



AQUIND Limited

AQUIND INTERCONNECTOR

HABITATS REGULATIONS ASSESSMENT

REPORT - VOLUME 3 - APPENDIX 2: PRE-

SCREENING FOR MARINE MAMMALS

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

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HRA pre-screening for marine mammals (ref. 1193194)



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Assessment of potential for connectivity between UK marine mammal SACs and the UK AQUIND project

Dear Richard,

Following our very useful call on the 13/02/2019, please find enclosed additional information regarding how the conclusion that none of the UK marine mammal SACs are deemed to be close enough to the Proposed Development for there to be potential for connectivity has been reached, and the evidence base employed.

We welcome your advice on whether NE is still in agreement with this conclusion in light of this additional information.

Yours sincerely

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cc. Ross Hodson (NP), Sarah Lister (NP)

HRA pre-screening: Assessment of the potential for connectivity between UK marine mammal SACs and the UK AQUIND project

The closest UK Special Areas of Conservation (SACs) for each Annex II marine mammal species were considered when assessing the potential for connectivity to the UK aspects of the AQUIND project (Proposed Development). The UK SACs considered were as follows and are shown in Figure 1:

- Southern North Sea SAC (137 km from the Proposed Development) – harbour porpoise (*Phocoena phocoena*);
- The Wash and North Norfolk Coast SAC (370 km from the Proposed Development) – harbour seal (*Phoca vitulina*);
- Pembrokeshire Marine SAC (542 km from the Proposed Development) – grey seal (*Halichoerus grypus*); and
- Cardigan Bay SAC (618 km from the Proposed Development) – bottlenose dolphin (*Tursiops truncatus*).

The assessment of potential connectivity has been based on whether the Proposed Development fell within the likely foraging range of seals or likely population range of cetaceans which are features of the SACs. Foraging range information for seals came from telemetry studies, but telemetry studies have not been conducted for cetaceans in the UK. Therefore information on likely population range for animals which are a feature of the closest SACs to the Proposed Development was used. For bottlenose dolphins this mainly came from individual identification (photo-ID) data. For harbour porpoises the SCANS and SCANS II data (model-based density surfaces) were used; these have yet to be released for SCANS III. The main references used have been listed at the end of each section.

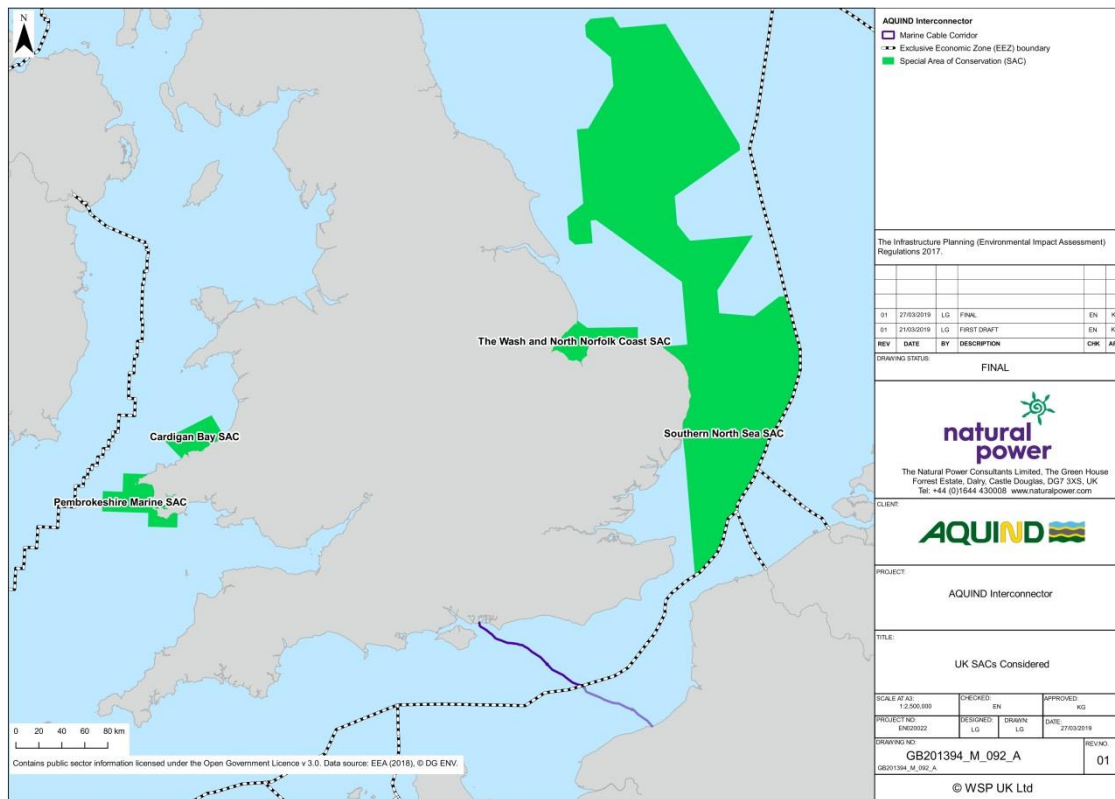


Figure 1: UK SACs considered

1. Potential for connectivity of harbour porpoises as a feature of the Southern North Sea SAC and the Proposed Development

To date there has not been any telemetry work on harbour porpoises in the UK. Telemetry work in other countries has tended to come about when animals have become trapped in pound nets or herring weirs. This provides an opportunity for live-captures when animals can be tagged prior to release. Porpoises do not lend themselves to individual identification studies either; they surface briefly and do not display obvious individually recognisable marks. There is therefore a general lack of data on individual animal movements in UK waters.

Model-based density surfaces using the SCANS and SCANS II data (Hammond *et al.*, 2013) show a marked difference in harbour porpoise distribution between 1994 and 2005 with higher densities in northern areas in 1994 shifting south in 2005. However the density of harbour porpoises in the Channel was very low in both time periods (see Figure 2 below).

Given the predicted density surfaces, with very low densities being predicted in the Channel, it is considered likely that the Proposed Development does not fall within the range of the population of harbour porpoises which are a feature of the Southern North Sea SAC. This SAC encompasses the area of high density predicted using the SCANS II (2005) data. This is not surprising as the SCANS and SCANS II data form part of the Joint Cetacean Protocol (JCP) data set which was used to identify the 'discrete and persistent areas of relatively high porpoise density' to inform SAC site identification and designation (Heinänen and Skov, 2015).

The potential for connectivity of harbour porpoises which are a feature of the Southern North Sea SAC and the Proposed Development is therefore considered to be negligible. It is therefore proposed that this SAC be pre-screened out of the HRA which will be conducted for the Proposed Development.

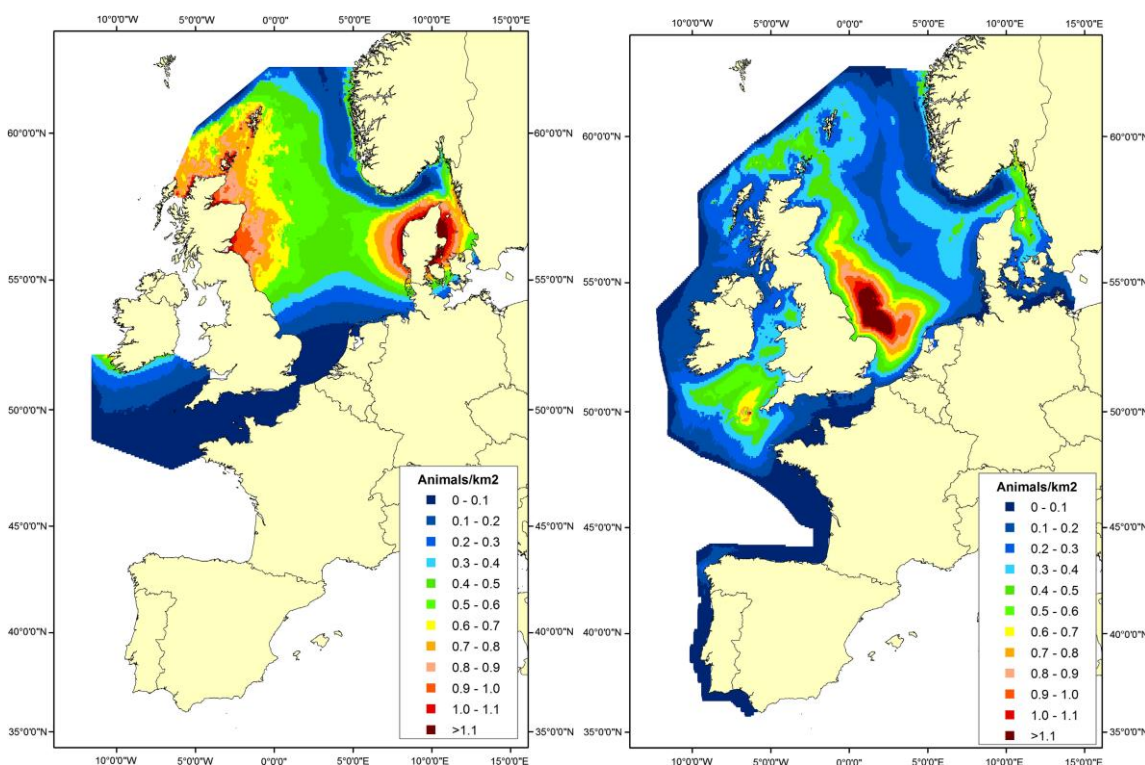


Figure 2: Predicted density for harbour porpoise in 1994 (left) and 2005 (right). Images taken from Hammond *et al.* (2013)

References

Hammond, P.S. *et al.* (2013). Cetacean abundance and distribution in European Atlantic shelf waters to inform conservation and management. *Biological Conservation* 164: 107-122.

Heinänen, S. and Skov, H. (2015). The identification of discrete and persistent areas of relatively high harbour porpoise density in the wider UK marine area. JNCC Report No.544.

2. Potential for connectivity of harbour seals as a feature of The Wash and North Norfolk Coast SAC and the Proposed Development

Regional differences are apparent in the distances harbour seals travel from haul-out sites to likely foraging areas (Sharples *et al.*, 2012). Although animals from the Northern Isles (Orkney and Shetland) and Outer Hebrides generally make shorter distance trips, seals on the east coast of the UK (Moray Firth, St Andrews Bay and The Wash) make some of the longest and more wide-ranging trips.

Some of the 24 seals tagged in The Wash made repeated foraging trips of more than 200 km although as a result of individual variations in foraging distances the average trip distance was 86 km. In comparison seals from Shetland, Orkney and the Thames Estuary had shorter average foraging trip distances of between 11 and 21 km. However, even the longer foraging trips made by harbour seals which use The Wash and North Norfolk Coast SAC do not overlap with the Proposed Development.

One individual using The Wash and North Norfolk Coast SAC also hauled out in the Thames Estuary. Of nine seals tagged within the Thames Estuary (by Sharples *et al.*, 2012) one individual travelled south across the Channel to haul-out in the Baie de Somme, France, before moving to haul-out and forage in The Wash (Figure 3). Due to the small sample size we also considered whether animals tagged in France regularly moved between French and UK haul out sites. However, all of the 28 harbour seals tagged on the north coast of France by Vincent *et al.* (2017) stayed within French coastal waters (Figure 4).

Although one of the harbour seals which hauled out and foraged in The Wash had previously travelled across the Channel and hauled out on the French coast (but not within the vicinity of the Proposed Development), movements of this nature do not appear to be typical. It is therefore considered that the Proposed Development does not fall within the likely foraging range of seals which are a feature of The Wash and North Norfolk Coast SAC.

The potential for connectivity of harbour seals which are a feature of The Wash and North Norfolk Coast SAC and the Proposed Development is therefore considered to be negligible. It is therefore proposed that this SAC be pre-screened out of the HRA which will be conducted for the Proposed Development.

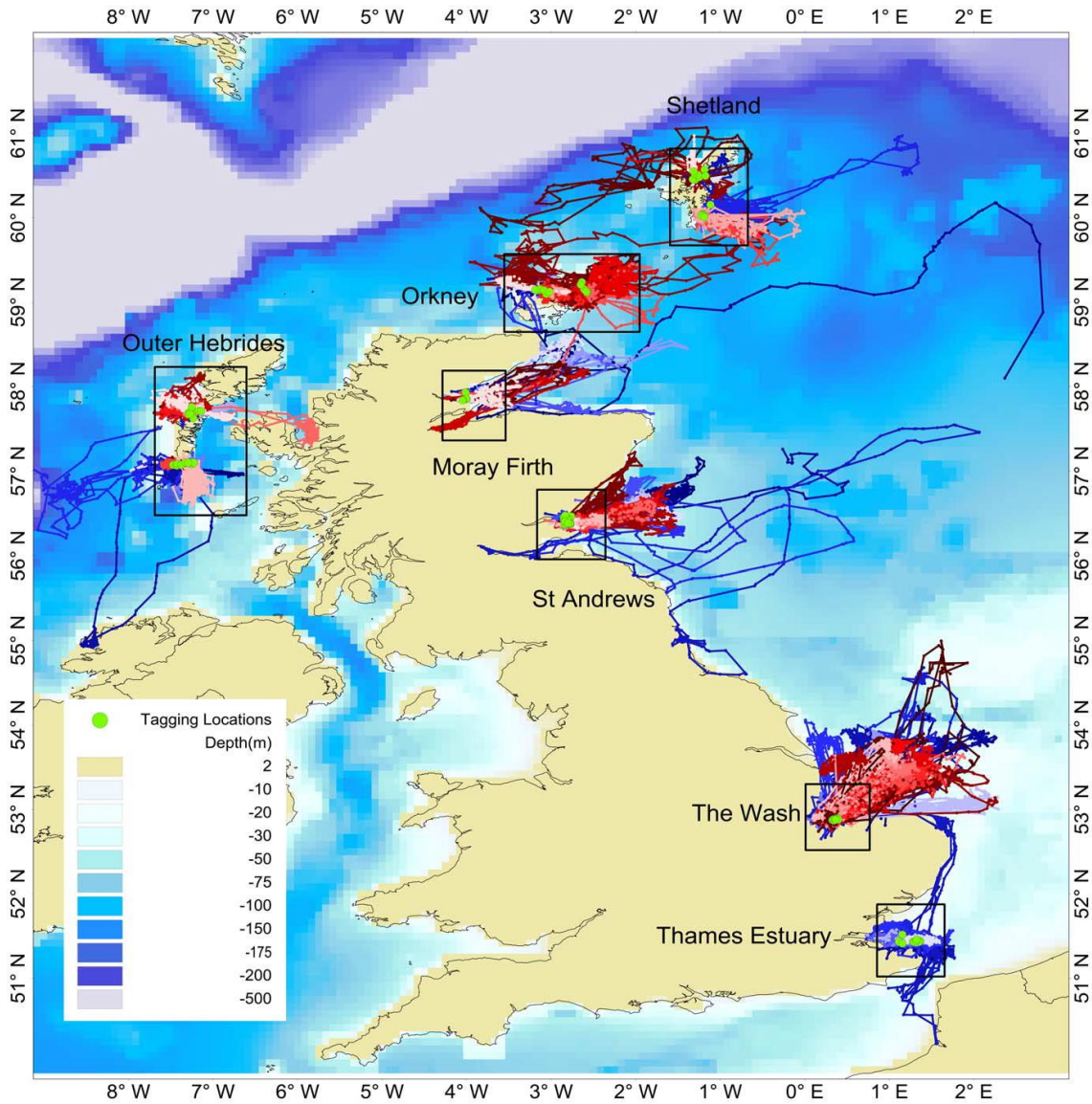


Figure 3: Smoothed telemetry tracks and capture locations for harbour seals. Image taken from Sharples et al. (2012)

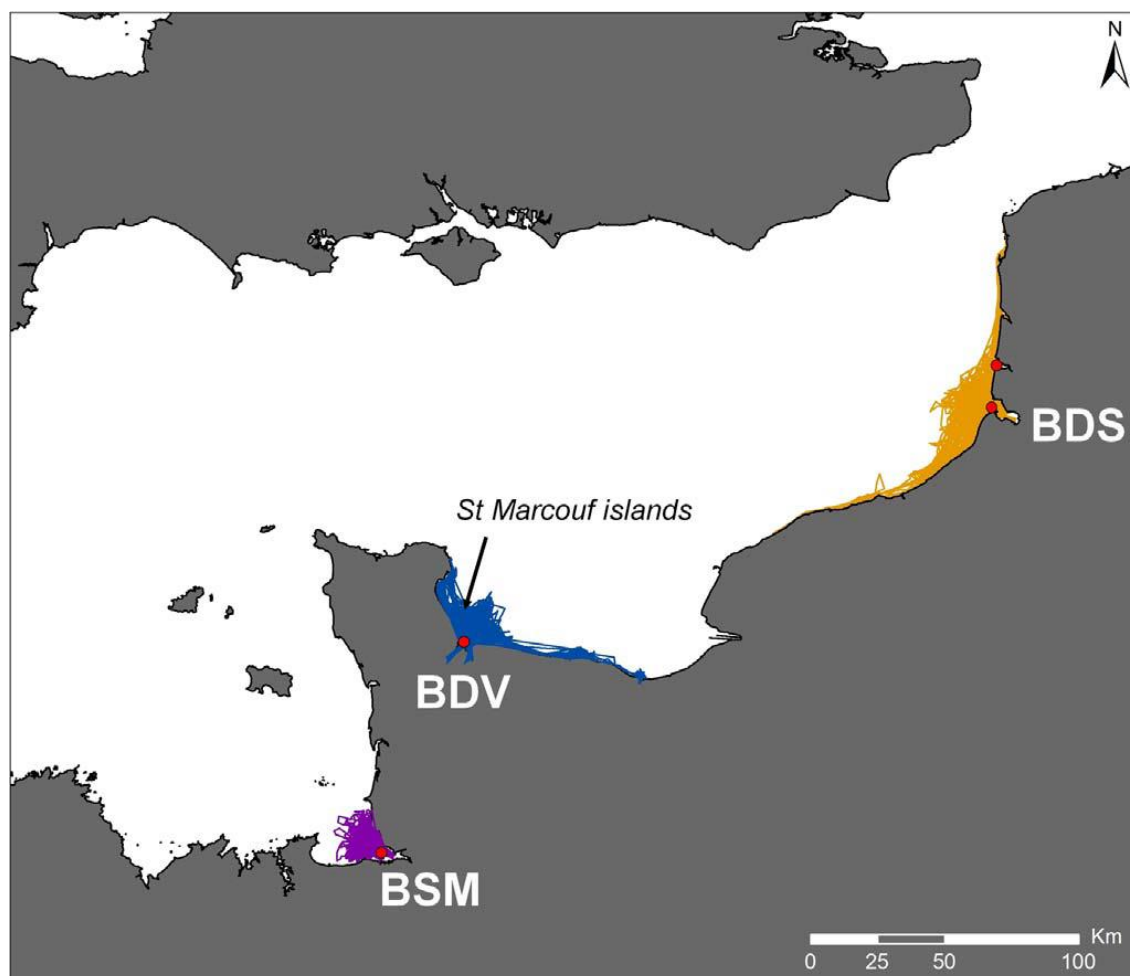


Figure 4: Telemetry tracks of harbour seals captured and tagged at three locations on the French North Coast (BSM = Baie du Mont-Saint-Michel, BDV = Baie de Veys, BDS = Baie de Somme). Image taken from Vincent et al. (2017)

References

- Russell, D.J.F., Hastie, G.D., Thompson, D., Janik, V.M., Hammond, P.S., Scott-Hayward, L.A.S., Matthiopoulos, J., Jones, E.L. and McConnell, B.J. (2016). Avoidance of wind farms by harbour seals is limited to pile driving activities. *Journal of Applied Ecology* 53: 1642-1652.
- Russell, D.J.F., Jones, E.L. and Morris, C.D. (2017). Updated seal usage maps: The estimated at-sea distribution of grey and harbour seals. *Scottish Marine and Freshwater Science* Vol 8 No 25. Published by Marine Scotland Science. ISSN: 2043-7722. DOI: 10.7489/2027-1.
- Sharples, R.J., Moss, S.E., Patterson, T.A. and Hammond, P.S. (2012). Spatial variation in foraging behaviour of a marine top predator (*Phoca vitulina*) determined by a large-scale satellite tagging program. *PLoS ONE* 7(5): e37216. doi:10.1371/journal.pone.0037216.
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3. Potential for connectivity of grey seals as a feature of the Pembrokeshire Marine SAC and the Proposed Development

Although UK grey seals are known to undertake long distance travel, this tends to be directed to known haul out sites most of the time (McConnell *et al.*, 1999). The majority of their trips to sea are much shorter (taking a small number of days) with seals generally returning to the same haul out sites from which they departed. The range of these foraging trips is generally in the region of 20-60 km from the haul out site.

Russell *et al.* (2017) displayed tracks of 270 grey seals tagged by the Sea Mammal Research Unit (SMRU) in the UK as part of their analysis of the estimated at-sea distribution of grey and harbour seals (see Figure 5). A number of these seals were tagged in Wales, and long distance travel and shorter foraging trips are illustrated in Figure 5.

None of the grey seals using the Welsh coast were tracked further east into the Channel than the area off Torquay. Given that this study is based on a relatively large amount of data, it is considered that the Proposed Development does not fall within the likely foraging range of grey seals which are a feature of the Pembrokeshire Marine SAC.

The potential for connectivity of grey seals which are a feature of the Pembrokeshire Marine SAC and the Proposed Development is therefore considered to be negligible. It is therefore proposed that this SAC be pre-screened out of the HRA which will be conducted for the Proposed Development.

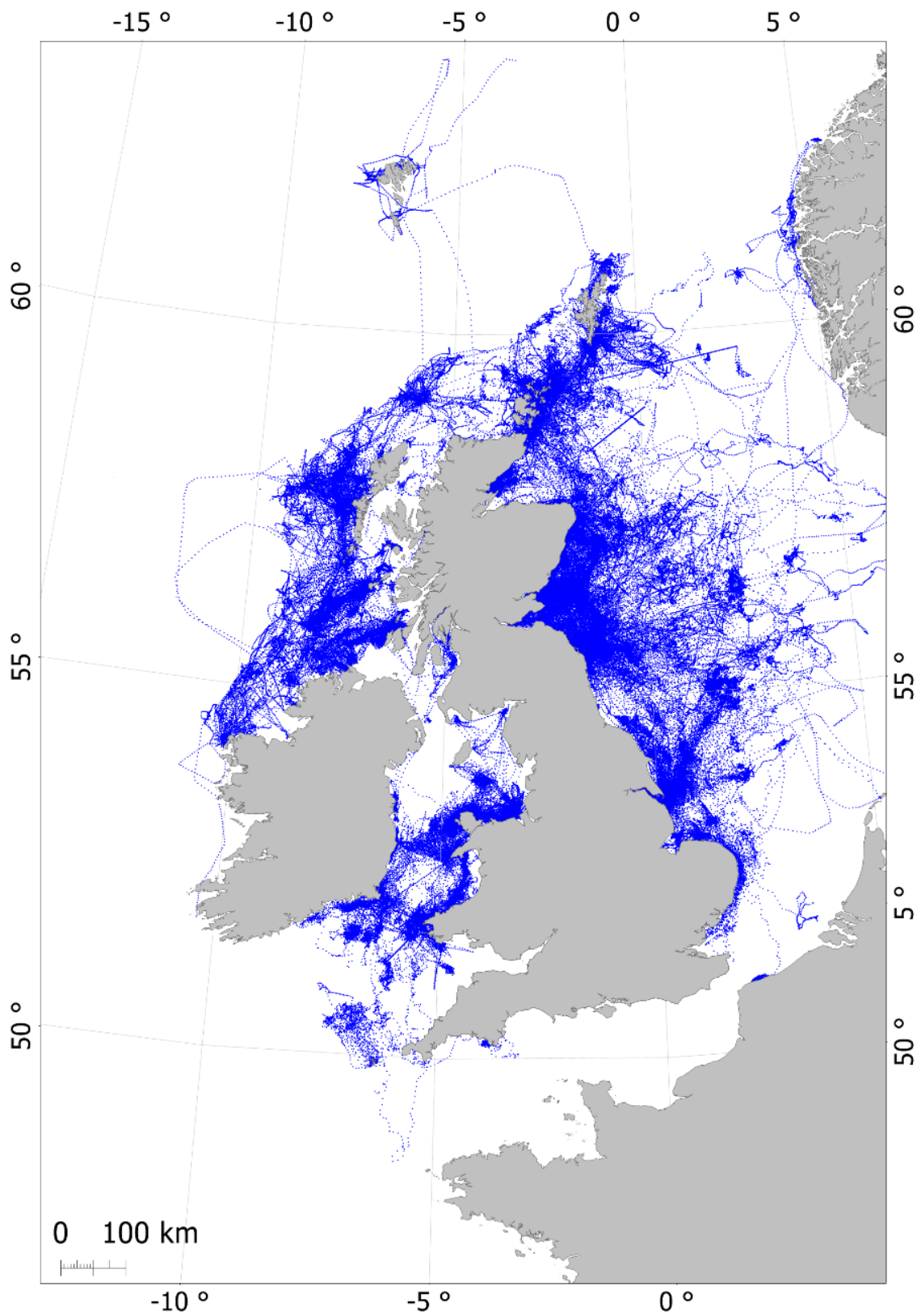


Figure 5: Tracks of 270 grey seals tagged by SMRU in the UK. Image taken from Russell et al. (2017)

References

Russell, D.J.F., Jones, E.L. and Morris, C.D. (2017). Updated seal usage maps: The estimated at-sea distribution of grey and harbour seals. Scottish Marine and Freshwater Science Vol 8 No 25. Published by Marine Scotland Science. ISSN: 2043-7722. DOI: 10.7489/2027-1.

4. Potential for connectivity of bottlenose dolphins as a feature of the Cardigan Bay SAC and the Proposed Development

Although the population of bottlenose dolphins which uses the Cardigan Bay SAC is known to range widely, the majority of movements appear to be to the north into Liverpool Bay off the north coast of Wales, particularly in winter (Veneruso and Evans, 2012; Pesante et al., 2008).

It was originally thought that the bottlenose dolphins off south west England (Brereton *et al.*, 2016) may be part of the Welsh population (Wood, 1998). However, comparisons of the Cardigan Bay and south west England photo-ID catalogues have not revealed any matches (Pesante *et al.*, 2008a; Brereton *et al.*, 2016). Given this lack of matches, it is unlikely that animals using the Cardigan Bay SAC use the area between the SAC and the Proposed Development on a regular basis.

It is therefore considered that the Proposed Development does not fall within the likely range of the population of bottlenose dolphins which are a feature of the Cardigan Bay SAC. The potential for connectivity of bottlenose dolphins which are a feature of the Cardigan Bay SAC and the Proposed Development is therefore considered to be negligible. It is therefore proposed that this SAC be pre-screened out of the HRA which will be conducted for the Proposed Development.

References

Brereton, T., Jones, D., Leeves, K., Davies, R., McNie, F. and Russell, T. (2016). Population structure, mobility and conservation of bottlenose dolphins in south west England from photo-identification studies 2007-2013. Report number RP01679 commissioned by Natural England.

Pesante, G., Evans, P.G.H., Baines, M.E. and McMath, M. (2008). Abundance and life history parameters of bottlenose dolphin in Cardigan Bay: Monitoring 2005-2007. CCW Marine Monitoring Report No. 61.

Pesante, G., Evans, P.G.H., Anderwald, P., Powell, D. and McMath, M. (2008a). Connectivity of bottlenose dolphins in Wales: North Wales photo-monitoring interim report. CCW Marine Monitoring Report No. 62.

Veneruso, G. and Evans, P.G.H. (2012). Bottlenose dolphin and harbour porpoise monitoring in Cardigan Bay and Pen Llŷn a'r Sarnau Special Areas of Conservation. CCW Monitoring Report No. 95.

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