A Vision for International Polar Year 2007-2008

www.us-ipy.org
IPY Concept

- IPY 2007-2008 will be an intense, internationally coordinated campaign of polar observations, research and analysis that will further our understanding of physical and social processes in polar regions, examine their globally-connected role in the climate system, and establish research infrastructure for the future.

- IPY will galvanize new and innovative observations and research while building on and enhancing existing relevant initiatives.

- Timeframe: 1 March 2007 – 1 March 2009
Why International?

- The polar regions – both North and South – are inherently international terrain
- What happens in the polar regions affects ALL nations around the globe
- The science challenges exceed the capability of any one nation
- A coordinated approach maximizes outcomes
- International collaboration shares the benefits and builds a legacy of common understanding
Why Polar?

- Environmental changes in polar regions are unprecedented and vivid
  - Arctic sea ice cover decreasing in extent
  - Some Antarctic ice shelves are retreating and thinning
  - Glaciers around globe are retreating
  - Ecosystems changing (earlier bloom times)
  - Changes in permafrost

- The polar regions play key roles in global processes
- The ice is a “library” of information about the past
Why a Year?

- Intensive burst of effort will accelerate progress and initiate activities that couldn’t be done otherwise
- An opportunity to lay groundwork for sustained assessments of environmental change and variability
- Spread over two years to allow observations at both polar regions across seasons
- More than “champagne and fireworks” - enhanced infrastructure and observing systems will provide improved foundation for ongoing science
Why 2007-2008?

- Anniversary of past IPYs and IGY
- Pressing need to understand change in the polar regions
- 50 year’s worth of advances in technology and logistics provide open many doors
History of the “International Year” Concept

- **1882-1883**: 1\(^{\text{st}}\) International Polar Year
  11 nations, first coordinated international science

- **1932-1933**: 2\(^{\text{nd}}\) International Polar Year
  40 nations - meteorology, magnetism, radio science

- **1957-1958**: International Geophysical Year
  67 nations - geosciences and applying WWII technologies

- **2007-2008**: 3\(^{\text{rd}}\) International Polar Year
  50 nations - broad interdisciplinary focus, emphasis on environmental change. Includes social science, health, human dimensions of change.
Evolution of IPY 2007-2008

- Early, scattered discussions (2002-2003)
  - Encourages community and US agency involvement
  - Outreach - interagency IPY implementation workshop, briefings, IPY e-newsgram, IPY website, conferences and talks
  - Invites nations to participate and outlines IPY concept
  - Delivers report “A Framework for IPY” to ICSU and gains ICSU endorsement. Gains WMO agreement to host jointly.
- ICSU-WMO form Joint Committee (2005)
  - Official IPY Programme Office & Director, Cambridge, England
  - Expressions of Interest process
  - Joint Committee meetings and Open Consultative Forums
  - Coordination with international programs
  - Forms subgroups to work on education/outreach, data management, other issues
- ICSU-WMO Joint Committee continues work (2006-2009)
US “Vision Report”

Free PDF copies of the Vision report and Workshop report are available at:

www.us-ipy.org or http://www.nap.edu
US-Identified Broad Themes

- Assessing Large-Scale Environmental Change in the Polar Regions
- Scientific Exploration of the Polar Regions
- Observing the Polar Regions
- Understanding Human-Environment Dynamics
- Creating New Connections Between Science and the Public
ICSU Framework for IPY

International Council for Science (ICSU)
“A Framework for IPY” Report includes:

- Research themes
- Observational initiatives
- Data management
- Education, outreach and communication
- Organizational structure
- Suggested implementation process
- IPY Criteria (“what makes something part of IPY?”)
ICSU Research Themes

- **Status**: determine the present environmental status of the polar regions
- **Change**: quantify, and understand, past and present natural environmental and social change and project future change
- **Global Linkages**: advance understanding on all scales of the links and interactions between polar regions and the global system
- **New Frontiers**: investigate the frontiers of science in the polar regions
- **Vantage Point**: use the unique vantage point of poles to enhance observations (from interior to Sun)
- **Human Dimensions**: investigate cultural, historical, and social processes that shape circumpolar societies
What Makes Something Part of IPY?

1. Makes significant advances within one or more IPY themes
2. Involves at least one pole and takes place in timeframe
3. Contributes to international collaboration
4. A viable management plan and organisational structure
5. A viable approach for securing funding
6. A viable plan for securing appropriate logistical support
7. Agrees to principles of IPY data management and proposes a viable data management plan
8. A viable plan or approach for education, outreach and communication activities
9. Foster the next generation of polar researchers
10. Provides opportunities for lasting legacies
11. Builds on existing plans and initiatives (or doesn’t conflict!)
12. Has interdisciplinary elements
The National Academies
Advisors to the Nation on Science, Engineering, and Medicine

Preliminary IPY Plan

Note: Based on initial assessments, subject to change and improvement, 86 proposals.
Plates & Gates

Terrestrial Soils & Permafrost

Permafrost features on Kvadehuksette (Svalbard), Ólafur Ingólfsson

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The diagram outlines various topics related to Earth, Land, People, and Ocean. It highlights areas such as Terrestrial Soils & Permafrost, Tracing Ocean Circulation, and outreach & education. The photo credits Jeffrey Kietzmann, US Antarctic Program, NSF.
Resiliency, sustainability of human societies

Terrestrial Soils & Permafrost

Ecosystems

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IPY Success Requires Broad Participation

There is no one “lead” on IPY, but many equally important parts

- Scientists and Engineers
- Universities
- Government Decision Makers
- Agencies
- US National Committee
- Other national committees
- ICSU-WMO Joint Committee
- IPY Programme Office, Cambridge England

- Communities
- Foundations
- Educators
- Media
- Private sector
- NGOs
- IPY hub-offices (Russia)
What Can You Do?

- Find ways to get wide range of participants engaged
- Work with colleagues in science, agencies, communities, media and education to plan activities, increase awareness and move toward implementation
- Form international partnerships and help nurture national and international funding sources and logistics coordination
- Follow guidance from IPY Programme Office & ICSU-WMO Joint Committee at www.ipy.org
- Check www.us-ipy.org or www.us-ipy.gov for information
- Commit to making something happen!
For More Information

USNC Site: www.us-ipy.org
US Gov’t Site: www.us-ipy.gov
International Site: www.ipy.org

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