



SCAR Sub-Group

SG

Person
Responsible:

ISSA

LS

Justine Shaw

SCAR Delegates Meeting 2020

Integrated Science for the Sub-Antarctic (ISSA) 2018-2020 Report

Report Author(s)

Justine Shaw, The University of Queensland, Australia

Summary of activities from 2018-20 and any other important issues or factors

- Following Davos 2018, the programme grew in members and scope. Links were established with input to existing and emergent research groups.
- Several large international grants were submitted by members that focused on sub-Antarctic science, facilitated and through new collaborations formed in association with ISSA.
- We contributed to the ANTOS program, highlighting the need for more time series observations to document change in the environment and to processes.
- We have notable input to the development of the proposed SCAR SRP Ant-ICON.
- An international ISSA workshop held in late 2018 in New Zealand brought together key researchers from across the region, with representatives from France, South Africa, New Zealand, Australia and the UK.
- During 2019 and 2020, considerable effort was put into the design and promotion of a sub-Antarctic Forum (to be held as part of the SCAR activities), in conjunction with the governments of Tasmania, Australia and New Zealand. During this process, new linkages were formed between responsible agencies, managers, researchers and national programs. There was considerable uptake for the Forum and it triggered sharing of information and links related to sub-Antarctic research in the lead. ECRs were engaged and many became involved in virtual discussion and sharing of ideas.
- ISSA members submitted a session to SCAR Open Science Conference in 2020 - **Sub-Antarctic Islands: Sentinels of Change**.
- ISSA has maintained strong relationships with the Antarctic Nearshore and Terrestrial Observing System, Southern Ocean Observing System.

Recommendations that EXCOM and Scientific Group Chief Officers should consider

- For noting: ISSA has reached the end of its term. The network of researchers has grown and continues to grow. Research outputs continue to have impact. New research collaborations and grants continue to be born out of ISSA.

ISSA: 2018-2020 Annual Report, cont.

- Based on the success and the potential for greater impact and the need for more focused research in the region, we are now focusing our efforts on developing a future SRP proposal for SCAR focussing on sub-Antarctic science. We anticipate making a presentation of the first PPG to EXCOM in 2021, and we would then hope to make a presentation to the Delegates in 2022.

Summary Budget 2018 to 2020

	2018	2019	2020	
	Spent	Requested	Requested	
(US\$)	2000	2000	2000	

*** Requested funds were to support travel and a workshop associated with the Sub-Antarctic Forum (Hobart, 2020)

Progress and Plans

Sub-group Major Outcomes/Activities

(No more than three major developments with one paragraph describing each of no more than ~ 300 words. Why important, why now?)

1. An ISSA workshop was held on Great Barrier Island, New Zealand. This workshop brought together multiple researchers. This workshop was critical as new directions for sub-Antarctic research were determined and a gap analysis of existing programs conducted. Linkages from science to policy were made. Assessment of logistic and planning capabilities across the sub-Antarctic was determined.
2. Twelve months planning, engagement and design of the 4th Sub-Antarctic Forum (July 2020) was undertaken. Unfortunately, this event was **postponed due to COVID19**.

Keynote speakers had accepted invitations to talk on the following themes:

- *Terrestrial biodiversity*- Dr Michelle Greve (UPretoria, South Africa)
- *Marine biodiversity*- Dr Thomas Saucède (Université Bourgogne, France)
- *Climate and change*- Dr Krystna Saunders (ANSTO, Australia)
- *Policy and governance*- Debbie Saunders (New Zealand)
- *Heritage*- Prof. Elizabeth Leane (IMAS, Australia)
- *Island management*- Steven Horn (Dept. Conservation, New Zealand)
- *Tourism*- Lisa Kelly (IAATO)
- *Marine protected areas and predator conservation*-Prof. Mark Hindell (IMAS, Australia).

Abstracts for oral presentations and posters were received, including many ECRs. In total of 76 abstracts submitted across eight key research areas.

Funding was secured for ECR travel support. It was to be held in the last week of July 2020 in Hobart, in conjunction with SCAR 2020. The conference twitter account continues to acquire followers despite the cancellation of the conference. A book on Sub-Antarctic Futures will emerge from the Forum regardless of when it is rescheduled.

3. 21 abstracts were received for the session **Sub-Antarctic Islands: Sentinels of Change** for SCAR Open Science Conference in 2020. Many were from ECRs. ISSA member were conveners of the session. The abstracts of these will be published in the SCAR 2020 abstracts book. Submissions were received from Chile, Brazil, Australia, France, UK, South Africa, Spain, Portugal.
4. ISSA researchers collaborated on several large, collaborative international research grant submissions. These grants have a strong sub-Antarctic research focus. Although much of the research is independent of each other, collectively they span the entire sub-Antarctic region, and cover many aspects of biological, climate and conservation science. Collectively the work involved hundreds of researchers.
They were submitted through the following research schemes: biodivERsA 2019-2022 (CI: Renault- *pending*) and an Australian Research Council Species Research Initiative (CI: Chown - *successful*).
5. Manuscript. A review manuscript is approaching submission. Its purpose is as a “position paper” to outline the current status of the sub-Antarctic research effort, current circum sub-Antarctic understanding and the importance of the region.

Sub-group Outcomes Summary

(Summarize the above and in each case provide your sub-group name in left hand column)

Sub-group	Activity/Outcome/Benefit/Achievement
ISSA	Sub-Antarctic workshop
ISSA	Sub-Antarctic Forum planning
ISSA	Review Manuscript preparation

Sub-group Cash Flow

(From previous Delegates meeting to date)

Sub-group	Allocation	
		2018
ISSA	\$2,000	\$2,000

Notable Papers

Chau, J.H., Born, C., McGeoch, M.A., Bergstrom, D., Shaw, J., Terauds, A., Mairal, M., Le Roux, J.J. & Jansen van Vuuren, B. (2019) The influence of landscape, climate and history on spatial genetic patterns in keystone plants (*Azorella*) on sub-Antarctic islands. *Molecular Ecology*, **28**, 3291-3305.

Brooks, C. M., Chown, S. L., Douglass, L. L., Raymond, B. P., Shaw, J. D., Sylvester, Z. T., & Torrens, C. L. (2020). Progress towards a representative network of Southern Ocean protected areas. *PloS one*, 15(4), e0231361.

Wauchope, H.S., Fuller, R.A., Shanahan, D. F., & Shaw, J. D. (2019). Restoring islands and identifying source populations for introductions. *Conservation Biology*

Houghton, M., Terauds, A., Merrit, D., Driessen, M. & Shaw, J.D. (2019) The impacts of non-native species on the invertebrates of Southern Ocean Islands. *Journal of Insect Conservation* <https://doi.org/10.1007/s10841-019-00147-9>

Dickson, C., Baker, D., Bergstrom, D.M., Bricher, P.K., Brookes, R., Raymond, B., Selkirk, P.M., Shaw, J.D., Terauds, A., Whinam, J. & McGeoch, M.A. (2019) Spatial variation in the ongoing and widespread decline of a keystone plant species. *Austral Ecology* <https://doi.org/10.1111/aec.12758>

Williams, L. K., Fergus, A., Shaw, J. D., Terauds, A., Kristiansen, P., Wilson, S. C., Godsen, J., Zeigler, K. & Sindel, B. M. (2019) Quantifying site and species factors to inform the feasibility of eradication of alien plants from Southern Ocean Islands: *Stellaria media* on Macquarie Island. *Biological Invasions* 21: 993-1005

JP Féral, E Poulin, C De Ridder, T Saucède (2019) A field guide to coastal echinoderms of the Kerguelen Islands. *Zoosymposia* 15 (1), 33-43

Forthcoming Activities

ISSA has come to end. But the research and collaborations continue to grow and have impact.

Despite ISSA coming to an end, the following activities and outputs are proposed within the next 12 months:

1. Sub-Antarctic Forum – *postponed pending COVID restrictions*. Discussion are currently underway about alternative dates and locations. SCAR Biology 2021

was an option, but it has recently been postponed to 2023. Tasmania remains the most likely location in the future, once more is known about future travel restrictions in light of COVID-19.

2. A team of ISSA members lead by Shaw and others will develop a proposal for a Program Planning Group for sub-Antarctic Science SRP. We anticipate making a presentation of the first PPG to EXCOM in 2021, and we would then hope to make a presentation to the Delegates in 2022.
3. Policy and strategy review across different sub-Antarctic nations – unlike SCAR and the Antarctic Treaty these are held by different government agencies in each country and have different objectives. Effective implementation of a circum- and integrated sub-Antarctic initiative with effective uptake will require this.
4. Published book on sub-Antarctic Futures (ed. Shaw & Chown) based on the research and engagement undertaken as part of the Subantarctic Forum and collaborative research by ISSA members.

Budget

Planned use of funds

Year (YYYY)	Purpose/Activity	Amount (in USD)	Contact Name	Contact Email
2021	Workshop to develop the PPG amongst current ISSA members	\$2000	Justine Shaw	shaw.justine@gmail.com
Total	\$2000			

Linkages

Direct support from outside organisations received for your activities

(Numbered list with values indicated if direct cash support. Please restrict in-kind support to substantive in-kind support only)

University of Otago – travel support for Gary Wilson (~\$6,000)

Committed to 4th SubAntarctic Forum (*now postponed*):

State Growth Tasmania, Australia –AUD \$30, 000

Department of Conservation, NZ – committed to sub-Ant forum AUD \$40, 000

Major collaborations your sub-group has with other SCAR groups and with organisations/groups beyond SCAR

Within SCAR

1. Antarctic Nearshore and Terrestrial Observing Systems
2. Southern Ocean Observing Systems

Outside SCAR

1. Long Term Ecological Research Program

Outreach and Capacity Building

Outreach, communication and capacity building activities

(Provide a numbered list of no more than half a page)

1. Collaboration with the Department of Premier and Cabinet, Tasmania and Department of Conservation, New Zealand in the planning and promotion of the SubAntarctic Forum proposed for July 2020 in Hobart.
2. Emergence of a new cohort of ECRs working in sub-Antarctic science through active promotion of the SubAntarctic Forum and a call for abstracts.
3. Engagement across island managers and decisions makers regarding the importance of integrated management and research for the sub-Antarctic:
 - Parks & Wildlife Services, DPIPWE, (Australia),
 - Department of Conservation (New Zealand)
 - Department of Environment Affairs and Tourism (South Africa)
 - Institut Polaire (France)
 - TAAF(France)
 - Australian Antarctic Division (Australia)
 - INACH (Chile)
4. Support and commitment to engaging in the Forum from:
 - IAATO
 - CCAMLR
 - ACAP
 - Pew Charitable Trust
 - WWF
 - ASOC
 - Arctic and Antarctic Affairs for Norway, Royal Ministry of Foreign Affairs (Norway)
 - Norsk Polarinstitut
5. Promotion of key research papers by members via social media platforms and email circulars.
6. Keynote talk at Ecological Society of Australia, Dec 2018. Presentation on the conservation science and its application to sub-Antarctic islands
7. Invited speaker to Island Arks, 2019, international conference. Presentation on Integrated science informing conservation of sub-Antarctic islands.
8. Public talks in New Zealand, Australia and South Africa.
9. Speaker series on Antarctic and the Southern Ocean to the University of the Third Age
10. Provided expert advice on invasive species eradication monitoring to Parks & Wildlife Services, DPIPWE, (Australia), Department of Conservation (New Zealand) and Department of Environment Affairs and Tourism (South Africa) regarding future of research and management of sub-Antarctic Islands – Auckland, Antipodes, Macquarie, Marion islands.

SCAR Fellowship Reviewers

Please list one or more people from your group who would be willing to serve as reviewers for the next few years, along with 1-3 keywords on their principal expertise.

First Name	Last Name	E-mail	Principal Expertise
Gary	Wilson	gary.wilson@otago.ac.nz	Paleoceanography / Paleoclimatology but broad range from time as chief scientist for the New Zealand programme and Subantarctic as well as Antarctic initiatives

Membership

Leadership

Role	First Name	Last Name	Affiliation	Country	Email	Date Started	Date Term is to End
Chair	Justine	Shaw	University of Queensland	Australia	j.shaw6@uq.edu.au	2018	2020
Co-Chair	Bettine	van Vuuren	University of Johannesburg	South Africa	bettinevv@uj.ac.za	2018	2020
Co-Chair	Gary	Wilson	University of Otago	New Zealand	gary.wilson@otago.ac.nz	2015	2020
Co-Chair	Thomas	Saucede	Universite de Bourgogne	France	Thomas.Saucede@u-bourgogne.fr	2018	2020

Other members

First Name	Last Name	Affiliation	Country	Email
Dana	Bergstrom	Australian Antarctic Division	Australia	Dana.Bergstrom@aad.gov.au
*Marius	Rossouw	University of Stellenbosch	South Africa	mariusrossouw@sun.ac.za
*Claudia	Maturana	Universidad de Chile	Chile	cmaturana.ciencias@gmail.com
Krystna	Saunders	ANSTO	Australia	krystyns@ansto.gov.au
Ian	Hogg	Polar Knowledge Canada	Canada	ian.hogg@polar.gc.ca
Bettine	van Vuuren	University of Johannesburg	South Africa	bettinevv@uj.ac.za
Craig	Cary	University of Waikato	New Zealand	caryc@waikato.ac.nz
Andrew	Lowther	Norwegian Polar Institute	Norway	Andrew.Lowther@npolar.no
Irene	Schloss	Instituto Antartico Argentino	Argentina	ischloss@dna.gov.ar
Pete	Convey	British Antarctic Survey	UK	pcon@bas.ac.uk
Aleks	Terauds	Australian Antarctic Division	Australia	Aleks.terauds@awe.gov.au

*Please identify Early Career Scientists with * in first column*

Requests to the Secretariat

None