

Marine Mammal Observer Report

RRS James Cook - JC293

Survey information

Vessel	RRS James Cook
Chief Scientist	Dr. Michael Clare
Survey Area	Whittard Canyon & Gollum Channels, Northeast Atlantic
Dates	26 June 2026 - 3 August 2026
Port of Departure	Southampton
Port of Arrival	Southampton
Project	MISSING LINK (JC293)
Jurisdictions entered	UK, Ireland, France, Spain

Overview of the acoustic equipment

Three hull-mounted acoustic systems requiring marine mammal observation prior to start-up - were operated:

- Hull-mounted, deep water, 12 kHz Kongsberg EM122 multibeam echosounder. It has a swath width of 6 x depth (m), and has a maximum power of 2000 W, and a maximum sound intensity 210 dB re 1 μ Pa @1m. The multibeam echosounder has a built in automatic soft start.
- Hull-mounted Kongsberg EM710 multibeam echosounder with a frequency range of 70-100 kHz and a maximum sound intensity of 210 dB re 1 μ Pa @1m. This system is not equipped with an automatic soft start.
- Hull-mounted Kongsberg SBP27 sub-bottom profiler with a frequency range of 2.5-7.5 kHz, max power of 8000 W and a max source level of 224 dB re 1 μ Pa @1m. Most of the energy is released between 3.5 and 6.5 kHz. During start up a soft start was applied by reducing the sound intensity with 30 dB relative to the max sound intensity, resulting in half of the power output.

During all the acoustic surveys, the sub-bottom profiler and one of the multibeam echosounders ran simultaneously. The EM710 was used in water depths up to approximately 1000 m while the EM122 was used at deeper water depths. The survey speed varied between 3 and 10 knots depending on water depth and the desired resolution/quality of the line. The shot interval was adjusted according to the water depth, ranging from 0.85 Hz in shallow water and 0.1 Hz in deep water. This results in a shot interval from 5 to 50 m.

Summary of the applied mitigation procedures and regulations

The applied mitigation measures followed the Joint Nature Conservation Committee (JNCC) guidelines for minimising the risk of injury to marine mammals from geophysical surveys (JNCC, 2017) and the National Parks and Wildlife Service (NPWS) guidance to manage the risk to marine mammals from man-made sound sources in Irish waters, as set out in Marine Environmental Mitigation Plan (MEMP) SME 22/1756 as issued by NERC:

- If water depth is >200 m, 60 minutes of observation focusing on the mitigation zone (500 m from the acoustic source) should be undertaken.
- If water depth is <200 m, 30 minutes of observation focusing on the mitigation zone (500 m from the acoustic source) should be undertaken.
- If marine mammals are observed during the search, start-up should be delayed at least 20 minutes from the time of the last detection within the mitigation zone.
- A soft-start should be enacted if the equipment allows.
- If marine mammals are detected within the mitigation zone whilst the source is active, either during the soft-start procedure or when at full power, there is no requirement to the source.
- Start up should only be done during daylight and with a sea state limit of Beaufort force 4 or lower.

Additional requirements of the dip clears of the jurisdictions entered during the cruise were also taken into account. The French dip clear (No. 2026-0234557 issued 24/06/2026) and Irish (Dipclear Note No. DC 271/26 issued 22/06/2026) did not have additional requirements. The Spanish dip clear (Nota Verbal No.: 74/18.2 issued 26/06/2026) required an additional MMO watch of one hour after the use of acoustic instruments.

Overview of staff and equipment involved in MMO

The MMO efforts were performed by four trained marine mammal observers working in teams of two, running 12-hour-long shifts. Each of the MMOs had successfully completed the Joint Nature Conservation Committee Marine Mammal Observer Mitigation Training before the onset of the cruise.

Table 1: Overview of the marine mammal observers and their experience.

Name	Working hours	Previous experience
Chris Auckland	4 am – 4 pm	
Harry Ashton-Key	4 am – 4 pm	
Morgan Wolfe	4 pm – 4 am	
Piet Reyniers	4 pm – 4 am	During RV Belgica cruise 2022-18 and 2023-12.

All dedicated marine mammal observation efforts were conducted from the bridge, with a floor height of 15.2 m above sea level. Three pairs of binoculars were available: Celestion (magnification 8x56), GPO (magnification 8x42) and Hawke (magnification 7x50, equipped with reticule and compass). Range estimates were done with handmade rangefinder sticks.

Summary operations and MMO efforts

Ship departed from the port of Southampton on 29/06/2026. Before departure, the sub-bottom profiler and the multibeam system were turned on at the dock. On 02/07/2026 at 08h19 the sub-bottom profiler and the multibeam system were turned off. At 18h49 on the same day, an MMO effort commenced prior to start-up of the acoustic systems. For the duration of the watch, no marine mammals were sighted. The soft start of the EM122 and SBP27 began at 19:52, reaching full power at 20:00.

For the remainder of the cruise, one of the multibeam systems and the sub-bottom profiles ran continuously. Even if the data was not recorded, the systems' sources remained active. In the

operations tab of the Marine Mammal recording form, the active multibeam system is noted per line. If not specified, the end date of one operation matches the start time of the succeeding operation. Switching between the EM122 and EM710 multibeam systems took no more than 30 seconds, and the acoustic source of the SBP27 remained active, making it unnecessary to do a soft start and MMO effort every time the multibeam system was changed.

Many of the surveys during this cruise took place on the border of multiple jurisdictions (Fig. X.1). For surveys that often crossed EEZ boundaries, multiple country codes (alpha 3 code) have been filled in the country field of the Marine Mammal recording form.

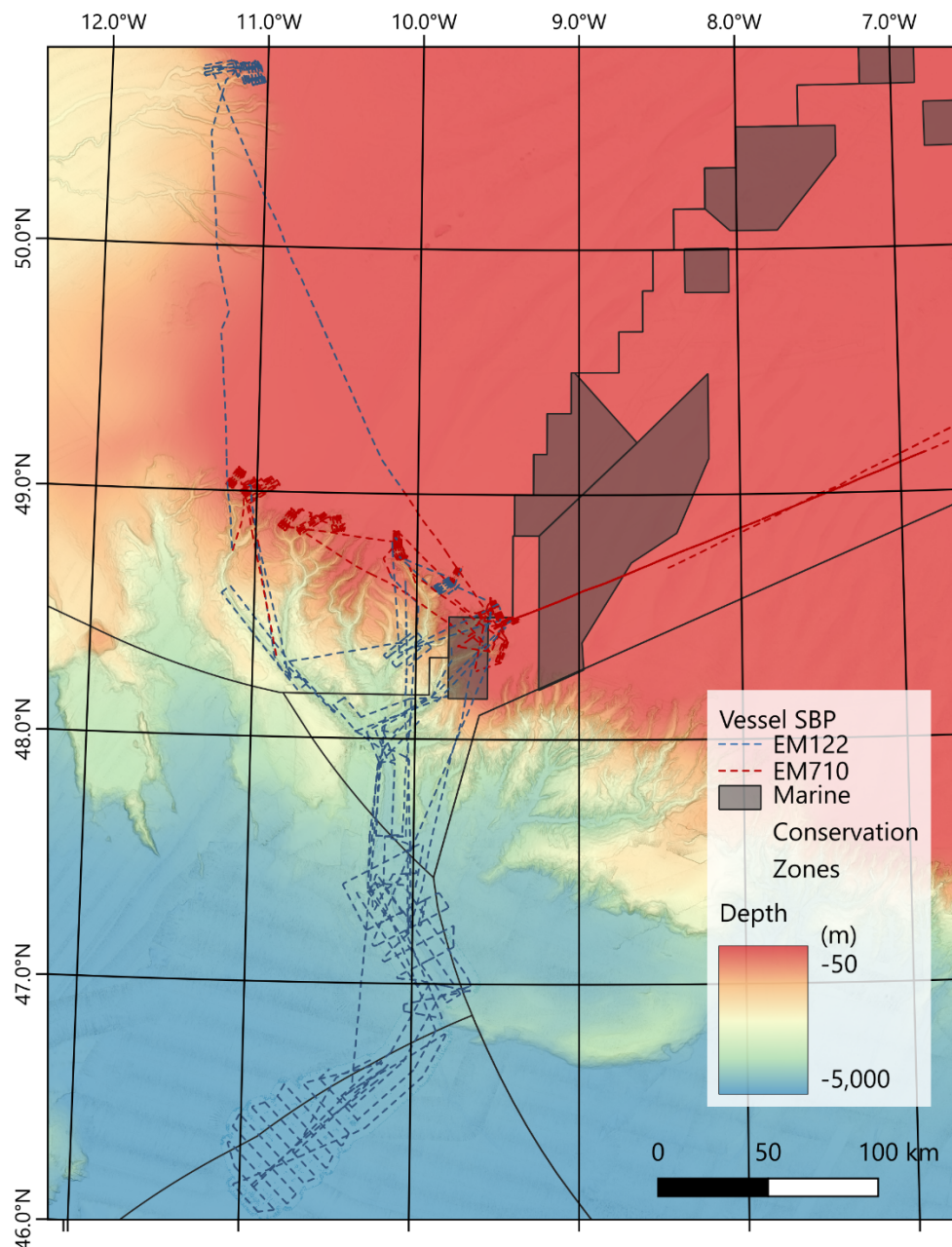


Figure 1: Overview of all the sub-bottom and multibeam lines, Marine Conservation zones (JNCC and NPWS) Exclusive Economic Zones (Maritime Boundaries v12, Flanders Marine Institute 2023). Lines acquired with the SBP27 and EM710 in red and SBP27 and EM122 in red. Bathymetry data: GMRT (Ryan et al., 2009)

Summary of the marine mammals encountered.

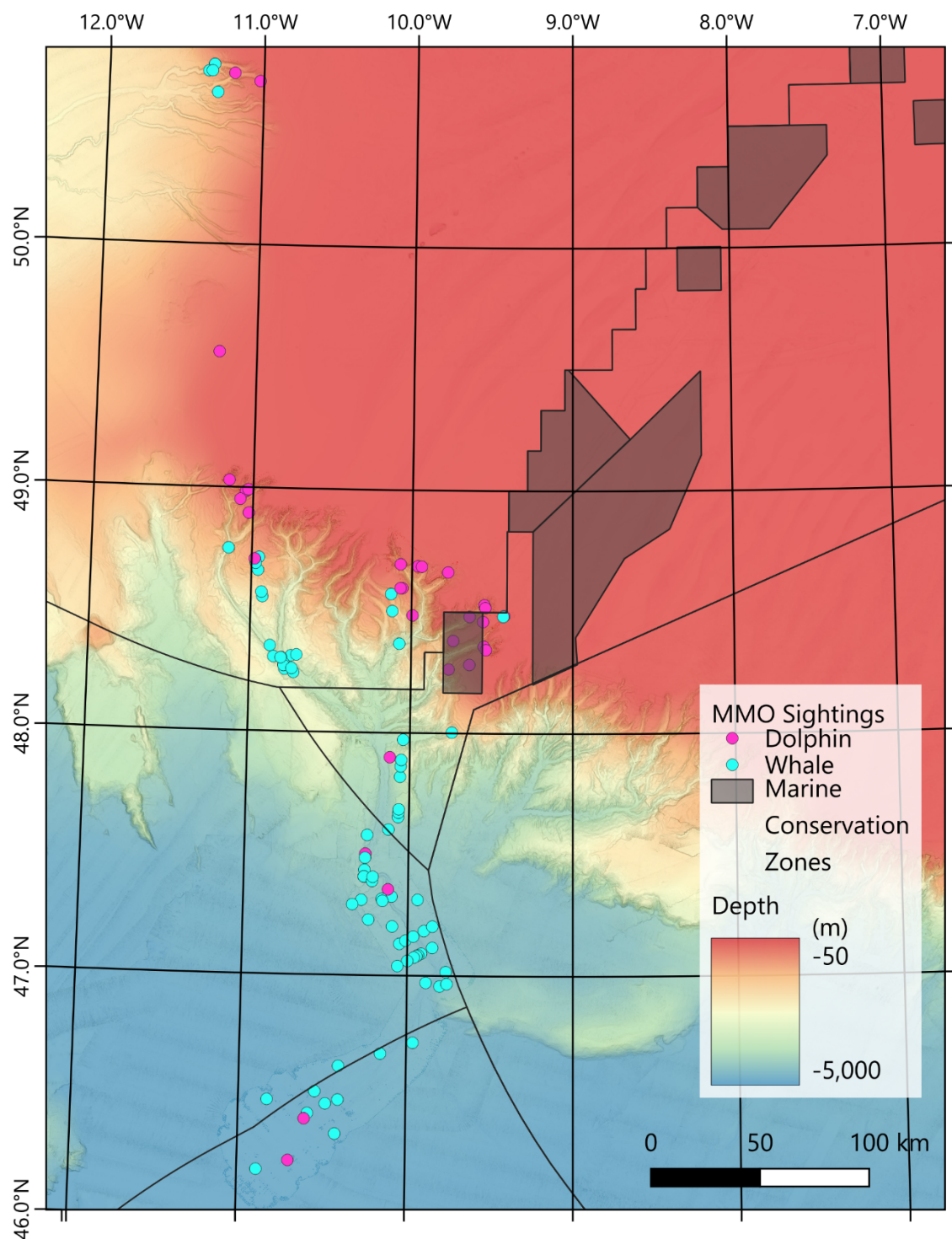


Figure 2: Overview map of the marine mammal sightings. Marine conservation zones: JNCC and NPWS. EEZ boundaries: Maritime Boundaries v12, Flanders Marine Institute 2023. Bathymetry data: GMRT (Ryan et al., 2009)

Total of 118 observations from 29/06/2026 to 03/08/2026, of which 66 could be identified to species level (Table 2). A selection of photographs of the observations is attached in Appendix I.

Table 2: Number of sightings per species

Species	Number of sightings
Short-beaked common dolphin - <i>Delphinus delphis</i>	25
Sei whale - <i>Balaenoptera borealis</i>	19
Long-finned pilot whale - <i>Globicephala melas</i>	7
Fin whale - <i>Balaenoptera physalus</i>	8
Minke whale - <i>Balaenoptera acutorostrata</i>	4
Blue whale - <i>Balaenoptera musculus</i>	2
Striped dolphin - <i>Stenella coeruleoalba</i>	1
Unidentified dolphin	11
Unidentified whale	41

- Whales were generally more difficult to identify to species level because only a blow in the distance was often observed, without sighting of the body.
- Based on the spatial distribution of the sightings (Fig 2), there is a clear separation between the observations of whales and dolphins. With the exception of a few sightings (12, 14, 17, 42, 43 and 47), all dolphins have been spotted on the shelf and shelf break, in water depths up to approx. 1200 m. Whales, on the other hand, have been mostly seen in deeper water above the continental slope and abyssal fan with water depths up to 5000 m.
- Sighting numbers 27 and 28 of a Blue Whale are remarkable. Blue Whales are not common in the survey area at this time of year. However, based on the size of the observed animal, we are confident in the identification.

Contact

A copy of this report has been sent to the relevant authorities:

- United Kingdom:
The Regulator: emt@beis.gov.uk
JNCC: seismic@jncc.gov.uk
- Ireland:
NPWS: wildlife.reports@npws.gov.ie, offshore@npws.gov.ie
- Spain:
Spanish Hydrographic Institute: i hm_apoyonaval@mde.es

For further questions, contact Dr Michael Clare (michael.clare@noc.ac.uk)

References

Flanders Marine Institute (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 12. Available online at <https://www.marineregions.org/>. <https://doi.org/10.14284/632>

JNCC (2017). JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys. Accessed at: http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismicsurvey_aug2017.pdf

JNCC, UK Marine Protected Area Datasets for Download <https://jncc.gov.uk/our-work/uk-marine-protected-area-datasets-for-download/>

NPWS (2014). Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters, January 2014. Accessed at: https://www.npws.ie/sites/default/files/general/Underwater%20sound%20guidance_Jan%202014.pdf

NPWS (2026). Marine protected areas boundary data <https://www.npws.ie/maps-and-data/designated-site-data/download-boundary-data>

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Appendix I: Photographs of the observed marine mammals



Sighting 1



Sighting 4



Sighting 5



Sighting 9



Sighting 11



Sighting 30



Sighting 31



Sighting 31



Sighting 49



Sighting 50



Sighting 78



Sighting 78



Sighting 79



Sighting 81



Sighting 83



Sighting 83



Sighting 86