

Current data management activities

- **Acquisition + curation** of historical observations, focused specifically on hydrologic and coastal sea ice data.
- **Increasing access + exploration** of relevant Arctic focused data.
- **More data management resources + processes** to support the entire InterFACE project team.

InterFACE Data Index <https://interfacedata.iarc.uaf.edu>

Browse curated hydrologic data via web app and database. Planned improvements include more filters and the ability to export filtered site metadata as CSV or GeoJSON.



- Filter data by watershed (27) and parameter (24).
- Point locations have tooltips with basic metadata (left). Site summary pages contain more metadata.
- Access data via a Google Sheets API and Python wrapper.
- Data are stored on Google Drive (currently private), with validation and cross-sheet references to ensure consistency.

Data curation efforts to date

500+ permafrost hydrology datasets

- 200+ snow observations (oldest record 1901)
- 20+ stream and river discharge records
- 130 water quality records
- Soil properties
- ~30 meteorological stations

Landfast ice data for 1996–2018

- Chukchi Sea and Beaufort Sea regions
- Organized by season (e.g. 1996–97)
- Landfast ice extent is integrated every 10 days as it advances and retreats over the course of the season
- Includes monthly minimum, mean, median, and maximum landfast ice extents

Improving data access + exploration



ARDAC helps users find and utilize high-impact geospatial datasets about Alaska and the Arctic. The core of ARDAC is its “Toolbox” – geospatial data and technologies that facilitate data access. <http://dev.arcticdatascience.org>

Apps that are built on the ARDAC Toolbox

NORTHERN CLIMATE REPORTS <https://northernclimatereports.org>

Ecological futures in stories, charts, + data

HISTORICAL SEA ICE ATLAS <https://snap.uaf.edu/tools/sea-ice-atlas>

Sea ice concentrations off Alaska, 1850–present

ARCTIC-EDS <https://arcticeds.org>

Merge environmental data with science + engineering workflows



How we **RECEIVE** a dataset, **CURATE** it, and **SHARE** it via web services to bring its most useful parts to life



• **CURATION:** determine how the dataset could be most useful in its existing form, as derived products, and/or application with other ARDAC datasets

• **AGGREGATION:** e.g. compute decadal summaries for climate projections, which might help improve public interpretability and utility in research

• **CONSTRUCTION:** consider future query performance, and building a final dataset that can efficiently provide desired data

• **QUALITY CONTROL:** ensure that the resulting dataset is what we expect and that all constituent assets are standardized for interoperability

• **TRANSPARENCY:** use open-source software and standards with publicly-available code

• **COMPREHENSIVENESS:** make all data available in its native format, along with user-friendly documentation and standard, machine-readable, open formats