



# Report of the Scientific Committee on Antarctic Research to the SCOR 2023 Meeting

## Summary

This paper presents the annual report of the Scientific Committee on Antarctic Research (SCAR) to the 2023 meeting of the Scientific Committee on Oceanic Research. Following the publication of the Southern Ocean Action Plan in April 2022, SCAR was approved to act as the Decade Collaborative Centre for the Southern Ocean Region (DCC-SOR) on World Oceans day, June 8<sup>th</sup> 2023. The first SOOS Symposium took place in August 2023, bringing together 300 researchers from 25 countries, on the theme of “Southern Ocean in a Changing World”.

## Background

The mission of SCAR is to advance research in, from and about Antarctica and the Southern Ocean, and to promote scientific knowledge, understanding and education on any aspect of the Antarctic and Southern Ocean regions. To this end, SCAR is charged with the initiation and international coordination of Antarctic and Southern Ocean research beneficial to global society. SCAR provides independent and objective scientific advice and information to the Antarctic Treaty System and other bodies, and acts as the main international exchange of Antarctic information within the scientific community. Descriptions of SCAR’s activities, and the scientific outputs and outcomes facilitated by SCAR are available at:

<https://www.scar.org/>.

## SCAR 2023 Highlights

The inaugural SOOS Symposium 2023 “Southern Ocean in a Changing World” has been held in Hobart, Australia, from the 14-18th August 2023. This milestone event for the Southern Ocean community and beyond concluded with [a crucial joint statement](#). 300 scientists from 25 nations called for an urgent expansion of Southern Ocean science amidst the climate crisis.

Following the publication of the [Southern Ocean Action Plan](#) in April 2022, SCAR has been approved to coordinate the Decade Collaborative Centre for the Southern Ocean Region (DCC-SOR), with the [Southern Ocean Task Force](#) acting as the Advisory Board. Announced on UN World Oceans Day, 8<sup>th</sup> June 2023, the DCC-SOR will endeavour to connect Southern Ocean science with global ocean science, reinforcing cooperation and collaborations by Parties and NGO stakeholders between the Antarctic region and adjacent regions, and complementing Article III of the Antarctic Treaty.

Training, support, and development of the Antarctic community continue to form a fundamental component of SCAR’s work. In 2022, SCAR awarded [five early career Fellowships](#) from the available funds, including the first Fellowship awarded through the Polar Initiative. The 2022 SCAR cohort was from Brazil, Argentina (2), the UK and Ukraine.

Additionally, [three Visiting Scholar awards](#) were made in 2022 to applicants from Brazil, USA and Norway.

From 28 May to 8 June 2023, Finland hosted the XLV Antarctic Treaty Consultative Meeting (ATCM) as well as the XXV meeting of the Committee for Environmental Protection (CEP). SCAR authored or co-authored 3 Working Papers and 14 Information Papers for the meetings. The SCAR lecture was delivered by Dr Heather Lynch on satellite-based science and the changing nature of Antarctic exploration. Additionally, Prof Steven L Chown presented an update on the Antarctic Climate Change and the Environment Decadal Synopsis during a joint ATCM/CEP session on Climate Change. The [Helsinki Declaration on Climate Change in the Antarctic](#) was adopted on the last day of the meeting.

## Science Priorities

SCAR's three Scientific Research Programmes (<https://www.scar.org/science/srp/>) are the main vehicles through which SCAR facilitates and coordinates science in, from and about Antarctica. All three Scientific Research Programmes held community engagement sessions and kick-off workshops over the past months.

- **Integrated Science to Inform Antarctic and Southern Ocean Conservation (Ant-ICON)** is looking at the conservation and management of Antarctica and the Southern Ocean, focusing on research to drive and inform international decision-making and policy change.

The Ant-ICON-SC-ATS Science-Policy Fellowship was conceived and launched, with two fellows selected to attend the ATCM/CEP and the SC-CCAMLR meeting. An in-person workshop to advance socio-ecological research objectives was held at the Scott Polar Research Institute (Cambridge) in September 2022. On-line workshops were delivered in October 2022 to facilitate environmental reporting and communication to policy makers. The [workshop report](#) was submitted to the Committee for Environmental Protection and the CEP encouraged the further development of environmental reporting tools by SCAR. Ant-ICON had strong presence at the SCAR Biology Symposium in August 2023 as well as at the SC-HASS biennial conference in June 2023 where an Ant-ICON- led roundtable on Antarctic conservation was run. Several academic publications on the science/policy interface are in progress.

- **INSTabilities and Thresholds in ANTArctica (INSTANT)** is a cross-disciplinary programme looking at quantifying Antarctica's contribution to past and future global sea-level change, helping decision-makers to better anticipate, manage, and adapt to sea-level rise.

INSTANT held a major conference in Trieste in September 2023. 267 registrations were received from 40 countries for the multidisciplinary conference with 35% ECRs, and the programme included 20 keynotes, 40 oral presentations, 250 posters, 5 side meetings and 18 workshops, 3 public events and 3 field excursions. The Groups PRAMSO , MARICE , ICEPRO , RINGS, SCAREXCOM , and IODP EXP 378 held meetings either side of the Conference. During the conference three days of thematic presentations on specialist topics led up to the highlight - the "Melting Ice and Rising Seas" Symposium on Thursday, September 14<sup>th</sup>.

- **Near-term Variability and Prediction of the Antarctic Climate System (AntClimNow)** is looking at near-term Antarctic climate variability and trends, understanding contemporary climate change, and modelling future climate projections.

AntClimNow has organised a session of talks at the 2023 General Assembly of the International Union of Geodesy and Geophysics (IUGG) in Berlin, along with supporting the 2022 SURFEIT kick-off meeting. They also supported an Antarctic-focussed session

at a major international meeting on atmospheric rivers and continued supporting projects as part of the AntClimNow Antarctic data stewardship and development scheme. The Group also provides a monthly science talk series.

## Recent Developments

- The Marine Ecosystem Assessment for the Southern Ocean (MEASO), a core activity of the SCAR co-sponsored program Integrating Climate and Ecosystem Dynamics in the Southern Ocean (ICED), is preparing to publish its Summary for Policy Makers (SPM). This will be a joint publication between SCAR, SCOR and Integrated Marine Biosphere Research (IMBeR).
- The Southern Ocean Region Panel (SORP) is co-sponsored by the World Climate Research Programme's core projects the Climate and Ocean: Variability, Predictability and Change (CLIVAR) and the Climate and Cryosphere (CliC), and the SCAR. SORP is planning a joint ICTP-NORP-SORP summer school for July/August 2024 on polar climate, building on the successful NORP-SORP workshop held together in 2022. Planning commenced at the 15<sup>th</sup> SORP business meeting held in Potsdam in July 2023, alongside the NORP-3 meeting, with the overarching theme for the summer school to be Arctic-Antarctic similarities and differences.
- SCAR, together with ICCI and ICIMOD hosted a side event at the UNFCCC World Climate Conference SB58 in Bonn, Germany, on 8 June 2023 titled ["Loss of Mountain Water Resources and Sea-level Rise: Why 2°C is Too High for 3.5 Billion"](#)
- For the UNFCCC COP28 Meetings to be held in Dubai, United Arab Emirates, during November and December 2023, SCAR along with partners has applied for an official side event titled "Adaptation with Loss and Damage: Facing Sea-level Rise and Mountain Freshwater Losses Above 1.5°C". SCAR is also working with SOOS and others on events at the Cryosphere Pavilion, including on the Focus Day for "Polar Oceans: Long-tailed Legacy of Acidification, Warming and Freshening".
- In September 2022, the SCAR Delegates expressed support for a future International Polar Year (2032-2033) and endorsed the creation of an internal planning group within SCAR to participate in the planning discussions of the wider polar community. Aside from the International Arctic Science Committee (IASC) and SCAR, the initial planning efforts for the 5th IPY are currently supported by the World Meteorological Organization (WMO), International Science Council (ISC), University of the Arctic, International Arctic Social Sciences Association (IASSA), the Association of Polar Early Career Scientists (APECS) and other partners worldwide representing both poles. A concept note is in preparation amongst these partners and will be released before the end of 2023.
- SCAR notes the excellent relationship with SCOR in delivery of the Southern Ocean Observing System (SOOS) and looks forward to collaborating with SCOR to support both communities' engagement with SOOS over the coming year.