

14.5 COMPARISON OF ONSHORE AND OFFSHORE BIRD MIGRATION BY DIFFERENT RADAR SYSTEMS NEAR THE BELGIAN COAST

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The research program RAVen (RAdar registrations of bird migration Validation through an interdisciplinary approach) is a collaboration between the Royal Belgian Institute of Natural Sciences (RBINS) and the Royal Meteorological Institute of Belgium (RMIB) to study bird migration along the western flyway using different radar systems. RBINS owns and operates a Merlin bird radar located on an offshore platform at the Thorntonbank, a major wind farm 30 km (19 mi) off the Belgian coast. This radar is installed with the purpose of studying the impact of offshore wind farms on the behaviour of birds and bird migration. The Jabbeke weather radar operated by the RMIB is located at 10km of the Belgian coast and 40km from the Merlin radar. Additionally, a third bird radar was operated by NaturaConst@ near the French-Belgian border during the autumn migration of 2016, at 50km from the weather radar. This unique configuration was used to cross-validate the three radar systems for bird detection, and it offers also the rare opportunity to investigate onshore vs offshore migration of the same migratory events.

In this contribution we present the methodology and the first results of this inter-comparison. In particular, we focus on the seasonal and diurnal patterns as seen by the three radar systems. Some additional information regarding insect contamination is obtained from the dual-pol moments of the weather radar. Furthermore, we present a preliminary analysis of vertical bird density distributions obtained by the RMIB weather radar and the RBINS offshore bird radar.