brown. The female plumage does not contrast as sharply as with the males, and it does not possess long central rectrices on the tail. In the summer, the darker head and neck with becomes dark brown. Also, it acquires feathers similar to the females on its back; the scapulars are buff with black centers. As summer progresses, the females' head and neck become whiter and the flanks become a darker gray. By summer, the female is significantly darker, especially on the face.

The juvenile plumage is similar to the winter adult female. Overall, the pale markings of head and neck not as well defined, and the flanks washed with brown. The cheek-patch

is brown, not blackish brown, and not sharply defined. The darker portions of the plumage are washed with browns. It becomes whiter on the head and the plumage markings are better defined as the winter progresses. The young male begins to acquire some elements of adult male plumage in the fall, including a pink band on bill, but not to extent attained by adults.

The nest is located on the ground near water; it is built using vegetation and lined with down. Six to nine pale-gray to olive-colored eggs are laid per clutch.

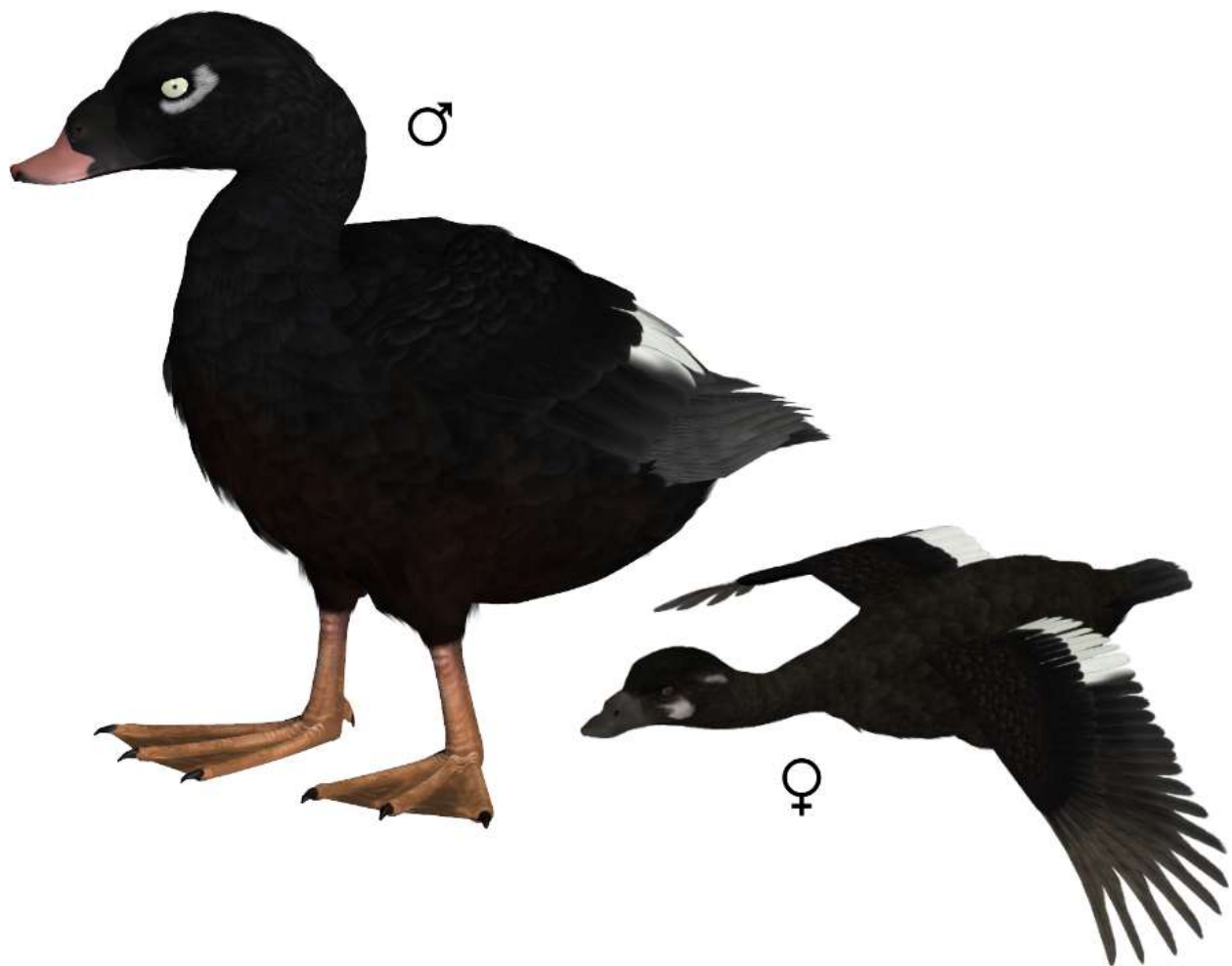
Cool Facts: Individuals dive for food with impressive depths not reached by other sea ducks (more than 60 meters).

Common Name: White-winged Scoter

Scientific Name: *Melanitta deglandi*

Size: 19–24 inches (48–60 cm)

Habitat: North America; They mainly breed in boreal forest from Alaska to Western Canada and are less common east towards the Hudson Bay and south towards the Canadian Prairies. It winters further south in temperate zones, on the Great Lakes, the coasts of the northern United States and the southern coasts of Canada. It forms large flocks on suitable coastal waters. These are tightly packed, and the birds tend to take off together. It has occurred as a vagrant in Europe, including Scotland, Iceland, Norway and Ireland.



Status: Least Concern. **Global population:** Unknown number of adult individuals with a declining population trend. Hunting, gillnet fishing and oil pollution from shipping are significant threats to this species.

Diet: In freshwater, this species primarily feeds on crustaceans and insects; while in saltwater areas, it feeds on mollusks and crustaceans. The favorite foods are amphipods in freshwater, and rock clams, Atlantic razor clams and Arctic wedge clams.

White-winged scoters are benthic feeders and forage in open water diving between 5 and 20 m in wintering grounds and 1 and 3 m on breeding grounds.

Nesting: The male is all black, except for white around the eye and a white speculum. The bill is orange and red with a large black knob at the base. It takes three years for definitive (adult) plumage to be attained – second-year males resemble adult males but exhibit reduced eye markings and have browner flanks. Females are brownish overall and best distinguished from other scoters by the feathered gape and body shape. The facial pattern in female-type birds is highly variable – younger individuals have conspicuous white spots in front and behind the eye, while adults may lack these patches and appear entirely chocolate brown in winter. Juveniles resemble females but have more distinct facial patches and a mottled white belly. The greater secondary coverts of juvenile males have more extensive white than juvenile females which exhibit little to no white fringing.

They are monogamous and form pairs in late summer, suggesting long-term pair bonds. Their earliest breeding age is two years old. Some adults do not breed annually and gather on large lakes and marshes over summer.

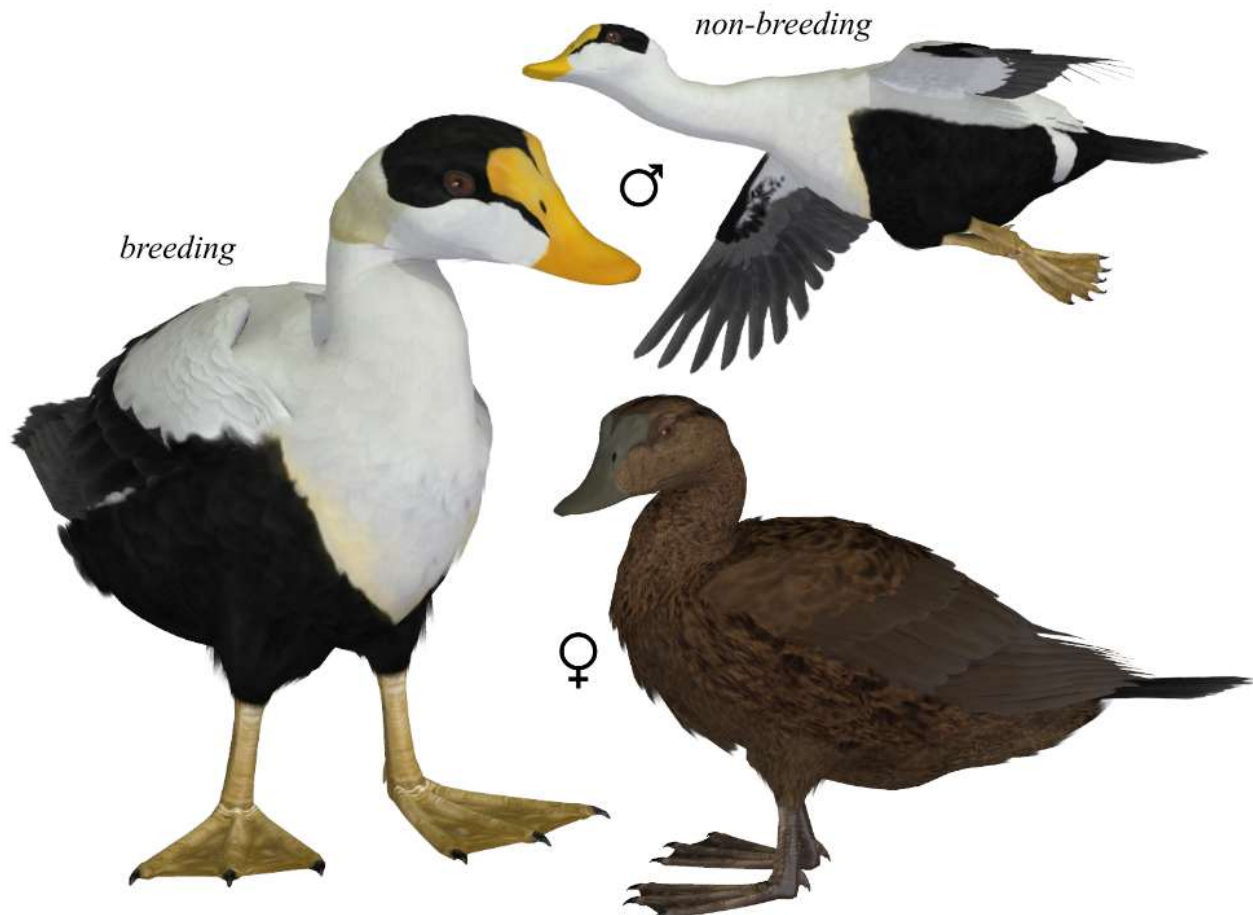
The lined nest is built on the ground close to the sea, lakes or rivers, in woodland or tundra. Five to eleven eggs are laid. The incubation period can range from 25 to 30 days. Males remain with females during the egg-laying period, and typically gather in small groups before leaving the breeding grounds when the young have hatched. After about 21 days, neighboring females may start to behave aggressively towards other nesting females, resulting in confusion and mixing of broods. By the time she is done brooding, a female may be tending to as much as 40 offspring due to the mixing from these conflicts. The female will tend to her brood for up to three weeks and then abandon them, but the young will usually stay together from another three weeks. Brood amalgamation is not uncommon in areas in densely populated breeding grounds, with as many as 100 ducklings gathering in a creche. Flight capacity is thought to be gained at 63 to 77 days of age.

Cool Facts: The white-winged scoter is one of three North American scoter species and the largest species of scoter. Birds in Alaska are sometimes recognized as a distinct subspecies, *M. d. dixonii*, which is reported to have shorter and broader bills on average, but most authorities consider these differences insufficient to warrant taxonomic distinction.

Common Name: Common Eider
Scientific Name: *Somateria mollissima*

Size: 20-28 inches (50-71 cm)

Habitat: Northern Hemisphere. The breeding range of this species is widely distributed around the mid- to high-latitude coasts of the northern hemisphere, particularly at the higher latitudes. It has a Holarctic distribution, being present in both Eurasia and North America. However, its distribution is not continuous across the Holarctic. There are distinct and persistent gaps in both the central parts of the Russian Arctic and the Canadian Arctic. The distributional gap in Russia (54° longitude) is considerably wider than that in Canada (6° longitude). These gaps can be attributed to the presence of ice all year round at these locations, especially landfast sea ice. At the highest latitudes, the presence of breeding birds is largely limited by the distribution of ice-free conditions during June.



In winter, the range is more compressed, with migratory northern populations largely wintering within the range of the southerly sedentary populations (Waltho and Coulson 2015). The southern limits of regular wintering ranges are southern Alaska (USA) at 51°N, New Jersey (USA) at 41°N, W France at 44°N and Kuril Islands (Russia) at 50°N (Waltho and Coulson 2015).

Primarily a marine resident, breeding on islands and spits along low-lying rocky coasts and estuaries. It will go inland, on brackish or freshwater tundra pools or rivers. Ducklings require access to fresh water in brood-rearing areas. It disperses along shallow seashores in winter, commonly in bays, and river mouths, generally avoiding areas exposed to strong winds and thus large waves.

Status: Near Threatened. **Global population:** 1,580,000-1,910,000 mature individuals with a declining population trend. Habitat destruction, oil pollution, hunting and nest disturbance are all factors in its decline. It is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies.

Diet: Mussels are the favored food; it also feeds on crustaceans and mollusks.

This species dives for mussels, crustaceans and mollusks. It will eat mussels by swallowing them whole; the shells are then crushed in their gizzard and excreted. When eating a crab, the eider will remove all of its claws and legs, and then eat the body in a similar fashion.

Nesting: The common eider is the largest of the four eider species. It is distinguished by its bulky shape and large, wedge-shaped bill. The male is distinct, with its black and white plumage and green nape. The female is a brown bird, but can still be readily distinguished from all ducks, except other eider species.

Eiders are colonial breeders. They nest on coastal islands in colonies ranging in size of less than 100 to upwards of 15,000 individuals. Female eiders frequently exhibit a high degree of natal philopatry, where they return to breed on the same island where they were hatched. This can lead to a high degree of relatedness between individuals nesting on the same island, as well as the development of kin-based female social structures. This relatedness has likely played a role in the evolution of co-operative breeding behaviors amongst eiders. Examples of these behaviors include laying eggs in the nests of related individuals and crèching, where female eiders team up and share the work of rearing ducklings. The clutch consists of 3 to 8 eggs. The eggs are incubated for 24–26 days.

Cool Facts: It is also called St. Cuthbert's duck or Cuddy's duck.

The eider's nest is built close to the sea and is lined with eiderdown, plucked from the female's breast. This soft and warm lining has long been harvested for filling pillows and quilts, but in more recent years has been largely replaced by down from domestic farm-geese and synthetic alternatives. Although eiderdown pillows or quilts are now a rarity, typically being marketed as luxury goods, eiderdown harvesting continues and is sustainable, as it can be done after the ducklings leave the nest with no harm to the birds.

Six subspecies are recognized:

- *S. m. v-nigrum*. First reported by Bonaparte and Gray in 1855. This race breeds in northeast Asia and Alaska; winters in the Bering Sea and the Aleutian Islands.
- *S. m. borealis*. First reported by Brehm in 1824. This race breeds in northeast Canada, Greenland and Iceland; it winters in the north Atlantic.
- *S. m. sedentaria*. First reported by Snyder in 1941 – breeds in Hudson Bay and James Bay (Canada)
- *S. m. dresseri*. First reported by Sharpe in 1871. This race breeds in southeast Canada and northeast United States; it winters around northwest Atlantic coasts.
- *S. m. faeroeensis*. First reported by Brehm in 1831. Endemic to the Faroe Islands.
- *S. m. mollissima*. First reported by Linnaeus in 1758. The nominate race breeds in northwest Eurasia and locally in central Europe (lakes in the Alps) and the northern Black Sea (Crimea); it winters in northwest and central Europe.

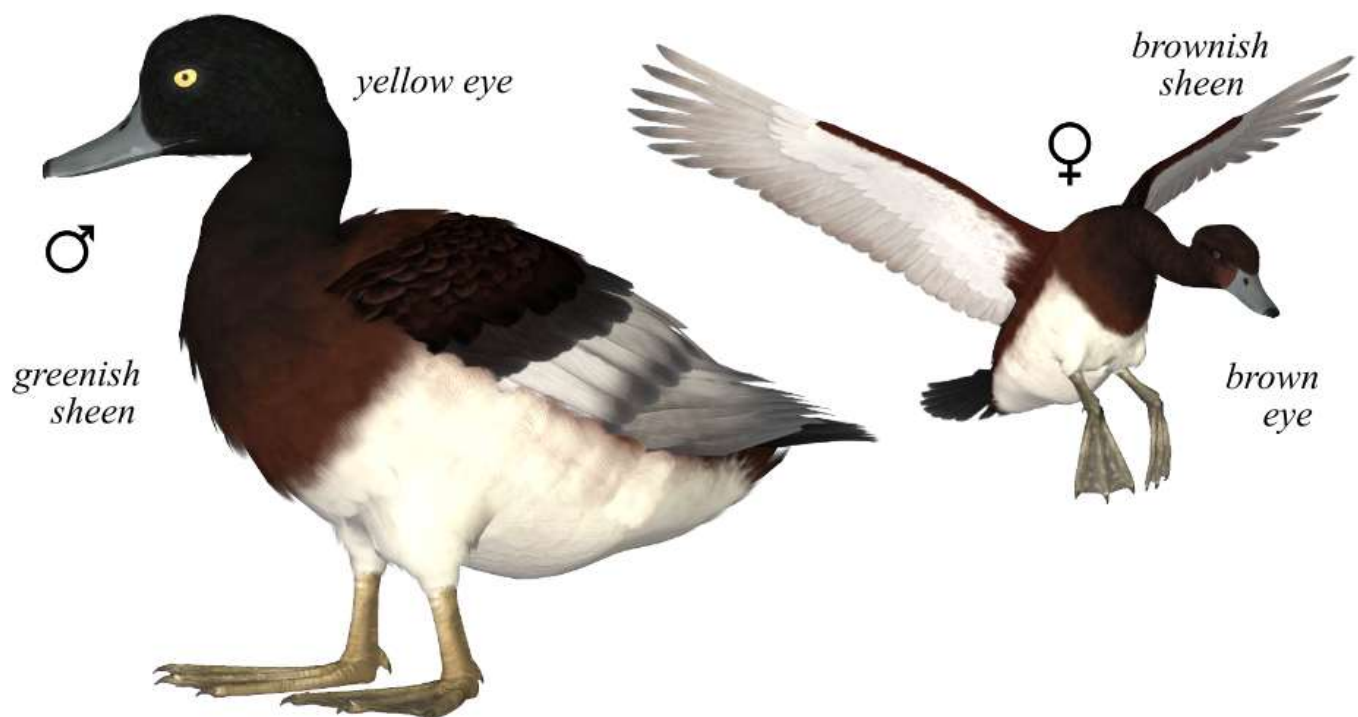
Common Name: Baer's Pochard
Scientific Name: *Aythya baeri*

Size: 16-19 inches (41-47 cm)

Habitat: Eurasia; found in eastern Asia. It is a resident bird in North and Central China, and formerly bred in southeast Russia and Northeast China, migrating in winter to southern China, Vietnam, Japan, and India.

It is a shy species, that inhabit open, slow-flowing lakes, swamps and ponds. It breeds around lakes with rich aquatic vegetation, nesting in dense grass, flooded tussock meadows, or flooded shrubby meadows. In winter, it forms large flocks on large and open freshwater lakes and reservoirs with other pochards.

Status: **Critically Endangered**. **Global population:** <1,000 adult individuals. Hunting and habitat loss are considered to be the main reasons. It is listed as a first-class protected animal in China.



Diet: Aquatic plants, grass seeds and mollusks.

It has strong wings, and can fly or walk at high speeds. It is also good at diving and swimming, and can quickly take off from the water when threatened or disturbed. In migrating season, they form small groups of more than 10 or dozens of birds, flying at low altitudes in wedge-shaped formations. During winter, it sleeps during the day, leaves for unknown feeding sites with other ducks in the dusk, and returns before dawn.

Nesting: The male is slightly larger than the female. The breeding male has a black head and neck with green gloss, white or paler yellow eyes, blackish-brown back, dark chestnut breast, white or light chestnut flanks and a short and low tail. While it is likely to look completely black in poor light. The female has brown eyes and a dark brown head and neck that blend into the chestnut-brown breast and flanks. The Eclipse and first-winter male resembles female, but retain the white eyes. Both male and female have wide white speculum feathers, white vent-side, dark-grey bill, black nail and dark-grey tarsometatarsus.

It appears to have a monogamous mating system, at least within a breeding season. After the ice season, it gathers on the large, open lakes. They breed from mid-to-late May. During courtship, the male swims around the female, repeatedly nods his head up and down. When other males approach, it swims toward them quickly to drive them away, but there is no violent fight between them. The female also nods her head in response. When the male approaches, the female straightens her neck and lowers her head to the water. He then climbs onto her body and bites her nape feathers to mate. After the mating, the male and female leave the flock for nesting.

The nest is circular cylindrical, located among emergent vegetation, usually in shallow water or on small islands or ridges. The nest is made of sedges, reeds and other plants collected from the immediate vicinity, lined with a layer of down. Its clutch ranged from 5 to 14 eggs. Males usually take on sentry duty at about 10 meters from the nest during hatching. Females leave the nest to forage 2–3 times a day. They cover the eggs with nest materials during forging, and place them onto their back when coming back. If water levels are elevated by heavy rainfall or human activity, females increase the height of the nest to avoid flooding. During the hottest days, females often stand on the nest and shelter eggs from the strong sunlight, whilst allowing circulation of air around them. Females also take water into their plumage and use it to cool the eggs. The incubation lasted for 23–26 days. About 20-30% of eggs hatched successfully, and 3–16 young fledged per nest.

Cool Facts: Baer's pochard was first scientifically described in 1863 as *Anas baeri* by Gustav Radde in his book “Reisen im Süden von Ost-Sibirien”.

Common Name: Canvasback
Scientific Name: *Aythya valisineria*

Size: 20.1-22 inches (51-56 cm)

Habitat: North America; its breeding range centers in parklands and mixed prairies of northwestern North America. The breeding densities appear to be increasing in subarctic Yukon Territory and Alaska. The non-breeding season is greatly influenced by severity of winter. The largest concentrations occur at widely scattered sites, including Puget Sound; San Francisco Bay; delta lakes in southern Louisiana, Mississippi River delta and elsewhere along the northern Mississippi; Lake St. Clair, Detroit River, and western Lake Erie; and Chesapeake Bay and Currituck and Pamlico Sounds, North Carolina.



It breeds in small lakes, deep-water marshes, sheltered bays of large fresh water and alkali lakes, permanent and semipermanent ponds, sloughs, potholes, and shallow river impoundments. In aspen parklands and mixed-grass prairie, it prefers wetlands bordered by dense emergent vegetation.

Status: Least Concern. **Global population:** 750,000-1,000,000 adult individuals. It is a federally protected migratory game bird in Canada, United States and Mexico. It was on the "Blue List" for period 1975 to 1981 and as a species of "Special Concern" in 1982 and 1986. After an extended period (1982–1995) during which its numbers remained below long-term average of 563,000 set in the North American Waterfowl Management Plan, its breeding population increased significantly between 1994 and 1995 to >770,000 and has remained above long-term average since 1995, a period of generally wet conditions in the prairie-pothole. Hunting is a major mortality factor. Approximately 87,000 Canvasbacks shot by hunters in U.S. in 1999. Habitat destruction is also a danger for this species.

Diet: Omnivorous; foods exploited vary depending upon availability. During winter and migration, mainly plants (winter buds, rhizomes, and tubers of aquatic plants); when plant foods limited, takes small clams and snails. It consumes both plant and animal material throughout breeding season (seeds, buds, leaves, rhizomes, tubers, and root stalks of aquatic plants), and snails, caddisfly larvae, damselfly and dragonfly nymphs, mayfly nymphs, and midge larvae.

It is behaviorally, morphologically, and anatomically specialized for feeding on subterranean plant and animal materials. During individual foraging dives, it lifts the foreparts of its body, clear of water, and arches neck so that it submerges vertically. When underwater, it orients the long axis of its body perpendicular to the water surface and uses alternate strokes of the legs to maximize force for inserting its bill into substrate to locate buried food items.

It is gregarious, except during breeding season. The feeding cycle generally diurnal and bimodal, with peaks in early morning and late evening.

Nesting: The male is slightly larger than the female. The adult male has most of its head and neck a reddish brown, grading to blackish brown on face and crown. The upper back is black with the scapulars and mantle whitish to pale gray, finely vermiculated with black and grading to brownish black on the rump and upper-tail coverts. The breast is black, contrasting with the white sides and belly. Its flanks are pale gray, lightly vermiculated with a blackish brown. The under-tail coverts are blackish. The upper wing coverts are whitish, finely vermiculated with gray, while the secondaries appear pearl gray or gray with narrow blackish margins. The primaries and median primary coverts are slate brown, while the under-wing surface are white to pale gray. The feet and legs are a grayish blue. The bill is blackish. The adult female has its forehead, crown, nape, and upper neck a light brown to brownish olive. Its cheeks, chin, and throat are a whitish buff with the lower neck being a gray-brown, with reddish-brown cast. The mantle and scapulars are light gray. The feathers have light edges with dark vermiculations towards the tips. The lower back and rump are grayish, with many feathers having a fine, white vermiculation. The upper-tail coverts are sooty brown. The breast is brown with the sides and flanks being a dull brown to grayish, finely vermiculated with blackish brown. The belly is white to grayish white while the under-tail coverts are whitish. The upper wing coverts are grayish, flecked whitish near the

tips; the secondaries are light grayish brown with a broad grayish subterminal band and white tips; the primaries and median primary coverts are blackish brown, and the wing-lining is pale grayish in color. The legs and feet are grayish blue with the bill nearly black.

Canvasbacks are monogamous and secretive during the breeding season. Pairs form during spring migration and continue to do so until they reach the breeding grounds. The breeding home range is large for this species, encompassing several ponds that pairs use for nesting, feeding, loafing, and brooding. The Canvasback nests over water, in a large structure constructed of loosely woven reeds and sedges and lined with down. This species is an ecological specialist whose restricted nesting and specific trophic requirements link it inextricably to deeper, more stable ponds, marshes, and potholes.

Cool Facts: The Canvasback is one of the most studied species of duck in North America. Excellent long-term studies of breeding populations at Minnedosa Manitoba, have given us a unique synthesis of the overall biology of the species. Studies on the breeding grounds have contributed to our understanding of pair-bond and social behavior during the breeding cycle; factors affecting reproductive success; probability of recruitment of juvenile females into the breeding population; habitat use, survival, and movements of ducklings and the behavioral response of Canvasbacks to brood parasitism by Redheads.

Since the 1960s, Canvasbacks have altered their traditional migration routes, changed wintering sites, and modified diets in response to changes in the availability and predictability of certain foods, changes generally attributed to declining abundance of plant tubers.

Special Thanks to...

....my betatesters (Alisa and FlintHawk)

Species Accuracy and Reference Materials

The author-artist has tried to make these species as accurate to their real life counterparts as possible. Birds of the same species vary considerably, just as all others do in nature. The birds were created using the correct field markings and the most common similarities.

With the use of one generic model to create dozens of unique bird species, some give and take is bound to occur. In addition, 3D-models have many technical challenges, which make exact representations difficult, if not impossible. It's best to think of these birds represented as resembling the particular species, and they may not, in some cases, be 100% scientifically accurate.

The model and morphs were created using Luxology's Modo. The texture maps were created in Corel's Painter. The model was rigged in Smith-Micro's Poser and adapted for use in DAZ's DAZ Studio.

Field Guide Sources:

- **"The Sibley Guide to Birds"** by David Allen Sibley.
- **"The LeMaster Method to Waterfowl Identification"** by Richard LeMaster
- **"Birds of Europe"** by Killian Mullarney, Lars Svensson, Dan Zetterstorm and Peter J. Grant.
- **"Birds of Southeast Asia"** by Craig Robson.
- **"Birds of East Asia"** by Mark Brazil.

Internet Sources:

- **Cornell Lab of Ornithology** (<http://www.birds.cornell.edu>)
- **Wikipedia** (<http://www.wikipedia.com>)
- **Birdlife International** (<http://www.birdlife.org>)
- **Birds of the World** (<https://birdsoftheworld.org>)

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