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**Report of the SCAR Delegation to
XXXVIII ATCM and CEP XVIII
in Sofia, Bulgaria, 1 – 10 June 2015**



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Report of the SCAR Delegation to XXXVIII ATCM and CEP XVIII in Sofia, Bulgaria, 1 – 10 June 2015

1. Introduction

The SCAR Delegation consisted of Jerónimo López-Martínez (SCAR President), Aleks Terauds (CO of SCATS), Steven Chown (SCATS) and Richard Bellerby (SCAR Lecturer).

2. SCAR Input

SCAR provided two Working Paper (WPs), six Information Papers (IPs) and three Background Papers (BPs). Two papers were submitted jointly with Treaty Parties.

SCAR also provided input to intersessional groups, such as the contact group on climate change, and remained heavily involved in the Antarctic Environments Portal through editorial oversight and assistance with content development. The SCAR Lecture, given by Richard Bellerby, was on "*Southern Ocean Acidification*". SCAR also participated in the Workshop on Education and Outreach held in Sofia on 30 June in association with the ATCM.

Submitted Papers:

- WP 21: *Antarctic Environments Portal: Project completion and next steps* (New Zealand, Australia, Belgium, Norway, SCAR)
- WP 27: *Wildlife Approach Distances in Antarctica* (SCAR)
- IP 11: *Antarctic Environmental Portal content development and editorial process* (New Zealand, Australia, Belgium, Norway, SCAR)
- IP 19: *The Scientific Committee on Antarctic Research (SCAR) Annual Report for 2014/15* (SCAR)
- IP 20: *Outcomes of the 1st SCAR Antarctic and Southern Ocean Science Horizon Scan* (SCAR)
- IP 92: *Antarctic Climate Change and the Environment – 2015 Update* (SCAR)
- IP 93: *Monitoring biological invasion across the broader Antarctic: a baseline and indicator framework* (SCAR)
- IP 98: *Report on the 2014-2015 activities of the Southern Ocean Observing System (SOOS)* (SCAR)
- BP 1: *Abstract of the SCAR Lecture: Southern Ocean Acidification* (SCAR)
- BP 4: *The Scientific Committee on Antarctic Research (SCAR) Selected Science Highlights for 2014/15* (SCAR)
- BP 22: *A meta-analysis of human disturbance impacts on Antarctic wildlife* (SCAR)

The papers submitted by SCAR are available on the SCAR website (<http://www.scar.org/treatypapers/atcm38>).

3. Committee for Environmental Protection and Antarctic Treaty Consultative Meetings

The full reports of the Committee on Environmental Protection (CEP) and Antarctic Treaty Consultative (ATCM) meetings are now available from <http://www.ats.aq>. In this SCAR report, only those items directly relevant to SCAR are presented.

The Antarctic Environments Portal

(CEP Item 3)

New Zealand introduced WP 21 *Antarctic Environments Portal: Project completion and next steps*, and referred to IP 11 *Antarctic Environmental Portal content development and editorial process*, jointly prepared with Australia, Belgium, Norway, and SCAR. The paper reported on the progress made in completing the development of the Antarctic Environments Portal project since ATCM XXXVII (2014).

SCAR reiterated its full support for the Portal initiative and the potential it provides to support SCAR's advisory role to the Antarctic Treaty System. In this regard, SCAR emphasized the importance it placed on guaranteeing the reliability and independence of the Portal's content.

The Committee agreed to advise the ATCM that it: welcomed the completion of the Antarctic Environments Portal project; expressed its support for the final product; and acknowledged the utility of the Antarctic Environments Portal as a voluntary tool to help ensure the Committee was as informed as possible on the state of Antarctic environments. Accepting the CEP's advice, the ATCM adopted Resolution B (2015): *The Antarctic Environments Portal*.

Agreement: SCAR will continue to play an active role in supporting the Environments Portal project, in particular through active ongoing involvement in the editorial process and assistance with content development.

25th anniversary of the Environmental Protocol

(CEP Item 3; ATCM Item 5, 15)

Norway introduced WP 44 *A symposium celebrating the 25th anniversary of the Environmental Protocol to the Antarctic Treaty*, jointly prepared with Australia, Chile, France, New Zealand and the United Kingdom. Following a suggestion by Norway at CEP XVII, WP 44 suggested that a commemorative symposium to celebrate and discuss achievements in relation to the Protocol's role as the framework for environmental protection in Antarctica be held in conjunction with the 39th ATCM and the 19th meeting of the CEP.

Argentina introduced WP 47 *Workshop on Education and Outreach - Report of the Informal Discussions on the Development of a Publication on the Occasion of the 25th Anniversary of the Madrid Protocol*. The paper presented the outcomes of the informal discussion led by Argentina, including a draft index of subjects for a publication, and possible ways to move forward. Argentina emphasised the importance of informing the general public on the many achievements over the past 25 years.

Both the idea of the symposium and publication celebrating the 25th anniversary of the Protocol generated significant discussion. However, it was agreed that the former should be held in conjunction with the Chile ATCM in 2016.

Agreement: SCAR agreed to contribute to the symposium and provide input into the publication.

The SCAR Annual Report

(CEP Item 5; ATCM Item 4)

SCAR presented IP 19 *The Scientific Committee on Antarctic Research (SCAR) Annual Report 2014/15* and referred to BP 4 *The Scientific Committee on Antarctic Research (SCAR) Selected Science Highlights for 2014/15*. It highlighted several examples of its activities, including the publication of the *Biogeographic Atlas of the Southern Ocean*, the completion of the SCAR Science Horizon Scan (IP20) and resulting publications in the journals *Antarctic Science* and *Nature*, and the participation in the development of the Antarctic Environments Portal. SCAR referred to the work of several of its subsidiary groups of potential interest for the CEP and the ATCM. It also noted the formation of new groups focused on identifying undisturbed snow areas, near-shore terrestrial observing systems, geological mapping update, volcanism, and geological heritage and geoconservation.

Argentina expressed surprise and concern regarding the use of incorrect toponymy in the *Biogeographic Atlas of the Southern Ocean* with respect to Argentine National territories which are currently the object of a bilateral sovereignty dispute. It stated that it had sent a note to SCAR requesting its urgent rectification. SCAR responded by removing the Biogeographic Atlas URL from IP19, which was agreed in conversation with the Argentinean Delegation.

CEP Observer Report to the XXXIII SCAR Delegates meeting

(CEP Item 5)

Chile presented IP 106 *Report by the CEP Observer to the XXXIII SCAR Delegates' Meeting*, which includes the most important aspects of the meeting relevant to the Committee. Chile expressed interest regarding the presence of the CEP representative at the SCAR Delegates' Meeting and took the opportunity to thank SCATS and Dr. Chown for the support given to the Committee in the past, and wished Dr. Terauds the greatest success in his new role as CO of SCATS.

CEP SC-CAMLR Workshop

(CEP Item 5)

The United States introduced WP 6 *Proposed joint CEP/SC-CAMLR workshop (2016) on climate change and monitoring*, jointly prepared with the United Kingdom. The 2014 meetings of the CEP and SC-CAMLR had supported the concept of holding a second joint CEP/SC-CAMLR workshop in 2016. The Steering Committee now sought input from CEP members regarding the proposed workshop terms of reference, specific items for the agenda, and nominations for additional members of the Steering Committee.

Agreement: SCAR expressed interest in attending the workshop.

Climate Change

(CEP Item 7; ATCM 13, 14)

SCAR presented IP 92 *Antarctic Climate Change and the Environment – 2015 Update* where it provided updates to the Antarctic Climate Change and the Environment (ACCE) Report, related to the understanding of climate change across the Antarctic continent and the Southern Ocean, and the impact on terrestrial and marine biota.

Agreement: SCAR to continue to provide updates to its ACCE report.

SCAR also submitted BP1 *Abstract of the SCAR Lecture: Southern Ocean Acidification* under Agenda Item 7.

The United States introduced WP 39 *Shared Science Priorities and Cooperation: Systemic Observations and Modelling in the Southern Ocean*, prepared jointly with Australia. The paper emphasized the Southern Ocean as an important component of the earth's climate system.

SCAR welcomed this paper, noting that it had been a key supporter of SOOS since its inception and remained committed to facilitating ongoing multi-national efforts to undertake monitoring in the Southern Ocean. SCAR noted that similar knowledge gaps exist for terrestrial Antarctic systems and that it welcomed co-operative efforts to conduct monitoring and modelling in these areas.

Unmanned Aerial Vehicles

(CEP Item 8b, 10c, ATCM 10, 13)

SCAR introduced WP 27 *Wildlife Approach Distances in Antarctica*, and referred to BP 22 *A Meta-Analysis of Human Disturbance Impacts on Antarctic Wildlife*. This paper was prepared in response to a request from CEP XXVII and considered more than 60 research studies conducted on 21 species. The meta-analysis clearly indicated that human disturbance has a significant negative impact on Antarctic wildlife. In the case of camping and unmanned aerial vehicles (UAVs), SCAR noted that little scientific evidence currently exists about the nature or extent of their impacts on Antarctic wildlife. SCAR also noted that its recommendations in WP 27 were intended to emphasise the importance of taking into account cryptic, negative responses of wildlife. It noted that this element was not reflected in existing guidelines, and therefore warranted consideration.

The Committee thanked SCAR for the advice given in WP 27 and BP 22. With regard to the recommendations presented in WP 27, the Committee agreed to: encourage Members to undertake further research in support of setting evidence-based guidelines on approach distances to wildlife in Antarctica; and to support research into UAV impacts, and means to avoid them. The Committee supported taking a precautionary approach in the absence of scientific data and noted the utility of considering cryptic responses to disturbance when evaluating environmental impacts of UAVs. It noted SCAR's suggestion to consider avoiding UAV launches closer than 100 metres to wildlife until Antarctic-specific information had become available, while noting the importance of considering the different types and sizes of UAVs, and the different site-specific environmental conditions. The Committee welcomed SCAR's offer to report back to CEP XX in 2017 on advances in research on the impacts of UAVs on wildlife.

The Committee also agreed that the management of human activities to avoid disturbance of wildlife should be based on the best available science. The Committee strongly encouraged Members to conduct more research in this area, as suggested by SCAR, and agreed that matters related to wildlife disturbance should be reconsidered in the future as new scientific data became available.

Agreement: SCAR will report back to CEP XX (2017) on advances in research on the impacts of UAVs on wildlife.

Activities in terrestrial geothermal areas

(CEP Item 9e)

New Zealand introduced WP 35 *Code of Conduct for Activities within Terrestrial Geothermal Environments in Antarctica*, and referred to IP 24 *Code of Conduct for Activities within Terrestrial Geothermal Environments in Antarctica*, both of which were jointly prepared with Spain, the United Kingdom, and the United States. The proponents recommended that the Committee: provide any comments on the draft of the code of conduct; invite SCAR in consultation with COMNAP to review the draft code of conduct with a view to endorsing it as a SCAR code of conduct; and invite SCAR to re-submit a final version of the code of conduct for consideration at CEP XIX.

The Committee thanked New Zealand and the United States for convening the workshop and expressed strong support for the proposed recommendations, particularly noting the value of having SCAR and COMNAP involved. The Committee welcomed SCAR's offer to review the draft code of conduct and to submit a final version to CEP XIX for consideration by the Committee. The Committee asked Members to encourage their own relevant specialists to participate in the intersessional review process.

Agreement: SCAR will review the draft code of conduct for activities in geothermal areas and submit a final version to CEP XIX (2016) for consideration.

Geological Heritage and Geoconservation

(CEP Item 9e)

Argentina introduced WP 50 *Findings from ad hoc Surveys Related to the Protection of Fossils in Antarctica: Potential Courses of Action for Further Discussion*. Argentina reminded the Committee that this matter was raised at CEP XVII, where Argentina undertook to lead informal intersessional discussions. Following these discussions and a survey of relevant Parties, Argentina identified possible courses of action that could assist in achieving additional protective measures related to fossils in Antarctica, including: that all Parties take note of the various mechanisms and procedures informed by each survey participant; that various modes of information exchange be considered; and that SCAR, through its Action Group on Geological Heritage and Geoconservation, could be requested to provide technical advice on identifying appropriate management and protection measures for geological sites, including those containing fossils.

Agreement: The SCAR Action Group of Geological Heritage and Geoconservation will consider matters relating to the scientific understanding of fossils as part of the

group's broader work and SCAR will provide advice on this matter to CEP XXI (2018).

Quarantine and non-native species

(CEP Item 10a)

The United Kingdom introduced WP 28 *Revision of the CEP Non-native Species Manual (Edition 2011)*, jointly prepared with France and New Zealand. The United Kingdom reminded the Committee that the CEP Non-native Species Manual was adopted under Resolution 6 (2011), which also encouraged the Committee to continue to develop the Manual. The paper highlighted the growing body of scientific work and developments in practical methods for addressing non-native species issues, as well as the additional work on non-native species of the Committee and recent ICGs, suggesting that consideration be given to the revision of the Manual.

Agreement: SCAR has agreed to assist in the revision of the CEP Non-native Species Manual.

Argentina introduced WP 46 *Study to determine the occurrence of non-native species introduced into Antarctica through natural pathways*. This paper discussed the results of studies conducted on two specimens of the vagrant bird *Netta peposaca* found dead in the South Shetland Islands.

SCAR highlighted that introduction of non-native species remains an important issue and that, according to recent studies, human introductions of non-native species were becoming more frequent. SCAR also drew attention to several recent microbiological reviews, indicating much endemism in elements of the continent's microbiota.

SCAR presented IP 93 *Monitoring biological invasion across the broader Antarctic: a baseline and indicator framework*. SCAR reported on some recently published research that has developed a framework (the Antarctic Biological Invasion Indicator - ABII), which applies global best practice to the problem of understanding, monitoring and managing biological invasions in Antarctica. SCAR suggested that the indicator framework not only provides a comprehensive baseline on the current status of biological invasions in Antarctica, but also provides a mechanism to facilitate information exchange across the broader Antarctic region. SCAR recommended that the CEP consider the potential value of the ABII for helping to address one of its key priorities and drew attention to the relevance of this framework in the review of the non-native species manual.

The Committee thanked SCAR for bringing to its attention the ABII, and noted that further consideration could be given to this framework during the planned review of the Non-native Species Manual.

Southern Ocean Observing System

(CEP Item 11, ATCM 13)

SCAR presented IP 98 *Report on the 2014-2015 activities of the Southern Ocean Observing System (SOOS)*. It noted that, in 2014, SOOS clarified its mission and objectives, and developed Implementation Structures to support implementation activities. It highlighted SOOS sponsorship and endorsement, as well as activities planned for the 2015/16 season, along with its key objectives. The Committee

welcomed the update and noted the value and relevance of SOOS to CEP interests, as had been recognised in its earlier discussions of WP39 and the CCRWP.

Inspection Reports

(CEP Item 12, ATCM Item 12)

The United Kingdom introduced WP 19 rev.1 *General Recommendations From the Joint Inspections Undertaken by the United Kingdom and the Czech Republic Under Article VII of the Antarctic Treaty and Article 14 of the Environmental Protocol*, and referred to IP 57 *Report of the Joint Inspections Undertaken by the United Kingdom and the Czech Republic under Article VII of the Antarctic Treaty and Article 14 of the Environmental Protocol*, jointly prepared with the Czech Republic. It reported on the joint Antarctic Treaty inspections undertaken between December 2014 and January 2015, which involved 12 research stations, one non-governmental facility, one refuge, six cruise vessels and five yachts.

With regard to Recommendation 13, SCAR informed the Committee that it does not have a research group focused on the impact of climatic or environmental changes on facilities or infrastructure

SCAR Horizon Scan

(CEP Item 13, ATCM 13)

SCAR presented IP 20 *Outcomes of the 1st SCAR Antarctic and Southern Ocean Science Horizon Scan*. The Horizon Scan had focused on the most compelling and important scientific questions, both in and from Antarctica and the Southern Ocean, to be addressed over the next two decades and beyond.

The Meeting thanked and congratulated SCAR for undertaking these projects. It was noted that the project strengthened knowledge of the Southern Ocean and Antarctica, not only for the Antarctic scientific community, but worldwide.

4. The SCAR Lecture

Richard Bellerby gave the SCAR Lecture, which was introduced by the SCAR President, Jerónimo López-Martínez, and the session was chaired by the Executive Secretary of the Antarctic Treaty, Manfred Reinke. The lecture was well attended and very well received by the audience.

The final Report of the ATCM included that ‘Taking into account the valuable series of lectures given by SCAR at a number of ATCMs, the Meeting decided to invite SCAR to give another lecture on scientific issues relevant to ATCM XXXIX’.

For further details, see paper BP 1 *Abstract of the SCAR Lecture: "Southern Ocean Acidification"*.

Appendix I: Extract from the SCATS Report to the SCAR Executive Committee Meeting, 26-28 August 2015

Introduction

The Standing Committee on the Antarctic Treaty System (SCATS) is the body tasked with developing SCAR's scientific advice, not only to the Antarctic Treaty Consultative Meeting (ATCM) and its Committee on Environmental Protection (CEP), but also to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the Convention for the Conservation of Antarctic Seals (CCAS), and the Advisory Committee to the Agreement on the Conservation of Albatrosses and Petrels (ACAP).

In 2014-15, SCATS Chief Officer Steven Chown stepped down after eight years in the role. Dr. Aleks Terauds was elected to this position at the 33rd SCAR Delegates meeting in Auckland, New Zealand in September 2014. Other SCATS members to rotate off over this time period included Chuck Kennicutt and Sergio Marensi. New members over this time include Daniella Liggett, Akinori Takahashi, and Yan Ropert-Coudert. SCATS still requires a representative of the Standing Scientific Group on Physical Sciences and is in discussion with the Chief Officer of SSG-PS on this front.

Important Issues or Factors

The Monaco Assessment

In 2010, parties to the Convention on Biological Diversity (CBD) adopted the Strategic Plan for Biodiversity 2011-2020. Its vision: *“By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.”* To realise this vision, 20 targets within five strategic goals were agreed to. They form the basis of a global agreement to address biodiversity loss. In consequence, much of the world's biodiversity is the subject of global action, or at the least intended action, for its conservation.

By contrast, the Antarctic region is largely an international space governed predominantly through the Antarctic Treaty System. Environmental matters are the main concern of its Committee for Environmental Protection (CEP) and the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). While environmental conservation is a key concern within the Antarctic Treaty System, how strategic initiatives in the region align with those identified through the Strategic Plan for Biodiversity 2011-2020 has not been ascertained.

To this end, a meeting of biodiversity and Antarctic experts, entitled *‘Antarctica and the Strategic Plan for Biodiversity 2011-2020: The Monaco Assessment’*, was convened for three days in Monaco, with the support of the Monaco government, the Centre Scientifique de Monaco, SCAR, and Monash University. SCAR President Jerónimo López-Martínez and SCATS CO Aleks Terauds represented SCAR at this workshop.

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. An additional goal was to identify key areas for work and indicators to help guide that work.

One of its first outcomes is a statement by the participants on Antarctic and Southern Ocean conservation in the context of the Strategic Plan for Biodiversity 2011-2020, based on an expert elicitation process, and entitled *The Monaco Assessment*. It is provided on the SCAR website at <http://www.scar.org/monaco-assessment>. Further outcomes and products of *Antarctica and the Strategic Plan for Biodiversity 2011-2020: The Monaco Assessment* will be made available over the next several months.

The Antarctic Environments Portal

Over the last 12 months the Antarctic Environments Portal has developed on a number of fronts, and SCAR has provided input into many of these aspects, including governance, editorial processes, the communication strategy, content development, website structure and appearance and general project planning. SCATS CO Aleks Terauds attended the Steering Group Meeting in November (remotely) and also attended a meeting for content development around climate change in Cambridge, March 2015. SCAR will have an ongoing presence on the Portal Editorial Board, with SCATS CO and two other scientific representatives that SCAR nominates. On this basis, Aleks Terauds was appointed to the Portal Editorial Board in early 2015 and, on SCAR's recommendation, so were Akinori Takahashi (Member of SCATS and on the Steering Committee of AnT-ERA) and Carlota Escutia (Chief Officer of the SCAR SRP PAIS). Aleks Terauds and Carlota Escutia attended the first Editorial Meeting in March 2015.

In 2015, SCATS, in conjunction with the Portal Editor David Walton, has coordinated the review of six Information Summaries for the Portal, and the Editorial processes seem to be working effectively. The Portal recently received funding from the Tinker Foundation to continue its operation for the next three years, and SCAR will remain an active partner in this initiative.

SCAR- CCAMLR Engagement

Informal discussion between SCATS (Aleks Terauds) and CCAMLR (Keith Reid) were initiated in the margins of the ATCM in Sofia. These discussions will continue to generate ideas and strategies for improving the information flow between SCAR and CCAMLR.

Future Initiatives

Cross-Programme workshop on interactions between biological and climate processes

In September 2015, SCATS will send a representative to the SCAR Cross-Programme Workshop to be held in Barcelona. The aims of this workshop are to gather information for the development of interdisciplinary projects in Antarctic and Southern Ocean research. Specifically, the meeting hopes to identify: (1) demands in environmental information from existing and planned biological projects; (2)

environmental information that non-biological working groups can provide; (3) information that biologist can provide (e.g. CO₂ uptake and O₂ production), for physically driven climate research projects; (4) compile environmental data.

Next steps and outputs from the Monaco Assessment meeting.

SCAR will maintain an active involvement in the production of a high-profile article detailing the findings of the Workshop. SCAR will also stay involved in the dissemination of these findings after they have been published, including the possible preparation of a Working Paper to be submitted 2016 CEP in Chile.

Antarctic Environments Portal

SCAR is committed to assisting that the Antarctic Environments Portal maintains its objective of providing objective and independent policy-ready science to the CEP Members and other interested parties. To this end, SCATS CO will continue to liaise with Editor David Walton, and the rest of the Editorial Board, to ensure that the editorial processes are maintained at the highest standards. SCATS will also continue to assist with the review process and content development.

Appendix II: List of Acronyms

| | |
|-----------------|--|
| ABII | Antarctic Biological Invasion Indicator |
| ACAP | (Advisory Committee to the) Agreement on the Conservation of Albatrosses and Petrels |
| AnT-ERA | Antarctic Thresholds - Ecosystem Resilience and Adaptation |
| ATCM | Antarctic Treaty Consultative Meeting |
| BP | Background Paper |
| CBD | Convention on Biological Diversity |
| CCAMLR | Commission for the Conservation of Antarctic Marine Living Resources |
| CCAS | Convention for the Conservation of Antarctic Seals |
| CCRWP | Climate Change Response Work Programme |
| CEP | Committee for Environmental Protection (Antarctic Treaty) |
| CO | Chief Officer |
| CO ₂ | carbon dioxide |
| COMNAP | Council of Managers of National Antarctic Programs |
| e.g. | for example (from Latin: <i>exempli gratia</i>) |
| ICG | Intersessional Contact Group |
| IP | Information Paper |
| O ₂ | Dioxygen, a diatomic gas (the most stable form of oxygen) |
| PAIS | Past Antarctic Ice Sheet dynamics |
| SCATS | Standing Committee on the Antarctic Treaty System |
| SCAR | Scientific Committee on Antarctic Research |
| SOOS | Southern Ocean Observing System |
| SRP | Scientific Research Programme |
| UAV | Unmanned Aerial Vehicle |
| URL | Uniform Resource Locator, an internet address |
| WP | Working Paper |