Effects of wind on seabird flight & distribution: Implications for assessing impact of offshore wind farms

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Introduction

- 1. The UK is the largest producer of offshore wind energy¹.
 - 2. It also holds internationally important numbers of seabirds².

3. Seabirds use wind to travel vast distances over the ocean.



4. This wide-ranging, pelagic lifestyle makes them **vulnerable** to offshore wind farms.

- **5.** Climate change is predicted to **alter** wind regimes³.
 - **6.** Consequences for seabirds and their risk to offshore wind farms are *uncertain*.

The Project

How does wind speed influence...

QUESTION

How does wind

effect seabird

movements and

behaviour?

1. Foraging trip metrics (e.g. duration, distance, flight speed)?

Impacts on breeding success? Adult survival? Body condition?

2. Proportion of time spent performing different behaviours (e.g. foraging, commuting)?

Species specific responses/impacts?

1. Displacement costs?

Data

- GPS tracking data from 3045 individuals, 29 colonies, 13 years and 8 species.
- Wind data from <u>European Centre for Medium-</u> Range Weather Forecasting.

Gannet about to embark on a foraging trip with a GPS logger

GPS logger

What are the implications of this research?

2 Avoidanco

2. Collision

risk?

3. Avoidance rates?

QUESTION
What does this
mean for
the impacts of
wind farms?

- Enhance understanding of the least studied component of climate change on seabirds.
- Reduce uncertainty associated with the impacts of offshore wind farms under different climate change scenarios.









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References: ¹DECC (2013), ²Mitchell et al. (2004), ³ Young et al. (2011).