



XXXIX ANTARCTIC TREATY  
CONSULTATIVE MEETING  
SANTIAGO - CHILE 2016  
25 YEARS PROTOCOL ON ENVIRONMENTAL PROTECTION

Agenda Item: ATCM 4, CEP 5  
Presented by: SCAR  
Original: English  
Submitted: 12/04/2016

# **The Scientific Committee on Antarctic Research (SCAR) Annual Report 2015/16 to the Antarctic Treaty System**



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## 1. Background

The Scientific Committee on Antarctic Research (SCAR) is a non-governmental, Interdisciplinary Scientific Body of the International Council for Science (ICSU), and Observer to the Antarctic Treaty and the UNFCCC.

SCAR's Mission is (i) to be the leading, independent, non-governmental facilitator, coordinator, and advocate of excellence in Antarctic and Southern Ocean science and research and (ii) to provide independent, sound, scientifically-based advice to the Antarctic Treaty System and other policy makers including the use of science to identify emerging trends and bring these issues to the attention of policy makers.

## 2. Introduction

SCAR's scientific research adds value to national efforts by enabling researchers to collaborate on large-scale scientific programmes to accomplish objectives not easily obtainable by any single country. SCAR's Members currently include 39 countries and 9 ICSU Scientific Unions.

SCAR's success depends on the quality and timeliness of its scientific outputs and the volunteer time of world's leading researchers. Descriptions of SCAR's activities and scientific outputs are available at: <http://www.scar.org/>. This paper should be read in conjunction with a separate Background Paper (BP002) that highlights recent scientific publications by the SCAR research community since the last Antarctic Treaty Meeting.

## 3. SCAR Highlights (2015/16)

SCAR has a number of subsidiary bodies and programmes that focus on science or science-related activities in the Antarctic region. Here we highlight and provide updates on SCAR activities that we believe to be of particular interest to Treaty Parties.

### *Standing Committee on the Antarctic Treaty System (SCATS)*

(<http://www.scar.org/antarctic-treaty-system/scats>)

SCATS is the body tasked with developing SCAR's scientific advice to the Antarctic Treaty. In addition to providing and co-ordinating scientific advice for SCAR, SCATS members are also actively involved in research. SCAR supports the Antarctic Environments Portal where the SCATS Chief Officer sits on the Editorial Board, and SCAR's Executive Director sits on the Management Board. SCAR, in collaboration with several partners, continued its development of the Antarctic Conservation for the 21<sup>st</sup> Century Strategy.

### *The Monaco Assessment (<http://www.scar.org/monaco-assessment/document>)*

In 2015, SCAR was represented at the meeting of global biodiversity and Antarctic experts entitled 'Antarctica and the Strategic Plan for Biodiversity 2011-2020: The Monaco Assessment'. The central purpose of the meeting was to examine the extent to which conservation of the biodiversity of Antarctica and the Southern Ocean is realizing the set of ambitions agreed for the world as part of the Strategic Plan for Biodiversity 2011-2020. The meeting also aimed to provide guidance for action that can effectively help deliver further conservation successes for Antarctica and the Southern Ocean. See IP038 submitted by SCAR and Monaco summarizing the workshop.

### *Southern Ocean Acidification (<http://www.scar.org/ssg/physical-sciences/acidification>)*

SCAR has undertaken a synthesis of the scientific understanding of Southern Ocean acidification. This landmark report was highlighted at the ATCM XXXVIII - CEP XVIII and was the topic the Treaty Lecture (See 2015 BP001). The report will be launched at the SCAR Open Science Conference in Kuala Lumpur, Malaysia 22-26 August 2016.

***Follow Up to The SCAR Science Horizon Scan*** (<http://www.scar.org/horizonscanning/>)

In 2014, the 1st SCAR Antarctic and Southern Ocean Science Horizon Scan identified the most important scientific questions that should be addressed over the next two decades and beyond (See 2015 IP020). With SCAR's assistance, COMNAP has lead a second stage in the process with the Antarctic Research Challenges (ARC) Project in order to assist national Antarctic programmes to understand, and develop ways to address the challenges, and share any innovation or access to technology (See IP051, submitted by COMNAP). The topic of this year's SCAR Lecture will address both the science priorities from the SCAR Horizon Scan and results from the ARC project and discuss the steps needed to address those science priorities (See BP003).

***Antarctic Climate Change and the Environment*** (<http://www.scar.org/ssg/physical-sciences/acce>)

The climatic, physical and biological properties of Antarctica and the Southern Ocean are closely coupled to other parts of the global environment by the oceans and the atmosphere. In 2009 SCAR published the landmark Antarctic Climate Change and the Environment (ACCE) Report and since then has provided annual updates. See IP035.

***Recommendations for activity within terrestrial geothermal areas***

After a broad and extensive consultation, including the SCAR relevant subsidiary bodies and COMNAP, the SCAR Code of Conduct for Activity within Terrestrial Geothermal Environments in Antarctica has been developed (See WP023).

***Geoheritage and Geoconservation*** (<http://www.scar.org/ssg/geosciences/geoconservation>)

The SCAR Geological Heritage and Geoconservation Action Group was created to consider emerging concerns on the recognition, protection and ongoing management of geological and geomorphological sites of significance within the Antarctic, including fossils. Among the goals is to develop a paper for submission to the CEP in 2018. Advances in this matter are shown in IP031.

***SCAR at the UNFCCC COP21*** (<http://www.scar.org/srp/ant-era#COP21>)

SCAR played an active role at the historic 2015 UNFCCC COP21 held in Paris, highlighting changes in the Antarctic that have global ramifications and promoting Antarctic science in general. SCAR partnered with the International Cryosphere Climate Initiative (ICCI) for two official events on Antarctica Day (December 1st) and promoted the 2015 ACCE update presented to ATCM XXXVIII (See 2015 IP092) and information on the Antarctic Environments Portal.

***SCAR Data and Products*** (<http://www.scar.org/data-products>)

SCAR promotes free and unrestricted access to Antarctic data and information through open and accessible archives, managed by its Standing Committees on Antarctic Data Management (SCADM) and Antarctic Geographic Information (SCAGI). SCAR also has several products of relevance to the Antarctic community, such as Quantarctica, the Antarctic Map Catalogue, and the Biogeographic Atlas of the Southern Ocean among others.

***Antarctic Sea Ice Underway Observation Platform v2*** (<http://aspect.antarctica.gov.au/>)

The Antarctic Sea Ice Process and Climate (ASPeCt) digital underway ice observation method, v.2, has been launched. Voyages from October 2015 - March 2016 have uploaded near-real time data, pending networking from vessel to central server, and automatic cameras were implemented on some research cruises to take

images that currently supplement ASPeCt visual observations. Ships going to the Antarctic are encouraged to participate in data collection.

**SCAR Strategic Plan 2017-2022** (<http://www.scar.org/about/futureplans>)

SCAR's current Strategic Plan expires at the end of 2016 and efforts are underway for the development of a new plan to meet future needs. SCAR is consulting widely in its development and welcomes comments from all interested in the future direction of the organization and its activities. The new plan will be discussed at the XXXIV SCAR Delegates Meeting in Kuala Lumpur, Malaysia, on 29-30 August 2016, and finalized later this year.

**Celebrating Women in Antarctic Research** (<http://www.scar.org/outreach/women>)

In the 1950s most countries did not allow women to work in Antarctica and there were few female Antarctic scientists. Today females are playing leading and influential roles in Antarctic research. To help acknowledge this, SCAR is hosting a Wikibomb event to promote and celebrate the achievements of female Antarctic scientists by increasing their presence in Wikipedia at the next Open Science Conference. The aim is to increase the visibility of models for younger female researchers and to stimulate girls around the world to pursue science careers.

#### 4. SCAR Fellowships and Prizes

In order to expand capacity within all its Members, SCAR runs several Fellowship and Prize Schemes (<http://www.scar.org/awards>):

- **SCAR/COMNAP Fellowships** focus on early career researchers and aim to build new connections and further strengthen international capacity and cooperation in Antarctic research. The fellowships are advertised in tandem with the [CCAMLR Scholarships](#). In 2015 four SCAR fellowships, including the new Prince Albert II of Monaco Biodiversity Fellowship and one SCAR/COMNAP fellowship were awarded. A mini-symposium to highlight the SCAR/COMNAP fellowships will be held during the 2016 SCAR Open Science Conference. <http://www.scar.org/awards/fellowships>
- **SCAR Visiting Professor Scheme** provides mid- to late-career scientists the opportunity to undertake short-term visits to a facility in, or operated by, SCAR member countries, to provide training and mentoring. Two Visiting Professorships were awarded in 2015. <http://www.scar.org/awards/visitingprofs>
- **Tinker-Muse Prize for Science and Policy in Antarctica**, facilitated by SCAR, is a USD \$100,000 unrestricted award presented to an individual in the fields of Antarctic science or policy. Dr. Valérie Masson-Delmotte was awarded the 2015 Tinker-Muse Prize for her work on the characterization, quantification and understanding of past changes in climate and water cycle, translating the isotopic data to paleo-temperature records. [www.museprize.org](http://www.museprize.org)

#### 5. Other News

In an effort to continue to improve, a structural review was conducted last year resulting in several recommendations for streamlining the SCAR organisational structure and meetings. This year 5 of the 6 SCAR Scientific Research Programmes are also undergoing external review, as is the Southern Ocean Observing System (See IP032 for SOOS update). SCAR itself is also being reviewed by ICSU this year. For more information, see <http://www.scar.org/about/reviews>.

In July 2015, Dr. Jenny Baeseman was appointed as the new SCAR Executive Director, replacing Dr. Mike Sparrow.

#### 6. Major SCAR Meetings

- *XII International Symposium on Antarctic Earth Sciences (ISAES) 2015*. 13-17<sup>th</sup> July 2015, Goa, India. <http://www.isaes2015goa.in>
- *XXXIV SCAR Meetings and Open Science Conference*. 20-30 August 2016, Kuala Lumpur, Malaysia. <http://scar2016.com>
- *XII SCAR Biology Symposium*. 3-9 July 2017, Brussels, Belgium.
- *The XXXV SCAR Meetings and Open Science Conference*, 15-27 June 2018 in Davos, Switzerland. The Open Science Conference will cover both polar regions, being organized jointly with the International Arctic Science Committee (IASC). <http://www.polar2018.org/>