The Arctic Council and the Arctic Data Directory

New Opportunities for Circum-Arctic Information

A proposal submitted to the

Arctic Council Senior Arctic Officials

by the

International Arctic Environmental Data Directory Council

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Background

Data and information are essential and powerful tools in the world of the 21st century. Their ongoing development and dissemination within the circum-Arctic context create a wealth of new opportunities, contribute substantively to decision making and policy development, and help define a common vision for a region of the globe that, at least until recent years, has been effectively diffracted by distance, by climate, and by competing politico-economic strategies.

The Arctic Council is a natural focal point for knowledge of the Arctic. As the body in which is manifest both unique national interests and the collective imagination that has made possible an array of new initiatives in the region, it offers the potential to establish for the Arctic and its inhabitants a special place in the global system. Through its affiliate organizations, the Council monitors the state of the arctic environment and spearheads research into marine ecosystems, flora and fauna, sustainable development, and the socio-cultural heritage of the Arctic indigenous peoples.

International Arctic Environmental Data Directory (ADD)

The ADD was established jointly by the Global Resource Information Database (GRID) and the United States Geological Survey (USGS) in 1993 to promote ready access to Arctic data and information. The current membership of the ADD parallels that of the Arctic Council. At present, this includes all Arctic countries (Canada, United States, Russia, Finland, Norway, Sweden, Denmark/Greenland, Iceland), non-Arctic states having significant research interests

in the Arctic (United Kingdom, Germany), Arctic environmental and scientific organizations (AMAP, CAFF, IASC, UNEP, SCAR), and affiliated members (IPA, IASSA). It is anticipated that several new members will be added this year; discussions are currently underway with national members (Japan, Netherlands), organizations (PAME), and affiliated members (Polar Libraries Colloquy, IPS, ICC, WWF).

Like the Council=s, the mandate of the ADD is to promote the development and dissemination of Arctic data and information, but the ADD is not itself a repository of polar information; rather, it is a co-operative network among generators and users of polar data whose goal is to promote the wider dissemination of polar information. To this end, the ADD interacts and forms working partnerships with other organizations and agencies throughout the circum-Arctic region as well as in those countries with research interests. It liaises with science project groups operating under the umbrella of the International Arctic Science Committee (IASC) and with Arctic Council working groups, several of which are members of the ADD Council.

For 1999B2001, the ADD is re-examining its mandate and its operations, so as to respond more readily to the evolving demands of the polar science community. In the past year, the ADD has:

- undertaken a review of its approach to data management to reflect better both the needs of the community and emerging information technologies;
- established an *ad hoc* group to deal specifically with the collection and management of Arctic metadata;
- worked with governmental and other agencies to improve data management tools and training;
- solicited feedback from the Arctic Council and IASC Project Groups on data priorities and requirements;
- developed strategies to strengthen the contribution of Russian environmental agencies to the ADD and provide data management training;
- established interchange agreements with the Joint Committee on Antarctic Data Management (JCADM) on polar data management issues;
- invited the participation of other countries and organizations in the ADD, including Japan, the Netherlands, IASSA, and the Inuit Circumpolar Conference; and
- prepared a draft report, *Arctic and Antarctic Data Management: The Bipolar Context*, as a strategic blueprint for further development of high-latitude data resources.

Building on Strengths

Arctic Council Web Site

As developed to date by the initial host secretariats in Canada and the United States, the Arctic Council=s web site is perhaps its most visible public face. In addition to listing official documents, background on working groups, and reference material on national members and points of contact, the site contains a variety of links to Arctic data and information. At present, the site relies on a server and technical support supplied by the host country, an arrangement which has proved workable to date; however, it is probable that the capacity of individual hosts to undertake such work will vary considerably from country to country. As well, the regular rotation of the secretariat on a roughly two-year cycle will tend to increase the possibility of transitional Adown time@, and the likelihood that incompatible file formats,

languages, domain names, URLs, and design concepts will prevent the site from achieving its full potential as a key communications and information tool.

A Long-Term Solution

Concern for the issues of consistency, stability, and a common Alook and feel@ for the Arctic Council, was raised with the ADD at its June 1998 meeting at Rovaniemi, Finland. The ADD Council agreed at the time to consult with the Arctic Council Secretariat regarding *a)* the general dissemination of Arctic information and data, and *b)* the particular requirements of the Secretariat with respect to on-line, Web-based information. Subsequent discussions with the U.S. SAO and Arctic Council Secretariat at Washington and Ottawa in 1999 indicated support for a formal proposal from the ADD to:

- host, on a permanent basis, the Council=s Web server through ADD=s GRID-Arendal secretariat (mirrored at the United States Geological Survey in Ralston, VA and/or GRID-Ottawa);
- supply information and data through ADD member organizations; and
- provide the Council with a Aready-made@ network of data and information specialists.

The proposal was forwarded to the Arctic Council Chair, and presented to the SAO Washington meeting in November 1999. Further discussion of Arctic Council/ADD collaboration is on the agenda for the Fairbanks SAO meeting in April 2000. In addition to the role noted above, the proposal suggests that the ADD continue to liaise with the Arctic Council and the International Arctic Science Committee (IASC) and work closely with the U.S. secretariat (U.S. Department of State) and incoming secretariat in Finland. The Arctic Council Secretary attended the ADD=s Ottawa meeting and will participate in the ADD=s 2000 meeting scheduled for Copenhagen in early June.

The initiative proposed by ADD, in co-operation with GRID-Arendal, has the following objectives:

- to provide a permanent site for Arctic Council Web server;
- to help build a unique identity for the Arctic Council;
- to work facilitate convergence on common initiatives (e.g., Arctic Climate Impact Assessment);
- to work with the Arctic Council on the development of Arctic information; and
- to advise the Council on important data and information management issues, as appropriate.

As indicated, the ADD is currently reviewing the metadata and information types it references and is in the process of upgrading its data management tools and information resources, with assistance from GRID-Arendal, the Canada Earth Observation Network (CEONet), the Global Change Master Directory (GCMD), and the Danish Polar Centre. The Directory has provided financial and technical assistance to member countries (Russia, Iceland). Most recently, the ADD has discussed with the World Wildlife Fund (WWF) means by which to support specific initiatives under that organization=s Arctic Programme.

The current proposal does not suggest that the ADD become a working group of the Council or assume sole responsibility for information; content and approvals would continue to rest

with the host secretariat. However, the proposal does suggest that the ADD be extended Observer status at the Council level and that a regularized reporting mechanism be put in place to ensure that Arctic Council SAOs are aware of important issues and developments relevant to the wider dissemination of Arctic data and information. In addition to hosting the Council=s Web server at GRID-Arendal, the ADD might be tasked by the Council to undertake specific data- and information-gathering activities relevant to the mandates of both organizations.

Implementation

Web Hosting Service

Support arrangements for the Arctic Council server will be negotiated between the Arctic Council host secretariat and UNEP/GRID-Arendal. The host secretariat will retain complete access and control of the website; in this sense, the host secretariat will continue to serve as Arctic Council Aweb master@. As part of its ongoing work in support of the ADD and polar information, GRID will supply at no cost a range of services (e.g., web server, connection, storage space, access to indexing and search capabilities, Web page integrity, technical support, etc.) similar to that already provided to Arctic organizations such as AMAP, CAFF, PAME, RAIPON, and ADD. GRID-Arendal specializes in advanced Geographic Information Systems (GIS), data preparation and modelling, database development, and data searching and communication via tools such as the World Wide Web. Another important aspect is networking with partner agencies and assisting co-operating institutions in capacity building and state-of-the-environment reporting.

Site Content

The ADD national and organizational representatives comprise a Aready-made@ network of data management expertise, obviating the requirement to develop new mechanisms for the co-ordination and standardization of metadata and data; in other words, there is no need to Areinvent the wheel@ with respect to polar information. Arctic Council working groups such as AMAP and CAFF have been members of the ADD since its inception; thus the ADD is cognizant of their specialized data and information requirements and will work closely with thematic data centres established in support of monitoring and assessment activities.

Given that its membership largely mirrors that of the Arctic Council, the ADD, through its Council representatives, will:

- assist the host secretariat in the preparation of national web pages and information resources;
- ensure that the Arctic Council site has a consistent and highly visible presence within the global on-line community;
- develop regional media scans on Arctic issues;
- provide links to international and bipolar data and information resources; and
- undertake data-access initiatives on specific issues of relevance to the activities of the Council.

A primary goal of the ADD is to increase direct access to research data via the Internet; to this end, consultations are underway with a number of science initiatives, including the Arctic Climate Impact Assessment (ACIA) project which is supported by the Arctic Council and

IASC.

In many respects, the ADD is ideally suited to serve as a Ameta-network@ of national polar centres having organizational linkages to existing data and information networks. The ADD is supported by the worldwide GRID network under the aegis of the United Nations Environment Programme (UNEP). The ADD=s secretariat is located at GRID-Arendal; a second Apolar@ node at GRID-Ottawa is currently being developed under the auspices of the Canada Centre for Remote Sensing.

In short, the proposed Arctic Council/ADD relationship represents a Awin-win@ situation for expanded knowledge of the polar regions.

Arctic Data Management FAQ

Are there disadvantages with the current arrangement?

At present, the Arctic Council relies on infrastructure and technical expertise supplied by the host country. The capacity of individual host organizations to undertake such work will vary considerably from country to country. Regular rotation of the Arctic Council Secretariat also increases the potential for incompatibility of formats, languages, domain names, URLs, and design; as well, there may be considerable lag time before the Council site can be uploaded and made operational. These and other issues were presented to the ADD and recognized by the Arctic Council secretariat as requiring attention.

What is the ADD?

The International Arctic Environmental Data Directory (ADD) is a co-operative network of national organizations dedicated to the wider dissemination of data and information on the circum-Arctic region. The ADD is not itself a data warehouse or repository; rather, it seeks to identify key data sources and works with appropriate organizations and agencies to facilitate access to information resources.

The ADD was created in 1993 as a joint initiative of the United Nations Environment Programme (UNEP) and the Global Resource Information Database (GRID), in co-operation with the United States Geological Survey (USGS). In 1995, the ADD was adopted as an autonomous working group under the auspices of the International Arctic Science Committee (IASC).

What are the goals of the ADD?

The mission of the ADD is to provide the user community with an efficient and up-to-date service for locating and assessing sources of arctic environmental data and information. To that end, the ADD has among its objectives:

- the establishment of working relationships with institutions that hold Arctic environmental data;
- the development of feedback mechanisms with the international Arctic science and environmental planning and management community; and
- the promotion, preservation, and use of Arctic environmental data and information.

What is UNEP/GRID-Arendal?

The United Nations Environment Programme's mission within the UN system is to provide leadership and encourage partnership in caring for the environment by inspiring, informing and enabling nations and people to improve their quality of life without compromising that of future generations.

GRID-Arendal was established in 1989 by UNEP and the Norwegian Ministry of Environment. Its goal is to support UNEP=s objectives by serving as an internationally recognized information centre that raises public awareness, and facilitates policy making and environmental action. The Arctic and Antarctic are two of GRID-Arendal=s key focal points for data and information activities.

How does the ADD serve the circum-Arctic community?

Through its national and associate representatives, the ADD consults with national and regional organizations to determine current and emerging priorities for the collection and dissemination of Arctic data and information. At the Council level, the ADD works with international groups in the Arctic and Antarctic, as well as with global data and information providers. Based on the findings of those consultations, the ADD works to provide metadata descriptions and access to such data, either by providing assistance to such groups or linking directly to data sources themselves.

How does the ADD differ from other data suppliers?

The ADD works for the overall promotion of Arctic data and information as opposed to a specific project or research objective. In addition to facilitating data linkages, the ADD promotes the development and use of metadata (data descriptions), the preservation and maintenance of datasets, and the application of data and information resources to decision making and policy development processes.

How can GRID-Arendal assist with the Arctic Council website?

Support arrangements for the Arctic Council server will be negotiated between the Arctic Council host secretariat and UNEP/GRID-Arendal. The host secretariat will retain complete access and control of the website; in this sense, the host secretariat will continue to serve as Arctic Council Aweb master@.

As part of its ongoing work in support of the ADD and polar information, GRID will supply at no cost a range of services (e.g., web server, connection, storage space, access to indexing and search capabilities, Web page integrity, technical support, etc.) similar to that already provided to Arctic organizations such as AMAP, CAFF, PAME, RAIPON, and ADD.

GRID-Arendal specializes in advanced Geographic Information Systems (GIS), data preparation and modelling, database development, and data searching and communication via tools such as the World Wide Web. Another important aspect is networking with partner agencies and assisting co-operating institutions in capacity building and state-of-the-environment reporting.

Would there be additional costs to having GRID host the site?

As "polar environmental information" is a key focus of UNEP=s work, the costs of hosting the Arctic Council site would be covered internally. Should the Arctic Council host secretariat wish to delegate certain responsibilities to GRID-Arendal, a cost-recovery arrangement can be negotiated between the two organizations.

Would the Arctic Council website be accessible?

The Arctic Council host secretariat will maintain complete access and control rights to the web site and server. GRID-Arendal and ADD will work with the incoming secretariat and the USGS to ensure the integrity of the site and address any outstanding issues.

How can the ADD assist the Arctic Council?

The ADD brings a circum-Arctic perspective to the field of data and information delivery, having linkages to national (Arctic and non-Arctic), scientific, and research organizations. More specifically, the role of the ADD will be to offer logistical support, assist in the identification, development, and posting of information resources, provide SAOs with feedback on data and information issues, and undertake special projects at the discretion of the Council and/or host secretariat. The ADD can also assist in the development of individual country pages, helping to ensure consistency in format and content.

For projects such as the Arctic Climate Impact Assessment, the ADD and GRID-Arendal are ideally placed to develop appropriate mechanisms for metadata and the delivery of on-line data.

The ADD national and organizational representatives comprise a Aready-made@ network of data management expertise, obviating the requirement to develop new mechanisms for the co-ordination and standardization of metadata and data. At the same time, ADD is cognizant of the need to work closely with organizations having specialized data and information requirements (e.g., AMAP TDCs, PAME, CAFF) Several Arctic Council working groups as well as organizations such as the International Permafrost Association and the International Arctic Social Sciences Association are members of the ADD. The ADD also utilizes the network of the International Arctic Science Committee to help develop plans and priorities for data and information management.

How will ADD national representatives interact with Arctic Council SAOs?

The ADD national representatives are resource people involved in Arctic science and research through governmental, university, or private-sector organizations. As a member of the ADD, the Arctic Council Secretary can participate in meetings of the ADD Council, and work with ADD colleagues in the development of individual country home pages, and co-ordination of data resources. In turn, the ADD Chair will report on a regular basis to Arctic Council SAOs.

Annex A

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Moscow, Russia

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Ottawa, Canada

Saõ Jose dos Campos, Brazil

Sioux Falls, USA

Tblisi, Georgia

Tsukuba, Japan

Uppsala, Sweden

Warsaw, Poland

GRID is a global network of environmental data centres facilitating the generation and dissemination of key environmental geo-referenced and statistical data-sets and information products, focusing on environmental issues and natural resources. GRID centres typically have the ability, expertise and specialized information technology (environmental data

management, remote sensing/Geographic Information Systems) to prepare, analyze and present environmental data and information, which are the basis for reliable environmental assessments. This map highlights the current GRID centers worldwide.