Transfer of West African Manatee *Trichechus senegalensis* from Appendix II to Appendix I

Proponent: Benin, Senegal, Sierra Leone

Summary: The West African Manatee *Trichechus senegalensis* is a herbivorous aquatic mammal found in coastal and estuarine habitats, coastal lagoons and river systems over a wide area of western Africa from Mauritania to Angola, extending as far inland as Mali, Niger and Chad. There are 21, possibly 22, range States. The species is one of three extant members of the genus *Trichechus*. Life history parameters are poorly known; females of the closely related Caribbean Manatee *T. manatus* produce a single calf on average once every 2.5 years, though this figure varies greatly, and mature at around four to five years. Florida Manatees *T. manatus* and Dugongs *Dugong dugon* can be long-lived (up to 60–70 years), though approximately 40 years may be a better estimation for the West African Manatee. The West African Manatee is difficult to survey and there are few recent population estimates. However, based on those that have been conducted, the population is believed to have declined and several local populations have been extirpated. The population is under pressure from hunting for meat and oil, incidental by-catch, and the destruction and fragmentation of habitat from mangrove harvesting, pollution and dams that restrict the movement and isolate some populations. Nearly 300 West African Manatee were estimated to be accidently captured annually in Cameroon alone. No reliable population estimate has been made based on quantitative data, but it may be that there are fewer than 10 000 individuals. The species was assessed by IUCN as Vulnerable in 2008, based on a high probability of a 30% or more projected population decline within three generations (taken as 90 years).

Hunting pressure is believed to be high. Manatee products, chiefly meat and oil, are used domestically but are also believed to be traded across national borders within West Africa. Legislation in all range States currently prohibits trade in any part of the West African Manatee but is reported to be largely ineffective, mainly due to the weak capacity and lack of resources in enforcement agencies.

The West African Manatee was first included in Appendix II in 1975; the two other manatee species were included in Appendix I in the same year. From 2000 to 2010, the CITES trade database recorded 27 wild live animals of the species in international trade, in addition to 120 specimens and a small number of bones, skins and other derivatives, mainly for scientific purposes and zoos. Any cross-border trade within western Africa goes unrecorded.

The proposal seeks to transfer West African Manatee from Appendix II to Appendix I in accordance with biological criteria A i) and v), and C ii) in *Resolution Conf. 9.24 (Rev. CoP15).*

Analysis: The West African Manatee does not have a restricted range. There is no reliable global population estimate for the species. It is thought possible that the current population may number fewer than 10 000, however, it seems unlikely that it would be considered small under the guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15).* There are no historic or recent data on population trends, although there is no indication that the species is considered to have undergone a recent decline that would be considered marked under the guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)*.

Annex 1 of *Resolution Conf. 9.24 (Rev. CoP15)* also refers to a marked decline in the population size in the wild projected on the basis of any one of a number of factors. Annex 5 of the Resolution notes that projection involves extrapolation to infer likely future values. The numerical guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)* do not explicitly address projected future declines and give no indication as to how such declines might be assessed within the context of the criteria for inclusion in Appendix I. Any predictions of future changes in the West African Manatee population remain conjectural. The basis for the current IUCN Red List Categorization of the species as Vulnerable (published in 2008), taking all available information into account, was a view that the most likely decline over the next three generations (taken as 90 years) would be more than 30% but less than 50% (as the latter in this case would have led to a categorization of Endangered under criterion A2 of the IUCN Red List Categories and Criteria (ver 3.1)). If it is assumed that the guideline figures in Annex 5

to *Resolution Conf. 9.24 (Rev. CoP15)* for a marked recent rate of decline could also be applied to a projected future decline, then on the basis of the scant information available, this decline would be less than that suggested as a marked decline in the Resolution.

The species is hunted for meat and oil, some of which is said to be traded across borders within West Africa, although this trade goes unregulated and unreported. Very limited international trade under CITES has been reported since the species was listed in Appendix II in 1975, notably a small number of live individuals as display animals and some skins. All domestic and international trade has been prohibited under legislation in all range States. The species has a relatively low productivity and harvesting may be having a negative impact on the species along with other threats. However, from the scant information available it would appear unlikely that West African Manatee meets the criteria for inclusion in Appendix I.

Supporting Statement (SS)	Additional information
Range	
Mauritania, Senegal, The Gambia, Mali, Guinea, Guinea-Bissau, Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Togo, Benin, Niger, Nigeria, Cameroon, Chad, Congo, Equatorial Guinea, DRC, Gabon and Angola.	*Possibly Burkina Faso (CMS, 2012).*
IUCN Global Category	
Since 1978 it has been classified as Vulnerable (Criteria A3cd and C1, 2008). A new review of the species is anticipated in 2013.	

Biological criteria for inclusion in Appendix I

A) Small wild population

(i) Population or habitat decline; (ii) small sub-populations; (iii) concentrated geographically during one or more life-history phases; (iv) large population fluctuations; (v) high vulnerability

The population of *Trichechus senegalensis* is estimated at fewer than 10 000 individuals based on survey data from Côte d'Ivoire, Guinea-Bissau, Gambia, parts of Senegal and Cameroon, and deducing from what is known of the manatees in other range States and from density data on the *T. manatus*.	*Estimating the absolute abundance of West African Manatees is extremely difficult as individuals mostly occur in turbid waters and are present in countries which may lack the funds to conduct aerial surveys (Marsh* et al., *2011). Thus, there are currently no reliable data on which population size and trends can be estimated (Marsh,* in litt*., 2012; Morales,* in litt., *2012).* *An estimate made between 1979 and 1983 predicted that the total West African Manatee population in Côte d'Ivoire comprised fewer than 750–850 individuals, based on a rough estimate of the number killed annually and on apparent population trends (Roth and Waitkuwait, 1986).* *In detailed interviews of 329 people (mainly fisherman, hunters, farmers and former manatee hunters) in three areas of Guinea-Bissau, a total of 256 manatee sightings involving 439 individuals between 1990 and1998 were reported (Silva and Araújo, 2001).*
The species' vulnerability is increased by its relatively long generation period and a low reproductive rate. If life history is similar to that of the better-known West Indian	

Supporting Statement (SS)	Additional information
Manatee, gestation could be around 12-14 months and age at maturity about four to five years. Some studies indicate that the most advanced age of West African Manatees is 39 years old.	*The lifespan of the West African Manatee is not known but Florida Manatees (*T. manatus latirostris*) and Dugongs (*Dugong dugon*) have been found to live as long as 57 and 73 years, respectively (Marsh,* in litt., *2012).*
B) Restricted area of distribution **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability; (iv) decrease in distribution, population, area or quality of habitat, or recruitment)**	
The species is present in coastal and estuary habitats, coastal lagoons and lower reaches of most river systems, from Mauritania to Angola. It goes back into the river systems as far inland as Mali, Niger and Chad. Permanently isolated populations can be found in particular in the wetlands of northern Cameroon and in Chad, in the Logone River, the Chari River and Mayo Kebi River. The species is found far from the coast at sea, off-Bissau, in the Bijagos Archipelago. Dams have been built on some watercourses, meaning habitat is reduced and fragmented, curtailing manatees' migrations or trapping them in unsuitable habitat. In coastal areas, excessive exploitation and the conversion of large mangrove areas contributes to the reduction of manatee habitat. Other compounding factors include pollution of important portions of lagoons and deltas through rubbish dumps, industrial waste and oil spills. The new mining zones located near the rivers are also potential sources of threat that must be closely monitored and regulated. Droughts in the 1970s and 80s, profoundly changed the characteristics and environment of the hydrographic basins of West Africa. The intense degradation of the vegetation intensified water runoff resulting in a proliferation of sand banks in water beds and floodplains. In the Sahel - Sudan area of the range where many river distributaries are no longer regularly flooded because of the decline and irregularity of rainfall, a large number of habitats that once sheltered the species, are now destroyed or no longer accessible.	*The West African Manatee distribution is discontinuous, with some populations already extirpated (Nishiwaki, 1984).* *It is thought that several local populations have been extirpated, though anecdotal accounts of manatees from these places still emerge (Powell, 1996).* *Genetic isolation of populations poses a key threat as manatees lose the ability to move between different sections of rivers and wetlands (Dodman* et al., *2008).*
C) Decline in number of wild individuals **(i) Ongoing or historic decline; (ii) inferred or projected decline due to decreasing area or quality of habitat, levels of exploitation, high vulnerability, or decreasing recruitment**	
This population is likely to decrease by at least 10% (within three generations) based on the continued and increasing anthropogenic threats to the species. The lack of demographic data means that results from isolated surveys done as part	*It has been estimated that there is a high probability that a 30% or greater reduction in population size will result within a 90-year, three-generation period (Powell and Kouadio, 2008). Calculation of a single generation time of up to 30 years in an*

Supporting Statement (SS)	Additional information
of projects, experts' findings in the course of specific missions, the testimony of villagers, and press reports are the only option to be used to identify a trend. All these sources indicate explicitly or implicitly that this trend is clearly a decline. Based on these findings, CMS listed the species in Appendix I in 2008. Strong human population growth and its concentration in coastal areas and along major rivers exert direct pressure by excessive takings (poaching and accidents) from the population, and indirect pressure from different developments (embankments, agricultural irrigation projects, clearing of mangroves, wetlands embankments, etc.). Overall, the number of range States for the West African Manatee does not seem to have varied. However, in the range states, as well as at a more localized level, the species is now absent from areas and water bodies where it existed before. In particular, it is has not been reported in Lake Chad since 1929, nor in the Chari River in Central Africa and in some lagoons of Côte d'Ivoire.	*unexploited population is based on data from the assessment for the Florida Manatee* (T. manatus)*. Reynolds* (in litt.*, 2012) considers this generation time to be unrealistic. Marsh* et al*. (2011) agree with the figure of 30% but infer three generations equates to approximately 60 years on the basis of data from the Florida Manatee.* *Habitat loss is likely to increase as the human population is predicted to grow exceptionally fast over the next in 50 years in West Africa in comparison to the rest of the world (United Nations, 2004).*

Trade criteria for inclusion in Appendix I

The species is or may be affected by trade

The majority of international trade reported in the CITES trade database between 2000 and 2010 was reportedly for scientific purposes.

International trade as reported in the CITES trade database between 2000 and 2010. Quantities reported by importers were used in the first instance; if these were missing then exporter quantities were used.

International trade as reported in the CITES trade database between 2000 and 2010

Product	Wild	Total
Live animals	26	28
Bodies	1	1
Skins / skin pieces	30	30
Specimens	118	118
Bones	17	17
Bone carvings /bones	19	19
Skulls	1	1
Oil	150ml	150ml

Product	Wild	Total	E	Q	S	T	Z
Live animals	27	30	0	2	13	6	9
Bodies	1	1	0	0	0	0	1
Skins / skin pieces	30	30	0	0	30	0	0
Specimens	120	120	0	0	120	0	0
Bones	37	37	0	0	37	0	0
Bone carvings /bones pieces	19	19	0	0	19	0	0
Skulls	1	1	1	0	0	0	0
Oil	150ml	150ml	0	0	150ml	0	0

** E (Educational), Q (Circus or travelling exhibition), S (Scientific), T (Commercial), Z (Zoo)*

Supporting Statement (SS)	Additional information
Exports from range States went to Republic of Korea, China, Taiwan POC, Canada, United States, Thailand and Italy.	*Exports from range States also went to Japan (CITES Trade database).*
Illegal international trade is a growing threat to the manatee across its range motivated by high market prices of manatee products and a growing human population.	*The majority of meat is moved across very remote borders (such as southern Gabon into Congo, northern Chad into Nigeria) where there is no enforcement or anyone to document the trade (Keith Diagne,* in litt., *2012).*
Manatees are mostly hunted for their meat, but all body parts, including oil, are used and actively traded throughout most of their range. The varying price of manatee parts and derivatives in different range States seems to encourage international trade.	*Studies of wild meat tend to focus on the use of terrestrial species, and are normally focussed on use within countries, rather than trade between countries. Studies of aquatic species do not normally include manatees. Therefore, there is little documented evidence in the cross-border trade of West African Manatee (Keith Diagne,* in litt., 2012*).*
National reports indicate an active trade in meat and by-products of the species between Guinea, Sierra Leone and Cote d'Ivoire, and between Chad, Cameroon and Nigeria. Also in coastal areas, the development of illegal local, national or cross-border trade is reported from Senegal to the Gulf of Guinea. Although no statistical data are currently available for trade, all stakeholders in the conservation of the species observe that the meat trade from Sierra Leone and cross-border trade of the species between Chad, Cameroon and Nigeria are already an established threat to the existence of the species in these parts of the range.	*In Chad, meat is not sold locally, but dried before to be exported to Cameroon and Nigeria (Dodman* et al*., 2008).*
In Sierra Leone, the financial stakes of the trade in manatee specimens are such that a kind of "Manatee Mafia" has now appeared. More than 350 manatees were the victims of commercial poaching between 2007 and 2010. Concerns are growing that such organized hunting may eventually extend from Guinea and Sierra Leone to the entire sub-region.	*Climate change is also likely to exacerbate poaching of the species because of the associated loss of protein from fish due to the projected fisheries collapse (Marsh* et al., *2011).*
The wildlife breeding and trading facility, River Zoo farm, based in Guinea-Bissau, advertises live wild caught manatees for sale to zoos on its website and is known to have exported two manatees to Toba Aquarium in Japan in 1996.	*Manatees are captured live for zoos or for wildlife collections on rare occasions and captures have taken place recently in Guinea-Bissau (Dodman* et al., *2008).* *Japan reported the import of four live manatees from Guinea-Bissau in 1996 (Guinea-Bissau reported having exported six to Japan in that same year). In 2004, Cote d'Ivoire exported three wild specimens to Taiwan, POC. In 2010, China imported two captive-bred and two wild-caught live manatees from Cameroon, and the Republic of Korea reported the import of one wild-caught and one captive-bred individual from Guinea; all were destined for zoos.*

Other information

Threats

Habitat degradation, along with poaching, are the greatest threats affecting the West African Manatee in its natural range.	*For sirenians, adult mortality from poaching is likely to be the greatest threat (Marsh* in litt., *2012).*

Supporting Statement (SS)	Additional information
Manatee populations are negatively affected by accidental catch in fishing nets. Climate change threatens West African Manatees, by directly or indirectly changing water regimes and the quality of watercourses. Manatees are impacted by the cutting of mangroves for rice farming, timber, smoking and salt extraction in particular. Affected manatees have become trapped in valves of irrigation canals and killed during the construction of the dams or of the port installations. In highly populated areas (Abidjan and Lagos in particular), pollution from urban effluents eliminated manatees in several of the water areas they had naturally occupied before. Similarly, much of the Niger Delta is now removed from this species' habitat due to spills of unrefined oil. Although this is not documented, it is likely that, in areas where there are large scale hydro-agricultural developments or mining operations, the significant quantities of pesticides and other chemicals dumped in the water courses (the valley of the Senegal River and Niger River, in particular, and in Guinea-Bissau) constitute a threat to the health of individuals, as well as to their habitat. Data on these issues are very limited, but the scientific information available does not mention any disease or any parasite that could threaten the species. Crocodiles were the only predator, aside from humans, reported as an opportunist predator on young manatees. Collision with water craft is not yet a threat, but the various development projects in this sector are potential causes of threats in the sub-region.	*Accidental capture in fishing nets is perhaps one of the greatest threats faced by West African Manatees; as fishing has increased and with the wider use of strong nets made of synthetic fibres, so the incidental capture of manatees has also increased (Dodman* et al., *2008).* *Accidental capture of West African Manatees was estimated at 292 animals per year in Cameroon (Ayissi, 2008).* *Despite the high number of manatee deaths in Cameroon, fishermen continue to believe that, manatees are still numerous in their respective habitat because they believe that they have high reproductive potential and breed every year (Takoukam, 2011).* *At high tide, manatees may on occasion enter rice fields and eat the crop resulting in them being hunted as a pest (Dodman* et al., *2008). Silva and Araújo (2001) stated that the destruction of rice fields was one of the two main conflicts which occurred between manatees and people, along with the destruction of fishing gear.* *The conversion of wetlands to other land uses is a threat to manatees (Dodman* et al., *2008).* *Manatees sometimes become stranded and die as water levels become lower during the dry season (Powell, 1996).* *Subsistence hunting has been intensive in some areas and it may be the principal cause of West African Manatee population declines (Reeves* et al., *1988).* *Existing threats are likely to be exacerbated by projected high increases in human population, poverty of almost all range States and the adverse effects of climate change on food and water insecurity in the region (Marsh* et al., *2011).*
<u>Conservation, management and legislation</u>	
Since 1975, it has been listed in CITES Appendix II. At present, it is the only species of the Sirenia Order not included in CITES Appendix I. The African Convention on the Conservation of Nature and Natural Resources included the West African Manatee in Class A (totally protected species) in 1968. CMS listed the species in its Appendix II in September 2002 (CoP7), then uplisted it to Annex I in December 2008 (CoP9). The Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan	

Supporting Statement (SS)	Additional information
Convention) explicitly protects the West African Manatee. Legislation in all range States prohibits trade in any part of the West African Manatee meaning all national, local, and trans-boundary trade is illegal. Ineffective protection is mainly due to the weak capacity of the developing country authorities responsible for manatee protection and wildlife law enforcement. The efforts of NGOs in the late 1990s/early 2000s to host meetings and fund studies and conservation projects coalesced under the aegis of the Regional Conservation Programme for the Coastal and Marine Area of West African (PRCM) with UNEP, the CMS Secretariat, the Secretariat of the Abidjan Convention and the Regional Coastal and Marine Program, to build a regional network, collect scientific data and develop a conservation action plan for the manatee across the PRCM region. This led to the development of the UNEP/Wetlands International "Conservation Plan for the West African Manatee" and the CMS "Memorandum of Understanding concerning the Conservation of the Manatee and Small Cetaceans of Western Africa and Micronesia" which includes the "Action Plan for the Conservation of the West African Manatee". Two areas are protected specifically as manatee habitat - the sanctuaries of Léré and Tréné in Chad, and the Tocc Tocc Reserve of the Guiers Lake in Senegal. Education and awareness actions in the Senegal River valley and along the coastline of Côte d'Ivoire, Gabon and Gambia conducted by NGOs (Océanium Dakar, Noé Conservation, Wildlife Conservation Society, Sea to Shore Alliance, WWF and NAAFO) are helping to foster community-level ownership of the species and reduce poaching. Locally, significant efforts are regularly deployed by villagers, NGOs and nature management agencies to rescue individual manatees trapped by a too rapid withdrawal of water or caught in irrigation dams. The preservation of the species is included in the programmes and initiatives of international environmental conservation organizations, including UNEP, IUCN, WWF and Wetlands International Afrique.	*In Lake Ossa Wildlife Reserve, Cameroon, the Forest and Wildlife office lacks basic equipment such as boats and life jackets needed to patrol the aquatic component of the reserve, leaving manatee unprotected from hunting (Takoukam, 2011).* *Consider listing of* Trichechus senegalensis *in CITES Appendix I of CITES is identified as an action to be initiated by Range States under Objective 1 of the "Action Plan for the Conservation of the West African Manatee" (improve policies and legislation for protection of West African manatees and law enforcement).*
<u>Similar species</u>	
The genus Trichechidae includes three species (*Trichechus senegalensis, T. manatus* and *T. inunguis*) and the Dugongidae one species *(Dugong dugon).* Physically, the three species of *Trichechus* are very similar and it is difficult for non-experts at first glance to differentiate the West African Manatee *Trichechus senegalensis* from *T.manatus* by their appearance, weight or colour. By contrast, *T.*	*All sirenians are listed in Appendix I of CITES except the West African Manatee.*

Supporting Statement (SS)	Additional information
inunguis is smaller in size, darker in colour and has pectoral fins without nails. No other Sirenian species can be found in the range of *T. senegalensis*.	
Captive breeding/Artificial propagation	
No captive breeding or artificial propagation of the West African Manatee has been reported in its range.	
Other comments	
Ineffective protection is mainly due to the weak capacity of the developing country authorities responsible for manatee protection and wildlife law enforcement. Range States are optimistic that an Appendix I listing, and the attendant publicity, will bring needed attention and resources to their task. Senegal was charged by its peers to consult with the other range States for the species. In September 2012, Senegal presented the proposal to a meeting attended by the management authorities of 25 CITES Parties from the African region (17 of which were range countries). Responses to the range States consultations were favorable to the submission of this proposal.	*The West African Manatee is the most threatened species in the Order Sirenia (Reynolds* in litt*., 2012; Marsh* in litt*., 2012).*

Reviewers: H. Marsh, B. Morales, J. Reynolds, S. Ringuet.

References:

Ayissi, I. (2008). Rapid gillnet bycatch survey in Cameroon. University of Yaoundé. Unpublished Report. Page 45.

CMS (2012). List of range states of migratory species included in the CMS appendices. http://www.cms.int/pdf/en/CMS_Range_States_by_Species.pdf. Viewed 8 November 2012

Dodman, T., Diop, N.M.D. and Sarr, K. (Eds) (2008). *Conservation Strategy for the West African Manatee*. UNEP, Nairobi, Kenya and Wetlands International Africa, Dakar, Senegal.

Keith Diagne, L. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.

Marsh, H., O'Shea, T.J. and Reynolds III, J.E. (2011). *Ecology and Conservation of the Sirenia. Dugongs and Manatees*. Cambridge University Press, Cambridge.

Marsh, H. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.

Morales, B. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.

Nishiwaki, M. (1984). Current status of the African manatee. *Acta Zoologica Fennica* 172: 135–136.

Powell, J. A. (1996). *The distribution and biology of the West African manatee (Trichechus senegalensis Link, 1795)*. United Nations Environment Programme, Regional Seas Programme, Oceans and Coastal Areas, Nairobi, Kenya.

Powell, J. and Kouadio, A. (2008). *Trichechus senegalensis*. In: IUCN (2012). *IUCN Red List of Threatened Species*. Version 2012.2 Viewed 25 October 2012.

Reeves, R.R., Tuboku-Metzger D. and Kapindi R.A. (1988). Distribution and exploitation of manatees in Sierra Leone. *Oryx* 22: 75–84.

Reynolds, J. (2012). In litt. to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.
Roth, H.H. and Waitkuwait, E. (1986). Répartition et status des grandes especes de mammiferes en Cote-d'voire III: Lamantins. *Mammalia* 50:227–242.
Silva, M.A. and Araújo, A. (2001). Distribution and current status of the West African manatee (*Trichechus Senegalensis*) in Guinea-Bissau. *Marine Mammal Science* 17: 418–424.
Takoukam, K.A. (2011). Activity center, habitat use and conservation of the West African Manatee (*Trichechus senegalensis* Link, 1795) in the Douala-Edea and Lake Ossa wildlife reserves. *A Thesis Submitted to the Faculty of Sciences of the University of Dschang In Partial Fulfillments of the Requirements for the Award of the Master of Science (M.Sc) Degree in Animal Biology.*
United Nations (2004). *World population to 2300.* New York, United Nations.