



Area Size

35 538 km²

Qualifying Species and Criteria

Grey seal – *Halichoerus grypus*

Criterion B (2); C (1,2)

Sperm whale – *Physeter macrocephalus*

Criterion A

Sei whale – *Balaenoptera borealis*

Criterion A

Fin whale – *Balaenoptera physalus*

Criterion A

Marine Mammal Diversity

Criterion D (2)

Balaenoptera borealis, *Balaenoptera musculus*,

Balaenoptera physalus, *Globicephala melas*,

Hyperoodon ampullatus, *Lagenorhynchus acutus*,

Mesoplodon bidens, *Physeter macrocephalus*,

Tursiops truncatus, *Ziphius cavirostris*

Monach Isles and Outer Hebrides Western Continental Shelf IMMA

Summary

This IMMA encompasses the continental shelf waters between the Outer Hebrides and the shelf edge, and includes the Monach Isles. This area is particularly important for grey seals (*Halichoerus grypus*), with the Monach Isles supporting the largest breeding colony in Europe, and ~6.5% of global pup production. These rich and productive waters also support a diverse range of additional marine mammal species. These include species associated with the continental shelf slope (fin whales (*Balaenoptera physalus*), sei whales (*Balaenoptera borealis*), sperm whales (*Physeter macrocephalus*), northern bottlenose whales (*Hyperoodon ampullatus*), long-finned pilot whales (*Globicephala melas*), Atlantic white-sided dolphins (*Lagenorhynchus acutus*), common dolphins (*Delphinus delphis*)), as well as species associated with the shelf itself (humpback whales (*Megaptera novaeangliae*), white-beaked dolphins (*Lagenorhynchus albirostris*), harbour porpoises (*Phocoena phocoena*), bottlenose dolphins (*Tursiops truncatus*), grey seals, and harbour seals (*Phoca vitulina*)). Minke whales (*Balaenoptera acutorostrata*), killer whales (*Orcinus orca*), and Risso's dolphins (*Grampus griseus*) regularly occur beyond the shelf as well as over the shelf itself. The shelf slope is an important habitat for migrating whales, and a century ago, supported a major whaling industry.

Description:

The deep trough that lies between Britain and Rockall is an important feature in determining deep water circulation in the region (Ellett et al., 1983). The north-eastwards flowing North Atlantic drift interacts with this deep water in a complex and turbulent

manner. This turbulence can force deeper water, richer in nutrients towards the surface where it enhances productivity. Strong water column stratification gradients are present at the shelf edge, where upwellings from deeper water likely provide predictable foraging opportunities for marine mammals (Cox et al., 2018).

Along the shelf slope, the Atlantic Ocean water masses meet the less saline waters of the continental shelf, which receive freshwater inputs from rivers in Britain, and although there is relatively little mixing along this boundary, currents of slightly warmer water move northwards along this shelf edge carrying plankton, including fish eggs and larvae, from south to north. Turbulence brings deep water up the shelf slope to within 200 m of the surface, resulting in enhanced productivity of plankton and associated aggregations of cephalopods and fish

such as blue whiting and mackerel. These in turn attract concentrations of pelagic seabirds and cetaceans such as the larger baleen whales, long-finned pilot whales (*Globicephala melas*), killer whales (*Orcinus orca*), common dolphins (*Delphinus delphis*), and Atlantic white-sided dolphins (*Lagenorhynchus acutus*) (Evans, 1990; Waggitt et al., 2020; Giménez et al., 2023).

Frontal systems occur where two water masses of different densities meet; such density differences may be generated by temperature or salinity or both. The turbulence caused by the front may bring nutrients from deeper water to the surface where they promote the growth of phytoplankton (especially of diatoms and dinoflagellates). These may in turn be fed on by swarms of zooplankton and associated aggregations of fish, seabirds and cetaceans.



Figure 1: South Uist, Outer Hebrides. Photo credit: PGH Evans

The IMMA also includes the Monach Isles; low lying islands with sandy beaches which make ideal habitat for grey seals (*Halichoerus grypus*) to pup, and also to haul-out between foraging trips at sea.

Criterion A: Species or Population Vulnerability

Both the sperm whale (*Physeter macrocephalus*) and the North Atlantic fin whale (*Balaenoptera physalus*) are classified as Vulnerable on the IUCN Red List of Threatened Species (Taylor et al., 2019; Cooke, 2018a), whilst the sei whale (*Balaenoptera borealis*) is classified as Endangered (Cooke, 2018b).

Criterion B: Distribution and Abundance **Sub-criterion B2: Aggregations**

This IMMA encompasses important terrestrial and offshore habitat for grey seals (*Halichoerus grypus*) hauling out at the Monach Isles Special Area of Conservation (SAC): the largest breeding aggregation of grey seals in the Northeast Atlantic (Russell et al., 2022). Approximately 6,000 grey seals regularly haul out on the Monach Isles, making regular foraging trips to sea (Russell et al., 2022; Russell & Carter, 2021). Compared to the foraging season, a higher proportion of the UK grey seal population aggregates on the Monach Isles to breed (Russell et al., 2022).



Figure 2: Grey seals (*Halichoerus grypus*) haulout at Monach Isles. Photo credit: Sea Mammal Research Unit, University of St Andrews



Figure 3: Aerial view of grey seals (*Halichoerus grypus*) haulout at Monach Isles. Photo credit: Sea Mammal Research Unit, University of St Andrews

Criterion C: Key Life Cycle Activities

Sub-criterion C1: Reproductive Areas

The Monach Isles is the largest grey seal breeding colony in the Northeast Atlantic, with ~12,500 pups born annually (approx. 18.5% of UK pup production; Russell et al., 2022), and ~ 6.5% of the global pup production (SCOS, 2022).

Sub-criterion C2: Feeding Areas

At-sea distribution models based on tracking data (Carter et al., 2022) demonstrate that the shelf waters

west of the Outer Hebrides out to the shelf break are important foraging areas for grey seals hauling out at the Monach Isles and elsewhere. Analysis of scats has shown several fish species that occur commonly in the region (cod (*Gadus morhua*), plaice (*Pleuronectes platessa*), poor cod (*Trisopterus minutus*), sand eel (*Ammodytes* spp.), sea scorpion (*Taurulus bubalis*), dragonet (*Callionymus lyra*), ling (*Molva molva*), herring (*Clupea harengus*), and mackerel (*Scomber scombrus*) are prevalent in the diet of grey seals (Hammond & Wilson, 2016; Wilson & Hammond, 2019).

Criterion D: Special Attributes

Sub-criterion D2: Diversity

Several surveys have been conducted along the continental shelf edge to the north and west of the Western Isles (e.g., Weir et al., 2001, Waggitt et al., 2020). These have shown a high diversity of marine mammal species, with the area suggested to be one of the most species diverse of any in the British Isles (Evans & Waggitt, 2020). Using systematic conservation planning to identify priority areas of cetacean biodiversity in the Northeast Atlantic, the shelf edge was clearly identified as important, and a consistent hotspot across seasons at a community level (Giménez et al., 2023).

The rich and productive waters of this IMMA support several regularly sighted cetacean species. These include continental shelf slope species (fin whales (*Balaenoptera physalus*), humpback whales (*Megaptera novaeangliae*), long-finned pilot whales (*Globicephala melas*), Atlantic white-sided dolphins (*Lagenorhynchus acutus*), and common dolphins (*Delphinus delphis*)), and continental shelf species (white-beaked dolphins (*Lagenorhynchus albirostris*), harbour porpoises (*Phocoena phocoena*), bottlenose dolphins (*Tursiops truncatus*), grey seals, and harbour seals (*Phoca vitulina*)). Minke whales (*Balaenoptera acutorostrata*), killer whales (*Orcinus orca*), and Risso's dolphins (*Grampus griseus*) are regularly seen (Evans & Waggitt, 2020). Even deep-water species (northern bottlenose whales (*Hyperoodon ampullatus*), and sperm whales) are sighted (Evans & Waggitt, 2020).

The shelf slope is important habitat for migrating whales, and a century ago, supported a major whaling industry (Thompson, 1928; Brown, 1976; Ryan et al., 2022). Species such as fin whales, sei whales and humpback whales (*Megaptera novaeangliae*) were taken in great numbers and populations are slowly recovering.



Figure 4: Sperm whale (*Physeter macrocephalus*).
Photo credit: PGH Evans



Figure 5: Fin whale (*Balaenoptera physalus*).
Photo credit: PGH Evans



Figure 6: Humpback whale (*Megaptera novaeangliae*) in the Outer Hebrides. Photo credit: PGH Evans



Figure 7: Minke whale (*Balaenoptera acutorostrata*) off the Outer Hebrides. Photo credit: PGH Evans



Figure 8: Risso's dolphin (*Grampus griseus*) at South Uist. Photo credit: PGH Evans



Figure 9: Northern bottlenose whale (*Hyperoodon ampullatus*). Photo credit: Sisojunno

Supporting Information

Brown, S.G. 1976. Modern whaling in Britain and the north-east Atlantic Ocean. *Mammal Review*, 6: 25-36.

Carter, M.I.D., Boehme, L., Cronin, M.A., Duck, C.D., Grecian, W.J., Hastie, G.D., Jessopp, M., Matthiopoulos, J., Mcconnell, B.J., Miller, D.L., Morris, C.D., Moss, S.E.W., Thompson, D., Thompson, P.M., and Russell, D.J.F. 2022. Sympatric seals, satellite tracking and protected areas: habitat-based distribution estimates for conservation and management. *Frontiers in Marine Science*, 9, 875869. <https://doi.org/10.3389/fmars.2022.875869>.

Cooke, J.G. 2018a. *Balaenoptera physalus*. The IUCN Red List of Threatened Species 2018: e.T2478A50349982. <https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T2478A50349982.en>. Accessed on 11 April 2023.

Cooke, J.G. 2018b. *Balaenoptera borealis*. The IUCN Red List of Threatened Species 2018: e.T2475A130482064. <https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T2475A130482064.en> Accessed on 25 October 2023.

Cox, S.L., Embling, C.B., Hosegood, P.J., Votier, S.C., and Ingram, S.N. 2018. Oceanographic drivers of marine mammal and seabird habitat-use across shelf-seas: a guide to key features and recommendations for future research and conservation management. *Estuarine, Coastal and Shelf Science*, 212, 294–310. <https://doi.org/10.1016/J.ECSS.2018.06.022>.

Ellett D.J., Kruseman, P., Prangmsma, G.J., Pollard, R.T., Vanaken, H.M., Edwards, A., Dooley, H.D., and Gould, W.J. 1983. Water masses and mesoscale circulation of North Rockall Trough waters during JASIN 1978.

Phil Trans R. Soc. Lond A., 308: 231-252.

Evans, P.G.H. 1990. European cetaceans and seabirds in an oceanographic context. *Lutra* 33:95-125.

Evans, P.G.H. and Waggitt, J.J. 2020. Cetaceans. Pp. 134-184. In: Crawley, D., Coomber, F., Kubasiewicz, L., Harrower, C., Evans, P., Waggitt, J., Smith, B., and Mathews, F. (Editors) *Atlas of the Mammals of Great Britain and Northern Ireland*. Published for The Mammal Society by Pelagic Publishing, Exeter. 205pp.

Evans, P.G.H., Anderwald, P. and Baines, M.E. 2003. UK Cetacean Status Review. Report to English Nature and the Countryside Council for Wales. Sea Watch Foundation, Oxford. 160pp.

Evans, P.G.H., Carrington, C. and Waggitt, J. 2021. Risk Assessment of Bycatch of Protected Species in Fishing Activities. European Commission, Brussels. 213pp.
<https://circabc.europa.eu/ui/group/3f466d71-92a7-49eb-9c63-6cb0fadf29dc/library/b5021eec-77d2-48fo-8fob-6428af40aa1b/details>.

Giménez J., Waggitt J.J., and Jessopp M. 2023. Identification of priority cetacean areas in the north-east Atlantic using systematic conservation planning. *Aquat Conserv-Mar Freshw Ecosyst*.

Hammond, P.S. and Wilson, L.J. 2016. Grey Seal Diet Composition and Prey Consumption. *Scottish Marine and Freshwater Science Vol 7 No 20*, 47pp.

Russell, D.J.F. and Carter, M.I.D. 2021. SCOS Briefing Paper. Estimating the proportion of grey seals hauled out during August surveys.

Russell, D.J.F. et al. 2022. Trends in seal abundance and grey seal pup production. Special Committee on

Seals Briefing Paper. SCOS-BP 22/02.

Ryan, C., Calderan, S., Allison, C., Leaper, R., and Risch, D. 2022. Historical occurrence of whales in Scottish Waters inferred from whaling records. *Aquatic Conserv: Mar Freshw Ecosyst.*, 32:1675-1692.

SCOS. 2022. Scientific Advice on Matters Related to the Management of Seal Populations: 2022. Natural Environment Research Council Special Committee on Seals, UK.

Taylor, B.L., Baird, R., Barlow, J., Dawson, S.M., Ford, J., Mead, J.G., Notarbartolo di Sciara, G., Wade, P., and Pitman, R.L. 2019. *Physeter macrocephalus* (amended version of 2008 assessment). The IUCN Red List of Threatened Species 2019: e.T41755A160983555. <https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T41755A160983555.en>. Accessed on 11 April 2023.

Thompson, D.A.W. 1928. On Whales Landed at the Scottish Whaling Stations during the Years 1908-1914 and 1920-1927. *Scientific Investigations Fishery Board of Scotland*. 1928. No. 3: 1-40.

Waggitt, J.J., Evans, P.G.H., Andrade, J., Banks, A.N., Boisseau, O., Bolton, M., Bradbury, G., Brereton, T., Camphuysen, C.J., Durinck, J., Felce, T., Fijn, R.C., Garcia-Baron, I., Garthe, S., Geelhoed, S.C.V., Gilles, A., Goodall, M., Haelters, J., Hamilton, S., Hartny-Mills, L., Hodgins, N., James, K., Jessopp, M., Kavanagh, A.S., Leopold, M., Lohrengel, K., Louzao, M., Markones, N., Martínez-Cedeira, J., Cadhla, O.O., Perry, S.L., Pierce, G.J., Ridoux, V., Robinson, K.P., Santos, M.B., Saavedra, C., Skov, H., Stienen, E.W.M., Sveegaard, S., Thompson, P., Vanermen, N., Wall, D., Webb, A., Wilson, J., Wanless, S., and Hiddink, J.G. 2020. Distribution maps of cetacean and seabird populations in the North-East Atlantic. *J Appl Ecol* 57:253-269.

Weir, C.R., Pollock, C., Cronin, C., and Taylor, S. 2001. Cetaceans of the Atlantic Frontier, north and west of Scotland. *Continental Shelf Research*, 21: 1047-1071.

Wilson, L.J. and Hammond, P.S. 2019. The diet of harbour and grey seals around Britain: Examining the role of prey as a potential cause of harbour seal declines. *Aquatic Conservation: Marine Freshwater Ecosystems*. 2019; 29(S1): 71–85.
<https://doi.org/10.1002/aqc.3131>.

Acknowledgements

We would like to thank the participants of the 2023 IMMA Regional Expert Workshop for the identification of IMMAs in the North East Atlantic Ocean. Funding for the identification of this IMMA was provided by the Water Revolution Foundation. Other sponsors for the workshop included OceanCare and ORCA (orca.org.uk), and substantial administrative support to the IMMA Secretariat was provided by the Tethys Research Institute and Whale and Dolphin Conservation.



**MARINE MAMMAL
PROTECTED AREAS
TASK FORCE**

IUCN SSC WCPA
Species Survival Commission World Conservation Union

TETHYS
since 1986

ocean care

WDC
WHALE AND
DOLPHIN
CONSERVATION

WATER
REVOLUTION
FOUNDATION

Suggested Citation: IUCN-MMPATF (2024) Monach Isles and Outer Hebrides Western Continental Shelf IMMA Factsheet. IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, 2024.

PDF made available for download at
<https://www.marinemammalhabitat.org/factsheets/monach-isles-and-outer-hebrides-western-continental-shelf-imma/>