

Slender-snouted Crocodile

Crocodylus cataphractus

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Common Names: Slender-snouted crocodile, African gharial (English), Faux-gavial africaine, crocodile au long museau (French), Panzerkrokodil (German).

Important Synonyms: *Mecistops cataphractus* (see below)

Range: Angola, Benin, Cameroon, Central African Republic, Cote d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Gabon, The Gambia (critical), Ghana, Guinea, Liberia, Nigeria, Republic of Congo, Senegal (critical), Sierra Leone, Tanzania. Likely extirpated in Burkina Faso, Chad, Guinea-Bissau, Togo and Zambia.

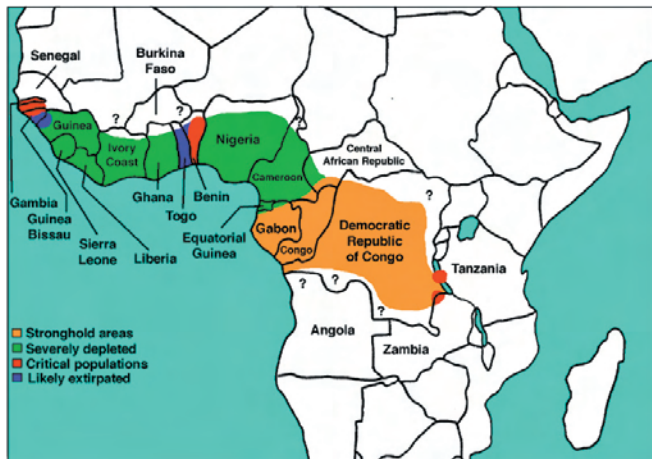


Figure 1. Distribution of *Crocodylus cataphractus*.

Conservation Overview

CITES: Appendix I

2009 IUCN Red List: DD (Data Deficient; see Priority Projects; IUCN 2009) (last assessed in 1996).

CSG Action Plan:

Availability of survey data: Extremely Poor
Need for wild population recovery: High
Potential for sustainable management: Moderate to Low

Principal threats: Habitat loss, illegal hunting, and conflict with mostly small-scale subsistence fisheries

General

The Slender-snouted crocodile was placed in its own monotypic genus *Mecistops* by McAleiley *et al.* (2006). This change in taxonomy has not yet been formally accepted and *Crocodylus cataphractus* remains in use within some important contexts, such as CITES and the IUCN. Because of this, the original name *Crocodylus cataphractus* will continue to be used in this Action Plan until a taxonomic change is adopted at the international level.

Ecology and Natural History

The Slender-snouted crocodile is a narrow-snouted, medium-sized species reaching a maximum length of up to 4 m (Brazaitis 1973), though individuals over 3-3.5 m are now rare.

Historically, *C. cataphractus* was widely distributed throughout West and Central Africa, but recent surveys suggest that its distribution has changed as a result of local extirpations (see below). The most comprehensive work to date on wild *C. cataphractus* remains that of Waitkuwait (1989), and while relatively little is known about the ecology of the species, it appears to prefer forested rivers and other densely vegetated bodies of water (i.e. reservoirs and freshwater lagoons), but has also been found in sparsely vegetated, gallery habitats within savannah woodland (Waitkuwait 1989; Shirley *et al.* 2009).

At the start of the annual wet season females lay an average of 16 eggs in mound nests composed of organic matter at the fringe of aquatic habitats. Nests are normally constructed along rivers in undisturbed forests, but nests have also been encountered in cacao plantations in Cote d'Ivoire (Shirley 2007), suggesting a higher tolerance to disturbance than previously thought. The nesting season broadly overlaps that of the sympatric Dwarf crocodile (*Osteolaemus* sp.), though there appears to be partitioning of nest habitat between the two species, and *C. cataphractus* has a more condensed nesting



Figure 2. *Crocodylus cataphractus*. Photograph: John Thorbjarnarson

season (Waitkuwait 1989). Egg size is very large relative to female size (Waitkuwait 1985, 1989; Thorbjarnarson 1996).

Like most crocodilians, young animals feed primarily on small fish and a variety of invertebrates; adult animals are primarily piscivorous although they have been observed to consume mammals (Pauwels *et al.* 2003, 2007). While there is nothing specific documented in the literature, *C. cataphractus* is known to be a very vocal species perhaps indicating a much more structured social hierarchy or breeding ethology than is presently known. An alternative hypothesis for their highly vocal behavior has been proposed where adult *C. cataphractus* may live solitary lifestyles and their vocalizations are necessary for territory demarcation and finding mates. Neither of these hypotheses has yet to be tested thoroughly.

Conservation and Status

Surveys prior to 1998 painted a grim picture for *C. cataphractus*, particularly in West Africa and the extreme south and east of its distribution (eg Angola, Zambia, Tanzania). The species was recorded as severely depleted in Liberia (Kofron 1992) and Nigeria (Dore 1991, 1996; Akani *et al.* 1998a, b) and likely extinct in The Gambia, Senegal, Guinea-Bissau (Jones 1991), Togo (Behra 1993), Chad and Angola (Ross 1998). Simbotwe (1993) suggested that Zambia was probably the southern range limit for this species and that changing habitat conditions in the Luapula River, Lake

Mweru and Lake Tanganyika may mean *C. cataphractus* is now extinct in Zambia. However, other researchers suggested that *C. cataphractus* may have been common in Lake Mweru (Taylor 1998) and, while sparse, could still be found in the Luapula Basin (Thomas 1998) as late as 1991. There are still occasional reports of sightings from Tanzania. Disruption of habitat through removal of riverside vegetation and direct harvest for meat and skins were the major threats in this eastern limit of its range. In contrast, populations in Cote d'Ivoire (Waitkuwait 1989), Gabon, Republic of Congo and Central African Republic (Behra 1987, 1994) were thought to be somewhat depleted but not imminently threatened.

Since 1998, very little additional survey data has become available for *C. cataphractus*, and much of what is available constitutes incidental observations from general biodiversity reports focused on other taxa. For example, the Malagarasi-Muyovozi Wetland Complex in Tanzania was designated as a Ramsar Wetland in 2000 partially on the basis that *C. cataphractus* is still present. Survey data from Nigeria (Luiselli *et al.* 2000), Benin (Kpera 2003), Liberia (G. Miller, unpublished data), Ghana and Cote d'Ivoire (Shirley *et al.* 2009), and The Gambia and Senegal (Matthew Shirley, unpublished data) suggest that *C. cataphractus* is all but extinct in the Upper Guinea ecoregion (ie west of the Cross River, Nigeria). However, recent reports from Central Africa, including Gabon and Republic of Congo (Thorbjarnarson and Eaton 2004; Eaton and Barr 2005; Pauwels 2006), noted a small number of localized, robust populations in the Ivindo and Ogoué River basins in Gabon and the Lac Tele

region of Republic of Congo. While no surveys exist for the Democratic Republic of Congo, it is suspected that the vast area of uninhabited wilderness may support significant populations of this species as well.

Population decline in the past has been attributed to the commercial skin hunting associated with the decline of *C. niloticus* populations throughout their sympatric ranges in this region, though available evidence suggests that *C. cataphractus* was not directly targeted until the economic extinction of the Nile crocodile, as well as subsistence hunting and habitat destruction (Abercrombie 1978; Pooley 1982). Currently, hunting for skins in Central and West Africa has abated, largely as the result of declines in crocodile populations and the availability of skins, but to a lesser extent from restrictions on international trade established by CITES (Thorbjarnarson 1999). Modern anthropogenic pressures impeding the recovery of *C. cataphractus* populations include small-scale, subsistence fisheries (resulting in a reduced prey base and incidental mortality in fishing nets) and habitat modification (where large tracts of forest are cleared for cacao and rubber plantations or settlements), as well as on-going limited hunting for the bushmeat markets.

In most countries the management of *C. cataphractus* is based on the legal protection of wild populations; however this legislation exists without enforcement even in many protected areas. There are no “sustainable utilization” programs based on *C. cataphractus* in West and Central Africa. Regulated hunting was formerly reported as legal in Chad, Sierra Leone, Togo, Cameroon and Democratic Republic of Congo (Ross 1998); however, *C. cataphractus* is by all accounts now extinct in at least two of these countries (Chad and Togo; possibly Sierra Leone) and the other three countries likely experience heavy illegal harvesting despite legal mandates for protection. Currently, no countries hold a CITES export quota for this species, though the Republic of Congo renewed its annual CITES export quota for the years 1990 to 1992, but the permit has since lapsed (Ross 1998).

There is no known ranching or farming operations for *C. cataphractus* for the purposes of utilization or conservation. Captive breeding with the intent of reintroduction was initiated at the Abidjan Zoo (Cote d'Ivoire) by Wolf Ekkehard Waitkuwait (Waitkuwait and Shwedick 2002), though this effort was largely defunct by the late 1990s, and while the zoo still harbors a substantial population of adult animals, it is currently out of operation (Shirley 2007). Another facility, the St. Lucia Wetland Crocodile Centre in South Africa, has successfully bred *C. cataphractus* in large numbers, perhaps providing a model formula for future efforts elsewhere. Additional programs for *ex-situ* conservation in The Gambia and Ghana are currently in the initial phases of development.

The Slender-snouted crocodile is one of the few crocodilians where the available information, although sparse, suggests a seriously deteriorating status, and it is highly recommend that its IUCN Red List status be re-evaluated (Shirley *et al.* 2009). There are, however, vast areas of potential habitat through the drainages of the Congo (DRC and RoC) and Ogooué (Gabon)

rivers, as well as numerous other large river drainages in the region that may contain as yet undiscovered populations. Logistic difficulties and political instability make surveys in this region problematic, and improving the state of available data for this species is an urgent priority. A new program being initiated by the Département de Faune et Chasse in Gabon looking to expand the protected areas network of that country by 1 million ha has targeted *C. cataphractus* for reserve development. Surveys as part of this effort will better establish the population status of this species in Gabon and may provide the first ever protected areas for this species.

Priority Projects

High Priority

1. **Reassessment of IUCN Red Listing:** Currently listed as Data Deficient, a preliminary analysis based on the limited available information suggests the species may merit listing as Endangered based on suspected functional extirpation from West Africa and other marginal habitats, and Critically Endangered regionally in West Africa.
2. **Assessment of population status throughout West and Central Africa:** While our level of knowledge of the distribution and status of *C. cataphractus* has increased considerably since 1998, there is still little known about the species' status in the wild, and surveys are needed throughout the species' range. Priority countries/areas include Liberia, Cote d'Ivoire (all protected areas), Ghana (Western Region), Nigeria (Cross and Niger River drainages), Gabon, Republic of Congo, Central African Republic (Sangha-Dja complex), and Democratic Republic of Congo. Surveys should be conducted in collaboration with relevant management authorities to promote capacity-building and development of management plans.
3. **Studies on ecology and population dynamics:** *Crocodylus cataphractus* is, along with *Tomistoma schlegelii*, the least known of crocodilians in terms of basic ecology, and this lack of information is a barrier to the establishment of biologically sound management programs. Studies of population dynamics, movement and habitat use should be prioritized in order to establish baseline data to guide the creation of protected areas and management plans for the species in the wild. Additionally, evaluation of habitat suitability with specific reference to freshwater fisheries will capitalize on the highly aquatic, and almost exclusively piscivorous, habits of *C. cataphractus* to facilitate its utility as an umbrella and flagship species around which protected areas can provide a haven from small-scale, local, subsistence fisheries and in turn increase the sustainability of the fishery resource for local fishing communities.
4. **Draft management plans to implement real-time protection:** Despite receiving complete legal protection through the majority of its range, no management plans currently exist for *C. cataphractus*. While the paucity

of available data no doubt make drafting management plans difficult, if these can be established on a national basis throughout the range of this species it will at least set a precedent for developing funds for research and conservation action programs, and perhaps pressure national wildlife authorities to keep the species in their purview.

Moderate Priority

5. Studies on intraspecific systematics and population genetics: Should captive breeding for reintroduction ever become a priority objective for this species it will be critical to determine the genetic isolation status of populations throughout the range to ensure that appropriate founder stock are utilized. Additionally, current reviews of the systematic status of the sympatrically distributed *Crocodylus niloticus* and *Osteolaemus tetraspis* have revealed the presence of cryptic species complexes where additional taxa may be present within each of these species. The same biogeographic forces acting on these species likely act on *C. cataphractus* and evaluation of the systematics of this species is warranted.

Low Priority

6. Studies on interspecific relationships: Research that elucidates the dynamics between this species and *C. niloticus* should be conducted to determine if the latter is a limiting factor in the distribution of *C. cataphractus*.

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Figure 3. Captive *C. cataphractus* at a crocodile farm/park in Lusaka, Zambia. Photograph: Christine Lippai.

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