

Crocodylus acutus (American Crocodile)

Family: Crocodylidae (Crocodiles)

Order: Crocodylia (Crocodiles, Alligators and Caiman)

Class: Reptilia (Reptiles)



Fig. 1. American crocodile, *Crocodylus acutus*.

[https://en.wikipedia.org/wiki/American_crocodile, downloaded 14 February 2016]

TRAITS. *C. acutus* has a green-grey skin with black mottling (Fig. 1). The length of an adult is up to 3.8m, with males larger than the females. Adults have a hump located above the eyes (Fig. 2). The dorsal armour of the body is irregular and asymmetrical. The hatchlings have yellow-tan to grey colouring with dark marks running across their skin, which gradually disappear as they grow. *C. acutus* has a narrower, more pointed snout than that of an alligator. In addition, unlike alligators, the fourth tooth on the lower jaw is left exposed when the mouth is closed in *C. acutus* (Fig. 2).

DISTRIBUTION. This species is widely distributed along the coast of the northern neotropical regions. The species is found on the Atlantic and Pacific coasts of northern South America, Central America and southern Mexico. Its range also includes the southern end of Florida in the USA, and Cuba, Jamaica and Hispaniola (IUCN, 2012). There have been reports of *C. acutus* in Trinidad,

however, those sightings are thought to have arisen due to the accidental translocation of the animal outside of its normal range (IUCN, 2012). The species is thus not considered indigenous to Trinidad.

HABITAT AND ACTIVITY. The species inhabits coastal regions. It is generally found in freshwater or brackish water environments. Habitats include coastal lagoons, mangrove swamps and estuaries. The species is known to travel inland, in particular where there are large rivers. The species is also known to inhabit lakes entirely enclosed by land, man-made water bodies and offshore islands (IUCN, 2012). There are certain features of the microhabitat that affect the distribution of *C. acutus* in a particular area. Crocodiles prefer a habitat containing both areas of shallow and deep water. There must be land, for nesting and basking, and ideally semi-aquatic or aquatic vegetation, for cover. The size of the crocodile and population density would likely affect species distribution. In addition, crocodiles have been shown to avoid areas of human activity. The age of the crocodile is another factor determining distribution. If the environment into which a hatchling is born is unsuitable, it would disperse until a suitable habitat is found. However, studies have shown that once the environment is suitable, a hatchling may stay there for years (IUCN, 2012). Studies indicate that hatchling crocodiles prefer sheltered habitats, typically shallow-water with lots of vegetation for cover. Factors shown to cause dispersal of neonates (newborns) from their nesting site is wave exposure and hypersalinity of the aquatic environment. The vast majority of crocodile activity including that of hatchlings is nocturnal. In subadults and adults, the important factors in determining distribution were wave exposure, availability of food and nesting sites. The highest population densities were found in area with little wave exposure and a high availability to food (IUCN, 2012). The suitability of the habitat for nesting became important for females during the nesting season. In studies, spatial segregation has been observed between the juveniles, subadults and adults when there is a low population density and greater availability of habitats.

FOOD AND FEEDING. Newborn and juvenile crocodiles feed mainly on invertebrates and small fish. A common source of prey for the newborns and juveniles are aquatic insects and their larvae. The size of the invertebrate prey typically increases as the size of the crocodile increases. Common types of prey for the subadult and adults were fish, birds, turtles and mammals. However, the primary prey for adult crocodiles is fish (IUCN, 2012). Crocodiles have been observed to utilise both passive and active foraging methods. Foraging occurs at night. The feeding process is divided into ingestion, intraoral transport and swallowing. The head is rotated around the vertical axis and the prey captured by the teeth. The prey is positioned within the mouth via inertial bites. This is followed by a forceful bite and a crushing phase, in which the prey is killed in a series of crushing bites. Another technique that crocodiles use is to submerge their prey in the water, drowning it. The repositioning and crushing phases are then carried out (Cleuren and De Vree, 2000). In intraoral transport, the prey is positioned lengthwise and headfirst. The prey is then moved to the back of the oral cavity. It is then directed into the oesophagus by cycles of swallowing. The adult crocodile does not tend to have any natural predators.

POPULATION ECOLOGY. American crocodiles are mostly solitary. There is a tolerance of the presence of others of the same species once there is a sufficient food supply and habitat available. There are parts of its range in which it also coexists with other crocodylian species. The species has a lifespan in the wild of 60-70 years. The highest mortality rate occurs in the first few years of life (IUCN, 2012). This is mainly due to predation, as a result of their small size, and inability to

adapt to environmental conditions, such as low temperatures and salinity levels. The number of predators decreases significantly as the size of the crocodile increases.

REPRODUCTION. This species is polygynous. This means that the males often have multiple mating partners. The breeding season occurs between April and May. Males and females become sexually mature at 8-10 years (Fishman and MacKinnon, 2009). During courtship, males become very territorial and aggressive towards other males and display this by vocalisations, body posturing and outright demonstrations of aggression. Courtship and mating behaviours are induced by the warmer ambient temperatures which raise the temperature of the body to that required for hormone activity and gamete production. Typical courtship behaviours of the male are repeatedly performing a series of one to three head slaps, low frequency vocalisations, snout lifting and rubbing. Females show interest in the male by lifting the snout, circling the male and placing their head on the male. Courtship and copulation occur in the water, the latter in shallow water. The gestation period is 2-3 months. Eggs are laid in clutches ranging from 30-60 eggs in the nest. The nest is a hole in which the eggs covered by vegetation or dirt, sometimes forming a mound (IUCN, 2012). The female periodically visits the nest and after hatching has occurred, helps the hatchlings out of the nest. After this point, hatchlings are left on their own by the mother and no further parental care given.

BEHAVIOUR. Acts of roaring and slapping the water with the head and tail are used by this species to claim and defend its territory from others. Males, during the courtship period, repeatedly slap their head against the water, to attract females, and emit a low frequency vocalisation, when courting (Fishman and MacKinnon, 2009). Another form of communication is thrashing the tail, used to show aggression. *C. acutus* becomes active at night. When the ambient day temperature is high, gaping has been observed in the species to lower their body temperature, with the mouth open. As the night approaches, they often submerge themselves in the water. This is because the temperature of the water decreases more slowly and this behaviour again aids in maintaining a steady body temperature (Fishman and MacKinnon, 2009). Predators are generally only a danger to young crocodiles, which are small and thus vulnerable. Hatchlings release a distress call when in danger, which serves to get the attention of others. However, the main form of anti-predatory defence that the species has is the colouring of their hide, which camouflages well with their environment. Adult crocodiles typically exhibit aggression when threatened.

APPLIED ECOLOGY. *C. acutus* is listed as a vulnerable species on the IUCN red list. This means that it is considered threatened but not endangered. The major threats to this species are habitat loss and illegal hunting, particularly for their skin. Conservation actions include the establishment of breeding programmes and of protected areas for the species. There is also monitoring of populations.

REFERENCES

- Cleuren, J., and De Vree, F. 2000. Chapter 10: Feeding In Crocodylians. Ebook. 1st ed. Academic Press.
https://www.researchgate.net/profile/Frits_De_Vree/publication/279607935_Feeding_in_Crocodylians/link/s/55f6ecc808aec948c4630f93.pdf.
- Fishman, J. and MacKinnon, K. 2009. *Crocodylus acutus* (On-line), Animal Diversity Web.
http://animaldiversity.org/accounts/Crocodylus_acutus/
- IUCN. 2012. *Crocodylus acutus*. IUCN Red List of threatened species. <http://www.iucnredlist.org/details/5659/0>

Author: Saskia Renton

Posted online: 2016



Fig. 2. An adult American crocodile resting on a river bank in Costa Rica.

[<http://yourshot.nationalgeographic.com/photos/2307305/?source=gallery>, downloaded 14 March 2016]

For educational use only - copyright of images remains with original source