

# Looking polewards

International Polar Year is drawing attention to the poles. But if more people are entering this pristine environment as a result, any negative impacts must be justified with commensurate benefits.

March 2008 marks the middle of the fourth International Polar Year (IPY) that, somewhat confusingly, spans the two-year period from 1 March 2007 to 1 March 2009. The event is embedded in a long tradition starting with the first IPY in 1882–1983. Since then, International Polar/Geophysical Years have recurred at 25 or 50 year intervals.

Each IPY took place in its own distinct setting of the world stage, as discussed in the Feature on page 143. The first IPY was an international scientific undertaking whose sheer scale of collaboration stood out from the scientific scene of its time. The second and third IPYs instilled hope and collaboration in a world shaken by the Great Depression in the early 1930s and at the height of the Cold War in the late 1950s, respectively.

At this time of the fourth IPY, international research collaborations on a large scale are well established. In fact, many of the 240 research projects endorsed by the International Polar Year would probably have been pursued with or without it.

Yet there is a need for a polar focus. Researchers of the Arctic and Antarctic regions face a new challenge in the twenty-first century: changing climatic conditions lend urgency to the problem of understanding the dynamics of polar ice. Directing the attention of

thousands of scientists to this problem is an important undertaking.

The fourth IPY also incorporates a large outreach programme, including a travelling roadshow (*Nature Geosci.* **1**, 5–6; 2008), children's books (page 147), blogs and numerous other activities. This is intended to raise public interest in the polar regions and advance general understanding of their vulnerability.

Of course, public exposure also has its downsides. The number of tourists that land on Antarctica each year has soared from under 7,000 in 1992–1993 to almost 30,000 in the 2006–2007 season. These tourists take home with them the concern for Antarctica's beauty, but despite regulation under the Antarctic treaty, negative environmental impacts of such a throughflow of visitors are inevitable (for example, *Science* **319**, 409; 2008).

Polar scientists are also making themselves more at home in Antarctica, as new, more comfortable buildings seem to shoot up at various places on the continent. A new US station at the geographic South Pole has just been completed; UK scientists are looking forward to moving into Halley VI, a replacement of the previous station on the Brunt Ice Shelf east of the Antarctic Peninsula; the third German Neumayer station, to be placed on the

Ekström Ice Shelf in the northeastern Weddell Sea, is due for completion in spring 2009; a new Belgian station is to be erected in the Sør Rondane Mountains of Dronning Maud Land; and an Indian base is planned for the Larsemann Hills in East Antarctica.

Most of these stations are replacing previous buildings that became unusable, or sank in accumulating snow, and the emphasis of the new designs is on environmental protection and durability in a challenging climate. The Belgian (summer only) station is projected to rely primarily on sustainable energy generation; both the British and German stations are designed on legs that can step on top of snow as it accumulates to prevent the fate of the previous German station that is now buried under 12 m of ice; and the British station is transportable, should the ice shelf that it sits on threaten to break off into the ocean.

Surprises and questions regarding the stability and dynamics of glaciers and ice sheets keep emerging from ongoing research. Scientific projects as well as monitoring programmes at both poles are therefore essential and must be continued and expanded, even though scientists will leave an ecological footprint. But the growing industry of polar tourism ought to be regulated by more than its outrageous price tags.



Home away from home. Artist's impression of the new British station Halley VI. Eight individual modules are mounted on hydraulic legs on skis to facilitate relocation.