



High mobility of Red-throated Divers revealed by satellite telemetry



R. Žydelis^{1*}, M. Dorsch², S. Heinänen¹, B. Kleinschmidt^{2,3}, J. Morkūnas⁴, P. Quillfeldt³, G. Nehls²

¹ DHI, Hørsholm, Denmark; E-mail: rzy@dhigroup.com

² BioConsult SH, Husum, Germany

³ Justus Liebig University Gießen, Germany

⁴ Klaipėda University, Lithuania



Background and research questions

- Knowledge about Red-throated Diver ecology and movements is limited.
- It is established, however, that this species is highly sensitive to human disturbances, but poor knowledge hinders conservation and management decisions.
- **Study objective:** fill knowledge gaps about Red-throated Diver origin, movement patterns, habitat use and overlap with offshore wind farms.
- **Aim of this presentation:** characterize the mobility and space utilisation of divers during the annual cycle.

Research design

- Wintering Red-throated Divers were captured on the German North Sea and equipped with implantable Argos satellite transmitters.
- 29 birds were successfully tracked during periods ranging from several months to two years.
- Generalized additive mixed modelling (GAMM) was used for assessing probabilities of diver occurrence in waters of separate countries during the annual cycle.

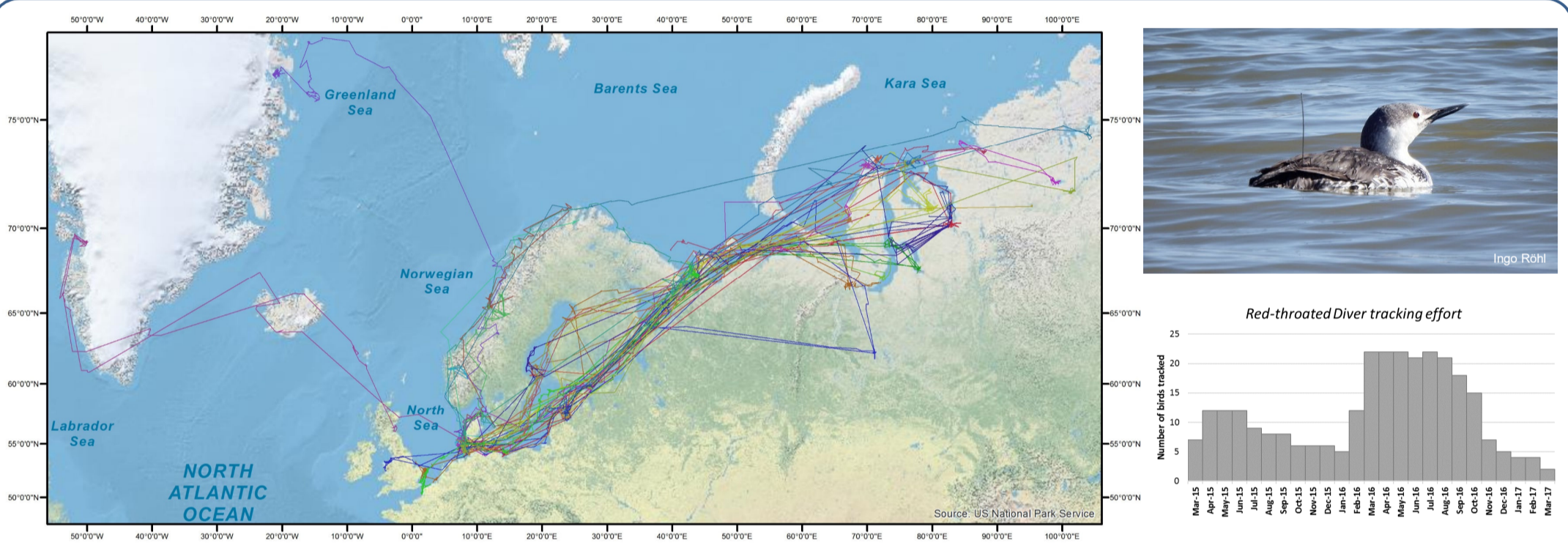


Fig. 1. Movement paths of 29 tracked Red-throated Divers

Results

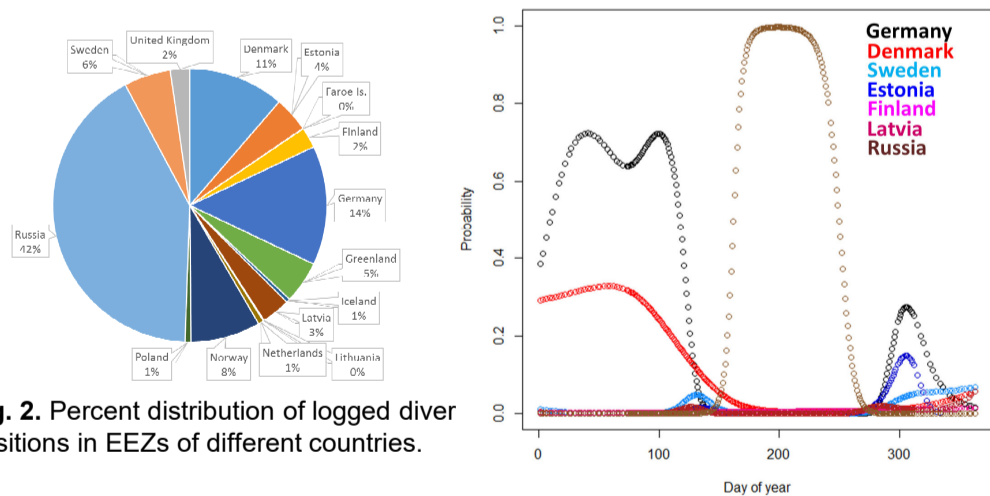
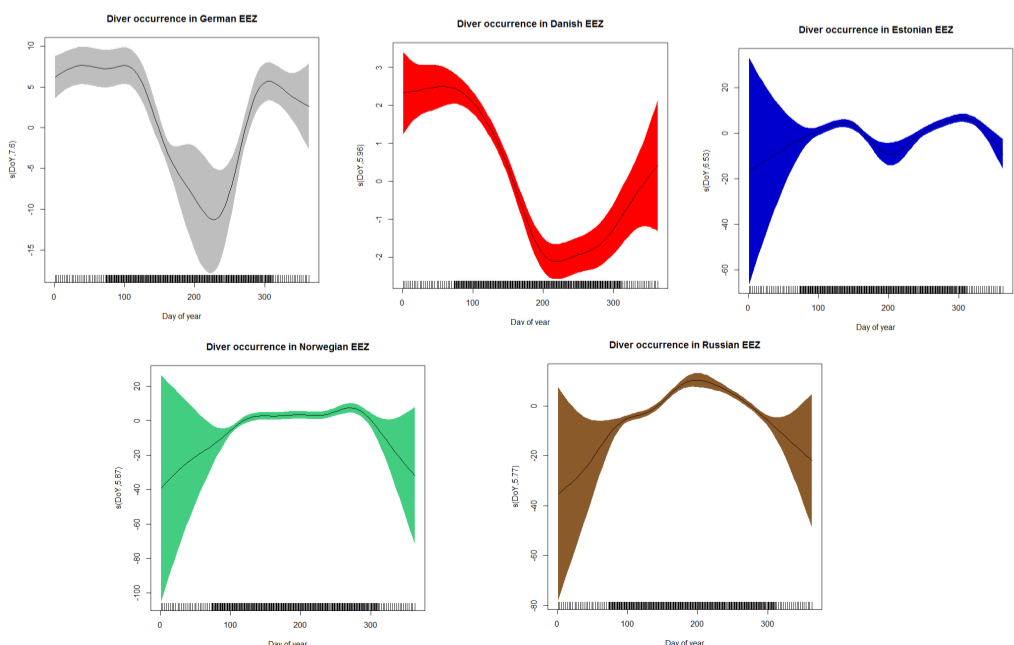


Fig. 2. Percent distribution of logged diver positions in EEZs of different countries.



Results & Conclusions

- Red-throated Divers wintering in the North Sea originate from a vast area of the Arctic region spanning around half of the globe.
- The species is highly mobile during the non-breeding period moving between separate staging, moulting and wintering grounds.
- Divers tagged in the North Sea cumulatively visited all countries surrounding the Baltic Sea and the North Sea. Plus Iceland and Greenland.
- The wintering ground with highest probability of use was German, Danish and UK waters. During migration periods Estonian EEZ was particularly important. Russia had the highest probability of diver occurrence in summer followed by Norway and Greenland.
- High mobility of Red-throated Divers and use several countries by each individual emphasizes the shared international responsibility for conservation and management of this species.

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