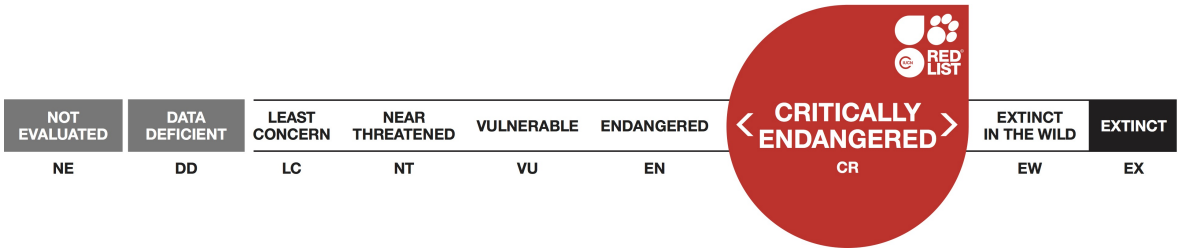
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Mecistops cataphractus, Slender-snouted Crocodile

Assessment by: Shirley, M.H.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Reptilia	Crocodylia	Crocodylidae

Taxon Name: *Mecistops cataphractus* (Cuvier, 1825)

Synonym(s):

- *Crocodylus cataphractus* Cuvier, 1825
- *Mecistops bennettii* Gray, 1844
- *Mecistops leptorhynchus* Bennett, 1835

Common Name(s):

- English: Slender-snouted Crocodile, African Slender-snouted Crocodile
- French: Crocodile à museau allongé d'Afrique, Crocodile au long museau, Faux gavial Africaine
- Spanish: Cocodrilo Hociquifino Africano

Taxonomic Source(s):

Oaks, J. 2011. A time-calibrated species tree of Crocodylia reveals a recent radiation of the true crocodiles. *Evolution* 65: 3285-3297.

Taxonomic Notes:

Recent DNA and morphological studies suggest that this species belongs in its own monotypic genus, *Mecistops* (McAliley *et al*. 2006). This finding has been supported by all subsequent phylogenetic studies (e.g., Hekkala *et al*. 2011, Meredith 2011, Oaks 2011,Shirley *et al*. 2013) and *Mecistop* has gained wide use and acceptance in the literature and is hence used here.

A recent study (Shirley 2013, Shirley *et al*. 2013) has found significant molecular and morphological support for two divergent taxa in this genus - one distributed entirely in West Africa and the other in Central Africa. Formal taxonomic revisions and recognition of these two unique taxa are expected soon.

Assessment Information

Red List Category & Criteria: Critically Endangered A2acde+3cde+4acde ver 3.1

Year Published: 2014

Date Assessed: May 30, 2013

Justification:

The Slender-snouted Crocodile was last assessed as Data Deficient on the 1996 IUCN Red List. Since that time, particularly in the last six years, sufficient information has been collected to review its status. As such, an updated assessment was the highest priority recommendation for this species in the 2010 IUCN SSC Crocodile Specialist Group Action Plan update (Shirley 2010).

The two regions (West and Central Africa) are completely isolated from each other underpinning the impending species split in this taxon. Central African habitats and populations do not seem to be

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fragmented despite some evidence for genetic isolation between major basins (Shirley 2013). In contrast, West African populations are highly fragmented due to a combination of severely fragmented forest habitats and the geology of the region and species-specific habitat use. For example, most major forested waterways throughout West Africa, especially in the Upper Guinea forest region, run north to south and show virtually no longitudinal communication except through the ocean which does not seem to be frequented by the Slender-snouted Crocodile.

The Slender-snouted Crocodile, particularly throughout West Africa, is incredibly shy and susceptible to human disturbance. As human populations throughout its distribution grow and occupy what were previously gallery forests and other forested wetland habitats this species is pushed out or hunted to local extinctions. In West Africa the extent of occurrence in the north of this species range has already declined drastically due to aridification and human settlement, it is projected that this species will likely be lost from the non-true forested areas (i.e., the wooded, gallery savanna areas in the north) of its West African range in the next 10–20 years if it currently still exists in these northern extremes. Additionally, surveys prior to 2005 already suggested that the Slender-snouted Crocodile may no longer occur in the Lake Mweru basin or throughout Lake Tanganyika. While very little historic survey data exists, that which does and can be compared to contemporary surveys (e.g., the Ogooué River and N'dougou Lagoon in Gabon – Behra 1987 and M. Shirley unpub. data, Côte d'Ivoire - Waitkuwait 1989, Shirley *et al*. 2009) show that populations are declining.

Long-running bushmeat studies in Gabon, Congo, and Democratic Republic of the Congo continually find adult Slender-snouted Crocodiles for sale in markets. In contrast, this species has not been detected in the bushmeat trade in West Africa for some time indicating it is not reliably available as a target species. Based on the current, estimated subpopulation declines and local extinctions throughout the Sahel, Lake Mweru, and Lake Tanganyika we anticipate these subpopulations to become extinct within one generation into the future. Additionally, while the Sene-Gambia subpopulation is currently well protected, any loss of will to continually protect the chimpanzee colonies will result in near instantaneous extinction of this subpopulation. Continuing decline in locationsThis species is significantly reduced in at least the Sahel zone and Lake Tanganyika and Mweru locations with anticipated complete extirpation in the near future. There is also continuing decline in the extent and quality of the habitat based on deforestation and forest degradation throughout this species range, especially in West Africa (Megevand 2013), which has resulted in sedimentation effecting prey species populations, as well as human settlement/encroachment and reduction in breeding habitat.

Based on known, extensive trade in crocodile skins and other products, as well as habitat alteration and human encroachment, since 1938 (three generations is 75 years), the Slender-snouted Crocodile meets the criteria for listing as Critically Endangered as it is inferred to have undergone a past population reduction of between 50-80% based on direct observation, loss of range and suitable habitat, direct exploitation and the impacts of introduced species (criterion A2acde). The reduction is closer to 50–60% for Central Africa and 70–90% for West Africa. There is no reason to expect the decline to slow, hence future reduction over the next 75 years is projected to be between 60–90% based on ongoing loss of range and habitat, exploitation and competition with other introduced crocodilian species (criterion A3cde). The future reduction is hard to quantify mostly due to extremely different threats and levels of active protection between West and Central Africa. On a global basis, however, this species is expected to lose 100% of mature individuals outside of protected areas and 60–90% inside of protected areas where fishing, hunting, and forest clearing remain issues. In West Africa subpopulations have already

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been reduced to the point where even small perturbations will result in localized extinctions and the state of protected area management (where most individuals are confined today) suggests that these reductions will continue into the future. For example, this species continues to exist in The Gambia solely due to the level of protection afforded the artificial chimpanzee colonies on the islands on which it breeds in the interior of the River Gambia National Park - it does not occur up or downstream of these core islands (M. Shirley unpub. data). Additionally, with increasing habitat conversion the West African Crocodile (*Crocodylus suchus*) will be able to occupy previously exclusive *M. cataphractus* habitat and out compete the latter species. Without intervention, in Central Africa the only remaining subpopulations at the end of three generations will be restricted to well-managed protected areas and remote areas of Gabon. In West Africa this species is anticipated to go completely extinct without significant revisions in protected area policy and management, as well as assisted efforts such as reintroductions.

Looking at a combination of the information on past and future reductions (i.e. subcriterion A4acde) it is estimated that population reduction would be between 50–80%, once again resulting in a Critically Endangered listing. This inference (for the past) and projection (for the future) is based on the period 1960-2035 and incorporates the extensive, post WWII skin trading that was happening throughout West and Central Africa and did not slow down until the mid-1980s. The majority of this trade was in Nile Crocodile products, but in certain parts of this range (i.e., Gabon, Côte d'Ivoire, Liberia, and the Congos) the Slender-snouted Crocodile was actually the primary traded species or heavily incidentally impacted. It is suspected that the slowdown of this trade in the 1980s was largely due to the significant reduction in crocodile populations (i.e., reduced efficiency and hunting output) and only partially due to international (e.g., CITES) and national legislative policies. From 2013 to 2035 it is estimated that continued habitat loss, habitat conversion for agriculture (e.g., palm oil and rubber developments throughout Gabon, the Democratic Republic of the Congo, Cote d'Ivoire, Liberia and Sierra Leone), and increasing human pressures on natural resources (notably freshwater fisheries) will greatly increase this species extinction risk.

Previously Published Red List Assessments

1996 – Data Deficient (DD)

1994 – Vulnerable (V)

1990 – Indeterminate (I)

1988 – Indeterminate (I)

1986 – Indeterminate (I)

1982 – Indeterminate (I)

Geographic Range

Range Description:

As the species is currently recognized it is distributed throughout western tropical Africa from Lake Tanganyika and Lake Mweru in the east/southeast to the Gambia River in the west (Shirley 2010). It occurs from sea level up to 600 m.

Taxonomic revisions in progress will recognize two divergent taxa within this species, one occurring from Lakes Tanganyika and Mweru to the coast of Gabon and up into southern/eastern Cameroon while the second occurs from Nigeria to the Gambia River. This species is distributed in the following countries:

West Africa - Côte d'Ivoire, Gambia, Ghana, Guinea, Liberia, Nigeria, Senegal, Sierra Leone. It is likely extirpated from Benin, Burkina Faso, Guinea-Bissau, Mali, and Togo if it ever occurred there.
Central Africa - Cameroon, Central African Republic, The Democratic Republic of the Congo, Gabon, Republic of Congo, Tanzania. It is likely extirpated from Angola, Chad, Equatorial Guinea, and Zambia.

Country Occurrence:

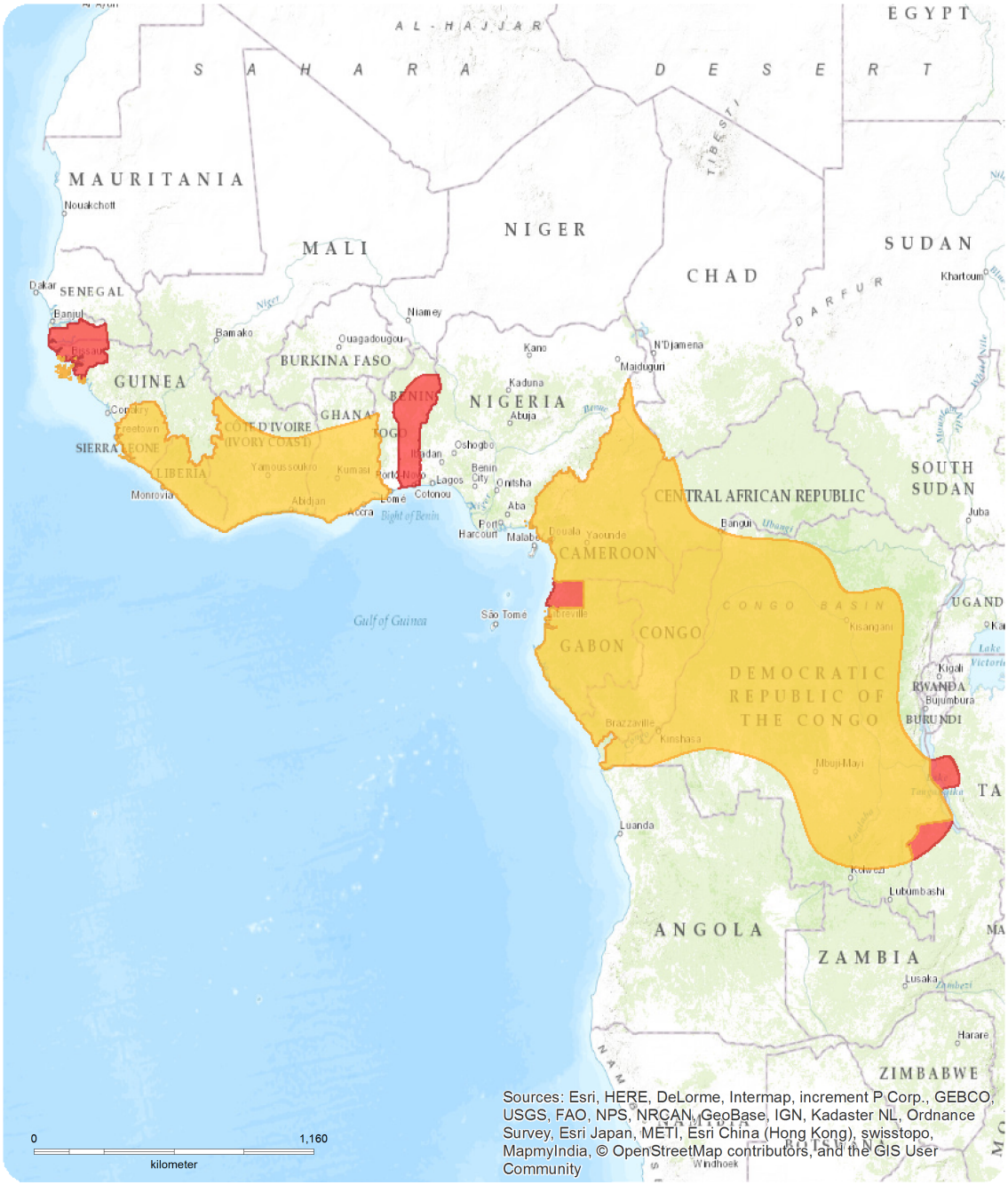
Native: Cameroon; Central African Republic; Congo; Congo, The Democratic Republic of the; Côte d'Ivoire; Gabon; Gambia; Ghana; Liberia; Sierra Leone

Possibly extinct: Benin; Burkina Faso; Equatorial Guinea; Guinea-Bissau; Mali; Senegal; Tanzania, United Republic of; Zambia

Regionally extinct: Chad

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Distribution Map



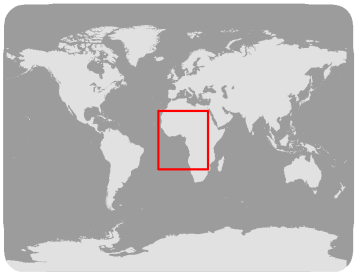
Mecistops cataphractus

NE DD LC NT VU EN **CR** CRITICALLY ENDANGERED EW EX

Range

- Extant (resident)
- Possibly Extinct

Compiled by:
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The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

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Population

Surveys prior to 1998 painted a grim picture for *C. cataphractus*, particularly in West Africa and the extreme south and east of its distribution (e.g., 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 Gambia, Senegal, Guinea-Bissau (Jones 1991), Togo (Behra 1993), Chad and Angola (Ross 1998). It is possibly extinct in Equatorial Guinea where there is no clear evidence of the species' presence since the 1980s (Lasso *et al*. 2002). 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 (see below). 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 Côte 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, much additional survey data has become available for *C. cataphractus*, though with the exception of a few key countries much of what is available is composed of 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* was still present. Survey data from Nigeria (Luiselli *et al*. 2000), Benin (Kpera 2003), Liberia (G. Miller, unpublished data), Ghana and Côte d'Ivoire (Shirley *et al*. 2009), and Gambia and Senegal (M. Shirley unpub. data) suggest that *C. cataphractus* is all but extinct in West Africa (i.e., west of the Cross River, Nigeria) with fewer than 50 individuals and five adults detected in all these surveys. However, recent reports from Central Africa have found a number of localized, robust populations in the Ogooue River and coastal basins in Gabon and the Lac Tele region of Republic of Congo (Thorbjarnarson and Eaton 2004, Eaton and Barr 2005, Pauwels 2006, Shirley unpub. data). Surveys in the Democratic Republic of the Congo in 2011 found small populations in the Ituri River and upper Lomami River regions and it is suspected that the vast area of uninhabited wilderness within the arc of the Congo River may support significant populations of this species (Shirley 2010; M. Shirley unpub. data).

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

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, *M. cataphractus* was widely distributed throughout West and Central Africa, but recent surveys suggest that its distribution has changed as a result of local extirpations. The most comprehensive ecological studies on wild *M. cataphractus* are that of Waitkuwait (1989) and Shirley (2013, unpub. data). This species prefers forested rivers and other densely vegetated bodies of water (e.g. reservoirs and freshwater lagoons), but has also been found in sparsely vegetated, gallery habitats within savanna 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 constructed at the base of trees at the edge of undisturbed forested wetland habitats, though some nests have also been encountered in cacao plantations in Côte d'Ivoire (Shirley 2007) suggesting a reasonable tolerance to disturbance when replacement "forest" habitat is available. 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 *M. cataphractus* has a more condensed nesting season (Waitkuwait 1989). Egg size is very large relative to female size and hatchlings tend to be larger than those of other crocodile species (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), turtles and birds (M. Shirley pers. obs.). Gabonese fishermen reported it feeding on aquatic snakes (Pauwels *et al*. 2002). While there is nothing specific documented in the literature, *M. 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 behaviour has been proposed where adult M. cataphractus may live solitary lifestyles and their vocalizations are necessary for territory demarcation and finding mates. Both of these hypotheses have yet to be tested thoroughly.

Systems: Terrestrial, Freshwater

Use and Trade (see Appendix for additional information)

Population decline in the past has been attributed to the commercial skin hunting associated with the decline of *Crocodylus. niloticus* populations throughout their sympatric ranges in this region, though available evidence suggests that *M. 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 *M. 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 *M. 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” programmes based on *M. cataphractus* in West and Central Africa. Regulated hunting was formerly reported as legal in Chad, Sierra Leone, Togo, Cameroon and Democratic Republic of the Congo (Ross 1998); however, *M. 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 *M. cataphractus* for the purposes of utilization or conservation.

Threats (see Appendix for additional information)

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Conservation Actions **(see Appendix for additional information)**

To date the only known conservation actions for this species are not targeted specifically at it but rather at communities and landscapes (e.g. national parks and national legislation). A recently renewed initiative in Côte d'Ivoire is looking at captive breeding and reintroduction. The species is listed on CITES Appendix I.

Credits

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External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	Resident	Suitable	Yes
1. Forest -> 1.8. Forest - Subtropical/Tropical Swamp	Resident	Suitable	Yes
2. Savanna -> 2.2. Savanna - Moist	Resident	Marginal	-
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.2. Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks	Resident	Marginal	-
5. Wetlands (inland) -> 5.4. Wetlands (inland) - Bogs, Marshes, Swamps, Fens, Peatlands	Resident	Suitable	No
5. Wetlands (inland) -> 5.5. Wetlands (inland) - Permanent Freshwater Lakes (over 8ha)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.6. Wetlands (inland) - Seasonal/Intermittent Freshwater Lakes (over 8ha)	Resident	Suitable	No
5. Wetlands (inland) -> 5.7. Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.8. Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.14. Wetlands (inland) - Permanent Saline, Brackish or Alkaline Lakes	Resident	Unknown	-
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Resident	Unknown	-
13. Marine Coastal/Supratidal -> 13.4. Marine Coastal/Supratidal - Coastal Brackish/Saline Lagoons/Marine Lakes	Unknown	Unknown	-
13. Marine Coastal/Supratidal -> 13.5. Marine Coastal/Supratidal - Coastal Freshwater Lakes	Resident	Suitable	No

Use and Trade

(http://www.iucnredlist.org/technical-documents/classification-schemes)

End Use	Local	National	International
Food - human	Yes	Yes	Yes
Wearing apparel, accessories	Yes	Yes	Yes

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Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
2. Agriculture & aquaculture -> 2.2. Wood & pulp plantations -> 2.2.2. Agro-industry plantations	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
3. Energy production & mining -> 3.1. Oil & gas drilling	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
3. Energy production & mining -> 3.2. Mining & quarrying	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		

5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale)	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale)	Ongoing	Majority (50-90%)	Causing/could cause fluctuations	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.5. Persecution/control	Ongoing	Minority (50%)	Negligible declines	Low impact: 4
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.11. Dams (size unknown)	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.3. Other ecosystem modifications	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
9. Pollution -> 9.1. Domestic & urban waste water -> 9.1.3. Type Unknown/Unrecorded	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.2. Soil erosion, sedimentation	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	Minority (50%)	Rapid declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
11. Climate change & severe weather -> 11.2. Droughts	Ongoing	Minority (50%)	Rapid declines	Medium impact: 6

	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance			
11. Climate change & severe weather -> 11.3. Temperature extremes	Ongoing	Minority (50%)	Unknown	Unknown	
	Stresses:	2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success			

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: Yes
Systematic monitoring scheme: No
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 40 - 70
Area based regional management plan: Yes
Invasive species control or prevention: Not Applicable
In-Place Species Management
Harvest management plan: No
Successfully reintroduced or introduced beningly: No
Subject to ex-situ conservation: Yes
In-Place Education
Subject to recent education and awareness programmes: No
Included in international legislation: Yes
Subject to any international management/trade controls: Yes

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management

Conservation Actions Needed
2. Land/water management -> 2.3. Habitat & natural process restoration
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.2. Species recovery
3. Species management -> 3.3. Species re-introduction -> 3.3.1. Reintroduction
3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation
4. Education & awareness -> 4.1. Formal education
4. Education & awareness -> 4.2. Training
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.1. International level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.1. Taxonomy
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends
3. Monitoring -> 3.3. Trade trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km^2): 3000000
Continuing decline in extent of occurrence (EOO): Yes

Distribution
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 10
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 0
Upper elevation limit (m): 600
Population
Number of mature individuals: 1000-20000
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
Population severely fragmented: Yes
No. of subpopulations: 10
Continuing decline in subpopulations: Yes
Extreme fluctuations in subpopulations: No
All individuals in one subpopulation: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 25
Movement patterns: Not a Migrant

The IUCN Red List Partnership



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