Cook Inletkeeper coordinates a Stream Temperature Monitoring Network across key salmon-bearing systems of the Cook Inlet basin. Our goal is to describe water temperature profiles and identify watershed characteristics that make specific streams more sensitive to climate change impacts. This fact sheet provides a summary of data collected on Trapper Creek through this collaborative effort.

**Trapper Creek**

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**Why temperature?**

Water temperature affects all phases of the salmon lifecycle, including:

- timing of migration
- survivorship of eggs
- respiration
- metabolism
- availability of O₂

Warm water temperature induces stress in salmon and makes them more vulnerable to pollution, predation and disease.

**For more details about our methods or data, please contact:**

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**Watershed facts**

The Trapper Creek watershed (highlighted in green on map) is located in the Mat-Su basin. The creek flows into the Susitna River downstream of the confluence with the Talkeetna River.

- Watershed size: 16,872 acres  
- Maximum elevation: 1,012 feet  
- Mean elevation: 592 feet  
- Percent wetlands: 28.1%  
- Connected lakes: Yes

**Water temperature monitoring site is located at Bradley Road crossing.**  
Latitude (N) 62.26600; Longitude (W) -150.18400
Trapper Creek Temperature Summary

Below is a summary of Trapper Creek water temperature data from 2008-2012.

- Maximum temperature recorded 22.2°C (72.0°F)
- June average temperature 13.6°C (56.5°F)
- July average temperature 15.2°C (59.4°F)
- August average temperature 13.4°C (56.1°F)
- Maximum 7-day average temperature 16.8°C (62.2°F)
- Maximum 7-day maximum temperature 18.5°C (65.3°F)
- # of days/year temperature exceeds 13°C (55°F) 66
- # of days/year temperature exceeds 15°C (59°F) 37

Climate Change Vulnerability

We can use our current knowledge of the relationship between air and water temperature to develop stream-specific predictions for future water temperature. “Sensitivity” is a term used to describe how much a stream’s water temperature will change with a 1°C (1.8°F) change in air temperature. A stream with a higher sensitivity (>0.75) will increase faster as air temperatures increase in the years ahead. And we can use a salmon-relevant threshold value of 13°C (55°F) for average July temperature to describe a stream as “cold” or “warm” to create a framework for assessing climate change vulnerability:

- Cold Temperature - Low Sensitivity
- Warm Temperature - Low Sensitivity
- Cold Temperature - High Sensitivity
- Warm Temperature - High Sensitivity

Trapper Creek falls in the "warm, high sensitivity" category, which indicates that July stream temperatures will likely increase by at least 2°C (3.6°F) in the decades ahead resulting in significant thermal stress for both spawning and juvenile salmon.

This baseline data set and our understanding of stream-specific sensitivity can guide future monitoring efforts to track climate change impacts and can help fisheries and land managers prioritize streams for research and protection efforts to ensure Cook Inlet wild salmon endure as thermal change continues.