INTRODUCTION

During winter and spring, large numbers of Red-throated diver occur in offshore areas of the German North Sea. Offshore wind farm development is increasing in this area which can lead to conflicts as divers are very sensitive to anthropogenic disturbance. The project DIVER aims to study these interactions between divers and offshore wind farms.

METHODS AND RESULTS

The distribution of divers was modelled in relation to the dynamic offshore environment and anthropogenic pressures (OWF and shipping traffic) using GAMMs. Results from two independent datasets, satellite telemetry and digital aerial surveys, are compared.

Satellite Telemetry

45 Red-throated divers were captured and tagged (PTT satellite transmitters) in the area west of Sylt (German EEZ) during 2015–2017.

Digital Aerial Surveys

Four large-scale digital aerial surveys were conducted during spring 2016 and 2017.

Both methods consistently show significant effects of distance to wind farm up to a distance class of 10-15 km.

Effects of ship traffic on individual movements

Relocation distances of divers are larger when ships are present in the vicinity.

CONCLUSIONS

- Modelling results show consistent displacement up to 10-15 km, and identify important environmental parameters (salinity, water depth)
- Results from digital aerial surveys were confirmed by independent data from satellite telemetry
- Diver distribution and individuals movements indicate strong avoidance of ships

Funded by German Federal Ministry for Economic Affairs and Energy represented by PTJ Funding ID 0325747A/B

Thanks to Thomas Grünkorn, Jorg Welcker and the ship crew of MS Arctic Hunter and MS Madog for help with Diver catching and to projekt HELRBIRD (FTZ Büsum) for providing aerial survey data.