



# Convention on the Conservation of Migratory Species of Wild Animals

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## 16<sup>TH</sup> MEETING OF THE CMS SCIENTIFIC COUNCIL

Bonn, Germany, 28-30 June 2010

UNEP/CMS/ScC16/Doc.18  
Agenda Item 14.1

### DRAFT PROPOSALS FOR THE INCLUSION OF CUVIER'S AND BLAINVILLE'S BEAKED WHALES ON CMS APPENDIX I

*(Introductory note prepared by the CMS Secretariat)*

1. The draft proposal for the amendment of CMS Appendix I attached to this note has been submitted by the Government of Spain. The combined proposal calls for the listing of both Cuvier's beaked whale (*Ziphius cavirostris*) and Blainville's beaked whale (*Mesoplodon densirostris*).
2. It has been submitted to the Scientific Council for its consideration. Based on a positive evaluation from the Scientific Council, the Secretariat will address appropriate Parties and invite them to consider and subsequently submit the proposals to the Tenth Meeting of the Conference of the Parties.

#### **Action Requested:**

The Scientific Council is requested to:

- Examine the proposals and see whether they can be formally submitted.



**PROPOSAL FOR AMENDMENT OF THE APPENDICES  
TO THE CONFERENCE OF THE PARTIES OF THE CONVENTION ON THE  
CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS**

**A. PROPOSAL**

Inclusion of Cuvier's beaked whale (*Ziphius cavirostris*) and Blainville's beaked whale (*Mesoplodon densirostris*) on Annex I

**B. PROPONENT: Government of Spain**

**C. SUPPORTING STATEMENT**

**1. Grupo taxonómico**

1.1 Clase: Mammalia

1.2 Ordo: Cetacea

1.3 Familia: Ziphiidae

1.4 Species:

a) *Ziphius cavirostris* (Cuvier, 1823)

b) *Mesoplodon densirostris* (Blainville, 1817)

1.5 Common names

a) English: Cuvier's beaked whale; Goose beaked whale  
Spanish: Zifio de Cuvier; Roas

b) English: Blainville's beaked whale; Goose beaked whale  
Spanish: Zifio de Blainville; Roas

**2. Biological data**

2.1 Distribution

Cuvier's beaked whale is the most widely distributed species of the family Ziphiidae, with a cosmopolitan presence in most oceans excepting polar and subpolar waters; Blainville's beaked whale has a more restricted distribution in warm and temperate waters (Leatherwood y Reeves 1983). Beaked whales inhabit deep waters and so are usually found far from the coast but little is known about their offshore distribution. However, resident or partially resident populations have been found in the Ligurian Sea (Revelli *et al.* 2008) of Cuvier's beaked whales and of both Cuvier's and Blainville's beaked whales in relatively coastal waters off Bahamas (Claridge y Balcomb 1995), Hawaii (Baird *et al.* 2007; McSweeney *et al.* 2007) and El Hierro in the Canary Islands (Aguilar de Soto *et al.* 2004; Aparicio *et al.* 2006; Aguilar de Soto 2006; Aparicio 2008).

2.2 Population

There are no demographic data on the majority of the species of the family Ziphiidae and this lack of data has traditionally impeded the evaluation of their conservation status. The size of the local populations of Cuvier's and Blainville's beaked whales has been studied in Hawaii (Baird *et al.* 2007) and off El Hierro in the Canary Islands (Aparicio 2008; Aguilar Soto *et al.* 2010). Results show that the local populations are small: the abundance of Cuvier's beaked whale is comparable in Hawaii and El Hierro (best estimate of 56 whales in Hawaii and 44 whales in El Hierro), while the population of Blainville's beaked whale in Hawaii (best estimate of 144 whales) is higher than in El Hierro (best estimate of 59 whales), although this may be due to differences in the extension of the survey area in both studies.

The population studies in Hawai and El Hierro are based on photo-identification techniques. However, the elusive behaviour of Cuvier's and Blainville's beaked whales, species that spend most of their time diving (Tyack *et al.* 2006), makes necessary long temporal investment to record a sufficient photographic sample size as to apply statistical analysis for population abundance estimates. For this reason there are no data on demographic dynamics of the local populations.

The difficulties on discriminating beaked whale species at sea has resulted in line transect cetacean surveys in the Pacific yielding pooled abundance estimates for all beaked whales of genus *Mesoplodon*, *Berardius* and *Ziphius* in the area (Barlow y Forney 2007). The resulting abundance estimates have a large coefficient of variation ( $CV > 0.6$ ) due to the rarity of Ziphiidae sightings and thus the probability to detect even a dramatic reduction in the abundance of Ziphiidae species is considered very low (Taylor *et al.* 2007)

### 2.3 Habitat

Blainville's and Cuvier's beaked whales usually inhabit deep waters far offshore. However, in the Canary Islands, where deep waters are found very near the coast, these species have been observed both close to the shore (<1km) in shallow depths (200m) (Aparicio *et al.* 2004; Arranz *et al.* 2008) and at long distances from the islands (up to 140 km) and at 2000m depth (Fais *et al.* 2010). Blainville's and Cuvier beaked whales perform long and deep foraging dives (maximum of 70 min / 1300 m and 90 min / 1995 m, respectively, Tyack *et al.* 2006, M. Johnson & N. Aguilar pers. comm). During each foraging dive these whales attempt to capture 20-30 prey (Johnson *et al.* 2004) in mesopelagic and benthopelagic waters (Aguilar de Soto 2006, Revelli *et al.* 2009, Arranz *et al.* 2008)

### 2.4 Migrations

There are little or no data on the migratory movements of Blainville's and Cuvier's beaked whales and the few existing studies indicate that these species may show territorial fidelity in some areas (McSweeney *et al.* 2007; Baird *et al.* 2007; Aparicio 2008) and that Cuvier's beaked whale has genetically isolated populations within its distribution area (Dalebout *et al.* 2008). However, both beaked whale species inhabit deep waters that in some parts of their distribution include both national and international waters. An example is provided by the populations in the Canary Islands, where both species have been observed within the 12 nm boundary of the national waters surrounding the Archipelago (Aguilar de Soto *et al.* 2004; Arranz *et al.* 2008), and offshore at up to 140 km NE of the Archipelago, in international waters (Fais *et al.* 2010). It is very possible that this trans-boundary pattern of distribution is common in other areas, making the conservation of the populations an international concern.

## 3. **Threat data**

Beaked whales are the taxon most commonly involved in atypical mass strandings associated with naval exercises, suggesting that Ziphiidae are especially sensitive to acoustic pollution. Mass strandings such as those recorded in several areas of the world (Annex I) might represent an important demographic impact on small local populations (Aparicio *et al.* 2009) For example, after the beaked whale mass stranding in Bahamas 2000, sightings of Cuvier's beaked whale became rare in the area and whales previously photo-identified have not been re-sighted (D. Claridge, com. pers.).

### 3.1 Direct threats

#### **Acoustic pollution**

Atypical mass strandings of Cuvier's and Blainville's beaked whales have been associated with naval exercises involving the use of intense mid-frequency sonar or underwater charges (Martín *et*

al. 2003, Fernandez *et al.* 2005). When necropsies were performed, the results show a common pathologic pattern including haemorrhages in multiple organs (Fernández *et al.* 2005). Some mass strandings of beaked whales have been recorded also in coincidence with seismic prospectings (Malakoff 2002), although it was not possible to perform a veterinary analysis to investigate the physical causes of death. Annex I presents a partial listing of mass strandings involving Cuvier's and/or Blainville's beaked whales. Beaked whales are the most common species in these atypical strandings, suggesting a special sensitivity of Ziphiids to acoustic pollution. Within the family Ziphiidae, Cuvier's beaked whale is the most commonly affected and it is unknown if this reflects the cosmopolitan distribution of the species, resulting in a larger overlap with impacting activities, or a higher sensitivity of this species.

### **Accidental captures. Bycatch**

Bycatch of beaked whales has been documented in different fisheries and geographical areas, from the Mediterranean to the Pacific, involving mainly Cuvier's beaked whales but also species of genus *Mesoplodon* and unidentified beaked whales (di Natale 1994; Carretta *et al.* 2008)

### **Ship collisions**

There are sparse reports of slip collisions with ziphids, but the regularity of these events is not quantified.

#### 3.2 Habitat destruction or modification

Acoustic pollution is one of the parameters that affect the quality of the marine environment and the increase of ocean background noise, produced mainly by shipping noise, can mask the ultrasonic vocalizations of beaked whales in some cases (Aguilar de Soto *et al.* 2006). These authors present an example of a large vessel passing in the vicinity of a Cuvier's beaked whale diving at 700m depth. The noise produced by the ship reduced the distance at which the whale could echolocate for prey by more than 50%, while the distance at which the whale could detect communication signals from conspecifics was reduced by more than five times. Results suggest that the whale could react to high level noise by changing its foraging and diving behaviour (Aguilar de Soto *et al.*, *op. cit.*)

#### 3.3 Indirect threat

#### 3.4 Threat connected especially with migrations

The distribution of beaked whales in deep international waters results in the possibility of these species overlapping geographically with potential impacting activities in these waters, such as seismic prospecting or naval exercises. Potential impacts have not been evaluated excepting in the case of atypical mass strandings.

#### 3.5 National and international utilization

These species are not subject of dedicated hunting

## **4 Protection status and needs**

### 4.1 National protection status

The lack of data on population abundance prevents evaluation of the conservation status of the species. However, this may be revised in subsequent updates of the Spanish list of protected species to consider recently available scientific information.

#### 4.2 International protection status

Beaked whales are protected by the EU Habitat Directive and Cuvier's beaked whale is included in the IUCN and Appendix II of CITES.

#### 4.3 Additional protection needs

Local populations of Blainville's and Cuvier's beaked whales are small (Baird *et al.* 2007; Aparicio 2008; Aguilar *et al.* 2010) and this makes them potentially vulnerable to repetitive anthropogenic impacts (Aparicio *et al.* 2009). Given the difficulties in quantifying the abundance and demographic trends of beaked whale populations (Taylor 2008), it is important to apply the precautionary principle and consider the effects of acoustic pollution and other impacts in their distribution area, including direct hunting.

### 5. **Range States**

### 6. **Comments from Range States**

### 7. **Additional remarks**

### 8. **References**

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**ANNEX I. Atypical mass strandings involving Cuvier's and/or Blainville's beaked whales**  
(Brownell *et al.* 2004, Espinosa *et al.* 2005, Frantzis 2004, IWC 2004, Moore and Stafford 2005)

<b>Year</b>	<b>Localization</b>	<b>Species (number of whales) [Zc= Cuvier's, Me= Gervais', Md=Blainville's]</b>	<b>Associated activity when information is available</b>
1914	New York, United States	Zc (2)	
1960	Sagami Bay, Japan	Zc (2)	US Fleet
1963	Gulf of Genoa, Italy	Zc (15+)	Naval maneuvers
1963	Sagami Bay, Japan	Zc (8-10)	US Fleet
1964	Sagami Bay, Japan	Zc (2)	US Fleet
1965	Puerto Rico	Zc (5)	
1966	Ligurian Sea, Italy	Zc (3)	Naval maneuvers
1967	Sagami Bay, Japan	Zc (2)	US Fleet
1968	Bahamas	Zc (4)	
1974	Corsica	Zc (3), Striped dolphin (1)	Naval patrol
1974	Lesser Antilles	Zc (4)	Naval explosion
1975	Lesser Antilles	Zc (3)	
1978	Sagami Bay, Japan	Zc (9)	US Fleet
1978	Suruga Bay, Japan	Zc (4)	US Fleet
1979	Sagami Bay, Japan	Zc (13)	US Fleet
1980	Bahamas	Zc (3)	
1981	Bermuda	Zc (4)	
1981	Alaska, United States	Zc (2)	
1983	Galapagos	Zc (6)	
1985	Canary Islands	Zc (12+), Me (1)	Naval maneuvers
1986	Canary Islands	Zc (5), Me (1), beaked whale spp. (1)	
1987	Canary Islands	Me (3)	
1987	Italy	Zc (2)	
1987	Suruga Bay, Japan	Zc (2)	US Fleet
1987	Canary Islands	Zc (2)	
1988	Canary Islands	Zc (3), bottlenose whale (a beaked whale) (1), pygmy sperm whale (2)	Naval maneuvers
1989	Sagami Bay, Japan	Zc (3)	US Fleet
1989	Canary Islands	Zc (15+), Me (3), Md (2)	Naval maneuvers
1990	Suruga Bay, Japan	Zc (6)	US Fleet
1991	Canary Islands	Zc (2)	Naval maneuvers
1991	Lesser Antilles	Zc (4)	
1993	Taiwan	Zc (2)	
1994	Taiwan	Zc (2)	

Table from Dolman, Green, Heskett, Reynolds and Rose (2006). Report to the Advisory Committee on Acoustic Impacts on Marine Mammals by the Marine Mammal Commission.