Introduction

NOAA@NSIDC receives financial support from NOAA NESDIS and is allied with its National Centers for Environmental Information. We work within the larger NSIDC infrastructure of developers, IT systems, User Services professionals, and scientists.

While most of our collection consists of data from operational services such as the US National Ice Center or from satellites, like the Sea Ice Index, we have an increasing number of data sets from individual researchers. These are often unique collections of historical data.

The researchers who assemble these collections do so with painstaking care, knowing that they are working for future generations. AGU’s position statement on data reinforces this point of view, stating “Earth and space science data are a world heritage, and an essential part of the science ecosystem... Trusted domain-specific data repositories must be available to curate, archive, and disseminate data and other research artefacts without restriction, ensuring accessibility well into the future.”

Researchers who contribute data gain:

- A secure home for their data in a trusted repository.
- Credit for their work, through the citation for the data set that contains their name in author position and through the User Guide description.
- Satisfaction of knowing others will more easily build on their work.
- Usage statistics! We track the number of users downloading data and registering for data sets.
- Assistance in documenting and, when needed, reformatting their data before the data are published and appear in the NSIDC data catalog. The hands-on, personal nature of this interaction is vital to ensuring success.

Examples of Data Sets from Individual Researchers

On-Ice Arctic Sea Ice Thickness Measurements from the Late 1800s Onward

JPL scientist Ben Holt and interns assembled measurements from 50 expeditions that had not been assembled elsewhere. On-ice measurements are the gold standard for determining sea ice thickness.

Holt describes the project: “From journal articles, reports, expedition publications, online resources such as Google Scholar and the Defense Technical Information Center, as well as through direct contact with individual sea ice investigators, measurements have been assembled from many types of expeditions, large and small. With version 2, the earliest data extends back to the Jeannette Expedition from 1879-1881, then to the Fram Expedition in the mid-1890s, the Maud Expedition in the 1920s, and includes up to more recent collections occurring through 2016. In one case, an early investigator’s field book was made available to us, providing single point measurements of thickness that had, as yet, only been summarized in published graphs.”

Kenai Fjords National Park Coastal Glacier Repeat Photography Collection

Deb Kurtz, National Park Physical Science Program Manager, compiled and documented this collection. It is one of several special collections within the Glacier Photograph Collection of more than 25,000 photographs dating back to the mid 1800s.

Kurtz developed metadata for existing historical photographs, and then photographed these glaciers, “despite the challenges of precisely replicating and aligning photos taken from boats”.


Artic Sea Ice Concentration and Extent from Danish Meteorological Institute Sea Ice Charts, 1901-1956

By publishing a data set, a student can make a citable, permanent contribution at an early stage in their career.

These are simple, color-coded fields of ice concentration derived from historical observations from ships that were compiled by mapmakers. Vivian Underhill, an undergraduate at the time, documented previous uses of these charts for research, and devised a way to extract ice concentration and ice edge estimates from the historical charts so that the concentration fields could be used in other data products.

Kurtz describes the project: Photos of 40 individual glaciers or glacier groups from southcentral-Alaska document “the current but ephemeral state of the park’s changing glaciers and provides a historical record for all”.


Considering publishing your data with us?

If you have data that would broadly impact scientific research and would like to discuss archiving it with us, please contact fetterer@colorado.edu