**GOOS Network OCG-15 Report Template**

We ask that you follow this template for reporting prior to OCG-15. Please note that we ask each Network to complete this **reporting document** by April 12 2024 to highlight the advances during the **last intersessional period** and prepare a **poster** for the OCG-15 meeting (template to be provided). Please use this report to highlight what your **key challenges are, any ask for the OCG** (Exec, networks, OceanOPS, and/or GOOS), and **how OCG can support your network and activities towards an expanded, integrated and more fit for purpose global ocean observing system**.

These reports will be reviewed by the OCG Exec prior to OCG-15 and will help guide the conversation and action planning at the meeting, and inform the network posters.

This year, the reporting will be primarily through this written report - with opportunities to discuss the content and show advances through the poster session, and to collectively discuss challenges, opportunities and ‘asks’ in Session 10: Network issues and opportunities.

* Please be concise in your reporting, 4 page limit
* Network reports should be submitted to [t.yu@unesco.org](mailto:t.yu@unesco.org) by end ofday **April 12 (Friday)**, 2024

**Animal Borne ocean Sensors - AniBOS**

Prepared/submitted by Clive McMahon and Fabien Roquet

1. Highlight the key network successes
   1. AniBOS is celebrating 20 years of continuous oceanographic (CTD) observations in the Southern Ocean.
   2. In total over 800,000 vertical profiles of Temperature and Salinity (TS) have been collected, primarily by seals in the polar seas, since 2004
   3. The MEOP-CTD database version 2024-03-08 is a major update on the previous version, with more than 150,000 new TS profiles made available freely. https://www.meop.net/news/
   4. Funding has been secured to 2027 to deploy CTDs to seals in the Southern Ocean from IMOS
   5. IMOS has invested in an expanded (to 2027) animal borne ocean observing programme in the tropical seas to the north of Australia. This programme will deploy 20 CTDs on turtles in the Timor and Arafura seas.
2. How has the network advanced across the OCG Network Attribute areas[[1]](#footnote-1)

Sub-surface TS profiles in the world’s tropical ocean remain rare and the expansion of animal borne observations into tropical regions provide TS profiles to 150 m and key oceanographic observations to improve ocean model forecasts in tropical and subtropical areas. Along with STORM[[2]](#footnote-2),[[3]](#footnote-3) this new IMOS funding will provide crucial observations to assess and better forecast Tropical Cyclone properties to better protect live and property[[4]](#footnote-4).

There is a growing community and number of institutions providing TS profiles from animals as summarized in Figure 1.

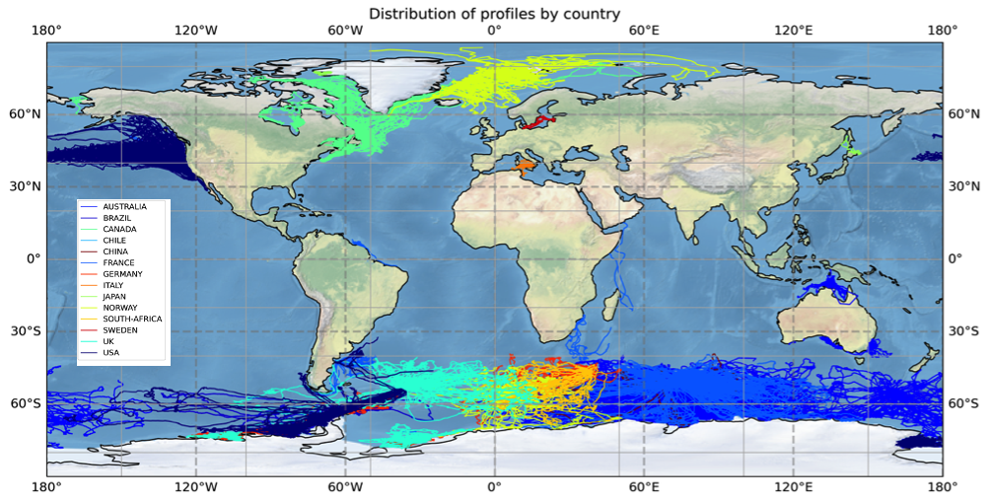


Figure 1. The updated (March 2024) world map showing the distribution of CTD profiles (i.e. vertical profiles of temperature and salinity) currently available in the MEOP-CTD database.

1. Future Plans[[5]](#footnote-5) and Opportunities - at network and/or cross-network OCG level

Integrating physics and biological observations to better 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. We aim to do this by:

1. Establishing the links between water column physical properties and phytoplankton bloom dynamics (start, duration, and magnitude)
2. Evaluating to what extent phytoplankton blooms in different coastal polynyas exhibit fluorescence characteristics indicating iron stress or availability.
3. Exploring the use of oxygen sensors as a new approach to help 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.

1. Challenges and Concerns - at network and/or cross-network OCG level

The AniBOS Data Committee is tasked with the design, construction, operation, maintenance, and documentation of the Data Management System for the AniBOS Network. This system is essential for the hosting, transmission and archiving of the Network’s real-time and delayed-mode metadata and data products. Collectively, the Data Committee members bring considerable expertise in all aspects of AniBOS data management, but there are several challenges to ensure the Committee’s tasks are achieved in a timely & sustainable manner. As a consequence, the Committee has identified the following funding needs:

1. 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. 1 FTE position to support AniBOS data management development & operation.

The Committee members spend considerable time taking on AniBOS tasks, however this often lacks continuity as other, non-AniBOS responsibilities take priority. A dedicated AniBOS employee, hired at a junior level (eg. BSc/MSc) with the ability to take on a variety of data management planning & operational tasks would ensure the continuity to ensure tasks are completed in the require timeframe.

1. Asks from OCG (Exec, networks, OceanOPS, and/or GOOS), perhaps related to the responses to parts 3 and 4 and how OCG can support your network.
2. Could OCG help us better identify funding opportunities to support data management and indeed OceanOPS?
3. OceanOPS has raised funding concerns for the programme and it has been suggested that all networks contribute funds to support OceanOPS. How will this affect emerging networks like AniBOS that run essentially off research funding (noting of course that AniBOS has built and maintained a continuous times series of ocean observing for 21 years)?
4. OceanOPS is tasked as a key partner to manage metadata but so far, there has been limited support, clear directives from OceanOPS will help clarify mutual obligations and facilitate a reciprocally beneficial solution – is this the plan for the service level agreements (SLAs) that are being proposed?
5. Recent publications, articles, etc. (if you want to share)

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5. Future plans on implementation, instrumentation, data management, test, new sensors, plan for new EOV/ECV observations, capacity development, etc. [↑](#footnote-ref-5)