Agreement on the Conservation of Albatrosses and Petrels

Thirteenth Meeting of the Seabird Bycatch Working Group

Swakopmund, Namibia, 27 - 29 May 2026

Development of a sink rate management tool for small vessel demersal longline fisheries in New Zealand

Tiffany Plencner & Igor Debski

SUMMARY

Recent changes to regulations to reduce the incidental captures of seabirds in demersal longline fisheries in New Zealand now require that hooks are protected by the aerial extent of the tori line until they have reached a depth of 5m. Voluntary Mitigation Standards state that this depth should be adjusted to 10m during high-risk periods. To date, bottle tests, which can be inaccurate and difficult to use, have been the only way of collecting data to verify that requirement is being met.

This project delivered a sink rate management tool enabling small vessel demersal longline fishers to both meet regulatory requirements for sink rate records and to assess and manage sink rates to reduce the risk to seabirds. The mobile application is compatible with the ZebraTech (Nelson, New Zealand) Bluetooth-enabled sink rate sensors (see Annex A) which have an activation clip that allows for accurate deployment records and are designed for offline use in offshore environments. The app allows fishers to specify and adjust gear setups, record sink rate data, and visualise performance through intuitive graphs and summaries. Key functionalities include automated data offloading, gear-specific data assignment, and export options for CSV, PDF, and image formats, supporting robust reporting and compliance. Example screen shots from the app, are shown in Annex A.

Development was completed using a cross-platform React Native framework, ensuring compatibility across iOS and Android devices. The app incorporates advanced features such as geolocation, BLE device discovery, and offline-first data storage, alongside a user-friendly interface built on Material Design principles. Testing included both simulated and real-world scenarios, validating Bluetooth reliability, data accuracy, and usability under operational conditions. The final product provides fishers and Department of Conservation fishery liaison officers with a practical, scalable tool for adaptive management, contributing to improved seabird protection and streamlined data collection across the fleet.

Apps available for download:

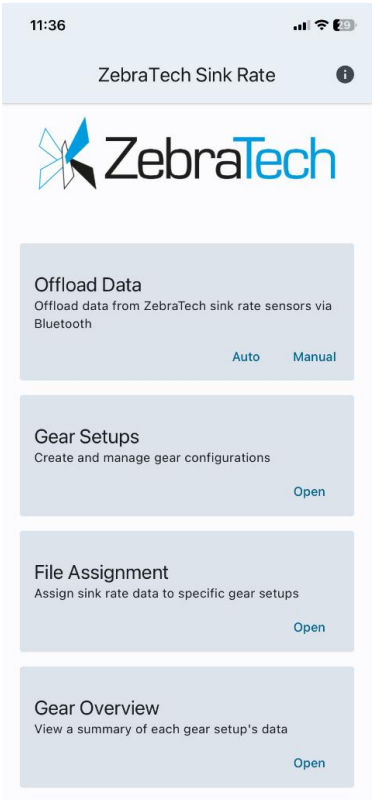
ZebraTech sink rate app - Apple Store (iOS)

ZebraTech sink rate app - Google Play Store (Android)

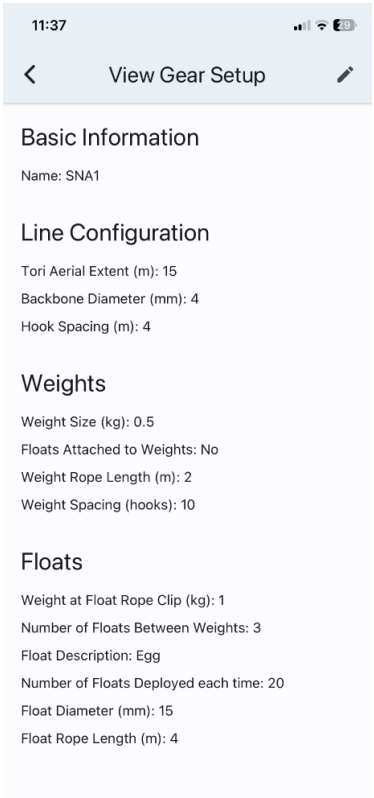
Annex A: Sample screen shots from the ZebraTech sink rate app

ZebraTech Moana SR1000 Sink Rate Sensor (1000m Depth Rating) with Activation Clip and Neutral Buoyancy Jacket:

App home screen:



App gear setup:



App sink depth plot examples: