

## 1. DATA AND INFORMATION TYPES

### A. Provide a contextual description of the data stream.

Scenarios Network for Alaska & Arctic Planning (SNAP) historical air temperature data are derived from Climate Research Unit (CRU) time-series (TS) 3.1 data, which includes data from 1901–2009. The CRU TS3.1 data set is based on an archive of climate data provided by more than 4000 weather stations distributed around the world. They allow variations in climate to be studied, and include variables such as cloud cover, diurnal temperature range, frost day frequency, precipitation, daily mean temperature, monthly average daily maximum temperature, vapour pressure and wet day frequency. CRU TS3.1 data are calculated on a 0.5x0.5 degree grid, which SNAP downscales to a 2.0x2.0 km grid cells.

Scenarios Network for Alaska & Arctic Planning (SNAP) historical total precipitation data are derived from Climate Research Unit (CRU) time-series (TS) 3.0 data, which includes data from 1901–2006. The CRU TS3.0 data set is based on an archive of climate data provided by more than 4000 weather stations distributed around the world. They allow variations in climate to be studied, and include variables such as cloud cover, diurnal temperature range, frost day frequency, precipitation, daily mean temperature, monthly average daily maximum temperature, vapour pressure and wet day frequency. CRU TS3.0 data are calculated on a 0.5x0.5 degree grid, which SNAP downscales to a 2.0x2.0 km grid cells. (Note: Total precipitation is based on CRU TS3.0 data because of a systematic error in the 3.1 precipitation data.)

Website URL:

<http://portal.aos.org/#module-metadata/d8b0e2d8-07c7-11e5-8d38-00265529168c/ba7481d0-ea25-11e0-9025-0019b9dae22b>

### B. How many station locations are there for this data stream?

N/A

### C. What are the specific parameters of the data.

The parameters of these data include: monthly average air temperature and monthly total precipitation

### D. Provide information about the sampling platform or instrumentation.

N/A

## 2. DATA PATHWAY

### A. Is a data sharing agreement required?

SNAP releases this data under Creative Commons license, Attribution 4.0 International (CC by 4.0). The user is free to:

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**B. In which format(s) were data received by AOOS?**

Data were received as original ASCII files from the originator.

**C. How can the information be accessed?**

The data are available through the AOOS data portal, where it can be downloaded or explored through interactive visualizations. Specifically the data are available from four unique access points:

- Web Mapping Service (WMS)
- THREDDS
- OPeNDAP
- File Downloads (CSV)

**D. What file formats will be used for sharing data, if different from original?**

Data are shared as CSV and NetCDF. Data are also available for exploration in the AOOS portals via interactive, graphical visualizations.

**E. Describe how the data are ingested(e.g. the flow of data from source to AOOS data portals) and any transformations or modifications made to share data in the AOOS data portal.**

The data were downloaded from the source as one zip file with a text file per month. The data were converted to NetCDFs and stored on additional servers within the AOOS system. AOOS converted these files to NetCDF files using custom Java and Scala scripts, and stores the converted data on servers within the AOOS data management system. Data are made available in the AOOS portals through the access points and via graphic display. Graphical map displays are generated through internal data requests from the sensor service in JSON format. Program code handles the connection of data from the server to graphic display in the portal. A time series extraction tool uses a JSON request to pull values out of the netCDF files for multiple times at a specific location. Extracted data are provided as CSV.

Gridded data files may be downloaded by the user from the AOOS data portal. A user request for a WMS file will provide a georeferenced image tile for use with common web mapping services. A user request for THREDDS or OPeNDAP uses that respective service to request full or partial data files in netCDF format.

**F. What metadata or contextual information is provided with the data?**

SNAP provides overview information and XML metadata record in ISO19139 format: <http://ckan.snap.uaf.edu/dataset/historical-monthly-and-derived-precipitation-products-2-km-cru-ts/resource/fd18c5c7-7daf-49af-a4a8-5061382a7d65>. Data are shared in the AOOS portals with descriptive narratives describing the data and linking back to the originator's site.

**G. Are there ethical restrictions to data sharing?**

No

**a. If so, how will these be resolved?**

N/A

**H. Who holds intellectual property rights (IPR) to the data?**

Tom Kurkowski, Scenarios Network for Alaska and Arctic Planning (SNAP)

**I. Describe any effect of IPR on data access.**

None

**3. DATA SOURCE AND QUALITY CONTROL**

**A. Indicate the data source type (i.e. Federal, Non-Federal, University, State Agency, Local Municipality, Military Establishment (branch), private industry, NGO, non-Profit, Citizen Science, Private individual)**

University

**a. If Federal data source, were changes applied to the data?**

N/A

**b. If Yes, describe any changes to the data that require documentation?**

N/A

**B. Indicate the data reporting type (e.g. real-time, historical).**

Historical

**C. If real-time, list the QARTOD procedures that are currently applied.**

Not required

**D. If real-time, list the QARTOD procedures that are planned for implementation.**

N/A

**E. What is the status of the reported data? (e.g. raw, some QC, incomplete, delayed mode processed but not QC'd)**

QC by originator

**F. Describe the data control procedures that were applied by the originator.**

This is a data product based on an accepted, community standard of climate data. Contact the data source for availability of quality controlled data.

**a. Provide a link to any documented procedures.**

N/A

**G. Describe the data control procedures that were applied by AOOS.**

No applied AOOS QC. This is a synthesis product made from existing data sources.

**a. Provide a link to any documented procedures.**

N/A

**H. List the procedures taken for data that could not be QC'd as directed.**

N/A

**4. STEWARDSHIP AND PRESERVATION POLICIES**

**A. Who is responsible for long-term data archiving?**

Data are aggregated for visualization and exploration with other layers in the AOOS data portal. AOOS stores the real-time and historical data internally using the AOOS data servers.

AOOS will facilitate data archival with NCEI. However, the SNAP datasets that make up these products may already be actively archived. NCEI might have the temperature and precipitation SNAP data through another source. AOOS and NCEI are looking into this and will inform the status in a Data Stream Update.

**B. Which long-term data storage facility will be used for preservation?**

NCEI if not already there.

**C. Describe any transformation necessary for data preservation.**

N/A

**D. List the metadata or other documentation that will be archived with the data.**

N/A