Integrated Science to Inform Antarctic and Southern Ocean Conservation (Ant-ICON)

SCAR Scientific Research Programme Planning Group

Aleks Terauds and Mercedes Santos (Chief Officers)

September 2019
Why?

- Build on foundation of research from previous SRPs
- Answer questions from the SCAR Horizon Scan
- Facilitate research to inform decision-making

Antarctica and the Southern Ocean are threatened on several fronts by multiple stressors
Why?
Respond to a strong and increasing community desire
**Why?**

Antarctic Treaty Parties are increasingly looking to SCAR for independent and objective scientific advice.

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**Resolution 7 (2019)**

**SCAR’s Sixtieth Anniversary and the Role of SCAR in Providing Scientific Advice to Support the Work of the Antarctic Treaty System**

The Representatives,

Recalling the role of Scientific Committee on Antarctic Research (‘SCAR’) in initiating, developing and coordinating high quality international scientific research on Antarctica and the Southern Ocean as well as the role of the Antarctic region in global systems;

Acknowledging the significant and longstanding contribution that SCAR has made to support the Antarctic Treaty system;

Warmly congratulating SCAR on its sixtieth anniversary;
Broad Objectives

- Facilitate and coordinate high quality research
- Improve the integration of multi-disciplinary research outputs
- Inform and drive international policy response and effective conservation and management
Specific Objectives

Increase awareness of contemporary and future environmental issues in Antarctica and the Southern Ocean

Identify vulnerable species, ecosystems and environments

Quantify threats and inform the development of practical mitigation strategies
Driving change

• Antarctic Treaty Parties

• Members of the Committee on Environmental Protection

• Scientific Committee for the Conservation of Antarctic Marine Living Resources

• Various international and national bodies
Informing change

- Facilitate dynamic responses to emerging priority issues
- Improving iterative discussions between scientists and policy-makers
- Close links to SC-ATS will be a key aspect of these interactions
Programme Planning Group

Gender equity
Reflect the gender balance in the Antarctic research community

Geographic representation
Adequate representation of SCAR member countries

Early career researchers
Opportunities to join a research community and undertake leadership roles

Trans-disciplinary
Biological, physical, earth and social sciences, humanities AND policy makers

Broad consultation
Considerable consultation to date, ongoing and more required
Science and Implementation Plan

- Knowledgeable, diverse and enthusiastic PPG (45 members)
- Round one of consultation mid-late-2018
- Round two of intensive consultation early-2019 (including with policy makers from the CEP and CCAMLR)
- Full draft (not including supporting material) completed July 2019 – still a work in progress
- Complete draft planned by end of October following meeting in the margins of CCAMLR in Hobart
Q48: Identification of vulnerable ecosystems and food webs

Q49: The impact of future environmental conditions on ecosystem functioning;

Q50 - Clarifying the synergistic effects of multiple stressors and environmental change drivers on Antarctic and Southern Ocean biota;

Q52,53: Better understanding the impact of contaminants and pollutants;

Q54,55: Clarifying non-native species pathways and associated impacts

Q56-58: Investigating climate mediated impacts on Antarctic and Southern Ocean biota

Q75: Identification of the impacts of large-scale, direct human modification of the Antarctic environment

Q80: Better understanding of how diseases and pathogens change, will impact and adapt to the extreme Antarctic environment
Aligned with SCAR Strategic Plan

- Facilitate high-quality science to underpin SCAR’s independent and objective advice
- Strengthen and expand collaborations across disciplines and geographical boundaries
- Effectively communicate research and raise public awareness of Antarctic issues
- Grow research capacity, through proactive mentoring of early-to-mid-career researchers
Research Themes

- Current states and future projections
- Sustainability and impact of human activities
- Socio-ecological approaches to conservation
- Science synthesis for decision-making
Current and future states

- Vulnerable species ecosystems and environments
- Integrated forecasts of change
- Future impacts from multiples stressors
- Key change drivers
- Cross-biome connections
Tourist landings in Antarctica: 1994 - 2016

Lee et al. in prep; IAATO

• Current and future extent of human activities

• Quantifying anthropogenic risk

• Synergistic and cumulative impacts

• Strategies for mitigating impacts
Humans interact with all Antarctic environments

Social dimensions are inseparable from the bio-geo-physical components

Socio-ecological approaches to Antarctic conservation

Increasing recognition of the importance of integrated research
Effective Antarctic conservation requires an understanding of the interactions between humans and the Antarctic environment.

Socio-ecological approaches to Antarctic conservation planning and management occurs in a dynamic and complex geopolitical environment.

Assessment of some values (e.g. intrinsic, aesthetic) require socio-ecological approaches.
Socio-ecological approaches to Antarctic conservation

Connectivity
Social impacts and consequences of environmental change

Responsible & ethical governance of Antarctica in the 21st Century

Role of resilience in the dynamics of socio-ecological systems
Science synthesis to inform decision-making and policy development

- Integration of outputs to inform:
  - Systematic Conservation Planning,
  - species protection,
  - identification of vulnerable ecosystems,
  - management of human activities.

- Scientific evaluation of decision-making frameworks, management strategies and vulnerability assessments

- Prioritization of scientific outputs and identification if geopolitical sensitivities

- Quantifying and dealing with biases and uncertainties in decision-making
Links to existing initiatives, groups and new SRPs
Implementation

- Multidisciplinary, focused, objective based workshops
- Capacity building and promoting diversity
- Engagement with key end-users – including SC-ATS
- Regular and targeted reporting
Future steps

Broader consultation

NGOs, Policy bodies (SC-CAMLR, CEP Chairs), Industry, science community (including SRPs)

Finalisation of plan for 2020

Meeting to finalize the SRP proposal for submission to the 2020 SCAR OSC
**PPG Members**

- 45 members
- 18 countries
- 6 EMCRs (13%)
- Gender balance (f:m) 19:26
- Disciplinary coverage

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<thead>
<tr>
<th>Name</th>
<th>Country</th>
<th>Discipline/focus</th>
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<tr>
<td>Aleks Terauds</td>
<td>Australia</td>
<td>Quantitative ecology (CO)</td>
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<td>Alvaro Soutullo</td>
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