NSF Arctic Data Center

https://arcticdata.io

@arcticdatactr

the Arctic Data Center

Amber Budden

0000-0003-2885-3980

NCEAS

DataONE

NSF Award #1546024

Arctic Data Center Data Science Training
February 11-15, 2019

the **Arctic Data Center,**

NSF Standards & Policies


NSF

Troms Fylke

Rama

Detroit Publishing Co.

Features and Services

- **Data Archive**
- **Portal** for data discovery
- **Tools & Infrastructure**
  - *Data and metadata submission*
  - *Provenance features*
  - *Replication features*
  - *Metadata quality check*
- **Support Services**
- **Training & Outreach**
- **Data Rescue**






Team


M. Jones


Baker-Yeboah


Budden


Casey


Dozier


Schildhauer


Walker


C. Jones


Mecum


Clark

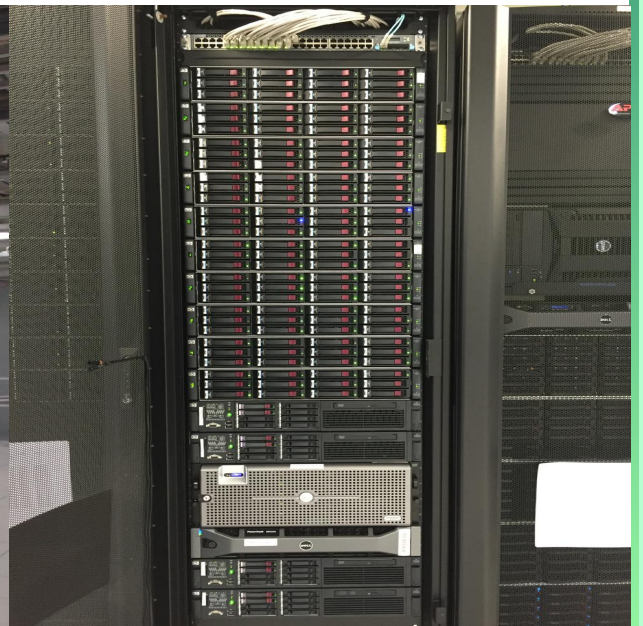

Goldstein

Li


Mullen

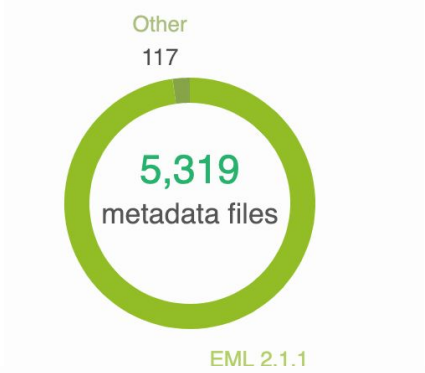

Chong

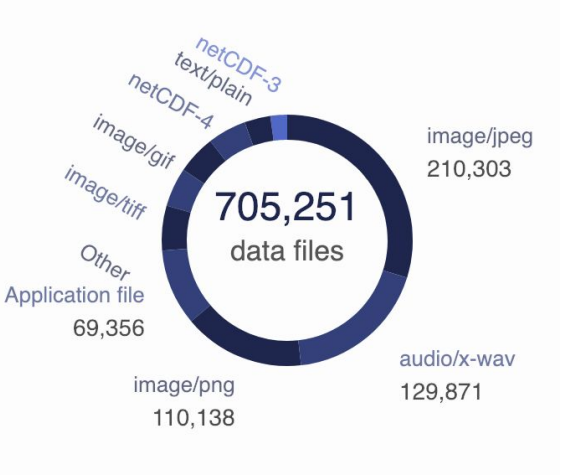
Data Archive

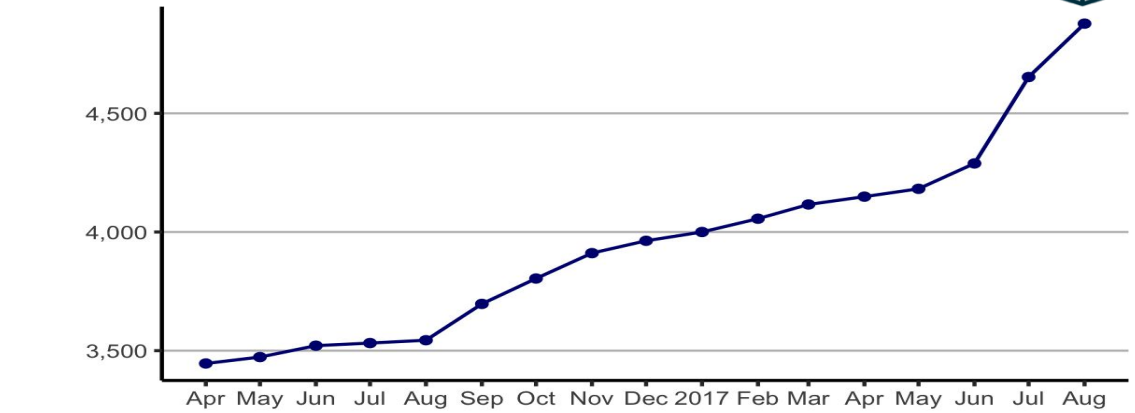


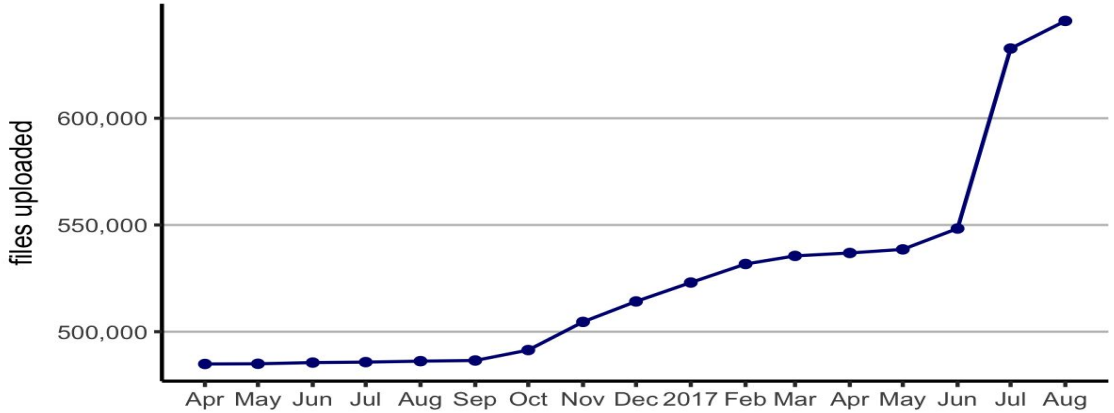
Data archive growth

4 to 27 TB



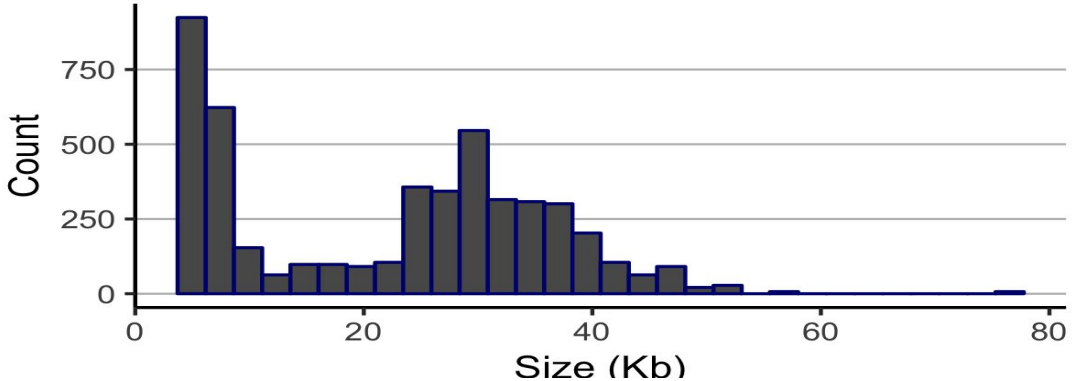




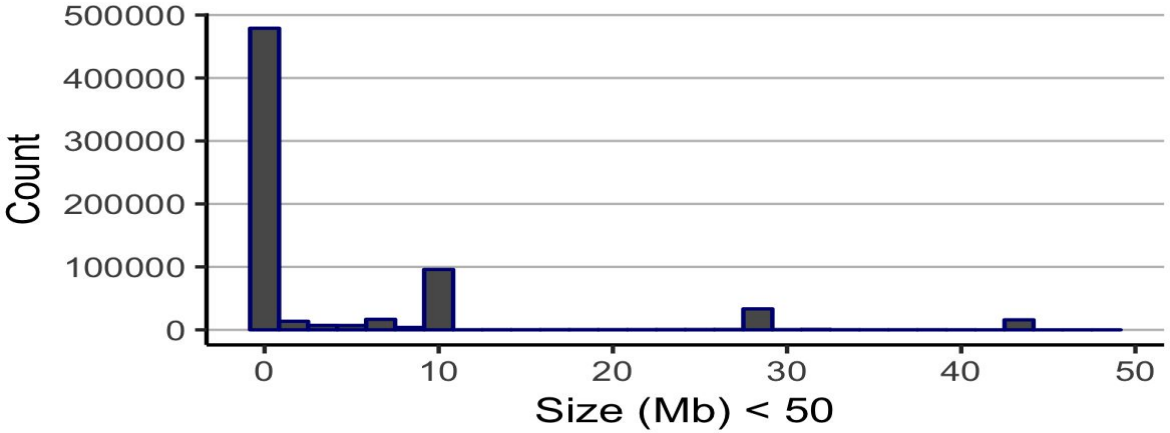


Size distribution

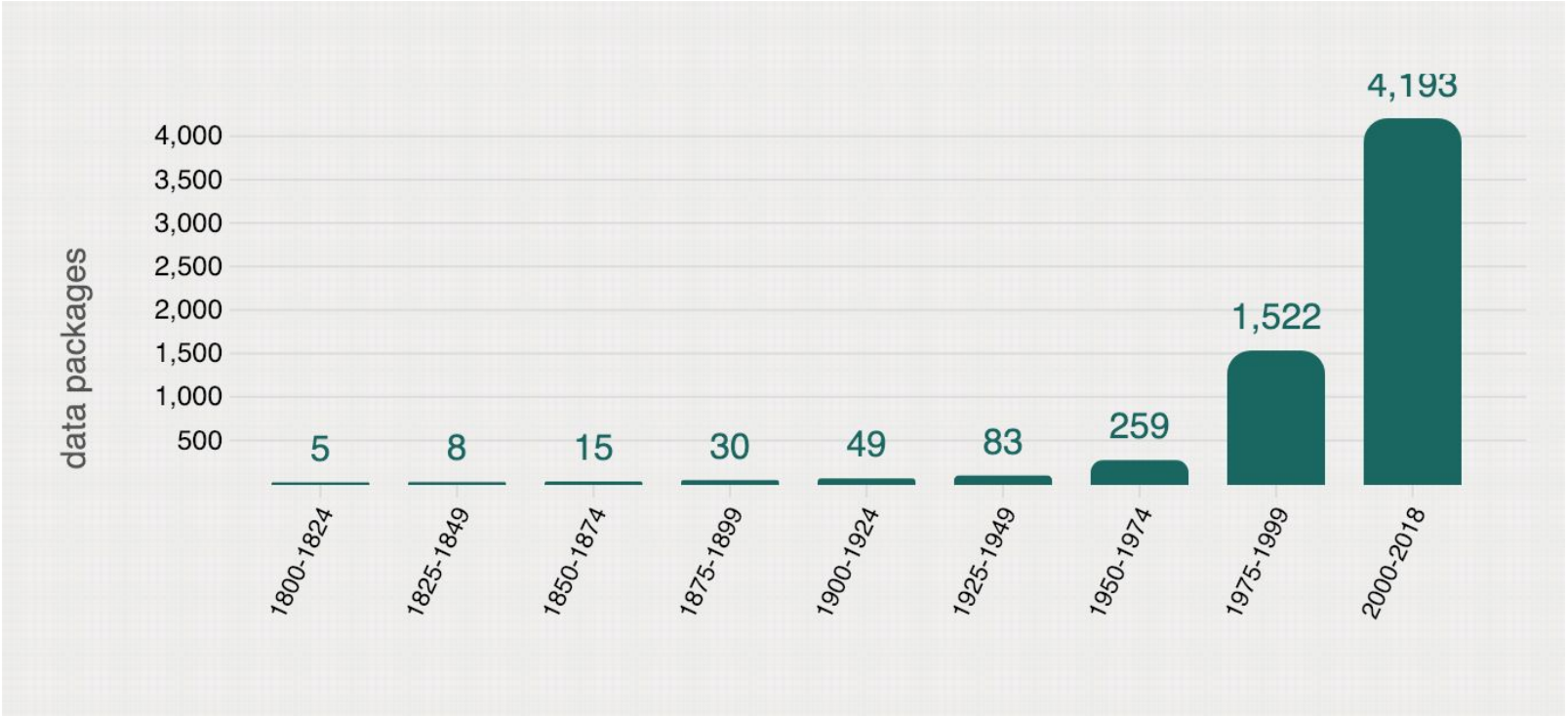
Metadata



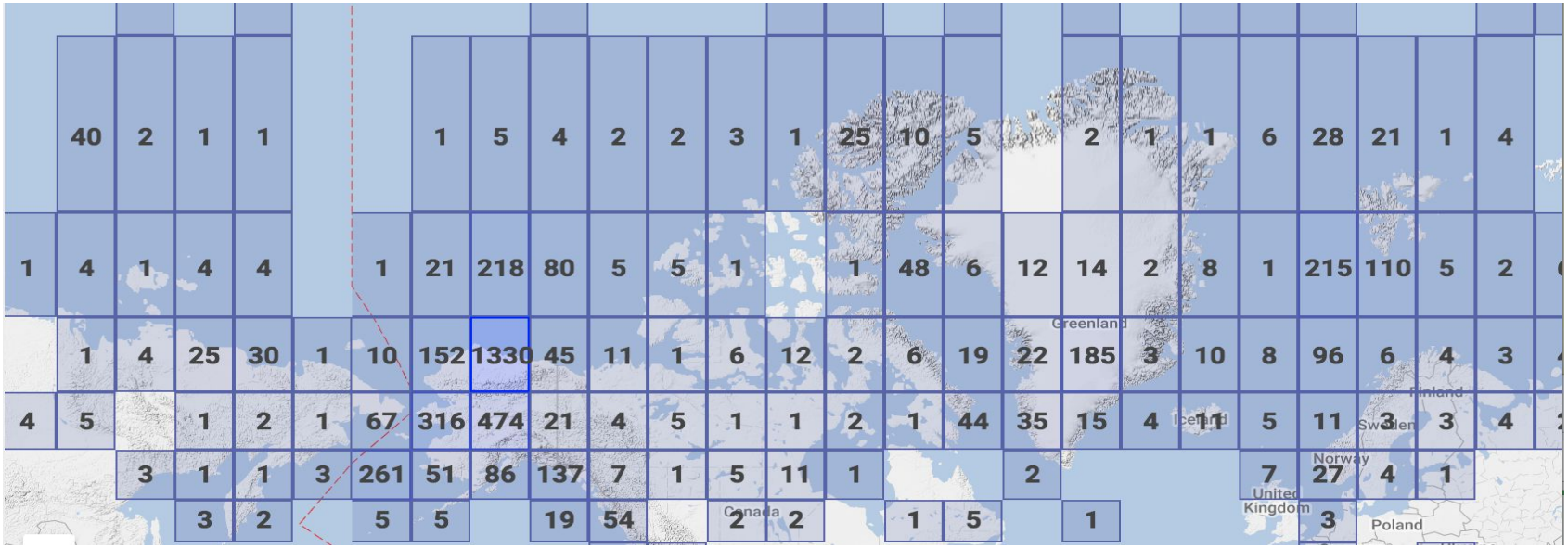
Data (< 50MB)



Data by time period

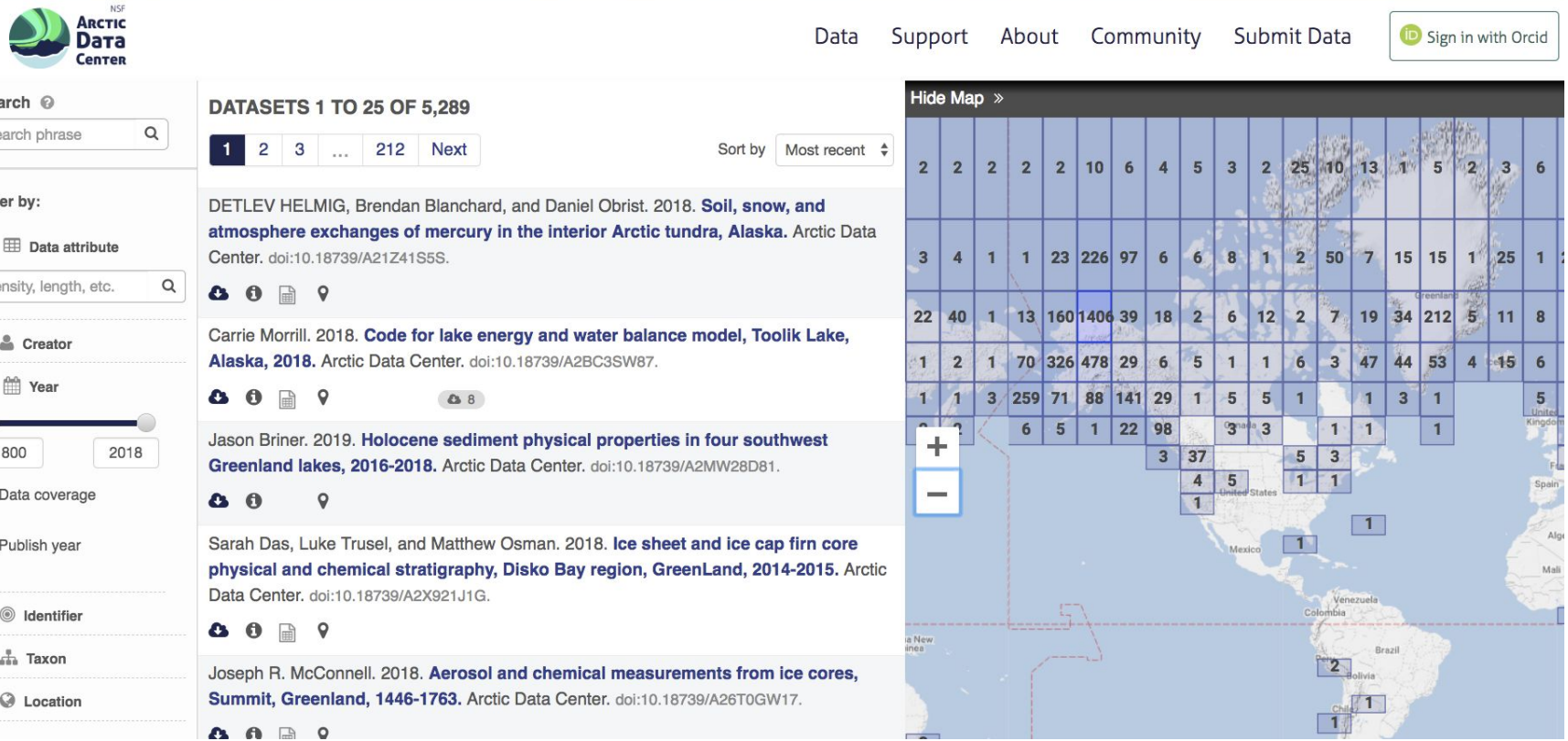


Pan-Arctic Data



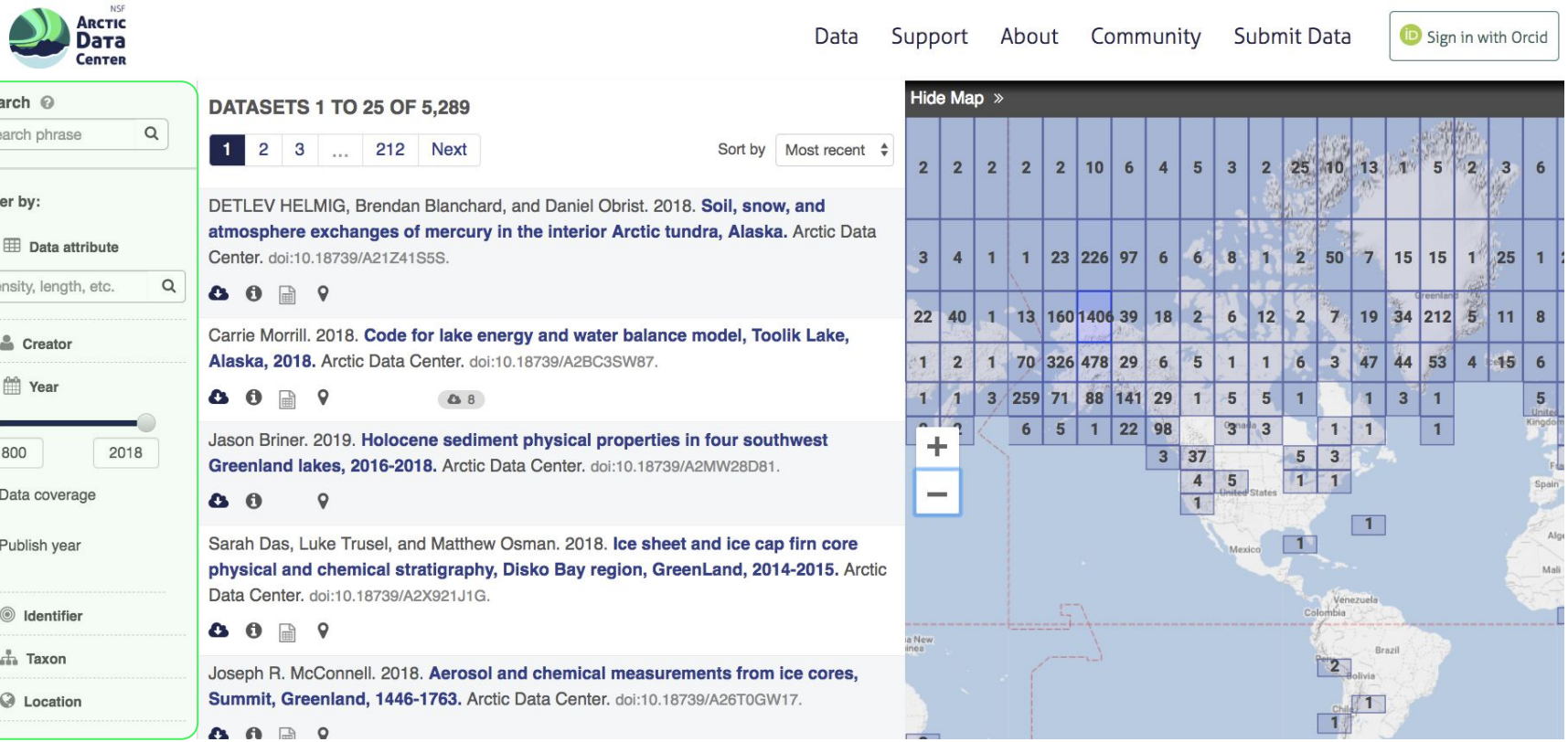
Data Discovery Portal

https://arcticdata.io/catalog/



Data Discovery Portal

https://arcticdata.io/catalog/



Data Discovery Portal

Sarah Das, Luke Trusel, and Matthew Osman. 2018. Ice sheet and ice cap firn core physical and chemical stratigraphy, Disko Bay region, GreenLand, 2014-2015. Arctic Data Center. doi:10.18739/A2X921J1G.

Citations 0 | Downloads 0 | Views 0 | Copy Citation | Quality report

Files in this dataset Package: resource_map_doi:10.18739/A2X921J1G

Name		File type	Size	Download All
Metadata: Disko Bay Project, Greenland: ice sheet and ice cap firn core physical and chemical stratigraphy.xml		EML v2.1.1	65 KB	Download
gw2014_melt_vs_depth.csv	More info	text/csv	631 B	Download
nu2015_melt_vs_depth_nov2017.csv	More info	text/csv	19 KB	Download
gc2015_density.csv	More info	text/csv	33 KB	Download

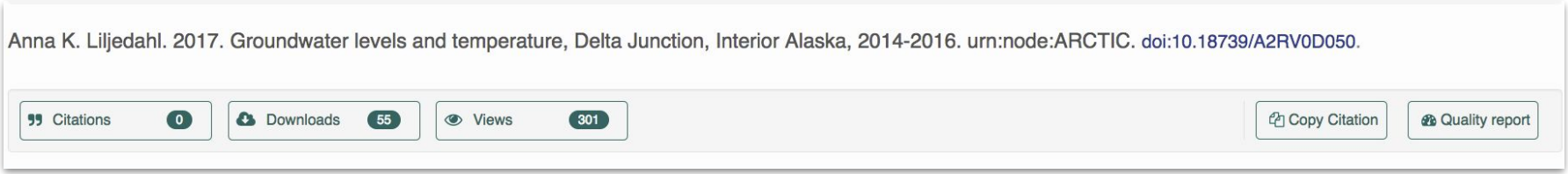
Show 6 more items in this data set

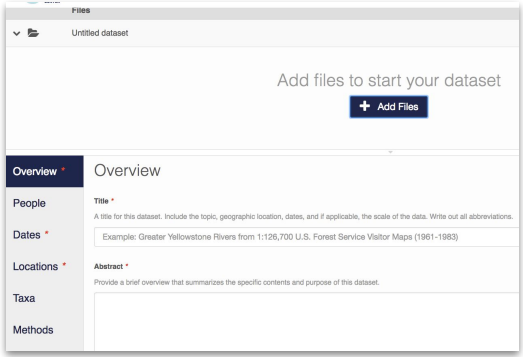
General

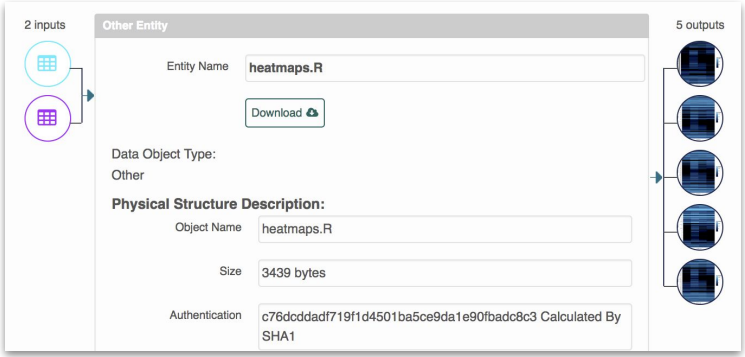
Identifier: doi:10.18739/A2X921J1G

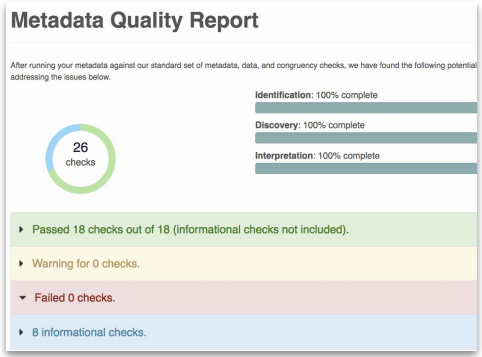
Abstract: This dataset is comprised of physical and chemical stratigraphic records from firn cores collected on the western flank of the Greenland Ice Sheet, and ice caps on Disko Island,

Tools and Infrastructure



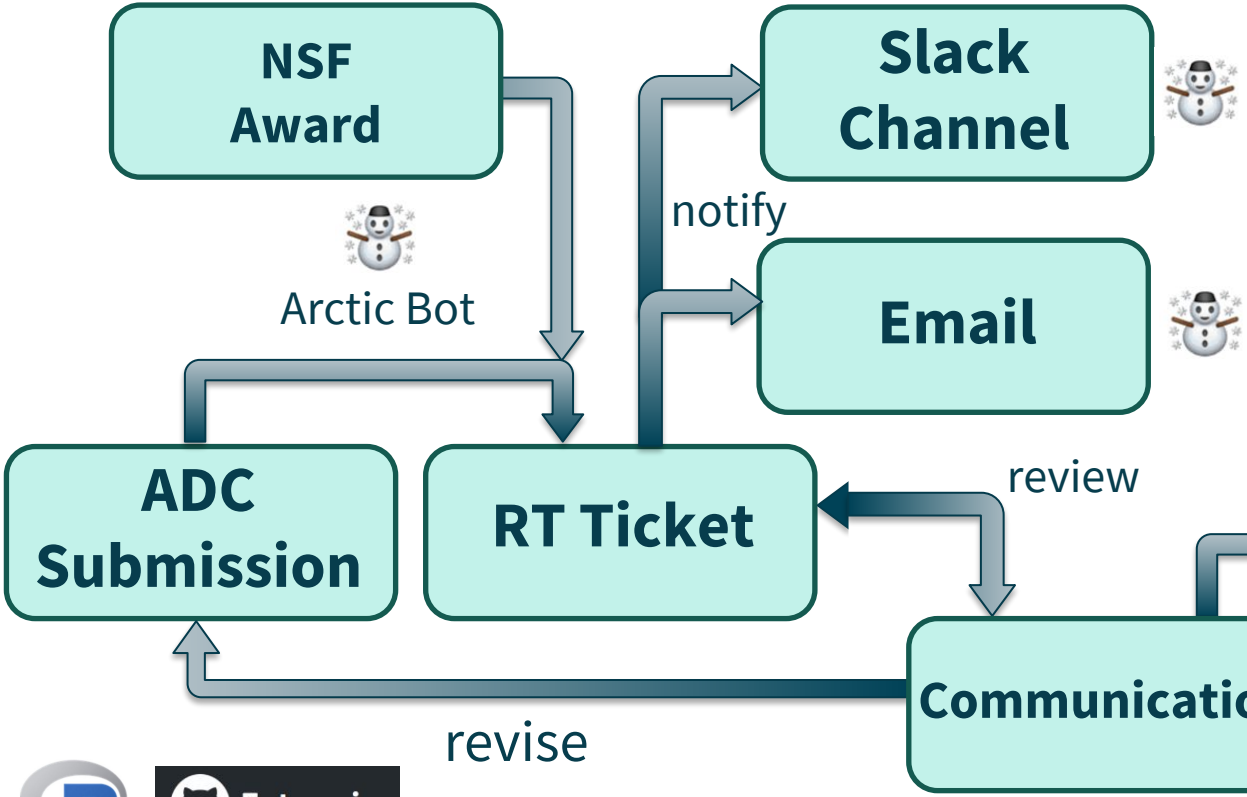






Support Services

Support Systems



Enterprise

Support Team (support@arcticdata.io)

Clark

Goldstein

Mullen

Chong

Monper

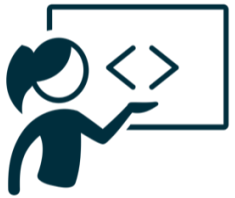
Pruett

Sun

Student Interns

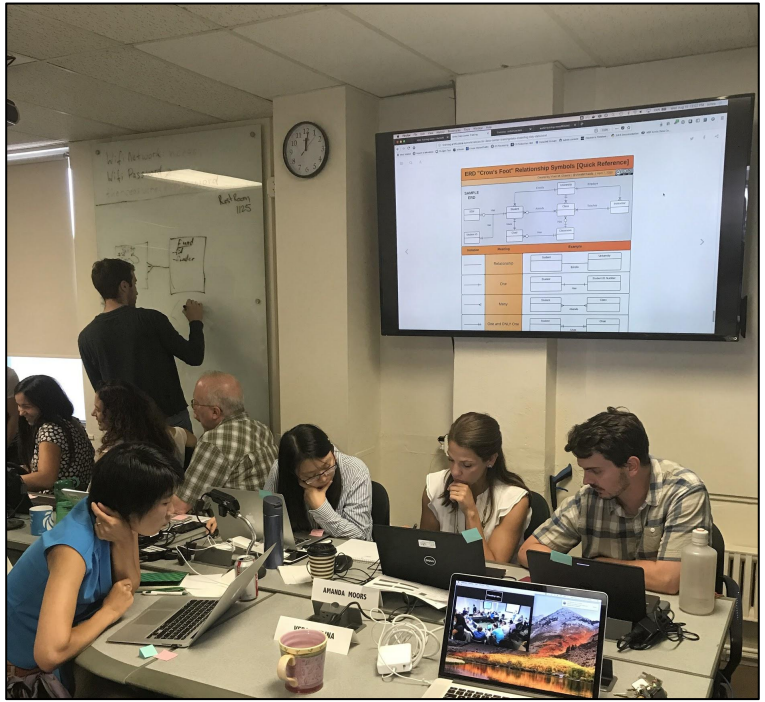
Training and Outreach

Training and Outreach

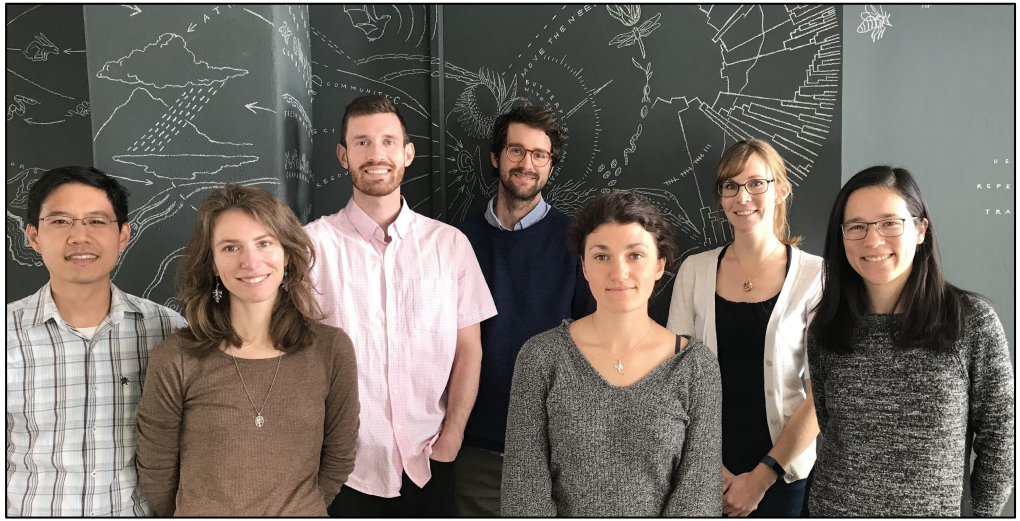


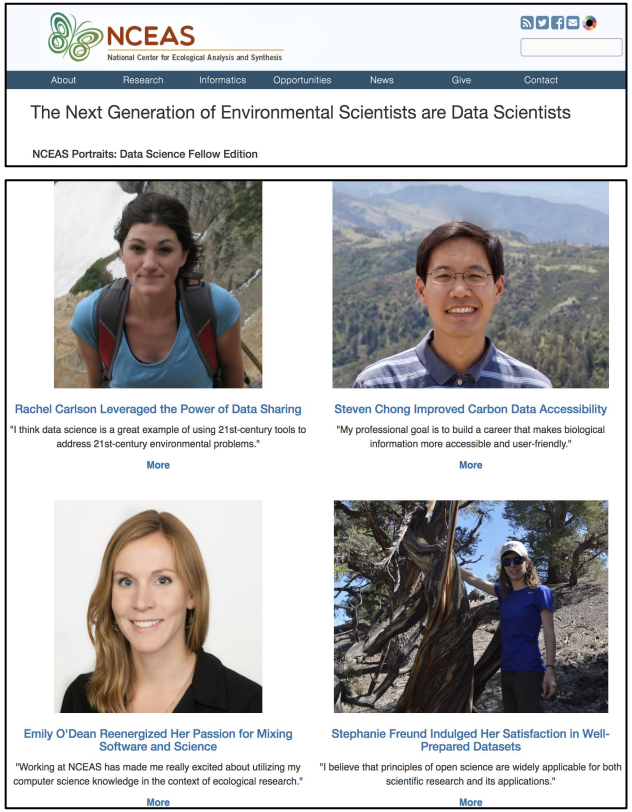
- Training
  - Trainings
  - Workshops
  - Internship Program
  - Data Fellows Program
  - Webinars

Arctic Data Science Training



Data Science Fellowship





NCEAS
National Center for Ecological Analysis and Synthesis

About Research Informatics Opportunities News Give Contact

The Next Generation of Environmental Scientists are Data Scientists

NCEAS Portraits: Data Science Fellow Edition

Rachel Carlson Leveraged the Power of Data Sharing

"I think data science is a great example of using 21st-century tools to address 21st-century environmental problems."

More

Steven Chong Improved Carbon Data Accessibility

"My professional goal is to build a career that makes biological information more accessible and user-friendly."

More

Emily O'Dean Reenergized Her Passion for Mixing Software and Science

"Working at NCEAS has made me really excited about utilizing my computer science knowledge in the context of ecological research."

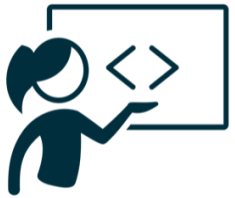
More

Stephanie Freund Indulged Her Satisfaction in Well-Prepared Datasets

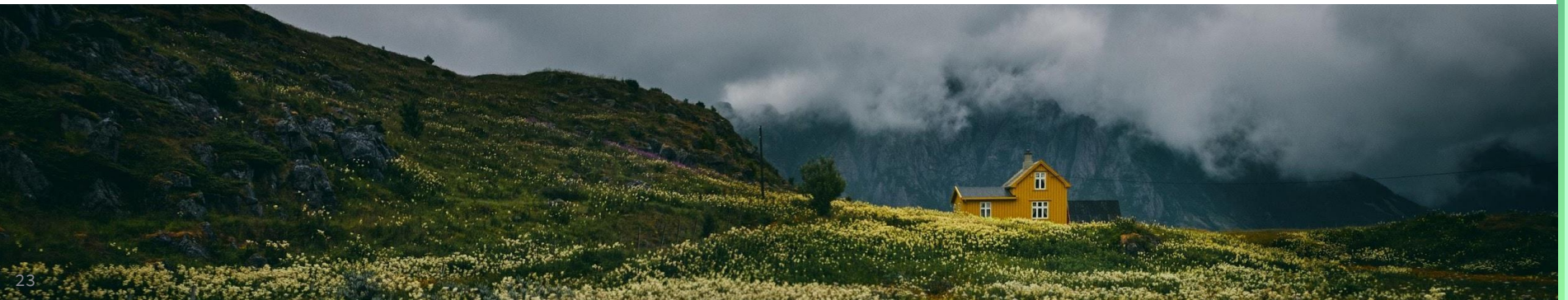
"I believe that principles of open science are widely applicable for both scientific research and its applications."

More

Training and Outreach



- Outreach
  - In-person events
  - News items and other communications
  - Social media
  - Arctic Data Center website



Data Training & Outreach

Dataset Highlights

Dataset Highlight: Phenological Mismatch in the Arctic, with Dr. Kathy Kelsey

By Kathryn Meyer

Citation: Katharine Kelsey. 2017. Methane and nitrous oxide fluxes as a function of the timing of goose grazing, Yukon Kuskokwim Delta, Alaska, 2016. Arctic Data Center. doi:10.18739/A28J6F.

> ***Highlight:*** *"These data are critical for understanding how climate-induced changes in the timing of migratory herbivore grazing should be included in projections of the role of Arctic and Subarctic ecosystems in the global climate system," – Dr. Kathy Kelsey.*

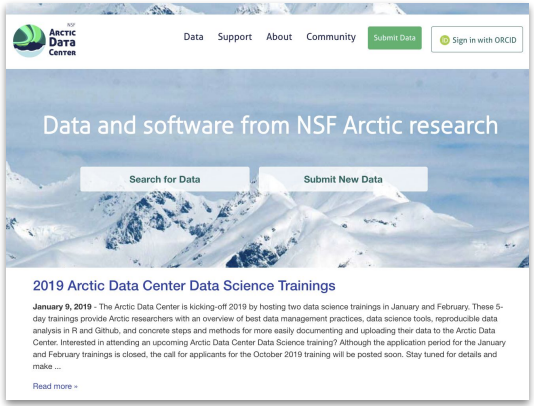
Dr. Kathy Kelsey collecting greenhouse gas data. PC: Ryan T. Choi

Phenological mismatch is when the timing of food and/or habitat availability for a species is altered relative to that which that species is accustomed. It's also a phenomenon becoming more prevalent in a changing climate. As climatic changes lead to an earlier spring in the Arctic and many other parts of the world, the timing of herbivore migration and grazing is also changing. Dr. Kathy Kelsey, a Postdoctoral Fellow at the University of Alaska, Anchorage, and her team led by Principal Investigators Dr. Karen Beard, Dr. Jeffrey Welker and Dr. Joshua Leffler, know this well.

But while phenological mismatch is known to have effects on herbivore populations, Kelsey and her team are specifically investigating how these timing changes affect interactions between the biosphere and the atmosphere. To do this, they collected data on the exchange of greenhouse gases, including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), between the ecosystem and the atmosphere. This particular dataset helps to understand how changes in the timing of the growing season and the timing of goose grazing affect greenhouse gas fluxes.

Addressing their research questions really is a team effort. To collect and analyze their own data, Kelsey's team relied on other available data – including data on geese arrival,

Social Media & Marketing

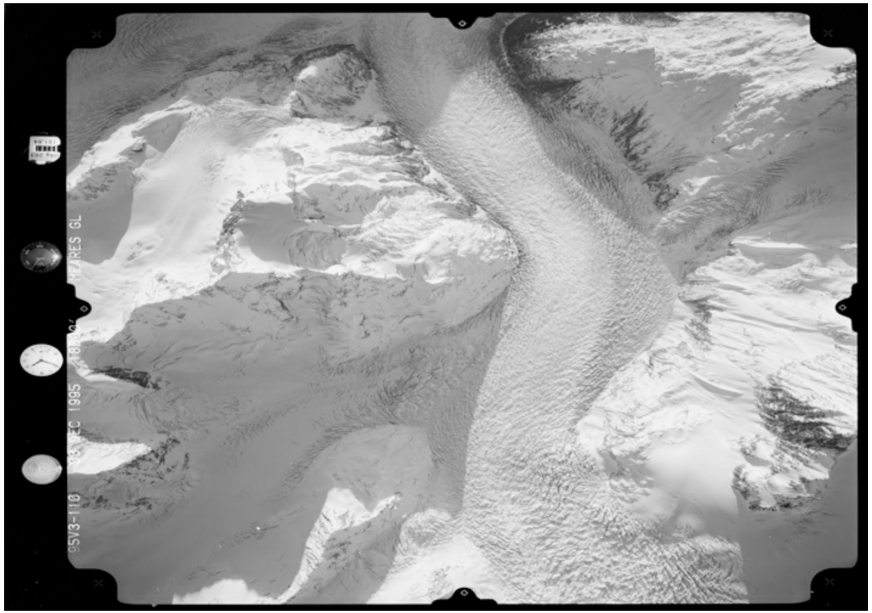


@arcticdatactr

Data Rescue

Data Recovery: Aerial Glacier Photos

- Austin Post's collection
- 1964 – 1997
- 2 - 6 rolls per year
- 100,000+ files = 4.9 TB
  - Glacier photos: TIFs, JPGs, TNs
  - Reconstructed flight paths, images of notes, image metadata, camera specs



Meares Glacier, Prince William Sound, AK
61.187448, -147.457573, taken from 18,000'
December 3, 1995, Roll 3, Frame 110
doi:10.18739/A2FF6Z (NAGAP_95V3_110.jpg)

the Arctic Data Center,

NSF Standards & Policies

Who Must Submit

https://arcticdata.io/submit/#who-must-submit

Arctic Research Opportunities (ARC):

- Complete metadata and all appropriate data and derived products
- Within 2 years of collection or before end of award, whichever comes first

ARC Arctic Observing Network:

- Complete metadata and all data
- Real-time data made public immediately
- Within 6 months of collection

Who Must Submit: Social Sciences

https://arcticdata.io/submit/#who-must-submit

Arctic Social Sciences Program (ASSP):

- NSF policies include special exceptions for ASSP and other awards that contain sensitive data
- Human subjects, governed by an Institutional Review Board, ethically or legally sensitive, at risk of decontextualization
- Metadata record that documents non-sensitive aspects of the project and data
  - *Title, Contact information, Abstract, Methods*

Terms of Use: Licensing and Distribution

https://arcticdata.io/submit/#license-and-data-distribution

All metadata and (non-sensitive) data will be released under either:

CC-0 Public Domain Dedication:

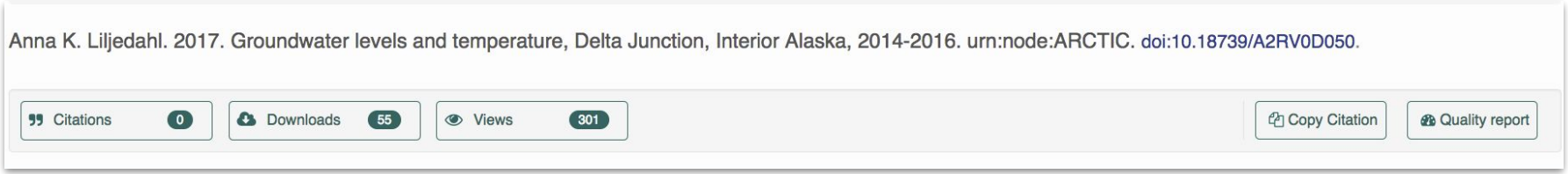
> *"...can copy, modify, distribute and perform the work, even for commercial purposes, all without asking permission."*

Creative Commons Attribution 4.0 International License:

> "...free to...copy,...redistribute,...remix, transform, and build upon the material for any purpose, even commercially,...[but] ***must give appropriate credit***, provide a link to the license, and indicate if changes were made."

Data Citation

- We assign a DOI to each published data set
- Researchers should cite data they use



- We are working as part of Make Data Count to track the citations to data

MAKE DATA COUNT

Data Citation

- Each update has a unique identifier
- Cite the exact version used
- Newer versions are clearly indicated

the **Arctic Data Center,**
NSF Standards & Policies,
Summary

Arctic Data Center Features and Services

Data Archive

Data Discovery Portal

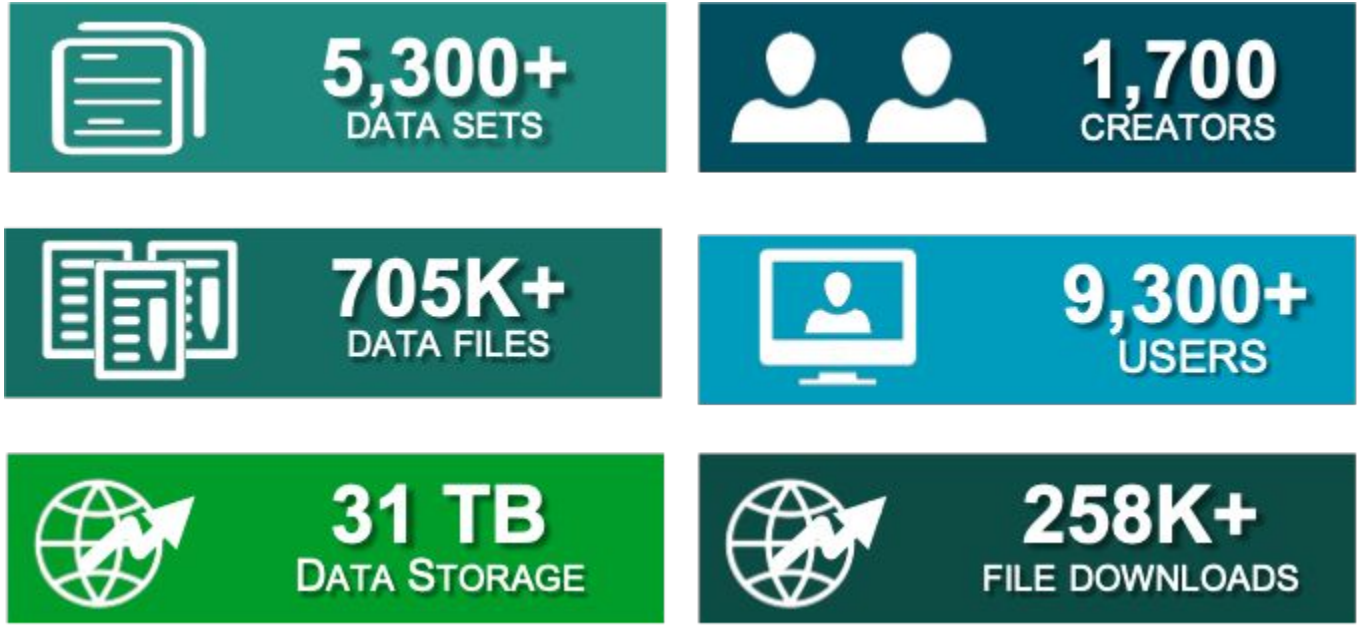
Tools and Infrastructure

Support Services

Training and Outreach

Data Rescue

Operation Metrics



https://arcticdata.io