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POSTER ABSTRACT

Radar monitoring of migrating Pink-footed Geese – behavioural responses to offshore wind farm development

I. C. SIMMS, P. PLONCZKIER & J. MILBORROW
The Food and Environment Research Agency (Fera) Sand Hutton, York, UK
* Email: ian.simms@fera.gsi.gov.uk

In the context of growing demand for offshore wind energy production in recent years, much effort has been made to determine the collision risk that offshore wind turbines pose to birds. Currently only limited species-specific data on migrating birds' avoidance rates and associated mortality at offshore wind farms exist. During a 4-year study, bird detection radar was used to monitor behavioural responses and flight changes of migrating Pink-footed Geese *Anser brachyrhynchus* in relation to two offshore wind farms during and after construction. Radar recorded a total of 979 goose flocks migrating through the whole study area, of which 630 were visually confirmed as 43 249 Pink-footed Geese. Overall, we calculated that 97.25% of all flocks recorded by radar, in 2009 and 2010 combined, migrated without any risk of additional mortality associated with the constructed wind farms. We identified a growing tendency of geese to avoid the wind farms and calculated that, for 2009 and 2010 combined, avoidance was exhibited by 94.46% of the original 292 flocks predicted to enter the wind farms.

This study demonstrated that migratory geese responded to offshore wind farms by adopting strong horizontal and vertical avoidance behaviour. For the first time, wind farm avoidance rates have been recorded for Pink-footed Geese, and these rates will allow more robust impact assessments to be undertaken both of this species and of waterfowl in general. Remote sensing techniques should be used to undertake long-term impact assessments at offshore wind farms to provide an evidence-base for assessing the mortality risk for migratory birds.