

Coming in from the cold

Science in the Arctic cries out for better coordination — perhaps modelled on what happens in Antarctica.

It is abundantly clear that the Arctic ice-cap, land and ocean play an important role in the climate dynamics of our entire planet. The region has long been one of intense interest to ecologists, atmospheric researchers, climate scientists and meteorologists. And it is now accepted that the Arctic — vaguely defined as the lands and oceans inside the Arctic Circle — is particularly vulnerable to global change.

Two forthcoming events — the G8 summit in St Petersburg, Russia, in July and next year's celebration of International Polar Year — provide vital opportunities for scientists to make the case for a more concerted, international effort to study this desolate yet fascinating region.

Sea-ice and glacier retreat, permafrost melting, carbon fluxes, vegetation changes, biodiversity and species adaptation to climate change are just some of the phenomena that make the region so interesting, and scientists are only just beginning to understand the relationships between them. Their efforts to do so can surely benefit the Sami, the Inuit and other indigenous people living in the region, whose delicate environments are under siege from pollution, ozone depletion and various human health problems. They can also help the rest of us, most obviously by contributing to our understanding of climate change.

The region's importance with regard to this issue was reiterated in the 2004 Arctic Climate Impact Assessment, a literature review that captured the frantic pace of Arctic warming over the past century and its effects on plants, animals and people. It also charted how changes there could ripple across the entire the planet (see page 146).

The assessment report, which drew considerable public attention, was the culmination of various research activities that were ignited half a century ago by the 1957–58 International Geophysical Year, which focused on polar research issues. The forthcoming International Polar Year, in 2007–08, will give polar researchers a chance to showcase their work and plan new approaches to further enhance our understanding of the Arctic.

Despite the stark findings of the 2004 climate assessment, the eight nations with territory north of the Arctic Circle — Russia, Canada, the United States, Denmark (on behalf of Greenland), Iceland,

Finland, Norway and Sweden — remain too passive in their approach to coordinating polar research. Their benign neglect has led to the gradual deterioration of parts of the network of meteorological stations in the Arctic (see page 133). Better baseline support for such monitoring would cost little, but would make a huge difference to Arctic researchers of all disciplines.

As part of its contribution to International Polar Year, Canada has allocated about Can\$90 million (US\$80 million) for this and related projects. Other countries, including the United States and Russia, have promised to improve Arctic and Antarctic monitoring. Scientists should check that these pledges are properly implemented.

By and large, scientists working in the Arctic are well connected with each other. But in contrast with Antarctica, where a 1959 international treaty obliges its signatories to collaborate in scientific research, there is no political framework for collaboration on Arctic research. The governments involved discuss regional issues through the Arctic Council, but this has no formal provision for cooperation in research.

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Contacts between Russia and the other nations with territory there improved after the end of the cold war. But many parts of Russia, which has by far the largest Arctic territory, are still not easily accessible to scientists, and there aren't enough truly international projects in the region.

Climate change will be on the agenda at the G8 summit, and the meeting provides an opportunity to improve the links between the large Arctic research communities of Russia, the United States and Canada. Leaders at the summit should commit to closer and more open collaboration on the model that has been tried and tested in the Antarctic.

Russia, which chairs the Arctic Council until the end of this year, should use its leadership to set up a council working group on pan-Arctic research that could address such issues as the availability of research permits and the maintenance of infrastructure for monitoring conditions in the region. ■

Special provision

Some research centres are more equal than others.

From a distance, it sounds like an event worth celebrating. At Westminster on 4 May, British government officials and scientists gathered to toast the Tyndall Centre for Climate Change Research. In its first five years, the Norwich-based centre has brought together social and natural scientists and produced

internationally respected work on the options that exist for responding to climate change. The gathering marked the award of another three years of support for the centre.

But behind the scenes, things aren't quite as rosy as they appear. One of Britain's more successful interdisciplinary research centres, the Tyndall centre is in fact facing a cut of some 15% in the real value of its income. Its research programmes will be reduced in scale and its PhD studentship programme abandoned. It also faces an uncertain future when current funding expires in 2009.

The Tyndall centre is a victim of two sets of circumstances that