

Canadian IPY 2007-2008 Data Policy

Introduction

The International Polar Year (IPY) 2007-2008 is an intense, interdisciplinary, internationally coordinated campaign of research and observations that will deepen understanding of polar processes and their global linkages. This is producing large and diverse volumes of research data and information that must be effectively managed to ensure the greatest benefit to humanity for generations to come.

Members of IPY projects that have been endorsed by the International Joint Committee for IPY have agreed to abide by the International IPY Data Policy (available at http://www.ipy.org/index.php?ipy/detail/ipy_data_policy/). The Canadian IPY 2007-2008 Data Policy aims to expand upon the policy objectives of the International IPY Data Policy by providing more explicit guidance in the Canadian context. As well, the Canadian IPY 2007-2008 Data Policy provides a framework for data generated through Canadian IPY research to be handled in a consistent manner.

This policy is intended to be compatible with the data principles of the sponsoring bodies: International Council for Science (ICSU) and the World Meteorological Organisation (WMO). This policy is consistent with relevant Canadian Federal policies including the “*Policy on the Management of Government Information*” (http://www.tbs-sct.gc.ca/pubs_pol/ciopubs/TB_GIH/mgih-grdg1_e.asp#eff)

The Canadian IPY 2007-2008 Data Policy applies to all Canadian IPY projects funded through the Government of Canada Program for IPY and compliance with the policy is a condition of funding.

In order to be considered as officially part of the IPY program, each Project must be consistent with the Canadian IPY 2007-2008 Data Policy, including submission of metadata and data according to an agreed timetable, and must include a data management plan.

The Government of Canada Program for IPY is the author of the Canadian IPY 2007-2008 Data Policy. Questions about the Policy and its implementation should be directed to the Data Management Coordinator of the IPY Federal Program Office (api-ipy@ainc-inac.gc.ca).

Objective

The purpose of the Canadian IPY Data Policy is to ensure that data and information generated by Canadian IPY research is managed responsibly. *The Framework for the International Polar Year 2007-2008* produced by the ICSU IPY 2007-2008 Planning Group notes: “The overarching objective of IPY 2007-2008 data management is to ensure the security, accessibility and free exchange of relevant data that both support current research and leave a lasting legacy.” (ICSU 2004a, p.19). The Canadian IPY Data Policy provides guidance for IPY project investigators to meet this data management objective. In support of the general objectives of IPY this data policy:

- Applies to all data collected during IPY regardless of scientific discipline;
- Fosters cross-discipline cooperation and equitable data sharing;
- Requires the appropriate and secure preservation of data and physical samples;
- Encourages the recognition of data providers as valuable contributors to the advancement of science; and,
- Ensures data, information and publications generated through IPY research are available for future generations.

Data Definition

IPY data are those data, relevant data products, and physical samples generated during the IPY timeframe by the specific projects endorsed by the ICSU/WMO Joint Committee as IPY projects. This policy applies specifically to those data and in particular to those data generated by IPY projects in Canada or funded through Canadian sources. It should be recognized, however, that IPY researchers may/will use IPY-related data from outside sources, such as from existing operational data streams and historical sources. These data are outside of the jurisdiction of this policy, but the principles of preservation, access and exchange are encouraged to be applied in those cases.

Data Availability and Exchange

In accordance with

- the Twelfth WMO Congress, Resolution 40 (Cg-XII, 1995);
- the Thirteenth WMO Congress, Resolution 25 (Cg XIII, 1999);
- the ICSU 1996 General Assembly Resolution;
- the ICSU Assessment on Scientific Data and Information (ICSU 2004b);
- Article III-1c from the Antarctic Treaty;
- the Intergovernmental Oceanographic Commission Data Exchange Policy; and,
- the Federal Policy on the Management of Government Information;

and in order to maximize the benefit of data gathered under the auspices of the IPY, the Government of Canada Program for IPY and the Canadian IPY National Committee require that IPY data, including operational data delivered in real time, are made available fully, freely, openly, and on the shortest feasible timescale. The timescale of availability would be negotiated by the IPY Federal Program Office on a case by case basis.

The only exceptions to this policy of full, free, and open access are:

- where human subjects are involved, privacy and confidentiality must be protected, and access to data and/or physical samples will be determined by the owner of the data or samples, in accordance with agreements signed by the subjects;
- where local and traditional knowledge is concerned, rights of the knowledge holders shall not be compromised;
- where data release may cause harm, specific aspects of the data may need to be kept protected (for example, locations of nests of endangered birds or locations of sacred sites); and,
- where pre-existing data are subject to access restrictions.

ICSU (2004b) defines “Full and open access” as equitable, non-discriminatory access to all data preferably free of cost, although some reasonable cost-recovery for distribution of the data is acceptable. WMO Resolution 40 uses the term “Free and unrestricted” and defines this as non-discriminatory and without charge. “Without charge”, in the context of this resolution, means a charge that is no more than the cost of reproduction and delivery and without charge for the data and products themselves.

Metadata are essential to the discovery, access, and effective use of data. All IPY data must be accompanied by a full set of metadata that completely document and describe the data. In accordance with the ISO standard Reference Model for an Open Archival Information System (OAIS) (CCSDS 2002), complete metadata may be defined as all the information necessary for data to be independently understood by users and to ensure proper stewardship of the data.

Regardless of any data access restrictions or delays in delivery of the data itself, all IPY projects funded by the Government of Canada Program for IPY must promptly provide basic descriptive metadata of collected data in an internationally recognized, standard format to an approved catalogue or registry (to be provided by the IPY Federal Program Office).

Data Preservation

Recognizing that the true value of scientific data is often realized long after they have been collected, and to ensure the lasting legacy of IPY, it is essential to ensure long-term preservation and sustained access to IPY data. All Canadian IPY data must be archived in their simplest, useful, machine readable form and be accompanied by a complete metadata description. Associated metadata

records must include descriptions of Quality control procedures and/or assessment(s) that have been applied to the data.

The IPY Federal Program Office will consult with project investigators and relevant long-term archives and data centres to negotiate the preservation and access rights of the data.

Canadian IPY projects must make arrangements with long-term archives recommended by the Government of Canada Program for IPY to ensure the preservation of their data. Data preservation and access are criteria for funding through the Government of Canada Program for IPY and will need to be considered while data collection and management plans are being developed. The IPY Federal Program Office will work with the relevant operational centres, data centres, and other organizations to ensure the preservation of relevant IPY related data.

Physical samples collected during IPY represent a valuable resource that could provide scientific value decades into the future and as such should be archived appropriately. In consultation with the IPY Federal Program Office, suitable facilities will be identified and agreements sought for their long-term storage and access.

In all cases where human or cultural data or samples are collected, the appropriate provisions, policies and Federal/Territorial legislation will apply. Human and cultural data and samples should be preserved with the appropriate ethical considerations, with respect to custody and to the confidentiality and anonymity of participants. Research Ethics Board decisions, where applicable, and signed consent agreements of the participants must be honoured when preserving new data or samples, as well as when preserving those that were previously archived or that have been transferred between agencies or data centres.

Data Acknowledgment

To recognize the valuable role of data providers (and scientists who collect or prepare data) and to facilitate repeatability of IPY experiments in keeping with the scientific method, users of IPY data are strongly encouraged to formally acknowledge data authors (contributors) and sources. Where possible, this acknowledgment should take the form of a formal citation, such as when citing a book or journal article. Journals should require the formal citation of data used in articles they publish. Where formal citation is not possible, such as with some medical and social science data, ethical policies for data collection and data use are encouraged, building upon existing models such as Article 8(j) of the 1992 Convention on Biological Diversity.

Publications

An important legacy of IPY will be the publications documenting the planning, results and achievements of IPY. To disseminate and preserve this legacy, the authors of all publications that result from the Canadian IPY program must

submit citations for those publications to the Canadian IPY Publications Database (astis@ucalgary.ca). The Canadian IPY Publications Database will also attempt to cite all publications about the Canadian IPY program written by authors outside the program and all publications about northern Canada that result from the IPY programs of other countries, and would therefore welcome the submission of citations for all such publications. All citations in the Canadian IPY Publications Database will automatically be included in the worldwide IPY Publications Database. Further details are available on the Canadian IPY Publications Database website (<http://www.aina.ucalgary.ca/ipy>).

Where possible, the complete text of the publication(s) should be preserved in an appropriate archive. Project investigators must make every effort to ensure that their peer reviewed journal publications are freely available and the use of an appropriate open archives initiative-compliant digital archive (if one exists) is encouraged. A publisher-imposed embargo on open accessibility of no more than 6 months is acceptable.

Responsibilities

Project Investigators

All IPY project investigators are responsible for:

- applying the data management principles, standards and practices outlined in this policy to their respective research data; and,
- identifying data management requirements and issues to the Canadian IPY Data Management Subcommittee through the Canadian IPY Federal Program Office.

Canadian IPY Data Management Subcommittee

The Canadian IPY Data Management Subcommittee has specific roles and responsibilities related to the provision of advice for the management of data and information collected as part of IPY including:

- advising the ADM Committee on IPY and the Canadian National Committee / IPY Secretariat on activities required to implement this policy;
- assisting project investigators and data archives/centres to collaborate effectively; and,

Canadian IPY Federal Program Office

The Canadian IPY Federal Program Office is the administrative body responsible for the implementation of the Government of Canada Program for IPY. As such, it is responsible for:

- supporting and coordinating the activities of the Canadian IPY Data Management Subcommittee;
- providing interpretive advice on this policy;
- developing and promoting a Data Management Plan and related initiatives which addresses the cross-cutting themes of Data Access, Archives and Governance; and,
- ensuring the distribution of materials pertaining to data management to appropriate project investigators, program managers and other interested parties.

Canadian IPY National Committee

The Canadian IPY National Committee provides coordination and advice on the development and delivery of IPY in Canada inclusive of all interested parties. In the context of data management, it is responsible for:

- promoting a culture of open data-sharing and information-sharing nationally and internationally between all participants.

ADM Committee on IPY

The ADM Committee on IPY is the decision-making body of the Government of Canada Program for IPY. Its responsibilities include:

- approving the Canadian IPY 2007-2008 Data Policy and ensuring its implementation; and
- providing overall direction for the Government of Canada Program for IPY and approval of data management initiatives.

References

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