




<https://arcticdata.io>

 @arcticdatactr

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

Amber E Budden

 0000-0003-2885-3980

NSF Award #1546024



**DataONE**

Arctic Data Center Training  
August 13-17, 2018

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**





## Features and Services

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



**Data****ONE**   
**NCEAS**





# Team



M. Jones



Baker-Yeboah



Budden



Casey



Dozier



Schildhauer



Walker



C. Jones



Mecum



Clark



Goldstein



Li



Mullen



Chong



Meyer







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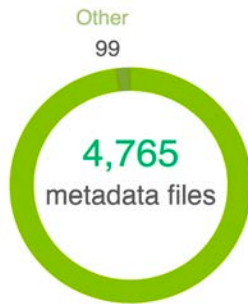


# Data Archive

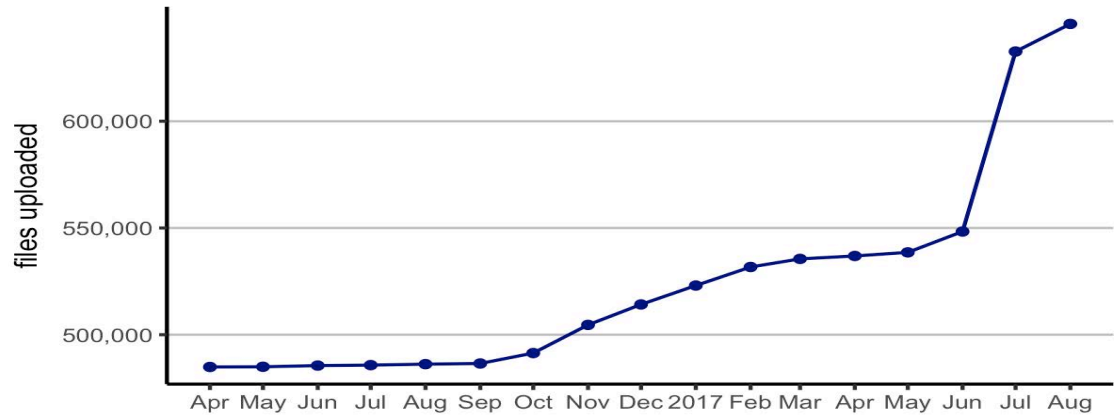
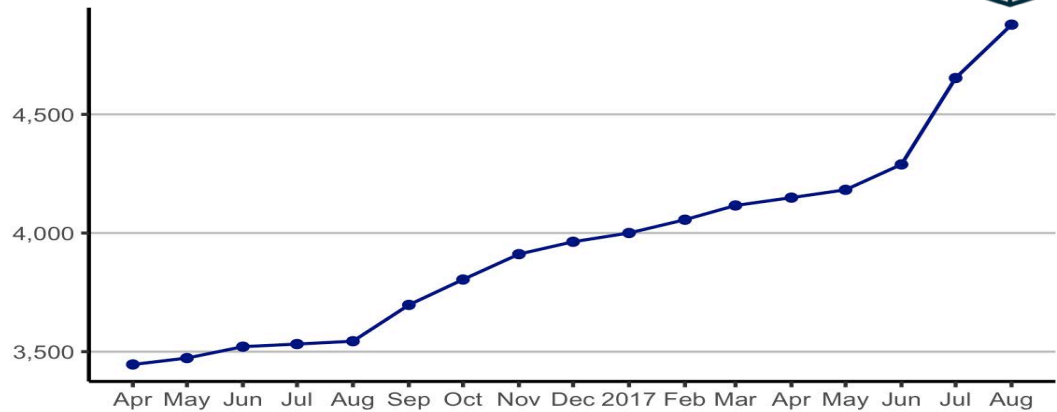
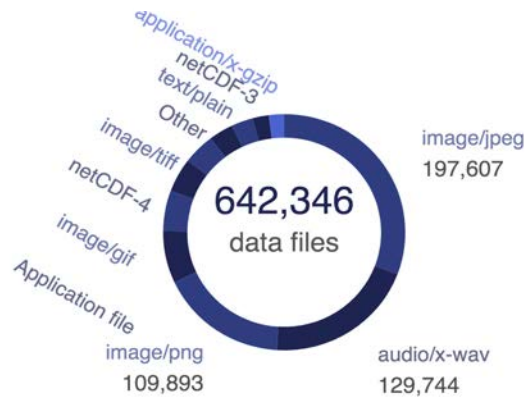




# Data archive growth



EML 2.1.1  
4,666

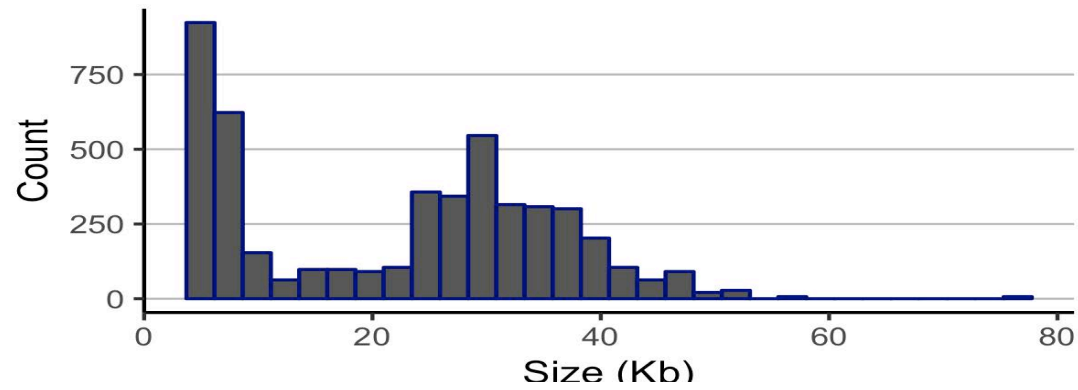




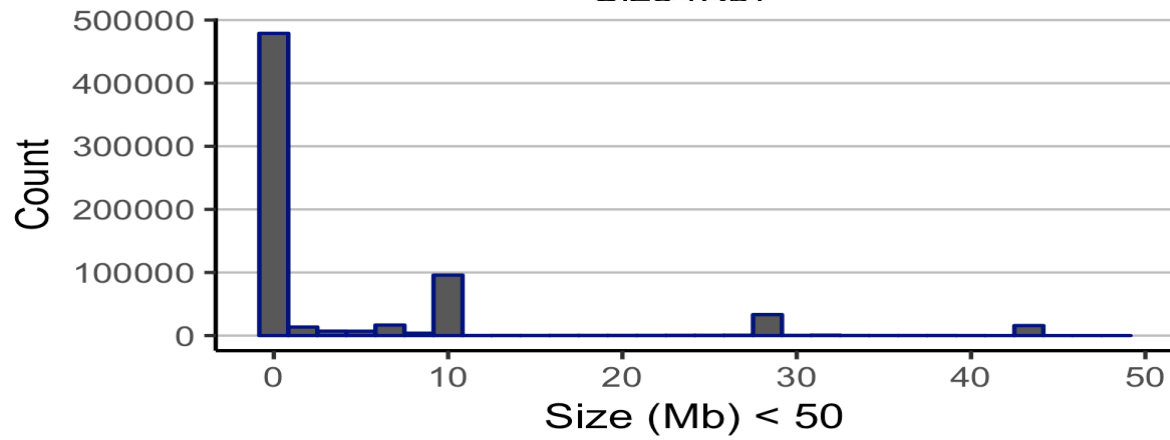
# Size distribution



## Metadata

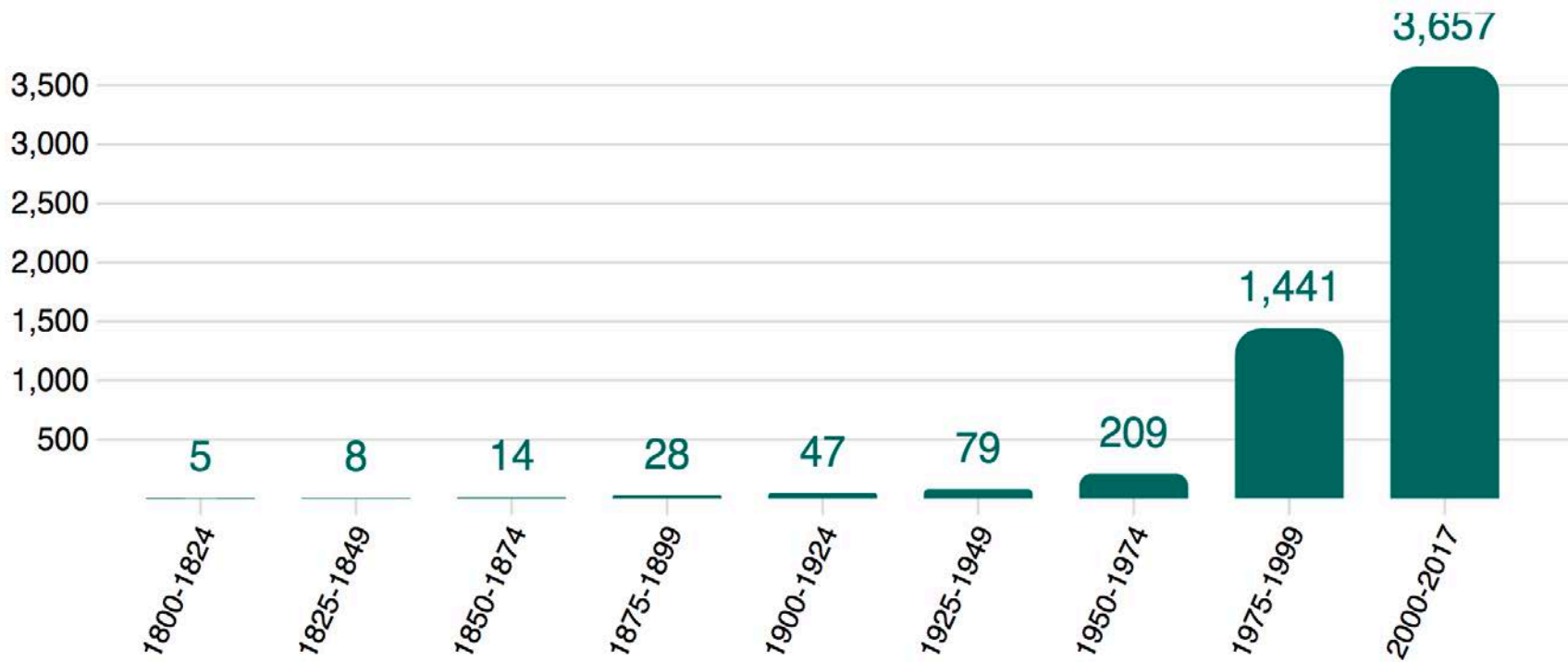


## Data (< 50MB)





## Data by time period







# Pan-Arctic Data







# Data Discovery Portal



The screenshot shows the NSF Arctic Data Center website. The browser address bar displays <https://arcticdata.io/catalog/>. The page features a search bar with the text "Search phrase" and a magnifying glass icon. Below the search bar, there are filter options: "Data attribute", "Creator", "Year", "Identifier", "Taxon", and "Location".

The main content area displays "DATASETS 1 TO 25 OF 5,132". The first dataset listed is by Andrew Parsekian, Andrea Creighton, Benjamin Jones, Allen Bondurant, and Christopher Arp, titled "Arctic lake transient electromagnetic (TEM) soundings 2016-2017". The second dataset is by Karen Junge, titled "Extreme summer melt: Assessing the habitability and physical structure of rotting first-year Arctic sea ice. Chukchi Sea, Alaska, 2015-2018". The third dataset is by Lora Koenig and Lynn Montgomery, titled "Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density, accumulation on land ice, and snow depth on sea ice datasets". The fourth dataset is also by Lora Koenig and Lynn Montgomery, titled "Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) accumulation on land ice subdataset, Greenland and Antarctica, 1987-2018". The fifth dataset is another by Lora Koenig and Lynn Montgomery, titled "Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density subdataset, Greenland and Antarctica, 1950-2018".

On the right side of the page, there is a "Hide Map" button and a map of the Arctic region. The map is overlaid with a grid of numbers, representing the distribution of datasets across the region. The numbers are: 1, 5, 4, 2, 3, 3, 2, 25, 10, 9, 2, 1, 1, 6, 3; 4, 1, 23, 220, 82, 5, 6, 2, 1, 1, 50, 6, 13, 13, 24, 1, 21; 40, 1, 13, 160, 138, 37, 18, 1, 6, 12, 2, 7, 19, 30, 197, 3, 11, 8, 9; 2, 1, 70, 319, 475, 27, 5, 5, 1, 1, 6, 3, 47, 42, 51, 4, -15, 6, 1; 1, 3, 259, 71, 88, 143, 28, 1, 5, 5, 1, 2, 5, 2; 1, 6, 5, 1, 24, 98, 3, 3, 1, 1, 1. The map also shows labels for "Satellite" and "Terrain" views, and a scale bar indicating "1000 km".



# Data Discovery Portal



The screenshot displays the NSF Arctic Data Center catalog interface. The browser address bar shows the URL <https://arcticdata.io/catalog/>. The page features a search bar with the text "Search phrase" and a search icon. Below the search bar is a "Filter by:" section with several expandable categories: "Data attribute" (with a search input containing "density, length, etc."), "Creator", "Year" (with a range from 1800 to 2018), "Data coverage", "Publish year", "Identifier", "Taxon", and "Location" (with a search input for "Geographic region").

The main content area displays "DATASETS 1 TO 25 OF 5,132". The first dataset listed is by Andrew Parsekian, Andrea Creighton, Benjamin Jones, Allen Bondurant, and Christopher Arp, titled "Arctic lake transient electromagnetic (TEM) soundings 2016-2017". The second dataset is by Karen Junge, titled "Extreme summer melt: Assessing the habitability and physical structure of rotting first-year Arctic sea ice. Chukchi Sea, Alaska, 2015-2018". The third dataset is by Lora Koenig and Lynn Montgomery, titled "Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density, accumulation on land ice, and snow depth on sea ice datasets". The fourth dataset is also by Lora Koenig and Lynn Montgomery, titled "Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) accumulation on land ice subdataset, Greenland and Antarctica, 1987-2018". The fifth dataset is another by Lora Koenig and Lynn Montgomery, titled "Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density subdataset, Greenland and Antarctica, 1950-2018".

On the right side of the page, there is a "Hide Map" section showing a map of the Arctic region with a grid overlay. The map displays various data points represented by numbers in small boxes, indicating the location and count of datasets. The map includes a "Satellite" and "Terrain" view selector and a "Map data ©2018 1000 km" scale bar.



# Data Discovery Portal



The screenshot shows the NSF Arctic Data Center website. The browser address bar displays the URL: <https://arcticdata.io/catalog/#view/urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7>. The page header includes the NSF Arctic Data Center logo, navigation links for Data, Support, and About, a green Submit Data button, and a Sign in with Orcid button. Below the header, there are navigation links: < Back to search, Home, Search, and Metadata. The main content area features a citation: Lora Koenig and Lynn Montgomery. 2017. Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density, accumulation on land ice, and snow depth on sea ice datasets. Arctic Data Center. urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7. Below the citation are buttons for Copy Citation and Quality report. A section titled 'Current Data Set (1 of 4) Package: resource\_map\_urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7' contains a table of files. The table has columns for Name, File type, Size, Downloads, and a Download All button. The files listed are: Metadata: science\_metadata.xml (EML v2.1.1, 12 KB, 18 views), SUMup\_Snow\_Depth\_on\_Sea\_Ice\_Dataset\_readme.pdf (PDF, 125 KB, 13 downloads), SUMup\_Snow\_Density\_Dataset\_readme.pdf (PDF, 211 KB, 13 downloads), and SUMup\_Snow\_Accumulation\_Dataset\_readme.pdf (PDF, 159 KB, 13 downloads). Below the table is a button to Show 3 nested datasets. The General section shows the Identifier as urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7 and the Alternate Identifier as SUMup Dataset.

NSF Arctic Data Center

Data Support About Submit Data Sign in with Orcid

< Back to search Home Search Metadata

Lora Koenig and Lynn Montgomery. 2017. Surface Mass Balance and Snow Depth on Sea Ice Working Group (SUMup) snow density, accumulation on land ice, and snow depth on sea ice datasets. Arctic Data Center. urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7.

Copy Citation Quality report

Current Data Set (1 of 4) Package: resource\_map\_urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7

Name	File type	Size	Downloads	Download All
Metadata: science_metadata.xml	EML v2.1.1	12 KB	18 views	Download
SUMup_Snow_Depth_on_Sea_Ice_Dataset_readme.pdf	PDF	125 KB	13 downloads	Download
SUMup_Snow_Density_Dataset_readme.pdf	PDF	211 KB	13 downloads	Download
SUMup_Snow_Accumulation_Dataset_readme.pdf	PDF	159 KB	13 downloads	Download

Show 3 nested datasets

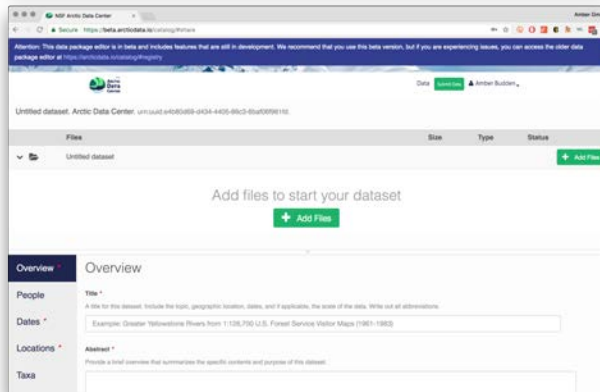
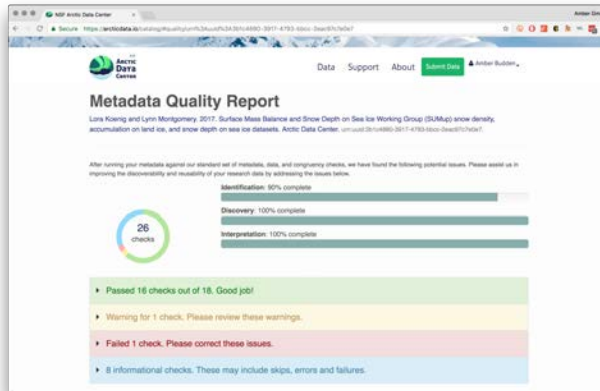
General

Identifier urn:uuid:3b1c4880-3917-4793-bbcc-2eac97c7e0e7

Alternate Identifier SUMup Dataset



# Tools and Infrastructure



Downloads
3 views
852 downloads
274 downloads
209 downloads

MAKE  
DATA  
COUNT

DataONE





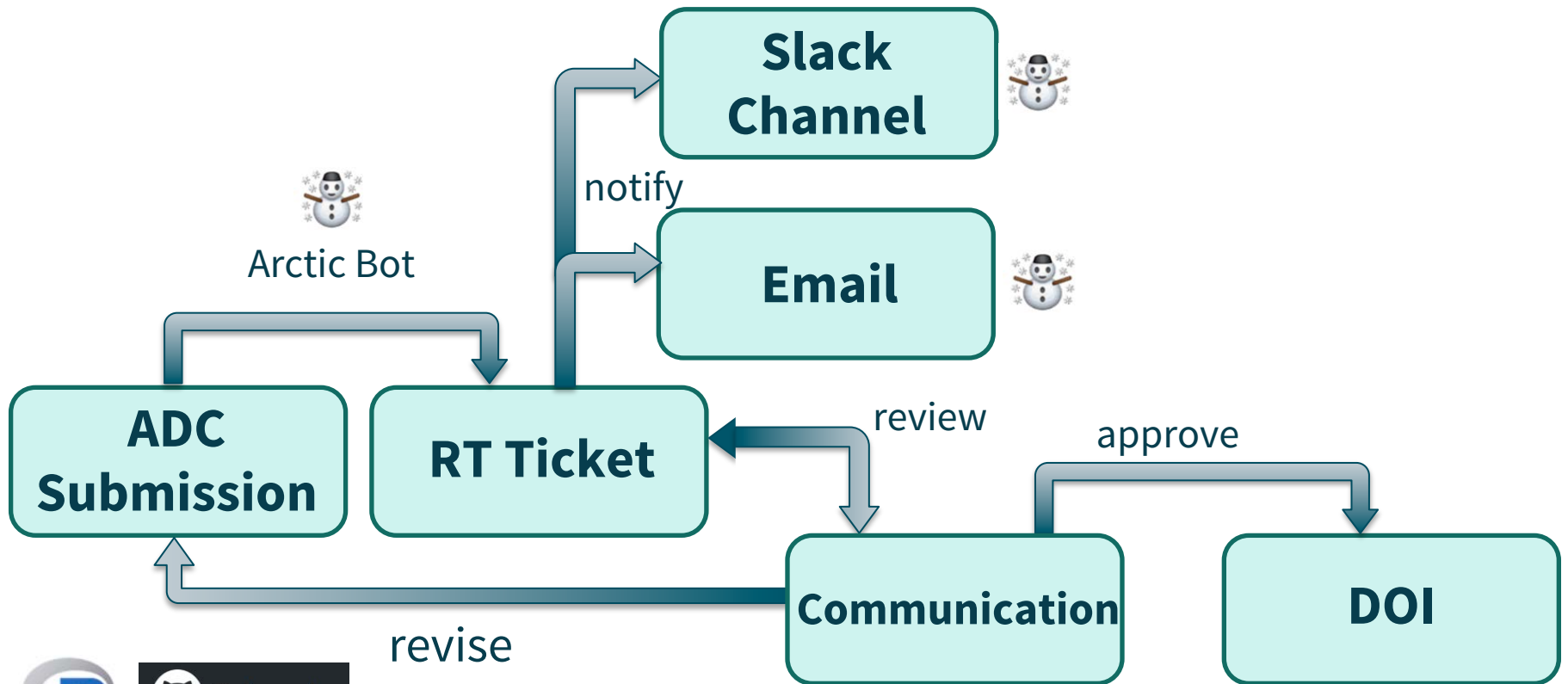
# Support Services







# Support Systems





# Request Tracker ticket system



Display History Basics People Dates Links Jumbo Reminders Actions ☆ ☰

^ History Show all quoted text — Show full headers

Mon Apr 10 18:00:22 2017 **arcticbot - Ticket created** Reply Comment Forward  
Subject: ERMOLD: IABP 12-Hourly Interpolated position, velocity, SL... (arctic-data.10529.1)

A new submission just came in. View it here: <https://arcticdata.io/catalog/#view/arctic-data.10529.1>. This ticket was automatically created by the submissions bot because the PID arctic-data.10529.1 was created/modified. See <https://github.nceas.ucsb.edu/KNB/arctic-data/blob/master/docs/handling-submissions.md> for more information on what to do. If you aren't sure why this ticket was created, please see the README at <https://github.nceas.ucsb.edu/KNB/submissions-bot>.)

Download (untitled) with headers text/plain 473B

Mon Apr 10 18:00:23 2017 **The RT System itself - Outgoing email recorded** Show

Tue Apr 11 10:01:02 2017 **dmullen (Dominic Mullen) - Requestor <wermold@apl.washington.edu> added**

Tue Apr 11 10:05:19 2017 **dmullen (Dominic Mullen) - Correspondence added** Reply Comment Forward

Hi Wendy,

Thank you for your submission to the NSF Arctic Data Center. Prior to your submission being finalized we would like to make a few small changes. We will spell out the abbreviations in the title for added clarity. Additionally, I noticed there is one dataset corresponding to each year, we will aggregate these into one table for added convenience. We noticed this entry is related to a previously submitted data set (located here: <https://arcticdata.io/catalog/#view/um:uuid:346e2aad-3114-4cc7-917f-22efc2ae2898>), we can nest these together after the submission is finalized. Finally, what are the definitions (including units) of the columns?

Best,  
Dominic Mullen

Download (untitled) with headers text/html 671B

Tue Apr 11 10:05:20 2017 **The RT System itself - Outgoing email recorded** Show

Tue Apr 11 10:05:20 2017 **The RT System itself - Outgoing email recorded** Show

Tue Apr 11 12:19:50 2017 **<wermold@apl.washington.edu> - Correspondence added** Reply Comment Forward

From: "Wendy Ermold" <wermold@apl.washington.edu>  
Date: Tue, 11 Apr 2017 12:12:29 -0700  
Subject: Re: [arcticdata #14635] ERMOLD: IABP 12-Hourly Interpolated position, velocity, SL... (arctic-data.10529.1)  
CC: "Ignatius Rigor" <ignatius@uw.edu>  
To: support@arcticdata.io

Hi Dominic,

Thank you for nesting this dataset with the others of its kind! The changes you suggest sound good.

The data in all 4 submitted files for 2013 thru 2016 contain the following columns of data:

Download (untitled) with headers text/plain 1.7KB





# Slack #arcticbot



**Arctic Bot** APP 12:40 PM

Correspondence by [mgrieman@uci.edu](mailto:mgrieman@uci.edu): " Thanks for getting back to me so quickly The age scale for the ice core has been updated so I just wanted the data to ..." on [Ticket 14798](#)



1



**2 replies** Last reply 3 days ago



**Arctic Bot** APP 1:00 PM

Correspondence by [austincharron@ku.edu](mailto:austincharron@ku.edu): " The abstract should read On Tue May 9 2017 at 2:19 PM Alex Gordee via RT [support@arcticdata.io](mailto:support@arcticdata.io) wrote Hi Austin Thank y..." on [Ticket 14799](#)



1



# Arctic Data Center Support Team

[support@arcticdata.io](mailto:support@arcticdata.io)



Clark



Goldstein



Mullen



Chong



Meyer



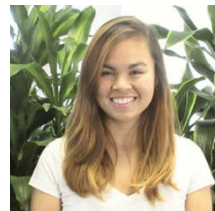
Steves



Maier



Ochs



Train



Nguyen



Sun



Reevesman



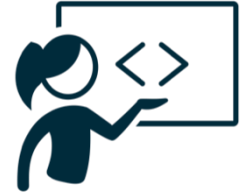
Chen

Data Science Fellows

Student Interns

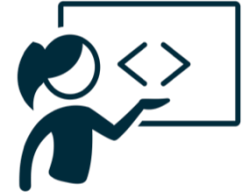


# Training and Outreach





## Training and Outreach



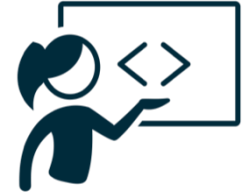
- Training
  - Summer Training
  - Workshops
  - Internship Program
  - Data Fellows Program
  - Webinars



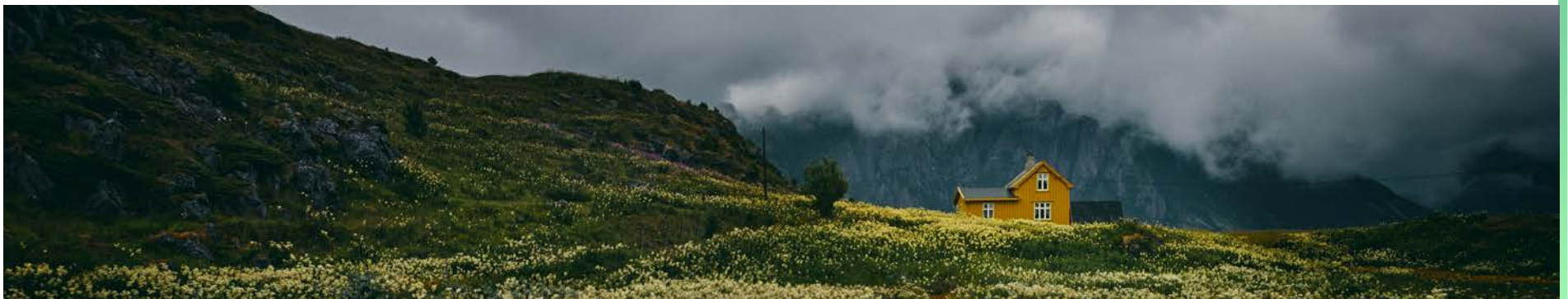




# Training and Outreach

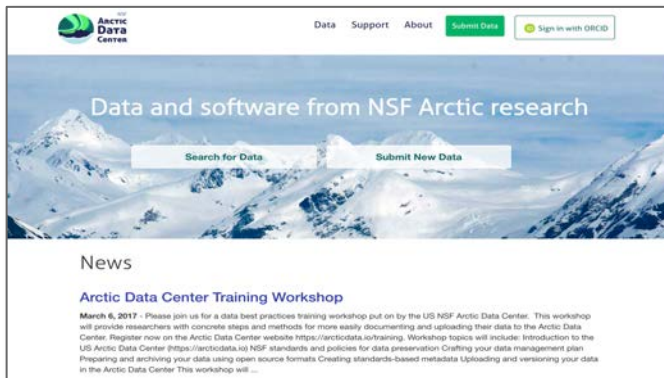
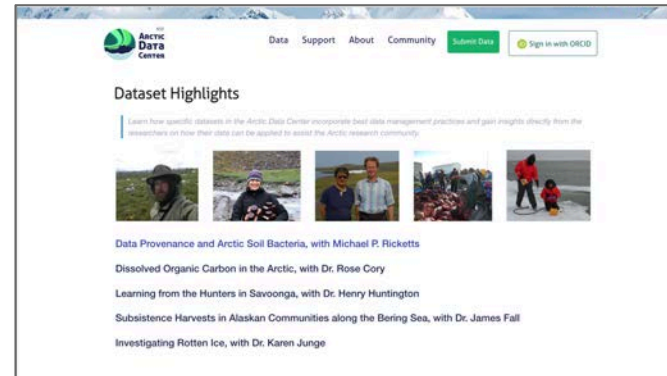
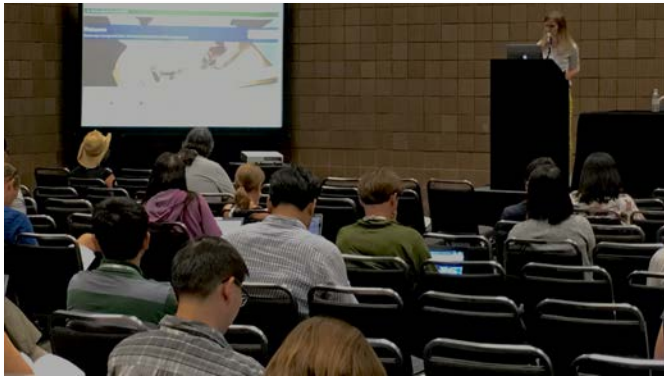


- Outreach
  - In-person events
  - News items and other communications
  - Social media
  - Arctic Data Center website
  - Marketing





# Training and Outreach





# 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.”*



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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

Nina J. Karnovsky and Ann M. A. Harding. 2016. At-sea density of foraging little auks (*Alle alle*) near Hornsund Fjord. Arctic Data Center. doi:10.5065/D6MK6B17.

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

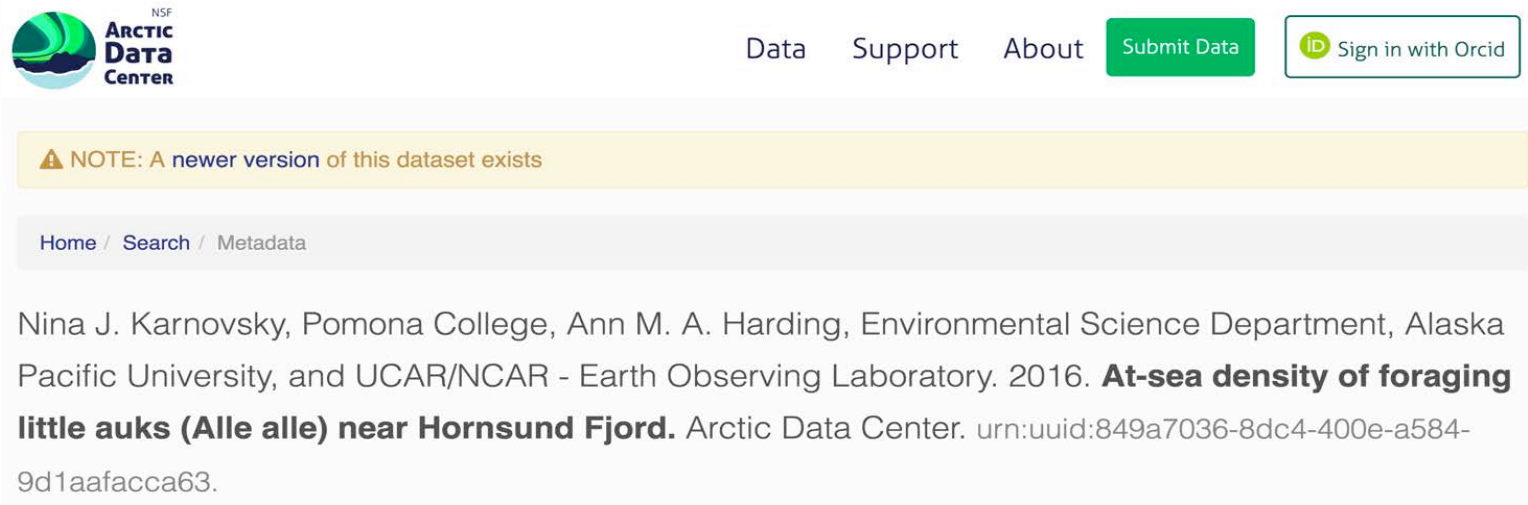







## Data Citation

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



 NSF  
**Arctic Data Center**

[Data](#) [Support](#) [About](#) [Submit Data](#) [Sign in with Orcid](#)

**NOTE:** A newer version of this dataset exists

[Home](#) / [Search](#) / [Metadata](#)

Nina J. Karnovsky, Pomona College, Ann M. A. Harding, Environmental Science Department, Alaska Pacific University, and UCAR/NCAR - Earth Observing Laboratory. 2016. **At-sea density of foraging little auks (Alle alle) near Hornsund Fjord**. Arctic Data Center. urn:uuid:849a7036-8dc4-400e-a584-9d1aafacca63.

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

**Summary**



# Arctic Data Center Features and Services



Data Archive



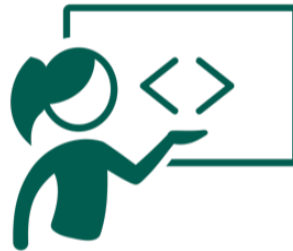
Data Discovery Portal



Tools and Infrastructure



Support Services



Training and Outreach



Data Rescue





## Operation Metrics



**4,700+**  
DATA SETS



**2,000**  
CREATORS



**642K**  
DATA FILES



**4,600+**  
USERS



**13.94 TB**  
DATA STORAGE

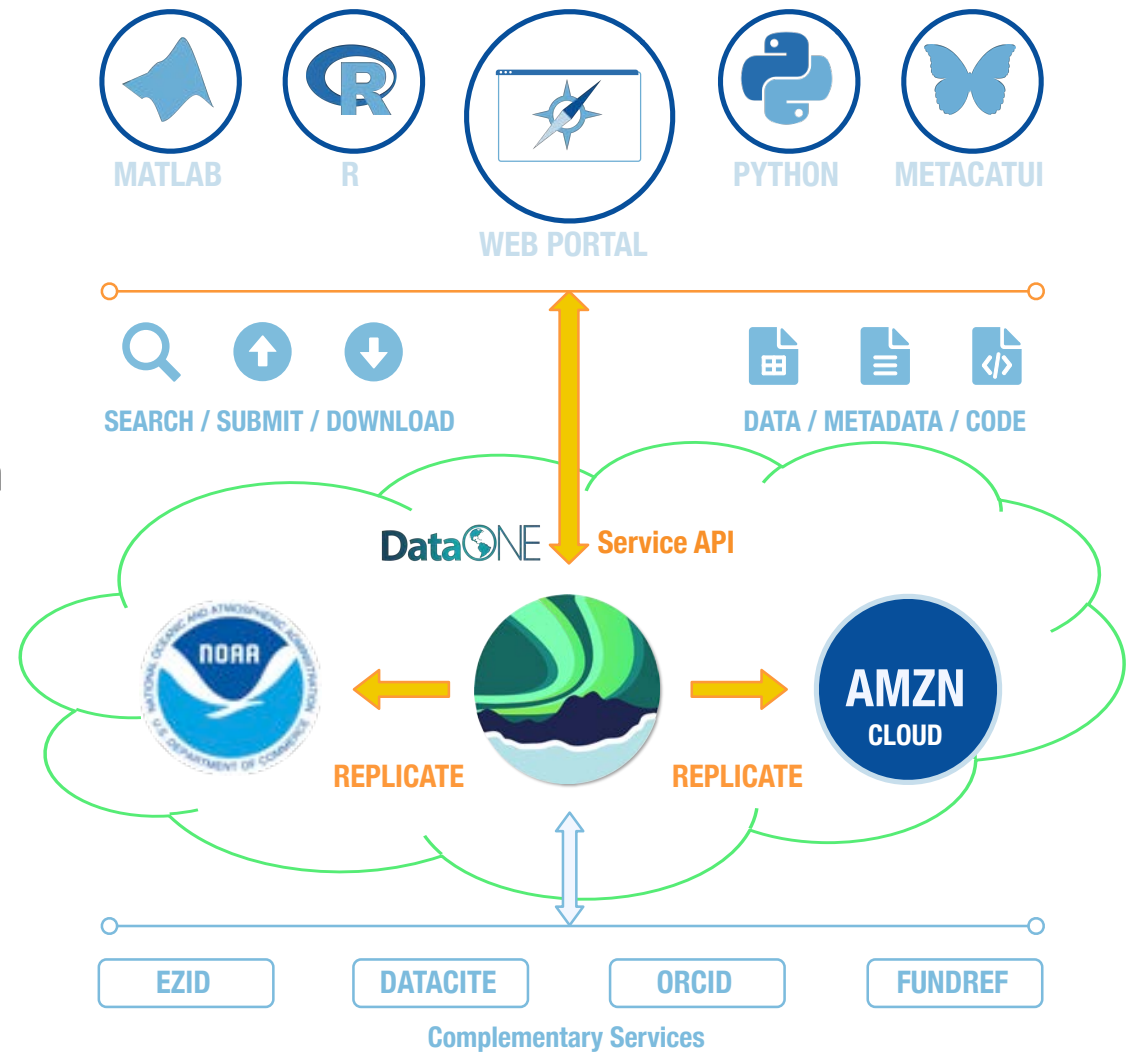


**71K+**  
FILE DOWNLOADS





- Projects: GRISO, DBO, ARMAP
- Repositories: LTER, BCO-DMO, R2R, Antarctic Data Center (IDEA)
- Networks: A2DC, Arctic Data Explorer
- Committees: Arctic Data Committee, IARPC Data Sub-team





<https://arcticdata.io>

