GOOS Regional Alliance (GRA) Report 2024-2025

Description: *This report aims to capture the current status of individual GRA. It invites basic information on the GRA (Section 1), an overview of its role and linkages (Section 2), a snapshot of key achievements in 2024–2025 (Section 3), a simple self-assessment of EOV measurements (Section 4), and a forward look at plans and support needs for 2026–2027 (Section 5). The template provides a common structure to support consistent inputs across regions.*

Also, the purpose of this document is to have a comprehensive tool for reporting to the GOOS Steering Committee and to sustain an updated and collaborative mechanism between GRAs. It is expected for individual GRA to report annually, on Sections that have relevant information to be known by the GRA Council and the GOOS Steering Committee.

GRAs are encouraged to complete it to the best of their ability, gathering information from all members of the organization.

Session 1: Basic information

1. Name of GRA
   - GRA: Black Sea GOOS
   - GRA: CIOOS
   - GRA: EuroGOOS
   - GRA: GOOS Africa
   - GRA: GRASP
   - GRA: IOCARIBE GOOS
   - GRA: IMOS
   - GRA: IOGOOS
   - GRA: MonGOOS
   - GRA: NEAR GOOS
   - GRA: OCEATLAN
   - GRA: PI GOOS
   - GRA: SEAGOOS
   - GRA: U.S. IOOS
   - **GRA Affiliated Organisation: SOOS**

2. Your name: **Alyce Hancock**

3. Your email: **hancock@soos.aq**

4. Your role in the GRA: **SOOS Executive Officer**

Session 2: GRA Overview

5. Vision and mission of the GRA:

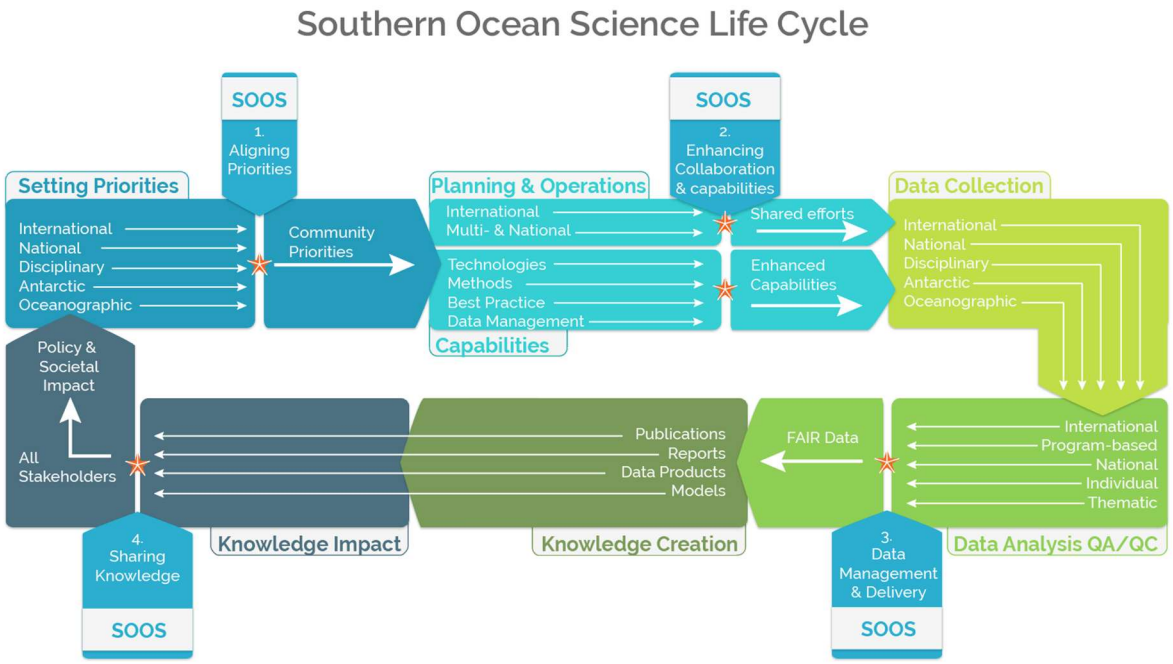
SOOS Vision:
"Sustained observations of dynamics and change of the physics, chemistry, biology and geology of the Southern Ocean system should be readily accessible to provide a foundation for enabling the international scientific community to advance understanding of the Southern Ocean for managers to address critical societal challenges."

The mission of SOOS is to facilitate the sustained collection and delivery of essential observations of the Southern Ocean to all stakeholders, through the design, advocacy and implementation of cost-effective observing and data delivery systems.

SOOS enhances the collection and delivery of Southern Ocean observations by:

1) Aligning, advocating, and supporting scientific and observational priorities to provide a unified voice to funders, national programs, and intergovernmental agencies through publications, research endorsement, alignment of system requirements, and advocacy
2) Enhancing collaboration and observational capabilities by building integrative networks, developing collaborative tools, supporting capacity development opportunities, and facilitating efficiencies in sensor, platform, and data technologies
3) Ensuring management and delivery of observational data by connecting data repositories, rescuing unpublished data, and encouraging the use of FAIR data principles
4) Sharing knowledge within the Southern Ocean community and beyond, to provide visibility and enhance the impact of Southern Ocean research and the knowledge created from it, through communication strategies, workshops, publications, and community coordination efforts.

At each step of the Southern Ocean science life cycle SOOS integrates between disparate communities to ensure greater impact.



6. Affiliated organisations and agencies of the GRA:
   - Governments/Member States
   - Academia
   - Research Institutions
   - Regional organisations
   - Non-governmental Organisations (NGOs)
   - Private sectors
   - Other. Please specify_____

SOOS works with a broad range of affiliated organisations1 and stakeholders across the research community (both the Southern Ocean and global oceanographic communities), managers of marine resources, policy makers, local planners, ship operators, Antarctic tourism operators, weather and climate forecasters, educators and international organisations.

In total SOOS has 67 affiliated organisations across 21 countries which include:

- Government organisations, mainly National Antarctic Programs. For example, the Australian Antarctic Division, British Antarctic Survey and National Centre for Ocean and Polar Research (India).
- Research institutions and academia. For example, Flanders Marine Institute (Belgium), Gateway Antarctica (New Zealand) and Institute Pierre Simon Laplace (France).
- Non-governmental organisations including SOOS' governing bodies the Scientific Committee of Antarctic Research (SCAR) and the Scientific Committee for Oceanic Research (SCOR).
- Inter-governmental organisations including the European Polar Board.

- Industry partners including ETT (Italy) and EMODnet Physics.
- International policy and commissions including the Antarctic Treaty and the Commission on the Conservation of Antarctic Marine Living Resources.

7. Please list the national observing systems that the GRA is connecting to.

All nations with Southern Ocean research and National Antarctic Programs with strong connections with Argentina, Australia, Belgium, Brazil, Chile, China, France, Germany, India, Italy, Japan, New Zealand, Norway, South Africa, South Korea, Türkiye, United Kingdom, United States of America, and some connection with Poland and Denmark.

8. How does the GRA connect to GOOS National Focal Points (NFPs) in the respective countries?

Please specify GOOS NFPs in which countries you are currently connecting to and how you are coordinating with them). Link to current GOOS NFPs is: https://goosocean.org/who-we-are/goos-national-focal-points/group/

SOOS is predominantly connected with National Antarctic Programs which vary to the GOOS focal points who have more temperate latitude focus. However, SOOS has a strong connection and collaboration with IMOS.

9. Governance of the GRA.

Please outline governing bodies of the GRA, including Chair, Secretariat, Steering Committee, etc.

SOOS is an initiative of the Scientific Committee of Antarctic Research (SCAR) and the Scientific Committee of Oceanic Research (SCOR), who are therefore the governing bodies of SOOS.

SOOS has an Executive Committee of 2 Co-Chairs (currently Irene Schloss, Argentina, and Wolfgang Rack, New Zealand), 2 Vice Chairs (currently Andrew Meijers, UK, and Sarat Chandra Tripathy, India), and the SOOS Executive Officer (currently Alyce Hancock).

SOOS also has a Scientific Committee with ~10 full Scientific Committee members, ex-officio members including Co-Chairs of SOOS's Regional Working Groups, Data Management Sub-Committee, EDI Liaisons, sponsor and governing body representatives as well as observers including Co-Chairs of SOOS's Capability Working Groups and Task Teams, and National Representatives. Information on SOOS' Scientific Steering Committee including membership is available here.

SOOS has 18 implementation groups who undertake the key work of SOOS. This includes 5 Regional Working Groups, a Data Management Sub-Committee, Capability Working Groups, Task Teams and projects/partnerships SOOS is working in close collaboration with other organisations on. Information on SOOS' implementation groups including leadership of each implementation group is available here.

SOOS is supported by an International Project Office (IPO) hosted by the Institute for Marine and Antarctic Studies, University of Tasmania. The SOOS IPO has an Executive Officer (Alyce Hancock), Data Officer (Michaela Miller), and Science and Communications Officer (Julia Bach).

10. Strategic documents of the GRA.

*Please list titles, dates, and relevant information of the most recently updated version of the governing documents, including the **links** if available. Strategic documents may include: MoU, Goals and Objectives, Planning Documents (eg Strategic Plan, Work Plan, Implementation Plan), Data Policy, etc.*

SOOS has a Science and Implementation Plan developed for 2021-2025 available here (Newman et al., 2021). The Science Plan is currently being updated for 2026-2030 and a new Implementation Plan is being developed. These will be available the in the second half of 2026. SOOS also has a SOOS Data Policy (SOOS DMSC, 2022) with a clear set of agreed guidelines for what good data management looks like. This is based on the Alignment of Polar Data Policies – Recommended Principles (Stein et al., 2021), which SOOS co-developed, and the algins with the SCAR Data Policy.

11. Communication tools of the GRA.

Please list links of GRA website, contact person, newsletter, brochure, introductory video, etc., if any.

- SOOS website: https://soos.aq/
- SOOS Science and Communications Officer: Julia Bach, bach@soos.aq or info@soos.aq
- Quarterly SOOS Update (newsletter): https://soos.aq/resources/newsletters
    - Many of SOOS's working groups also have newsletters which are available on their webpages via the SOOS website (https://soos.aq/activities)
- SOOS Annual Reports: https://soos.aq/resources/reports
- SOOS Flyers and Communication Tools: https://soos.aq/resources/other-media
- SOOS Posters and Presentation Templates: https://soos.aq/resources/posters-presentations
- SOOS Infographics: https://soos.aq/resources/infographics
- SOOS Logo files and other templates: https://soos.aq/resources/templates
- SOOS Video: soon to come
- Other SOOS Resources and Products: https://soos.aq/resources
- SOOS Impact and Reporting Hub: https://soos.aq/reporting

SOOS has a SOOS Communications and Engagement Strategy that can be available on request.

12. Primary financial sources of the GRA.

Please consider the investment in the ocean observing system itself as well as for GRA coordination.

SOOS has a range of financial and in-kind sponsors these include:

- SOOS' Governing Bodies: SCAR and SCOR
- SOOS Sponsors: Tasmanian State Government, CSIRO, Australian Antarctic Project Office, Alfred Wegner Institute, Swedish Polar Research Secretariat, TÜBİTAK MAM Polar Research Institute (Türkiye), and OCEAN ICE (Horizon Europe project)
- SOOS has numerous project starting in 2026 which include funding Europe and the Fondation Prince Albert II de Monaco
- The SOOS IPO is hosted in-kind by the Institute for Marine and Antarctic Studies, University of Tasmania

SOOS has considerable in-kind sponsorship from EMODnet Physics (hosts and maintains SOOS' data product, SOOSmap), the European Polar Board (hosts and maintains SOOS' logistical product, DueSouth) as well as NASA, the Council of Managers of National Antarctic Programs (COMNAP, International Association of Antarctic Tour Operators (IAATO), British Antarctic Survey, University of Canterbury, Gateway Antarctica, National Centre for Polar and Ocean Research (India), Instituto Antártico Argentino, Centro Austral de Investigaciones Científicas y Técnicas (CADIC-CONICET) and Universidad Nacional de Tierra del Fuego.

Session 3: Achievements since last GRA Forum (April 2024)

13. Meetings and workshops the GRA organised or sponsored

In total SOOS convened 23 meetings and workshops. These include:

- Joint workshop with OCEAN ICE on ice-ice observations harmonisation and future priorities
- Hybrid and virtual meetings of the SOOS Data Management Sub-Committee and Scientific Steering Committee
- 10 Working Group webinars
- 2 Working Group virtual, multi-day workshops
- Side-meetings at other conferences

14. Contribution/Integration to the Global Ocean Observing Networks.

If the GRA is currently contributing/integrating to other networks or observing communities other than GOOS networks, please specify them in the field of 'Other'.

- Ship Observations Team (SOT)/Voluntary Observing Ships (VOS)
- Ship Observations Team (SOT)/XBT-Ship of Opportunity Programme (SOOP)
- Ship Observations Team (SOT)/Automated Shipboard Aerological Programme (ASAP)
- **Global Ocean Ship-Based Hydrographic Investigations Programme (GO-SHIP)**
- **Global Sea Level Observing System (GLOSS)**
- **OceanSITES**

- Data Buoy Cooperation Panel (DBCP)/Moored Buoys (MB)
- Data Buoy Cooperation Panel (DBCP)/Tsunami Buoys
- Data Buoy Cooperation Panel (DBCP)/Drifting Buoys (GDA)
- **Argo**
- The Global High Frequency Radar Network
- **Ocean Gliders**
- **Animal-Borne Ocean Sensors (AniBOS)**
- **Emerging: Fishing Vessel Observing Network (FVON)**
- **Emerging: Surface Ocean CO2 Observing Network (SOCONET) – emerging connection**
- **Emerging: SUN Fleet – emerging connection**
- None
- Other. Please specify_____

15. Any other ocean observation projects and activities uniquely conducted by the GRA?

SOOS collaborates with a large network including affiliated organisations, connected international coordinated observing initiatives and connected international programs all available here. Additionally, SOOS endorsed project proposals which are available here.

16. Contribution of data at local/national/regional/global level.

Please indicate other data centers and repositories in 'Other', if applicable.

- Ocean Data and Information System (ODIS)
- IODE National Ocean Data Center (NODC)
- IODE Associate Data Unit (ADU)
- IODE Associate Information Unit (AIU)
- WMO Information System (WIS)
- Other. Please specify_____

As SOOS itself doesn't deploy any observing equipment, it doesn't directly provide data to any data centres. Rather SOOS is enhancing collaboration and coordination across the Southern Ocean observing community to facilitate the enhance collection and delivery of observations. However core to SOOS is ensuring FAIR data management and to assist with this, SOOS has a data visibility and accessibility product, SOOSmap, which is hosted and maintained for SOOS by EMODnet Physics.

17. Describe the primary roles of the GRA in facilitating the delivery of Information, Products and Services to end users and how these are different/complementary to national activities

SOOSmap is an interactive web portal for oceanographic data visualisation and dissemination developed and hosted for SOOS by the European Marine Observations and Data Network (EMODnet) Physics. The portal is supported by the 'Southern Ocean Carbon and Heat Impact on Climate (SO-CHIC)' project and the Horizon Europe 'Ocean-Cryosphere Exchanges in ANtarctica: Impacts on Climate and the Earth System (OCEAN ICE)' project.

SOOSmap serves up curated and standardised observation data from oceanographic and Antarctic research programs from many nations and scientific disciplines. It is built around individual observing platforms or sampling events (e.g. an Argo float or plankton trawl). Specifically, it allows users to discover and access circumpolar data coming from several international research centres and data assemblers, oceanographic repositories and marine infrastructures in the Antarctic.

Datasets are provided with metadata and are available in multiple data formats drawing from the extensive data holdings of Copernicus and EMODnet, which were collated for European seas but which cover global oceans. Additionally, SOOS is bringing in key datasets of particular value to the Southern Ocean, including krill, plankton, sea ice observations, DNA barcoding, plastics and many more. At the moment SOOSmap incorporates more than 50 data layers including over 50,000 observations.

All metadata is publicly available via the SOOSmap GeoNetwork Metadata Catalogue for easy discoverability.

We are working with data centres around the world to make SOOSmap a comprehensive source for marine observations from the Southern Ocean. Given the complex ecosystem of data centres and data aggregation efforts, this is no small task. SOOS and EMODnet are negotiating with individual data centres to improve our holdings of each observation type. Over time, you can expect both the number and type of observations to grow, as we develop these relationships. For more information or to help improve SOOSmap, please contact the SOOS data officer.

SOOSmap was successfully launched in October 2017 and a second, updated version was officially introduced in 2023. The data management architecture and the user interface of the SOOSmap platform were redesigned to offer a faster and smarter experience, a deeper and more accurate data exploration and a more interactive analysis. Explore SOOSmap by clicking the button above!

18. In what areas (checklist is below) does the GRA enable ocean observing solutions that are co-designed/co-produced with users?

More detailed information & services, e.g. links, can be indicated in 'Other'

- Biodiversity conservation
- Sustainable fisheries
- Coastal resilience
- Climate resilience mitigation and adaptation
- Sustainable ocean planning
- Marine carbon capture and storage
- Safety of life at sea
- Coastal hazard warnings
- Disaster risk reductions
- Human health
- Ocean science
- Other. Please specify_____

SOOS' end-users are predominantly the scientific community and therefor all products are co-designed with this community. SOOS does have new projects starting in 2026 which will work to develop products and information directly to policy, these will be co-designed with those policy makers with preliminary work underway.

19. Please list new Best Practice documents completed in 2024-2025 (and submitted to the OBPS).

A Brief Guide to Publishing Data for the Polar Research Community – not submitted to the OBPS

20. Capacity Building and Knowledge Sharing

Please state the capacity building activities organised in 2024-2025, and # of beneficiaries; expertise/experience shared with other GRAs in terms of capacity building.

SOOS has a number of early career researcher (ECR) leadership positions including ECR Representative positions on all SOOS working groups as well as a number of ECR general leadership members. Collectively, these ECR Representatives have a Consortium and 2 Representative Observer positions on the SOOS Scientific Steering Committee. A number of these ECRs are responsible for coordinating working group communications as well as co-lead convening working group meetings, webinars and workshops.

Section 4: Essential Ocean Variables (EOVs) Measurement

GOOS Essential Ocean Variables (EOVs) are defined as the minimum set of ocean variables that are needed to assess ocean state and variability for important global ocean phenomena, and to provide essential data for applications that support societal benefit. Please see more detailed information and specification sheet for each EOV via https://goosocean.org/what-we-do/framework/essential-ocean-variables/

21. Please indicate the **physics EOVs** that have been/are being measured by your GRA.

EOVs	Yes	No	No info
Sea state	Poor		
Ocean surface stress	Poor		
Sea ice	Yes		
Sea surface height	Yes		
Sea surface temperature	Yes		
Subsurface temperature	Yes		
Surface currents	Yes		
Subsurface currents	Yes		
Sea surface salinity	Yes		
Subsurface salinity	Yes		
Ocean surface heat flux	Yes		
Ocean bottom pressure	Some		
Turbulent diapycnal fluxes (*pilot)			

22. Please indicate the **biochemistry EOVs** that have been/are being measured by your GRA.

EOVs	Yes	No	No info
Oxygen	Yes		
Nutrients	Yes		
Inorganic carbon	Yes		

Transient tracers	Yes		
Particulate matter	Yes		
Nitrous oxide			Unknown
Stable carbon isotopes	Some		
Dissolved organic carbon	Some		

23. Please indicate the **Biology and Ecosystems EOVs**that have been/are being measured by your GRA.

EOVs	Yes	No	No info
Phytoplankton biomass and diversity	Some		
Zooplankton biomass and diversity	Some		
Fish abundance and distribution	Poor		
Sea turtles abundance and distribution			N/A
Seabirds abundance and distribution	Yes		
Marine mammal abundance and distribution	Yes		
Coral cover and composition			N/A
Seagrass cover and composition			N/A
Macroalgal canopy cover and composition			N/A
Mangrove cover and composition			N/A
Microbe biomass and diversity (*pilot)	Some		
Benthic invertebrate abundance and distribution (*pilot)	Poor		

*Benthic biodiversity – is measured by the community but with fair to poor coverage

24. Please indicate the **Cross-disciplinary (including human impact) EOVs** that have been/are being measured by your GRA.

EOVs	Yes	No	No info
Ocean colour		No	
Ocean sound		No	
Marine debris (*pilot)			Plastics

Section 5: Planning and Support

25. Top 3 Challenges and Opportunities

*To highlight the **challenges** for operation of GRA and how to address them; as well as the **opportunities** for new partnerships with regional networks, programme/project, countries; new funding opportunities including cooperation with industries; emerging requirements for delivery of information and services, and etc.*

SOOS has struggled with securing financial stability which has now been reached for the first time in a long time. However, SOOS still lacks the full resources and capacity to fully meet its objectives. Additionally, the capacity of community is limited therefore where volunteer time previously was used to achieve most of SOOS' objectives, this is getting more challenging.

26. Planning for 2026-2027

To highlight top 3-5 priorities of the GRA over next two years.

- Amendment to the SOOS 2021-2025 Science Plan and development of the new 5-Year Strategy and Implementation (2026-2030)
- Finalise SOOS Symposium Special Feature in Elementa, "Understanding the Trajectory and Implication of a Changing Southern Ocean: the Need for an Integrated Observing System"
- Commence work on the Fondation Prince Albert II de Monaco project to develop interactive maps of observational coverage
- Continue support of the Antarctica InSync initiative and International Polar Year (IPY-5)
- Begin planning for a SOOS Symposium in 2027

27. Requested Support from GOOS leadership and other components including other GRAs.

May include but not limited to communication support; capacity building support; partnership building support; leveraging support from member states, etc. Indicate priority or urgency.