

# PROJECT SUMMARY



## PrePARED Output Summary No. 1

### What is PrePARED?

PrePARED is a collaborative research project, funded by the Offshore Wind Evidence & Change (OWEC) Programme of the Crown Estate, and Crown Estate Scotland. It will concurrently study predator (seabird and marine mammal) and prey (fish) distribution and behaviour in and around offshore wind farms, providing critical insight into cumulative effects from large scale developments on key species.

Bringing together expertise from government, academia, nature conservation agencies and industry, PrePARED will address critical knowledge gaps that currently are barriers to sustainable offshore wind development, required to help meet the government’s renewable energy targets and subsequently reach net zero emissions.

### Background

Ambitious targets of 40 GW of installed offshore wind by 2030 in the UK require development at an unprecedented pace and scale. Uncertainties around environmental impacts from offshore wind farm (OWF) development on protected seabird and marine mammal populations currently constrain impact assessments and delay the planning process.

There is therefore an urgent need to better understand how seabirds and marine mammals respond to OWF development and the mechanisms underpinning these responses,

### Project Team

The PrePARED project brings together experts who are leading research into environmental effects of OWF development from the Scottish Government Marine Directorate, University of Aberdeen, University of Exeter, the Sea Mammal Research Unit (SMRU), SMRU Consulting, Aarhus University, Biomathematics and Statistics Scotland (BioSS), the UK Centre for Ecology & Hydrology (UK-CEH), NatureScot and Natural England.



particularly changes to prey distribution.

Increased certainty on magnitude of cumulative impacts will facilitate deployment of OWF at the pace and scale needed.



## Activities – Data Collection

- Fish, seabird and marine mammal data collection in 2022-25 in and around OWF in the **Moray Firth and Firth of Forth / Tay** regions, Scotland
- Fish biomass **acoustic surveys, trawls, baited fish trap deployments, underwater cameras, fish tagging**
- Concurrent with fish surveys, collection of seabird distribution and movement data from **developer-funded GPS tracking**
- Collection of data on harbour porpoise distribution and behaviour from **developer-funded passive acoustic monitoring**



## Activities – Analysis and Models

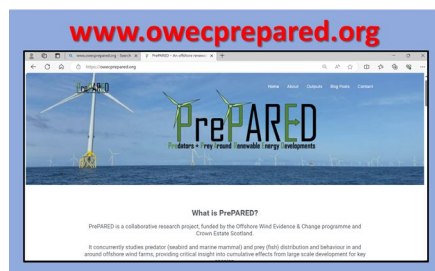
- Characterisation of broad-scale and fine-scale **fish distribution, biomass, abundance and behaviour**
- Identification of **minimum prey data requirements** for modelling predator distribution
- Characterisation of **predator distribution and behaviour** in relation to prey, OWF construction and operation, vessel noise and environmental covariates

## Funding

PrePARED is funded by the Offshore Wind Evidence and Change Programme of The Crown Estate, Crown Estate Scotland and in-kind contributions from the Scottish Government Marine Directorate, University of Aberdeen, University of Exeter, Natural England and NatureScot. The project will also use data collection funded by offshore wind developers in Scotland.



- Development of **context-specific dose response curves** for harbour porpoise incorporating prey data
- Identification of generalities in **prey response to OWF development** and subsequent predator response, applicable across the UK
- Integration of new knowledge and understanding into **impact assessment models (SeabORD, iPCoD and DEPONS)** and model testing/validation
- **Improve cumulative impact assessment** approaches for marine mammals and seabirds informed by project findings
- Scope predator-prey studies for **other parts of the UK**
- **Extensive dissemination of project findings**



## PrePARED Outcomes

**Increased stakeholder confidence in magnitude of cumulative effects** – delivery of guidance, technical reports and dissemination of outcomes to inform impact assessments, reduce uncertainty, and improve stakeholder (SNCBs, regulators, etc) confidence in sustainable delivery of OWF

**Evaluation of both negative and positive effects of OWF development on key receptors** – assessment of changes in fish communities in and around OWF and how this might impact key receptors (seabirds and marine mammals)

**De-risking consenting** – ability to provide applicants with clearer guidance on how cumulative impacts are assessed and evidence to support this, which leads to less uncertainty in decision-making and reduces risk of delays in the planning and licensing process for OWF development

**Improved post-consent monitoring** – identification of the most important variables for post consent monitoring of seabird and marine mammal responses to OW development, and provision of a framework for targeted and cost-effective monitoring to better understand the magnitude of cumulative effects and future planning.

## The PrePARED Management Group



**Better-informed marine spatial planning** – improved understanding of how and why seabirds and marine mammals are distributing themselves in the marine environment in relation to OWF and prey, providing evidence to inform mapping of constraints and opportunities for future OWF development

**Understanding of fish distribution in OWF for fisheries co-existence/co-location** - distributions of commercial fish species will be monitored in and around OWFs, which will provide useful information when considering the potential for co-location and multi-use of sea space



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