



1. Requirement overview:

Requirements	To improve understanding on the seasonal distribution and habitat usage of birds in English waters, particularly for designated species outside protected areas and for UK Biodiversity Action Plan priority bird species.
Requirement detail	<p>Evidence on how birds use the marine and coastal environment is important to understand the potential for impacts from marine activity at different times of year and in different places. Less evidence is available on the seasonal useage by birds outside of protected areas relative to those inside, and for species of lower conservation priority listed e.g. those only listed as UK BAP priority bird species.</p> <p>To support decision making the MMO seeks information on bird distribution in space and time (at least seasonality, and ideally monthly) and the associated habitat usage including migration through, resting, feeding, rafting, moulting or nesting areas as appropriate to the species. This should include both designated and UK BAP priority bird species.</p>
MMO use	<p>Marine Licensing:</p> <p>This would inform marine licensing decisions related to developments that might interact with birds by identifying where consideration and potentially further supporting evidence is needed of the impact to bird species.</p> <p>Marine Planning:</p> <p>For identifying areas of importance for bird species that can be displayed in online evidence portals to provide enhanced clarity and certainty for licence applicants. In addition identifying where marine plan policy intervention is beneficial or required.</p>
External interest	Natural England, Joint Nature Conservation Committee
Delivery target	Marine licensing team have an ongoing requirement for this information while marine planning seek delivery for spring 2019 to inform iteration 3 of marine plans.

2. Aims and objectives

Aim:

To improve understanding on the seasonal distribution and habitat usage of seabirds in English waters so that risks to the birds or resources areas resulting from proposals in the marine area may be managed.

Objectives:

- collate, synthesis and assess the generality of existing seabird habitat use studies that assess individual species and colonies
- calculate and map seasonal distribution and abundance of bird species
- identify and map the key habitat usage areas (appropriate to the species) e.g. feeding, rafting, moulting or nesting that occur in relation to seasonal distributions above
- provide this evidence in a format suitable for incorporation into the MMO marine information system so that such evidence can be continually updated and available to all
- participate in a community of practice that can share methods, applications and case studies relating to use of this evidence

3. Existing evidence

MMO	Mapping Seabird Sensitivity to Offshore Wind Farms (MMO1034) Produced an assessment of seabird density around English waters in combination with a review of the relative sensitivity of each species to offshore developments. (Joint project with Natural England) at summer/winter resolution.
Academic	Wakefield et al Breeding (in press) density, fine-scale tracking and large-scale modeling reveal the regional distribution of four seabird species , Ecological Applications, doi: 10.1002/eap.1591 – estimate the distribution at sea foraging based on GPS tracking from multiple colonies across the UK and then applying habitat use models to predict space use from unobserved colonies across the UK. More frequently papers explore individual species and or colonies eg A comparison of foraging behaviour in the North Sea by Black-legged Kittiwakes <i>Rissa tridactyla</i> from an inland and a maritime colony that illustrate foraging locations included coastal waters and areas over 100 km from land.
Other	Horswill, C., et al. 2015. Review of mark-recapture studies on UK seabirds that are run through the BTO's Retrapping Adults for Survival (RAS) network . JNCC Report No. 600. JNCC, Peterborough. Mitchell, P.I et al (Eds.). 2004. Seabird Populations of Britain and Ireland: results of the Seabird 2000 census (1998-2002) Published by T and A.D.

	<p>Poyser, London. (Summary by JNCC).</p> <p>Furness, R.W. 2015. Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS). Natural England Commissioned Reports, Number 164. – includes seasonal behaviours</p> <p>RSPB data collections are mainly held by The National Biodiversity Network. The RSPB guidance on the use of bird data in marine planning highlights the main sources of information on the spatial and temporal distribution and ecology of UK breeding seabirds, as well as overwintering and passage birds</p> <p>British Ornithological Trust including BirdTrack volunteer data and resulting outputs</p> <p>The National Biodiversity Network eg (NBNAAtlas)</p> <p>Industry data is not readily accessible but includes ornithological surveys in higher level zone assessments supporting round 3 radar monitoring eg of migratory pink footed geese, and tagging studies of sandwich terns and black backed gulls etc.</p>
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4. Current activity

MMO is not currently engaged in activities to gather evidence related to this requirement.

5. Associated evidence requirements

Ref	Title
R005	Marine Species Migration Pathways
R006	Improved understanding of bird collision risk and avoidance
R110	Temporal variability of marine habitats

More information on the associated evidence requirements is available [here](#)

6. Potential delivery route

Partnering

The MMO will look to partner with organisations of relevance to widen the potential impact of any work undertaken in this area. This includes non-governmental organisations like Royal Society for the Protection of Birds and British Ornithological Trust and statutory nature conservation bodies; Natural England, Joint Nature Conservation Committee.

Knowledge Exchange

The MMO will work with industry, particularly the renewables energy sector to improve accessibility to data from ornithological surveys. The MMO would also be supportive of synthesis of the existing information to make it accessible.

7. Contact

For more information or to add further research to the existing evidence list please email evidence@marinemanagement.org.uk

Table 1: Delivery timescales 2017 to 2020

Delivery Route	2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Knowledge Exchange																
Partnering																