

A Classification of Living Birds

This list incorporates changes made in the 42nd and 43rd Supplements to the Check-list, as published in *The Auk* 117: 847-858 (2000); 119:897-906 (2002).

Order Gaviiformes

Loons

Waterbirds that breed beside lakes and ponds in arctic and subarctic latitudes of North America. Considerable debate as to their taxonomic affinities.

Family Gaviidae

- Large heavy diving birds
- Spear-shaped bills
- Laterally compressed tarsi
- Legs set far back on body with webbed feet

Order Podicipediformes

Grebes

Medium-sized, stocky waterbirds of lakes and marshes, well adapted to aquatic life.

- leg located far back on the body
- tarsi are elliptical or laterally compressed
- tail reduced
- feet lobed not webbed with flattened claws

Order Sphenisciformes

Penguins

Flightless seabirds of cool southern hemisphere waters.

- Legs located far back on the body
- densely covered with three layers of short feathers (unusual among birds in virtually lacking bare areas between feather tracts)
- bones of wing are flattened and fused, wing cannot be folded
- keel of sternum well developed
- vascular rete at base of wing for counter-current heat exchange

Order Procellariiformes

Tube-nosed Seabirds

Wide-ranging seabirds of the open ocean. This order of birds contains the greatest range in sizes (from the Least Storm Petrel – 14 cm / 25 g to the Royal Albatross – 125 cm / 12 kg).

- paired tubular nostrils surmounting a distinctly hooked bill

- characteristic musty, oily smell due to stomach oil which along with oil from the uropygial gland is spread over the plumage (thought that the tubular nostrils act as a conduit for controlled application of the oil)
- large paired nasal glands in the orbit of the eye. Glands produce secretion with large quantities of NaCl that is shed through the nostrils. This allows the bird to secrete up to 90% of NaCl in diet.
- Most species have long wings used for soaring

Order Pelecaniformes

Pelicans, Cormorants and allies

Medium to large sized aquatic birds that eat fish or squid. Most members have distensible pouch of bare skin between the branches of the lower mandible (gular pouch).

- All four toes connected by webs (totipalmate)
- Most have very small nostrils that sometime lack an external opening. Gannets for example lack opening because they need to prevent the entry of water when diving head first into the sea from 30m.

Order Ciconiiformes

Hérons, Storks and allies

Long-legged and often long necked birds adapted for wading and capturing animal foods. Bill shape is an important key used to separate the 5 families.

- Sexes are alike or at least very similar
- Most species are colonial in their nesting

Family Ardeidae – herons, bitterns and egrets

- Long spear-shaped bill
- Powderdown feathers which grow continuously and frays into a powdery substance that is used to protect the plumage from fish slime
- Comblike margin on the claw of the middle toe
- Enlarged sixth neck vertebrae which causes the neck to adopt a characteristic S-shaped appearance.

Family Threskiornithidae – ibises and spoonbills

- Long-curved bills or long bill with a broad flattened spoon-shaped tip.
- Pair of grooves which extend from the nostrils to the tip of the bill
- Lack of face feathers
- Fly with the neck extended

Family Ciconiidae – storks

- Straight, sharp bill and often with a slight curve at the tip
- Bulky in appearance
- Fly with neck extended
- Lack syrinx and thus clatter bills
- Will defaecate on legs for evaporative cooling

Family Cathartidae - New World vultures (previously in Order Falconiformes)

More or less unfeathered head and ruff of feathers at the base of the neck

- Generally black or brown plumage
- Lack a syrinx and thus are voiceless
- Perforated nasal septum
- Several species possess an unusually well developed sense of smell
- Will defecate on legs for evaporative cooling

Order Phoenicopteriformes

Flamingoes

Ancient distinct group of birds (5 species) found in saline lakes of high pH throughout tropical and warm temperate zones. Their current taxonomic relationship remains controversial. Some authorities include the order as a family within the Ciconiiformes (herons and storks) whereas others consider them more closely related to the Anseriformes.

- Distinguished by long necks, long legs, webbed feet, and generally pink coloration. Unique coloration due to their diet which is rich in carotenoids.
- Filter feeders with a unique bill structure. Bill is bent downward in the middle and the margins of the bill bear long lamellae for filtering small organisms out of the mud and water. During feeding the bill is placed in the water with the maxilla downward.
- Thick fleshy tongue used to circulate water between the lamellae.

Order Anseriformes

Waterfowl

For the most part the order contains wading and swimming birds yet also members of the group are three screamer species. These screamers share many unique characteristics with the rest of the members and hence are grouped together.

- Aftershaft is reduced or absent
- Uropygial gland is feathered
- Downy young at hatching

Family – Anatidae

- Webbed feet with hind toe somewhat elevated
- Flattened blunt-tipped bill, bearing a nail at the tip of the maxilla, fine lamellae along the margin of the maxilla and mandible

Order Falconiformes

Hawks, eagles, falcons

Diurnal raptorial birds, birds of prey.

- Sexes more or less similar in plumage but the male is often considerably smaller than the female
- Bill is hooked with a fleshy cere at the base containing the imperforate nostrils
- Sharp curved talons

Family Accipitridae – hawks, harriers, eagles, kites, Osprey, Old World vultures

- Diverse array of birds, wings generally broad and rounded but can be long and narrow (harriers) or pointed (kites)
- Faeces can be squirted several feet from perch

Family Falconidae – falcons, caracaras

- Bony tubercle in nostril
- Legs generally short
- Wings generally pointed
- Defecate below the perch

Order Galliformes

Grouse and fowl-like birds

Medium to large terrestrial birds often hunted as gamebirds. Usually considered to be closely related to Anseriformes and also to Falconiformes.

- Short rounded wings ill-adapted for sustained flight
- Short, conical bill with arched culmen
- Well developed keel
- Legs and feet sturdy, 3 front-facing toes and 1 shorter hind toe
- Large muscular gizzard
- Well developed aftershaft
- Chicks are precocial and able to feed themselves soon after hatching
- Large intestinal ceca

Family Phasianidae – pheasants, Old World quail, grouse, turkey

- Tarsal spurs present in many species
- Tarsi and sometimes toes are feathered (in grouse only)

Family Odontophoridae – New World quail

- Often drab plumage

Order Gruiformes

Cranes, Rails and allies

Diverse group of ground-feeding and nesting birds with few unifying characters. Order with the highest percentage of recently extinct or currently endangered species.

- Sexes generally alike in plumage and size
- All species lack a crop
- Skeletal similarities

Family Ralidae – rails and coots

- Most are laterally compressed with short-rounded wings
- Coots have lobed toes
- Rails have elevated hind toe

Family Gruidae – cranes

- Long-legged, long-necked birds
- All species migratory
- Convoluted trachea (like trumpeters coil) which enhances vocalizations

Order Charadriiformes

Shorebirds, Gulls and Allies

Waterbirds or birds clearly derived from waterbirds. Groups within order bear little outward resemblance and thus are classified into four suborders.

Suborder Charadrii – sandpipers and plovers (shorebirds)

- Small to medium sized birds with slender probing bills
- Long-legged with webbed feet in a few species

Family Scolopacidae – woodcocks, snipes and sandpipers

Family Recurvirostridae – avocets and stilts

Family Charadriidae – plovers and lapwings

Suborder Lari – gulls

- Long winged, short-legged birds
- Webbed feet with hind toe reduced or lacking
- Stout somewhat hooked bill

Family Laridae – Gulls and terns

Suborder Alcae – auks, murre, and puffins

- Small to medium sized, stocky marine diving birds

- Webbed feet with no hind toe
- Legs often set far back on the body

Family Alcidae – Auks, murre and puffins

Order Columbiformes

Pigeons and Doves

A large group of plump birds with small heads and exhibit a range of plumage patterns and colors. The Dodo, a large flightless pigeon of the Mauritius Island belonged within this order.

- Short legs with small reticulate scales
- Fleshy cere at the base of the bill
- All possess a large crop, the lining of which secretes substance known as “pigeons milk”.
- Uropygial gland is small or absent
- Feathers have no aftershaft

Family Columbidae – pigeons and doves

Order Psittaciformes

Parrots

Well known group of small to medium sized birds.

- Stout hooked bills with the upper mandible moveable. Mandible is attached by a hinge like articulation to the skull
- Fleshy cere at the base of the bill
- Short legs with zygodactyls toes
- Scales on legs and toes are small and granular

Order Cuculiformes

Cuckoos, Roadrunner

Small to medium sized birds, often with a long tail. This order includes two families the Cuculidae (Cuckoos, Roadrunners and Anis) and the Opisthocomidae (the Hoatzin).

- Slender, usually long-tailed
- Bill is usually slender and slightly decurved
- Mostly insectivorous
- Zygodactyl feet

Order Strigiformes

Owls

This group mainly consists of nocturnal birds of prey. Some authorities consider owls and the Caprimulgiformes to be closely related.

- Rounded heads with large eyes
- Large facial disks of feathers
- Long hooked bill with cere
- Legs and toes often feathered

Family Tytonidae – Barn Owls (only 2 species found within the AOU Checklist Area)

Family Strigidae – Great Horned, Screech Owls etc.

Order Caprimulgiformes

Nightjars and Allies

Members of this order are often nocturnal or crepuscular and are known for feeding “on the wing”. The name Caprimulgiformes literally means “goat-suckers” or “goat-milkers”. This comes from the widespread belief that they would take milk from livestock at night.

- Small weak bill with a large mouth opening and surrounded by long bristles
- Soft cryptically patterned plumage
- Often small weak feet

Order Apodiformes

Swifts and Hummingbirds

Small to very small birds. Members of this order may be closely related to either the Caprimulgiformes or the Passeriformes. Although Swifts and Hummingbirds are usually placed in the same order their relationship remains uncertain. They share a unique albumen protein and have a similar specialized wing morphology which is the basis for their grouping.

- Tiny feet
- Short hummeri
- Long sturdy primaries and short secondaries

Family Apodidae – Swifts

- Small claw present on wing
- Dull colored or patterned in black and white
- Short bill and broad gape
- Aerial insectivores with body and wing shape designed to feed “on the wing”

Family Trochilidae – Hummingbirds

- Brilliantly iridescent and sexually dimorphic, males typically have bright colored throat patches or crests
- Small gape and long slender bill
- Long extensile tongue used for reaching nectar

Order Coraciiformes

Rollers, Kingfishers, Hornbills and Allies

Small to medium sized stock birds. This group have affinities with the Piciformes and the Passeriformes.

- Small Syndactyl feet
- Large head with a stout bill
- Most nest in cavities
- Similar leg musculature and structure of the palate are unifying characters within this group

Family Alcedinidae – Kingfishers and Kookaburra

- Frequently brilliantly colored
- Dagger-like bill

Order Piciformes

Woodpeckers and Allies

This order comprises eight families including the woodpeckers (Picidae), the Toucans (Ramphastidae) and the Honeyguides (Indicatoridae).

- Zygodactyl feet
- Unique arrangement of tendons in the toes
- Feathers with an aftershaft
- All species nest in cavities

Family Picidae – Woodpeckers

- Thick walled skull
- Long barbed tongue supported by an elongated hyoid
- Secretions of salivary gland make tongue “sticky”
- Rectrices stiffened to act as a prop
- Strong, sturdy, chisel-like bill

Order Passeriformes

Perching Birds

This is the largest order of birds comprising over half of the known bird species of the world. They represent a diverse and rich assemblage of mostly small land birds. Differences in the anatomy of the syrinx allow for the separation of this order into two suborders, the suboscines (Tyranni) and the oscines (Passeres).

- Four unwebbed toes with an enlarged flexible hallux
- Unique oil gland structure
- Distinct bony palate
- Unique forelimb and hindlimb musculature

Suborder Tyranni

Family Tyrannidae – Tyrant or New World Flycatchers

- Large head
- Broad-based flat bill often with rictal bristles
- Plumage generally dull olive above, yellowish or whitish below
- Many species have crest
- Considered a “perch and sally” forager

Suborder Passeres

Family Laniidae – Shrikes

Family Vireonidae – Vireos

Family Corvidae – Crows, Jays and Magpies

Family Alaudidae – Larks

Family Hirundinidae – Swallows

Family Paridae – Chickadees and Titmice

Family Sittidae – Nuthatches

Family Certhiidae – Creepers

Family Troglodytidae – Wrens

Family Cinclidae - Dippers

Family Regulidae – Kinglets

Family Sylviidae – Old World Warblers and Gnatcatchers

Family Turdidae – Thrushes

Family Mimidae – Mockingbirds and Thrashers

Family Sturnidae – Starlings

Family Bombycillidae – Waxwings

Family Parulidae – Wood Warblers

Family Thraupidae – Tanagers

Family Emberizidae – Sparrows, Buntings

Family Cardinalidae – Buntings, Grosbeaks, Cardinals

Family Icteridae – Blackbirds and Orioles

Family Fringillidae – Finches

Family Passeridae – Old World Sparrows