

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

SCAR Scientific Research Programme Planning Group

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September 2019



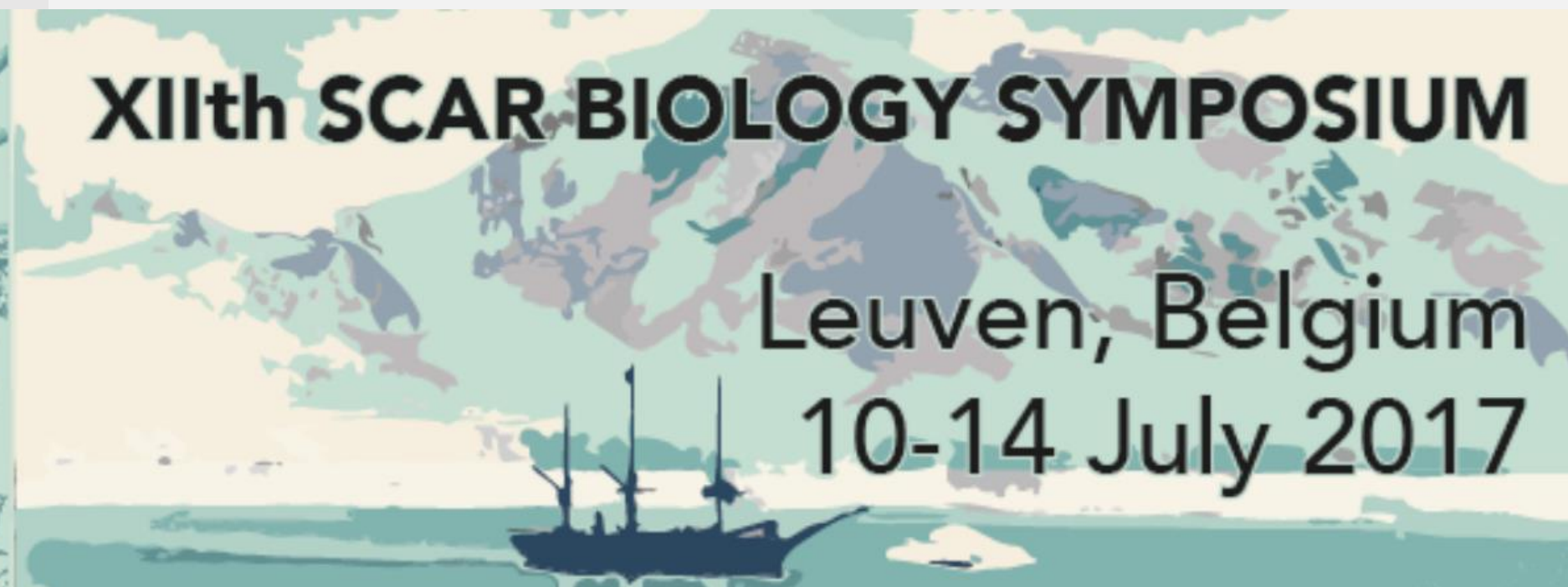
Why ?

- 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



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

Links to SCAR Horizon Scan

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

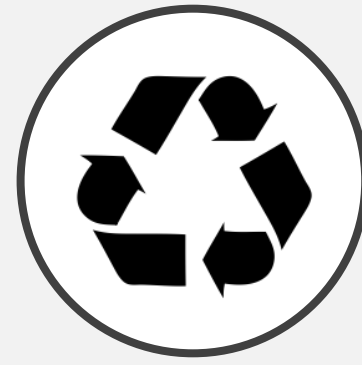
Aligned with SCAR Strategic Plan

- 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



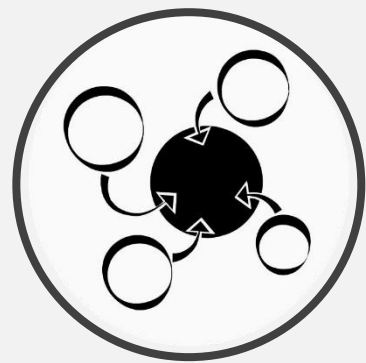
Current
states and
future
projections



Sustainability
and impact of
human
activities



Socio-
ecological
approaches to
conservation

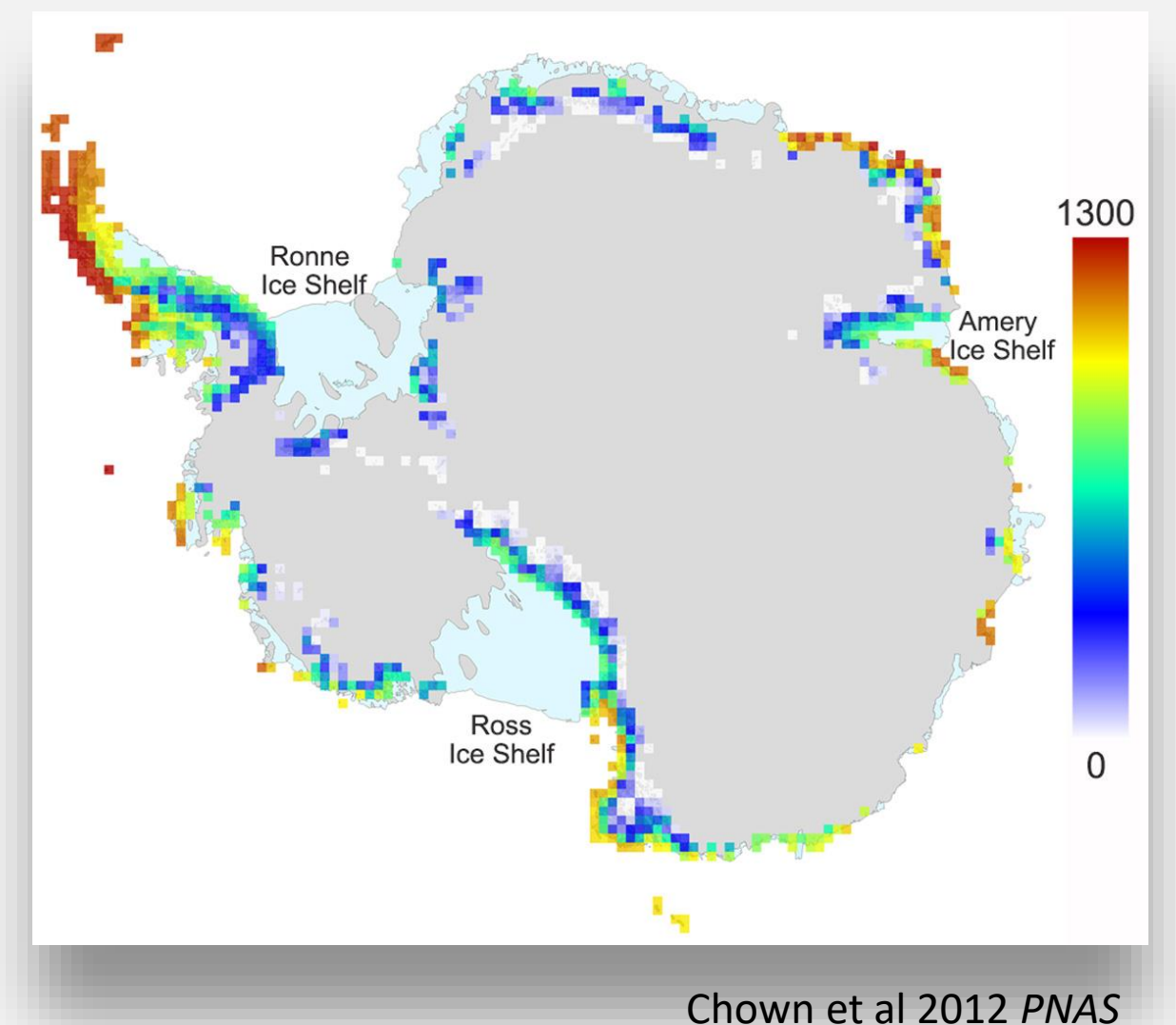
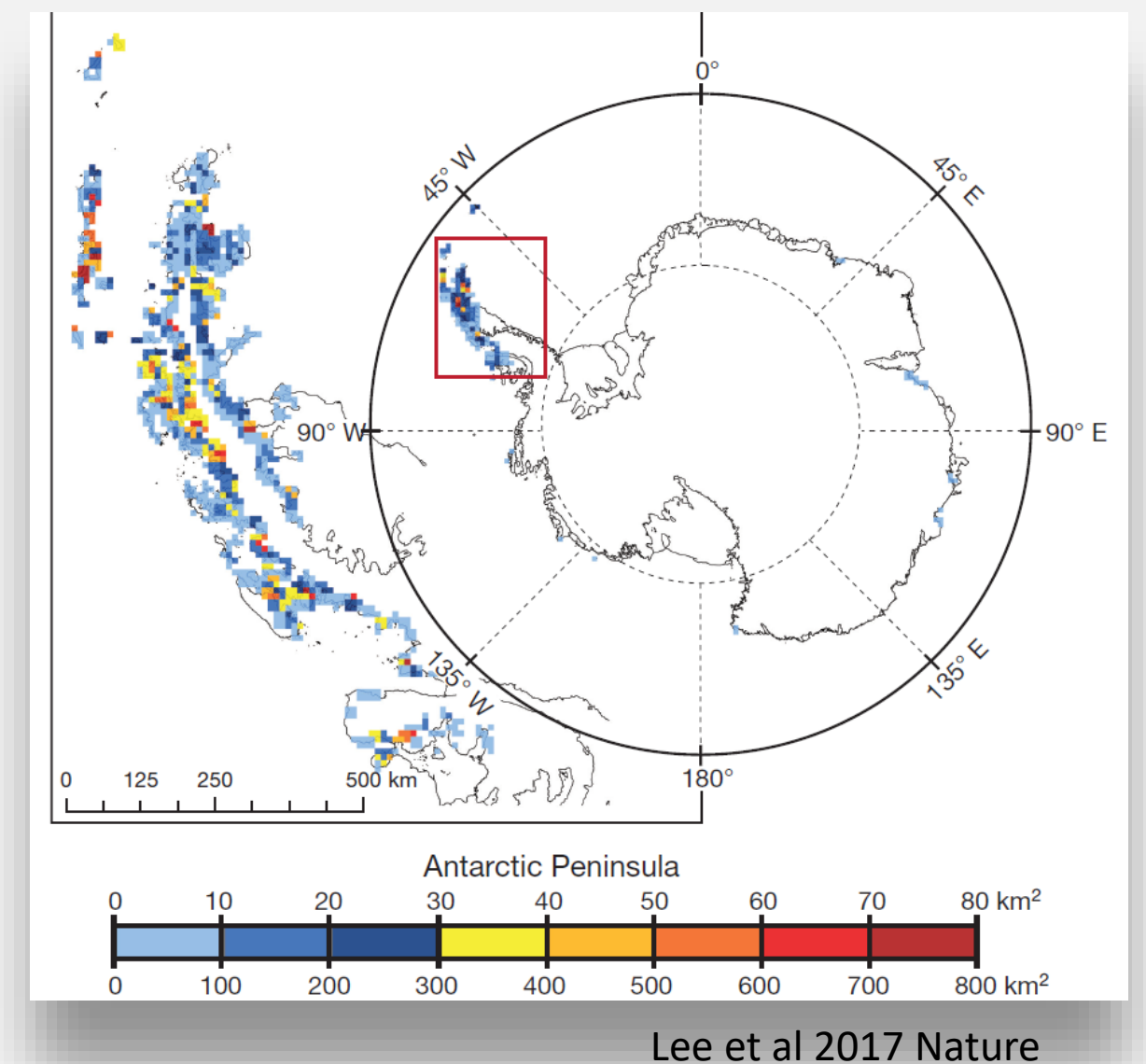


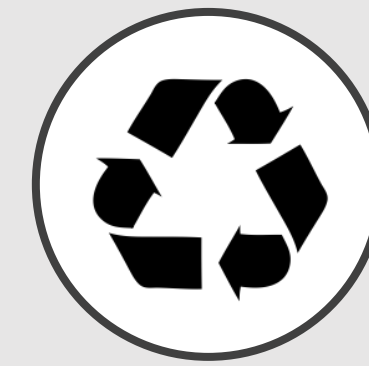
Science synthesis for decision-making



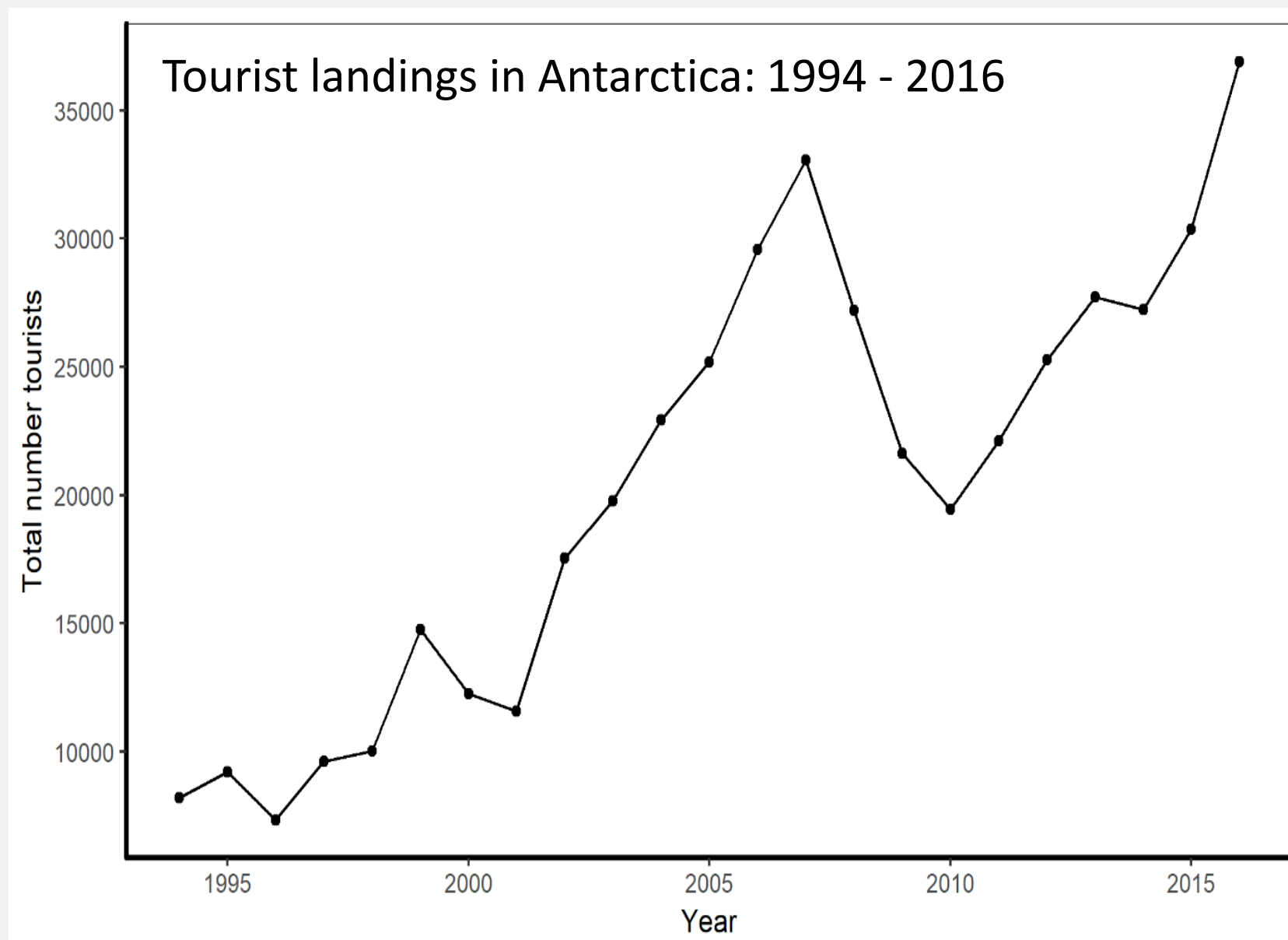
Current and future states

- Vulnerable species ecosystems and environments
- Integrated forecasts of change
- Future impacts from multiples stressors
- Key change drivers
- Cross-biome connections





Sustainability and impact of human activities



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

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



Antarctic conservation planning and management occurs in a dynamic and complex geopolitical environment



Socio-ecological approaches to Antarctic conservation



Connectivity

Social impacts
and consequences
of environmental
change



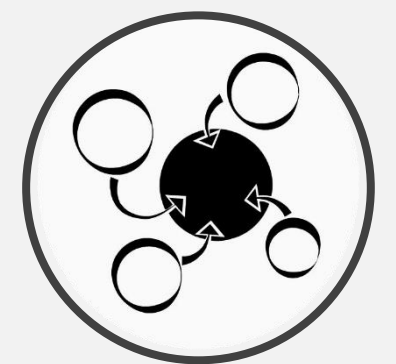
Responsible
& ethical
governance
of Antarctica in
the 21st Century



Role of
resilience
in the dynamics
of socio-
ecological
systems

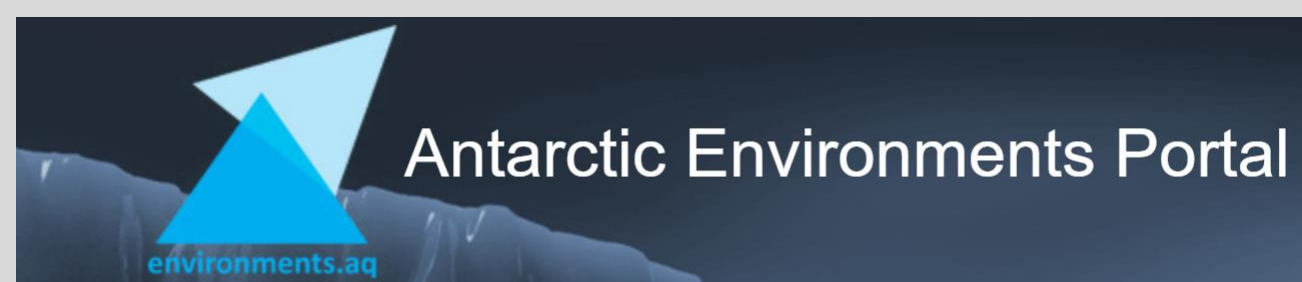
Science synthesis to inform decision-making and policy development

- 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 of 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

Name	Country	Discipline/focus
Aleks Terauds	Australia	Quantitative ecology (CO)
Alvaro Soutullo	Uruguay	Marine/Terrestrial ecology
Andres Barbosa	Spain	Marine/terrestrial ecophysiology
Andrew Lowther	Norway	Marine ecology
Annick Wilmotte	Belgium	Terrestrial ecology
Anton van de Putte	Belgium	Data (SCADM, biodiversity.aq)
Antonio Quesada	Spain	Terrestrial ecology
Bettine van Vuuren	South Africa	Terrestrial Ecology
Cassandra Brooks	USA	Marine ecology and policy
Cath Waller	United Kingdom	Intertidal/nearshore ecology
Charlene Guillaumot *	France	Quantitative Ecology
Charlotte Havermans*	Germany	Marine Ecology
Christina Braun *	Germany	Terrestrial ecology
Conxita Àvila	Spain	Marine Ecology
Craig Cary	New Zealand	Terrestrial ecology
Daniela Liggett	New Zealand	Social sciences and humanities
Diana Wall	USA	Terrestrial ecology
Elle Leane	Australia	Social sciences and humanities
Fraser Morgan	New Zealand	Terrestrial ecology
Gabriela Mataloni	Argentina	Terrestrial ecology
George Watters	USA	Fisheries
Heather Lynch	USA	Quantitative ecology
Huw Griffiths	United Kingdom	Marine ecology
Jasmine Lee *	Australia	Terrestrial ecology
Jerónimo López -Martinez	Spain	Geology
Juan Salazar	Australia	Social sciences and humanities
Justine Shaw	Australia	Terrestrial ecology
Kevin Hughes	United Kingdom	Terrestrial ecology and policy
Luis Pertierra *	Spain	Terrestrial ecology
Luis Valentin Ferrada	Chile	Antarctic policy/international Law
Luiz Rosa	Brazil	Microbiology
Manuela Basso	Brazil	Marine ecology
Marcelo Regeuro	Argentina	Earth sciences
Mecha Santos	Argentina	Marine ecology (CO)
Megumu Tsujimoto *	Japan	Terrestrial ecology
Nadine Johnston	United Kingdom	Marine ecology
Neil Gilbert	New Zealand	Antarctic policy
Pete Convey	United Kingdom	Terrestrial Ecology
Phillipe Koubbi	France	Marine Ecology
Prabir G Dastidar	India	Behavior/network analysis
Ryan Reisinger *	South Africa	Marine Ecology
Sergey Kakareka	Belarus	Terrestrial impacts
Thomas Saucede	France	Marine ecology
Tom Bracegirdle	United Kingdom	Physical sciences
Yan Ropert-Coudert	France	Marine ecology