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**Report of the Intersessional Correspondence Group on Beaked Whales**

**Simmonds And The Intersessional Group**



**INTERNATIONAL  
WHALING COMMISSION**

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# Report of the Intersessional Correspondence Group on Beaked Whales

Simmonds and members of the intersessional correspondence group.

## Background

The beaked whales (cetaceans in the family Ziphiidae comprising some 24 species) are one of the least-known groups of mammals due to their offshore and pelagic habitats, prolonged deep dives, and short surface intervals. New species have been described in recent years. While a few species have been studied in detail, baseline data on distribution, population size and structure, life-history and behaviour and ecology of most species, are lacking. These knowledge gaps are an impediment to their conservation (Dong et al., 2023).

Their offshore habitat and vulnerability to underwater noise makes them especially vulnerable to human activities and potentially increasingly as human activities increasingly move into the deep seas. During the intersessional period, the beaked whale intersessional correspondence group has continued to monitor developments and publications related to these species and a short overview is provided here, combined with proposals for further work. In recent years there has been a notable expansion of research into these species in Asia (as evidenced by the references noted here) and there are ongoing concerns about beaked whales in the Northeast Atlantic and the South-West Atlantic.

## North-east Atlantic

The topic of beaked whales was raised at the 9th Meeting of the Parties to ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas) in September 2020, because of the apparent increase in strandings that had occurred in the UK, Ireland, Iceland, the Faroes and elsewhere in the region. An intersessional working group was established and it reported back to the 26th Meeting of the ASCOBANS Advisory Committee (8-12 November 2021). It reported that strandings data from the NE Atlantic region (1990-2020) showed a high and potentially growing incidence of strandings of beaked whales, with several Unusual Mortality Events (UMEs) recorded over this period (figure 1). The authors noted that the NE Atlantic has become a global hotspot for beaked whale UMEs, with the largest ever beaked whale stranding occurring in 2018, and that such UMEs appear to be increasing in both magnitude and frequency (Dolman et al., 2021).

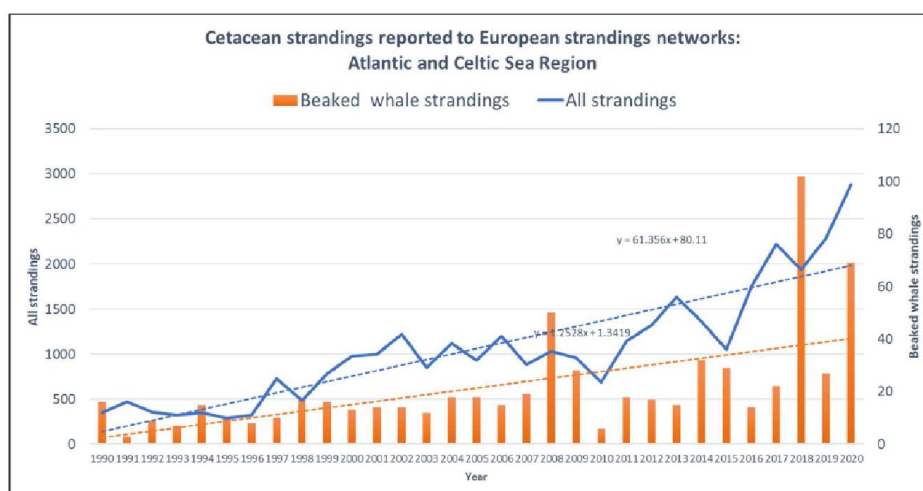


Figure 1, Incidence of beaked whale strandings versus all cetacean strandings reports in the Atlantic and Celtic Sea regions from 1990-2020 (Dolman et al. 2020).

An updated report was presented to the 2020 IWC Scientific Committee on this situation (Dolman et al., 2021) and the following recommendation was agreed:

*Recalling Resolution 2018-04, and the Commission's objective to facilitate mitigation of the adverse effects of underwater noise on cetaceans, the Committee welcomes the report from the intersessional working group (IWG) of ASCOBANS and **endorses** its recommendations. The Committee recognises the impacts of anthropogenic underwater noise on beaked whales and other cetacean species and **encourages** the communication and implementation of the ASCOBANS IWG recommendations by all relevant stakeholders. In addition, the Committee **recommends** the development of harmonised response protocols for beaked whale strandings to ensure that the necessary datasets (e.g. pathology, meteorology prior to the stranding, oceanography, acoustic monitoring, and any information on use of high intensity sound sources) can be rapidly assembled to assist with the identification of the time, location and cause of the mortality event. Identifying which data are required for such an investigation will also highlight data collection gaps which could be prioritised to ensure such data are available when needed. The Committee further **recommends** improved data sharing between countries to better identify and investigate mortality events. Further work on beaked whales will be progressed through an intersessional group to be established in cooperation with SM (IWC 2021).*

There will be an ASCOBANS workshop held on 8<sup>th</sup> April 2024 at the next European Cetacean Society meeting entitled 'Protecting the lesser known cetaceans of the NE Atlantic'. This may provide some further information on beaked whales and conservation guidance.

Additionally, based on research conducted off the Azores, Visser *et al.* (2022) report that behaviour of Sowerby's beaked whale (*Mesoplodon bidens*) deviated from the typically assumed ziphiid foraging strategy. They swim and hunt faster, perform shorter deep dives, and echolocate at a faster rate with higher frequency clicks compared to Blainville's beaked whale (*Mesoplodon densirostris*). This demonstrates that beaked whales exploit a broader diversity of deep-sea foraging and energetic niches than hitherto suspected, with potential implications for their (behaviourally driven) response to anthropogenic sounds.

### **South-west Atlantic**

A review of beaked whale strandings for Southern Patagonia in Argentina between 1895 and 2023 is underway. It also analyses the possible threats that these species currently face in this region (hydrocarbon exploration and exploitation, military exercise, and climate change). This work also highlights the importance of the SW Atlantic for beaked whales.

### **Russian Far-East**

A local population of Baird's beaked whales, *Berardius bairdii*, in the Commander Islands has been found to regularly use a shallow area with depths of less than 300 m (Filatova et al., 2024). This is a behaviour that is uncharacteristic for this species. Order-of-acquisition diffusion analysis showed that social transmission of knowledge about the shallow habitat was significantly more likely than individual asocial learning. Two mtDNA haplotypes were shared between whales that used the shallow areas and those that did not, suggesting that these categories did not represent separate maternal lineages. The authors concluded that knowledge of the shallow areas is transmitted horizontally through social learning, and therefore this is an example of a local cultural tradition.

## Suriname

De Boer et al. (2023) report on a group of Gervais' beaked whales *Mesoplodon europaeus* (Gervais, 1885) sighted along the Demerara Plateau (Suriname) at depths of 2,300 and 2,700m, the first records of the species within the Guiana Basin. The Demerara Plateau may well offer an important habitat for beaked whales, but further research is required to confirm this. The authors comment that there is an urgent need to develop effective conservation measures for whales in Suriname, especially because of increasing interest in fossil fuels there.

## Asia

Rosso et al. (2020) report on Deraniyagala's beaked whale, *Mesoplodon hotaula*, which is one of the least-known of the beaked whale species. Three free-ranging individuals of ginkgo-toothed beaked whale, *M. ginkgodens*/*M. hotaula*, whales were recorded from a dedicated marine mammal vessel survey carried out in the South China Sea (SCS) in April and May 2019. Photographic data (301 photographs) from the sighting were compared to photos of fresh stranded ginkgo-toothed beaked whale and Deraniyagala's beaked whale from both historical and unpublished records. The authors found that free-ranging *M. ginkgodens* and *M. hotaula* individuals can be easily distinguished from other *Mesoplodon* species due to differences in melon and gape shapes and coloration patterns. However, accurate at-sea differentiation of *M. ginkgodens* and *M. hotaula* may not be possible due to high similarity in both colouration and scarring patterns. In addition to photo-identification data, the authors collected what they believe to be the first preliminary descriptions of surfacing behaviour and diving patterns of one of these species. Finally, the presence of scars possibly caused by fishing gear or marine litter raises concerns about anthropogenic impacts and conservation of these poorly known species.

Lin et al. (2020) reported on a pioneering boat-based survey conducted in 2019, to gather baseline information regarding the presence, composition, relative abundance, and spatial distribution of deep-diving and off-shore cetaceans in the northern SCS. A total of 27 sightings comprising at least 8 cetacean species were recorded during the 13-day survey, including goose-beaked whale, *Ziphius cavirostris*, and an unidentified beaked whale (either the ginkgo-toothed beaked whale or Deraniyagala's beaked whale).

Additionally, Dong et al. (2023) have reported acoustic evidence of goose-beaked whales in the northern South China Sea and recommended further research.

A compilation of recent strandings of beaked whales in Asia is being developed.

## Future work and focuses

There should be increased monitoring, data collecting and sharing worldwide, because of the well-established vulnerability of these species to anthropogenic disturbance. Evidence of UMEs in the NE Atlantic and anecdotal concerns about the potentially unusual near-shore behaviour of northern bottlenose whales (*Hyperoodon ampullatus*) there in recent months suggest a need for increased scrutiny of strandings and sightings and improved collection and collation of data on the presence, frequency and magnitude of impulsive underwater noise in known beaked whale habitats. The group is encouraged to conduct such work and report back.

There are similar concerns in Asia and data collection there should be encouraged.

In addition, given that there is a growing body of literature on infectious disease detection in beaked whales, future collaboration between this intersessional working group and the cetacean diseases of concern intersessional group and the IWC expert panel on strandings will be helpful in characterising emerging disease threats.

### Other points for further consideration

- Identification of best protocols for identifying and collating data from stranding events in general;
- How to best correlate beaked whale strandings/presence with other events (e.g. military exercises, large-scale oceanographic effects e.g. El Niño/La Niña, etc.). Drift modelling may be useful for determining where stranded whales come from;
- Ongoing genetic analysis to assess diversity, population structure and connectivity;
- Potential use of stable isotope and fatty acid analysis to help elucidate feeding ecology from biopsy cases and significantly augments stomach content analysis undertaken on strandings;
- How populations/individuals that have been more exposed to noise may react differently to naive populations/individuals; and
- Whether we need to identify/endorse definitions for unusual mortality events etc., noting work in other expert bodies.

### References

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