



Science & Technology AUSTRALIA

Revision of the Australian Antarctic Science Strategic Plan

12 September 19

To the Australian Antarctic Science Council,

Thank you for the opportunity to provide feedback on the Australian Antarctic Science Strategic Plan.

Science & Technology Australia (STA) is the peak representative body for more than 77,000 scientists and technologists in Australia through our member organisations including associations and societies, research institutes, and research strategy bodies such as councils of deans.

STA supports Australia's research efforts in the Antarctic and the implementation of the new Australian Antarctic Science Council. Australia has some of the best access to the Antarctic continent which provides us with unique opportunities to maximise investment in Antarctic research and a scientific advantage over other nations conducting work in the area.

However, a number of challenges still serve as barriers to effective research in Antarctica.

A lack of forward planning is putting the success of our work in the Antarctic at risk. As the Australian Antarctic Science Program Governance Review¹ indicated, improvements to planning processes for expedition logistics and vital infrastructure, as well as mechanisms to support enhanced collaboration between research bodies, will address some of the existing inefficiencies.

STA has four recommendations for consideration in the revision of the Australian Antarctic Science Strategic Plan:

1. The Plan should include a long-term plan for expeditions;
2. The Plan should include a long-term infrastructure development and maintenance plan;
3. The thematic structure be reconsidered to allow for a more integrated approach to Antarctic Research;
4. Theme 4 should be updated to include research that falls within Australia's National Science Priorities or is funded through the National Competitive Grants Program; and
5. The Plan should emphasise the importance of sustainable and environmentally aware practices, treating Antarctica as a pristine research endeavour as the Antarctic Treaty states.

Kind regards,



¹ ["Australian Antarctic Science Program Government Review"](#) Drew Clarke, 2017

Dr Sue Barrell
Vice President, STA

Kylie Walker
Chief Executive Officer, STA

Introduction

Australia's proximity to the Antarctic provides us with unique strategic and research advantages that other nations are unable to utilise. This has empowered Australia to be world leaders in Antarctic research, behind only the UK and the US².

In considering our capacity to undertake research in the Antarctic, it is useful to take the same perspective as for national research infrastructure. That is to say, access to expeditions and research time is restricted only by the investment made in specialised staff and expert support.

As is the case for other major research infrastructure, to secure ongoing access and capability it is important to ensure long-term investment in both the capital infrastructure and maintenance and formulate a plan to provide logistical support for researchers. STA also emphasises the importance of areas of research excellence being able to access logistical support regardless of their relationship to the National Research and Science Priorities.

Timing and long-term planning of expeditions

As outlined in the Australian Antarctic Science Program Governance Review, clarity and long-term planning are required to determine what scientific research is being and should be conducted in Antarctica and which research sites are and should be targeted for expedition³. Currently, researchers are unable to apply for funding grants in a timely manner as it is not possible to determine in advance where they might be able to travel if they are successful in winning federal support for their research. This uncertainty also holds back the potential to develop international partnerships and business collaborations, which hampers Australia's full potential to lead, given the wide range of stakeholders involved in research in Antarctica.

In preparing this submission STA consulted with Antarctic researchers who reported difficulties in obtaining funding for projects given the uncertainty around future expeditions. The time it takes to obtain funding, particularly if it involves grant assessments by research funding bodies such as the Australia Research Council (ARC), can be exclusionary. This also makes it extremely difficult to ensure that funding and permissions are sought in time from the Australian Antarctic Division (AAD), which controls the research expeditions to the Antarctic.

STA has every expectation that expeditions can and will change depending on changing weather patterns and the logistical support available from the AAD, but

² ["Australian Antarctic Science Program Government Review"](#) Drew Clarke, 2017

³ ["Australian Antarctic Science Program Government Review"](#) Drew Clarke, 2017

a long-term schedule of research expeditions would likely limit disruptions. It will also ensure that research funding granted by bodies like the ARC is invested in the most efficient and effective manner possible.

STA recommends: A long-term plan for expeditions be developed as part of the Australian Antarctic Science Strategic Plan

Long-Term Research Infrastructure

The Antarctic is a difficult environment in which to establish and maintain research infrastructure – this includes equipment at each of the research sites and expedition infrastructure to move researchers in and out of the Antarctic. The extreme conditions present in the Antarctic mean that the risk of unplanned maintenance is much higher.

It's important that this maintenance is prioritised. When it is not performed in a timely manner researchers, workers and expeditions are put at risk, and public investments are therefore also at risk.

A long-term expedition plan was recommended and accepted as part of the Australian Antarctic Science Program Governance Review and a long-term maintenance plan should be part of this strategy⁴. Given the harsh conditions experienced in the Antarctic there is a higher likelihood of unplanned maintenance being required to research infrastructure. With this in mind it is also important that any long-term maintenance plan should include clear contingency planning and allocation of resources for unforeseen emergency repairs.

The National Collaborative Research Infrastructure Scheme, which now includes a 10-year planning period with guaranteed funding for four years, was well received by the research sector⁵. A similar approach should be taken in the Antarctic to ensure the same stability of funding.

STA recommends: The inclusion of a long-term infrastructure development and maintenance plan as part of the Australian Antarctic Science Strategic Plan

Thematic research areas

Unfortunately, the vast potential for research in the Antarctic means that it is near impossible to fund all of the worthwhile endeavours that Australian researchers propose to pursue. It is therefore expected that some level of prioritisation and strategic thinking is applied to the scientific direction of the

⁴ [“Australian Antarctic Science Program Governance Review: Australian Government Response”](#) Department of the Environment and Energy, 2017

⁵ [“Research Infrastructure Investment Plan”](#) Department of Education, 2018

Australian Antarctic Science Strategic Plan. STA is concerned however that the current thematic structure and the streams within this structure are too constrictive in their design and functionality. The interplay that exists between the Antarctic continent, the Southern Ocean, and Australia's climate points to significant national benefit being derived from research undertakings being considered in the context of this bigger picture. While a thematic approach may still be useful to prioritise research, there needs to be better connectivity between the themes and streams. The United Nations Decade of Ocean Science for Sustainable Development Roadmap (section 2.5.1) provides an example of how priority areas can be integrated to provide a holistic approach to ocean research and should be considered when considering the thematic approach of the Australian Antarctic Science Strategy Plan⁶.

STA recommends: The thematic structure be reconsidered to allow for a more integrated approach to Antarctic Research.

STA is also specifically concerned, that the proposed thematic structure may serve to restrict high-quality research outside of the themes and in areas not covered by the National Research Priorities. Even though theme 4 allows for research that falls within the national research priorities, it does not cover research that is funded through national grant programs such as the ARC. This could be problematic and cause unintended restriction on promising and important lines of research. Flexibility should be built into the thematic structure to address this potential risk and allow the ARC and AAD to work to ensure their funding and programs complement one another, rather than providing partial funding for research that then cannot go ahead.

Recommendation 3.1 from the Australian Antarctic Science Program Governance Review suggested that the ARC be used to review what science is awarded funding and support⁷. This recommendation may help prevent the issue of publicly funded research not falling within any of the themes and unable to garner logistical support, however, a more robust solution is to expand Theme four to include any research supported through the National Competitive Grants Program. This will allow for a balance between national priorities and research excellence to be achieved.

STA recommends: Theme 4 is updated to include research that falls within Australia's National Research Priorities or is funded through one of the National Competitive Grants Programs.

⁶ ["Revised roadmap for the UN decade of ocean science for sustainable development"](#)
Intergovernmental Oceanographic Commission (of UNESCO), 2018

⁷ ["Australian Antarctic Science Program"](#) Drew Clarke, 2017

The importance of keeping the Antarctic pristine and adhering to the Antarctic Treaty

The Antarctic treaty is an essential consideration for any future plan for the Antarctic and Australia's scientific endeavours there⁸. While the treaty prevents mineral extraction and military asset development on the continent, STA is concerned about the capacity for dual use technologies to be used in the Antarctic that may violate this treaty.

A recent briefing by the Department of Defence on the development of Antarctica has raised concerns about plan to install military infrastructure on the continent⁹. A potential example provided was the installation of dual-use infrastructure such as satellite navigation. STA is concerned that dual-use research technologies may be used as a way to install military infrastructure and potentially mineral extraction infrastructure that bypasses the Antarctic Treaty and the environmental protocols¹⁰.

As a key player in the management of Antarctica, and as a nation that receives great scientific benefits due to our proximity to the southern continent, it is in our interests to promote the tenets of the Antarctic Treaty and encourage sustainable and environmentally aware management of the Antarctic continent. Any Plan should include provisions for this, as it is an extremely important component of our diplomatic and scientific success in Antarctica.

STA recommends: The Plan should emphasise the importance of sustainable and environmentally aware practices, treating Antarctica as a pristine research endeavour as the Antarctic Treaty states.

⁸ [“The Antarctic Treaty”](#) Secretariat of the Antarctic Treaty, Accessed August 2019

⁹ [“Defence wants to roll out military tech in Antarctica despite treaty ban on military activity”](#) ABC News, 2019

¹⁰ [“Protocol on Environmental Protection to the Antarctic Treaty”](#) Australian Antarctic Division, 2019