

# The Importance of Metadata for Archiving and Promoting Spatial Data Discovery

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## What is Metadata?

Metadata is data about data. Metadata describe the content, quality, and condition of a data set or product. The importance of metadata lies in its ability to maintain, organize, and provide information about spatial data.

## Why Create Metadata?

Just as the World Wide Web is viewed as the information superhighway, metadata are increasingly becoming the vehicle for finding spatial data over the internet. Scientific data is often published in the form of journal articles but is not always archived in a format that makes it available for long term use. Standardized metadata records preserve institutional knowledge and can extend the life of your data. Metadata records are required to submit data sets to a clearinghouse archive. Many funding agencies now require the development of metadata.

## What is a Clearinghouse?

A clearinghouse is a secure archive that provides access to data over the internet using catalog and communication standards developed by the International Standards Organization (ISO) and the Federal Geographic Data Committee (FGDC). You can think of a clearinghouse as a digital library. Over 40 international clearinghouse nodes are established to support archiving and data access activities. The Z39.50 protocol has been adopted by these nodes to perform discovery, browse and query operations against distributed and potentially heterogeneous catalogs of metadata. This permits the discovery of services or information content based on field and full-text search.

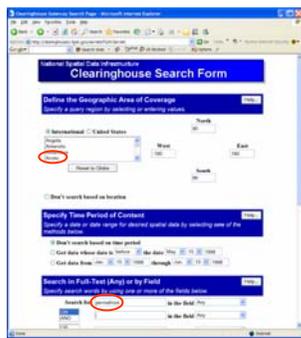
## How Can You Participate?

- Make creating metadata part of the process of developing your data.
- Use the ISO/FGDC metadata standard.
- Put metadata on a web page for future "harvesting" to a clearinghouse node.
- Send metadata to an existing node.
- Set up your own node.

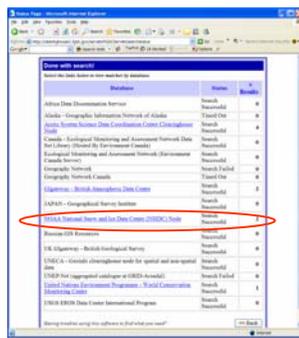
## Discover and Access Data through Clearinghouse Gateways

Gateways and portals allow users to visualize a virtual global network of compatible geographic information services and work towards their integration over the Web.

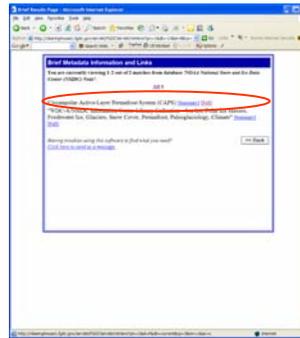
Search the international clearinghouse system through an established gateway such as:  
<http://clearinghouse1.fgdc.gov/servlet/FGDCServlet>



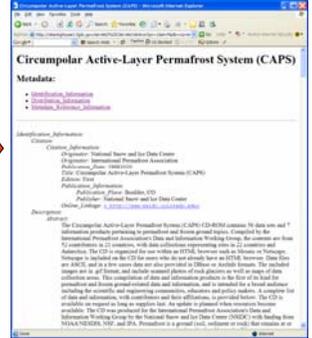
Choose an archive to view a list of spatial databases that meet your search criteria for "Arctic" and "Permafrost".



Select an appropriate spatial data set to view metadata details.



Review metadata description to assess if the data set is appropriate and use the distribution link to download plane an order for the data.

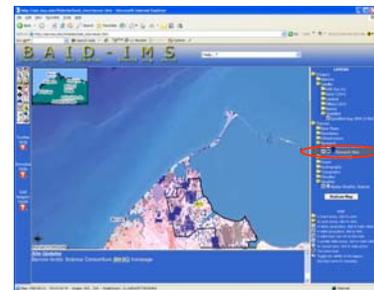


# Don't Duck Metadata

*Make creating metadata part of the process of developing your data.*

## and Portals

The Barrow Area Information Database – Internet Map Server (BAID-IMS, <http://www.baidims.org>) is an example of a web service that promotes data discovery and the use of formal metadata with links to a registered clearinghouse.



BAID-IMS links metadata records to data sets listed in the table of contents when available. "Distribution Information" includes a link to an FTP server for downloading the data.



## Tools

- Z39.50 protocol
- XML (Extensible Markup Language.)
- Web Mapping Services supported by the Open GIS Consortium and ESRI's ArcIMS
- Several metadata authoring tools are available to develop formal metadata that meets international standards. ESRI's ArcCatalog combined with the Metadata Parser (MP) from the US Geological Survey are two tools preferred for use and integration with clearinghouse nodes. For a complete list of commercial and shareware utilities visit:  
<http://www.fgdc.gov/metadata/toolkit/metadata797.html>
- Helpful References



This metadata outreach is part of the Barrow Area Spatial Data Infrastructure (SDI) effort which is made possible through support from the National Science Foundation (NSF Award OPP-0004401) and the US Geological Survey (USGS Award Number: 03HQAG0177) to the Barrow Arctic Science Consortium. Metadata outreach is two fold. The first objective is to capture historic information through mapping and documentation. This data rescue typically involves interviews with long time Barrow area researchers and the compilation of associated references including grey literature and old maps. The second objective is to promote the development of metadata for new research activities in the region. Publication, education and outreach activities help to facilitate stakeholder awareness as well as active information acquisition and documentation.

