

Status of African Manatee (*Trichechus senegalensis* Link, 1795) along Cameroon Coastline: Uncertain Future

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Abstract

Recent surveys have demonstrated that along the Cameroon coastline, the African Manatee is common in many rivers and streams; however, this vulnerable species is facing too many threats such as hunting, by-catching and habitat degradation despite the legal protection. Literature reviews belonging to various libraries in NGOs, research institutes and universities reveals that the bush meat trade is the main threat because the manatee is common in local market and hunted by local fishers. The manatee can be viewed as pests in some agricultural and fishing areas. They consume crops as coco-yams in the fields and eat small fishes caught in gillnet. This can result in the animals being killed.

The coastal wetlands have already been heavily damaged and are further severely threatened. Deforestation of mangroves habitats by fisheries, for firewood and furniture construction leads to the extermination of mangroves stands. Mangrove clearance and erosion due to the forest clearance upstream are resulting in increasing sedimentation that silts up lagoons and estuaries; the exploration of oil by seismic method; the pollution from various neighbour towns and agro-industry farms.

However, there is no system for monitoring and quantifying these threats and how they affect populations of these species in Cameroon. Having very limited information about their current distribution and abundance, it becomes difficult to understand population dynamics, local status and trends.

Keywords Bush-meat; By-catch; Cameroon; Douala-Edea Wildlife Reserve; Manatee

Introduction

The West African Manatee (*Trichechus senegalensis*), is an herbivorous aquatic mammal in the order of Sirenia. Its presumed distribution covers regions from Mauritania to the Cuanza River in Angola, as well as in the river systems of Cameroon, Chad, Gabon, Niger, Mali and Burkina Faso. The species has never been studied before across its entire range although it is also listed as "Vulnerable" in the IUCN Red List of Threatened Animals Anonym, 1999 [1]. And appears on Appendix I of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) since 2013 [2].

As in many developing African states, very few conservation efforts are oriented toward marine mammals in Cameroon. Recent surveys have demonstrated that manatees are present in Cameroonian coastal areas; however, these vulnerable species are being threatened by hunting, by-catches and habitat degradation [3-6]. However, there is no system for monitoring and quantifying these threats and how they population affect this specie in Cameroon. Having very limited information about their current distribution and abundance, it becomes difficult to understand population dynamics, local status and trends.

This current study could help to present information on status of manatee in Cameroon coastline and enforce the process of his gazetment as national marine parks. The exercise was aimed at contributing to the compilation of information on status of the specie and also better understanding of this endangered species in Cameroon. The objectives of the survey were:

- To assess the abundance and distribution of this specie;
- To identify human impacts and manatees-human conflicts;
- To sensitive local population for the conservation of this aquatic mammal.

Material and Methods

Scope of study

The coastal zone of Cameroon stretches over 402 km Sayer et al. [7], from the Nigerian border in north (Akwayafe river, latitude 4°40' N) to the Equatorial Guinean border in the South (Campo river, latitude 2°20'N). In terms of longitude, it is located between 8°15'E and 9°30'E (Figure 1).

the reserve and the need for the establishment of important relationships between species abundance, site temporal conditions (sandbank disappearance) and socio-economic activities with the view of identifying sustainable wetland ecosystem utilisation options.

Destruction of habitats: Habitat destruction is the main threat to manatee through deforestation by cutting firewood and work around fisheries along the coast, the extension of agro-industries and various pollution related to the use of pesticides and other fertilizers around Lake Ossa in Dizangue (Littoral Region). We can also talk of urbanization by expanding coastal cities and the mining and quarrying of sand.

Poaching: Poaching through illegal hunting is still a threat axes of this species despite legislation and numerous conservation measures

for this species. In many sites there is still an activity of illegal hunting of this species around Douala-Edea Wildlife Reserve and Cameroon Estuary (Figure 2).

Ayissi [5] reported 34 individuals caught yearly in Douala-Edea Wildlife Reserve. According to Ayissi and Jeff et al. [12,13] around 292 were caught incidentally per year in gillnet along Cameroon Coastline, 18 individuals were caught in the space of three weeks in Yassoukou hamlet by one hunter and actually 5 to 6 individuals are caught monthly during raining season around Mouanko in Douala-Edea Wildlife Reserve.



Figure 2: Fishing net for manatee poaching [14].

Unwanted catches: Unwanted catches are also a threat to this species through net frame it is the vehicle most used in various fisheries. Despite the herbivorous nature of the case according to information from many fishermen would take the case often comes when taking the fish in nets to consume about 292 individuals are taken annually [12,13].

Desertification and climate change: The drying of various aquatic environments, especially in the inland areas in lakes and along some rivers through the advancement of the desert and especially climate change greatly reduces these vulnerable habitats around Lake Tisongo and surrounding rivers.

Site specific threats

Ntem Estuary on the border Equatorial Guine: Water pollution:

Unwanted catches: They were noted in this area through fishing nets because fishing is the main socio-economic activity in the area.

Cameroon Estuary

The water pollution: Through the discharge of pollutants from the oil companies and factories of the area as ALUCAM Breweries, the Port of Douala, Douala Airport, cement and many solid and liquid wastes from households in this area the habitat of this species suffers much destruction. One of the most affected aquatic ecosystems is Lake Ossa, through pollution; SAFACAM causes eutrophication of the

ecosystem. This area is subject to a decade of boom in oil exploration with many potential releases without prior indication of threats to this species.

Poaching: The manatee meat is common in many restaurants mainly in the cities of Edea, Douala, Mouanko. These animals are taken with the Harpoon, nets, traps and others. According to Ayissi [5], 18 individuals were captured in Canton Yassoukou in the Sanaga Maritime in three weeks. Also one of the major centers of capture of this species in the upper reaches of the river NkamYabassi in Lake Bodiman.

Unwanted catches: One of the greatest threats to this species in the area is accidental capture in fishing nets through the lagoons, lakes and associated as Lake Ossa, Tissongo Lake, Lake Nsah, rivers Sanaga, Nyongand Dipombe rivers and streams (Mouaha and Kombe). According to Takoukam [15] around 4-6 Mouanko individuals are taken monthly in major rainy seasons i.e. between June and October.

Deforestation: Deforestation in this area through the use of firewood from mangroves for smoking fish in fisheries and expansion of agribusiness as SOCAPALM (Cameroon Society of Palm Oil), SAFACAM (Palm and rubber agro-industries farms) according Din et al. [16] 500000 m³/an fuel wood and service are taken to the city of Douala. And according to Ajonina [17] the period between 1985 and 2010 there was an almost complete disappearance of 20% to 25% of mangrove forests in Estuary Cameroon, mainly through the rapid urbanization of the city of Douala (Douala Districts 1, 2 and Douala 4 districts), siltation and sedimentation (Borough of Dizangue). The impact of these samples is little known because no evidence exists for damage assessment.

Rio Del Rey estuary and Nigeria border

The water pollution: Through the discharge of pollutants from oil companies and factories of the area as SONARA (oil company), CDC (Cameroon Development Corporation), PAMOL (Palm and rubber agro-industries farms) and many solid and liquid waste from households in this area. This area is subject to a decade of boom in oil exploration with many potential releases without prior indication of threats to this species.

Poaching: Hunting manatee is common in the area and according to Grigione [3], there exists across border traffic with neighbouring Nigeria in this area, but there is no indication on the same traffic and catch data are lacking.

Unwanted catches: As in all areas of use of the net as fishing gear, by-catch are common in the waters of N'dian, Granny, Cross River and numerous creeks but information about the threat is non-existent.

Deforestation: Deforestation in this area through the use of firewood from mangroves for smoking fish in fisheries and expansion of agribusiness as CDC (Cameroon Development Corporation) PAMOL (Palm and rubber agro-industries farms) and implementing much infrastructure development in this area since the postwar Bakassi, but any figures exist.

Conclusion

The West African Manatee occurs commonly in coastal and estuarine habitats, coastal lagoons and the lower reaches of most rivers systems from Campo in Ntem River in Equatorial Guinea border to Bakassi peninsula along Cameroon coastline. The population of this

specie was substantially diminished during last years by water pollution with wastes from surrounding towns as Douala, Edea and Limbe, illegal poaching, unwanted catches by fishing nets, deforestation of mangrove and revering Atlantic forests through urbanization and agriculture. Also, international and national laws are relatively ineffective due to difficulties with enforcement in the country.

Manatee by-catch was ubiquitous across study areas but rare on Cameroon coastline, where hundreds of West African manatees are killed each year through a combination of by-catch and intentional harvest. Manatee by-catch occurred almost exclusively in gillnets (but was also reported for hook-line gear in Cameroon). However, direct harvest of West African manatee-via use of nets, traps, and harpoons is common in certain sites.

Recommendations

For conservation of this species following measures will be taken in various ways:

Research

- Further research in critical sites to assess populations.
- Study of migration flows.
- Evaluation of all impacts especially from poaching, pollution of various kinds and destruction of critical habitat.
- Study of the composition of populations.

Policy, legal and institutional framework

- Sign the MoU emergency for small cetaceans and Sirenian Western Atlantic.
- Create marine protected sanctuaries for this species in its area of distribution areas.
- Encourage a national policy for conservation of the species.
- Train young Cameroonians on the biology of the specie.

Habitat restoration

- Restore all mangroves degraded habitats all along the coast.
- Assess the impact studies of different projects on the coast and involve the conservation of manatees in the management plans.
- Manage efficiently the waste on the Cameroon coast.
- Educate and sensitize masses.

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