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 the Moose River through this collaborative effort.

**Moose River**

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Water temperature monitoring site is located upstream of the Sterling Highway at Otter Trail Road. Latitude (N) 60.55700; Longitude (W) -150.73500

**Watershed facts**

The Moose River watershed (highlighted in green on map) is located on the central Kenai Peninsula. The Moose River is a tributary of the Kenai River with a confluence near the town of Sterling.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watershed size</td>
<td>156,984 acres</td>
</tr>
<tr>
<td>Maximum elevation</td>
<td>3,176 feet</td>
</tr>
<tr>
<td>Mean elevation</td>
<td>366 feet</td>
</tr>
<tr>
<td>Percent wetlands</td>
<td>27.1 %</td>
</tr>
<tr>
<td>Connected lakes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Moose River Temperature Summary

Below is a summary of Moose River water temperature data from 2008-2012.

- Maximum temperature recorded: 19.3°C (66.7°F)
- June average temperature: 12.5°C (54.5°F)
- July average temperature: 13.6°C (56.6°F)
- August average temperature: 12.7°C (54.8°F)
- Maximum 7-day average temperature: 15.4°C (59.8°F)
- Maximum 7-day maximum temperature: 16.5°C (61.8°F)
- # of days/year temperature exceeds 13°C (55°F): 49
- # of days/year temperature exceeds 15°C (59°F): 15

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:

Moose River falls in the “warm, low sensitivity” category, which indicates that stream temperatures will likely increase only moderately in the decades ahead, but will continue to exceed 13°C (55°F) resulting in more thermal stress for 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.