

Abstract – AOC 2023

How new Multi-Track technology can revolutionise avian fieldwork

Locating and monitoring birds is essential for research and conservation, but is particularly difficult in forested landscapes where many methods are unsuitable. VHF radio telemetry is a useful tool, but traditional equipment has limitations – especially for aerial tracking. Standard single-frequency receivers can monitor only one frequency at once. However, sequentially scanning through a list of frequencies wastes time, and if the receiver is moving you risk missing any unmonitored frequencies. There has to be a better way!

Here we describe the development of new Multi-Track receiver technology which revolutionises conservation research, especially for aerial tracking. The receiver monitors 500 frequencies simultaneously (instead of requiring sequential scanning), and automatically determines positions without triangulation. It can track while moving, and without needing to hover and rotate, which is ideal for efficient aerial tracking. Unlike standard receivers, the system also records position data for easy spatial analysis, and comparisons over time.

Tracking from the air using aircraft or Un-piloted Aerial Vehicles (UAVs, or drones) provided many advantages over traditional ground-based survey and research techniques, and different platforms offer different benefits. As well as making fieldwork faster, safer, and more efficient, the technology doesn't require any manual input so supports fully-automated searches for simplicity and repeatability.

We discuss the evolution of this technology, including comparisons with different sensors such as visual and thermal imagery for applied conservation. We present results comparing the efficiency of different tracking methods for locating different species, including cryptic nesting penguins, and forest birds following a conservation translocation.