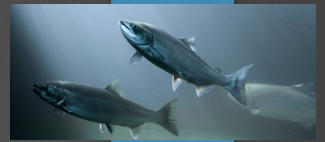


The Impacts of Hot Temperatures on Salmon

AN EDUCATIONAL OVERVIEW OF RISING TEMPERATURES IN THE CHEHALIS BASIN



The Problem

Increasing temperatures, declining summer rainfall, and human conflicts are disrupting salmon habitat and straining local ecosystems. Lower water levels in rivers and streams is also a concern for migration and habitat quality.

Salmon depend on “cold water refugia” for optimal shelter during hot summers to escape thermal stress. Cold water refugia is an area in streams and rivers where the water is consistently colder. In some cases, when people swim in cool pools in streams, the movement disrupts water layers and the cold water refugia is lost.

The impacts of warming temperatures also leave salmon more susceptible to predators, disease, and parasites because their immune system becomes weakened over long periods of stress.

Juvenile salmon are especially vulnerable to temperature and water level changes. Even small variances can exponentially increase their mortality rate.



Sockeye salmon found succumbed to heat and disease in the Lower Columbia. Steve Ringman/Seattle Times/TNS

In the summer of 2021, 23 spring Chinook salmon were reported to have been killed in the Newaukum River, with heat being the largest contributing factor. The Chehalis River Watershed did not have measurable rainfall for 85 days this summer, resulting in lowered water levels and higher water temperatures.

Potential Solutions

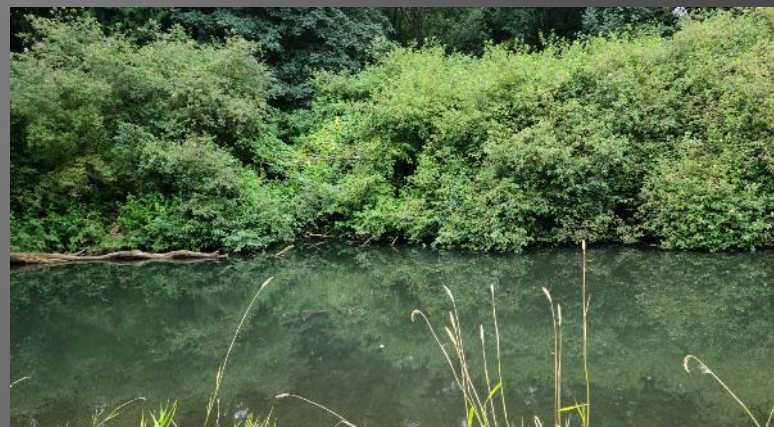
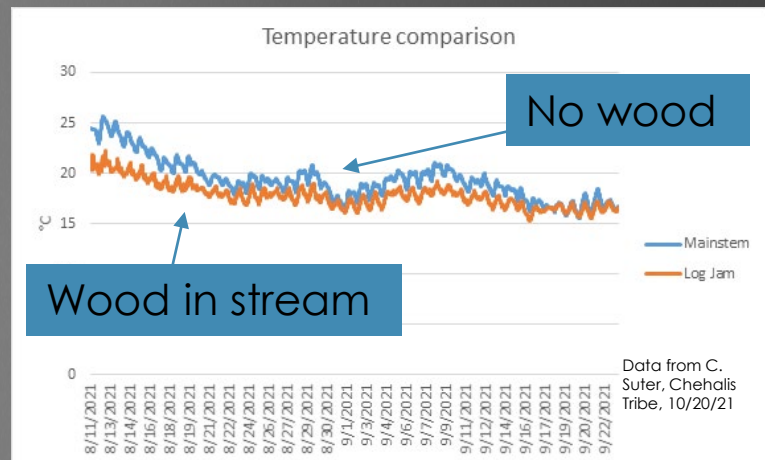
There are numerous strategies to preserving salmon habitat and mitigating rising water temperatures. Although there isn't one solution that fits all watersheds, some beneficial components include:

- Conserving water resources
- Preserving and planting native vegetation
- Leaving wood in rivers & streams
- Strategically placing wood in the rivers
- Reporting any dead or dying fish to Washington Department of Fish and Wildlife (WDFW) and leave carcasses in river

- Conserving water at home leaves more groundwater to recharge the rivers and provide cooler water.
- Vegetation cools the water by shading areas of the river, in addition to offering salmon a hiding place
- When trees fall or are placed into the river, they offer shelter and form deeper, cooler pools of water.
- Reporting dead and dying fish allows WDFW to collect important data about species and location
- Leaving carcasses in river allows the river or stream to carry vital nutrients to vegetation and wildlife.



Strategically placed wood in the Skookumchuck River's restoration project is aiming to provide deep pools and shelter for fish



Native vegetation providing shade and refuge in the Skookumchuck River