



## 14<sup>ème</sup> RÉUNION DU CONSEIL SCIENTIFIQUE DE LA CMS

*Bonn, Allemagne, 14 au 17 mars 2007*

CMS/ScC14/Doc. 6  
Point 6(a) de l'ordre du jour

### **ETAT DE CONSERVATION DU DAUPHIN A BOSSE DE L'ATLANTIQUE, UN AVENIR COMPROMIS?**

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#### **Historique**

1. De tous les cétacés vivant dans les eaux tropicales et subtropicales d'Afrique de l'Ouest, le dauphin à bosse de l'Atlantique est la seule espèce endémique. C'est aussi le cétacé qui vit tout au long de l'année près du rivage, souvent juste au delà du ressac, et il est donc en contact étroit avec les humains et leurs activités. C'est aussi une des espèces qui montre la plus grande méfiance à l'égard des humains. S'il est approché, il fuit même de petits bateaux prouvant ainsi sa grande sensibilité aux perturbations les plus infimes. En raison de cette situation particulièrement vulnérable, depuis 1991 l'espèce a été inscrite à l'Annexe II de la CMS. Depuis lors, le développement côtier et la dégradation n'ont fait qu'augmenter dans toute la région (par ex. Khan et Nikkola, 2002) et la pression sur l'habitat du dauphin n'a pu que s'accroître. En outre, malgré l'amélioration des efforts en matière de recherche, les observations sont rares. Un des buts du projet WAF CET-2 parrainé par le PNUE/CMS, mis en œuvre au Sénégal et en Gambie (et à un moindre degré en Guinée-Bissau), consistait à évaluer d'une manière générale l'état actuel du dauphin à bosse de l'Atlantique (Van Waerebeek et autres, 2003, 2004).

#### **Répartition et populations**

2. Les variations géographiques intraspécifiques en morphologie et en génétique moléculaire du *S. teuszii* n'ont pas été étudiées. Cependant, pour des raisons pratiques et de conservation Van Waerebeek et autres, (2004) ont désigné provisoirement huit stocks de gestion, définis biogéographiquement, dont sept sont connus comme existant encore, comparables aux unités de gestion de la CBI pour les grandes baleines, pour lesquels les données biologiques par population sont absentes ou insuffisantes (Donovan, 1991). Les habitats documentés comprennent : la baie de Dahkla, (Rio de Oro-Sahara occidental), le Banc d'Arguin (Mauritanie), le Saloum-Niumi (Sénégal-Gambie), le Canal do Gêba-Archipel Bijagos (Guinée-Bissau), la Guinée méridionale, le Gabon et l'Angola. Un 8<sup>ème</sup>, stock historique, à l'estuaire du Cameroun (où le holotype a été trouvé en 1892), reste hypothétique. L'existence possible d'un 9<sup>ème</sup> dans la partie occidentale du delta Togo/Volta demande une investigation. Certains de ceux-ci au moins devraient avoir un

statut de population biologique, notamment les trois stocks les plus septentrionaux semblent relativement isolés, peut-être un récent phénomène suite à une extirpation locale de communautés intermédiaires comme résultat d'une pression humaine croissante. D'autres stocks peuvent se fondre en des populations biologiques uniques avec des connaissances plus approfondies. Si une répartition quasi continue à partir du Rio de Oro vers l'Angola au sud a pu exister historiquement, des indications relatives à la répartition contemporaine de lacunes se font jour, probablement le résultat de prises accidentelles soutenues et de l'emprise humaine sournoise sur des côtes autrefois désolées. Cette espèce n'a jamais été considérée comme commune.

### **Abondance**

3. On ne dispose d'aucune estimation de l'abondance de *S. teuszii* quelle que soit la zone, mais la densité est certainement faible comparée à celle des delphinidés océaniques largement répartis. Les populations ci-dessus mentionnées s'élèvent estime-t-on à quelques centaines d'animaux tout au plus et non à des milliers. Par exemple, celle du Banc d'Arguin, qui est supposée bénéficier de la meilleure protection en raison de la taille de la Réserve marine PNBA, de son éloignement et du fait qu'aucun engin motorisé n'y est autorisé, ne devrait pas être composée de plus de 100 individus (Maigret, 1980). Une estimation plus récente l'avait fixée « à au moins plusieurs centaines ». Cependant, une enquête récente de trois jours portant sur 226 miles nautiques effectuée dans d'excellentes conditions a fait 11 observations de grands dauphins mais n'a pas rencontré de dauphin à bosse de l'Atlantique (Van Waerebeek et Jiddou, 2006). Cela suggère que l'espèce pourrait être devenue ou est restée (Maigret, 1980) très rare, même dans des circonstances optimales. Une estimation de « pas plus de 100 animaux » a également été citée pour la population du Delta du Saloum (Maigret, 1980) et en se basant sur des observations personnelles de la population du Saloum-Miumi depuis 1997, il semble très improbable que l'abondance puisse dépasser quelques centaines. Le Canal do Gêba et l'Archipel de Bijagos en Guinée-Bissau pourrait abriter une des populations existantes les plus vigoureuses de peut-être plusieurs centaines. On ne peut rien dire au sujet des populations de la Guinée-Conakri et de l'Angola, sauf qu'elles existent. Les groupes aperçus au large de la côte méridionale de l'Angola étaient peu importants, soit moins de 10 individus, au large du Gabon trois groupes comptent de 6 à 35 individus (Collins et autres, 2004). Aucune évaluation notable ne peut être faite pour le Cameroun, le Togo et les zones intermédiaires, ni pour tout autre pays de l'Afrique de l'Ouest (Van Waerebeek et autres, 2004).

### **Captures**

4. La majorité des spécimens figurant dans les collections sont des dérivés de dauphins pris soit accidentellement soit directement dans de petites pêcheries côtières. Cependant, la véritable importance de la mortalité dans les pêcheries des Etats de l'aire de répartition serait beaucoup plus élevée que ne le suggère ces quelques observations opportunes, si l'on considère que les signalements de capture sont à peu près inexistant. En se basant sur les spécimens récupérés et l'accroissement important des efforts de pêche artisanale bien documenté (par ex., Khan et Nikkola, 2002), la mortalité accidentelle par enchevêtrement dans des filets peut être une des plus importantes menaces pour la survie de l'espèce et une des plus difficiles à traiter. L'espèce vit dans une zone où la croissance de la population humaine est élevée et où l'on manque de protéines, ce qui constitue un potentiel de la consommation humaine pour les pêcheurs (Klinoska,

1991). Leur habitude de venir près du rivage fait que ces animaux sont des cibles facilement accessibles.

### **Détérioration de l'habitat**

5. Le dauphin à bosse de l'Atlantique est une espèce très timide. Toutes les formes possibles de développement côtier accompagnées des perturbations et des dégradations connues pour survenir en Afrique de l'Ouest (voir Khan et Nikkola, 2002) affecteront directement ou indirectement l'espèce. Elles comportent, sans y être limitées, la surexploitation des mangroves, les constructions côtières, (ports, résidences, raffineries, chantiers navals), l'aquaculture, l'exploration et l'extraction du pétrole et du gaz, les marées noires accidentelles, l'accroissement de la navigation, le tourisme et les effluents (domestiques, agricoles, chimiques). On estime que les grands efforts des pêcheries artisanales et industrielles exploitant les populations de poissons néritiques (par ex., Deme, 1996) ont, semble-t-il, des conséquences significatives. La réduction des fouilles pour se nourrir de poissons peut empêcher l'espèce de se remettre d'une importante mortalité par des prises accidentelles.

### **Conclusion**

6. Le Groupe des spécialistes des cétacés de l'UICN a d'une manière appropriée désigné le *S. teuszii* en tant que priorité élevée pour la recherche et la conservation en raison de son aire de répartition restreinte, de l'étroitesse de sa niche écologique, de son importance numérique généralement faible et des menaces permanentes dont cette espèce est l'objet (Reeves et autres, 2003). La plupart de nos connaissances sur le dauphin à bosse de l'Atlantique sont fragmentaires, incertaines ou non confirmées à l'exception de la tendance de l'état de son habitat. Pour un avenir prévisible, le développement accéléré des zones côtières d'Afrique de l'Ouest et la détérioration progressive concomitante en tant que biotope viable pour un cétacé qui fuit les humains sont non seulement certains mais aussi tragiquement inévitables dans une région ayant une grande croissance démographique humaine. Ecologiquement conditionné par sa grande adaptation évolutive à une niche très étroite d'eaux littorales chaudes et peu profondes, cette espèce de dauphin n'aura aucun lieu de refuge. Pour que le dauphin à bosse de l'Atlantique ait une réelle chance de survie au 21<sup>ème</sup> siècle, il aura besoin de toutes les mesures possibles de protection, à commencer par la protection juridique maximale possible.

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

**A. PROPOSAL:** Include the Atlantic humpback dolphin *Sousa teuszii* (Kükenthal 1892) on CMS Appendix I.

**B. PROPONENT:** [preferably a known range state].

**C. SUPPORTING STATEMENT**

**1. Taxon**

<b>1.1 Classis</b>	Mammalia
<b>1.2 Ordo</b>	Cetacea
<b>1.3 Familia</b>	Delphinidae
<b>1.4 Genus, species</b>	<i>Sousa teuszii</i> (Kükenthal 1892)
<b>1.5 Common names</b>	E: Atlantic Humpback Dolphin F: Dauphin à bosse Atlantique DE: Kamerun-Flußdelphin SP: Delfín jorobado del Atlantico POR: Golfinho-corcundo-do-Atlântico

**2. Biological data**

**2.1 Distribution (current and historical)**

The Atlantic humpback dolphin is a small delphinid regionally endemic to the tropical and subtropical eastern Atlantic nearshore waters of West Africa (Culik, 2002; Jefferson *et al.*). Its status was recently and comprehensively reviewed as part of the CMS/UNEP Wafcet-2 project (Van Waerebeek *et al.*, 2003, 2004). *S. teuszii* was described in 1892 from a carcass found in Cameroon. Second and third specimens were collected respectively in 1925 and 1943 in Senegal. Next it was sighted south of Conakry, Guinea, in 1953. Over the next half-century it was encountered in Dakhla Bay (Rio de Oro/Western Sahara), Banc d'Arguin (Mauritania), Siné-Saloum delta (Senegal), Niimi National Park (The Gambia), Canal do Gêba-Bijagos (Guinea-Bissau), southern Guinea, Gabon Estuary and finally in southern Angola, but it has never been considered a common species (Beaubrun, 1990; Robineau and Vely, 1998; Van Waerebeek *et al.*, 2003; Collins *et al.*, 2004).

Some authors have argued for a largely discontinuous distribution (Maigret, 1980; Ross *et al.*, 1994; Van Waerebeek *et al.*, 2000), while others indicated a more or less continuous coastal range from Dakhla Bay or Senegal to Cameroon (Dupuy, 1983; Klinowska, 1991; Rice, 1998; Jefferson *et al.*, 1993) which is possible but theoretical. The information on the presence or absence of Atlantic humpback dolphins is incomplete due to a paucity of field survey effort. While a quasi-continuous distribution may have existed historically, indications of contemporary distribution gaps are emerging, presumably the result of sustained bycatches and creeping human encroachment on once desolated coasts.

## 2.2 Population (estimates and trends)

### *Population identity*

Intraspecific geographic variation in morphology and molecular genetics of *S. teuszii* has not been studied. The samples required for biological population assessments are currently lacking. However, for practical and conservation purposes Van Waerebeek *et al.* (2004) provisionally designated eight management stocks, comparable to the biogeographically defined IWC management units for large whales where biological stock data are absent or deficient (Donovan, 1991). In the definition of the seven confirmed extant stocks, guidance was taken from sightings and specimens clustered around a documented habitat, i.e. from north to south, Dahkla Bay, Banc d'Arguin, Saloum-Niumi, Canal do Gêba-Bijagos, South Guinea, Gabon and Angola. The species holotype was collected from near the port of Douala, Cameroon. The species was never again reported from this country, thus an 8<sup>th</sup> stock remains hypothetical. Potential existence of a 9<sup>th</sup> management stock, western Togo/Volta delta, requires investigation. Although no firm claims of biological population status can be made here for any of these management stocks, at least some are expected to acquire such status with further research. Notably, the three northernmost stocks (Dahkla Bay, Banc d'Arguin, Saloum-Niumi) are thought to be relatively restricted in terms of gene flow, possibly a recent phenomenon following local extinctions of communities in-between as the result of mounting human pressure. Some other stocks may coalesce into single biological populations.

### *Abundance*

No abundance estimates for *S. teuszii* are available from any area, but density is certainly low compared with that of widely distributed, oceanic delphinids. The above-mentioned stocks are thought to amount to at most hundreds, not thousands, of animals. Some estimation of relative density can be gained as follows. The northernmost community, Dahkla Bay, is smallest by any definition. In four sightings, the aggregated total number observed was 28 dolphins, and some of these may have been resightings (Notarbartolo di Sciara *et al.*, 1998). The Banc d'Arguin stock was suggested not to exceed more than 100 individuals (Maigret, 1980). A more recent guess puts it 'at least at high hundreds' (Alex Aguilar, pers. comm., cited in Van Waerebeek *et al.*, 2004). However a 2006 survey of PNBA waters sighted many (11 sightings) common bottlenose dolphins *Tursiops truncatus* but did not encounter a single Atlantic humpback dolphin in 226nmiles (27h 59min) of survey effort (Van Waerebeek and Jiddou, 2006), which suggests that humpback dolphins may have become, or have remained (Maigret, 1980) quite rare. A guesstimate of "not more than 100 animals" was also cited for the Saloum Delta population by Maigret (1980), while Mitchell (1975a) stated that for coastal waters of southern Senegal "it is rather common" (p. 910). Based on observations of the Saloum-Niumi stock since 1997, it appears highly unlikely that abundance could exceed the low hundreds. From Spaans (1990) and Powell *et al.* (1996), and more recent sightings, it follows that at least until 1998 the species was not uncommon in the waters of Canal do Gêba and Bijagos Archipelago in Guinea-Bissau; and that may be one of the healthiest extant stocks. Nothing can be said about the Guinea-Conakry and Angola stocks, except that recent records have confirmed their existence, but groups seen off southern Angola were small, less than ten individuals. Off Gabon three groups ranged from 6-35 individuals (Collins *et al.*, 2004). No meaningful guesses can be made for Cameroon, Togo, nor for any other West African country.

Fisheries monitoring in western Ghana (Debrah, 2000; Van Waerebeek and Ofori-Danson, 1999; Ofori-Danson *et al.*, unpublished data) documented hundreds of landed delphinids taken in coastal fisheries, none *S. teuszii*. Atlantic humpback dolphins, if not entirely absent, must be very



rare west of Tema, central Ghana. The void may extend west several hundreds of kilometers into Ivory Coast, for there are no reports from there. The absence may be due to local extirpation after decades of high levels of bycatches, if not directed harvest.

In the absence of scientific abundance estimates, unknown recruitment, population structure, and trends, combined with a lack of understanding of local threats, adherence to the precautionary principle seems advised.

### 2.3 Habitat (short description and trends)

No offshore sightings have been reported. Atlantic humpback dolphins inhabit predominantly tropical coastal and estuarine habitat with soft-sediment bottoms. In the Saloum Delta and Niimi National Park it is seen nearshore within 100-200 m from the beach. Also, off southern Angola and in Gabon, animals were sighted within a short distance from shore. A young individual was taken alive in a beach-seine near Joal in 1955 (Van Waerebeek *et al.*, 2003, 2004; Collins *et al.*, 2004).

Tolerance for variable salinity levels seems high and includes both the brackish water of large estuaries and highly saline waters such as found in the Saloum Delta during the dry season (Van Waerebeek *et al.*, 2000). Although *S. teuszii* has repeatedly been suggested to also occupy riverine habitat (Dupuy, 1983; Jefferson *et al.*, 1993; Klinowska, 1991; Powell *et al.*, 1996), there is no evidence for that. There are no positive records from the fresh water biotope, beyond seawater intrusion of rising tides in estuaries. This is a relevant difference with *Sousa chinensis*, for instance, which does occasionally occur in riverine habitat.

Claims of sightings of *S. teuszii* in the Niger, Senegal, and Casamance Rivers (Klinowska, 1991) are unsupported. Interestingly, common bottlenose dolphins are confirmed to penetrate considerably upstream with rising tide in the Casamance and Gambia Rivers and may have been mistaken for Atlantic humpback dolphins (Van Waerebeek *et al.*, 2003, 2004).

### 2.4 Migrations (kinds of movement, distance, proportion of the population migrating)

Populations or communities that straddle two nations almost certainly move between them with high frequency. For instance, cross-border movements between Senegal's Saloum Delta and The Gambia's Niimi National Park were observed on several instances, and the Saloum-Niimi is considered a single stock (Van Waerebeek *et al.*, 2004). Some movements between Saloum-Niimi and the Bijagos Archipelago (Guinea-Bissau) are also expected, considering the relatively limited distance (*ca.* 280 km) and very suitable coastal habitat in-between.

Unpublished and published observations from October through March (Cadenat, 1959), a sighting in April (Cadenat, 1959), and a capture off Joal in August point to a year-round presence in Saloum-Niimi (Maigret, 1977).

Maigret (1980) suggested a possible seasonal movement between Banc d'Arguin (Mauritania) and the Saloum Delta (Senegal). However, there is no evidence of seasonality in occurrence in either area, nor any observations that would point to regular long-distance seasonal movements between the suggested 'home ranges'. Perhaps more probable would be that some season-dependent movements occur around one particular stock's core area.

### 3 Threat data

#### 3.1 Direct threat to the population (factors, intensity)

##### *Bycatches*

The majority of specimens archived in collections are derived from dolphins taken either incidentally or directly in small-scale coastal fisheries. The only specimen record from Rio de Oro/Western Sahara was a carcass found entangled in an octopus line in 1996. Imragen fishermen of Mauritania were photographed in 1967 cutting up an animal reported 'stranded' (Busnel, 1973). However, being fresh it was most probably a dolphin by-caught in nets. Another animal killed in a gillnet at Ile Arguin in 1995 was eaten by local fishermen. At least five individuals from Senegal have come from bycatches in shark gill nets in the period 1955-1956 (Cadenat 1956a, 1957; Cadenat and Paraiso, 1957).

In November 1996, three carcasses of *S. teuszii* were found together on uninhabited (sacred) Sangomar Island with nylon rope knotted around the tailstocks of two animals. They were abandoned on the island presumably for animist-religious reasons (Van Waerebeek *et al.*, 1997). The only known specimens from Guinea-Bissau and Guinea died in a fishing trap in 1989 (Sequeira and Reiner, 1992) and an unidentified fishing device in 2003, respectively (Van Waerebeek *et al.*, 2004).

Importantly, the true extent of fisheries-related mortality in all range states is expected to be considerably higher than these few opportunistic findings suggest, as reporting is next to nonexistent. Based on specimens recovered and well-documented steep increases in artisanal fishing effort (e.g., Khan and Nikkola, 2002), incidental mortality may be the most important threat to the species' survival and one of the hardest to address (Van Waerebeek, 2003).

##### *Directed catches*

The species lives in an area of high human population growth and protein food deficit, so there is potential for fisheries for human consumption (Klinowska, 1991). The nearshore habits of Atlantic humpback dolphins make them readily accessible targets. Specific accounts of directed takes are scarce but they are believed to occur with some regularity. A female taken alive in a beach seine near Joal in 1955 was not returned (Cadenat, 1956a). The fishers communities of Joal, Fadiouth, M'Bour and some others along Senegal's Petite Côte, have long been known to harpoon dolphins until at least 1996 (Cadenat, 1947, 1956b; Van Waerebeek *et al.*, 1997), including humpback dolphins of the Saloum-Niumi population. The illegality of the practice induces fishermen to hide all evidence, which they do efficiently, so estimates of numbers taken are elusive. Butcher remains are either discarded at sea, used as bait, or buried on the beach (Van Waerebeek *et al.*, 1997, 2000).

#### 3.2 Habitat destruction (quality of changes, quantity of loss)

The Atlantic humpback dolphin is a shy species; when approached by boat it will flee. All possible forms of coastal development with accompanying disturbance and degradation known to occur in West Africa (see Khan and Mikkola, 2002) will directly or indirectly affect the species. These include, but are not limited to, over-exploitation of mangroves, coastal construction (harbours, residences, refineries, shipyards), aquaculture, oil and gas exploration and extraction (drilling), accidental spills, increased shipping, tourism, and effluents (domestic, agricultural, chemical). Huge fisheries effort exploiting neritic fish stocks, both artisanal and industrial (e.g. Armah *et al.*, 1996; Deme, 1996; Khan and Mikkola, 2002), including on both known prey



species of *S. teuszii*, are thought to cause a major impact. Reduced foraging success may hamper recovery from high bycatch mortality.

### 3.3 Indirect threat (e.g. reduction of breeding success by pesticide contamination)

No dedicated research has been initiated and therefore no specific information is available on such indirect threats, but, as indicated above, the exclusive nearshore habits of Atlantic humpback dolphin would give it the dubious distinction of being West Africa's cetacean most likely to receive the most severe impact.

### 3.4 Threat connected especially with migrations

There are no known threats different from the ones outlined above.

### 3.5 National and international utilization

## 4 **Protection status and needs**

### 4.1 National protection status

No specific legislation seems to exist that protects Atlantic humpback dolphin. However, all small cetaceans are formally protected by national legislation in Senegal, The Gambia, Mauritania, Ghana, Benin and Togo, and presumably in several more range states. Nonetheless, in practice, bycatches of small cetaceans in fisheries, even if systematic and predictable, or even somehow directed or assisted (e.g. live-caught animals not being returned), are not being monitored.

### 4.2 International protection status

Recognizing its vulnerable situation, the Atlantic humpback dolphin has since 1991 been assigned to CMS Appendix II. Since then coastal degradation has vastly increased region-wide (e.g. Khan and Mikkola, 2002) and pressure on this species can only have risen. Despite much increased search effort, sightings remain scarce. CITES in recognition of its vulnerable situation bans all international commercial trade (Appendix I). IUCN considers the species 'Data Deficient'. For the species to survive, *S. teuszii* will need the maximum possible legal and other protection, considering its low abundance, threatened habitat, suspected fragmentation of distribution range, unknown natural history and low prospects for efficient monitoring of stock status.

### 4.3 Additional protection needs

Cetaceans should be added to the template of reporting forms used to gather national statistics on landings of marine biological resources. It is recommended that fisheries observers receive some basic training as to improve the quality of reporting. Although most fishermen will hide cetacean bycatches for fear of sanctions, some bycatches are openly landed and could be documented. Considering the poor state of knowledge on this species, even isolated cases may provide useful information.

## 5. **Range States of Atlantic humpback dolphin**

### Confirmed range states:

Mauritania, Senegal, The Gambia, Guinea-Bissau, Guinea, Cameroon, Gabon and Angola.  
(Western Sahara)

Possible range states: Ghana and Togo

## 6. Comments from Range States

## 7. Additional remarks

While distribution historically may have been quasi-continuous over the species' range, indications of contemporary distribution gaps are emerging. Precise documentation of present-day distribution and baseline abundance data need to be obtained. To start with, for several coastal nations, simple information on whether or not they are range states should be gotten. Other research priorities include assessment of the levels of gene-flow between the eight defined management stocks, the collection of carcasses and biological samples and the study of behavioural ecology. The IUCN CSG (Cetacean Specialist Group) appropriately tagged *S. teuszii* as a high priority for research and conservation because of its restricted range, narrow ecological niche, generally low abundance, and continuing threats (Reeves *et al.*, 2003).

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