Scottish Natural Heritage
Dualchas Nàdair na h-Alba
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Nàdar air fad airson Alba air fad

Guidance

RECOMMENDATIONS FOR THE PRESENTATION AND CONTENT OF INTERIM MARINE BIRD, MAMMAL AND BASKING SHARK SURVEY REPORTS FOR MARINE RENEWABLE ENERGY DEVELOPMENTS

April 2014

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1. Introduction

We recommend that site characterisation survey reports for proposed wave, tidal and offshore wind renewable energy developments meet the minimum standards set out below. Reports should be concise – presenting key information from surveys. They should also be clear – supported by maps, figures and tables that are easy to understand. The recommendations below apply to the results from boat based, aerial (including digital), or vantage point surveys from land.

Interim survey reports should provide information on data collection and analysis, and species observed within the survey area. Unless agreed otherwise, interim survey reports should not include detailed impact assessments, mitigation and monitoring methods.

The timeline for submission of interim survey reports should be agreed with Marine Scotland (MS).

Our recommendations are listed below.

2. Recommendations for interim survey reports

Executive summary

- Concise overview of the key findings, together with details of any further survey work to be completed.

Introduction

- Concise details regarding the proposed development, survey site, aims and data collection methods – including justification for any changes to the agreed methodology.

Data collection

- Survey methodology – unless the survey methodology has changed, this may simply refer to the methodology agreed with MS and Scottish Natural Heritage (SNH) prior to the survey commencing. A reference to the agreed methodology should be provided. If the survey methodology deviated from that agreed, details of any changes should be provided together with implications for data collection.

- Summary of vessels used for boat based surveys, planes used for aerial surveys and equipment used for digital aerial surveys. For boat based surveys, vessel details should include length, height of observation platform, berths, and any additional relevant information.

- Summary of vantage point (VP) details, such as height, view shed (i.e. area observed from the VP), equipment used to detect animals and record distances, together with any relevant maps or figures.

- Summary of survey team employed: number of observers, split of observers (birds versus mammals), level of experience (confirm ESAS-trained bird surveyors with ESAS survey experience; confirm MMO training and survey experience).

- Map of survey site showing planned transect routes/vantage points and actual area covered by the surveys. If actual survey routes differ from those planned then a map showing actual routes would be useful. It is particularly important to include information on whether both sides of the boat were covered and whether this was the case for all species.

- Presentation of survey trip information, such as number and timings of surveys, proportion of surveys in each Beaufort sea-state, tidal state,

weather conditions, visibility, how data is recorded, and an example of a completed field recording sheet.

Data analysis

- Include appendices of raw counts.
- Presentation and discussion of species densities and distributions for the entire study site, broken down into the development site and buffer area. Consideration should be given to any effects on density and distribution, such as water depth, distance from the coast, and attraction to fishing boats.
- Depending on the survey methodology used, densities should be presented for birds on the water and in flight, with a combination of the two to give the total density.
- Details of any correction factors should be provided, i.e. to account for declining detectability with distance, availability bias, and surveying across ecological gradients.
- Where Distance software has been used, include information on model selection, plot of detectability function and density estimates with associated error bars.
- Presentation of seasonal/monthly population estimates to allow impact assessments to be conducted on the relevant population scale (i.e. breeding, over wintering etc)
- Present the methods used to extrapolate from the density sample to the population of the entire development site ± buffer. It would be helpful to consider how the heterogeneity in densities may affect the population estimate.
- It will not be necessary to present density surface modelling in interim reports. However, it would be helpful to discuss how spatial heterogeneity in density might be analysed and which method(s) might be used.

Species accounts

- Separate seabirds, marine mammals and basking sharks accordingly. Order by species recorded most frequently to those recorded least, but grouped where possible into relevant species groupings (e.g. the auks, and harbour and grey seal).
- Provide details on the conservation status of each species.

- Provide details on the population status of each species at the regional, national and biogeographical region, and the population status, i.e. increasing, decreasing, or stable. Compare with the population figures derived from the site surveys to understand which are the key target species[1].

- Provide any contextual information for the area together with references, e.g. other survey results, local knowledge on distribution and abundance, tagging work, and haulout counts.

- Provide information on the species behaviour and site usage. For tidal developments this may also include diving bird behaviour.

- If agreed during scoping, provide information on seabird flight direction and height (information on flight height will only be required for offshore wind farms).

- Designated sites and Habitat Regulations Appraisal – provide a brief overview of potential connectivity between the development site and designated sites, such as SPAs, SACs, Ramsar sites, MPAs, and SSSIs. Where connectivity is identified, provide details on the species status at designation and the most recent count for each designated site and within the same time period. It may also be necessary to include counts from non-designated colonies if data is available.

- Maps should be at a scale to allow for sufficient contextual information to interpret a site's location (for example, including the coastline, location of other proposed developments). Maps should include a compass rose and scale bar.

- Figures should have clear axes with explanatory labels. Gridlines should generally be avoided. Where appropriate, axes can be interrupted so that infrequent large data values do not swamp the information elsewhere in the plot. It is very helpful if figure legends appear below figures and table legends above tables. Legends should allow the figure or table to be largely interpreted without having to refer specifically to the body text. Column and/or row headings in tables should be explained if necessary as should axes labels for figures.

- Identify the periods of peak abundance of key species and discuss how this may affect future impact assessment.

- Identify key potential impacts (e.g. collision risk or displacement) for the target species.

[1] In most circumstances the target species will be limited to those species which are afforded a higher level of legislative protection. Some species may also be selected as a result of their behaviour which makes them more likely to be subject to impact from marine renewable developments. Species that are features of protected sites and present within the survey area should also be considered as target species. Species should only be considered as target species if they are likely to be affected by a proposed development.

Other Information

It would be helpful if the following information was included in, or submitted at the same time as, the survey reports:

- Data sources for other species of concern not addressed by the survey methodology (such as passage species).
- The results from any additional survey work, such as PAM, tagging, haulout counts and radar studies. Consider whether results from these surveys can be shown on maps alongside count data.
- Any other available surveys or contextual information that may be used in the Environmental Impact Assessment or any Habitats Regulations Appraisal – such as ESAS surveys or seal telemetry data.
- Clarification on how datasets from different surveys will be analysed, taking into account any constraints on data collection, and how these may be interpreted.
- Proposals for further survey work, including targeted survey work on key species.
- References for any published reports or papers cited.

If you have any questions about any of the above, please contact marinerenewables@snh.gov.uk.