

From avian tracking to population processes

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High mobility of Red-throated Divers revealed by satellite telemetry

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Abstract

Red-throated Divers (*Gavia stellata*) occur in temperate coastal of the Northern Hemisphere during the non-breeding period. Knowledge about this species, however, remains fragmented. Especially the origin of locally observed birds and movement ecology of this sensitive species is usually unknown, which hinders conservation and management decisions related to human developments in marine environment.

We equipped Red-throated Divers with implantable Argos satellite transmitters in the German North Sea and successfully tracked 28 individuals during varying periods in 2015-2016. The birds were caught during the wintering period between February and April when their abundance peaks in the eastern North Sea. The aim of this presentation is to characterize the mobility and space utilisation of divers during the annual cycle by analysing bird occurrence in jurisdiction zones of different countries. We applied generalised additive mixed models to predict probabilities of diver occurrence in waters of separate countries during each day of the year.

Red-throated Divers captured within a small offshore area dispersed widely during the rest of the year. During the breeding season birds dispersed from Taimyr Peninsula, Russia, to western Greenland. Many individuals showed high mobility during the entire non-breeding period alternating between separate staging, moulting and wintering grounds. Assessment of the area use by jurisdiction zones revealed that tracked divers cumulatively visited all countries surrounding the Baltic Sea and the North Sea. The wintering ground with highest probability of use was German and Danish waters, close to where the birds were caught. During spring migration Latvian EEZ was particularly important. Russia had the highest probability of diver occurrence in summer, and Latvian and Estonian EEZs in autumn. Our results show that Red-throated Divers are particularly mobile birds using multiple areas in the course of the year and each individual spends significant time in jurisdiction areas of several countries.

Author bio

Ramūnas Žydelis is a marine ornithologist with research focus on bird habitat utilization, movements and foraging ecology.