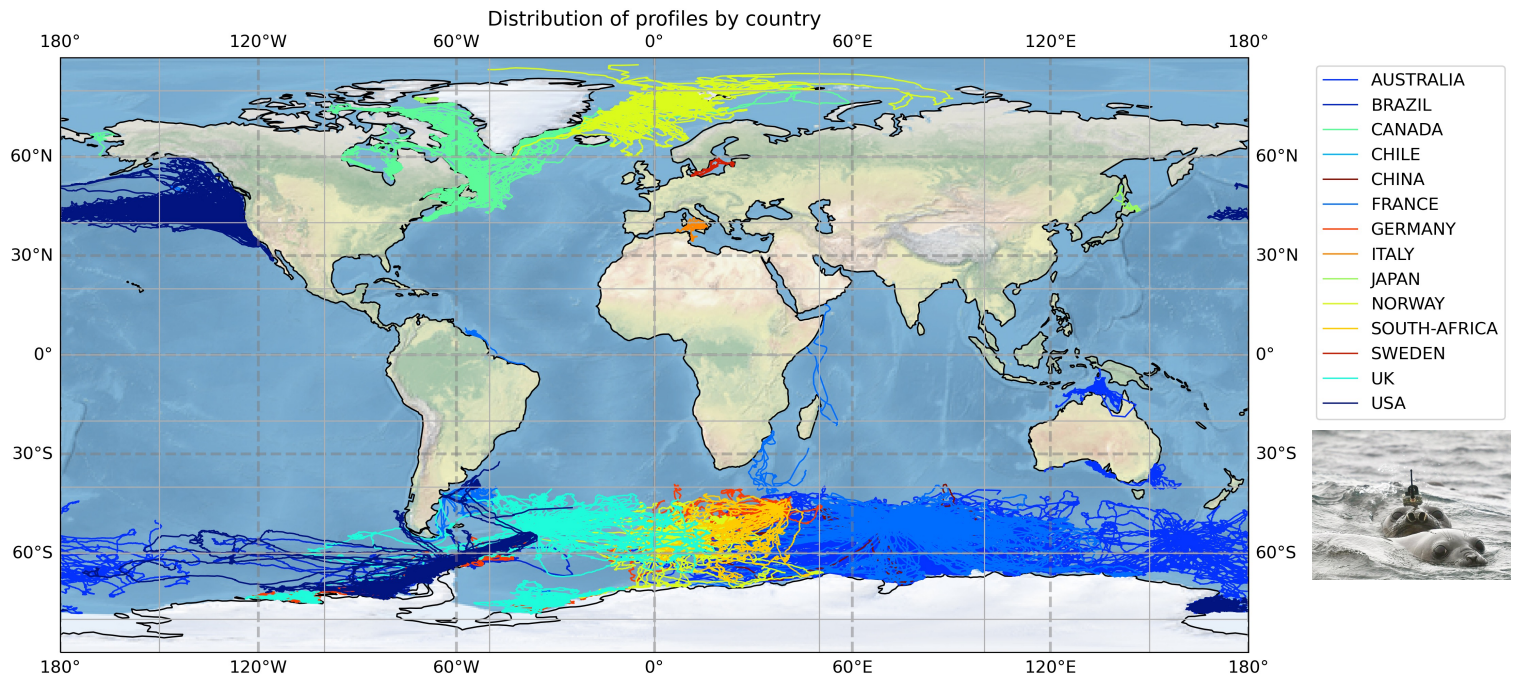


Animal Borne Ocean Sensors – AniBOS

UN Decade – 101 Animal-Borne Ocean Sensors: A decadal vision through new eyes

Clive McMahon¹ (clive.mcmahon@sims.org.au); Fabien Roquet² (Fabien.roquet@gu.se)

¹ IMOS Animal tagging, Sydney Institute of Marine Science | ² Gothenburg University



Highlights

- AniBOS is celebrating 20 years of continuous oceanographic (CTD) observations in the Southern Ocean.
- The MEOP-CTD database version 2024-03-08 is a major update on the previous version, with more than 800,000 TS profiles made available freely. <https://www.meop.net/news/>
- Gouretski, V., Roquet, F., Cheng, L., 2024. Measurement Biases in Ocean Temperature Profiles from Marine Mammal Dataloggers. J. of Atm. Ocean. Tech. 41, 629–645.
- McMahon, C., Roquet, F. et al., 2025. An enduring, 20-year, multidisciplinary seal-borne ocean sensor research collaboration in the Southern Ocean. Accepted in Elementa.
- Funding has been secured to 2027 to deploy CTDs to seals in the Southern Ocean from IMO
- 20 CTDs on turtles in the Timor and Arafura seas funded by IMOS

Challenges and concerns

The AniBOS data committee (ADC) identified the 3 needs:

- Hosting in-person Data Management meetings, ideally twice annually.
- Periodic 1-2 day in-person meetings will allow the Committee to progress essential tasks far more efficiently than through our regular monthly Zoom meetings.
- 1 FTE position to support AniBOS data management development & operation.
- ADC members spend considerable time taking on AniBOS tasks, but this lacks continuity - non-AniBOS responsibilities take priority.
- Bird flu is taking a huge toll on some population of elephant seals, and more generally on marine birds and marine mammals. Ticking bomb 🐛



Future Plans and Opportunities

Integrating physics and biological observations to understand how *in situ* physical structure affects biological productivity and animal performance remains a fertile field of study that is a focus for the AniBOS community.

- Establishing the links between water column physical properties and phytoplankton bloom dynamics (start, duration, and magnitude)
- Evaluating to what extent phytoplankton blooms in different coastal polynyas exhibit fluorescence characteristics indicating iron stress or availability.
- Exploring the use of oxygen sensors to constrain the physical influences on biological processes in polynyas.
- Our multinational (Australia, France & Sweden) research project (Using animal-borne sensors to unravel East Antarctic coastal productivity - DP230101368) funded by the Australian Research Council provides the funding (AUD 807K) for the study to 12/2026.

OCG Asks

- Can OCG help identify funding opportunities to support data management & OceanOPS?
- OceanOPS has raised funding concerns, how will this affect emerging networks that rely on off research funding (noting of course that AniBOS has built and maintained a continuous times series of ocean observing for 21 years)?
- OceanOPS is a key partner to manage metadata, clear directives from OceanOPS on mutual obligations can facilitate solutions