

Crocodylus intermedius (Orinoco Crocodile)

Family: Crocodylidae (Crocodyles)

Order: Crocodylia (Crocodyles, Alligators and Caiman)

Class: Reptilia (Reptiles)



Fig. 1. Orinoco crocodile, *Crocodylus intermedius*.

[<http://www.arkive.org/orinoco-crocodile/crocodylus-intermedius/image-G111798.html>, downloaded 29 March 2015]

TRAITS. This is one of the larger species of Crocodylia (Britton, 2009). The accepted maximum size is around 5.2 m for males with the largest female at 3.6 m (Merchán, 2012). Males average 4.2 m and 380 kg while females average 3.1 m in length and 225 kg in weight (Aquatic Community, 2015). Sexual dimorphism is not great in this species (Wikipedia, 2015a). A defining feature is the relatively narrow V-shaped snout, which the species name *intermedius* refers to; it is intermediate between a true crocodile and the Gavialidae (Lee, 2015), which are species with much thinner snouts. They have dorsal armour to also distinguish them from the similar American crocodile, *Crocodylus acutus* (Lee, 2015). There are three colour forms; ‘mariposo’ which is mostly greyish green with black patches; ‘amarillo’ which is light tan with dark areas (Fig. 1); and ‘negro’ which is almost totally dark grey (Britton, 2009).

DISTRIBUTION. The Orinoco crocodile is only found in the Orinoco River basin and the freshwater rivers of the Llanos savannah in Colombia and Venezuela (Britton, 2009) (Fig. 2). They have been found in Trinidad, but they are considered waifs to the island (Lee, 2015); there is no established population in Trinidad (Thorbjarnarson and Franz, 1987).

HABITAT AND ACTIVITY. Found only in the Orinoco River in the Llanos savannah, the Orinoco crocodile is limited to this habitat (Britton, 2009). The Orinoco River basin and the rivers that flow into the Llanos savannah are tropical, freshwater habitats. The Orinoco River is the main river that flows into the Llanos savannah and during the rainy season, July to December, the savannah is flooded and becomes a wetland (Wikipedia, 2015b), ideal for this animal. Although they are freshwater crocodiles, they show tolerance for saltwater (Lee, 2015). The ones sighted on Trinidad would be the result of flooding or storms that would have washed them into the ocean and then on to the island. This crocodile like many reptiles, are cold blooded and they need to bask in the sun to maintain an optimum body temperature (Merchán, 2012). They can bask on the beaches of the rivers or partially submerged with only their upper body on the bank. Peak basking hours are in the morning between 9:00 and 12:00 and in the afternoon between 16:00 and 17:00 in the dry season, January to June, and more variable during the rainy season (Merchán, 2012). The Orinoco crocodile is opportunistic in its feeding and would feed at any time, most observations of it feeding have been made during the day (Merchán, 2012).

FOOD AND FEEDING. Juveniles feed on small fish and invertebrates (Britton, 2009). When it grows into adulthood, this animal is opportunistic and would feed on almost any animal, including members of its own species (Merchán, 2012). Since it is an apex predator, any animal would be considered food, but most of its diet are fish and turtles, and often capybara. Smaller fish and mammals such as agouti are swallowed whole, while larger mammals particularly the capybara are dragged down into the water and drowned before feeding (Merchán, 2012). There is little information published on hunting techniques of the Orinoco crocodile, with the available information based on specific, individual observations. One hunting technique to catch small fish called “sardinas”, is to wait as the fish feed on organisms on its back, then suddenly use its tail to force the fish towards its mouth (Merchán, 2012).

POPULATION ECOLOGY. Due to its dwindling numbers and limited distribution, *C. intermedius* is often solitary. Its wild population is estimated to be between 250 and 1500 adults (Britton, 2009), they are therefore considered very rare. In past dry seasons, they were often found in dense concentrations, which made hunting them easy (Ross, 1998) but now it would be difficult to even find one. In the wild, most do not live past 50 years but in captivity they can live up to 70 years (Merchán, 2012). In the wild if males do meet, they are usually not aggressive but during the mating season, which occurs between October and December, they can claim a territory of around 2 km of river (Merchán, 2012).

REPRODUCTION. Males reach sexual maturity when they are 300cm in length and at an age of 9-12 years. In females the minimum length would be 240 cm and at an age of 7-10 years (Merchán, 2012). Males or females can initiate courtship, they come in contact by rubbing their noses and jaws, placing the female’s head on the male’s muzzle, and producing sub-audible vibrations and bubbles. They perform intercourse when the male slides over the side of the female, until the male is on top, while they submerge and re-emerge (Merchán, 2012). The nesting season occurs in the dry season when more of the beaches of the rivers emerge. They are a hole-nesting species and lay anywhere between 40 and 70 eggs (Ross, 1998) in a nest which the females excavated several days before at night (Merchán, 2012). These nests are located near riparian vegetation which is advantageous to the young hatchlings. Incubation in the wild usually lasts 74-93 days (Merchán, 2012), and hatching occurs between late March and mid-May which is the end of the dry season and the onset of the rainy season (Merchán, 2012). The hatchlings are miniature versions of their

parents (Fig. 3). While still in the egg, they emit a vocal message which signals the mother to help excavate the nest for their arrival. Females show variable levels of parental care, some would charge from the water towards the potential danger to the nest, others may only guard the nest through part of the incubation (Merchán, 2012).

BEHAVIOUR. Juvenile behaviour: Hatchlings stay close to their mother, sometimes basking on the mother's head or back (Merchán, 2012). They stay with their mother for one to three years before becoming independent (Britton, 2009), during this time and even into sub-adulthood, they feed on insects, small fish and any animal small enough to be preyed on.

Anti-predator behaviour: As an apex predator in the Orinoco River basin, they do not have any natural predators. Man is the only threat to the adults (Merchán, 2012). When threatened, they would snarl and growl, they can also charge out of the water usually with their mouths open (Fig. 4) (BBC Earth, 2014). As juveniles they make easy prey for snakes, large fish, black caimans (BBC Earth, 2014), and other Orinoco crocodiles (Merchán, 2012). Juveniles caught by fishermen are also sold (Ross, 1998).

Communication: They communicate through physical displays, bubbling, emitting sub-audible vibrations. Due to its solitary nature, this animal would only commonly meet during the mating season when these modes of communication are used during courtship. Hatchlings also communicate by emitting a vocal message to the mother from inside the egg to signal their hatching (Merchán, 2012).

APPLIED ECOLOGY. The IUCN lists the Orinoco crocodile as critically endangered (IUCN 2015). There is an estimated wild population of only 250 to 1500 (Britton, 2009). The reason for such a low population was the exploitation of the species during the 1930s and 1960s for its hide (Ross, 1998). The Orinoco crocodile is now protected by law in both Colombia and Venezuela (Ross, 1998). However these have had minimal effect on hunting, especially in Colombia (Ross, 1998). In Venezuela, the species is protected under Resolucion No. 95, 1979 and many reside in the Cinaruco-Capanapro National Park (Ross, 1998). Efforts such ex-situ egg incubation (of eggs removed from natural nests) are used to reintroduce and restock the population (Fig. 5). The threats facing the species include a combination of factors including limited distribution, habitat destruction, egg collecting, intentional and incidental killing, and the capturing of juveniles for sale (Ross, 1998).

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Fig. 2. Orinoco crocodile geographic distribution.

[http://crocodilian.com/cnhc/cst_cint_dh_map.htm , downloaded 29 March 2015]



Fig. 3. Orinoco crocodile hatchlings.

[<http://www.arkive.org/orinoco-crocodile/crocodylus-intermedius/image-G115415.html>, downloaded 30 March 2015]

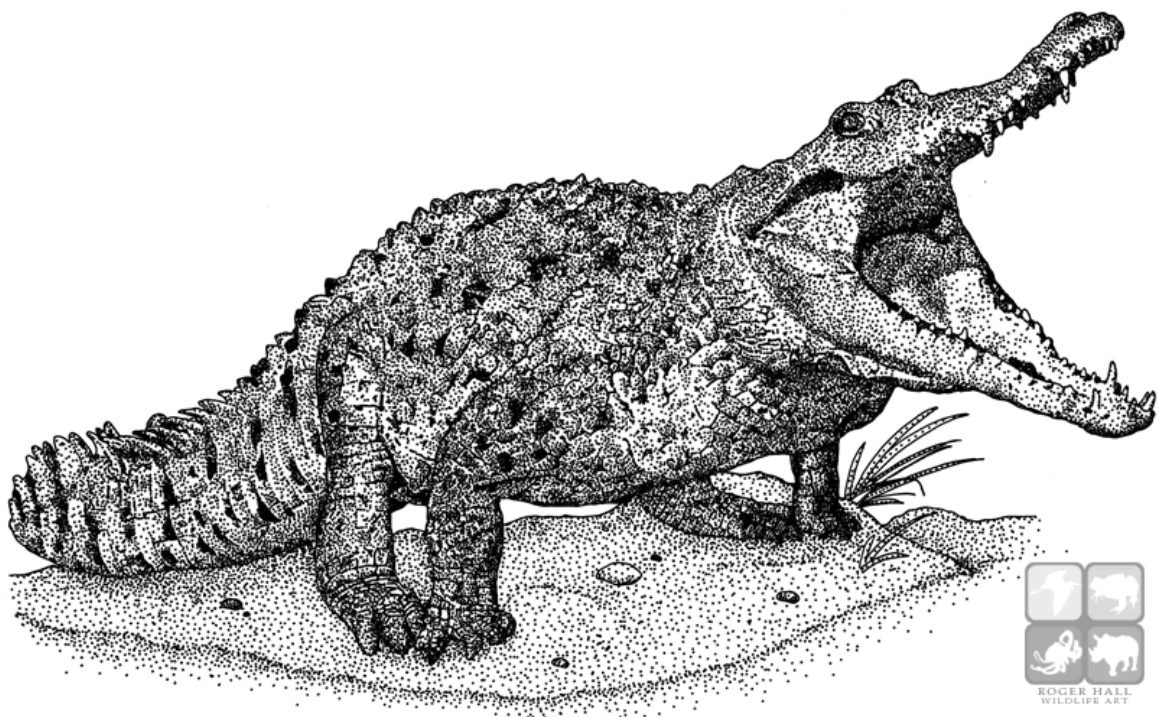


Fig. 4. Illustration of an aggressive Orinoco crocodile.

[http://www.inkart.net/illustration/wildlife/orinoco_crocodile/, downloaded 29 March 2015]



Fig. 5. Artificial egg incubation.

[http://www.tortoisereserve.org/researchandconservation/Croc_Article_Body2.html, downloaded 30 March 2015]

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