



NOTES

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BBC Films NSIDC Researcher at Work in Nunavut, Canada

BBC filmmakers visited NSIDC scientist Shari Gearheard in June to film her research for a forthcoming nature documentary series. Gearheard lives and works in Nunavut, Canada, and studies Inuit knowledge and climate change in the Arctic.

The BBC filmed Gearheard and Inuit hunters using snow machine-mounted interactive Global Positioning System (GPS) units to record observations and track trails routinely traveled by the Inuit community. Gearheard and the Inuit hunters developed the tracking units with geomatics engineers as part of the Igliniit Project.

The project combines Inuit knowledge of the Arctic environment with technology and science, outfitting Inuit hunters with logging systems that record weather conditions and allow the hunters to track observations of animals and environmental conditions in their own language. "Igliniit" in Inuktitut (the Inuit language) refers to trails routinely traveled by members of a community.

The documentary series, titled *Frozen Planet*, will focus on life in the Arctic and the Antarctic. It is co-produced by the BBC and the Discovery Channel, and is scheduled to air in 2012.



Shari Gearheard (left), an NSIDC scientist who lives in Clyde River, and David Iqaqrialu (right), a hunter from Clyde River, Nunavut, chat during a break filming with the BBC for the upcoming documentary *Frozen Planet*. Iqaqrialu and Gearheard work together on the Igliniit Project, which will be featured in the film. Credit: Elizabeth White, BBC

For more information, visit the Igliniit Project Web site (<https://gcr.carleton.ca/confluence/display/ISIUOP/Igliniit+Project>).



NSIDC Data Scientist Wins Falkenberg Award

NSIDC program manager Mark Parsons has won the Charles S. Falkenberg Award for his leadership in Earth science research and data management. The award honors a scientist under 45 years of age who has contributed to the quality of life, economic opportunities and stewardship of the planet through the use of Earth science information and to the public awareness of the importance of understanding our planet. It was established in 2002 and is presented jointly by the American Geophysical Union (AGU) and the Earth Science Information Partnership (ESIP).

Since joining NSIDC in 1994, Parsons has worked to improve the flow of Earth science information and raise public awareness of the importance of the Earth's polar regions and cryosphere. Parsons leads multiple data management projects at NSIDC and is active in many national and international data committees. He has been a tireless and outspoken advocate of robust data stewardship as a vital component of Earth system science and as an important profession in its own right.

PAIG Grant Awarded to NSIDC

NSIDC has been awarded a grant to arrange, describe, preserve, digitize, and make available the records of the World Data Center (WDC) for Glaciology at NSIDC. The National Oceanic and Atmospheric Administration (NOAA) Preserve America Initiative Grant (PAIG) is a popular mini-grant program to preserve, protect, and promote NOAA's historical and cultural resources. The grant will make it possible for the WDC for Glaciology to make the records describing the creation and history of the WDC for Glaciology and NSIDC available online. An online exhibit and timeline will be created to highlight this history.

The WDC for Glaciology provides a focus for snow and ice information services and is one of more than forty WDCs around the world that are collecting, archiving, and distributing geophysical data. Data sets cover the subject areas of glaciers, avalanches, snow cover, polar ice masses, ice cores, sea ice, and fresh water ice. In addition, the WDC for Glaciology includes extensive library and analog archive holdings. For more information, see the WDC for Glaciology Web site (<http://nsidc.org/wdc/>). For more information about the initiative, see the NOAA Preserve America Initiative Web site (<http://preserveamerica.noaa.gov/welcome.html>).

New Download Utility for Atlas of the Cryosphere and A-CAP

Users of NSIDC's popular Atlas of the Cryosphere (<http://nsidc.org/data/atlas/>) and the beta Antarctic Cryosphere Access Portal (A-CAP) (<http://nsidc.org/agdc/acap/>) can now save maps in a variety of image formats, including PNG, JPEG, GIF, GeoTIFF, KMZ, and others. The interface also allows users to save the map legend, scale bar, and overview map. In addition, users can now download the underlying data for each of the layers displayed in the map, with options for data format, map projection, resolution, and cropping to the current map view. Since they preserve quantitative values and geolocation information, these files are useful for scientific analysis and incorporation into geographic information systems (GIS) and advanced image analysis software. Example output formats include GeoTIFF, Shapefiles, and KMZ, ENVI, ESRI, ERDAS, and more.

Sensor Changes for Gridded Sea Ice Data Sets

NSIDC has switched its processing stream from the Special Sensor Microwave/Imager (SSM/I) on the F13 satellite to the Special Sensor Microwave Imager/Sounder (SSMIS) on the F17 satellite because of a failing data recorder on F13. The F13 satellite has been operational since 1995.

At this time, the products that are impacted include:

- Near-Real-Time DMSP SSM/I Daily Polar Gridded Brightness Temperatures (<http://nsidc.org/data/nsidc-0080.html>)

- Near-Real-Time DMSP SSM/I Daily Polar Gridded Sea Ice Concentrations (<http://nsidc.org/data/nsidc-0081.html>)
- Sea Ice Index (<http://nsidc.org/data/g02135.html>)
- Near-Real-Time SSM/I EASE-Grid Daily Global Ice Concentration and Snow Extent (<http://nsidc.org/data/nise1.html>)

NSIDC has done preliminary intercalibration between F13 and F17 to correct for sensor differences in the near real-time products, using the period 28 March 2008 to 31 March 2009. They retain reasonable consistency, though differences of approximately 28,000 square kilometers may be possible in daily total ice extents. The differences are primarily near the ice edge, where shifts of one to two grid cells (25 to 50 kilometers) may be seen.

Further information about these changes may be found in the data set documentation for each of the data sets listed above.

SSM/I Brightness Temperature Data Update

The *DMSP SSM/I Daily Polar Gridded Brightness Temperatures* data set has been updated through 31 December 2008. With this update, a new version of the source data was used in the gridded brightness temperature processing. All files beginning 01 July 2008 are now Version 3. Prior to 01 July 2008, data remain Version 2. For more information regarding the differences between the Version 2 and Version 3 files, refer to the Detailed Data Description section in the data set documentation. Data set documentation and FTP data are accessible via the product catalog page (<http://nsidc.org/data/nsidc-0001.html>).

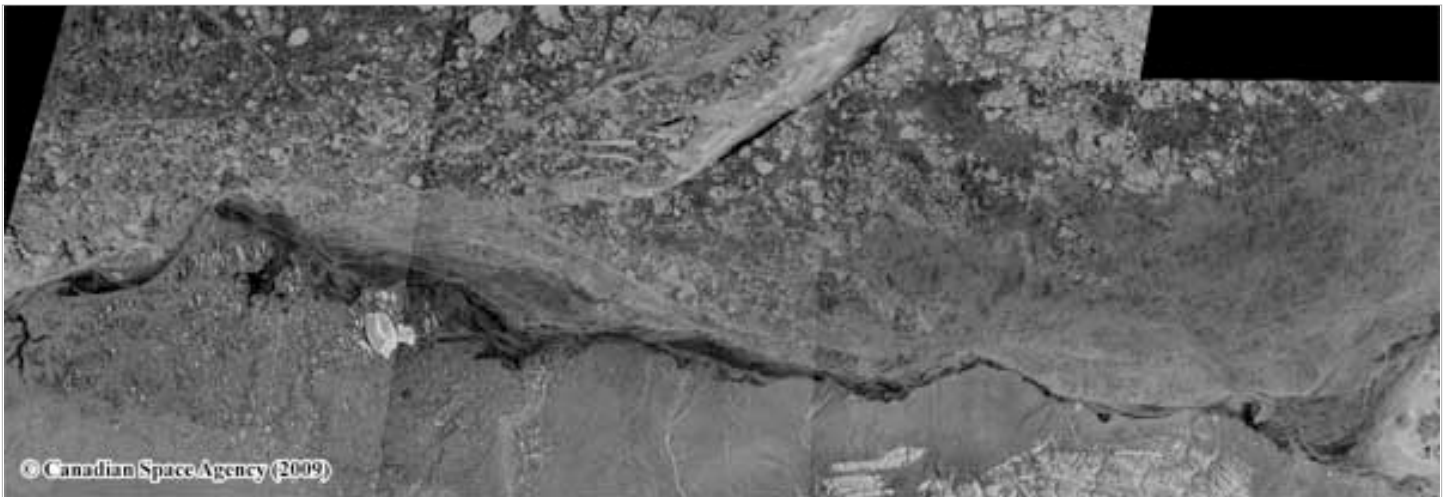
Sea Ice Concentrations Data Update

Data are now available through 31 December 2008 for the *Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I Passive Microwave* data set. These data will remain online until NSIDC receives the final data from Goddard Space Flight Center. For information regarding this data set, or to access data via FTP, please visit the product catalog page (<http://nsidc.org/data/nsidc-0051.html>).

CCAWS Releases Greenland Data Sets

NSIDC has released the first two data sets associated with the Cryospheric Change Analysis Web Services (CCAWS) project: the *Hydrologic Sub-basins of Greenland* data set and the *Hydrologic Outlets of the Greenland Ice Sheet* data set.

The CCAWS project is developing a scalable cryospheric analysis portal for the study of Greenland's ice mass balance. This will include interactive data analysis tools, seamless data access, and interoperable information services. To make this possible, a set of existing subsetting, gridding, projection, and visualization tools at NSIDC will be made into modular Web services. As part of this project, NSIDC will bring in several new data sets. CCAWS is a two-year Advancing Collaborative Connection for Earth System Services (ACCESS) proposal funded by NASA, and started in August 2008.



Example of a RADARSAT SAR image mosaic of landfast ice from NOAA@NSIDC's new data set, *Recurring Spring Leads and Landfast Ice in the Beaufort and Chukchi Seas, 1993-2004*. The image spans the dates of 16 March to 18 March 2000. (Credit: Canadian Space Agency)

The *Hydrologic Sub-basins of Greenland* data set (<http://nsidc.org/data/nsidc-0371.html>) contains geographic information system (GIS) polygon shapefiles that include 293 hydrologic sub-basins of the Greenland Ice Sheet, a modeled basin network for Greenland's ice sheet, and other data. The *Hydrologic Outlets of the Greenland Ice Sheet* data set (<http://nsidc.org/data/nsidc-0372.html>) contains GIS point shapefiles that include 891 observed and potential hydrologic outlets of the Greenland Ice Sheet. Meltwater features along the entire edge of the ice sheet were mapped via photo interpretation of satellite data.

New Data Set Released by NOAA@NSIDC

NOAA@NSIDC has released the new data set: *Recurring Spring Leads and Landfast Ice in the Beaufort and Chukchi Seas, 1993-2004*. This data set uses data acquired from the NOAA Advanced Very High Resolution Radiometer (AVHRR) and the Radarsat-1 Synthetic Aperture Radar (SAR) instruments to identify leads and landfast ice. The data are provided in a number of formats including ArcGIS geodatabases, GeoTIFFs, and Shapefiles. For more information about this data set and to obtain the data, see the data set summary page (<http://nsidc.org/data/g02173.html>).

MODIS Version 4 Removal

On 1 June 2009, the following Version 4 MODIS snow and sea ice data products were removed from NSIDC's archive. Registered users were notified in advance of the removal of data. All Version 5 products were retained.

Version 4 Snow products:

- MOD10L2: MODIS/Terra Snow Cover 5-Min L2 Swath 500m
- MYD10L2: MODIS/Aqua Snow Cover 5-Min L2 Swath 500m
- MOD10A2: MODIS/Terra Snow Cover 8-day L3 Global 500m Grid
- MYD10A2: MODIS/Aqua Snow Cover 8-Day L3 Global 500m Grid

Version 4 Sea Ice product:

- MYD29: MODIS/Aqua Sea Ice Extent 5-Min L2 Swath 1km

On 17 July 2009, the Version 4 MODIS snow data product MOD10A1: *MODIS/Terra Snow Cover Daily L3 Global 500m Grid* was removed from NSIDC's archive. Registered users again were notified in advance of the removal of the data. The Version 5 product was retained.

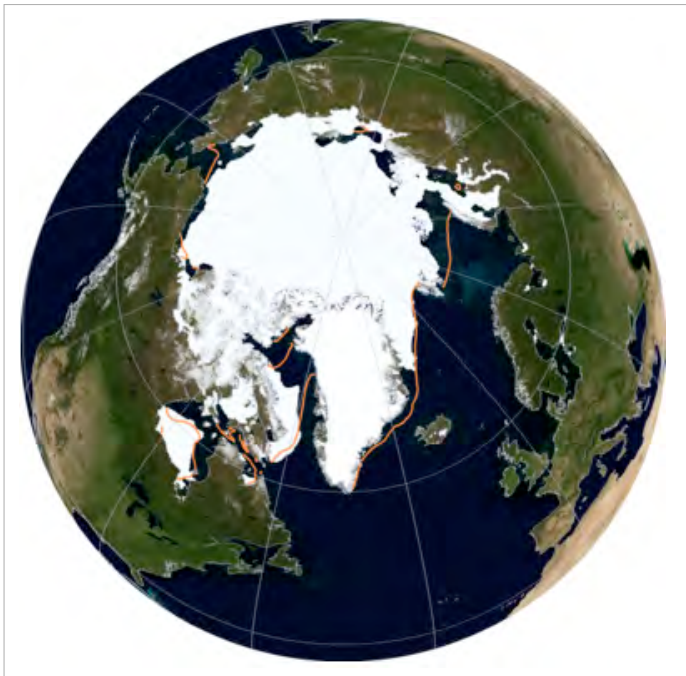
NSIDC will retain a small amount of MODIS Version 4 data from each data set for use in comparisons with other data versions. This is referred to as a "golden month." The golden month covers the time period 29 August 2002 (day of year 241) through 7 October 2002 (day of year 280). For access to the Version 4 golden month data, contact NSIDC User Services at nsidc@nsidc.org.

AMSR-E Reprocessing Update

Reprocessing is complete for the AMSR-E Level-2A brightness temperatures, Level-2B and Level-3 surface soil moisture products, Level-3 sea ice products and Level-3 snow products. Data from 19 June 2002, the date the AMSR-E mission began, through the present are now updated to the most recent versions of their algorithms. More information regarding the algorithm history of AMSR-E products can be found on the AMSR-E data versions Web page (http://nsidc.org/data/amsre/data_versions/version2.html).

AMSR-E Sea Ice Update

AMSR-E Validated 11 (V11-Stage 1) Level-3 sea ice products were released on 29 May 2009. The algorithm for V11 corrected an error (introduced in the V10 algorithm) that caused the "Snow Depth on Sea Ice" parameter to be overestimated by a factor of about two in the Southern Hemisphere. *AMSR-E/Aqua Daily L3 12.5 km Brightness Temperature, Sea Ice Concentration, & Snow Depth Polar Grids (AE_SI12)* is the only product with the "Snow Depth on Sea Ice"



The daily sea ice extent for 07 July 2009 projected onto NASA's Blue Marble. The *Sea Ice Index* features a new layout that makes it easy to see monthly and daily sea ice conditions at a glance (Credit: NSIDC/NASA EO)

parameter, but all AMSR-E sea ice products use the same production code and have been processed with the V11 algorithm. For ordering options, please see the order data page (http://nsidc.org/data/amsre/order_data.html).

New AMSR/ADEOS-II Product Available

Advanced Microwave Scanning Radiometer (AMSR) Level-2A Global Swath Spatially-Resampled Brightness Temperatures are now available from NSIDC. AMSR flew aboard the Japan Aerospace Exploration Agency's (JAXA) Advanced Earth Observation Satellite-II (ADEOS-II) which launched on 14 December 2002.

AMSR measured horizontally and vertically polarized radiances at 6.9, 10.65, 18.7, 23.8, 36.5, and 89.0 GHz, and vertically polarized radiances at 50.3 and 52.8 GHz. These Version 1 data are available from 28 January 2003 until 24 October 2003, when the satellite was lost.

AMSR/ADEOS-II Level-2A Global Swath Spatially-Resampled Brightness Temperatures (AA_L2A) are only available to NASA approved users. Please contact NSIDC User Services at nsidc@nsidc.org for information on becoming an approved user. More information and product documentation can be found on the product catalog page (http://nsidc.org/data/aa_l2a.html).

AMSR-E Version 1 Products Discontinued

As of 10 June 2009, Version 1 AMSR-E data are no longer available from NSIDC. NSIDC continues to distribute Version 2 AMSR-E data products, which use the most up-to-date algorithms.

New Glacier Photograph Collection Search & Order Interface

The NSIDC *Glacier Photograph Collection* has a new search and order Web interface. A complete redesign of the old interface has been implemented as well as changes to the overall appearance of the Web site. Photos can be searched by spatial coverage and temporal range as well as by glacier name or by photographer. The option of running multiple searches before placing an order is also available.

To access the new interface, see the *Glacier Photograph Collection* Web site (http://nsidc.org/data/glacier_photo/).

Update to the World Glacier Inventory

Data on 157 glaciers from the Huasco Catchment in Chile have been added to the *World Glacier Inventory*. The information was provided by The Center for Advanced Studies in Arid Zones (CEAZA) in La Serena, Chile. To search for these glaciers, go to the World Glacier Inventory Search Web page (http://nsidc.org/data/glacier_inventory/query.html), and select CEAZA from the Data Contributor pull-down menu.

More information about this update is available in the Quality Assessment and History of Updates section of the World Glacier Inventory documentation (http://nsidc.org/data/docs/noaa/g01130_glacier_inventory/).

Sea Ice Index has a New Look

The *Sea Ice Index* has been redesigned. The new layout makes it easy to see monthly and daily sea ice conditions at a glance, as well as longer term trends in ice extent and concentration from satellite passive microwave data. Images can be displayed on NASA's Blue Marble view of the Earth, and the site features tools for browsing and animating data images as well as downloading extent numbers.

For more information, see the redesigned *Sea Ice Index* Web site (http://nsidc.org/data/seaice_index/).

New Address for NSIDC XML Metadata Records

NSIDC's "Web Accessible Folder" has been moved to a new on-line location. Please use the following address to access XML files representing metadata for NSIDC's holdings: <ftp://sidads.colorado.edu/pub/metadata/>.

The XML files, available in both DIF and FGDC formats, are updated on a daily basis. These metadata files are provided to allow other organizations to regularly harvest our metadata collection for inclusion in data discovery and access portals. If you currently obtain metadata via our Web Accessible Folder, please confirm that you are using the new URL shown above.

Dust Alters Alpine Ecology

Thomas Painter, director of the Snow Optics Laboratory at the University of Utah and an affiliate scientist of NSIDC, has published a study linking increased dust deposition on snow to effects on mountain wildlife. The article, published in June in *Proceedings of the National Academy of Sciences* (PNAS), showed that dust that settles on mountain slopes and speeds up snow melt also leads to changes in plant growth and flowering in alpine landscapes. Painter's previous research showed that in the San Juan Mountains of Colorado, heavy dust deposition caused snow to disappear a month earlier than it would have in the early 19th century. For the current study, Painter worked with researchers at Colorado State University, the Center for Snow and Avalanche Studies, and the Mountain Studies Institute.

For more information, visit the article online at the PNAS Web site (<http://www.pnas.org/content/106/28/11629.abstract>)

Personnel

NSIDC welcomes two visiting scientists:

Dr. Stephanie Jenouvrier, CIRES Visiting Fellow, Woods Hole Oceanographic Institution (MA, USA) and Centre Nationale de la Recherche scientifique (France)

Dr. Jianping Yang, Cold and Arid Environmental and Engineering Research Institute (CAREERI), Chinese Academy of Sciences (CAS), Lanzhou, China

Last issue's question:

How many products on sea ice does NSIDC archive and distribute?

Answer:

NSIDC archives and distributes 93 products containing the keyword of "sea ice".

The answer was found using NSIDC's Advanced Data Search page (<http://nsidc.org/data/index.html>).

This issue's question:

What is the name of the BBC documentary currently in production, and which one of NSIDC's Arctic scientists was featured? The answer can be found on NSIDC's Press Room Web page or in this issue of Notes.

CITING NSIDC DATA

Please acknowledge NSIDC as the source when you obtain data from us. Refer to the data set documentation for suggested forms of acknowledgement and citation, or contact User Services for more information.

NSIDC also requests one reprint or the exact reference of any publication that was supported by data received from NSIDC. We also greatly appreciate reprints of any publication related to snow and ice research, for inclusion in the World Data Center Information Center collection.

If you have published data that you wish to archive and make available to the scientific community, please contact User Services to discuss the content, form, and size of the data set. A list of guidelines for submitting data in electronic format is available.

SUBSCRIPTION, SUBMISSION & CONTACT INFORMATION

For information about any of the products or services offered by NSIDC, or to subscribe to NSIDC Notes, please contact User Services.

NSIDC welcomes the submission of short items from our readers that are of interest to the cryospheric community. Please use the following address to submit news items, publication notes, research notices, or brief articles for publication in NSIDC Notes.

View back issues on the NSIDC Web site (<http://nsidc.org/pubs/notes/>).

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