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Acoustic receiver network - the need for range testing

Technology does not stand still and it helps researchers to perform high-quality scientific research. Improving technology allows us to gather continuous information on ocean processes, animal behaviour and environmental variables using automated devices. In Belgium, an acoustic receiver network was established as part of the Belgian LifeWatch observatory. This network allows flexible and cost-efficient spatio-temporal tracking of migratory fish species and is used to support biodiversity research and environmental impact studies.

An important aspect in acoustic telemetry studies is to know the detection range of the acoustic receivers. Therefore, range tests are performed to determine a receiver's ability to decode transmitters at various distances and in varying environmental conditions. The environmental factors affecting detection range (e.g. bottom type, noise, currents and weather conditions) can vary significantly from one location to another and with time at a particular location. Therefore, a range test was performed in the Belgian part of the North Sea to determine: 1) whether the current array design is appropriate and 2) to understand the detection performance and environmental factors influencing this performance. The range test assessed the detectability of tags between 50 and 700m and was run for approximately one month. Results will be discussed during the conference.

Keywords: acoustic telemetry, range test, fish, receiver