



UNEP/CMS-  
WATCH II-Doc.5 (E)

**WESTERN AFRICAN TALKS ON CETACEANS AND THEIR HABITATS**

DISCUSSIONS D'AFRIQUE OCCIDENTALE SUR LES CETACES ET LEURS HABITATS

**DRAFT**

**ACTION PLAN FOR THE CONSERVATION  
OF THE WEST AFRICAN MANATEE**

## Secretariat's Note

### Towards a Conservation Action Plan

Due to the threatened status of the West African Manatee, increasing threats and an overall population decline, it is clear that conservation efforts are essential to safeguard the survival of the species across its range. In recent years, Wetlands International (along with other partners) has brought together stakeholders from across the manatee's range to focus attention on conservation planning for the manatee. Recent field surveys, literature reviews and national and international meetings were coordinated through two main projects:

- a. The 'Conservation and Awareness of the West African Manatee *Trichechus senegalensis* along the West African Seaboard' project under the PRCM (Regional Coastal and Marine Conservation Programme for West Africa);
- b. A Memorandum of Understanding with the Abidjan Convention with support from the UNEP Regional Seas Programme and SIDA (the Swedish International Cooperation Agency).

The latter resulted in publication of the ***Conservation Strategy for the West African Manatee***, which provides accounts of the species' status, identifies the main threats, and highlights priority conservation actions and recommendations made by the countries of the sub-region. The purpose of the Conservation Strategy is to improve policies and protective legislation, determine research priorities, reduce existing pressures on the manatee and enhance awareness of the culture and values of the species.

However, as the West African Manatee inhabits many transboundary wetlands and in some areas moves between countries, both at the coast and inland, range states have also endorsed the development of an Action Plan for the manatee under the CMS. Significant steps were taken at the WATCH I in Tenerife, Spain in October 2007, when a draft Memorandum of Understanding concerning small cetaceans and the West African Manatee was drawn up, and a series of draft actions concluded. These documents and the Conservation Strategy developed under the Abidjan Convention therefore form the founding blocks for this draft Action Plan, which was prepared by Mr Tim Dodman.

Range states clearly need to work together if conservation measures are to succeed. Conservation in one country will be less effective if crucial habitats are destroyed in confluent areas of the manatee's habitat. The factors jeopardising ecosystems also have a regional and international scope and require regional and international cooperation. The Action Plan thus seeks to serve as a practical template for conservation of a unique, highly valued and culturally significant animal and its habitats.



# Draft Action Plan for the Conservation of the West African Manatee



## GOAL

***TO SIGNIFICANTLY IMPROVE THE CONSERVATION STATUS OF THE WEST AFRICAN MANATEE ACROSS ITS RANGE THROUGH THE IMPLEMENTATION OF STRATEGIC POLICY, RESEARCH, CONSERVATION AND AWARENESS ACTIONS***

## Introduction

### Manatees and Dugong

The West African Manatee (*Trichechus senegalensis*) is a member of the manatee or Trichechidae family, which belongs to the order Sirenia (or sea cows). Other members of the Sirenia order are the Dugong (*Dugong dugon*) and two other manatees, the Amazonian manatee (*Trichechus inunguis*) and the West Indian Manatee (*Trichechus manatus*). There are two subspecies of West Indian manatee: the Florida Manatee (*T. m. latirostris*) and the Antillean Manatee (*T. m. manatus*). Manatees and Dugong are aquatic herbivorous large mammals. Manatees inhabit coastal and inland waters on both sides of the Atlantic Ocean, whilst the Dugong is more strictly marine, found in coastal waters from the western Indian Ocean to Pacific waters of Asia and Australasia. Another sirenian, Steller's Sea Cow (*Hydrodamalis giga*), lived in colder waters of the northern Pacific, but was hunted to extinction some 200 years ago. All three manatees and Dugong are classed as Vulnerable under the IUCN Red List of Threatened Species and in Appendix II of both the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

### West African Manatee

The West African Manatee (*Trichechus senegalensis*) is a large aquatic mammal found in coastal and inland wetlands of Western Africa between Mauritania and Angola, and inland as far as Mali, Niger and Chad. It occurs in coastal and estuarine habitats, coastal lagoons and the lower reaches of most river systems from the Senegal River of Mauritania/Senegal to the Longa River in Angola. It has also found its way into the mid and upper reaches of several rivers in this region, notably the Senegal and Niger Rivers. In the Niger, it has reached far inland through Niger and Mali into northern Guinea, and eastwards into Cameroon and Chad along the Benue River.

The West African Manatee is the least studied of all sirenians, and its status across much of its range is only poorly known. However, despite a general lack of information, there is a growing body of evidence documenting the decline of the species, due mainly to habitat loss, accidental captures in fishing nets and hunting. There are currently no official regional mechanisms for the conservation of the West African Manatee, whilst national and local laws and customs across the many range states do not adequately cater for the species' conservation needs. Some efforts have been made by governments and civil society in the region to support the conservation of the species, but even in countries where it is protected by national law, enforcement is not widely applied.

A vulnerable and inoffensive species, the pressures on the manatee are manifold, and manatee populations across the range are impacted by capture in fishing nets, hunting, trading, modification of its habitat (including the cutting of mangroves) and through the impacts of development works, such as dams. The three main threats are:

- Loss of habitat, resulting from both climate change and human pressures;
- Incidental capture in fishing nets;
- Traditional hunting and commercial poaching activities.

These main threats are exacerbated by growing pressures on natural resources due largely to human population growth and resulting increased use and development of wetlands, along with the ever-expanding use of new technologies. Thus, fishing activities in the region are generally increasing, along with the demand for protein, whilst newer and more efficient nets replace more traditional methods.

## **Species Distribution and Movements**

### Distribution of the West African Manatee

The West African Manatee occurs in a wide range of wetlands and coastal ecosystems from the Senegal River at the Senegal-Mauritanian border to the Longa River in Angola, its presumed southern limit.<sup>1</sup> It lives in the middle and lower reaches of rivers that occur in this section of the Atlantic coast.<sup>2</sup> It is also found in adjacent seasonal floodplains, lakes and shallow coastal waters and around some offshore archipelagos and islands. It does not occur in deep marine waters however, and has not reached offshore island states, such as Cape Verde, though it is relatively numerous in the Bijagós Archipelago of Guinea-Bissau. Isolated populations occur a considerable distance upstream in many of the region's rivers, including the Niger, Bénoué, Oubangui and Chari. There are reported sightings as far as 2000km inland. Its preferred coastal habitat is undisturbed estuarine waters, coastal lagoons and the mouths of rivers, whilst inland it favours extensive wetland systems with lakes and floodplains.

### Movements of the West African Manatee

The West African Manatee is widely distributed in western Africa, and historically occupied almost any wetland within its reach that provided appropriate food resources and other conditions necessary for its survival. Although it has been extirpated from some areas, it remains widely dispersed, and as such moves regularly between countries, along both rivers and coastlines. Some movements are regular and seasonal, but on the whole the manatee is more dispersed than strongly migratory. Within this wide range it indulges in some seasonal movements according to changes in water levels, salinity and access to food<sup>2</sup>.

The main factors affecting movements in the Gambia River are currents, salinity variation and water level changes.<sup>3</sup> Manatees are not able to live in some sections of rivers during the rainy season when currents or stream flows are too high. Thus, they are more frequently found in the lower reaches of the Gambia River during the rainy season and in middle sections of the river during the dry season. Manatees may move along the main channel of the Niger River between Mali, Niger and Nigeria, but such movements become impossible when river channels are blocked by dams. In Senegal, manatees certainly used to move regularly between Lac de Guiers and the Senegal River, favouring the lake during the rainy season<sup>4</sup>, but these movements were halted by construction of a dam.

Movements up and down rivers and between rivers and connected riverine wetlands, such as lakes and floodplains are reported from several range states, and are generally linked to rainfall seasons, river flows and availability of food. Manatees move up and down the

<sup>1</sup> Dodman, T., Ndiaye, M.D.D. & Sarr, K. (eds.) 2007. *Conservation Strategy for the West African Manatee*. Wetlands International, Dakar, Senegal / UNEP-Abidjan Convention, Nairobi.

<sup>2</sup> Powell J.A. 1996. The Distribution and Biology of the West African Manatee (*Trichechus senegalensis* Link, 1795). United Nations Environmental Program, Regional Seas Program, Oceans and Coastal Areas, Nairobi, Kenya. 68p.

<sup>3</sup> Powell, J.A. 1985. Manatees in the Gambia River Basin and potential impact of the Balingho antisalt dam with notes on Côte d'Ivoire, West Africa. Institute for Marine Studies, University of Washington. 57pp.

<sup>4</sup> Bessac, H. & Villiers, A. 1948. Le lamantin du Sénégal. *La Nature* 3158:188-189.

Senegal River, and at times become trapped in dwindling tributary pools during the dry season<sup>5</sup>.

Manatees in the more static habitats of coastal lagoons tend to be more sedentary. Manatees studied in coastal lagoons of Côte d'Ivoire generally remained within a 10km range, though there were occasional movements between river systems<sup>2</sup>. There do not appear to be regular seasonal coastal migrations between countries, but movements certainly occur.

An overview of the distribution and status by country is provided in Annex 1, which also highlights the main movements of manatees, especially between countries.

There is no evidence to support the occurrence of West African Manatee in Burkina Faso, although there are limited possibilities of their occurrence in tributaries of the Niger and Volta rivers. Overall, the manatee has a restricted distribution in Mauritania, Togo, Equatorial Guinea and Chad, whilst in most other range states it is fairly widespread in suitable wetland habitats, especially along the coast and in the lower reaches of the main rivers.

### **Species Status**

Given its wide range across diverse coastal and inland wetland habitats, it is not surprising that the West African Manatee's conservation status is variable across this wide range. Its overall range does not seem to have diminished significantly since earlier assessments, although it appears to be absent from the Chari basin in Chad from where there are earlier reports<sup>6</sup>. However, in the majority of range states, manatees are in decline (see Annex 1 for details).

A key change in manatee status during the second half of the 20<sup>th</sup> Century is the fragmentation of populations through construction of dams and other developments. Whilst major dams such as the Akosombo in Ghana and Kainji in Nigeria may create new areas of suitable manatee habitat, they also lead to the genetic isolation of populations and prevent movement along traditional waterways. In many areas numbers have declined, and several localised sub-populations have been decimated. Such declines are largely attributed to hunting, incidental capture in fishing nets and habitat modifications. As with other aquatic mammals, it is very hard to estimate population size, and few attempts at quantifying populations in West Africa have been made. However, there is growing evidence to support a declining trend.

At the international level, the West African Manatee has been assigned the status of Vulnerable in the IUCN Red List of Threatened Species since 1986<sup>7</sup>. It was listed on Appendix II of the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) on 1<sup>st</sup> July 1975,<sup>8</sup> and on Appendix II of CMS at the 7<sup>th</sup> Conference of Parties (COP7) in September 2002.

At the national level, the West African Manatee is under some form of legal protection in all countries within its range<sup>1</sup>, though the type of legislation varies between countries. However, in reality, there are limited resources to implement or enforce the associated laws and other legal instruments across most of its range. Some measures of protection are probably best afforded in the various protected areas in which the species lives.

### **Values, Traditional Knowledge and Customs**

The West African Manatee is valued widely in western Africa on an ecological, economic and cultural level, and as such is appreciated in many areas for diverse values. However, as

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<sup>5</sup> Noé Conservation - Océanium. 2006. Sauvetage et suivi des lamantins (*Trichechus senegalensis*) au Sénégal. Contribution à la mise en oeuvre du Plan Sous-Régional d'Action pour la conservation et la gestion des populations des lamantins. Rapport sauvetage lamantin. In: PRCM. Regional Coastal and Marine Conservation Programme for West Africa. Annual Report 2006.

<sup>6</sup> Salkind, J.H. 1998. Etude sur les lamantins au Tchad. In: Revue Scientifique du Tchad Vol. 5 No.1:41-49.

<sup>7</sup> IUCN 2007. *2007 Red List of Threatened Species*. <[www.iucnredlist.org](http://www.iucnredlist.org)>

<sup>8</sup> UNEP-WCMC. 10 August, 2008. UNEP-WCMC Species Database: CITES-Listed Species

some traditions become eroded and as threats increase along with modernisation, human population growth and habitat conversion, so there is a need for a wider appreciation of the manatee. The main recognised values are:

### Ecological values

As a herbivore, the manatee contributes to the control of plant growth in rivers and other waterways, such as clearing channels of their overabundant vegetation.<sup>9</sup> It has also been proposed as a form of biological control against the proliferation of water hyacinth in West African rivers and streams, and this potential role has been considered in Niger,<sup>10</sup> although this aquatic weed does not appear to be one of the manatee's favoured food items in Africa. In some areas, there may be a positive relationship between the presence of manatees and an increase in fisheries productivity, due to the enrichment of water by manatee dung.<sup>10</sup> Certainly, manatees are established denizens of various different wetland types in western Africa, and no doubt form an integral part of the aquatic ecosystems in which they live.

### Economic values

For a long time, manatees have been valued economically for their meat and other products, including items used in traditional medicine. Manatee meat is widely prized in western Africa, and often carries strong cultural values as well. This has led in many areas to over-hunting, with populations declining across the range. The meat and oil are also subject to illegal trade, with trafficking taking place for instance between Chad and Cameroon. In Côte d'Ivoire, a freshly-killed manatee is valued at between 150,000 and 170,000 CFA francs (about €250). The meat is sold per portion of 400g at between 4500 and 5000 CFA francs (about €7.5).<sup>11</sup> In parts of Nigeria a male manatee may be exchanged for a 10 metre long boat and an outboard motor. In Guinea-Bissau a pair of manatees was sold to a Japanese aquarium in 1997, and they are even offered for sale on the internet from this country, as live animals. It is thus a highly valued species for local consumption and use and commercial trade.

### Cultural values, traditional knowledge and customs

The West African Manatee is widely respected or venerated by many cultures and traditions across its range. It is an emblematic totem for the Mandé in Niger, whose name is even derived from the manatee (*ma* being 'manatee' and *ndé* meaning 'son of'). For the Diolas and Mandingos of Casamance, Senegal, it is forbidden to attack this inoffensive mammal. In some villages of the Congo, the manatee is known under the name 'Mami Watta' and is believed to be a spirit of the ancestors living in lagoons, its mythical appearance being that of a mermaid.<sup>12</sup> The morphological resemblance between the woman and the female manatee raises veneration, respect and prohibition. Traditionally, the Peul of Sahelian Africa believe that the ancestor of the manatee is a Peul woman, who transformed herself into a manatee while taking a bath in the river.<sup>4</sup> In Guinea, the manatee marks the collective imagination of Baga and Soussou populations of the Dubreka and Sangareya region. In Togo, fishermen and hunters around Lake Togo place manatee skulls and other bones in special shrines which are visited before hunting. In some countries, manatee hunting is part of strong local rituals and traditional practices. For example, in Niger, killing a manatee is an act of prestige among Sorkos populations.

Being a large animal, a manatee catch is invariably highly prized by local fishermen. The meat is widely considered as being delicious, whilst many other parts of the animal are used

<sup>9</sup> Lowe, R.G. 1992. Book Review: Nigeria's Threatened Environment - a National Profile. NEST. *Niger. Fld.* 57:75-78.

<sup>10</sup> Ciofolo, I. & Sadou, I. 1996. Le Lamantin du Niger (*Trichechus senegalensis*). Technical report 7 CACP/MIR/O82. Ministère des finances et du Plan. Union Européenne. Genève. 48pp.

<sup>11</sup> Kouadio, A. 2007. Côte d'Ivoire / Côte d'Ivoire. In: Dodman, T., Ndiaye, M.D.D. & Sarr, K. (eds.) 2007. Conservation Strategy for the West African Manatee. Wetlands International, Dakar, Senegal / UNEP-Abidjan Convention, Nairobi.

<sup>12</sup> Akoi, K. 1994. Une enquête préliminaire sur les lamantins dans les eaux de la Réserve de la Conkouati au sud du Congo. *Canopée* 4:10.

for consumption and traditional medicine, including the oil, skin and bones. In most areas of its distribution, the West African Manatee has a therapeutic mythical interest for various ethnic groups. In Mali, different parts of the manatee's body have different traditional medicinal uses, such as oil to treat anaemia and ear infections, bones to treat rheumatism and epilepsy and sexual organs to treat impotence and sterility.<sup>13</sup> In some ethnic groups, the manatee is valued for its magical attributes known only to traditional healers.

Members of fishing communities especially know the manatees' habits quite well, including aspects such as seasonal occurrence, their need for freshwater and deeper pools as refuges, also their breeding behaviour, which may lead animals to congregate and relinquish caution. Fishing communities have used this knowledge to help them hunt manatees, and across the region there are specialist manatee hunters, who use learned and traditional experiences in their hunting techniques. Traditional hunting carried out for local consumption may have been largely sustainable, but nowadays manatees face many additional threats, whilst demand from urban centres provide incentives to trade meat and other products.

In some areas the manatee is perceived as a disruptive animal due to occasional accidents with pirogues and its habit of opportunistically feeding in flooded rice fields. Some riverine communities hold manatees responsible for the disappearance of catch from fishing nets. Such accounts can lead to resentment towards the manatee, and some local communities interviewed in Guinea wished that manatees would disappear from their waters.<sup>14</sup>

Overall, respect for the manatee is widespread across the region. Whilst in some areas, this respect prevents the intentional capture and consumption of manatees, in other areas the manatee is held as a symbolic and important catch, which may play a central role in local ceremonies or celebrations. The meat and body parts are widely considered as high value commodities. However, traditional cultures are becoming eroded in many areas, and respect for the manatee is in need of restoration in many areas.

## **Income-generating Opportunities through Tourism**

Manatees have long been valued for their meat and other products, but can they also have economic value as living animals? Certainly, there is good potential for ecotourism, and many visitors to the region would be interested to see manatees. The Florida Manatee, for instance, has proved to be highly popular and draws in international and resident visitors alike across the Atlantic. A factor that poses an obstacle to ecotourism for the West African Manatee is the high turbidity of most wetlands within its range. The muddy rivers and estuaries of western Africa make manatee sightings extremely difficult, and even then it may only be possible to see the animal's nose or back when it surfaces occasionally to breathe. Further, as manatees are hunted widely in western Africa, they are also generally cautious and tend to avoid man if possible.

Nonetheless, there is potential for income-generation through tourism activities, and even occasional sightings might encourage visitors to spend time in particular areas. In reality, the manatee would be seen as a part of the overall attraction to an area, as most sites where they live will also support other wildlife and be considered as areas of beauty or interest. Sites such as the Sine-Saloum Delta in Senegal, Orango National Park in Guinea-Bissau, Fresco Lagoon in Côte d'Ivoire, Lake Pandam in Nigeria, Conkouati Lagoon in Congo, coastal lagoons of Gabon and favoured sites along the Cuanza River in Angola all hold promise for the development of manatee-based ecotourism initiatives.

## **Threats**

### Natural threats

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<sup>13</sup> Kone, B. & Diallo, M. 2002. Rapport d'étude sur le lamantin au Mali (*Trichechus senegalensis*). Initiatives du Bassin du Fleuve Niger. Wetlands International, Sévaré.

<sup>14</sup> PRCM. 2005. Regional Coastal and Marine Conservation Programme for West Africa. Annual Report 2005.

The main natural threats to manatees are impacts from drought and climate change. There are numerous records of manatees becoming stranded in dwindling pools of tributaries of the Senegal River, notably in the Matam area. Manatees have been reported stranded in other lakes and wetlands of the region as well, particularly during extended drought years of the 1980s. Extensive sand deposition in tributaries of the Niger River can also lead to fragmentation and isolation of populations. In Sangaréyah in coastal Guinea, nine manatees beached themselves on banks after fluctuations in water level in 2004. Coastal manatee populations may also become isolated in lagoons, whose outlets to the sea close up. The current wave of climate change may well cause Sahelian wetlands to dry up and favoured coastal wetlands to disappear as water levels rise. However, the manatee is likely to survive such changes due to its adaptability and tolerance of different aquatic environments. Whilst not a threat *per se*, the West African Manatee is rendered vulnerable due to its low reproductive rate; a calf is only born every two to three years.

#### Habitat modifications, hydrological developments and genetic isolation

Manatees are capable of tolerating people, and have lived alongside man for thousands of years. However, some recent developments threaten manatees in western Africa, including large-scale conversion of wetlands to other land uses, usually for building or for agricultural developments. Pollution is another threat, from urban centres in the form of sewage, from agricultural run-off and notably from the oil industry. Some areas of the Niger Delta, for instance, can become heavily degraded by oil spills. Pollution in coastal lagoons can lead to eutrophication, which impacts all aquatic life. Destruction of mangroves is a threat in coastal areas, resulting in habitat loss and a reduction in food availability.

The construction of dams, barrages and other hydrological works is a specific threat to manatees, especially from structures that completely cross main river channels. There are numerous dams throughout western Africa. These include relatively small dams that control flow to/from lakes or irrigated areas, such as hydrological developments in the wetlands of the Senegal Delta and Lac de Guiers. There are anti-salt dams in coastal wetlands of Guinea-Bissau and other countries where rice is grown behind mangroves.<sup>15</sup> There are also large dams along the main rivers of the region and their tributaries, such as the Kainji Dam in Nigeria, the Diama Dam in the lower Senegal River and the Selingué and Markala dams of the Niger River in Mali. Other planned dams in the Niger Basin include the Fomi in Guinea, and the Talo and Djenné on the Bani River in Mali. Dams and barrages can have both positive and negative impacts on manatees. Some reservoirs or lakes created behind dams can provide excellent habitat for manatees, such as Lake Volta in Ghana, formed by the Akosombo Dam. However, a key threat posed by such developments is genetic isolation of populations, as manatees lose the ability to move between different sections of rivers and their associated wetlands. This can lead to local extinctions as small isolated populations die out. The potential impacts of inbreeding are not well known.

Manatees may be killed in the turbines or control gates of dams, with reported cases from Kainji in Nigeria.<sup>2</sup> There are also reports of manatees caught in control sluice gates of dams, for instance in the Senegal Delta, whilst in Guinea, construction of the dam and ferry port at Fatala impacted manatee occurrence and movements in the Fatala estuary. The building of a dam in the Upper River Division Bank at Sami Wharf Town in The Gambia around 1993 is believed to have caused the death of many manatees.

#### Hunting, capture and use of manatees

Across their range, wherever manatees are reasonably common, they tend to be hunted, sometimes by specialist manatee hunters, such as in the Bijagós Archipelago in Guinea-Bissau, or more opportunistic hunting by fishermen to supplement their main fishing activities. Harpoons are the most common weapons employed for hunting manatees, whilst

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<sup>15</sup> Bos, D., Grigoras, I. & Ndiaye, A. 2006. Land cover and avian biodiversity in rice fields and mangroves of West Africa. A&W-report 824. Altenburg & Wymenga, ecological research, Veenwouden / Wetlands International, Dakar.

in some areas platforms are built for the hunters, usually near popular feeding sites or close to freshwater seeps in salty / marine areas<sup>2</sup>. A variety of traps are used in different countries, which are usually baited, as well as special manatee nets, large hooks and even poison.

In many countries, hunting practices have reduced the sizes of the populations. Even when carried out at low levels, hunting is a real threat to the animal given its low reproductive rate. Despite the progress made to discourage hunting in some countries (e.g. Cameroon), manatee products are still much coveted. Unregulated and unsustainable hunting is widely considered as the main threat to the survival of manatee populations across its range.

On rare occasions manatees are captured live for zoos or for wildlife collections. Captures have taken place recently in Guinea-Bissau and Côte d'Ivoire.

### Incidental killing and capture

Incidental capture in fishing nets is one of the greatest threats faced by West African Manatee today. 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. The practice of stringing nets right across the channels of rivers, streams and creeks, bank to bank, is particularly dangerous for manatees. In most cases captured manatees are consumed locally and treated as an additional bonus to the fish catch, although on occasion the catches are reported to appropriate authorities. Manatees are at times also caught in fishing weirs in Côte d'Ivoire.<sup>16</sup> In Guinea, local communities of Dôbiret (Boffa area) reported five manatees caught in fishing nets in 2004, while in Sangaréyah, 34 had been captured.

In Senegal and Sierra Leone, manatees have been captured in fishing nets intended for sharks.<sup>17,18</sup> They are also victims of industrial fishing where they end up in trawlers or in monofilament nets.

There is no estimate of the effects of modern fishing materials on manatees, but incidental capture in fishing nets was the most frequently reported threat across its range in surveys carried out for preparation of the species conservation strategy.<sup>1</sup>

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<sup>16</sup> Akoi, K. 1992. Education et sensibilisation des populations pour la conservation du lamantin ouest africain (*Trichechus senegalensis*) en Côte d'Ivoire. Wildlife Conservation Society, 31pp.

<sup>17</sup> Cadenat, J. 1957. Observations de cétacés, siréniens, chéloniens et sauriens en 1955-1956. Bulletin de l'IFAN 19A:1358-1383.

<sup>18</sup> Reeves, R.R., Tuboku-Metzger, D. & Kapindi, R.A. 1988. Distribution and exploitation of manatees in Sierra Leone. Oryx 22:75-84.

**Themes, Objectives and Expected Outcomes**

To be filled in after Action Plan Themes and Objectives have been agreed in following tables!

Theme & Objectives	Expected Outcomes
1.	
2.	
3.	
4.	

**Themes, Objectives and Priority Actions**

***Strategic Objective: Improve the conservation status of the West African Manatee across its range***

<b>Theme 1: Policies and Legislation</b>		
<b>Objective 1: Improve policies and legislation for manatee protection, and strengthen their implementation</b>		
<b><i>Expected Outcome 1.1: Effective policies are established for manatee conservation at regional and national levels, and mechanisms are in place for their implementation in all range states</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Conduct a critical review of existing regional and national policies related to manatee conservation.	CMS / States	Medium
Incorporate specific manatee conservation measures into relevant existing regional and national policies.	CMS / States	High
Establish strong regional policies for manatee conservation, and, where necessary, provide strategic support for strengthening of national policies.	CMS / States	High
Establish practical mechanisms that facilitate implementation of policies at the regional and national level.	CMS / States / NEPAD	High
List the West African Manatee on Appendix I of the CMS	Government of Togo	Medium
Consider listing the West African Manatee on Appendix I of CITES	Range States	Medium
<b><i>Expected Outcome 1.2: Effective legislative frameworks are established for manatee conservation in all range states</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Conduct a critical review of existing legislative instruments at national and local levels (e.g. codes of conduct).	States	Medium
Revise existing legislation and, where necessary, develop new specific legislative measures for manatee protection (e.g. incentives and sanctions).	States	High
Incorporate specific manatee conservation measures into relevant legislative instruments at the national and local level in cooperation with relevant stakeholders.	States	High

<b>Expected Outcome 1.3: Policies and legislation relating to manatee conservation are widely adopted and well known to stakeholders</b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Sensitise decision makers, local authorities and local communities, about political and regulatory provisions for manatee conservation, and encourage their implementation.	States	High
Develop capacity of agencies responsible for developing and implementing policies and legislation related to manatee conservation.	States	Medium
Build wide awareness of policies and legislation relevant to manatee conservation within all stakeholder groups.	States	High
Develop appropriate information and awareness tools to promote manatee conservation, especially for local use.	NGOs	Medium
<b>Expected Outcome 1.4: Wide enforcement of legislation relating to manatee conservation</b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Promote application of legislation relating to manatee conservation at a regional level through implementation of international conventions (MEAs) and transboundary regulations.	CMS	High
Enforce legislation relating to manatee conservation at a national level, especially at unprotected sites.	States	Medium
Promote enforcement of legislation as widely as possible, especially in relation to manatee hunting and trade.	States/ CITES/CMS	High
<p><b>Targets/Indicators:</b></p> <ul style="list-style-type: none"> <li>• Policy review completed and disseminated to all range states, and used to incorporate manatee conservation measures into existing policies.</li> <li>• Strong regional policies for manatee conservation are established, as well as practical mechanisms for their implementation at national and regional level.</li> <li>• West African Manatee listed on Appendix I of CMS; report circulated with respect to CITES.</li> <li>• Legislative review completed and disseminated to all range states.</li> <li>• Manatee conservation measures are incorporated into existing legislation.</li> <li>• Awareness raised in all range states about policies and legislation related to manatees.</li> <li>• Capacity of responsible agencies is strengthened to enable them to develop and/or implement policies and legislation related to manatee conservation.</li> <li>• Information tools developed and disseminated to all range states for raising awareness.</li> <li>• Measurable improvements in the implementation of relevant international conventions and transboundary regulations.</li> <li>• Reduction in manatee hunting and trade through wide enforcement of legislation.</li> </ul>		

<b>Theme 2: Applied Research, Monitoring and Networking</b>		
<b>Objective 2: Improve understanding of the West African Manatee and use information for its conservation management</b>		
<b><i>Expected Outcome 2.1: Improved knowledge of the West African Manatee achieved through national and regional research initiatives</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Develop and harmonise methodologies and protocols for research and monitoring of the West African Manatee.	SOG	Medium
Conduct applied research programmes on the West African Manatee focusing on identified knowledge gaps, especially for enabling successful species conservation and management.	States & partners	High
Carry out regular monitoring of manatee populations, especially at key sites.	Site managers	High
Determine important areas for manatees, especially relating to movements, feeding and mating, and develop mechanisms to reduce manatee pressures in these areas.	States & partners	High
Establish, populate with data and maintain a scientific and socio-economic database on the West African Manatee.	WI & partners	Medium
<b><i>Expected Outcome 2.2: Successful management and conservation mechanisms are established for the West African Manatee</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Establish site-based applied research and management programmes for the demonstration of appropriate conservation mechanisms.	States / NGOs	High
Evaluate and improve manatee conservation and management mechanisms at different levels (i.e. regional, catchment and community levels).	CMS / sub-regional orgs / NGOs	Medium
Identify key sites for manatee conservation, and develop proposals for their designation and management.	States / NGOs	High
Identify key habitat requirements for manatees in different areas, and establish mechanisms for preventing the destruction and degradation of these habitats.	States	High
Design and avail practical tools, such as monitoring manuals and standardised forms, for strengthening regional capacity in the monitoring and management of West African Manatee populations.	SOG / NGOs	Medium

<b>Expected Outcome 2.3: Establishment of a functioning regional manatee network strengthened through capacity development and exchange initiatives</b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Establish a regional manatee network with active engagement of appropriate institutions and resource persons for information sharing and exchange at national, regional and international levels.	CMS / Abidjan	High
Develop and run training and capacity building programmes for actors involved in the management and monitoring of the West African Manatee.	States & partners	High
Identify and resource a regional centre for provision of expert advice on the West African Manatee, capacity development and information exchange, with a regularly updated website, database and other facilities.	WI & partners	Medium
Organise regional exchange workshops on research outcomes.	WI & partners	Medium
Develop and organise inter-state and community exchange visits.	WI & partners	Medium
<b>Targets/Indicators:</b>		
<ul style="list-style-type: none"> <li>• Methods and protocols for manatee research and monitoring developed and disseminated to all range states.</li> <li>• Applied manatee research and management programmes are established and operational, and periodically evaluated.</li> <li>• West African Manatee trends established in all range states through regular monitoring.</li> <li>• A list of key sites and areas for the West African Manatee is drawn up, detailing mechanisms for manatee conservation at each site.</li> <li>• Scientific and socio-economic database on the West African Manatee established and operational.</li> <li>• Report produced and disseminated highlighting key habitat requirements for manatees and outlining habitat conservation measures.</li> <li>• Capacity strengthened in all range states for monitoring and managing manatee populations.</li> <li>• A regional network for the West African Manatee is established and operational.</li> <li>• Number of training and capacity building programmes for manatee network.</li> <li>• A regional centre and website for the West African Manatee is established and operational.</li> <li>• Number of regional, inter-state and community exchange workshops and visits.</li> </ul>		

<b>Theme 3: Conservation, including Restoration and Safeguarding of Manatee Habitats</b>		
<b>Objective 3: Reduce pressures on the West African Manatee through the restoration and safeguarding of its habitats</b>		
<b><i>Expected Outcome 3.1: Designation of sites providing key manatee habitats as sanctuaries and through national and regional initiatives</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Create networks of sanctuaries that provide excellent habitat and refuge areas for the West African Manatee (e.g. community based sanctuaries, Marine Protected Areas), both at the coast and in each river basin.	Regional institutions (e.g. NBA, OMVS)	High
Develop and implement conservation plans for the West African Manatee at an ecoregional level (e.g. PRCM, Niger Basin), national level and at specific key sites (e.g. protected areas).	States / regional institutions	Very high
<b><i>Expected Outcome 3.2: Rehabilitation of West African Manatee habitats</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Develop and implement habitat restoration plans at degraded sites in important manatee zones, in collaboration with local stakeholders.	States & partners	High
Where feasible, rehabilitate obstructed waterways that currently prevent the free movement of manatees.	States	Medium
Promote management options at hydraulic works that enable the passage of manatees, at least seasonally.	River basin authorities	Medium
Ensure that key sites for manatees are protected from pollution.	States	High
Promote restoration of forests in basin headwaters in order to alleviate siltation of rivers and sand deposition.	River basin authorities	Medium
Develop long-term strategies to protect manatee habitats in relation to climatic changes.	CMS / CCD	Medium
<b><i>Expected Outcome 3.3: Reduced exploitation and capture of the West African Manatee</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Reinforce hunting control measures.	States	High
In cooperation with local communities at sites where manatees are hunted, develop alternative income generation activities (e.g. livestock breeding, aquaculture, bee-keeping) and train hunters in such disciplines, to encourage a reduction in manatee hunting.	States / NGOs	High
Develop a regional ecotourism strategy for the West African Manatee and encourage its implementation at key sites.	WI / States	Medium

Provide community-based incentive packages for communities that elect to refrain from manatee hunting.	Partners (NGOs)	High
Encourage the use of manatee-friendly fishing techniques in order to reduce the incidental capture of manatees in fishing nets.	Site managers & basin authorities	High
In collaboration with local communities at key sites for manatees, establish no-fishing zones in particularly important areas, in order to reduce the incidental capture of manatees in fishing nets.	Site managers	High
<p><b>Targets/Indicators:</b></p> <ul style="list-style-type: none"> <li>• Network of manatee sanctuaries created, including both inland and coastal sites.</li> <li>• Number of regional, national and site conservation plans for West African Manatee developed and operational.</li> <li>• Number of habitat restoration plans developed and underway at degraded sites, and blocked waterways freed.</li> <li>• Manatee-sensitive procedures are operational at a number of hydraulic works.</li> <li>• Number of key manatee sites are protected from pollution.</li> <li>• A long-term strategy is developed and disseminated that addresses manatees in relation to climate change and habitat restoration.</li> <li>• Number of community-based income-generation projects established and operational.</li> <li>• A regional ecotourism strategy developed, and implemented at a number of sites.</li> <li>• Manatee hunting is reduced through community-based incentives.</li> <li>• Measurable reduction in manatee capture in fishing nets, and no-fishing zones designated.</li> </ul>		

<b>Theme 4: Awareness &amp; Education / Information, Education &amp; Communication</b>		
<b>Objective 4: Instil a wide appreciation of the West African Manatee and its ecological and cultural values through targeted communication, education and public awareness</b>		
<b><i>Expected Outcome 4.1: Education and awareness materials relating to manatees, especially their values and threats, are developed and used widely</i></b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Integrate manatee conservation into training / educational programmes of schools, universities and training centres.	NGOs / States	High
Develop training tools relating to manatees and wetlands for schools, universities and training centres.	NGOs	High
Provide community based organizations (CBOs) with resources and practical training and animation tools for communicating the threats to and values of manatees.	NGOs	Medium
Develop communication media (including web-based resources) relating to manatees and wetlands, especially for use by national and local press.	NGOs & States	High

Encourage wide availability of all media and materials in appropriate local languages, and disseminate them in all range states.	NGOs	Medium
<b>Expected Outcome 4.2: Attitudes and actions favourable to manatee conservation are encouraged through awareness campaigns</b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Collaborate with radio and television stations to broadcast information about manatees and wetlands.	NGOs & national institutions	Medium
Produce reports and documentaries about community efforts to conserve manatees.	NGOs/ site managers	Medium
Organise special campaigns (such as 'Save the manatee' days and manatee clubs) to build awareness about issues important for manatee conservation.	NGOs	Medium
Collaborate with the press to foster public awareness of the values and threats to manatees.	NGOs	Medium
Organise seminars and other events to build awareness of decision makers about manatees and their conservation needs.	NGOs & States	High
Promote traditional values and cultures favourable to manatee conservation through appropriate awareness activities and outputs.	NGOs	Medium
<b>Expected Outcome 4.3: Manatee conservation is integrated into existing communication, education and awareness programmes</b>		
<b>Actions</b>	<b>Lead</b>	<b>Priority</b>
Build manatee communication, education and public awareness (CEPA) components into management plans for sites and catchments where the West African Manatee occurs.	Site managers & river basin authorities	High
Integrate the challenges facing the manatee and related conservation solutions into existing environmental awareness programmes at the national and catchment / basin level (e.g. the Niger Basin Authority).	Site managers & river basin authorities	High
Develop mechanisms to integrate the manatee into national environmental education programmes.	NGOs	Medium
<b>Targets/Indicators:</b>		
<ul style="list-style-type: none"> <li>• Training tools relating to manatees and wetlands are developed and disseminated, and integrated into a number of training / educational programmes.</li> <li>• Number of CBOs equipped for communicating manatee conservation information.</li> <li>• Communication media developed and consulted widely.</li> </ul>		

- Manatee media and materials are available in local languages and disseminated.
- Number of awareness activities across the region, including radio/TV broadcasting, documentaries, campaigns and press events.
- Number of seminars held for decision makers to improve awareness of manatee conservation needs.
- Traditional values and customs favouring manatees are well known.
- Manatee CEPA activities built into number of site management plans.
- Manatee conservation is built into regional awareness programmes of the NBA, OMVS, CSRP and other regional authorities.
- Manatee conservation built into national environmental education programmes in number of countries.

All actions shall be updated and amended regularly by consensus to reflect progress, new situations and newly initiated activities, and to meet evolving conservation needs.

### Acronyms

ABE	Agence Beninoise de l'Environnement	NBA	Niger Basin Authority
Abidjan	Abidjan Convention	NEPAD	New Partnership for Africa's Development
CBO	Community Based Organisation	NGO	Non Governmental Organization
CCD	Convention to Combat Desertification	OMVS	Organisation pour la Mise en Valeur du fleuve Sénégal
CEPA	Communication, Education and Public Awareness	PRCM	Regional Coastal and Marine Conservation Programme for West Africa
CFA	Communauté financière d'Afrique	SIDA	Swedish International Development Cooperation Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora	SSG	Sirenia Specialist Group
CMS	Convention on the Conservation of Migratory Species of Wild Animals	UNEP	United Nations Environment Programme
COP	Conference of Parties	WATCH	Western African Talks on Cetaceans and their Habitats
CSRP	Sub-regional Fisheries Commission	WCMC	World Conservation Monitoring Centre
DR Congo	Democratic Republic of Congo	WCS	Wildlife Conservation Society
IUCN	World Conservation Union	WI	Wetlands International
MEA	Multilateral Environmental Agreement	WWF	World Wildlife Fund / World Wide Fund for Nature
MPA	Marine Protected Area		

## Annex 1

Overview of distribution, regional status and movements of the West African Manatee by range state<sup>1,2</sup>

Country	Distribution / Occurrence	Status	International Movements
Mauritania	Senegal River and associated wetlands. Has been recorded in the Diawling National Park.	Limited to Senegal River basin. Dams and locks in the lower Senegal River basin present obstacles to free movement.	Moves regularly between Mauritania and Senegal within the transboundary Senegal River.
Senegal	Senegal River and associated wetlands, including the Djoudj National Park and the Lac de Guiers. Also in the Sine Saloum Delta, the upper Gambia River (Niokolo-Koba) and the Casamance River system.	Widespread in main rivers and in coastal wetlands. Has probably decreased in Senegal River, where movement is impacted by dams and other obstacles. Hunting occurs in the Sine Saloum.	Moves between Senegal and: (a) Mauritania within the Senegal River; (b) Mali along the Senegal and Falémé rivers; (c) The Gambia along the Gambia River and at the coast; (d) Guinea-Bissau between the Casamance and Baía de Varela; and (e) Guinea along the Gambia River.
The Gambia	Gambia River (lower and middle sections), with records also from coastal areas and creeks and bolons, including Bao Bolon, Niumi and the Allahein River.	Fairly widespread in the Gambia River, where threats include habitat modifications, impacts of drought, hunting and accidental capture in fishing nets.	Moves regularly between The Gambia and Senegal along the Gambia River and between Saloum and Niumi at the north coast, also at the south coast along the Allahein River.
Guinea-Bissau	Probably most numerous in the Bijagós Archipelago, which includes Orango National Park. Also in most continental watercourses, including Rio Cacheu, Rio Mansoa, Rio Gêba, Rio Grande de Buba, Rio Tombali and	Widespread throughout coastal and riverine wetlands, and common in some areas <sup>3</sup> . Main threats are accidental captures in fishing nets, hunting, drought,	Moves regularly between Guinea-Bissau and Senegal in the Baía de Varela area, and Guinea in the area of Cacine / Tristao. There are probably no international movements

<sup>1</sup> Dodman, T., Ndiaye, M.D.D. & Sarr, K. (eds.) 2007. *Conservation Strategy for the West African Manatee*. Wetlands International, Dakar, Senegal / UNEP-Abidjan Convention, Nairobi.

<sup>2</sup> Powell J.A. 1996. *The Distribution and Biology of the West African Manatee (Trichechus senegalensis Link, 1795)*. United Nations Environmental Program, Regional Seas Program, Oceans and Coastal Areas, Nairobi, Kenya. 68p.

<sup>3</sup> Silva, M.A., Araújo, A., Djedjô, F., Gomes, L. & Monteiro, H. 1999. Plano Nacional de Conservação do Manatim Africano (*Trichechus senegalensis*) na Guiné-Bissau. UICN-Bissau, Guiné-Bissau / Instituto da Conservação da Natureza, Lisboa, Portugal.

Country	Distribution / Occurrence	Status	International Movements
	Rio Cacine; and in coastal creeks and bolons.	and the impacts of (anti-salt) dams.	inland, where its distribution is rather sparse.
Guinea	Occurs in coastal wetlands and lower reaches of the main rivers, such as Rio Componi and the Cogon River in the northwest and the Baie de Sangareyah. It also occurs in the headwaters of the Niger River, such as the Tinkisso, as well as the Gambia River.	May be fairly common in some coastal wetlands, but probably declining in the upper reaches of the Niger river basin. Considered a pest by some coastal rice farmers. Main threats are capture in fishing nets, hunting and changing habitats.	Inland, areas of movement are probably only along the Gambia River between Guinea and Senegal, and the Niger River between Guinea and Mali. In coastal areas, manatees move between Guinea and Guinea-Bissau around Iles Tristao; and Sierra Leone south of Benti and along the Scarcies / Kolenté.
Sierra Leone	Occurs in most river systems, including the Sierra Leone, Great Scarcies, Little Scarcies, Bunce, Sherbro, Malam and Waanje. Also present in lakes Mape and Mabesi. Found especially at the coast and in river mouths.	Fairly widespread in the main river systems, especially at the coast. Threats include hunting for meat and other products (also as pests of rice crops), and capture in nets.	Migratory movements up and down rivers, moving upstream during rains. Probably moves into Guinea at the coast along the transboundary Great Scarcies River and also at the coast between Sierra Leone and Liberia (Mano River).
Liberia	Found in Lake Piso, Cestos-Sankwen and the main rivers, including Mesurado, Cavally, St. Paul, Morro, St. John and Cestos. However, distribution up most rivers is limited by rapids, so the main distribution is in estuaries, coastal lagoons and lower reaches of the main rivers.	Appears to be reasonably common in the lower courses of the main rivers and in coastal wetlands. Main threats are accidental capture, hunting and habitat modifications, and maybe wounding from boat engines.	Manatees occur along the Cavally River, which is transboundary between Liberia and Côte d'Ivoire. Its status at the western coastal border with Sierra Leone and in the transboundary Mano River is uncertain.
Côte d'Ivoire	Occurs along entire coastline, especially in coastal lagoons, and some distance up the main rivers, including Cavally, Sassandra, Bandema, Comoé, Bia and Tano. Key areas include the lagoon complexes of Aby-Tendo-Ehy and Ebrié-Comoé, east of Abidjan, and to the west, west Ebrié-Agneby, Tagba-	Widespread in coastal areas, especially in lagoons and lower reaches of rivers, but not reported from upper reaches. The main threats are hunting and capture in fishing nets. Other threats include habitat modifications and pollution.	Manatees move between Côte d'Ivoire and Liberia along the transboundary Cavally River. In the east, they move between Côte d'Ivoire and Ghana at the lower reaches of the Tano River and associated coastal wetlands (Aby-Tendo-Ehy). Migration between river systems has been recorded.

Country	Distribution / Occurrence	Status	International Movements
	Makey-Tadio-Niouzoumou and N’Gni-Fresco.		
Ghana	Found in coastal lagoons, such as Abi, Tano and Ehy in the southwest, and in the Dayi, Asukawkaw, Obusum, Sene, Digya, Oti and Tordzie rivers. Also in Volta River and Volta Lake, notably in the arm of Afram area. Manatees in Volta Lake are cut off from the lower Volta by the Akosombo dam.	Lake Volta provides good manatee habitat, as well as certain coastal lagoons. The main threat is hunting for meat, whilst capture in nets, loss of habitat and pollution are also of relevance.	Manatees in the Abi, Tano and Ehy lagoons and the Tano river form a transboundary population with Côte d’Ivoire. The coastal border with Togo offers less suitable habitat for transboundary movements.
Togo	There are manatee records from coastal areas of Togo, such as Lakes Togo and Aheme and in the Mono River.	It is fairly rare in coastal wetlands, where main threats are hunting for meat and other products, habitat modification and accidental capture.	Manatees occur in the transboundary Mono River between Togo and Benin, and there may be some movements along the coast between Ghana, Togo and Benin.
Benin	Found in coastal lagoons such as Nokoué and lower reaches of rivers, including the Ouémé and Mono. Occurs some distance upriver, especially in the Ouémé. Also in the Niger River and tributaries in northern Benin, such as Mékrou and Alibori, especially in the W Parc.	Probably most numerous in the Ouémé River and in coastal lagoons. 125 animals estimated to occur in the country in the 1990s. <sup>4</sup> Hunted especially for meat and for various body parts, which are used notably in traditional medicine.	Manatees migrate up and down rivers, seemingly moving downriver after rains into lagoons when they are less saline. Moves between Benin and Togo along the Mono River, and presumably between southern Benin and Nigeria at Porto Novo. In the north, moves between Benin and Niger along the Niger River, and thence into Nigeria.
Nigeria	Occurs in the Benue, Niger and Cross Rivers and their associated wetlands, also in Lake Kainje on the Niger and Yankari (in Benue basin). It is well known from Lake Pandam, a sanctuary off the Benue River, which serves as a dry season refuge. It also occurs throughout much of the Niger Delta, and is	Although widespread in rivers, lakes and coastal wetlands, conservation status is variable. Main threats are habitat destruction, accidental capture in fishing nets, illegal and seasonal hunting, wounds from boats, reduction of water volume in the Niger and isolation due to	Manatees migrate along the main rivers, though some are now blocked by dams. Movements along the Benue are seasonal. Manatees move between Nigeria and (a) Benin most likely within coastal lagoons and along the Niger River, (b) Niger along the Niger River, and (c) Cameroon within coastal

<sup>4</sup> ABE (Agence Béninoise de l’Environnement). 1999. Répertoire des Indicateurs Environnementaux de Développement durable et de Compendium Statistique du Bénin. Cotonou, Bénin.

Country	Distribution / Occurrence	Status	International Movements
	reported from Lagos Lagoon.	dam construction.	wetlands, the upper Cross River and the Benue River (and maybe some tributaries).
Mali	Found throughout the Niger River system, including the Bani, except where access is halted by dams. Most numerous probably in the Inner Niger Delta, with its many lakes such as Lake Débo. It also occurs in the Senegal River, especially in the Kayes region.	Widespread in wetlands of the Niger River, notably the Inner Niger Delta, but has decreased as a result of direct threats, (hunting, fishing) and indirect threats (low flood levels, drought, sand deposition, habitat loss).	There are seasonal movements within the Niger River, where manatees move to deeper pools when water levels decrease. Moves along the Niger between Mali and Guinea (Kangaba – Siguiri) and Mali and Niger (Labezanga). Also moves between Mali and Senegal along the Senegal River.
Niger	Occurs in the Niger River and associated wetlands and lower reaches of tributaries. There are about ten key sites along the length of the Niger River in Niger.	Main threats are hunting, sand deposition in channels, and isolation by dams, whilst intense harvesting of <i>bourgou</i> grasses can reduce food availability.	Seasonal movements occur, and during the dry season manatees seek out areas of deeper water. <sup>5</sup> Moves along the Niger River between Niger and (a) Mali, (b) Benin, where also moves along Mékrou, and (c) Nigeria.
Cameroon	Found throughout the coastal zone in suitable wetlands, especially where there are extensive creeks and estuary habitat, such as Rio del Rey, Baie de Cameroun and the River Sanaga (below Edea). They also occur in the upper Cross River and in the Bénoué River of northern Cameroon, including Lake Lagdo.	Widespread in coastal wetlands, perhaps fairly common at sites such as Douala-Edea. Pollution and impacts on mangrove areas are threats at coastal sites. Manatees are hunted in some areas, mainly for their meat.	At the coast, moves between Cameroon and (a) Nigeria, where there are extensive wetlands, also along the Akpa Yafé River; (b) Equatorial Guinea, in the Ntem (Campo) area. Inland, moves between Cameroon and Nigeria in the Upper Cross River. Further north, moves between Nigeria and Cameroon along the Bénoué and into Chad along the Mayo Kébi.
Chad	Present in the Mayo Kébi River and associated wetlands, notably lakes Léré and Tréné, but appears to be absent from the Chari River Basin.	Limited distribution in south-west Chad, where the main threat is from hunting. Apparently extirpated from Chari Basin.	Moves between wetlands of the Mayo Kébi River, which includes movements between Chad and Cameroon.

<sup>5</sup> Ciofolo, I. & Sadou, I. 1996. Le Lamantin du Niger (*Trichechus senegalensis*). Technical report 7 CACP/MIR/O82. Ministère des finances et du Plan. Union Européenne. Genève.48pp.

Country	Distribution / Occurrence	Status	International Movements
Equatorial Guinea	There is a general lack of information, but manatees occur in suitable coastal wetlands, notably the Rio Muni estuary.	Limited to a few coastal wetlands, where main threats are hunting, fishing and habitat changes.	Movements likely between Equatorial Guinea and (a) Cameroon (Ntem-Campo area) and Gabon (Rio Muni estuary).
Gabon	Found throughout the coastal region of Gabon, including Mondah Bay, Gabon River, the Ogooué River and its delta and in coastal lagoons such as Setté Cama.	Widespread in coastal wetlands, less common up rivers. It is hunted widely, especially for its meat, and may well be in decline.	Movements are likely between Gabon and (a) Equatorial Guinea in the Muni estuary, and (b) Congo at the coast, (between Mayumba and Conkouati-Douli national parks).
Congo	Occurs in most coastal wetlands, notably Conkouati-Douli and in the Kouliou River and associated wetlands, including Lake Nanga. Also in the lower Loémé River.	Reasonably common in coastal wetlands, but under pressure in several areas, notably from direct hunting, capture in fishing nets and disturbance.	Movements are likely between Congo and Gabon at the coast, and between Congo and the Angolan territory of Cabinda.
Democratic Republic of Congo	Found in the lower reaches of the Congo River, including the Parc Marin des Mangroves.	Restricted to the lower Congo River (and river mouth), where the main threats are habitat destruction, hunting and pollution.	Only international movements are between DR Congo and Angola, mainly at the mouth of the Congo River.
Angola	Occurs in lower reaches of rivers as far south as the Cuanza and Longa rivers, including Mussulo Bay. Status in Cabinda is uncertain. Occurs in the transboundary Congo River.	Rather sparsely distributed in Angola, except for the Cuanza River. Main threats are hunting, stranding in small pools, habitat destruction and capture in fishing nets.	Moves between Angola and DR Congo along the lower part of the Congo River and the river mouth. Probably also moves between Cabinda and Congo in coastal wetlands.