

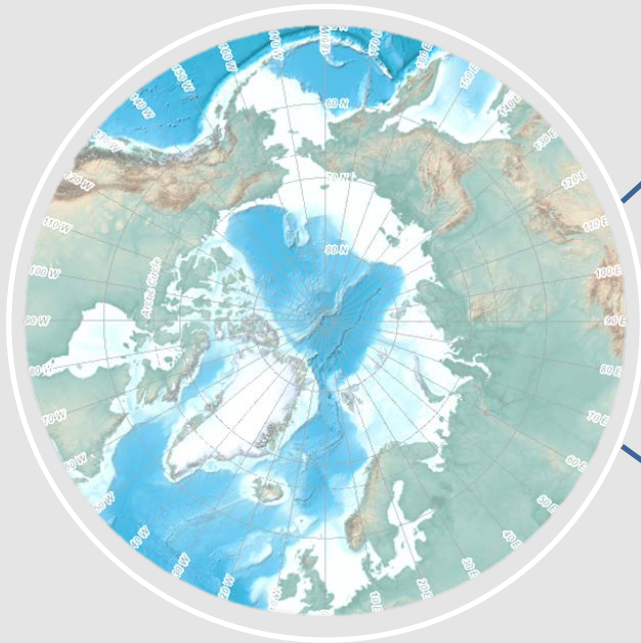


An Arctic Perspective NCEI's Prototype Arctic Data Viewer

NCEI Arctic Action Team
Kate Rose

The Arctic Challenge

Collaborative regional management



- Unique and complex environment
- Data collection is difficult and expensive



- Loss of sea ice, permafrost thaw, erosion, ocean acidification
- Loss of habitat, changes in ecosystem structure, indigenous way of life



- Arctic Council
- promote cooperation and coordination on common Arctic issues
- promote sustainable development and environmental protection

Make informed, data-based decisions

NCEI Arctic Data

Arctic Ice Dynamics

International Comprehensive Ocean-Atmosphere Data Set (ICOADS)

Arctic Regional Climatology

Bathymetric Attributed Grids (BAG) Bathymetry and Hillshades

Blended Sea Winds
NOAA Operational Model Archive and Distribution System (NOMADS)

NCEI Quarterly Joint US/Canadian Climate Outlook

Earth Magnetic Anomaly Grid

Daily Ice Edge Maps

Advanced Very High Resolution Radiometer (AVHRR)
Polar Pathfinder APP and APP-X

Microwave Integrated Retrieval System Daily Mapped Files (MIRS)

IMS Interactive Multisensor Snow and Ice Mapping System

Multibeam Bathymetry Surveys

Suomi S-NPP Data Exploitation Daily

Glacier Photograph Collection

Global Historical Climate Network (GHCN)

Paleoclimatology data (ice cores)

Alaskan Ocean Observing System (AOOS)

Circumpolar Active-Layer Permafrost System (CAPS)

Global Ozone Monitoring Experiment-2 (GOME-2) Total Ozone Daily

Historic Sea Ice Charts
Marine Geology Inventory

Greenland, Iceland, and Norwegian Seas (GINS) Regional Climatology

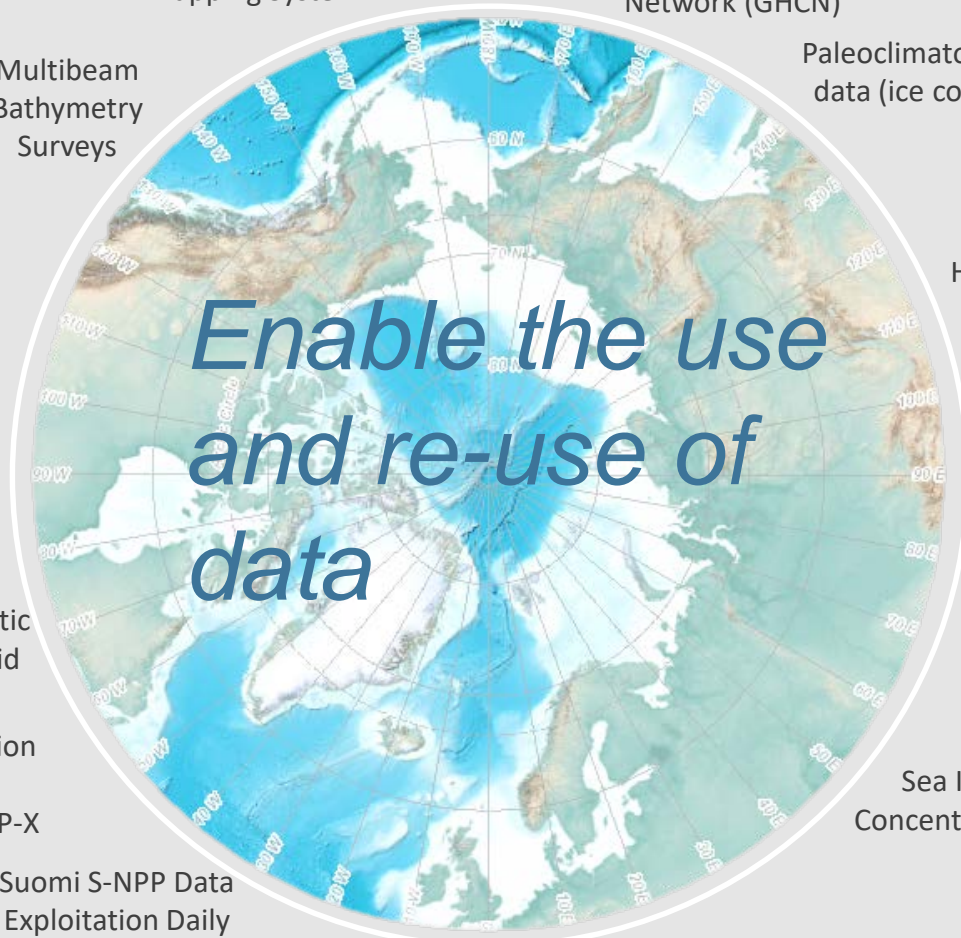
US Climate Reference Network (USCRN) Surface (land-based) Climate Data

NOAA Deep Sea Corals Research Technology Program (DSCRTP)

Sea Ice Concentration
Climatological Atlas of the Nordic Seas and Northern North Atlantic

Polar-orbiting Operational Environmental Satellite (POES)

WMO Global Cryosphere Watch Data Portal



*Enable the use
and re-use of
data*

NCEI Collaboration

NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION

Center for Weather and
Climate

Center for Coasts, Oceans, and Geophysics

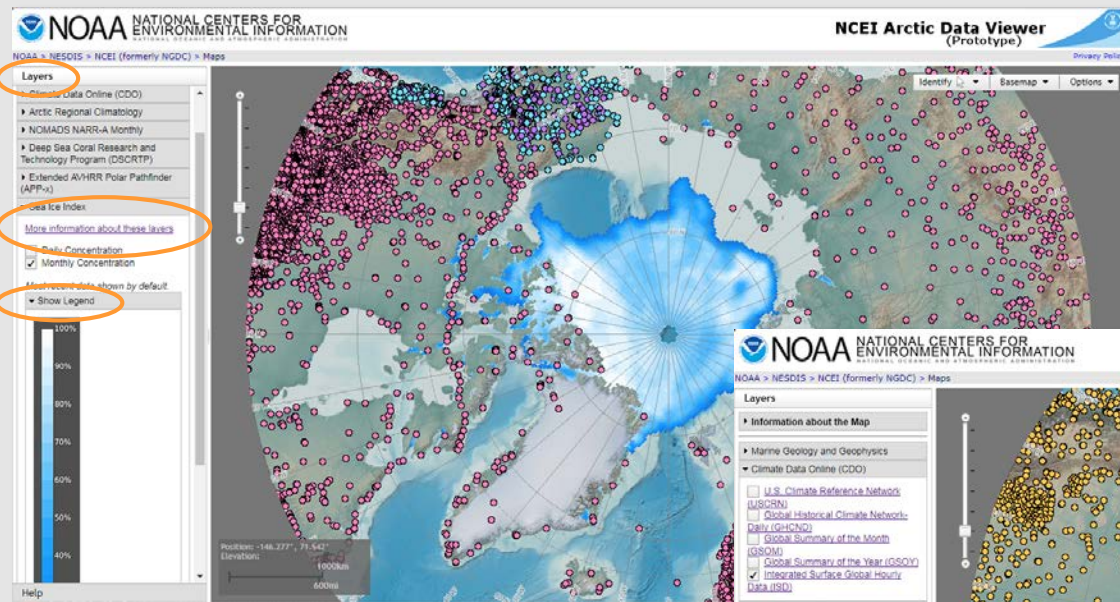
DIFFERENT SYSTEMS ACROSS DIFFERENT LOCATIONS
DATA & MAP SERVICES / THREDDS / GEOSERVER / ARCGIS SERVER

National Climate Data Center

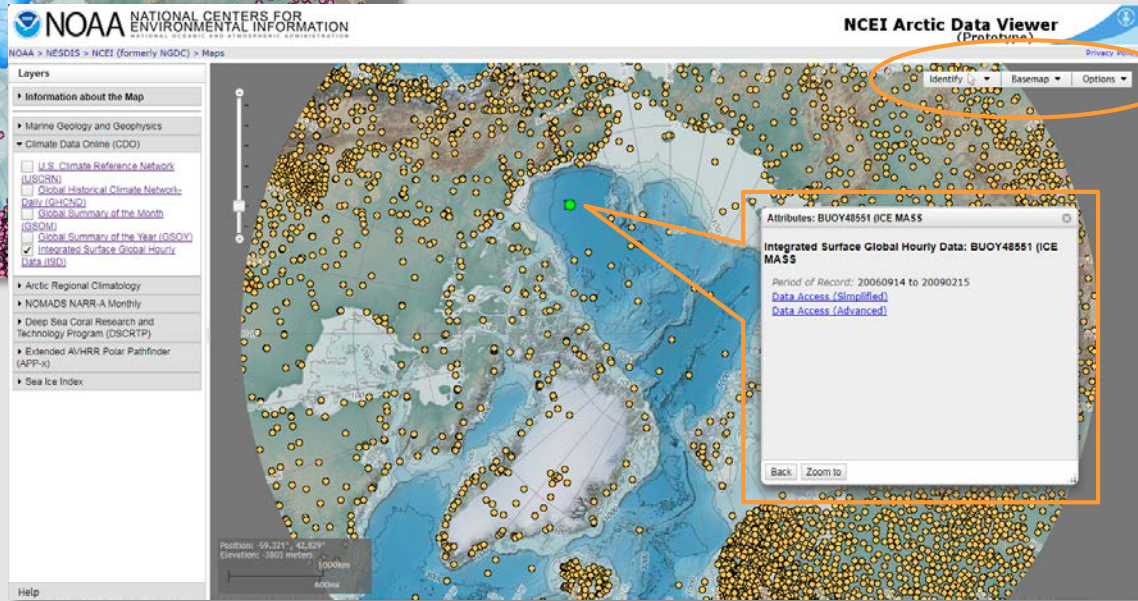
National Geophysical Data
Center

National Oceanographic
Data Center

Arctic Data Viewer (prototype)- features



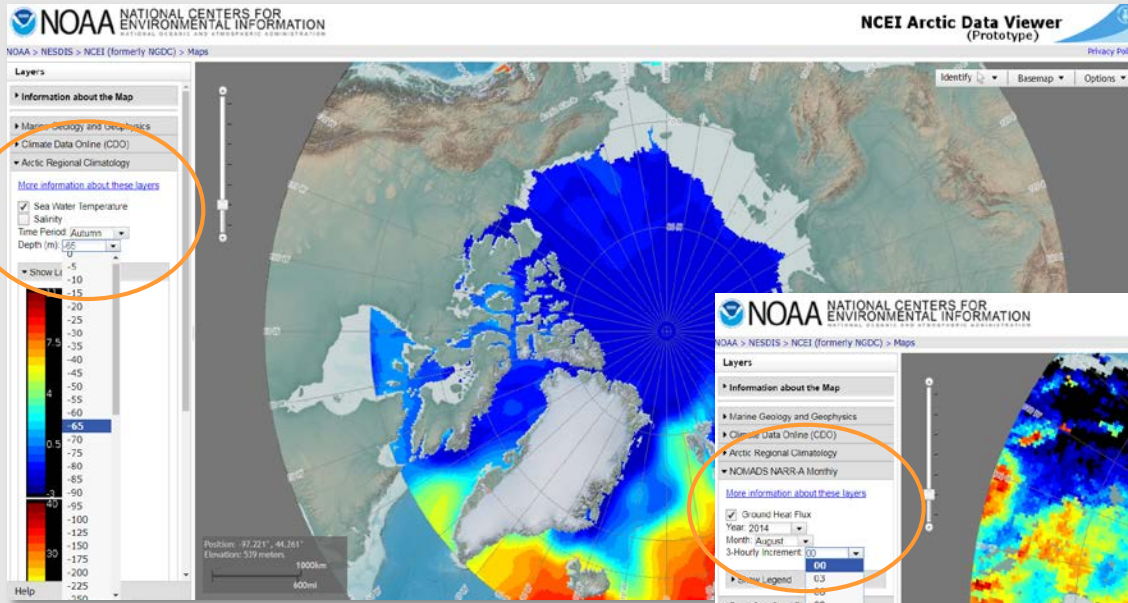
CWC Global Historical Climate Network- Daily (GHCND) overlying the CCOG/NSIDC Sea Ice Index monthly concentration.



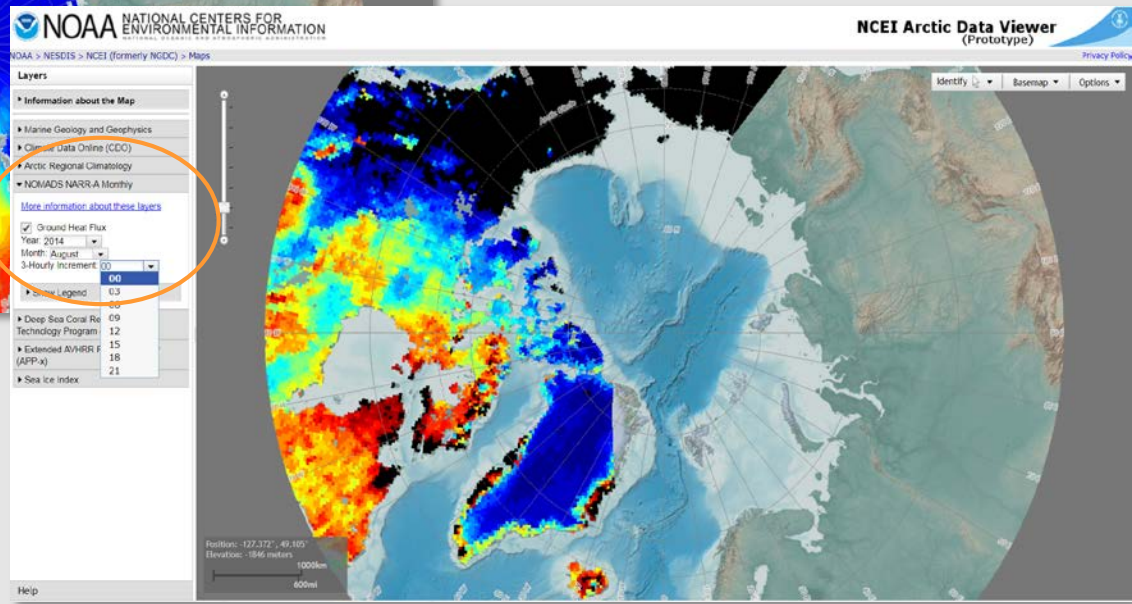
Integrated Surface Global Hourly Data (ISD)

Arctic Data Viewer (prototype)- features

Multi-dimensional Data Display



Arctic Regional Climatology: Seawater Temperature



NOMADS North American Regional Reanalysis (NARR): Ground Heat Flux



Lessons Learned

Technical challenges

- Different server types, versions
- Subset some of the global datasets to improve loading/performance
- Dependent on remote servers' status
- Re-projection of some layers
- Develop or replicate cartographic representation for some layers (THREDDS)
- Involvement of SMEs is crucial

Effective approach for sharing and providing access to data

- Allows users to visually preview the extent of the data and its attributes
- Easy access to data
- *Our efforts are a small-scale example of data-sharing needs for the Arctic research community*
- Enables coordination and collaboration among researchers
- Continue to provide our data in consumable OGC services, so they can be used by other applications



Arctic Data Viewer Team

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https://maps.ngdc.noaa.gov/viewers/ncei_arctic/