PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. **PROPOSAL:** Inclusion of the West African manatee (*Trichechus senegalensis)* on Appendix II.

B. **PROPONENT:** Ghana

C. **SUPPORTING STATEMENT**:

1 Taxon

1.1.	Class	Mammalia
1.2.	Order	Sirenia
1.3.	Family	Trichechidae
1.4.	Genus/species/subspecies	*Trichechus senegalensis*
1.5.	Common name	English: West African manatee French: Lamantin ouest-africain

2 Biological data

2.1. Distribution

Restricted to the coastal waters and adjacent rivers and lakes of West Africa from southern Mauritania to Angola and east to Mali, Niger and Chad (Powell, 1996). May have disappeared from parts of its original range. Some populations are isolated.

2.2 Population

There are no credible published population estimates (Powell, 1996). The species is reported to be reduced, and it is believed that several local populations have been extirpated. (However, anecdotal records continue to be reported from throughout what is believed to be the original range). The species is thought to satisfy an IUCN criterion for vulnerable status (at least a 20% decline in 10 years). The population decline has been attributed largely to hunting and incidental capture in fishing nets.

2.3 Habitat

Inhabits coastal areas, estuarine lagoons, large rivers that range from brackish to fresh water freshwater lakes and the extreme upper reaches of rivers above cataracts (Powell, 1996). Major rivers inhabited include (N to S) the Senegal, Saloum, Gambia, Casamance, Cahacheu, Rio Mansoa, Rio Geba, Rio Grande de Bulba, Rio Tombali, Rio Cacine, Kogon, Kondoure, Sierra Leone, Great Scarcies, Little Scarcies, Sherbro, Malem, Waanje, Sewa, Missunado, Cavally, St. Paul, MORRO, St. John, Bandama, Niouniourou, Sassandra, Bandama, Comoe, Bia, Tano, Volta, Mono, Oueme, Niger, Mekrou, Benue, Cross, Pie, Katsena Ala, Deb, Okigb, Issa, Bani, Akwayafe, Rio del Rey, Ngosso, Andokat, Mene, Munaya, Wouri, Sanaga, Faro, Chari, Bamaingui, Bahr-Kieta, Logone, Mitemele, Gabon, Ogoue, Lovanzi, Kouliou, Congo, Loge, Dande, Bengo and Cuanza; the manatee also inhabits the lakes in these river systems. The basic requirements are sheltered water with access to food and fresh water. Optimal coastal habitats are "a) coastal lagoons with abundant growth of mangrove or herbaceous growth; b) estuarine areas of larger rivers with abundant mangrove (*Rhizophora racemosa*) in the lower reaches and lined with grasses, particularly *Vossia* and *Echinochloa* further up river; c) shallow (<3 m depth) and protected coastal areas with fringing mangroves or marine macrophyte, particularly *Ruppia, Halodule* or *Cymodocea*" (Powell, 1996). Where river levels fluctuate seasonally, preferred areas are those with access to deep pools or connecting lakes for dry-season refuge and with seasonal flooding into swamps or forests with abundant grasses and sedges, particularly *Vossia, Echinochloa* and *Phragmites*. In the Bifagos Archipelago (Guinea-

Bissau), marine areas frequented have freshwater seeps and pools. May be limited to waters of 18^{0C} or higher.

2.4 Migration

Seasonal movements in response to changes in water level affecting availability of food and /or water salinity have been reported for several areas: between the Senegal River and Lake de Guier, between Niouzomou Lagoon and the Niouniourou River, and up and down the Gambia, Waanje, and Shewa Rivers (Powell, 1996). Shorter-term movements of up to 20km have also been reported, seasonal migrations have been observed between Mali and Niger and between Niger and Nigeria in the Niger River, between Senegal and the Gambia in the upper Gambia River, across the Senegal River between Senegal and Mali, and between seasonal wetlands in Mauritania and Senegal (unpublished data, pers. Comm. From James Powell, 2000). It has also been reported that manatees move between the waters of Ivory Coast, Ghana and Liberia (Akoi, 2000). Manatees may move across boundaries in other areas, and they may move along the coast between nations.

3 Threat data

3.1 Direct threats to the populations

Continuing uncontrolled and likely unsustainable hunting must be considered the major threat to the populations. Despite legal protection, the manatee is still-hunted throughout its range for meat leather and oil, by harpoon, trap, net, and snag line (Powell, 1996; Reeves et al., 1988; Roth and Waitkuwait, 1986; Akoi, 1992). In Mali, Senegal and Chad, the oil is used for medicinal and cosmetic purposes (Powell, 1996). In some areas, hunting is highly traditional and ritualised, and the meat is consumed locally. In other regions, hunting is more opportunistic and meat is traded among areas and tribes. In some nations, progress has been made in discouraging hunting, but the real protection thus conferred has been marginal and hunting is still though to be continuing at unsustainable levels. Meat has become scarce in some markets, but it is not known with certainty whether this is due to increased protected or decreased abundance (the latter seems more likely). The few historical data that exist indicate decrease in catch rates. For example, at one point in the 1930s as many as 12 manatees a day were caught in a 100-mile stretch of the Gambia River, whereas only two per year were estimated taken in the same area in the period 1978-83 (Powell, 1996). Awareness of the protected status of the manatee is widespread in all area surveyed, but there is little perceived fear of arrest and punishment (Powell, 1996); enforcement is rare and fines or sentences for the most part have been negligible.

Manatees are viewed as pests in some agricultural and fishing areas, e.g. in Sierra Leone (Reeves et al., 1988). They consume rice and other crops in the field and eat small fish caught in gillnets. This can result in the animals being culled. Data on the size or impact of the culls are not available.

Manatees are known to die incidentally in shark nets, e.g., in Senegal (Cadenat, 1957) and Sierra Leone (Reeves et al., 1998), trawls, set nets and weirs (Powell, 1996). They are sometimes also killed in turbines or control gates of dams; on one occasion six manatee carcasses were seen at one time below the Kainji Dam in Nigeria (Powell, 1996). There are no estimates of incidental kill rates in either fisheries or at dams.

3.2 Habitat destruction

The coastal wetlands that are a major habitat for the manatee have already been heavily damaged and are further severely threatened. Woodcutting, especially of the red mangrove (*Rhizophora racemosa*), for firewood and furniture construction is resulting in the extermination of mangrove stands in the Ivory Coast (Nicole et al., 1994). Mangrove clearance and erosion due to forest clearance upstream are resulting in increased sedimentation that silts up lagoons and estuaries.

Reduced water flow due to construction of dams reduces availability of estuarine freshwater and increases overall salinity that affects growth of vegetation. Similar destructive pressures operate on coastal wetlands throughout West Africa. Inland, construction of dams affects the amount and quality of riverine and lacustrine manatee habitats, but these effects have not been evaluated. It has been suggested that the manatee could serve well as a flagship species in the conservation of West African wetlands (Dodman, 1999).

3.3 Indirect threats

Coastal wetlands throughout West Africa are ecologically burdened with burgeoning human population and development. For example, in the Ivory Coast coastal wetlands make up only about 1% of the country but are home to 25% of its population (Nicole et al., 1994). Both population increase and development lead to increased effluents, which concentrate in rivers and estuaries. This pollution burden is largely unknown in its effects on manatee health and habitat but can be assumed to be detrimental.

3.4 Threats connected especially with migrations

Increases in salinity or reduced water flow due to manipulation or development of water resource can cause manatees to strand or vacate an area, with unknown demographic results (Powell, 1996)

3.5 National and international utilisation

The manatee is fully protected legally in all of the nations in which it occurs. Despite this, it is hunted and utilised in all of the range states. Manatees move in international trade. An aquarium in Japan acquired two manatees for exhibit from Guinea-Bissau in 1996 (Asano and Sakamoto, 1997), and manatees were offered for sale internationally on the Internet from Guinea-Bissau in 2000 (Anon., 2000). Manatee meat and oil is reported to move illegally in trade between Chad and Cameroon (Powell, 1996).

4 4. Protection needs and status

4.1 National protection status

The West African manatee is protected by the national laws of all the countries in which it occurs. However, it continues to be killed and utilised illegally throughout its range.

4.2 International

The species is classified as Vulnerable by IUCN (on the basis of a 20% decline over 10 years) and is listed on Appendix II of CITES.

4.3 Additional protection needs

Progress has been made in reducing kills in some areas, but there is a strong need for increased community-based education and resource management programs to increase awareness of the conservation problem and find ways to stop or reduce unsustainable hunting
(Powell, 1996; Dodman, 1999.

In a recent review (Powell, 1996)), eight areas critical for manatee conservation were identified, on the basis of " the degree of threat to manatees in that particular area, the existence of what is likely a sizeable manatee population or a site where institutional arrangements would facilitate the implementation of a manatee conservation program in an area known to contain an important manatee population".

1. Volta Lake, Ghana
2. N'Dogo lagoon, Gabon

3. Fresco, Nioumozou, Tadio lagoons Complex, Ivory Coast
4. Bijagos Archipelago, Guinea-Bissau
5. Casamance River, Saloum Delta national Park, Djoudi National Park and Lake de Guier, Senegal
6. Lake Léré and Lake Tréné, Chad
7. Inland Delta and Lake Debo, Mali
8. Lake Ossa and Sanaga River, Cameroon.

In order to increase understanding of the population biology of the manatee and develop systems for its protection and sustainable utilisation, research is needed on reproductive biology, migratory habits, and mortality levels due to hunting, culling and standing (Powell, 1996).

5. Range states

Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, |Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Congo, Republic of Congo (Zaire), Angola, Mali, Niger, Chad and possibly Burkina Faso

6. Comments from range states

7. Additional remarks

8. References

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CONSERVATION STATUS OF THE WEST AFRICAN MANATEE

William F. Perrin

Background

At the Ninth Meeting in 1999, it was noted that the West African manatee (*Trichechus senegalensis*) was the most threatened of all manatee species and it was proposed that it be considered as a species for action (UNEP/CMS/ScC.9/Doc. 10, p.9). it was agreed that the status of the species would be reviewed at an upcoming workshop on small cetaceans of West Africa. The workshop took place in Conakry, Guinea in May,2000(Anon., 2000a). A brief review was presented by CMS participants, and comments and new information were solicited. New information was available for only one country, Ivory Coast. Following is a summary of the review and discussions at the meeting and additional information since gathered from the recent literature and personal communications.

Distribution and Status by National

The West African manatee occurs in the middle and lower reaches of rivers from the Senegal to the Quanza in Angola (Powell, 1996; Dodman, 1999). It also occurs in adjacent seasonal wetlands, shallow marine waters and around some coastal islands. In addition, there are, or were, isolated populations in the upper parts of some rivers: the Niger, the Benue, the Congo, the Ubangi, and the Chari. The ranges extend over at least 20 nations, although it may now be close to extinct in some of them.

Mauritania
The species occurs in the Senegal River and its tributaries (Powell, 1996); this river forms the border between Mauritania and Senegal. It is an infrequent inhabitant of the Diawlang Reserve, a wetland reserve of interconnecting streams, lakes and ponds.

Senegal
In Senegal, the manatee is close to extinction (Navaza and Burnham, 1998). In most areas of the country, it has not been seen for many years. There are a few remaining in the Casamance River in the estuary and up to Kolda, and there have been some reported sightings in the delta of the Sine Saloum River near Kaolack, but the species is considered to be severely depleted and threatened. In the Casamance River where they still occur, they are respected and not molested, so there is some hope they can be saved there.

The Gambia
In the Gambia, numbers are thought to have declined, but as of 1993 the manatee was still numerous in the River Gambia. They have been fully protected for many years but in the 1980s were still hunted extensively.

Guinea -Bissau
Guinea-Bissau at one time was considered to be one of the last sanctuaries of the manatee, because of the relatively undisturbed state of its mangrove, wetlands and river systems (Schumann, 1995; Powell, 1996). The species also occurs throughout the Bijagos Archipelago. Information on the status of the manatee is scarce. In 1997, the government signed an agreement with IUCN to develop a National Plan for Conservation of the West African manatee in Guinea-Bissau, and some training and survey work started, but the work stopped when the war started in 1998 (Amedida e Silva, 1998). The present status of that effort s unknown. The major source of mortality before the war was accidental capture in fishing nets; they were not extensively hunted. Most recently, manatees have been advertised for export on the Internet, and two were exported to the Toba Aquarium in Japan (Asano and Sakamoto, 1997; Kataoka et al., 2000; Anon., 2000b).

Guinea
Little information is available on the manatee in Guinea. The country has extensive suitable habitat, and the species is known to occur in the area (Powell, 19996), but no systematic studies have been carried out (Barnett and Prangley, 1997).

Sierra Leone
In Sierra Leone the manatee is also declining (Reeves et al. 19988; Powell, 1996). It is protected but widely hunted and marketed, because it is good to eat and because it is thought to be a pest by rice growers and fishermen among the Mende people. The manatee in the late 1980s was still widely distributed in the country, but the catches at that time were thought to be unsustainable. The animals are trapped, netted and harpooned. There is some concern about the effect of modern fishing gear on the manatee, because it is easily tangled in monofilament gillnets.

Liberia
Manatees occur throughout the major rivers of Liberia, including in the proposed national park of Cestos-Sankwer, and in the Piso lake region (Powell, 1996). No information is available on status.

Ivory Coast
In the Ivory Coast, the manatee by the mid-1980s had been reduced by hunting to 5 to 6 small isolated populations, with an estimated total number of less that 750 animals. Hunting is illegal, but it still continued in the late 1980s, with traps, harpoons, hook lines, baited hooks and nets (Roth and Waitkuwait, 1986: Nicole et al., 1994; Powell, 1996). A program of research and education began in 1986, sponsored by the Wildlife Conservation Society. The population is tentatively estimated at 750 - 800 (Akoi Kouadio, pers. Comm., 2000). Illegal hunting is still a problem, as is habitat destruction by barrages. However, some success has been enjoyed in educating potential hunters and in enforcing the

hunting ban in some areas, with the aid of Wildlife Conservation International (Akoi, 2000; Anon, undated). A conservation plan is in development (Akoi, 2000).

Ghana
Recent surveys by the Institute of Aquatic Biology confirmed the continued existence of manatees in Volta Lake and Digya National park; additional surveys are planned (Powell, 1996). Hunting continues.

Togo
Manatees may still exist in Togo Lake (Powell, 1996). No information is available on status.

Benin
In Benin, the manatee had been thought to be extinct. However, this is apparently not the case (Powell, 1996), and a new research and conservation project on the species is underway to establish its current distribution and numbers as well as gather data on its ecology and behaviour (Risch, 2000).

Nigeria
The manatee is found throughout Nigeria but is depleted, due to over hunting (Powell, 1996). It is hunted for its oil. There is no effective enforcement of protection laws. The most recent concern is about population of the Niger Delta by oil development.

Cameroon
In Cameroon, based on a survey sponsored by WWF-USA and the Wildlife Conservation society in 1989 (Grigione, 1996), manatees may still be numerous in some areas. Legal hunting has been very limited, due mainly to local attitudes toward the species rather than legal protection, but poaching from across the border in Nigeria is a server problem. Habitat destruction by dams is also a problem.

Equatorial Guinea
There is no recent information on manatees; they likely occur in the lower reaches of the Mitemele River on the mainland (Powell, 1996).

Gabon
Gabon may have one of the highest densities of manatees remaining in Africa (Powell, 1996). Reports of opportunistic sightings are common. By catch occurs in gillnets.

Congo
A preliminary survey in 1994 found manatees in lakes, rivers and lagoons of Congo (Powell, 1996).

Democratic Republic of Congo
Manatees were once common in the extreme lower reaches of the Congo River below Binda (Powell, 1996). A local name for the species exists in the upper reaches of the Congo, so it may occur there as well. Status is unknown.

Angola
Manatees have been reported from the entire coast, but little information is available on abundance or status (Powell, 1996).

Mali
Manatees are found throughout the entire Niger River system of Mali (Powell, 1996) but may have been reduced by hunting. Hunting continues but may be decreasing, as meat now only rarely appears in the markets; it is not clear whether this is due to legal protection, less demand for the meat, or greatly decreased abundance.

Niger
The species has been recorded from the Niger River below Niger in Nigeria and above Niger in Mail, so it can be assumed that it occurs in the Niger River in Niger as well, but there is no information on its distribution or status (Powell, 1996). It may also occur in the Niger portion of the Chad basin.

Chad
Manatees were once abundant in the Chad basin but had become rare by 1924 (Powell, 1996). In a survey in 1995, they were found to be less abundant than formerly but not uncommon in Lere and Trene lakes in the Mayo-Krebbi region. Hunting continues on the rivers and lakes, despite enforcement efforts. The animals are sought mainly for their oil, which is shipped with dried meat to Cameroon.

Burkina Faso
Manatees inhabit all of the nations that surround Burkina Faso (Mali, Ivory Coast, Ghana, Togo, Benin and Niger). They are present in Volta Lake above the dam (see Ghana above). However, I could find no mention of its occurrence in the upper tributaries of the Volta (White Volta, Red Volta and Black Volta) or in the Mekrou River, which forms the boundary between Burkina Faso and Togo/Benin and drains the wetlands of the Parc National del'Arly. Pending directed surveys, its occurrence there must be considered possible.

Overall Status
The West African manatee is listed by IUCN as Vulnerable based on a 20% decline in numbers over a period of 10 years. It is listed on appendix II of CITES. It is protected by national law in every country in which it occurs, albeit ineffectively in most areas.

In response to requests from West African conservationists, Wetlands International concerned a regional meeting in 1998 with representation by 20 countries (Dodman, 1999). It was agreed that action must be taken to prevent the animal from disappearing from African waters, and a program of research and education is now under development, including an as-yet unfunded proposal for a preliminary across-region survey (Dodman, pers. Comm., June, 2000).

In summary, the species is much reduced and still declining, due to both hunting and habitat destruction. It exists in many scattered and liked isolated populations. There is much work to be done to prevent extinction of many or all of these populations.

Migration
A major question for CMS is "Does the manatee migrate across national boundaries?" The answer seems to be yes. There are no published studies on this, but James Powell, who has studied the manatees in several countries in West Africa, has established that they migrate seasonally in response to changes in water levels or salinity differences between wet and dry seasons. They move between Mail and Niger and between Niger and Nigeria in the Niger River. They also move between Senegal and the Gambia in the upper Gambia River, cross the Senegal river between Senegal and Mali, and move between seasonal wetlands in Mauritania and Senegal. It was reported at the Conakry workshop that manatees move between the waters of Ivory Coast, Ghana and Liberia (Akoi, 2000). Manatees may move across boundaries in other areas, and they may move along the coast between nations.

Conclusion
At this point, it appears that the manatee does meet the major criteria for inclusion in appendix II o CMS. It is certainly of unfavourable conservation status. It is migratory in the sense of the Convention. And it could benefit from regional co-operation in research and conservation action. A draft proposal to add the species to appendix II is attached (Anne 1).

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