



ENG

Agenda Item: ATCM 4, CEP 5
Presented by: SCAR
Original: English
Submitted: 13 Apr 2023

The Scientific Committee on Antarctic Research Annual Report 2023 to the XLV Antarctic Treaty Consultative Meeting

The Scientific Committee on Antarctic Research Annual Report 2023 to the XLV Antarctic Treaty Consultative Meeting

Summary

This paper presents the annual report of the Scientific Committee on Antarctic Research (SCAR) to the Antarctic Treaty Consultative Meeting. The main features of the report are also presented as an infographic (attachment 1).

Background

SCAR's mission is to advance Antarctic research, including observations from Antarctica, and to promote scientific knowledge, understanding and education on any aspect of the Antarctic region. To this end, SCAR is charged with the facilitation and 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 information on Antarctic research within the scientific community. Further information is available at www.scar.org.

New Strategic Plan

Every five years, SCAR updates its strategic plan to adapt to the changing environment within which it operates. The new plan for 2023-2028, "*Urgent Messages from the South: Antarctic and Southern Ocean Science and Policy*", was published in April and will underpin SCAR's activities over the coming five-year period. Further details are provided in IP047 *Summary of SCAR's Strategic Plan 2023-2028*.

Science Priorities

SCAR's three Scientific Research Programmes (www.scar.org/science/srp/) are the main vehicles through which SCAR facilitates and coordinates science in, from and about Antarctica.

- **Integrated Science to Inform Antarctic and Southern Ocean Conservation (Ant-ICON)** looks at the conservation and management of Antarctica and the Southern Ocean, focusing on research to drive and inform international decision-making and policy change. www.scar.org/science/ant-icon/home/

A workshop held in September 2022 examined Antarctic conservation from a comparative perspective. A second workshop in October discussed the potential scope of a community 'State of the Antarctic Environment' project [see WP018 *Contribution of information to inform State of the Antarctic Environment Reporting (SAER): a potential new SCAR initiative*]. A science-policy fellowship has been initiated jointly with SCAR's Standing Committee on the Antarctic Treaty System (SC-ATS) aimed at early-mid career researchers. Lucia Ziegler was appointed as the first CEP/ATCM fellow and is participating in the current meeting.

- **INSTabilities and Thresholds in ANTArctica (INSTANT)** focusses on 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. www.scar.org/science/instant/home/

Workshops and seminars were held in 2022 on Antarctic geological Boundary Conditions (June), the future of geodetic-geophysical observational networks in Antarctica (September), and geothermal heat flow anomalies (November). Five SCAR INSTANT fellowships were awarded in June 2022 for early-career researchers, particularly from under-represented regions.

The first SCAR INSTANT conference will take place in Italy later this year (see below).

- **Near-term Variability and Prediction of the Antarctic Climate System (AntClim^{now})** focuses on near-term Antarctic climate variability and trends, understanding contemporary climate change, and modelling future climate projections.

www.scar.org/science/antclimnow/home/

AntClimNow held a hybrid workshop in September 2022 on “*Connecting Models and Observations of the Antarctic Climate System Across Timescales*”, attended by 80 scientists. It runs a well-attended monthly online seminar.

A new Scientific Research Programme Planning Group on Antarctic Geospace and ATmosphere reseArch (AGATA), approved in September 2022, aims to advance knowledge of the Antarctic atmosphere and geospace (www.scar.org/science/agata/home/).

Other highlights

Events

SCAR’s 10th Open Science Conference (OSC) was held online in August, hosted by India’s National Centre for Polar and Ocean Research. Over 2,700 participants registered and 69 events were held.

The XXXVII SCAR Delegates Meeting in September in Goa, India, was held in hybrid format. Luxembourg was admitted as a new Associate Member and Prof Steven L Chown was awarded honorary membership. Dr Marcelo Leppe (Chile) and Prof Burcu Özsoy (Türkiye) were elected as Vice Presidents, responsible for administration and capacity building respectively.

Policy related activities

SCAR advice to CCAMLR in 2022 focussed on climate change in the Southern Ocean, including presentation of the Antarctic Climate Change and the Environment (ACCE) Decadal Synopsis report (ATCM XLIV IP072 *Antarctic Climate Change and the Environment - A Decadal Synopsis and Recommendations for Action* and its attachment ATT111) and an invited SCAR Lecture on this topic. Updates were provided from the SCAR Krill Action Group (SKAG) and on work to identify Key Biodiversity Areas (KBAs) in the Southern Ocean.

SCAR co-organised several side events at the UNFCCC COP27 meeting in Egypt, including an official event on “*Slow Onset, Irreversible Impacts Beyond Adaptation: Global Stocktake, Implementation and 1.5° Ambition*” and five events at the International Cryosphere Climate Initiative’s Cryosphere Pavilion.

Through its hosting of the Antarctic Environments Portal (IP075), SCAR provides impartial information based on the best available science, to support informed discussion on issues relevant to the CEP and wider stakeholders.

Communications outputs

On Antarctica Day, SCAR released a new animation “*Our future depends on us*” summarising the key messages of the ACCE report, available at youtu.be/P07sDH-kmw0.

In June 2022, SCAR’s Expert Group on Antarctic Volcanism produced an outreach book for children on “*Antarctic Volcanism: Explore the Remotest Volcanoes of the Planet*” available here (zenodo.org/record/6535775#.ZCHAS7TMJLB) – English

(zenodo.org/record/7699900#.ZCHAyLTMJLA) – Spanish

(zenodo.org/record/7704405#.ZCHA6bTMJLB) – Italian

Group activities

In September 2022, SCAR’s Standing Committee on Antarctic Data Management drew up an updated data policy, aimed at aligning the data policies of international scientific bodies coordinating research in the polar regions. Available from <https://www.scar.org/scar-library/reports-and-bulletins/scar-reports/5797-scar-report-42/file/>

The Plastic in Polar Environments group (Plastic-AG) is collating data for an open-access repository summarising national and international projects focused on plastic pollution in the Antarctic and Sub-Antarctic regions. The repository file and a map displaying project locations will be freely available at www.scar.org/science/plastic/home/.

The RINGS Action Group aims to provide complete and accurate bed topography data of the entire Antarctic ice-sheet margin. In June 2022, an article was published in *Eos* (doi.org/10.1029/2022EO220276), followed by a 4-day international workshop and a white paper on mapping Antarctic ice-sheet margins. See www.scar.org/science/rings/news/.

The SCAR Krill Group (SKEG), granted Expert Group status in September 2022, held its annual workshop in March 2023 on “*Development of Krill stock hypothesis (KSH) for CCAMLR 48*”. See www.scar.org/science/skeg/home/.

There are three active action groups in the Humanities and Social Sciences: Public Engagement with Antarctic Research (PEAR), whose key activity in 2022 was its Global Mapping Project, an online survey of public engagement activities and needs in relation to the Antarctic and Southern Ocean; the Action Group on Intrinsic Value in Antarctica (AGIVA) which seeks to develop a broad cross-cultural understanding of the intrinsic value of Antarctica in order that the intention of the Madrid Protocol to provide protection to this value can be better understood; and thirdly, the Tourism Action Group (Ant-TAG) which is discussed further in ATCM XLIV IP075 *SCAR Tourism Action Group (Ant-TAG)*.

SCAR awarded five early-career Fellowships, including the first Prince Albert II of Monaco Foundation Fellowship funded by the Polar Initiative, and three Visiting Scholarships. SCAR Medals were awarded to Prof Pippa Whitehouse and Prof Elisabeth Sikes for Excellence in Antarctic Research, to Prof Stephen Ackley for International Scientific Coordination and to Dr Bethan Davies for Education and Communication.

In December 2022 SCAR and the International Arctic Science Committee announced that preparatory work was underway for a 5th International Polar Year (IPY) in 2032-33. Further information is provided in IP050 *Plans for a fifth International Polar Year 2032/33*.

Equality, Diversity and Inclusion (EDI)

SCAR’s EDI Action Group, approved in 2021, now has over 150 members. A significant theme emerging during the OSC was the need to facilitate safe space discussion groups and identify the most effective platforms to do so. In November 2022, the group celebrated the third international Polar Pride Day, along with many others. Subgroups are working on topics such as developing a code of conduct and surveying diversity across the community and across SCAR’s capacity-building activities. Further information is provided in IP077 *The SCAR Equality, Diversity and Inclusion Action Group*.

Selected Forthcoming Meetings

- SCAR SC-HASS Conference 2023, 22-24 June, Lisbon, Portugal
<https://scarschass2023.ulusofona.pt/>

This year’s Humanities and Social Sciences conference will be held at Lisbon’s Universidade Lusófona with the theme “*The Antarctic for a Better World*”. It will cover all

disciplinary fields in the social sciences, humanities and arts concerning the Antarctic and Sub-Antarctic regions.

- **XIII SCAR Biology Symposium 2023, 31 July – 4 August, Christchurch, New Zealand**
<https://www.confer.co.nz/scarbiology2023/>

The symposium will be held at Te Pae Convention Centre, combining great science with sustainability and a cultural experience. Science meetings will be interspersed with excursions and field trips. Special meetings and workshops will be held at the University of Canterbury during the weekends before and after the meeting.

- **SOOS Symposium, 14-18 August, Hobart, Tasmania**

<https://SOOSymposium2023.au/>

The inaugural SOOS Symposium's theme is "*Southern Ocean in a Changing World*". This is a forum for assessing progress in providing observing systems, observations and regional programmes delivering timely and accessible information for the Southern Ocean. It is also an opportunity to tackle the challenges of providing long-term observations that address societal issues as well as advancing scientific understanding.

- **SCAR INSTANT Conference 2023, 11-14 September, Trieste, Italy**

<https://instant2023.org/>

The first major international conference of SCAR's INSTANT Programme will bring together researchers across the geological, geophysical, biological and social sciences interested in understanding the interactions between the ocean, atmosphere, solid Earth and the Antarctic Ice Sheet (AIS) and their global consequences.