

First confirmed live record of Sowerby's beaked whales (*Mesoploden bidens*) in mainland Portugal



Alfredo M.V. Rodrigues (1) Susana C.F. Gil (1) Megan Mackey (1,2) Joana Veloso (1) R. Peres dos Santos (3,4,5)



(1) Ocean Vibes Algarve - Tourism and Research - Faro, Portugal

(2) Queens University - Belfast, Northern Ireland, UK

(3) MARDIV, University of Algarve, Campus de Gambelas, Faro, Portugal

(4) Mingan Island Cetacean Study (MICS), Quebec, Canada

(5) Pattern Institute, Faro, Portugal



INTRODUCTION

Beaked whales are among the least known cetacean species worldwide, with currently 23 species described, of which very few are reported in Portuguese waters [1]. Detecting and observing beaked whales can be challenging due to their preference for deep waters, extended diving periods, and the requirement of favorable sea conditions [2,3]. Sowerby's beaked whales (*Mesoploden bidens*) are exclusive to the North Atlantic and have been previously documented in the Azores and Madeira archipelagos [4]. However, although an anecdotal report of a calf stranding in 2011 exists, **this species has not been previously described in the literature for mainland Portuguese waters. This study presents the first live sighting report of *Mesoploden bidens* in mainland Portugal, as well as remarks about group composition and behavior**

METHODS

Since 2019, **Opportunistic data** was collected on board a commercial whale watching vessel in **Faro (Portugal)**. This comprehends **random transects** between Fuseta and Quarteira, to 9 nautical miles offshore, with **sea conditions below level 4 (Beaufort scale)**. For each cetacean sighting, the time of observation, initial clue, GPS position, group composition, behavioral states, sea surface temperature, depth and several other inputs were recorded



Figure 2 - Sowerby Beaked Whale (*Mesoploden bidens*)

RESULTS

In July 2023 a pod of 3 Sowerby beaked whales was spotted 8nm SW of Deserta island (Faro). All individuals were considered adults, with no calves or juveniles present. The animals were initially spotted at a **depth of 340m near the edge of the continental shelf**. They were sighted twice within the same hour. After the first sighting, the whales dived for 25 minutes before returning to the surface. On the second sighting, a constant **travelling behavior** towards SW was observed.

Date and Time	Latitude	Longitude	Depth (m)	Seastate (Beaufort)	SST (°C)	Behaviour	Group size	Adults	Immatures
28/07/2023 13:58	36,83031	-7,90092	340	3	21,3	Travel	3	3	0

Table 1 - Sighting information



Figure 3 - Pictures from a surfacing sequence of one of the whales observed

DISCUSSION

The sighting location aligns with habitat predictability reported in previous studies as the whales were observed on a high slope of the continental shelf. This preference for such habitat may indicate specific ecological or behavioral factors influencing their distribution in the region.

With previously confirmed sightings in the Canary Islands, Madeira, Azores and the Mediterranean, this first record in southern Portugal is significant as it completes the distribution map of Sowerby's beaked whales in this region of the North Atlantic.

SCAN ME!



QR 1 - Sighting Video



QR 2 - Submarine sound in Faro

CONCLUSION

This study confirms for the first time the presence of *Mesoploden bidens* in mainland Portugal.

Our findings underscore the importance of continued monitoring and developing of research efforts to evaluate the possible impact of local military activities in beaked whales

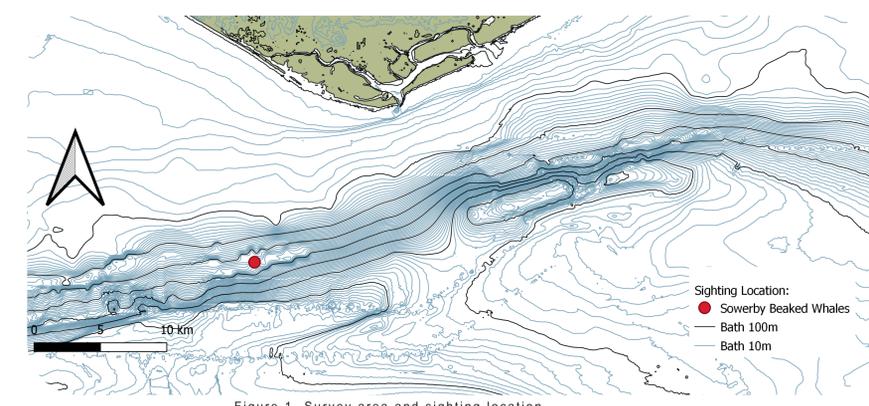


Figure 1- Survey area and sighting location

References: [1] Macleod, C.D., 2000. Review of the distribution of Mesoploden species (order Cetacea, family Ziphiidae) in the North Atlantic. Mamm. Rev. 30, 1-8. ; [2] Tyack, P.L., Johnson, M., Soto, N.A., Sturlese, A., Madsen, P.T. Extreme diving of beaked whales. J. Exp. Biol. 2004, 209, 4238-4253
[3] Barile, C., Berrow, S., O'Brien, J. Oceanographic Drivers of Cuvier's (Ziphius cavirostris) and Sowerby's (Mesoploden bidens) Beaked Whales Acoustic Occurrence along the Irish Shelf Edge. Journal of Marine Science and Engineering. 2021; 9(10):1081. <https://doi.org/10.3390/jmse9101081>
[4] Pereira, J.N., Neves, V.C., Prieto, R., Silva, M.A., Cascao, I., Oliveira, C., Cruz, M.J., Medeiros, J., Barreiros, J.P., Porteiro, F.M., & Clarke, D.R. (2011). Diet of mid-Atlantic Sowerby's beaked whales Mesoploden bidens

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