Featured user profiles for NOAA@NSIDC data sets: User support, engagement, and feedback

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Introduction

- User support and engagement are crucial elements of the NOAA@NSIDC team's data management expertise.
- We present three case studies that illustrate how users utilized three of our most popular data products.
- These cases were selected from questions submitted to our help desk.
- **Our aim is to emphasize the importance of user feedback and the need for high-level support for our users.**

Methods

- We manage user inquiries and assist with their data requirements through our help desk, which can be reached at nsidc@nsidc.org or via the support widget on our website.
- We compiled user questions for our three most popular NOAA@NSIDC datasets and selected a use case to highlight.
- Each use case outlines the project, user goals/questions, methods of assistance, outcomes, and user feedback.

Conclusions

- Issues and questions spanned from data format conversion and calculations to data access and future availability.
- Help was given through explanations, guidance, resource provision, and problem-solving. If our guides needed improvements, we made those adjustments. User feedback is vital for the ongoing improvement of our documentation.
- In all cases, the feedback was positive, indicating that users value our support and it's crucial for ensuring they can access and fully utilize the data.

Use Cases

Sea Ice Index (G02135) - provides daily and monthly Arctic and Antarctic sea ice extent and concentration from 26 October 1978 to present

Affiliation NOAA Southwest Fisheries Science Center

Project The user intends to replicate the average monthly sea ice extent and area values of the Bering and Chukchi Seas using the Sea Ice Index.

Sea ice breaks up in the Chukchi Sea. — Credit: Alia Khan, NSIDC

Goals The user had three questions:

1. Do the polygons defining the regions in the Sea Ice Index match those in MASIE (G02186)?
2. Can the binary file be shared as a text file to avoid installing Python libraries?
3. Noting differences in calculations and reported sea ice area values, the user gave a detailed method for calculating these values and asked if it aligns with our approach.

How We Helped

1. We explained the slight differences between the polygons defining the Sea Ice Index and MASIE regions, and pointed them to resources for visual comparison and the binary region mask file download. We also guided them on how to read the file using Python.
2. We delivered the requested text files, detailing each grid cell's region number and the coordinates of its center.
3. We further clarified varying grid cell areas due to polar stereographic projection, and provided guidance on the correct sea ice percentage threshold for their calculations.

Outcome

The user was able to use the files and calculate the area and extent values that they needed. The text file of the region mask was added to the ancillary files for the Sea Ice Index so that other users could access it.

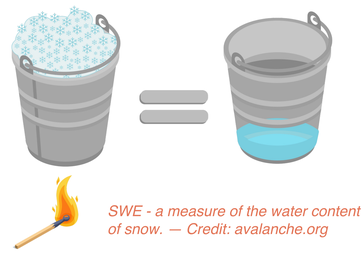
User Feedback

"Super helpful!! Thank you"

SNODAS (G02158) - provides daily snowpack properties from NOAA's National Weather Service's National Operational Hydrologic Remote Sensing Center (NOHRSC)'s Snow Data Assimilation System (SNODAS)

Affiliation UCLA Institute of the Environment and Sustainability

Project The user wants to convert a year's worth of SNODAS snow water equivalent data from binary to netCDF format.



SWE - a measure of the water content of snow. — Credit: avalanche.org

Goals The user had four questions:

1. After converting SNODAS SWE binary files to NetCDF, they noticed some grid cells had unusually high SWE values, even after adjustments. They seek clarification on these values.
2. They found slight discrepancies between geographic coordinates in the data files and guide article and ask which to use.
3. They noticed that some files were missing and wanted to verify if this was consistent with NSIDC's archives.
4. They want to know how to incorporate timestamps into file metadata during conversion.

How We Helped

1. We asked the user for detailed information about their issue, including specifics about the files and conversion method. We guided them towards our How-To article, which recommends using GDAL for file conversion. They mentioned this resulted in more accurate SWE values.
2. There were minor precision issues causing spatial bounds discrepancies in the text file. The coordinates in the How-To article were not entirely accurate. Following advice from NOHRSC, we recommended using an idealized version of the spatial bound coordinates that we provided. We have since updated the user guide and other relevant documentation with this information.
3. We guided the user to a log file to cross-verify missing days in the data.
4. We provided a GDAL command to add date and time to a file, appearing as a global attribute in the NetCDF file.

Outcome

The user successfully converted the files using GDAL and the appropriate spatial bounds. The How-To article has been updated with these correct spatial bounds and instructions on adding a timestamp to the converted GeoTIFF or NetCDF.

User Feedback

"… thank you for your diligence!"

"Awesome service"

IMS Snow and Ice (G02156) - provides daily maps of snow and sea ice cover for the Northern Hemisphere from February 1997 to present from the US National Ice Center (USNIC) Interactive Multisensor Snow and Ice Mapping System (IMS)

Affiliation U.S. Fish & Wildlife Service

Project The IMS snow and ice data is used yearly to create a Status Report impacting waterfowl regulations.

Waterfowl migration — Credit: Scott Ralston, USFWS

Goals The user asked four questions:

1. They use IMS snow and ice data from 2006 in GeoTIFF format and now need to use data dating back to 1997, which is in ASCII format. They need guidance on converting these ASCII files to GeoTIFF for their analysis.
2. They are interested in R code that can automate the ASCII to GeoTIFF conversion.
3. They're having trouble accessing IMS data via FTP, with a blank page displayed despite using various browsers.
4. They inquired about the future availability of IMS data, as they need it annually.

How We Helped

1. We provided a link to a 'How To' article for importing ASCII files into GIS.
2. Although we lack a ready R code script, we shared a link to a sample script article, ensuring correct projections. We also mentioned the availability of open-source Python tools with a link for more information.
3. We recommended using an FTP client for data access due to limited browser support for FTP, providing connection and directory details.
4. We detailed data access, noting that the USNIC generates the data and the NSIDC archives it. We also mentioned the transition from FTP to HTTPS for NOAA@NSIDC data access, providing the HTTPS link and clarifying that FTP remains available until 2023.

Outcome

The user thanked us for the support, acknowledging it saved time and prevented frustration. They successfully obtained the needed data and greatly appreciated the assistance.

User Feedback

"I really appreciate all your help with this - you definitely saved me a lot of time, and from a lot of frustration trying to fumble through this myself."

"I really appreciate you and your organization's stewardship of these data, as they're really important for our work here in the USFWS Division of Migratory Bird Management."