Is single-window data search a myth or can it be made real? **Developing Federated Search for Polar Oceanographic and Terrestrial Data**

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POLDER: Polar Data Discovery Enhancement Research **Polder (Dutch verb):** to work collaboratively to achieve a common goal.

Science communities have long asked for a singlewindow search to aid in data discovery and access

But polar data management efforts have historically been siloed by national or discipline boundaries

This variety of approaches has historically made federation and aggregation of catalogues challenging

These problems are not unique to polar regions, but the preexisting community relationships in polar data management make it a sensible scale for coordinating needs and planning developments

Dozens of discovery metadata catalogues list polar datasets

The catalogues use a wide range of metadata standards, profiles, and web service protocols to organise these records

Antarctic Master Directory (GCMD) Australian Antarctic Data Centre Australian Ocean Data Network biodiversity.aq British Antarctic Survey Polar Data Centre Marlin (CSIRO) **MGDS** Antarctic SOOS (GCMD) US Antarctic Program Data Portal

Gulf of Alaska Data Portal Alaska Satellite Facility ASF Arctic Data Explorer Arctic Institute of North America Arctic Landscape Conservation Cooperative Arctic Observing Viewer Arctic Spatial Data Infrastructure ArcticConnect Arctic Research Mapping Application Barrow Area Information Database

Biological and Chemical Oceanography Data Management Office British Oceanographic Data Centre Chinese National Arctic and Antarctic Data Centre CLIVAR and Carbon Hydrographic Data Office DataONE Dryad EarthChem Earth Observation Laboratory UCAR/NCAR Environmental Data Initiative EUDAT GEOTRACES Global Biodiversity Information Facility Global Cryosphere Watch

Global Terrestrial Network for Permafrost

Centre

Met.no

NASA ABoVE

KNB Data Repository

NASA GCMD/CMR

Antarctic Master Directory and SOOS (GCMD) contributors Argentina Australia Belgium Canada Chile Estonia Finland France Italy

Centre Etude Nordique Conservation of Arctic Flora and Fauna Dept. Fisheries and Oceans Canada EnviDat **Environment** Canada

> Environment Climate Data Sweden **ICES** INTAROS International Arctic Research Center Inuit Qaujisarvingat National Ecological Observatory Network North Slope Science Initiative NSF Arctic Data Center NWT Discovery Portal Open Data (Canada) Scholars Portal Dataverse U. of Toronto Svalbard Integrated Arctic Earth Observing System University of Alberta WMO ADC Yukon Research Centre

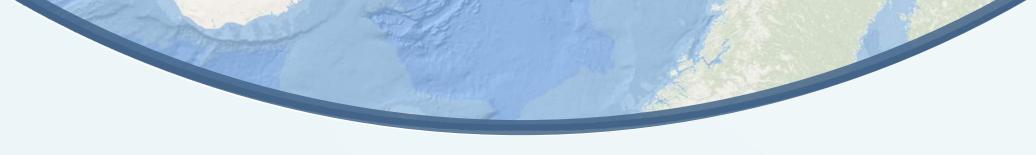
Group on Earth Observations System of Systems Joint Technical Committee of Marine Meteorology Platform Support NCEI National Climatic Data Center NCEI - National Geophysical Data Center NCEI - National Oceanographic Data Center NCEI - World Data System Paleoclimatology Data National Institute of Polar Research National Snow and Ice Data Center Netherlands Polar Data Center Norwegian Meteorological Institute Norwegian Polar Institute OBIS Ocean Data and Information System PANGAEA Polar Data Catalogue R2R Research Data Archive UCAR/NCAR SeaDataNet SESAR The digital Archaeological Record USGS ScienceBase WMO Integrated Global Observing System

Japan Malaysia Netherlands New Zealand People's Republic of China **Republic of Korea** Spain Sweden Switzerland Ukraine United Kingdom United States of America Uruguay

Figure 1: POLDER has identified these metadata catalogues with significant polar holdings; background data from ESRI, GARMIN, GEBCO, NOAA NGDC

POLDER is a group of polar data managers identifying and advocating the needs of the polar data users in a fast-moving environment





To get involved, please visit

https://polder.info

POLDER is building relationships with metadata federation and discovery projects, such as GEOSS, DataONE, Arctic Data Explorer, and schema.org

Through coordination on metadata exchange, POLDER can make data more FAIR: Findable, Accessible, Interoperable, and Reusable





