

Taking the Antarctic Arctic Polar Pulse

The International Polar Year (IPY) provides a unique opportunity to study the health of polar expeditioners and other temporary resident populations in the extreme Antarctic and Arctic environments.

Taking the Antarctic Arctic Polar Pulse will be led by Australian Antarctic Division Chief Medical Officer, Dr Jeff Ayton. The project will develop an anonymous 'snapshot' database of health events occurring in the Antarctic and Arctic during the IPY using data collected through new and existing

projects run by some 18 international polar research programmes.

The data will be used to investigate four key questions:

- What physiological, psycho-social and clinical changes occur in humans temporarily resident and interacting with the Antarctic environment?
- Are these changes comparable to those experienced in temporarily resident non-indigenous Arctic populations exposed to difficult environments?
- How can we best prevent and treat any adverse effects of these changes?
- How can this understanding enable us to improve the wellbeing of humans in polar regions, in space, in other extreme environments, and more generally?

Answers to these questions will also provide a greater understanding of the biophysical, clinical, cultural, social and behavioural processes that shape the sustainability of circumpolar societies.

The data will be gathered through a range of sub-projects, many of which have been underway for some time. These projects will benefit greatly by increased participation and cross-analysis of data across different countries, disciplines and at both poles. The projects include:

- *Nutrition and Body Composition in the Arctic*, led by Italy, which aims to anticipate malnutrition that could have physiological and psychological effects;
- *Dome A East Antarctica Psychology and Physiology Studies*, led by China, is investigating seasonal changes in mood and hormonal profiles;
- A French-Italian-led project looking at coping mechanisms, group dynamics, and psychosocial adaptation to isolation and confinement in a multicultural group;
- *Seasonal Activity Variations – Polar Regions*, led by New Zealand, looking at seasonal psychological patterns and activity levels of temporary residents in the Arctic and Antarctic.

The data will be collected from individuals on stations, ships, in field camps and on traverses. The database will provide a baseline reference for assessing the health of communities in extreme environments in the future.

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Information Services, AAD



MATT LOW

Taking the Antarctic Arctic Polar Pulse will study human health in extreme polar environments.

Aliens in Antarctica

As human travel continues to increase, the impact of the non-native (alien) species that they often accidentally carry with them, on ecosystems across the globe, is becoming one of the major environmental challenges of the 21st Century. The impact of these alien species ranges from minor transient introductions to substantial loss of biodiversity and ecosystem changes. Antarctica is not immune to the risks of invasive species, but impacts have so far been restricted to the milder sub-Antarctic islands. As parts of the continent warm, however, it will become easier for non-native species to gain a foothold. It is

also now easier for humans (and their unintended living cargo) to travel to and around the Antarctic than ever before, and many more people are doing so. Focusing on the annual migration of scientists and tourists to the Antarctic in 2007, the Aliens in Antarctica project, led by Australian Antarctic Division scientist Dr Dana Bergstrom, will take samples from clothing and equipment, to provide a unique snapshot of the number of spores, seeds, invertebrates and eggs transported to the continent. This will be the first time that an assessment of the extent of transfer of alien species into an entire biome has been made.



KATE KIEFER

All people travelling to the Antarctic and sub-Antarctic will have their clothing and equipment inspected for potentially invasive alien species.