INTERNATIONAL 2007 ✪ 2008
POLAR YEAR

IPY 2007-2008 is a truly global effort involving thousands of scientists, over 60 countries and six continents.

IPY partners have agreed on six key themes to shape the IPY scientific agenda:

- The Environmental Status of the Polar Regions
- Understanding Past Change and Predicting Future Change
- Links between Polar and Global Processes
- Bringing Science Frontiers to Polar Regions
- Observing the Earth and Space from the Poles
- The sustainability of Circumpolar Societies

See www.ipy.org for more details of who is involved and the exciting range of scientific activities envisaged.

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ICSU
International Council for Science

World Meteorological Organization
Weather • Climate • Water

Polar Science - Global Impact

A programme of the

International Council for Science

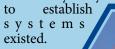and the

World Meteorological Organization

www.ipy.org

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The IPY will yield new knowledge in key areas, including:

People

Arctic communities are resilient but changes in climatic and social conditions pose great challenges to their way of life. Studies on the sustainability of traditional cultures will be important.

Earth

Over Earth's history, plate tectonics have moved continents and created oceans and mountain ranges, impacting polar and global climate and human activities. Understanding the history of change is the key to predicting future change.

Land

Polar environments are under threat from climate change and human-induced risks such as pollution. It is important to monitor changes and to understand ecosystem adaptation to these.

Ocean

Major changes in ocean circulation, for example to the Gulf Stream, could occur with increased freshwater input from melting ice sheets and other climate shifts.

New ways of getting data, including new satellite systems and remote-control vehicles, will help track changes in ocean currents and in marine ecosystems.

Ice

Melting of polar ice sheets will contribute significantly to sea level rise. Satellite measurements and computer models are needed to better estimate future change.

Decreasing sea ice, especially in the Arctic which could be ice-free in summer within 100 years, will significantly affect global climate and polar ecosystems.

Ice samples from kilometres deep in the polar ice sheets reveal hundreds of thousands of years climate history.

Atmosphere

Better understanding of the role of polar regions in global climate and weather is essential for improved weather forecasting and for understanding climate change.

Ongoing polar measurements at the surface and from satellites are essential to monitor ozone depletion and pollution transport.

Space

Charged particles from the sun interact with the upper atmosphere in polar regions causing "space weather" that affects our health, communications and electric power systems.

The clarity of the polar atmosphere provides an ideal window for deep space astronomical observation.

Education

IPY will inspire future generations of polar scientists and bring polar issues to the forefront at all levels of education.

The International Polar Year (IPY) 2007-2008 is an interdisciplinary and internationally coordinated research campaign, ushering in a new era of polar science.

The IPY will mark a quantum leap in understanding the polar regions and their profound significance for the Earth's climate, ecosystems and societies.

It will inspire future generations of natural and social scientists, motivate technologists, and engage the wider international public.

IPY will develop major scientific legacies and extend an international collaborative spirit in research. At a time of significant planetary change, IPY offers scientists the opportunity to go where they could not go before, to col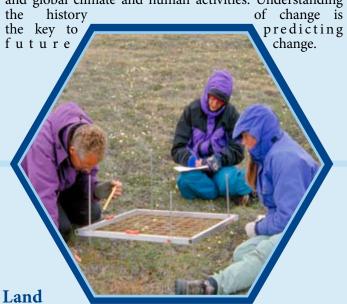lect data in ways they have not done, and to establish monitoring systems where none existed.