



<https://arcticdata.io>

 @arcticdatactr

the Arctic Data Center

Amber Budden
 iD 0000-0003-2885-3980



DataONE

NSF Award #1546024

Arctic Data Center Data Science Training
October 7-11, 2019

1



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





Troms Fylke



Rama

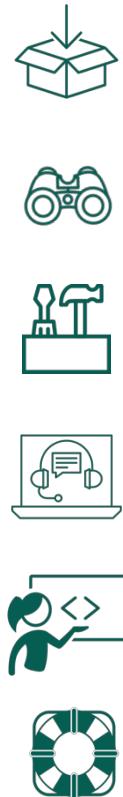


Detroit Publishing Co.



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**





Teams

Leadership Team



M. Jones



Schildhauer



Budden



Casey



Baker-Yeboah



Dozier



Walker



C. Jones



Mecum



Chong

CI Team

Data and User Services Teams



Clark



Vacant



Li



Mullen



Semnacher



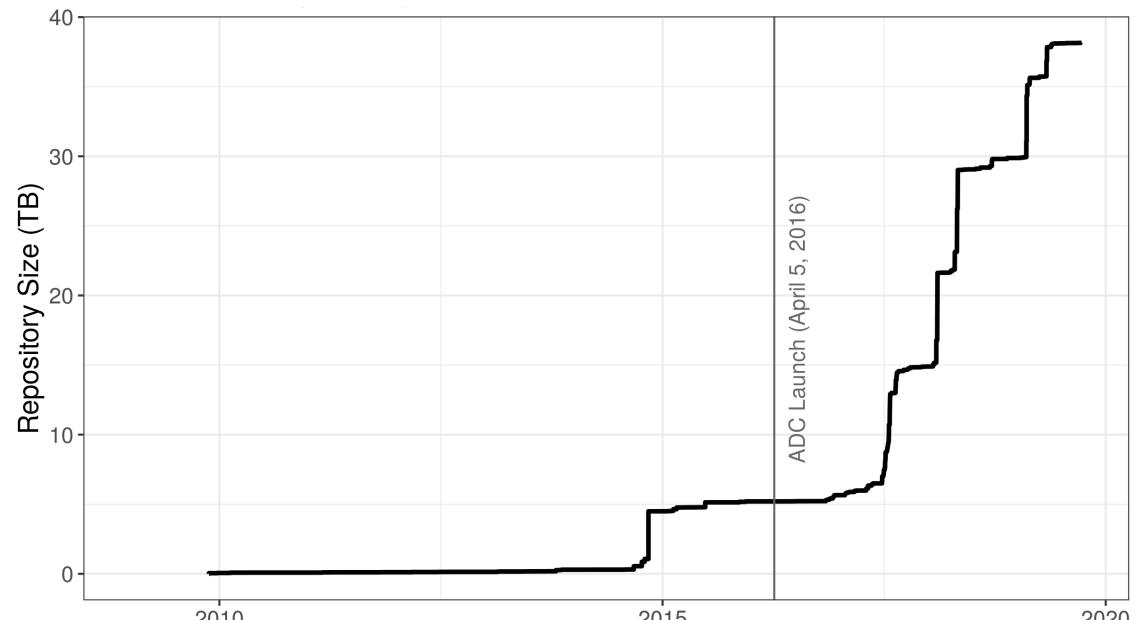
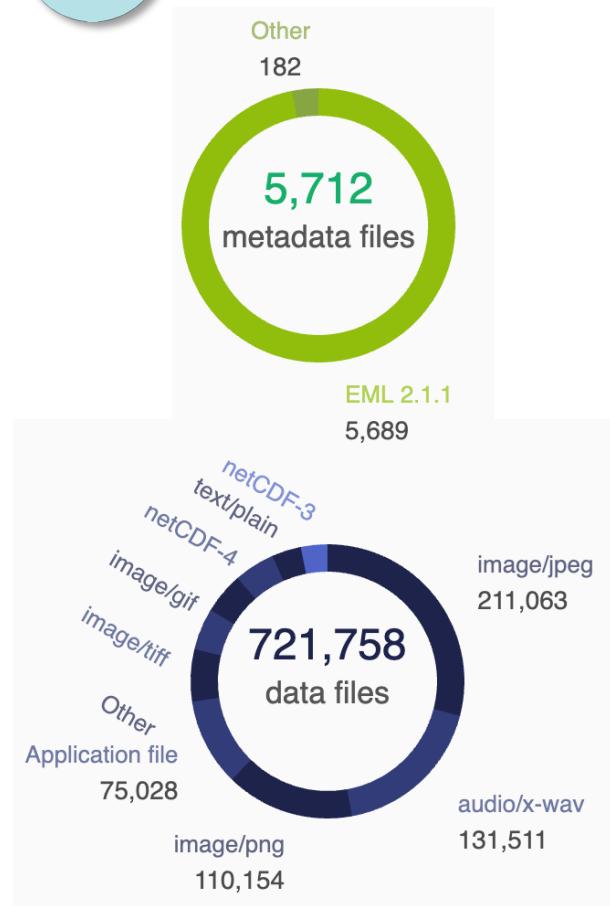
Data Archive





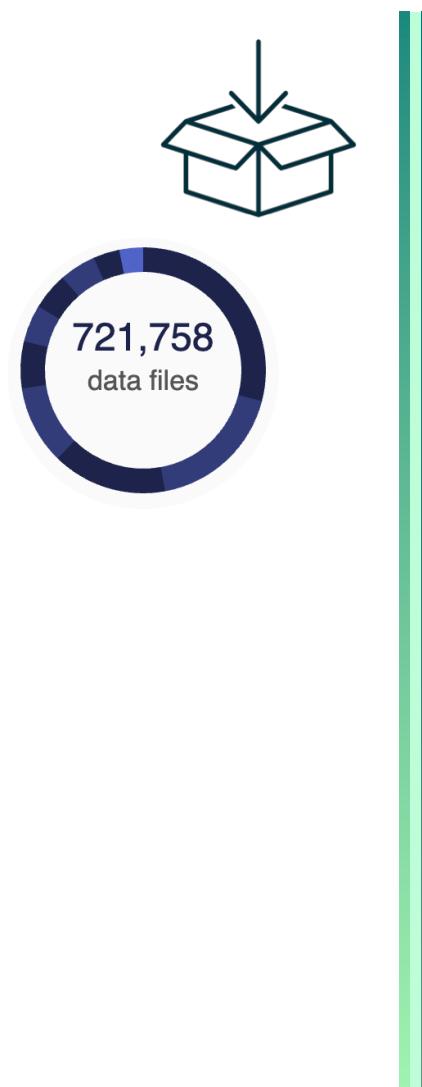
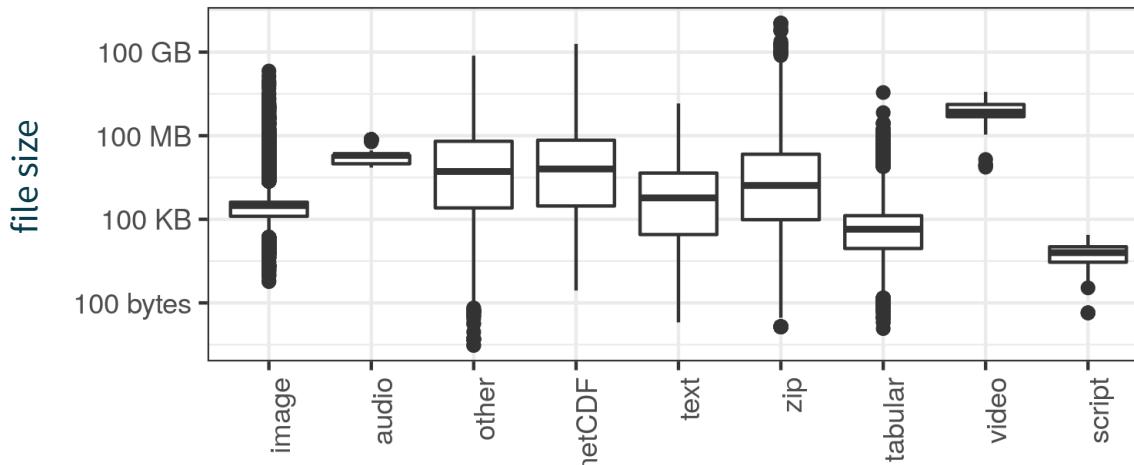
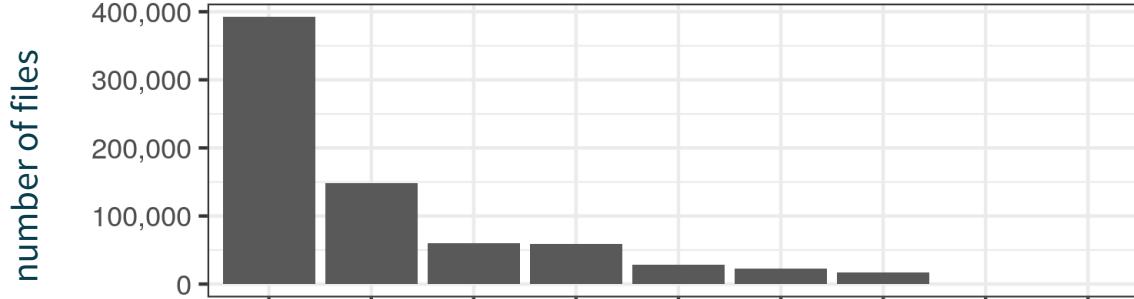
Data archive growth

4 to 34 TB





Content Characterization





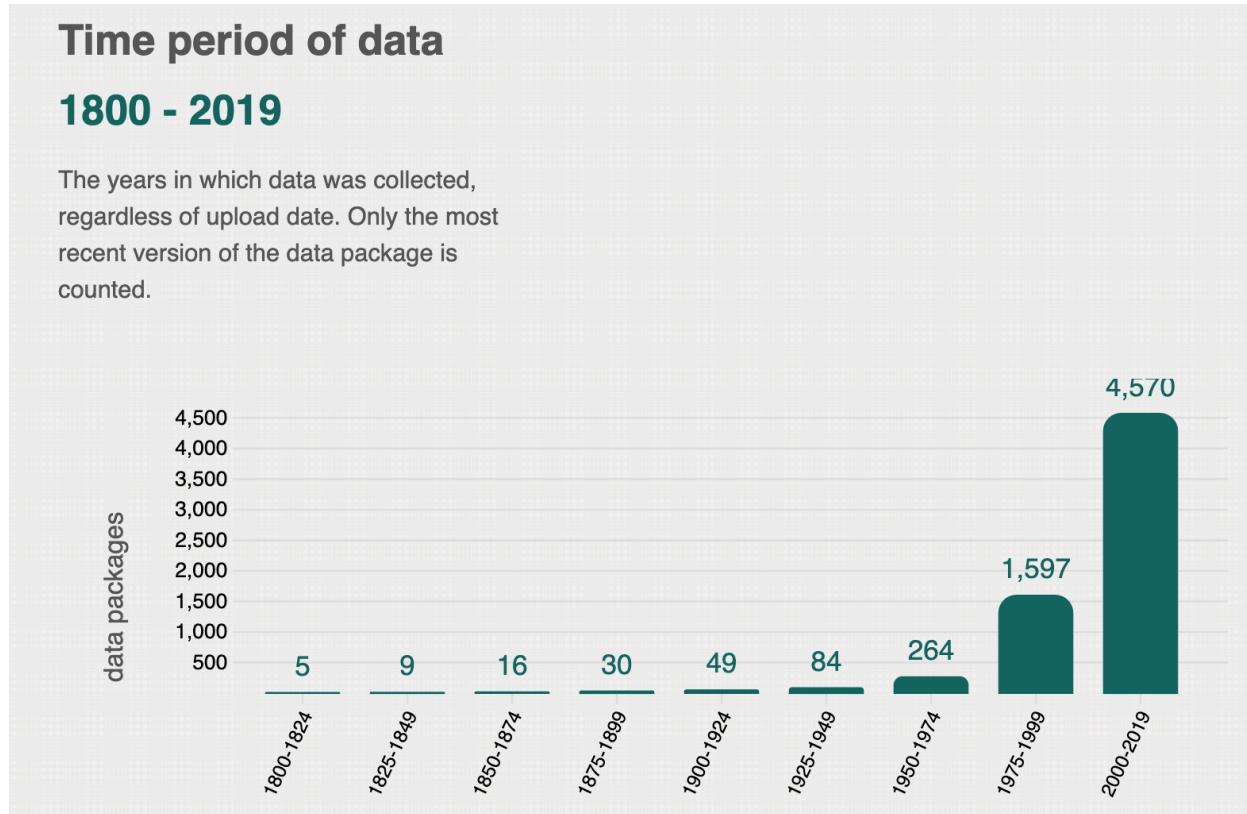
Data by time period



Time period of data

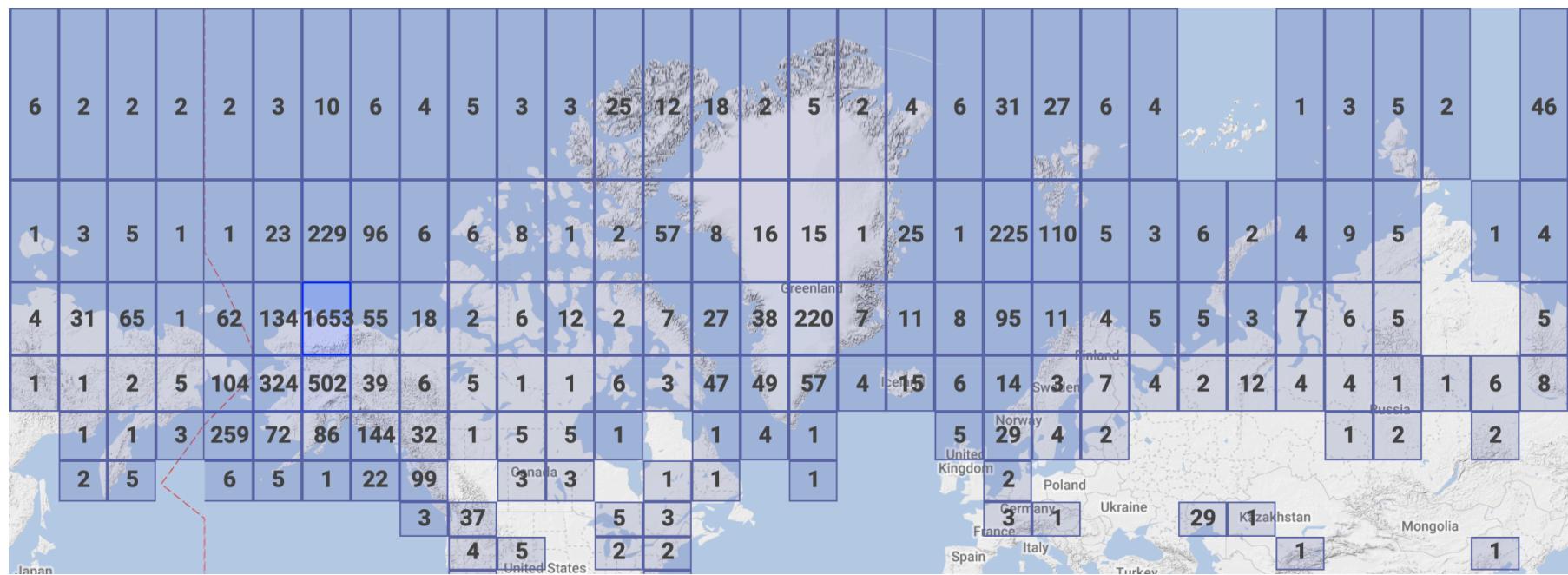
1800 - 2019

The years in which data was collected, regardless of upload date. Only the most recent version of the data package is counted.





Pan-Arctic Data





Data Discovery Portal



NSF Arctic Data Center arcticdata.io/catalog/data

Search [?](#) [🔍](#)

Filter by:

- [Data attribute](#)
- [Annotation](#)
- [Creator](#)
- [Year](#)
- [Identifier](#)
- [Taxon](#)
- [Location](#)

DATASETS 1 TO 25 OF 5,700

Sort by [Most recent](#)

1 2 3 ... 228 Next

William Daniels, Yongsong Huang, James Russell, Carrie Morrill, William Longo, et al. 2019. Leaf wax hydrogen isotope data, and modern precipitation isotope data, Lake E5, Alaska, 2014-2018. Arctic Data Center. doi:10.18739/A2DZ03215. [Cloud](#) [Info](#) [Download](#) [Location](#) 4 10

Rachel Fowler and Jasmine Saros. 2019. Lake water quality data from Kangerlussuaq, Greenland, 2013-2018. Arctic Data Center. doi:10.18739/A2QB9V561. [Cloud](#) [Info](#) [Download](#) [Location](#) 2

Timothy Pasch and Olaf Kuhlke. 2019. Arctic Unmanned Aerial Video (UAV) 4K footage demonstrating topographical factors in Huslia, Alaska, summer 2019. Arctic Data Center. doi:10.18739/A2W37KW0M. [Cloud](#) [Info](#) [Download](#) [Location](#) 2

Julie McKnight. 2015. Thule, Greenland CO₂ flux, soil moisture and temperature - 2015. Arctic Data Center. doi:10.18739/A20V89H5P. [Cloud](#) [Info](#) [Download](#) [Location](#)

Julie McKnight Konkel. 2017. Soil CO₂ flux, temperature, and moisture, Thule, Greenland 2016. Arctic Data Center. doi:10.18739/A24M9199T. [Cloud](#) [Info](#) [Download](#) [Location](#)

Patrick Sullivan. 2016. Light Saturated Needle Photosynthesis and Stomatal Conductance. Arctic Data Center. doi:10.18739/A29044R9D. [Cloud](#) [Info](#) [Download](#) [Location](#)

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<https://arcticdata.io/catalog/>



Data Discovery Portal



NSF Arctic Data Center arcticdata.io/catalog/data

Search [?](#) Search phrase [🔍](#)

Filter by:

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- [Year](#)
- [Identifier](#)
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Rachel Fowler and Jasmine Saros. 2019. Lake water quality data from Kangerlussuaq, Greenland, 2013-2018. Arctic Data Center. doi:10.18739/A2QB9V561. [Cloud](#) [Info](#) [Download](#) [Location](#)

Timothy Pasch and Olaf Kuhlke. 2019. Arctic Unmanned Aerial Video (UAV) 4K footage demonstrating topographical factors in Huslia, Alaska, summer 2019. Arctic Data Center. doi:10.18739/A2W37KW0M. [Cloud](#) [Info](#) [Download](#) [Location](#) [2](#)

Julie McKnight. 2015. Thule, Greenland CO₂ flux, soil moisture and temperature - 2015. Arctic Data Center. doi:10.18739/A20V89H5P. [Cloud](#) [Info](#) [Download](#) [Location](#)

Julie McKnight Konkel. 2017. Soil CO₂ flux, temperature, and moisture, Thule, Greenland 2016. Arctic Data Center. doi:10.18739/A24M9199T. [Cloud](#) [Info](#) [Download](#) [Location](#)

Patrick Sullivan. 2016. Light Saturated Needle Photosynthesis and Stomatal Conductance. Arctic Data Center. doi:10.18739/A2Q044RSD. [Cloud](#) [Info](#) [Download](#) [Location](#)

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<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	text/csv	631 B	Download
nu2015_melt_vs_depth_nov2017.csv	text/csv	19 KB	Download
gc2015_density.csv	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, GreenLand and the Nuussuaq Peninsula, GreenLand. These data were collected as part of the NCF project Collaborative Research on the Influence of Ocean Surface



Tools and Infrastructure



Anna K. Liljedahl. 2017. Groundwater levels and temperature, Delta Junction, Interior Alaska, 2014-2016. urn:nodenode:ARCTIC. doi:10.18739/A2RV0D050.

Citations 0 Downloads 55 Views 301

Copy Citation Quality report

Files Untitled dataset Add files to start your dataset + Add Files

Overview Overview

People

Dates Example: Greater Yellowstone Rivers from 1:126,700 U.S. Forest Service Visitor Maps (1981-1983)

Locations Abstract

Taxa

Methods

2 inputs Other Entity Entity Name heatmaps.R Download

Data Object Type: Other

Physical Structure Description: Object Name heatmaps.R Size 3439 bytes Authentication c76dcddadff719f1d4501ba5ce9da1e90fbadc8c3 Calculated By SHA1

5 outputs

Metadata Quality Report

After running your metadata against our standard set of metadata, data, and congruency checks, we have found the following potential addressing the issues below.

Identification: 100% complete
Discovery: 100% complete
Interpretation: 100% complete

26 checks

Passed 18 checks out of 18 (informational checks not included).
Warning for 0 checks.
Failed 0 checks.
8 informational checks.

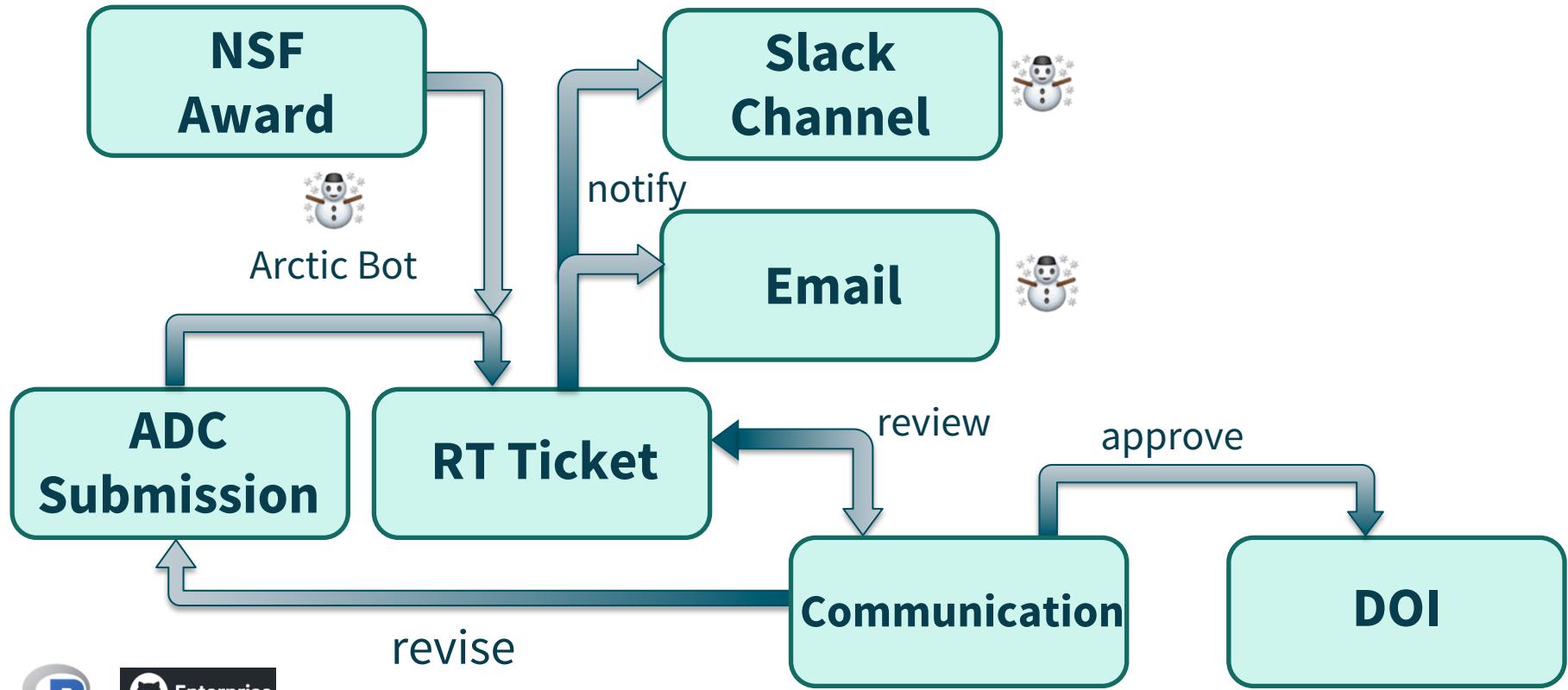


Support Services





Support Systems

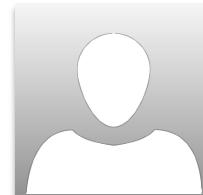




Support Operations Team



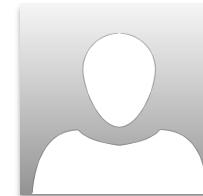
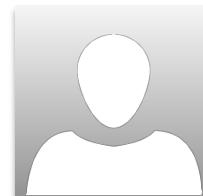
Project Data Coordinator
Dominic Mullen



Project Data Support
Jeanette Clark



Student Intern
Rachel Sun

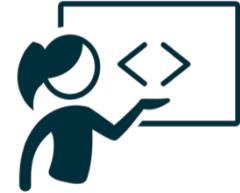


(support@arcticdata.io)



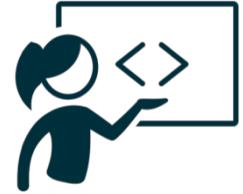


Training and Outreach





Training and Outreach

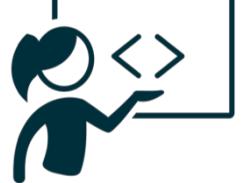


- Training
 - Trainings
 - Workshops
 - Internship Program
 - Data Fellows Program
 - Webinars



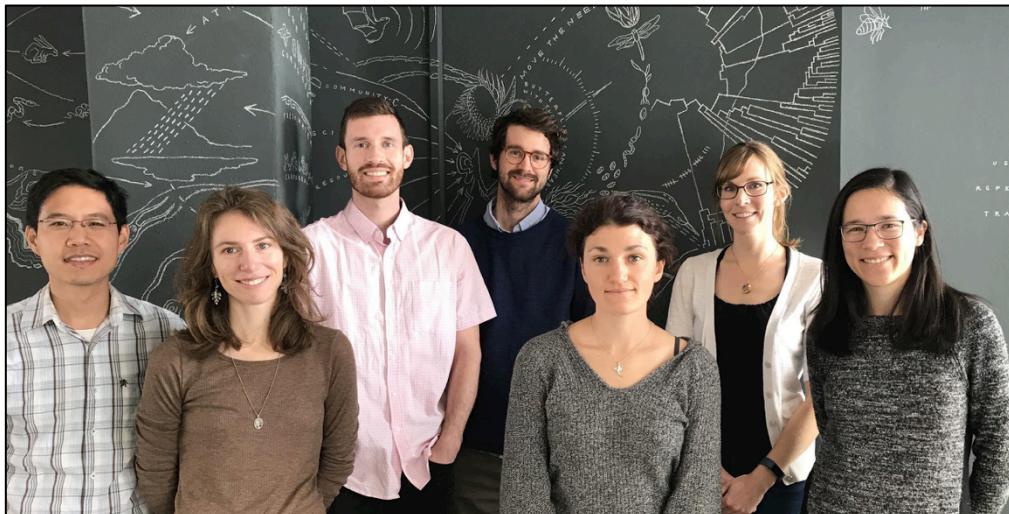


Arctic Data Science Training





Data Science Fellowship



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](#)

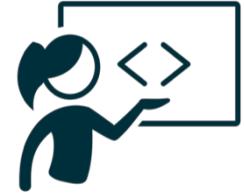
Stephanie Freund Indulged Her Satisfaction in Well-Prepared Datasets
"I believe that principles of open science are widely applicable for both scientific research and its applications."

[More](#)

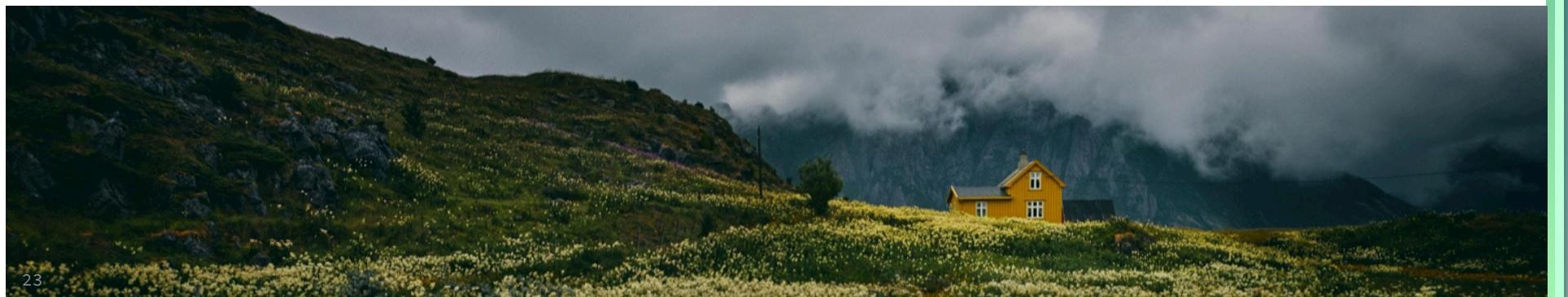
A vertical decorative bar on the right side of the page features a teal-to-green gradient.



Training and Outreach

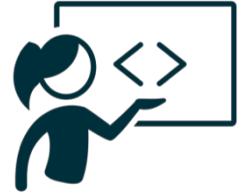


- Outreach
 - In-person events
 - News items and other communications
 - Social media
 - Arctic Data Center website





Data Training & Outreach





Data Highlights

NSF Arctic Data Center Data Support About Community Submit Data Sign in with ORCID

Dataset Highlights

Learn how specific datasets in the Arctic Data Center incorporate best data management practices on how their data can be applied to assist the Arctic research community.



[Data Provenance and Arctic Soil Bacteria, with Michael P. Ricketts](#)

[Dissolved Organic Carbon in the Arctic, with Dr. Rose Cory](#)

[Learning from the Hunters in Savoonga, with Dr. Henry Huntington](#)

[Subsistence Harvests in Alaskan Communities along the Bering Sea](#)

[Investigating Rotten Ice, with Dr. Karen Junge](#)

Citation: Karen Junge. 2017. Extreme summer melt: Assessing the habitability and physical structure of rotting first-year Arctic sea ice. Chukchi Sea, Alaska. 2015-2018. Arctic Data Center. doi:10.18739/A28C9R366.

Highlight: "So-called rotten ice has experienced a long summer of melt, is fragile, difficult to work with, and has received little attention. Comprehensive information on its physical and microbiological properties does not exist," – Dr. Karen Junge.

Decreases in ice extent, concentration, and thickness have all been observed in the Arctic as sea ice responds to a changing climate regime with earlier melt and later autumn freeze-up. Dr. Karen Junge, Senior Oceanographer at the University of Washington's Applied Physics Laboratory, and her team (co-principle investigators Dr. Bonnie Light and Dr. Monica Orellana and postdoc Carie Frantz, among others) are studying a less-familiar type of Arctic sea ice that could become more prevalent as the climate continues to warm: rotten ice.

"Rotten ice at the end of summer can be expected to be more prevalent as sea ice is being subjected to an increasingly longer summer melt period," says Junge. "Rotten ice is fragile and difficult to work with; and comprehensive information on its physical and microbiological properties does not exist."

This dataset is part of a project that is examining the microstructural properties and potential habitability of rotten ice. The team traveled to Utqiagvik (formerly Barrow), Alaska, to study rotten ice from shorefast and drifting ice off the Utqiagvik coast. Dr. Bonnie Light led the team in collecting data on the physical properties (temperature, salinity, density, microstructure) and optical (light scattering) properties; while Dr. Junge and Dr. Orellana led the team in collecting data on the biological properties. Being pioneers in rotten ice sampling, the team relied on local Inuit knowledge regarding on-site sea ice and weather conditions to ensure safe access to drifting rotten ice floes and safe ice sampling conditions during their fieldwork.

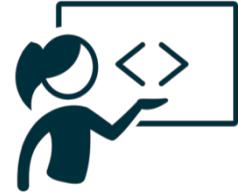


Sampling a structurally rotten ice floe offshore. PC: Dr. Karen Junge, July 2017.



Junge notes that no formal criteria exist to qualify when ice becomes rotten, so they sampled melting ice at the point where its structural and optical properties advance beyond the summer melt season peak.

The data indicate that Arctic sea ice at the end of melt season (rotten ice) is physically different from summertime ice. Pore space increased as ice temperature increased, ice salinity decreased, and bulk density decreased.



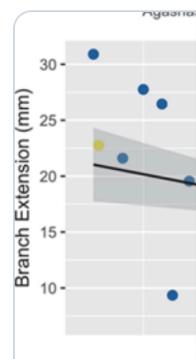


Social Media

Ecology @ESAEcology · Sep 4
#New in @ESAEcology with #OpenData from @arcticdatactr

Poor #nutrition as a potential cause of divergent #tree growth near the #Arctic treeline in northern Alaska

#dendroclimatology
esajournals.onlinelib



Branch Extension (mm)

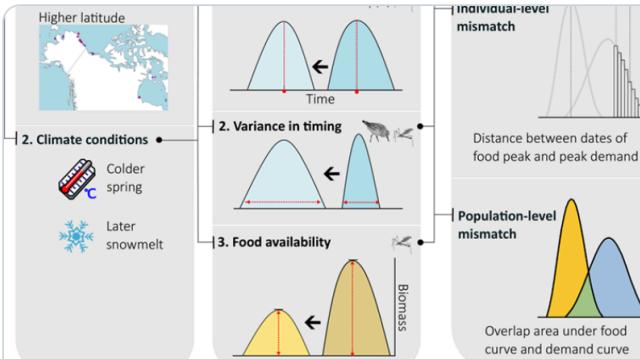
30
25
20
15
10

Q 3 T 3

Ecological Monographs @ESAMonographs · Jun 11
#New in @ESAMonographs with #OpenData from @arcticdatactr

Dissociation of climatic cues and warming #climate are linked with phenological mismatch between #Arctic #shorebirds and prey invertebrates

#phenology @eunbkwon
esajournals.onlinelibrary.wiley.com/doi/10.1002/ec...



Higher latitude

2. Climate conditions

Colder spring
Later snowmelt

2. Variance in timing

3. Food availability

Biomass

Distance between dates of food peak and peak demand

Individual-level mismatch

Population-level mismatch

Overlap area under food curve and demand curve

Q 7 T 6

Andy Parsekian 🇺🇸 @uw_nsgeophysics · May 16

The full, hard-earned dataset is also published on the @arcticdatactr in raw and processed forms. If you like playing with surface NMR data, or if you just want talik info to use in your own work, we encourage you to download the dataset! (2/2) arcticdata.io/catalog/view/d...

Q 1 T 1



@arcticdatactr



Data Rescue

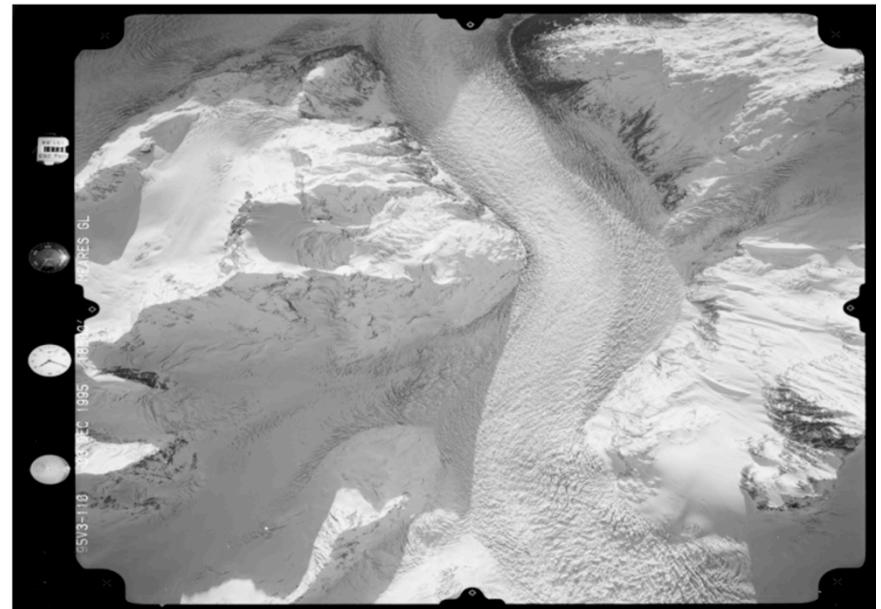




Data Recovery: Aerial Glacier Photos



- 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:



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Creative Commons Attribution 4.0 International License:

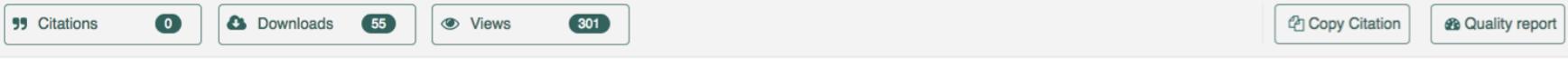
*“...free to...copy,...redistribute,...remix, transform, and build upon the material for any purpose, even commercially,...[but] **must give appropriate credit**, provide a link to the license, and indicate if changes were made.”*



Data Citation

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

Anna K. Liljedahl. 2017. Groundwater levels and temperature, Delta Junction, Interior Alaska, 2014-2016. urn:nodenode:ARCTIC. doi:10.18739/A2RV0D050.



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





Data Citation

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

The screenshot shows a dataset page from the Arctic Data Center. At the top, there's a navigation bar with the Arctic Data Center logo (NSF Arctic Data Center), links for Data, Support, About, a green 'Submit Data' button, and a 'Sign in with Orcid' button. A yellow banner at the top indicates a newer version exists. Below the banner, the page title is 'At-sea density of foraging little auks (Alle alle) near Hornsund Fjord.' by Nina J. Karnovsky, Pomona College, Ann M. A. Harding, Environmental Science Department, Alaska Pacific University, and UCAR/NCAR - Earth Observing Laboratory. The dataset is identified by the identifier urn:uuid:849a7036-8dc4-400e-a584-9d1aaafacca63. There are also links for Home, Search, and Metadata.



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





Arctic Data Center Features and Services



Data Archive



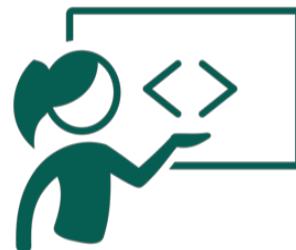
Data Discovery Portal



Tools and Infrastructure



Support Services



Training and Outreach



Data Rescue



Operation Metrics



5,700
DATA SETS



1,520
CREATORS



721K+
DATA FILES



14,119
USERS



34TB+
TOTAL SIZE



11.9M+
FILE DOWNLOADS



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Data
Center**

<https://arcticdata.io>