# Crocodylidae – Crocodiles

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| Taxonomy/Ancestry | • subfamilies – crocodylinae, mekosuchinae (ex.), tomistominae<br>• **tomistominae** – false gharial; genetic evidence suggests they are closer to the gharials so they may be reclassified into the Gavialidae family<br>• 3 extant genera; 16-17 species<br>• Ancient Greek = "lizard of the Nile"<br>• separated from other crocodilians during Eocene epoch 55 million years ago<br>• closest living relatives are birds |
| Size | 5-20 ft (1.5-6.1 m)<br>weigh up to 2000 lb (900 kg)<br>juveniles 20 cm (7.9 in) |
| Color | |
| Anatomy | • diapsid skull<br>• dorsal scales backed by osteoderms from heavy armor plating on neck and back<br>• tail strongly muscled and flattened for swimming<br>• aquatic adaptations<br>– nostril/ear valves<br>– nictitating membrane to cover eye<br>– glottal valve in throat<br>– able to concentrate and excrete salt; salt glands on tongue filter salt to allow for survival in saltwater environments<br>• webbing on toes of the hind feet speeds swimming + gives advantage on dry land<br>• cerebral cortex w/ 4-chambered heart<br>• slit pupils w/ tapetum lucidum<br>• teeth are replaced throughout lifespan<br>• poikilothermic + ectothermic<br>• live 70-80 yrs<br>• distinguishing from alligators<br>– narrower + longer heads<br>– v-shaped snouts<br>– lower teeth protrude when mouth closed<br>– large 4th tooth visible<br>– salt glands = saltwater habitat<br>– sensory pits all over body<br>– jagged fringe on hind legs + feet<br>– more aggressive + dangerous |
| Dimorphism | males grow larger + faster |
| Behavior | • nocturnal hunter-scavengers<br>• often bask on shoreline<br>• aestivate during drought or arid conditions<br>• adult males bellow, growl, or hiss for dominance<br>• hatchlings grunt, squawk, communicate thru ultrasound |
| Habitat | Hill streams, large rivers, marshes, ponds, lakes, canals, reservoirs, saline habitats (i.e. mangrove creeks/saltpans)<br>Deep water = safety + drought resistance but some species live in places where water regularly dries (Crocodylus suchus) by living in deep tunnels or caves; drought can also force species to move inland |
| Distribution | tropical + subtropical regions in Africa, Asia, Americas, Australia |

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| Feeding Ecology | • opportunistic apex of the food chain<br>• young are agile + can jump to eat dragonflies, termites, spiders, other insects<br>• adolescents begin to feed on crabs, fish, frogs, reptiles, birds, + mammals<br>• scavenge for carrion<br>• teeth/jaws designed for seizing, tearing, + crushing rather than chewing<br>• some species have narrow jaws + sharp teeth to hunt fish<br>• Sensory pores in or around mouth to help detect prey<br>• Some species herd fish to shore w/ their bodies, often communally<br>• Control predators of commercially important fish + help maintain cleanliness as scavengers |
| Reproductive Biology | • males defend territories + compete for mates<br>• fixed breeding seasons where males mate w/ multiple females<br>• females lay eggs 40-70 days after mating; incubation period depends on nest temp (avg. 60-90 days)<br>– higher temperatures = male, lower temperatures = female<br>– **hole-diggers** – females dig in sand, earth, or gravel embankments above the hind-water line w/ clawed hind-limbs; eggs emerge lubricated + hatch with the wet season<br>– **mound-nesters** – females gather vegetation, soil, or compost and digs a hole on top to lay eggs; eggs are laid at the start of the wet season and hatch when the water is highest<br>• females, sometimes males, guard nest during incubation<br>• young call w/ quacking grunts when ready to emerge so parents release young and carry to water<br>• young are cared for in creche formation w/ parents guarding young for 90 days<br>• adults are conditioned to respond to young distress calls<br>• mortality rate = 90% due to predators |
| Conservation Status | populations are reduced due to overhunting (for skin) and habitat loss due to human industrialization. sustainable-use programs responsible for recovery and continued survival of species like Nile, saltwater, and New Guinea crocodiles. 3 CR; 2 EN; 3 VU; 1 CD; 1 DD. |