TURNING ANTARCTIC SCIENCE INTO POLICY

Issue 13 of the *Australian Antarctic Magazine* features articles on an important and increasingly topical issue for the Australian Antarctic Division and Antarctic researchers generally: directing the results of scientific research in Antarctica into practical and relevant policy measures and, where appropriate, using policy to direct research.

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The Montreal Protocol, which phased out the use of ozone-depleting substances, is a dramatic example of research guiding policy. Ozone and atmospheric research continues today at Australia's Antarctic stations.

As the articles in this issue reveal, there are many connections between Antarctic science and policy and the Australian Antarctic Division is currently focusing on the quality of these interactions. Antarctic research is expensive and, as a publicly funded organisation we must ensure that the research we support is effective and delivers maximum benefit to those that fund us, the Australian public, and the Antarctic community. Our research must be cost-effective, relevant and inform public policy.

Antarctic scientists have been describing the physical world of Antarctica for over a century. They have worked with colleagues in temperate and tropical regions to build sophisticated models of the interactions between different components of the global physical environment. They have also recorded changes over time including, as we now well know, climate change.

While the evidence that human activities are changing the world's climate is convincing, significant changes in human behaviour will be best achieved when dialogue between policy-makers and scientists leads to coherent and effective responses based on the best available science. Governments around the world are now responding to the science presented to them, and Antarctic scientists can be proud of their direct link into policy-makers' understanding of climate issues (see page 6).

Climate science is not the only area of Antarctic research to have resonated with policy makers. Over 20 years ago, a dramatic example of research guiding policy was the 1985 report by British Antarctic scientists of the 'ozone hole'. This research led directly to the negotiation in 1987 of the Montreal Protocol, which provided internationally agreed arrangements to phase out the production of chloroflurocarbons and other ozone depleting substances (see page 15).

Research into the Southern Ocean marine environment also directly informs policy-making. For example, the scientific assessments of krill and fish stocks form the basis for the Commission for the Conservation of Antarctic Marine Living Resources to establish precautionary, sustainable catch limits for Southern Ocean fisheries. Research on seabirds has also lead to the development of new designs and practices to minimise the incidental catch of seabirds during fishing operations – one of the most significant conservation achievements in recent years (see page 2). In addition toxicology research helps decision-making on waste management at Antarctic stations, and the clean-up of abandoned sites.

There will always be more research demands and opportunities than we will be able to support, so one of our great challenges is to prioritise Antarctic research, taking into account its relevance to policy, its quality, and our ability to deliver research outcomes in the difficult Antarctic operating environment.

The issues that arise in trying to prioritise science are not new, but in the process of doing so it is important to understand the distinction between research that is unambiguously driven by immediate policy requirements, the desire to conduct basic research in Antarctica (continuing to describe the natural world through a raft of disciplines), and opportunities for serendipitous discovery that may turn up critical information.

There are strong arguments for maintaining the capacity for simple observations - the discovery of ozone depletion occurred by analysing routine measurements and observing how they changed over time. And policy users need the capacity to direct research into areas that could be regarded as mundane, but which could be critical to environmental decision-making by, for example, providing monitoring data on key environmental indicators that inform human impact management decisions, and the assessment of the effectiveness of those decisions. Antarctic science serves multiple purposes and getting the balance right is the key. Ultimately, publicly funded research, such as that conducted by the Australian Antarctic Division, must meet the policy requirements of the Government of the day.

This issue of the *Australian Antarctic Magazine* provides plenty of food for thought on these issues, as well as an insight into some of our other research and outreach activities, including new projects for the Australian Centre for Applied Marine Mammal Science, and the activities of some very busy Australian Antarctic Arts Fellows.

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