



# Daily snow and ice data from NOAA@NSIDC: The value of user engagement, support and feedback

Jennifer Roebuck<sup>1</sup>, Florence Fetterer<sup>1</sup>, and Ann Windnagel<sup>1</sup>

<sup>1</sup>National Snow and Ice Data Center, Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder

<https://nsidc.org/noaa>

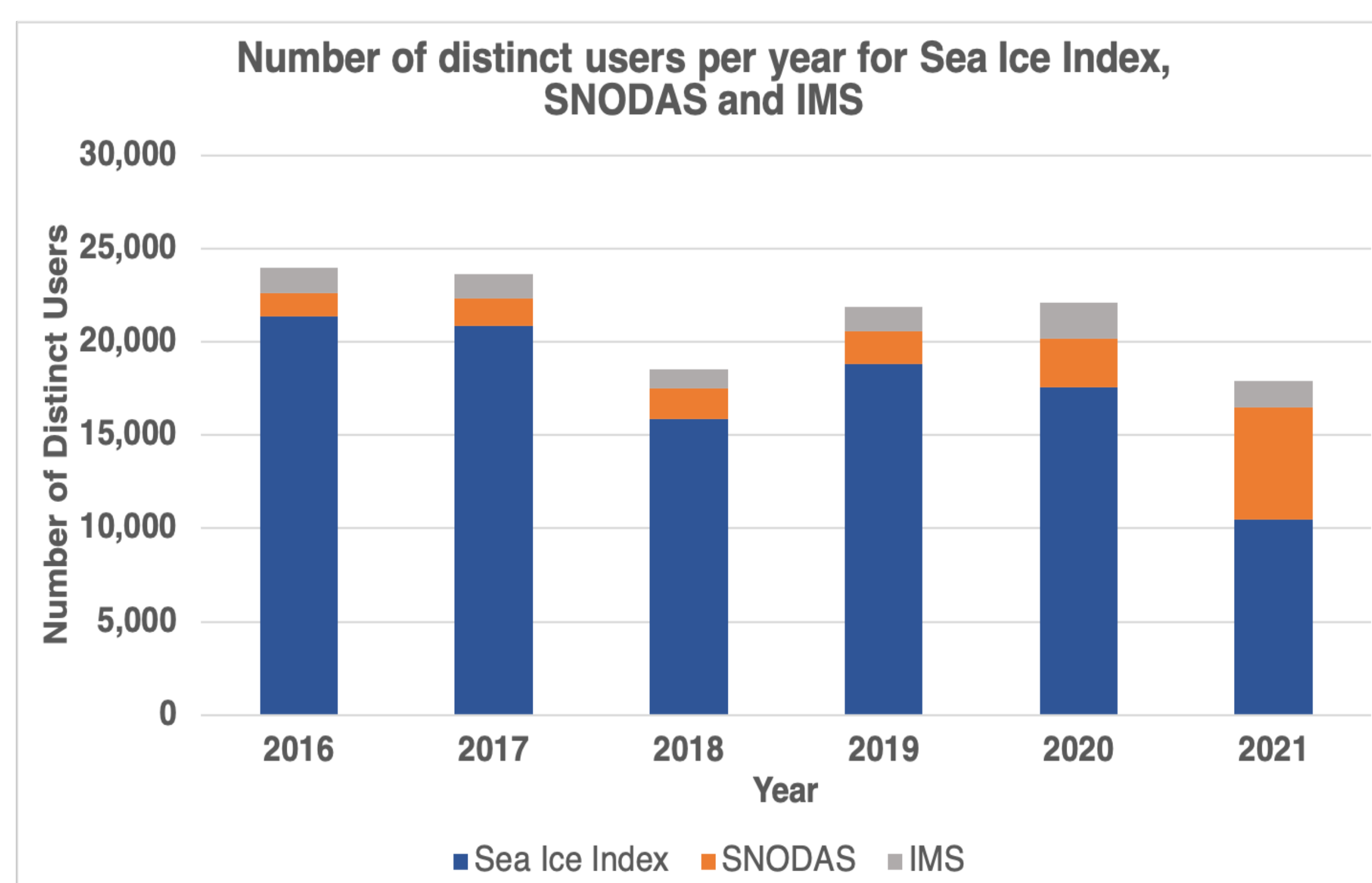
## Introduction

Over 20,000 users download NOAA@NSIDC data each year for research, education and commercial purposes. Recently, we emailed a user survey for three of our most popular products. Here, we present the results of that survey and user case studies to demonstrate the value of user feedback and the importance of providing a high level of support to our users.

## Survey Overview

We emailed a five question survey to the 5,382 registered users for three of our most popular NOAA@NSIDC data sets. These three data sets have thousands of unique users that download data each year (see figure below):

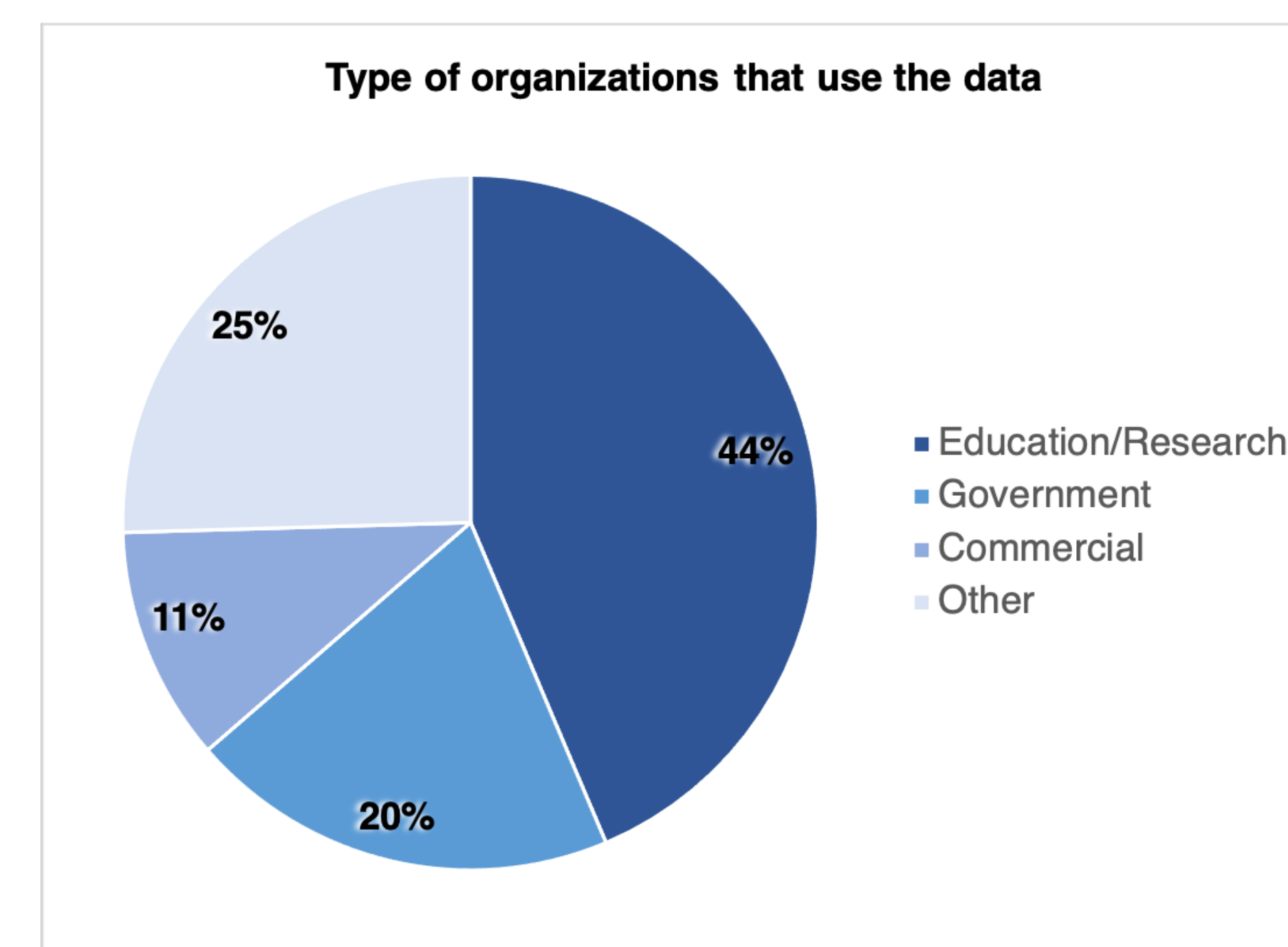
- **Sea Ice Index** – Daily sea ice extent and concentration from November 1978 to present.
- **Snow Data Assimilation System (SNODAS) Data Products at NSIDC** – Daily snow pack properties (e.g., depth, SWE) from NOAA's National Operational Hydrologic Remote Sensing Center's SNODAS.
- **IMS Daily Northern Hemisphere Snow and Ice Analysis at 1 km, 4 km, and 24 km Resolutions** – Daily maps of snow and sea ice cover for the Northern Hemisphere from February 1997 to present from the US National Ice Center (USNIC).



## Survey Results

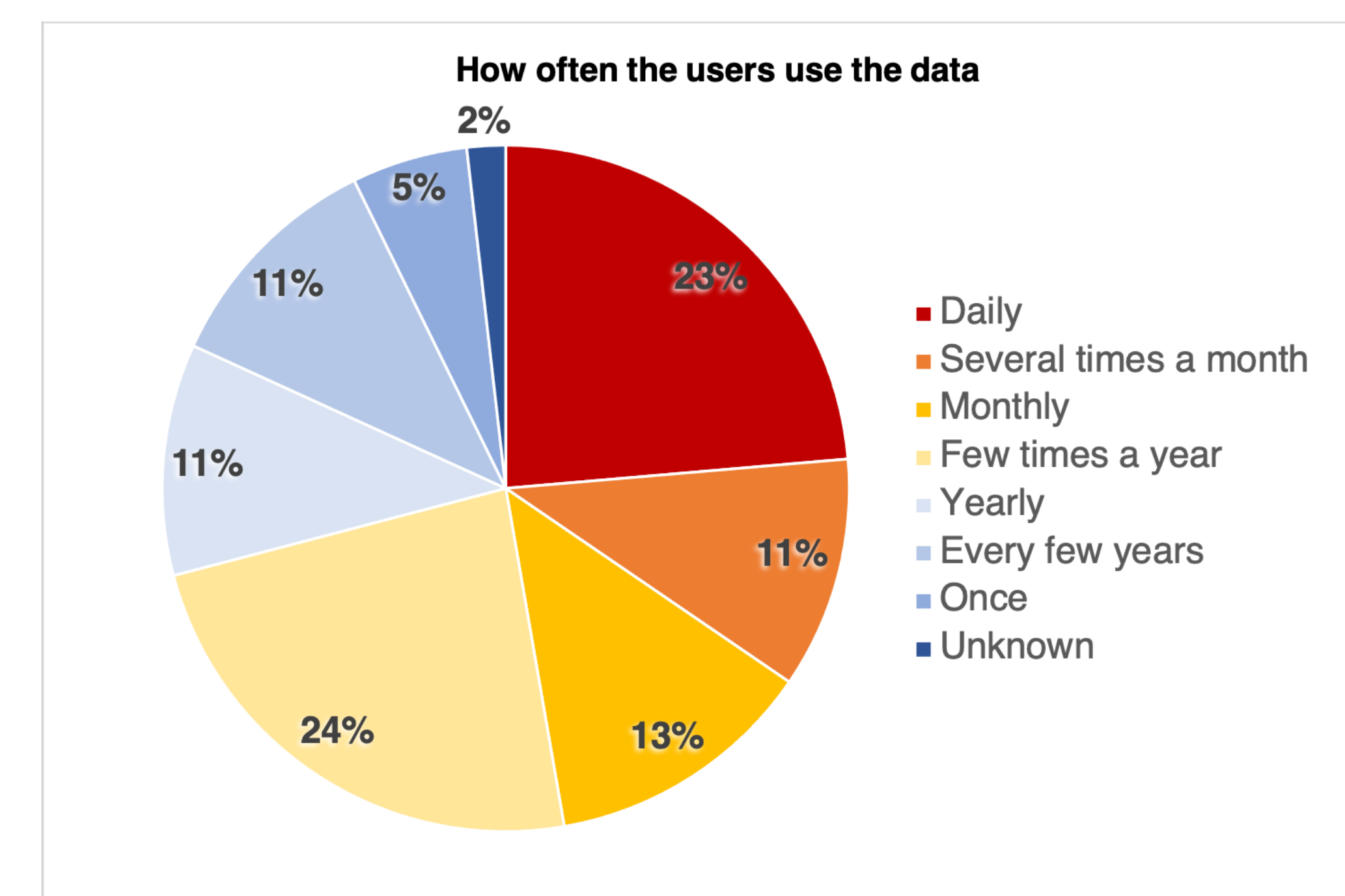
### Who uses the data?

Our users come from a wide range of organizations. The largest group are in education or research e.g., British Antarctic Survey, University of Washington, NOAA Fisheries, Swedish Meteorological and Hydrological Institute, Colorado Water Conservation Board.



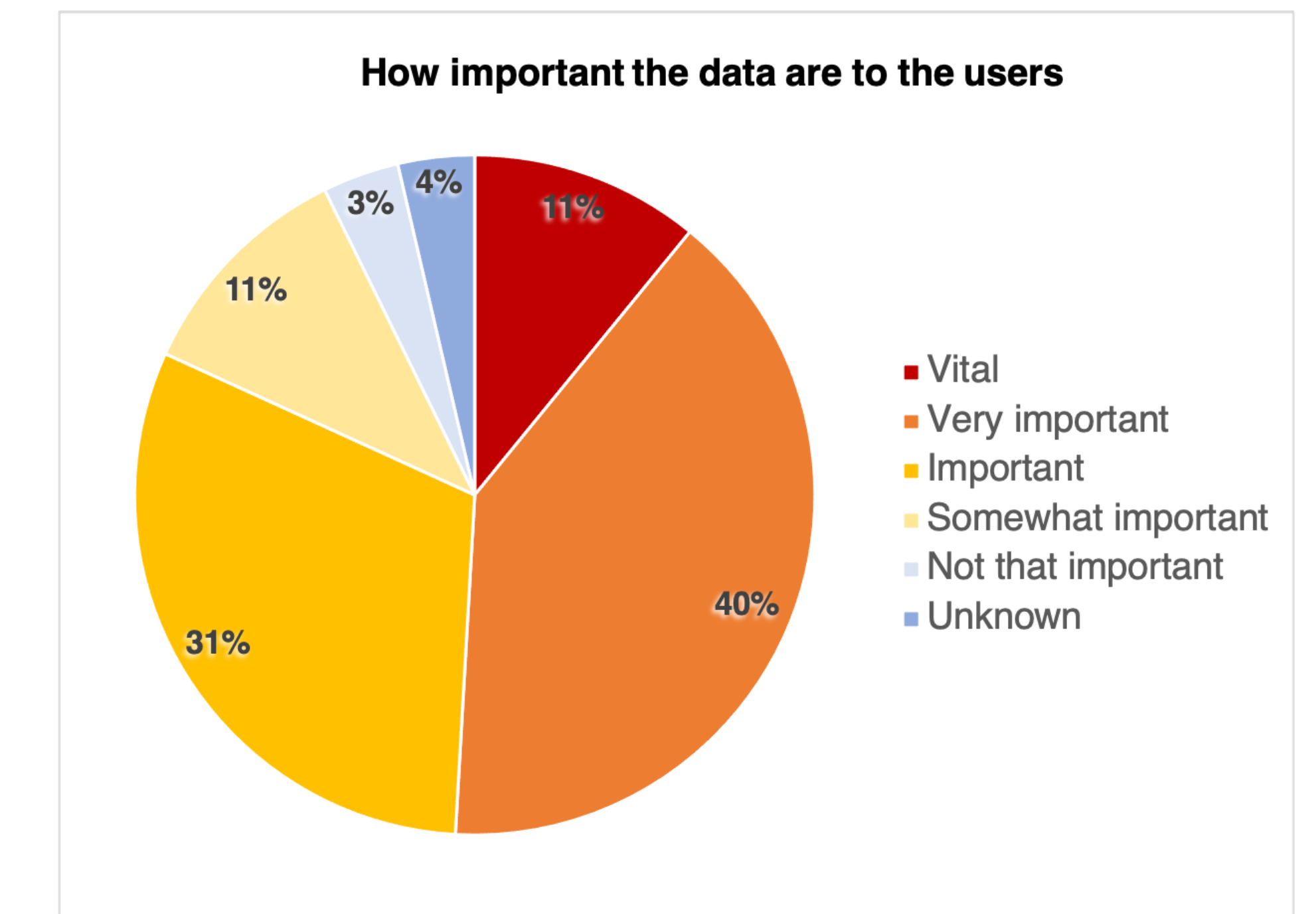
### How often do they use the data?

We asked users how often they look at the data, download the data, or use it as model input.



### How important is the data to users?

We asked users to rate how important the product was for their research/work using a scale of 1 to 5, where 1 is not that important and they only used it once, and 5 means its vital, they depend on it and it is used for critical decisions.



## User Profiles

### SNODAS

**Affiliation:** New Mexico State University

**Project:** Resource selection modeling related to the impact the re-established Mexican grey wolf has on elk. They need daily high spatial resolution snow data.

**Why contacted USO:** Needed help to download all the daily files from 2017 to present.

**How helped:** Provided instructions for downloading multiple files using the command line.

**Outcome:** "I am so thankful for this product. The high level of help was critical in me being able to get this data." The user also shared the R code they used to work with the data with us which we plan to make public for other users.



Members of the Druid wolf pack chase a bull elk in Yellowstone National Park. Credit: NPS

### IMS

**Affiliation:** U.S. Fish and Wildlife Service

**Project:** Analyses related to spring phenology and goose productivity which are important for establishing appropriate, sustainable harvest regulations.

**Why contacted USO:** Wanted to convert the ASCII format files prior to 2006 to GeoTIFF format.

**How helped:** Referred the user to help article on importing ASCII files into GIS. They then enquired about R code, we currently can't support R, but we found an article with example code and some open source python tools that we directed them to.

**Outcome:** "Support was great...I really appreciate all her help." The data were used in a report (Dooley, 2019) and are considered vital by this organization.



Canada Geese. Credit: fws.gov

## Conclusions

- 55 users responded to the survey. The results show that the three data sets are frequently used, on a daily to yearly basis, by users from a wide range of organizations. At a minimum, they are important to the majority of users.
- The data are used for research activities and informing organizational decisions and policy.
- The user support that we offer is valued by users and important for ensuring they can access and make the most of the data.

### References

Dooley, J.L. 2019. Analysis of Atlantic Population Canada Goose Age Ratios and NOAA-NSIDC Snow/Ice Cover Data, 2006-2018. Unpubl. Report to Atlantic Flyway Technical Section, U.S. Fish and Wildlife Service, Laurel, MD, April 2019.