



National Snow and Ice Data Center
Advancing knowledge of Earth's frozen regions

National Snow and Ice Data Center

An overview

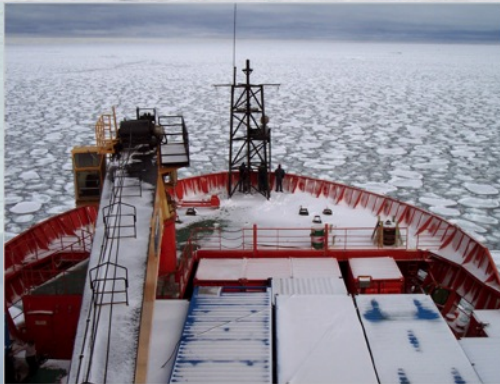
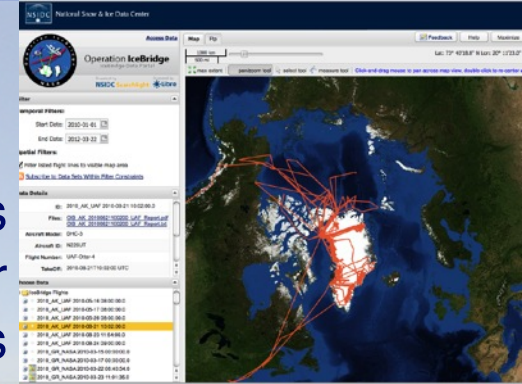


The National Snow and Ice Data Center...



Manages and distributes scientific data

Provides tools for data access



Researches the cryosphere and data science

Supports local and traditional knowledge



Supports data users

Educates the public about the cryosphere



NSIDC affiliations and sponsorship

Cooperative Institute
for Research in
Environmental
Sciences



World Data
System



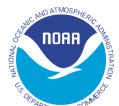
Main sponsors:



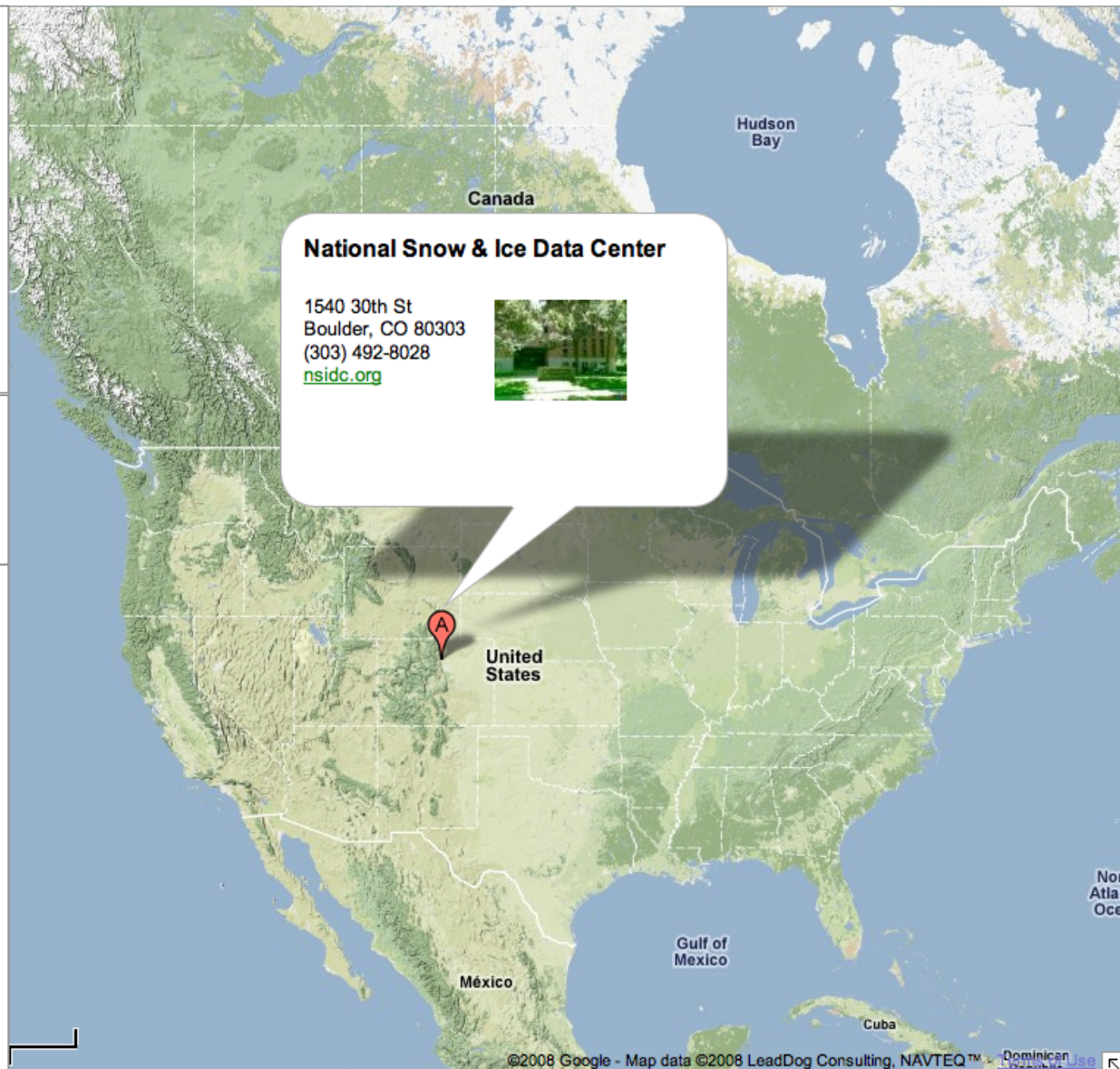
NASA



National Science
Foundation



National Oceanographic
and Atmospheric
Administration

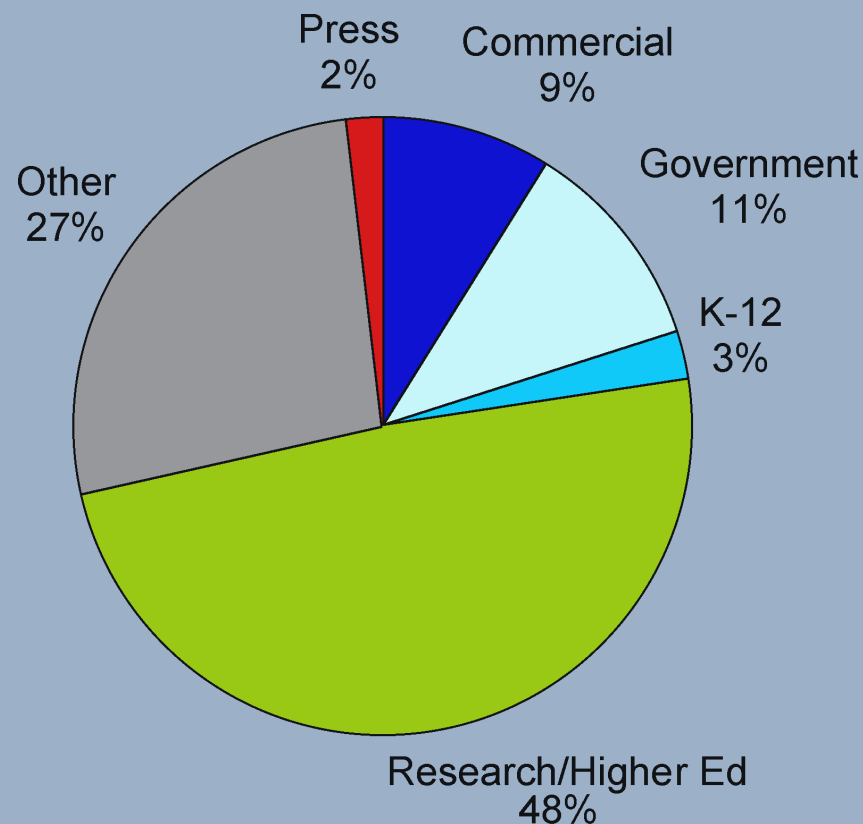


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Products

More than 600 data and information products, most freely available online

- Satellite
- In situ (station data and the like)
- Model output
- Most digital, some analog



Users

Focus on cryospheric data

Data...

Snow

Sea and lake ice

Glaciers

Ice sheets

Frozen ground

Ice cores

Icebergs

Avalanches

Elevation

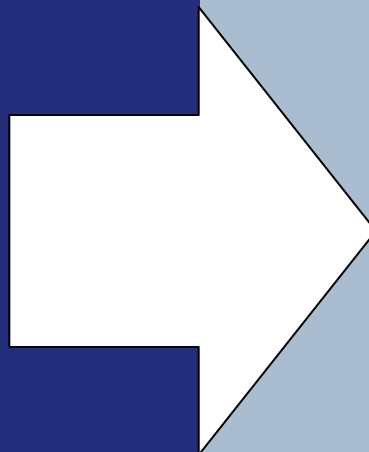
Polar atmosphere

Radiation

Meteorology

Local & Traditional

Knowledge



Used for...

Climate indicators

Climate modeling

Global energy balance

Water resources

Sea level change

Hazards

Education

How does NSIDC use metadata?

Enterprise Metadata Database

- Contains metadata for all data sets either archived or brokered by NSIDC
- Standards supported:
 - NASA DIF
 - FGDC CGDSM
 - ISO 19115
- Web services provide:

Data set landing pages

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 National Snow & Ice Data Center

HOME DATA PROGRAMS RESEARCH NEWS ABOUT THE CRYOSPHERE ABOUT US

Canadian Ice Service Arctic Regional Sea Ice Charts in SIGRID-3 Format

[Documentation](#) [FTP](#)

The Canadian Ice Service (CIS) produces digital Arctic regional sea ice charts for marine navigation, climate research, and input to the Global Digital Sea Ice Data Bank (GDSIDB). The ice charts are created through the manual analysis of in situ, satellite, and aerial reconnaissance data. The ice charts have information on ice concentration, stage of development, and ice form, following World Meteorological Organization terminology. These sea ice charts begin in 2006 and cover the following regions of the Canadian Arctic: Northern Canadian waters (Western Arctic, Eastern Arctic, and Hudson Bay) and Southern Canadian waters (Great Lakes and East Coast). Each regional shapefile (.shp) (encoded in SIGRID-3 format) and associated metadata file (.xml) are combined into a tar archive file (.tar) for distribution. All data are available via FTP.

[View Metadata Record](#)

Data Citation

The following example shows how to cite the use of this data set in a publication. For more information, see our [Use and Copyright](#) Web page.

Canadian Ice Service, . 2009. *Canadian Ice Service Arctic Regional Sea Ice Charts in SIGRID-3 Format*. [indicate subset used]. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/N51V5BW9>.

See Also

- [Arctic and Southern Ocean Sea Ice Concentrations](#)
- [Environmental Working Group Joint U.S.-Russian Arctic Sea Ice Atlas](#)
- [National Ice Center Arctic Sea Ice Charts and Climatologies in Gridded Format](#)
- [Sea Ice Charts of the Russian Arctic in Gridded Format, 1933-2006](#)

NOAA

Data Contributors

- CANADIAN ICE SERVICE

Parameters

- SEA ICE > SEA ICE CONCENTRATION

Ask us



9



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Item level metadata

- NSIDC operations maintains inventory metadata (e.g., checksums, etc.) for non-DAAC data files
- NASA ECS system maintains granule metadata used for:
 - inventory management
 - granule selection (i. e., data set subsetting)
 - granule subsetting
 - provenance and context
 - quality indication
- A few non-ECS data sets with a high level of service have item level metadata that can be used similarly to the ECS metadata
- ELOKA program is beginning to use a local Data Conservancy instance for project, collection and data item metadata

What does NSIDC do for preservation?

as much as our funders allow

- metadata, documentation and preservation support all vary strongly by level of service
- each data set does have a defined plan, which typically includes
 - multiple copies in different locations
 - agreements with other organizations for recovery or repatriation

NSIDC works to enhance the state of the art

- Participation in
 - science initiatives to provide data management expertise
 - data organizations such as the ESIP Federation, RDA
 - data related initiatives such as the Data Citation Implementers group
 - science organizations such as AGU

Has NSIDC sought trusted repository certification?

NSIDC is part of the World Data System

How does NSIDC encourage data citation?

- NSIDC data set landing pages have included suggested citation strings for more than a decade
- NSIDC staff have for years (and continue) played leading roles in pushing the field forward on this topic
- But we don't yet automatically link publications to data

Bibliography

Published Research

This Web page contains a list of citations of published research using MODIS snow and sea ice products since 2000. This list is sorted in reverse chronological order with entries listed in alphabetic order within each year period. Please contact [NSIDC User Services](#) if you have a reference you would like to share on this page. Use the tool bar below to navigate around this Web page.

2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
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Related Resources

[The MODIS Snow and Sea Ice Global Mapping Project: Publications](#)

NASA's related publications site for the MODIS snow and sea ice global mapping project.

2009 [\[top\]](#)

Gafurov, A., and Bardossy, A. 2009. Cloud Removal Methodology from MODIS Snow Cover Product. *Hydrology and Earth System Sciences* 13(7): 1361-1373.

Immerzeel, W. W., et al. 2009. Large-Scale Monitoring of Snow Cover and Runoff Simulation in Himalayan River Basins using Remote Sensing. *Remote Sensing of Environment* 113(1): 40-49.

Jain, Sanjay K. Goswami, Ajanta, Saraf, A. K. 2009. Role of Elevation and Aspect in Snow Distribution in Western Himalaya. *Water Resources Management* 23(1): 71-83.

Kaiser, G., et al. 2009. Methoden der optischen Fernerkundung zur Erfassung von Bedeckungsmustern der Schneedecke als Eingangsdaten für hydrologische Eis- und Schneeschmelzmodelle [Optical Remote-Sensing Methods for Studying Snow-Cover Patterns as Input Data for Hydrological Ice and Snow-Melt Models]. *Österreichische Wasser - und Abfallwirtschaft* 61(1-2): 25-33.

Karlsson, K.-G., Dybbroe, A. 2009. Evaluation of Arctic Cloud Products from the EUMETSAT Climate Monitoring Satellite Application Facility based on CALIPSO-CALIOP Observations. *Atmospheric Chemistry and Physics Discussions* 9: 16755-16810.

Matsouka, Kenichi, et al. 2009. Radar Signatures Beneath a Surface Topographic Lineation Near the Outlet of Kamb Ice Stream and Engelhardt Ice Ridge, West Antarctica. *Annals of Glaciology* 50(51): 98-104.

Molotch, Noah P. 2009. Reconstructing Snow Water Equivalent in the Rio Grande Headwaters using Remotely Sensed Snow Cover Data and a Spatially Distributed Snowmelt Model. *Hydrological Processes Journal* 23(7): 1076-1089.

Parajka, J., Jansa, J., Blöschl, G. 2009. Bestimmung des Schneevorrates in Einzugsgebieten mittels Fernerkundungsmethoden [Using Methods of Remote Sensing for Determining Snow Reserves]. *Österreichische Wasser - und Abfallwirtschaft* 61(7-8): 125-131. doi: 10.1007/s00506-009-0115-3.

Pu, Z. X., Xu, L. 2009. MODIS/Terra Observed Snow Cover over the Tibet Plateau: Distribution, Variation, and Possible Connection with the East Asian Monsoon (EASM). *Theoretical and Applied Climatology Journal* 97(3-4): 265-278.

Rutan, D., et al. 2009. Development and Assessment of Broadband Surface Albedo from Clouds and the Earth's Radiant Energy System Clouds and Radiation Swath Data Product. *Journal of Geophysical Research* 114(D08125), doi:10.1029/2008JD010669.

Closing thoughts

