Neognathae - the traditionally recognized orders

Gaviiformes - loons
Podicipediformes - grebes
Sphenisciformes - penguins
Procerciformes – tubenoses: albatrosses, shearwaters (petrels), storm petrels, diving petrels
Pelecaniformes (polyphyletic) – totipalmate birds: pelicans, tropicbirds, gannets (boobies), darters (anhingas), cormorants, frigatebirds
Ciconiiformes (polyphyletic) – storks, herons, ibises, shoebill, hammerkop, flamingos
Anseriformes – waterfowl: screamers, magpie goose, whistling ducks, ducks (swans, geese)
Falconiformes (polyphyletic) - diurnal birds-of-prey: New World vultures, hawks (eagles, buzzards, kites), falcons, osprey, secretarybird
Galliformes – fowl: mound-builders, currasows, pheasants (turkeys, grouse, quail), guineafowl
Gruiformes (polyphyletic) – cranes, rails, bustards, seriemas, finfoots (sungrebe), sunbittern, kagu, mesites, button quail, plains wanderer
Charadriiformes (polyphyletic) – shorebirds: sandpipers, seedsnipe, painted snipe, jaçanas, coursers and pratincoles, jaegers, auks, gulls, thick-knees, plovers, stilts, oystercatchers, sheathbills, ibisbill, crab plover, sand grouse
Columbiformes – doves (pigeons), dodos
Psittaciformes – parrots
Cuculiformes (polyphyletic) – cuckoos, turacos, hoatzin
Strigiformes – owls, barn owls
Caprimulgiformes (para- or polyphyletic) – goatsuckers: frogmouths, potoos, nighthawks, owlet-nightjars, oilbirds
Apodiformes – crested swifts, swifts, hummingbirds
Coliiformes – mousebirds (colies)
Trogoniformes – trogons
Coraciiformes (probably polyphyletic) – kingfishers, toadies, motmots, bee-eaters, rollers, cuckoo-roller, ground rollers, hornbills, hoopoes, wood-hoopoes
Piciformes
  Pici – woodpeckers, toucans, barbets, honeyguides
  Galbulae – puffbirds, jacamars
Passeriformes – perching birds, ~ 60 families
  Suboscines - mostly Southern Hemisphere except flycatchers
  Oscines – songbirds, worldwide
Gaviiformes - loons 4 spp. Northern Hemisphere
piscivorous, foot-propelled divers, bilaterally compressed palmate feet,
No apteria, migratory, biparental care, nest onshore
Podicipediformes - grebes 18 spp. worldwide
mostly fresh water, foot-propelled divers, bilaterally compressed lobe-finned feet,
dense silky plumage, no apteria, omnivorous,
elaborate courtship displays, biparental care, nest of floating vegetation on lakes, carry young on back
Sphenisciformes - penguins 17 spp. Southern Hemisphere
flightless, marine, wing-propelled divers, flipper-like wing that does not fold, no apteria, piscivorous, walk upright or slide on belly, gregarious, mostly colonial in inaccessible locations, biparental care
Procellariiformes - tubenoses
pelagic, migratory, dynamic soarers, wings of high aspect ratio, wing and foot propelled divers, palmate feet, generally piscivorous, biparental care, colonial on inaccessible islands, smelly, good olfaction

Diomedeidae - albatrosses 14 spp.
mostly southern oceans
large, long-lived, delayed maturation
regurgitate fish oil to feed young
longest wingspan of any living bird
Procellariidae
Hydrobatidae
Pelecanoididae
Procellariiformes
Diomedeidae
Procellariidae - shearwaters and petrels 56 spp. all oceans, nest in burrows or rock crevices
Hydrobatidae
Pelecanoididae
Procellariiformes
Diomedeidae
Procellariidae
Hydrobatidae - storm petrels, 18 spp., small, dark, nest in burrows, “walk” on water
Pelecanoididae
Procellariiformes
Diomedeidae
Procellariidae
Hydrobatidae
Pelecanoididae - diving petrels 5 spp. southern oceans, black and white, stocky, wing-propelled divers
Pelecaniformes - “steganopodes” or totipalmate birds
aquatic, mostly piscivorous, no apertia, nostrils small or absent, rhamphotheca segmented,
gular pouch in most, furcula ankylosed or fused to sternum, intraorbital salt gland,
biparental care, mostly colonial on inaccessible islands

Phaethontidae - tropicbirds
Pelecanidae - pelicans
Fregatidae - frigatebirds
Sulidae - gannets and boobies
Anhingidae - anhingas or darters
Phalacrocoracidae - cormorants

(polyphyletic!)
“Pelecaniformes”

Phaethontidae - tropicbirds (Metaves) 3 spp.
pelagic, tropical, plunge-divers, silvery-white, tail plume
digit I fused to tarsometatarsus, can barely walk
nostrils present, nest solitarily in caves or cliffs
Pelecanidae
Fregatidae
Sulidae
Anhingidae
Phalacrocoracidae
“Pelecaniformes”

Phaethontidae
Pelecanidae - pelicans 6 spp. worldwide, large, long hooked bill, flexible mandible, enormous gular pouch
nest in trees, may fish cooperatively
Fregatidae
Sulidae
Anhingidae
Phalacrocoracidae
“Pelecaniformes”

Phaethontidae
Pelecanidae
Fregatidae - frigatebirds, 5 spp. tropical to subtropical seas worldwide
sexually dimorphic, male with inflatable gular pouch for display,
long pointed wings and deeply forked tail, deeply hooked bill, kleptoparasitic,
colonial, nest in trees, smelly, uropygial gland reduced
Sulidae
Anhingidae
Phalacrocoracidae
“Pelecaniformes”

Phaethontidae
Pelecanidae
Fregatidae
Sulidae - boobies and gannets, 7 spp. tropical to temperate oceans, pelagic, plunge-dive from great heights, colonial, nest on cliffs on ground or in trees
Anhingidae
Phalacrocoracidae
“Pelecaniformes”

Phaethontidae
Pelecanidae
Fregatidae
Sulidae
Anhingidae - darters, anhingas, snakebirds 2 spp.
tropical to temperate worldwide, fresh water,
foot-propelled divers, spear fish,
toggle in cervical vertebrae,
vane of rectrices and scapulars undulating,
typically roost with wings spread,
nest solitarily in trees
Phalacrocoracidae
“Pelecaniformes”

Phaethontidae
Pelecanidae
Fregatidae
Sulidae
Anhingidae

Phalacrocoracidae - cormorants and shags 29 spp. worldwide, generally similar to anhingas but with hooked bill, gregarious, foot-propelled divers, opportunistic and behaviorally flexible, nest in colonies on cliffs on ground or in trees on inaccessible islands, typically roost with wings spread
Ciconiiformes - long-legged wading birds with short tails and unwebbed feet

Ciconiidae - storks
Ardeidae - bitterns, herons and egrets
Threskiornithidae - ibises and spoonbills
Balaenicipitidae - shoebill
Scopidae - hammerkop
Phoenicopteridae - flamingos

(polyphyletic!)
Ciconiiformes

Ciconiidae - storks 17 spp. worldwide, large, gregarious at times, build huge nest, elaborate courtship

Ardeidae
Threskiornithidae
Balaenicipitidae
Scopidae
Phoenicopteridae

typical storks

wood storks
Ciconiiformes
Ciconiidae - more storks
Ciconiiformes
Ciconiidae - storks
Ardeidae - bitterns, herons and egrets
Threskiornithidae - ibises and spoonbills
Balaenicipitidae - shoebill
Scopidae - hammerkop
Phoenicopteridae - flamingos
Ciconiiformes
Ciconiidae
Ardeidae
Threskiornithidae - ibises and spoonbills 28 spp.
bill highly sensitive, decurved or spatulate
Balaenicipitidae
Scopidae
Phoenicopteridae

ibises

spoonbills
Ciconiiformes
Ciconiidae
Ardeidae
Threskiornithidae
Balaenicipitidae - shoebill 1 spp. East Africa
Scopidae
Phoenicopteridae
Ciconiiformes
Ciconiidae
Ardeidae
Threskiornithidae
Balaenicipitidae
Scopidae - hammerkop
1 spp Africa
builds enormous nest,
which it adorns with bones
Phoenicopteridae
Ciconiiformes
Ciconiidae
Ardeidae
Threskiornithidae
Balaenicipitidae
Scopidae
Phoenicopteridae - flamingos 4 spp
pantropical/subtropical
Filter feeders, piston-like tongue,
feed with head inverted.
plumage affected by diet, highly colonial
Ciconiiformes
Phoenicopteridae
Anseriformes - waterfowl

Anhimaidea - screamers

Anatidae - ducks, geese, swans

Dendrocygnidae - whistling ducks

Anseranatidae - magpie goose
Falconiformes - diurnal birds of prey
hooked bill, talons in most, capture prey with feet

Cathartidae - New World vultures
Falconidae - falcons and caracaras
Accipitridae - hawks, buzzards, eagles, kites
Sagittariidae - secretarybird
Pandionidae - osprey or fish hawk

(polyphyletic!)
Falconiformes

Cathartidae - condors and New World vultures
7 spp. Americas
macrosmatic, eat carion
no talons, bare head, carunkles
gregarious, form roosts,
roost with wings spread,
nest in hollow tree trunks near
ground or in caves
Falconiformes

Falconidae - falcons and caracaras
58 spp. worldwide, airfoil in nostril, notched bill, pointed wings, long tail often with “moustache” stripe, fast powered flight, glide infrequently, nest on cliffs or old hawk nest
Falconiformes
Accipitridae - subfamily Accipitrinae - accipiters
agile woodland predators of birds, mostly powered flight
short wings, long tail,
long thin tarsus, small bill
tail barred, breast of adult
barred, of juvenile striped
females larger
Falconiformes
Accipitridae -subfamily Buteoninae - hawks, buzzards, eagles
heavy body, terrestrial or aquatic predators, glide on thermals
broad wings, short tail, large bill, robust tarsus, some booted
females larger, many species polychromatic, one social,
nest on ground, trees, cliffs
Falconiformes
Accipitridae - subfamily Circinae - harriers
facial disc, hunt by sound, sexually dichromatic
long wings and tail, long tarsus,
glide low to ground in open country, prairies or marshes,
nest on ground
Falconiformes
Accipitridae - kites, 3 subfamilies
short tarsus, square or forked tail

Milvinae - true kites and ... snail kites

Perninae - swallow-tailed kites and honey buzzards

Elaninae - white-tailed kites
Falconiformes
Accipitridae - subfamily Circaetinae - serpent eagles
feed on reptiles and snakes, Old World
Heavily armored tarsus, broad wings, short tail
Falcoformes
Accipitridae - subfamily Aegypiinae - Old World vultures
eat carrion, massive, heavy body, bare head and neck, tool use
Falconiformes
Pandionidae - osprey, 1 sp. nearly worldwide
piscivorous, strongly curved bill and talons, spiny feet
Falconiformes
Sagittariidae - secretary bird, 1 sp. African savannahs
primarily eat snakes, plumes on nape, long legs, long tail
Galliformes - fowl

Numinidae - guineafowl

Phasianidae - pheasants, quail, grouse, turkeys

Megapodidae - moundbuilders

Cracidae - currasows and guans