Project: Stream Temperature Models

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Data files

There are three zip files, one for each watershed, which contain input data files and output data products described in the table below. Notes on differences between the zip files are also provided.

Table describing input data files and output data products.

Products	Format	Description	Temporal resolution[1]	Spatial resolution
Flowlines	Shapefile	Vector dataset of stream reaches	NA	Stream reach
Catchments	Shapefile	Polygon dataset of land area draining to each stream reach	NA	Catchment
Sites	csv	Sites with empirical stream temperature data	NA	Point
Temperature data	csv	Empirical temperature data associated with sites	Sub-daily and daily, years vary	Point
Spatial variables	csv	Spatial predictor variables linked to stream reaches and stream catchments	NA	Catchment
Climate variables	csv	3-day moving average of air temperature, 5-day moving sum of precipitation, and April 1st SWE for each year	1980-2019	Catchment
Predictions	csv	Predicted mean daily stream temperature by catchment and year	1980-2019	Catchment
Future predictions	csv	Predicted mean daily stream temperature by catchment and scenario	Baseline and +2°C and +4°C scenarios	Catchment

Table continued.

Products	Format	Description	Temporal resolution[1]	Spatial resolution
Historic temperature metrics	csv	Annual temperature metrics that describe magnitude, variability, frequency, and timing of stream temperatures	1980-2019	Catchment
Future temperature metrics	csv	Monthly means of stream temperatures	Baseline and +2°C and +4°C scenarios	Catchment

[1] Historic climate predictor variables, predictions, and historic temperature metrics extend to 2019 for the Deshka watershed and to 2018 for the Anchor-Stariski watershed.

All zip files:

- The catchmentID saved to the csv files will appear in scientific notation when opened in Excel and some other software. The full 15 digits can be viewed by converting the field to numeric in Excel.
- Fish species information from the Alaska Department of Fish and Game (ADF&G) is provided in the Deshka and Anchor-Stariski catchments shapefiles. Chinook and Coho Salmon rearing and spawning are from the Anadromous Waters Catalog.
- Air temperature and precipitation are provided together in the climate variables csv file. The date in the climate variables file is the last day of the moving average for each variable (e.g. day 3 for air temperature and day 5 for precipitation).
- The April 1st snow water equivalent is provided in a separate csv file.

Deshka.zip:

- catchmentID is the same as the NHDPlusID for this watershed only.
- Species information in the catchments shapefile includes northern pike from ADF&G spatial data.
- There are two deshka_temperature_data csv files. The first file contains sub-daily raw temperature data from 90 sites as received from USFWS and Cook Inletkeeper. The second file contains daily temperature data aggregated for a previous project and includes data for nine sites.
- Predictions go through 2019.

Anchor.zip:

- Predictions go through 2018.

Kenai.zip:

- Six sites located at lake outlets are identified in the sites file.

- There are two kenai_temperature_data csv files. The first file contains sub-daily raw temperature data from 24 sites. The second file contains daily temperature data from four USGS sites.
- A predictive model was not developed for the Kenai watershed so there are no predictions, future predictions, historic temperature metrics, or future temperature metrics.