

The Southern Ocean Observing System

The Southern Ocean plays a disproportionately important role in the Earth System, connecting the world's ocean, and impacting climatic, biogeochemical and ecology systems. SOOS is an international initiative of SCAR and SCOR that facilitates the collection and delivery of essential observations by:

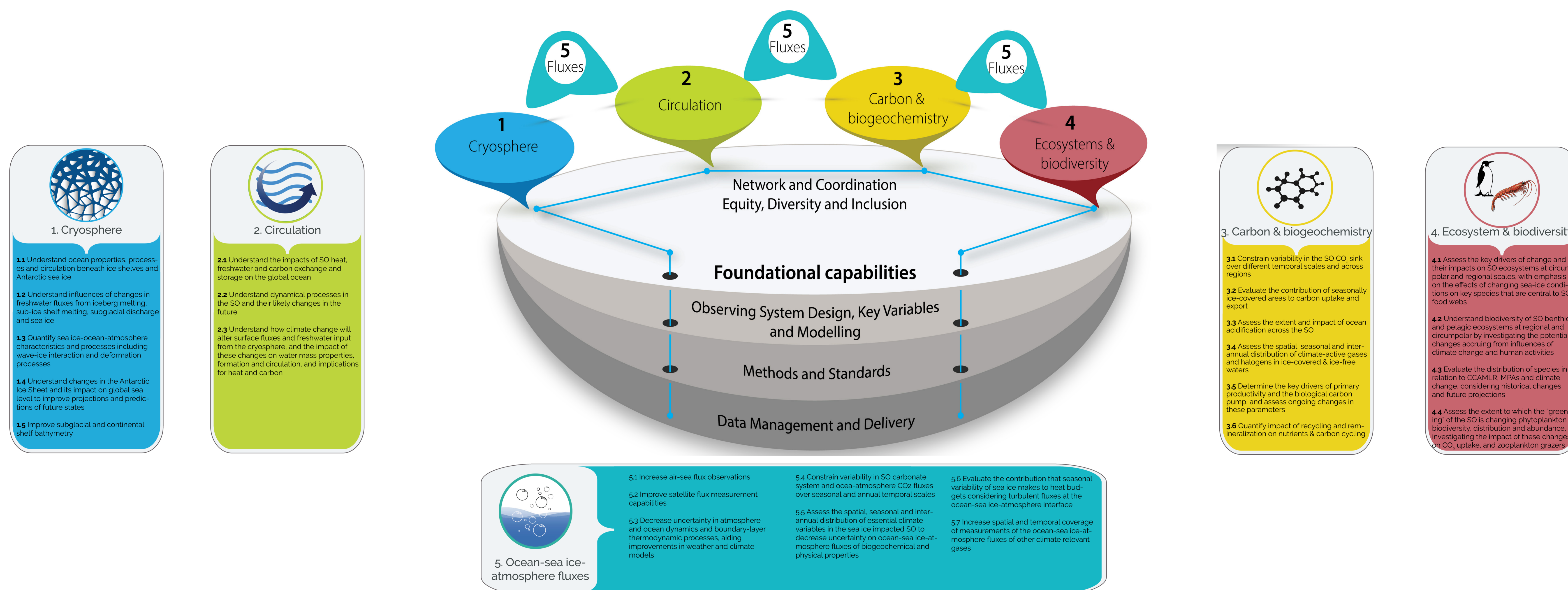
- Aligning, advocating and supporting scientific and observational priorities
- Enhancing collaboration and observational capabilities
- Ensuring observational data is managed and delivered
- Sharing knowledge

In the twelve years since its inception, SOOS has developed 23 community networks and 5 tools to support collaboration and data discovery - to address gaps in the observing system. SOOS has enhanced coordination and collaboration by delivering 80 scientific publications, 86 stakeholder reports, 146 international events and endorsed 77 research proposals. In addition, SOOS has strong representation in the Antarctic Treaty System, Antarctic fisheries managers (CCAMLR), climate conferences (e.g. COP) and other international meetings focused on polar data, coordinated regional observing efforts and support for new observational technologies.

Data is the heart of SOOS. Through two key data products, [SOOSmap](#) and [DueSouth](#), SOOS provides stakeholders with access to circumpolar data sets and logistical information. SOOSmap provides 50,000+ standardised aggregated, circumpolar data sets including over 800 moorings, PANGAEA CTD data sets and SCAR's plastics data all identified, curated and aggregated by SOOS. SOOSmap receives 96,000 visits and 30,000 data downloads per year. DueSouth provides information on over 1200 Southern Ocean shipping, air and land planned routes for fisheries, tourism and 24 national Antarctic programs.

Future Priorities

SOOS has a Science and Implementation Plan ([soos.aq/implementationplan](#)) for 2021-2025 to focus the activities of SOOS including an update of the SOOS science structure. Five community-agreed Science Themes were identified, including the cross-cutting Theme 5, which integrates the other four themes. For each theme, a number of Key Science Challenges were identified. Additionally, the plan highlights the foundational capabilities that are needed to enhance our ability to collect, manage and use observational data.



SOOS in Action

Delivering Southern Ocean Data

To provide stakeholders with the data they need, SOOS - in collaboration with EMODnet Physics - has developed [SOOSmap](#). Through SOOSmap, SOOS brings together internationally-curated data sets in an open-access, easy-to-use data discovery tool (Fig. 1).

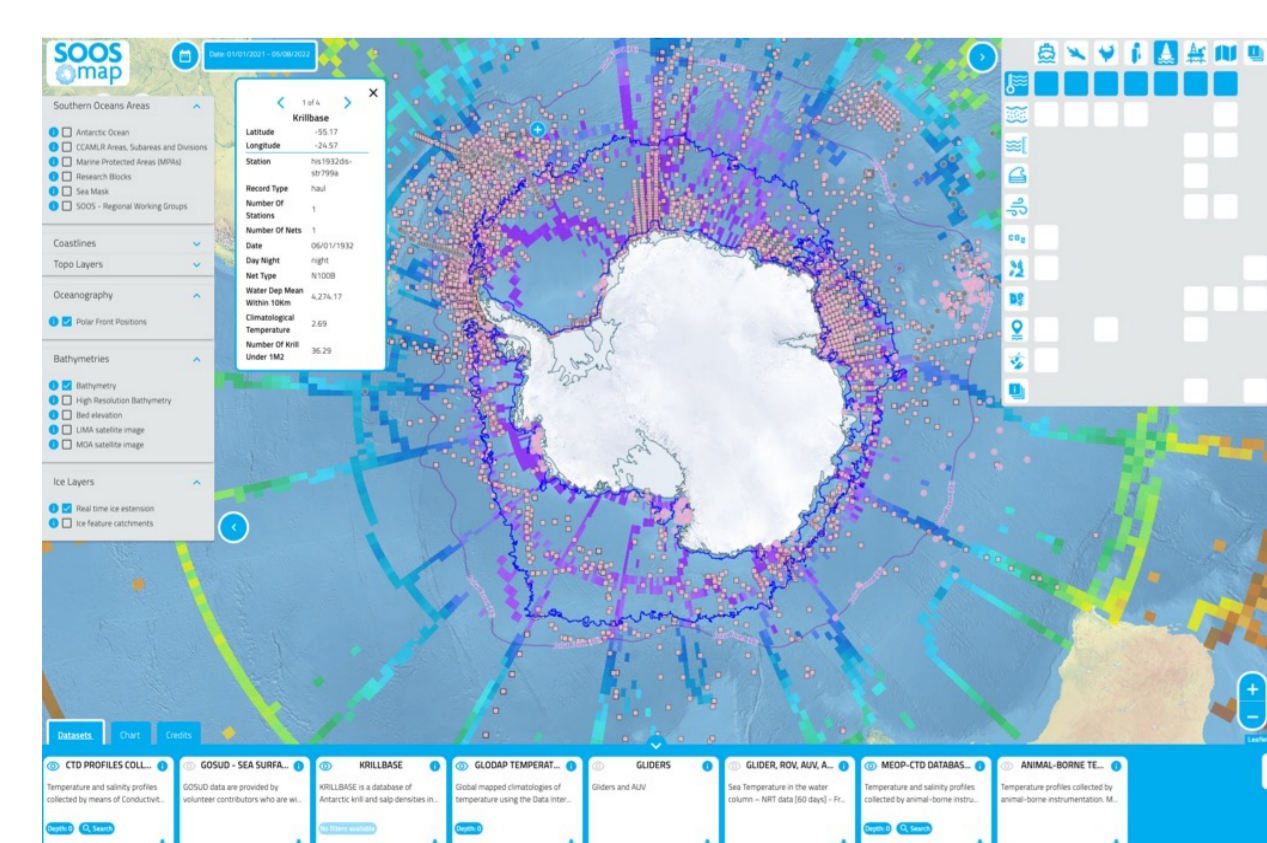


Figure 1: Temperature data displayed in SOOSmap ([www.soosmap.aq](#)).

Enhancing Regional Coordination

[SOOS Regional Working Groups](#) (RWGs) play an important role in the coordination and implementation of the observing system. Each working group is responsible for bringing together planning, logistics and resources. Collectively, the RWGs work with circumpolar observing programs and projects to enable coverage, facilitate logistics and resource sharing.

The SOOS RWGs are open for all interested participants.

Enhancing Capabilities

[SOOS Capability Working Groups](#) develop important capabilities that enhance our ability to collect, use, manage and share Southern Ocean observational data. These include developing and implementing new technologies, improving observational design, efficiency and coverage, or associated methods for managing and disseminating information. Similarly, [SOOS Task Teams](#) are small groups of experts that produce specific products, organise events or solve a particular problem over a short period of time.

Enhancing Southern Ocean Logistical Collaboration

SOOS has developed a free online database that enables the Southern Ocean research community to share plans for upcoming fieldwork, [DueSouth](#). Hosted by the European Polar Board, DueSouth is part of a larger polar logistical database, [Polardex](#) (Fig. 2).

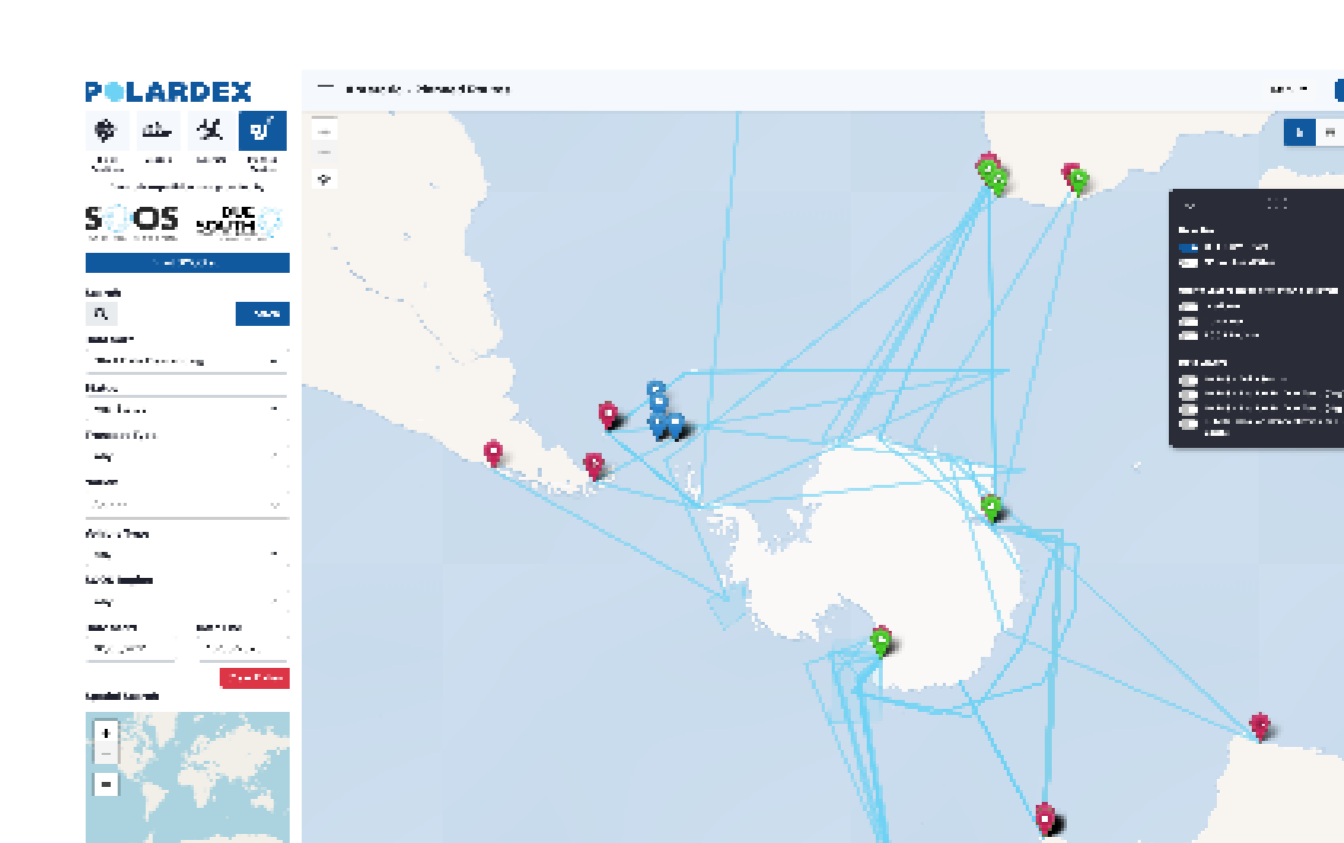


Figure 2: DueSouth in Polardex ([polardex.org/due-south](#)).

Get Involved- [www.soos.aq](#)