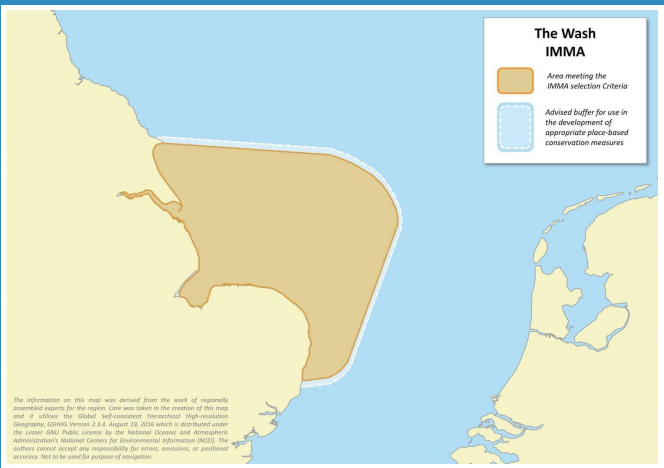

Area Size

25,740 km²

Qualifying Species and Criteria

Harbour seal – *Phoca vitulina*

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

Other Marine Mammal Species Documented

Halichoerus grypus, Phocoena phocoena

Summary

This IMMA, which encompasses The Wash and North Norfolk Coast Special Area of Conservation, includes the haulout, breeding and foraging area of the majority of the English subpopulation of Atlantic harbour seals (*Phoca vitulina vitulina*). Harbour seals are coastal compared to the sympatric grey seal (*Halichoerus grypus*), and in this area they focus their foraging activities on sand banks at depths shallower than 30m. The population in this area has declined by around 25% in the last five years for unknown reasons.

The Wash IMMA

Description:

The habitat in this IMMA is generally a mix of sandy and gravelly substrate with a number of shallow (<30 m deep) banks that likely provide predictable foraging areas for seals. It also has a number of tidal sandbanks that the harbour seals haul out and breed on. The area features relatively high densities of fish such as gadids and sandeels, which according to diet studies are likely to be important prey species for harbour seals (Wilson & Hammond, 2019).

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

The IMMA provides habitat that supports around 4,250 Atlantic harbour seals (*Phoca vitulina vitulina*) (6,0000 until recently) (SCOS, 2022). This is the majority (>90%) of harbour seals in England and also represents 5% of the Northeast Atlantic harbour seals, and around 2.5% of the entire subspecies (Russell et al., 2022). Harbour seals in The Wash suffered huge population reductions of 50% in 1988 and 30% in 2002 due to outbreaks of Phocine Distemper Virus (PDV) (SCOS, 2022). The population recovered following these events, but over the last five years numbers have again declined by around 25% between 2018 and 2022 according to both number of seals recorded during moult counts (Thompson & Russell, 2022) and number of pups counted during breeding surveys (Thompson, 2022). The reasons for these declines are unknown. This is a key subpopulation as it represents almost the entirety of the United Kingdom's (UK) part of the Southern European harbour seal metapopulation (harbour seals elsewhere in the UK form a separate Scottish metapopulation; Carroll et al. (2020)). The habitat is also changing as a result of wind farm development.

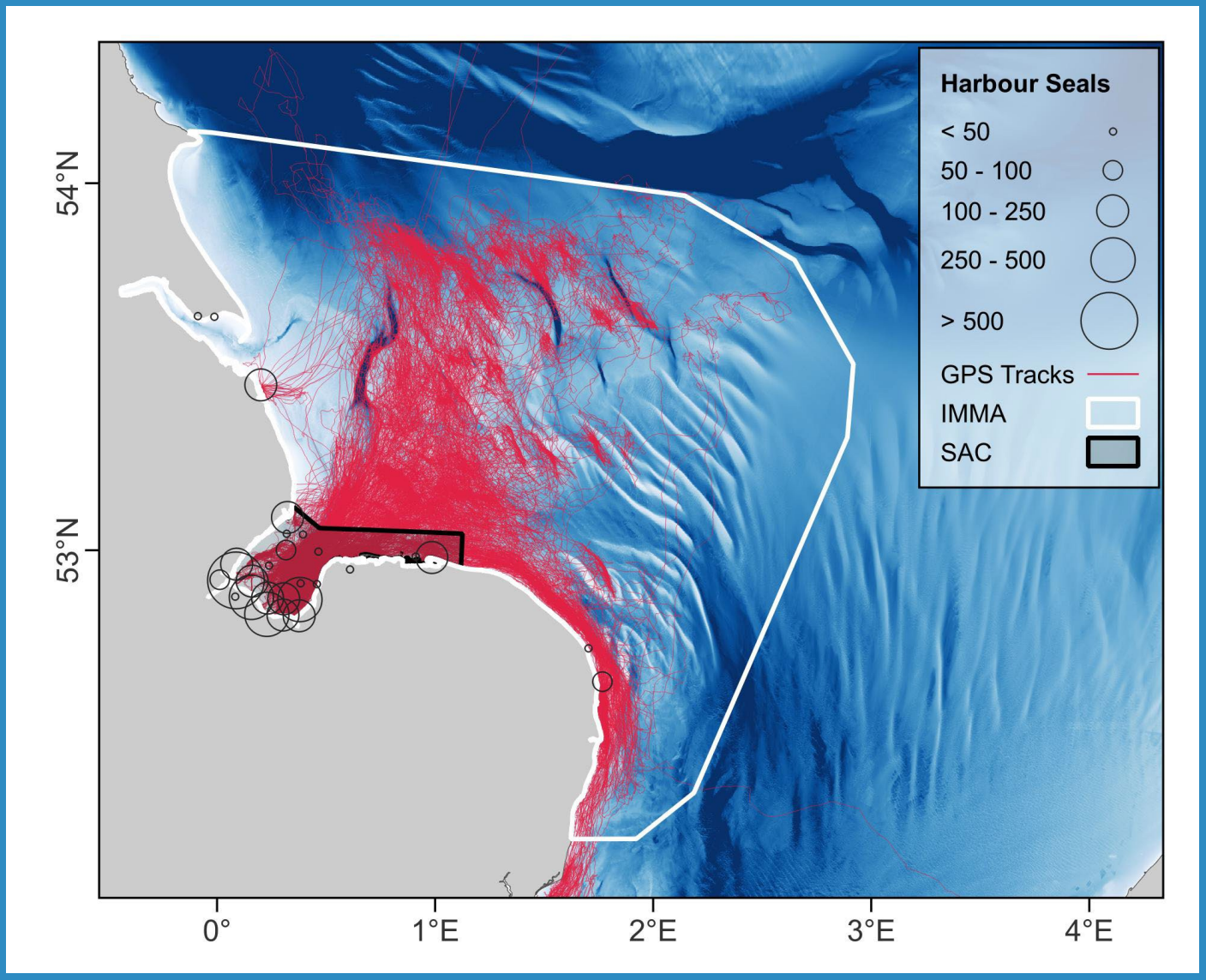

Figure 1: Map of GPS tracking data from harbour seals tagged in The Wash with haulout counts conducted during the moult in August 2022. Credit: Sea Mammal Research Unit, University of St Andrews. Bathymetry data from EMODnet.

Criterion C: Key Life Cycle Activities
Sub-criterion C1: Reproductive Areas

The harbour seals are resident in the IMMA area, breeding on the tidal sandbanks. A total of 1140 pups were counted in the most recent breeding survey in 2020, but this was 24% lower than the preceding survey in 2018 (SCOS, 2022).

Sub-criterion C2: Feeding Areas

The Wash IMMA is a very shallow (<30 m) and productive area which incorporates the vast majority of foraging areas for the harbour seals that haul-out in The Wash (Carter et al., 2022). High at-sea density areas for harbour seals are usually adjacent to relatively large centres of abundance on land (i.e. haulout and breeding sites) and The Wash and surrounding waters is one of the areas most densely used for foraging in the UK. Harbour seal distribution is more tightly concentrated in coastal and inshore waters compared to sympatric grey seals (*Halichoerus grypus*), but with fine-scale structuring of density around the coast (Carter et al., 2022).

Figure 2: Harbour seals hauled out on a tidal sand bank in The Wash. Photo credit: Sea Mammal Research Unit, University of St Andrews

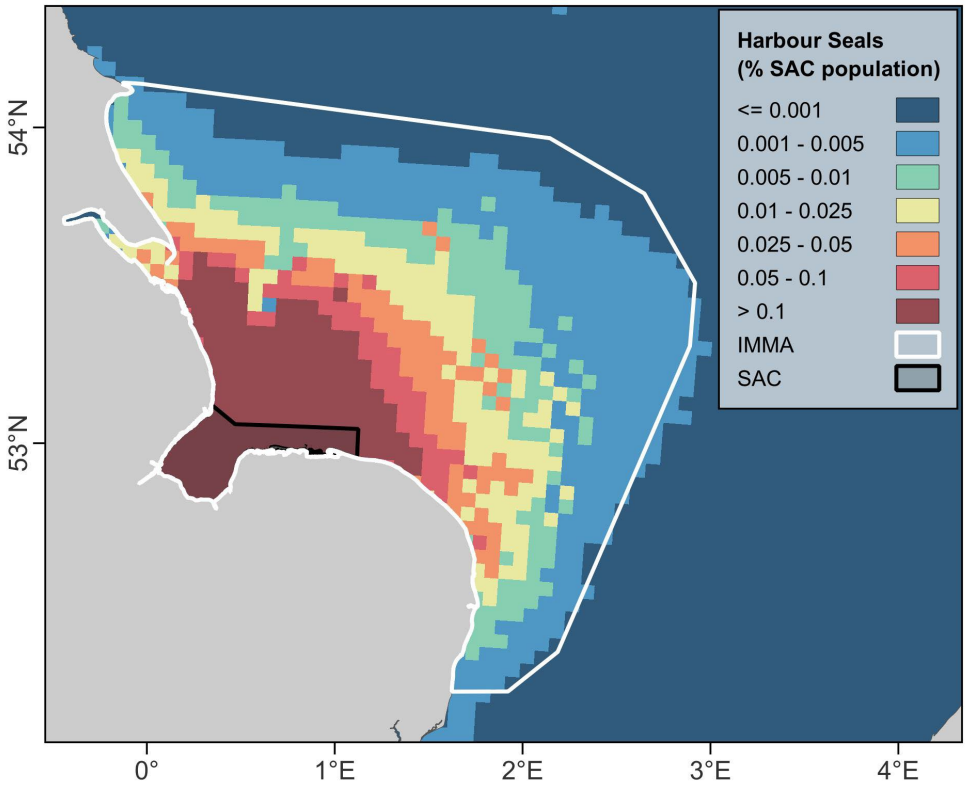

Figure 3: Map of harbour seal at-sea distribution from haulouts in The Wash and North Norfolk Coast Special Area of Conservation (SAC), showing the percentage of the SAC at-sea population per 5km x 5km grid cell. Excerpt taken from Carter et al. (2022).

Supporting Information

Carroll, E.L., Hall, A., Olsen, M.T., Onoufriou, A.B., Gaggiotti, O.E., and Russell, D.J.F. 2020. Perturbation Drives Changing Metapopulation Dynamics in a Top Marine Predator. Proc.R.SocB. 287, 20200318.

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.

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Russell, D.J.F., Duck, C.D., Morris, C.D., Riddoch, N.G., and Thompson, D. 2022. Trends in seal abundance and grey seal pup production. SCOS Briefing Paper.

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, 29(S1): 71– 85.

Acknowledgements

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PDF made available for download at ***https://www.marinemammalhabitat.org/factsheets/the-wash-imma/***