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Report of the SCAR Delegation to CEP XVI & XXXVI ATCM

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Report of the SCAR Delegation to CEP XVI & XXXVI ATCM

Brussels, Belgium, 20-29th May 2013

1. Introduction

The XXXVI Antarctic Treaty Consultative Meeting (ATCM) and XVI Meeting of the Committee for Environmental Protection (CEP) took place in Brussels, Belgium from 20th to 29th May 2013.

The SCAR Delegation consisted of M D Sparrow (SCAR Executive Director), J López-Martínez (SCAR President), M C Kennicutt II (SCAR Past-President and SCAR Speaker), S L Chown (CO of SC-ATS), and R Badhe (SCAR Executive Officer). Only M D Sparrow and J López-Martínez stayed for the full meeting.

An item to highlight at this meeting is that the Treaty agreed on the first draft of a multi-year strategic plan. Along with the successful CEP five-year plan, these documents will be useful to SCAR when it comes to its own priority-setting for advice to the ATCM.

2. SCAR Input

SCAR provided five Working Papers (WPs), six Information Papers (IPs) and three Background Papers (BP). Many were submitted jointly with other Parties, Observers and Experts:

Working Papers (WP)

- WP001: Review of ATCM Recommendations on Operational Matters (joint paper with COMNAP, IAATO, IHO and WMO, headed by COMNAP)
- WP028: Antarctic Environments Portal: Progress Report (joint paper with New Zealand, Australia, Belgium and Norway, headed by New Zealand)
- WP037: www.biodiversity.aq - The new Antarctic Biodiversity Information Network (joint paper with Belgium, headed by Belgium)
- WP038: The Antarctic Climate Change and the Environment (ACCE) Report - A Key Update
- WP039: Human footprint in Antarctica and the long-term conservation of terrestrial microbial habitats (joint paper with Belgium, South Africa and the UK)

Information Papers (IP)

- IP004: The Scientific Committee on Antarctic Research (SCAR) Annual Report for 2012/13
- IP005: The Southern Ocean Observing System (SOOS) 2012 Report

- IP019: 1st SCAR Antarctic and Southern Ocean Science Horizon Scan
- IP052: Ocean Acidification - SCAR Future Plans
- IP082 Advancing technologies for exploring subglacial Antarctic aquatic ecosystems (SAEs)
- IP083 The International Bathymetric Chart of the Southern Ocean (IBCSO): First Release

Background Papers (BP)

- BP020 The Scientific Committee on Antarctic Research (SCAR) Selected Science Highlights for 2012/13
- BP021 Antarctic climate change and the environment: an update
- BP014, SCAR Lecture: "Probing for life at its limits: Technologies for the exploring Antarctic subglacial ecosystems"

All papers are available from: <http://www.scar.org/treaty/atcmxxxvi/>.

3. Committee for Environmental Protection (CEP XVI)

The full report of the Committee on Environmental Protection (CEP) meeting will be available from <http://www.ats.aq>. In this SCAR report, only those items directly relevant to SCAR are presented. At the request of the CEP, IPs were only presented if absolutely necessary. Therefore, unless otherwise stated below, the SCAR IPs were taken as read by the Committee.

3.1 Strategic Discussions on the Future Work of the CEP (CEP Agenda item 3)

New Zealand introduced *WP 28, Antarctic Environments Portal: Progress Report*, jointly prepared with Australia, Belgium, Norway and SCAR. The paper provided an update on the development of the Antarctic Environments Portal since introducing the concept at CEP XV, and addressed issues raised during informal intersessional discussions. It noted that the project aims to facilitate the link between Antarctic science and the CEP by providing ready access to independent, science-based information on priority issues. New Zealand demonstrated a prototype of the Portal to the Committee, and outlined the next steps for the project. The value of the Portal as a tool, which would provide ready access to scientific syntheses and high quality information to inform decision-making and support the effective implementation of the Protocol, was highlighted. The value of SCAR's demonstrated history of providing independent scientific advice was also highlighted by the Parties.

AGREEMENT: SCAR will continue to work with New Zealand and Australia in producing a pilot version of the Antarctic Environments Portal.

3.2 Cooperation with other Organisations (CEP Agenda item 4)

The President of SCAR, J López-Martínez, presented *IP 4, The Scientific Committee on Antarctic Research (SCAR) Annual Report for 2012/13*. The President outlined how in 2012 SCAR approved five new Scientific Research Programmes :

- a) State of the Antarctic Ecosystem (AntEco);
- b) Antarctic Thresholds – Ecosystem Resilience and Adaptation (AnT-ERA);
- c) Antarctic Climate Change in the 21st Century (AntClim21);
- d) Past Antarctic Ice Sheet Dynamics (PAIS); and
- e) Solid Earth Response and influence on Cryosphere Evolution (SERCE).

He also introduced the forthcoming SCAR Antarctic and Southern Ocean Science Horizon Scan, which would assemble the SCAR community and leading Antarctic experts to identify the most important scientific questions to be addressed over the next two decades. Further information was available in *BP 20, The Scientific Committee on Antarctic Research (SCAR) Selected Science Highlights for 2012/13*.

Norway noted the useful approach SCAR was taking in focusing their new research programmes towards management needs and underscored the importance of disseminating results from these programmes in an appropriate manner. In response, SCAR noted that findings from their ongoing research activities would be presented at various events in 2013 onwards and later to the ATCM. The next major SCAR event was the SCAR Biology Symposium in Spain, 15–19 July 2013.

Under this agenda item, the CO of SC-ATS, S Chown, also presented *IP 52, Ocean Acidification: SCAR Future Plans*. The SCAR Ocean Acidification Action Group intends to:

- a) define our present understanding of the contemporary rates and future scenarios of Southern Ocean acidification;
- b) document ecosystem and organism responses from experimental perturbations and geological records;
- c) identify present and planned observational and experimental strategies;
- d) identify gaps in our understanding of the rates and regionality of ocean acidification; and
- e) define strategies for future Southern Ocean acidification research.

The final report will be launched at the SCAR Open Science Conference in August 2014 (<http://www.scar2014.com/>).

3.3 Climate Change Implications for the Environment: Strategic Approach (CEP Agenda item 7)

The SCAR Executive Director, M Sparrow, introduced *WP 38, The Antarctic Climate Change and the Environment (ACCE) Report: A Key Update*, which represents a major update of the original SCAR Antarctic Climate Change and the Environment (ACCE) report (Turner et al., 2009) – see also *BP 21 Antarctic climate change and the environment: an update* and <http://www.scar.org/publications/occasionals/acce.html>. The update summarises subsequent advances in knowledge concerning how the climates of the Antarctic and

Southern Ocean had changed, how they might change in the future, and the associated impacts on marine and terrestrial biota.

Members thanked SCAR for its ongoing efforts to update the CEP on the state of knowledge on climate change and noted SCAR's recommendation to engage with other organisations such as the IPCC and UNFCCC. The Committee noted the pace of change reported in the update and recalled that the ATME on climate change recommended that the CEP consider developing a climate change response work programme (Recommendation 19). The United States highlighted the quality of SCAR's peer-reviewed report, which had already been published in a scientific journal. Norway remarked that the outcomes of the report might feed well into the Antarctic Environments Portal.

In endorsing SCAR's recommendations, the Committee decided to:

1. Encourage SCAR and Treaty Parties to engage with the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC) to ensure that climate change issues in the Antarctic and Southern Ocean are fully considered and that both bodies are made aware of the outcomes of the ACCE report and associated updates;
2. Focus efforts on implementing the recommendations outlined by the Antarctic Treaty Meeting of Experts (ATME) on climate change and implications for Antarctic management and governance (2010); and
3. Convey the key points of the ACCE updated report more broadly to ensure awareness of the critical role of Antarctica and the Southern Ocean in the climate system and the importance of associated impacts on the region.

The Committee decided to establish an Intersessional Contact Group (ICG) on climate change with the following Terms of Reference:

1. Review progress made against ATME recommendations 18 to 29, drawing on SP007 (CEP XV) and discussions at recent CEP meetings (cf: CEP report 2010, paragraphs 351 - 386);
2. Consider these ATME recommendations in light of recent papers, and in particular SCAR's 2013 major update report, in order to identify additional actions that may need to be addressed by the CEP;
3. Consider how the recommendations might be addressed by developing a prioritised climate change response work programme;
4. Provide an initial report to CEP XVII.

AGREEMENT: SCAR will work with Parties in the Intersessional Contact Group (ICG) on climate change.

3.4 Other Annex V matters (CEP Agenda item 9)

The United Kingdom introduced *WP 10, Identification of potential climate change refugia for emperor penguins: a science-based approach*, which stated that climate change was likely to impact upon emperor penguin distribution range and breeding success. The United Kingdom suggested that the remote sensing techniques outlined in the paper could make a step-change contribution in improving the evidence base for the monitoring of vulnerable sites, including ASPAs.

Germany and Argentina reminded Members of the activities of SCAR's Action Group on Remote Sensing, and proposed collaborative work with SCAR.

AGREEMENT: SCAR, through its new Action Group on Remote Sensing, to work with the UK and others on remote sensing techniques for gathering information on emperor penguin population variability.

The Russian Federation introduced *WP 22, Russian Antarctic biogeographic regioning as compared with the New Zealand classification*, which noted that Russian scientists have generated classifications of major landscape types on the basis of environmental parameters. The Russian Federation noted that this work could build on and complement existing classifications, such as the Environmental Domains Analysis adopted under Resolution 3 (2008) and the Antarctic Conservation Biogeographic Regions adopted under Resolution 6 (2012).

On behalf of SCAR, S Chown welcomed the paper from the Russian Federation. He reminded the Committee that Working Paper 35 presented last year by Australia, New Zealand and SCAR, the *Antarctic Conservation Biogeographic Regions* are based on the original environmental domains analysis of the Antarctic prepared by New Zealand. SCAR welcomed these additional views from the Russian Federation, which help further develop biogeographic understanding of the region. The additional biodiversity data that are available are also welcome, and could be contributed to the SCAR biodiversity database hosted by Australia.

Belgium introduced *WP 39, Human footprint in Antarctica and the long-term conservation of terrestrial microbial habitats*, prepared jointly with SCAR, South Africa and the United Kingdom, which highlighted potential threats to the conservation of terrestrial microbial ecosystems in Antarctica, and to future scientific research on these ecosystems. Belgium pointed out that recent advances in molecular biology techniques had identified diverse microbial communities and species endemic to Antarctica. Belgium accordingly recommended:

- a) that microbial contamination of pristine sites are considered by Parties in their EIAs for activities in locations unlikely to have ever been visited; and
- b) that the protected area system should be used more actively to protect microbial habitats for future science and for their own intrinsic value, including through the designation of areas kept inviolate from human interference.

Members thanked Belgium and its co-authors for their contribution, supported by extensive scientific data, and recognised the importance of this question. Moreover they raised several questions, including: the difficulty of controlling the transportation of microbial organisms; the definition of "pristine area" as applied to micro-organisms in Antarctica; the possibility of establishing prohibited areas; and the current lack of decontamination methods. The inclusion of aquatic micro-organisms was proposed; and the importance of further ecological research was highlighted.

3.5 Conservation of Antarctica Flora and Fauna (CEP Agenda item 10)

Germany introduced *WP 19, Report on the Research Project "The Impact of Human Activities on Soil Organisms of the Maritime Antarctic and the Introduction of Non-Native Species in Antarctica"*, regarding biosecurity measures to prevent the transfer

and introduction of non-native soil organisms, and referred to IP 55 and related information included in the final report of the research project which is available at <http://www.umweltbundesamt.de/uba-info-medien/4416.html>.

Many Members expressed their appreciation of Germany's scientific efforts and highlighted factors which could increase the risk of introduction of non-native organisms, including increasing visitor numbers and climate change. New Zealand underlined the importance of continuing work on the issue of non-native species in Antarctica, and in taking a precautionary and preventative approach to managing risks. SCAR recalled the findings of its "Aliens in Antarctica" study presented to the ATCM in 2012, which concluded that on a per capita basis, scientists have been found to transport more plant propagules than other types of visitors; therefore all categories of visitors should be considered capable of transferring non-native species to the region.

The Committee commended Germany for its research and endorsed the recommendations contained therein. The Committee agreed to take the work forward, under the leadership of Germany, via an open and informal working group and noted the readiness of SCAR, IAATO and ASOC to contribute to this work.

AGREEMENT: SCAR to contribute to an informal working group to discuss the outcomes of the German paper WP 19, Report on the Research Project "The Impact of Human Activities on Soil Organisms of the Maritime Antarctic and the Introduction of Non-Native Species in Antarctica".

3.6 Environmental Monitoring and Reporting (CEP Agenda item 11)

Belgium introduced *WP 37, www.biodiversity.aq: The new Antarctic Biodiversity Information Network*, jointly prepared with SCAR, which described the renewed international Antarctic Biodiversity Portal which built on the legacy of the SCAR Marine Biodiversity Information Network and the Antarctic Biodiversity Information Facility. The Committee noted the initiative and acknowledged the great value of the www.biodiversity.aq initiative.

J López-Martínez presented *IP 19, 1st SCAR Antarctic and Southern Ocean Science Horizon Scan*, outlining how the Scan plans to carry out an on-line Horizon Scan and then assemble around 50 of the world's leading Antarctic scientists, policy makers, leaders, and visionaries to identify the most important scientific questions that should be addressed by research in and from the southern polar region over the next two decades, in order to assist in aligning international programmes, projects and resources.

IP 5, The Southern Ocean Observing System (SOOS) 2012 Report was also submitted under this agenda item.

3.7 General Matters (CEP Agenda item 13)

S Chown presented *IP 83, The International Bathymetric Chart of the Southern Ocean (IBCSO): First Release*, and urged all Parties to continue to contribute data to the IBCSO database. He noted that the map and data were available for download, and more details could be found at: www.ibcso.org.

4. Antarctic Treaty Consultative Meeting (ATCM XXXVI)

As above, only those items directly relevant to SCAR are presented. IPs were only presented if absolutely necessary.

4.1 Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts (ATCM agenda item 4)

J López-Martínez presented the SCAR Report in plenary (see Section 3.2, above, for details). When presenting the COMNAP annual report, the Executive Secretary of COMNAP noted that COMNAP and SCAR were planning two joint workshops this year, on the Southern Ocean Observing System, and on Antarctic conservation challenges.

4.2 Operation of the Antarctic Treaty System: General Matters (ATCM agenda item 5a)

COMNAP introduced *WP 1, Review of ATCM Recommendations on Operational Matters*, submitted jointly with IAATO, IHO, SCAR, WMO, which proposed revisions to twenty-eight recommendations in four categories relating to operational matters.

4.3 Science Issues, Scientific Cooperation and Facilitation (ATCM agenda item 13)

SCAR presented several IPs under this agenda item. Firstly M Sparrow presented *IP 5, The Southern Ocean Observing System (SOOS) 2012 Report*, which highlighted SOOS achievements in 2012, and planned activities for 2013. SCAR reported that the Scientific Steering Committee meeting held in May 2013 in China detailed development and integration of work plans for the six SOOS science themes.

J López-Martínez presented *IP 19, 1st SCAR Antarctic and Southern Ocean Science Horizon Scan*, which described the initiation of an Antarctic and Southern Ocean Science Horizon Scan. SCAR noted that the Scan would identify the top 100 Antarctic research questions to be addressed over the next 20 years.

M Sparrow presented *IP 82, Advancing technologies for exploring subglacial Antarctic aquatic ecosystems (SAEs)*, which supported the SCAR Lecture to the ATCM and provided further information on technological development and deployment to SAEs in Antarctica. The paper outlined the scientific arguments for future technology development and deployment, assessed the current status and application of available technologies, and discussed what is required technologically and environmentally for the future exploration of SAEs. SCAR also summarised the activities of its Advancing Technological and Environmental stewardship for subglacial exploration in Antarctica (ATHENA) Expert Group.

M Sparrow also presented *IP 83, The International Bathymetric Chart of the Southern Ocean (IBCSO): First Release*, which was the result of a project initiated in 2006 with the objective of designing and implementing an enhanced digital database of bathymetric data available south of 60°S latitude. In April 2013, IBCSO version 1.0

was released by the Alfred Wegener Institute (AWI), in Germany. The map and data are available at: www.ibcso.org. SCAR urged all Parties to continue to contribute data to this important database.

4.4 Implications of Climate Change for Management of the Antarctic Treaty Area (ATCM agenda item 14)

M Sparrow introduced *WP 38, The Antarctic Climate Change and the Environment (ACCE) Report: A Key Update* and *IP 52, Ocean Acidification: SCAR Future Plans* (see Sections 3.2 and 3.3 for details).

4.5 Exchange of Information (ATCM agenda item 16)

France introduced *WP 43, Importance of unique and common geo-referencing of toponymic data in the Electronic Information Exchange System*, which sought an agreement on a common principle for the designation of geographic features in Antarctica using, as far as practicable, existing tools.

SCAR advised that it had compiled a Composite Gazetteer of Antarctica of all officially submitted place-names used in Antarctica in all languages, and was working to improve the accuracy of the geographical coordinates used. The Russian Federation, United States and United Kingdom agreed that any additional work on this issue would benefit from further advice on the outcomes of SCAR's work.

AGREEMENT: SCAR, through its Standing Committee on Antarctic Geographic Information, to work with France intersessionally on common geo-referencing of toponymic data.

4.6 The SCAR Lecture

The SCAR Lecture was given by M C Kennicutt and jointly authored with J L Wadham. The title was *'Probing the Limits of Technology: Exploration of Subglacial Aquatic Environments'* (see <http://www.scar.org/treaty/atcmxxxvi/>). The lecture was introduced by J López-Martínez, who recalled that this was the 11th in the series of SCAR lectures initiated in 2003. The lecture was very well-received by the audience. For further details see the following papers:

BP 14, SCAR Lecture: "Probing for life at its limits: Technologies for the exploring Antarctic subglacial ecosystems"

IP 82, Advancing technologies for exploring subglacial Antarctic aquatic ecosystems (SAEs)

5. Side Meetings

Various side meetings were held during the CEP/ATCM. For example, an Action Group meeting was held between representatives of SCAR and CCAMLR to discuss a more strategic partnership between the two organisations. Various side meetings were held with COMNAP to discuss issues such as the SCAR Open Science Conference, the Conservation Workshops and the joint Fellowship schemes.

Meetings were also held with New Zealand and others to discuss the Portal and Conservation Strategy. The SCAR President and the Executive Director also took the opportunity to hold an informal gathering of SCAR Delegates present during one of the coffee breaks. During the ATCM, a series of conversations with delegations of several countries that may consider SCAR membership in the near future were held, in particular Austria, the Czech Republic, Colombia and Turkey.

Appendix: List of Acronyms

| | |
|-----------------------|--|
| ACCE | Antarctic Climate Change and the Environment |
| AntClim ²¹ | Antarctic Climate Change in the 21st Century |
| AntEco | State of the Antarctic Ecosystem |
| AnT-ERA | Antarctic Thresholds - Ecosystem Resilience and Adaptation |
| ASOC | Antarctic and Southern Ocean Coalition |
| ASP | Antarctic Specially Protected Area |
| ATCM | Antarctic Treaty Consultative Meeting |
| ATHENA | Advancing TecHnological and ENvironmental stewardship for subglacial exploration in Antarctica |
| ATME | Antarctic Treaty Meeting of Experts |
| AWI | Alfred Wegener Institute, Germany |
| BP | Background Paper |
| CCAMLR | Commission for the Conservation of Antarctic Marine Living Resources |
| CEP | Committee for Environmental Protection (Antarctic Treaty) |
| CO | Chief Officer |
| COMNAP | Council of Managers of National Antarctic Programs |
| EIA | Environmental impact assessment |
| IAATO | International Association of Antarctica Tour Operators |
| IBCSO | International Bathymetric Chart of the Southern Ocean |
| ICG | Intersessional Contact Group |
| IHO | International Hydrographic Organisation |
| IP | Information Paper |
| IPCC | Intergovernmental Panel on Climate Change |
| PAIS | Past Antarctic Ice Sheet dynamics |
| SAE | subglacial Antarctic aquatic ecosystem |
| SC-ATS | Standing Committee on the Antarctic Treaty System |
| SCAR | Scientific Committee on Antarctic Research |
| SERCE | Solid Earth Response and influence on Cryosphere Evolution |
| SOOS | Southern Ocean Observing System |
| UK | United Kingdom |
| UNFCCC | United National Framework Convention on Climate Change |
| WMO | World Meteorological Organisation |
| WP | Working Paper |