

## Short Communication

# Sightings of beaked whales (Cetacea: Ziphiidae) including first confirmed Cuvier's beaked whales *Ziphius cavirostris* from Angola

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The distribution of beaked whales off the west coast of Africa in the South-East Atlantic Ocean is poorly known. A total of eight beaked whale (Cetacea: Ziphiidae) sightings was recorded off Angola between March 2004 and September 2005. At least one sighting was positively identified as Cuvier's beaked whale *Ziphius cavirostris*, and the seven further sightings were *Ziphius* or

*Mesoplodon* beaked whales. Groups comprised between one and three animals, and were observed at between 1 477m and 2 250m (mean = 1 837m) water depth. These records appear to include the first confirmed sighting of Cuvier's beaked whales in Angolan waters, and add to knowledge of the occurrence of beaked whales off West Africa.

**Keywords:** Angola, beaked whales, Cuvier's beaked whales, *Mesoplodon*, *Ziphius cavirostris*

## Introduction

The worldwide distribution of beaked whales (Cetacea: Ziphiidae) is primarily described from stranded specimens, since most species are rarely observed at sea due to their pelagic distribution, difficulties in distinguishing between the species and their cryptic behaviour (Mead 1989a). Documented records of beaked whales are particularly scarce along most of the west coast of Africa from Morocco in the north to Namibia in the south, on account of the absence of dedicated stranding networks and a paucity of at-sea survey data. Strandings have been systematically recorded only in South Africa, where True's *Mesoplodon mirus* and Gray's *M. grayi* beaked whales have been recorded in the Cape region (Findlay *et al.* 1992), and Cuvier's *Ziphius cavirostris*, Blainville's *Mesoplodon densirostris* and strap-toothed *M. layardii* beaked whales around the Cape and also farther north on the West Coast (Ross and Tietz 1972, Ross 1984, Mead 1989a, Findlay *et al.* 1992). While records of the Southern bottlenose whale *Hyperoodon planifrons* and Arnoux's beaked whale *Berardius arnuxii* have occurred around the Cape region, the distribution of these species appears restricted to cold waters primarily south of 30°S (Findlay *et al.* 1992). Another cold-temperate Southern Hemisphere species, the Shepherd's beaked whale *Tasmacetus shepherdi*, is documented from the South-West Atlantic and is likely to occur off South Africa (Mead 1989b).

In Namibia, Findlay *et al.* (1992) report the presence of stranded Cuvier's, strap-toothed and Gray's beaked whales, and a Blainville's beaked whale has also been recently recorded (J-P Roux, Ministry of Fisheries and Marine Resources, Namibia, pers. comm.). However, with

the exception of three strandings of Gervais' beaked whale *Mesoplodon europaeus* at offshore Ascension Island in 1980 (Mead 1989a), there are no documented beaked whale stranding records along the entire West Coast northwards from north Namibia at 18°S, until a record of Gervais' beaked whale in Guinea-Bissau at 12°N (Reiner 1980). A sighting of three unidentified *Mesoplodon* whales reported off Angola in July 1966 (Mörzer Bruyns 1968) appears to be the only live beaked whale record off the West African coast in the Southern Hemisphere, outside of South Africa.

In North-West Africa, beaked whale strandings have been confirmed in Senegal (*Z. cavirostris*; Van Waerebeek *et al.* 2000), Mauritania (*Z. cavirostris*, *M. densirostris* and *M. europaeus*; Robineau and Vely 1998), the Canary Islands (Northern bottlenose whale, *Hyperoodon ampullatus*, *Z. cavirostris*, *M. densirostris*, *M. europaeus* and *M. mirus*, Martin *et al.* 1990, 1992) and Madeira (*M. densirostris* and Sowerby's beaked whale *M. bidens*; Maul and Sergeant 1977), and a live sighting of three Cuvier's beaked whales was reported near the Cape Verde Islands (Haase 1987). The presence of Longman's beaked whale *Indopacetus pacificus* has yet to be confirmed in the Atlantic Ocean, but the species occurs in tropical waters of the Pacific Ocean and the Indian Ocean, including the east coast of Africa (Dalebout *et al.* 2003) and it may yet be recorded off Africa's west coast.

Although the distribution of several beaked whale species (notably Cuvier's and Blainville's) is considered likely continuous along the entire west coast of Africa, records are absent for the majority of the region particularly from the Gulf of Guinea south to Angola.

In this paper, eight live sightings of beaked whales from Angolan waters are described, of which at least one was positively identified as Cuvier's beaked whale. A total of eight beaked whale sightings was recorded during dedicated marine mammal surveys carried out in association with seismic survey operations off Angola (5°–11°S) between March 2004 and September 2005. Most months of the year received survey coverage, exceptions being June and July. Observations were made from 9m or 18m eye-height on a seismic survey vessel typically travelling at 4–5 knots survey speed. A single observer used 10 x 42 Leica binoculars to scan continuously 360° around the vessel for cetaceans during daylight hours. Whenever a marine mammal was sighted, the information recorded included the species, number of animals, behaviour, position, water depth and associated environmental data (sea state, swell height, visibility, wind force). The locations of the sightings are shown in Figure 1.

## Sightings

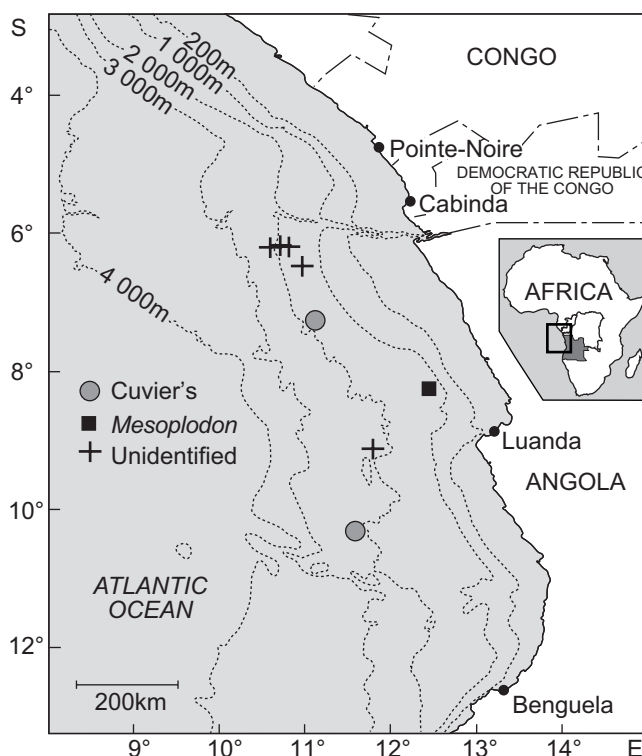
### *Cuvier's beaked whale*

On 15 January 2005, a group of three Cuvier's beaked whales of estimated 5m body length was observed South-West of Luanda (09°15.75'S, 11°49.02'E) in 2 250m water depth. The whales exhibited sloped backs with small, fairly triangular dorsal fins, and were a distinctive chocolate brown colouration with variable white pigmentation and scarring along the forward portion of the dorsal surface and the head. Definite sloped foreheads were observed when the whales surfaced, which angled down steeply into a short and indistinct beak. The animals lacked both the bulbous foreheads of any of the possible larger Ziphiid species, and the prominent mid-length to long beaks of *Mesoplodon* species. The whales were seen on three surfacing sequences, two of which were witnessed fully and consisted of between six and eight inconspicuous surface rolls interspersed by an 11-minute period subsurface. Occasionally faint vertical blows of <2m height were visible. The animals were observed within 1km of a Bryde's whale *Balaenoptera edeni*, without any noticeable interaction.

On 20 March 2005, a group of three to four beaked whales was observed North-West of Luanda (07°15.84'S 11°07.79'E) in 1 717m water depth. The animals were estimated to be 6–7m long and were broad in body shape with a mixed brown and cream colouration. The dorsal fins were moderate in height and slightly falcate in shape, and the animals lacked long beaks. During the sighting, the whales were positioned in line abreast formation and slowly surfaced 10 times as they travelled steadily away from the vessel, producing a steeper roll on the last surfacing. All animals produced tall but faint blows of about 1.5m height. Based on colouration and profile, these animals were also considered to be likely Cuvier's beaked whales.

### *Mesoplodon* species

On 8 March 2004, a small whale of an estimated length of 4–5m was seen to breach nine times in succession in 1 513m water depth at 08°15.99'S, 12°26.72'E. Breaches were



**Figure 1:** Location of Cuvier's, *Mesoplodon* and unidentified beaked whale sightings off Angola

separated by intervals of 4–45 seconds. At each breach the whale leapt vertically and fell back onto its side just prior to the flukes emerging. The whale had a dark brown dorsal surface and upper flanks, with a cream ventral area. The dorsal fin was small and falcate, and positioned towards the rear of the relatively long back. The head was observed briefly during breaching, and showed a distinct but sloped forehead and prominent medium length rostrum.

### *Unidentified beaked whales*

The sightings of unidentified beaked whales were all considered likely to be either *Ziphius* or *Mesoplodon* species. All of these animals had estimated body lengths of 4–6m, distinct foreheads and relatively small triangular-shaped dorsal fins set well to the rear of a sloped back. On 24 January 2005, two whales surfaced together 12 times in 1 898m water depth west of Luanda (09°07.39'S, 11°48.26'E). The well defined sloped foreheads and apparent absence of long beaks on these animals was suggestive of *Ziphius*. The remaining sightings all occurred within a relatively small area to the south-west of Cabinda and the Congo Canyon (Figure 1). On 21 February 2005 a single animal was observed to breach three times in rapid succession in 2 091m water depth at 06°12.56'S, 10°35.85'E. The spindle-shaped body, small dorsal and pectoral fins and defined melon could have related to either genus. On 8 March 2005, the dorsal profiles of two beaked whales were seen clearly as the animals surfaced four times in 1 477m water depth at 06°28.47'S, 10°58.19'E. On 23 August 2005,

two beaked whales were observed in 1 967m water depth at 06°09.65'S, 10°42.91'E. The surfacing sequence consisted of 11 slow rolls, during which the animals maintained a 10m separation but moved together purposefully in a coordinated manner. The sunlight glinted off their foreheads on several occasions and no long beaks were visible, suggesting *Ziphius* as a likely identification. However, silhouetting in sun glare hindered observation of the animals' colouration. Another pair of beaked whales was encountered briefly in 1 788m water depth at 06°12.69'S, 10°48.51'E on 26 August 2005.

## Discussion

Only one beaked whale sighting had previously been reported off Angola (Mörzer Bruyns 1968), and the current eight records therefore add considerably to previous knowledge of beaked whales in this region, particularly in confirming the occurrence of Cuvier's beaked whales in Angolan waters. Consistent with current knowledge of beaked whales, the Angola sightings all occurred over deep water (mean = 1 837m) seaward of the shelf edge, presumably a result of the distribution of deep-water cephalopods and fish preyed upon by Cuvier's beaked whale and *Mesoplodon* species (Mead 1989a, Ross 1984). Sightings occurred during January, February, March and August (note the absence of survey effort during June and July), and it is possible that beaked whales occur in Angolan waters for most, if not all, of the year. We were unable to positively identify most of the animals to species level because of the brevity of the sightings, inclement weather conditions and views too distant to observe the position and shape of the teeth in the mandible, a feature of adult male *Mesoplodon* often required to confirm species identification (Mead 1989a). However, the unidentified animals lacked the prominent bulbous foreheads and larger body size of *Hyperoodon*, *Tasmacetus*, *Indopacetus* or *Berardius* species, and were all considered likely to be either Cuvier's beaked whale or a *Mesoplodon* species. Whereas the distribution of *Mesoplodon* whales off the west coast of Africa is poorly known, two species likely to occur off Angola are Blainville's and Gervais' beaked whales, which inhabit tropical and subtropical regions of the Atlantic Ocean and have been documented as strandings in adjacent areas (Mead 1989a, J-P Roux pers. comm.) and along the larger West Africa coastline (Reiner 1980, Martin *et al.* 1990, 1992, Robineau and Vely 1998). However, there are also records of Gray's and strap-toothed beaked whales from Namibia (Findlay *et al.* 1992), and Hector's *M. hectori* and True's beaked whales from South Africa (Mead 1989a), and these species may yet be documented farther north.

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## References

- Dalebout ML, Ross GJB, Baker CS, Anderson RA, Best PB, Cockcroft VG, Hinsz HL, Peddemors V, Pitman RL (2003) Appearance, distribution, and genetic distinctiveness of Longman's beaked whale, *Indopacetus pacificus*. *Marine Mammal Science* **19**: 421–461
- Findlay KP, Best PB, Ross GJB, Cockcroft VG (1992) The distribution of small odontocete cetaceans off the coasts of South Africa and Namibia. In: Payne AIL, Brink KH, Mann KH, Hilborn R (eds) *Benguela Trophic Functioning. South African Journal of Marine Science* **12**: 237–270
- Haase BJM (1987) A group of goose-beaked whales *Ziphius cavirostris* G. Cuvier, 1823 near the Cape Verde Islands. *Lutra* **30**: 107–108
- Martin VR, Heimlich-Boran J, Heimlich-Boran S (1992) Preliminary observations of the cetacean fauna of the Canary Islands. *European Research on Cetaceans* **6**: 61–65
- Martin V[R], Vonk R, Escorza S, Montero R (1990) Records of Gervais' beaked whale *Mesoplodon europaeus* on the Canary Islands. *European Research on Cetaceans* **4**: 96
- Maul GE, Sergeant DE (1977) New cetacean records from Madeira. *Bocagiana* **43**: 1–8
- Mead JG (1989a) Beaked whales of the genus *Mesoplodon*. In: Ridgway SH, Harrison R (eds) *Handbook of Marine Mammals. 4. River Dolphins and the Larger Toothed Whales*. Academic Press, London, pp 349–430
- Mead JG (1989b) Shepherd's beaked whale *Tasmacetus shepherdi* Oliver, 1937. In: Ridgway SH, Harrison R (eds) *Handbook of Marine Mammals. 4. River Dolphins and the Larger Toothed Whales*. Academic Press, London, pp 309–320
- Mörzer Bruyns WFJ (1968) Sight records of cetacea belonging to the Genus *Mesoplodon* Gervais, 1850. *Zeitschrift für Saugetierkunde* **33**: 106–107
- Reiner F (1980) First record of an Antillean beaked whale, *Mesoplodon europaeus* Gervais, 1855 from the República Popular de Guiné-Bissau. *Memoires do Museu do Mar (Cascais), Série Zoologia* **1**: 1–8
- Robineau D, Vely M (1998) Les cétacés des côtes de Mauritanie (Afrique du Nord-Oest). Particularités et variations spatio-temporelles de repartition: rôle des facteurs océanographiques. *Revue Ecologique (Terre Vie)* **53**: 123–152
- Ross GJB (1984) The smaller cetaceans of the south east coast of southern Africa. *Annales Cape Provincial Museums (Natural History)* **15**(2): 173–410
- Ross GJB, Tietz RM (1972) Records of Cuvier's beaked whale, *Ziphius cavirostris*, from southern Africa. *Annales Cape Provincial Museums (Natural History)* **9**(1): 1–10
- Van Waerebeek K, Ndiaye E, Djiba A, Diallo M, Murphy P, Jallow A, Camara A, Ndiaye P, Tous P (2000) A survey of the conservation status of cetaceans in Senegal, The Gambia and Guinea-Bissau. UNEP/CMS Secretariat, Bonn, Germany, 80pp