



Temperature

Aquatic life temperature criteria. Water temperature is measured by the 7-day average of the daily maximum temperatures (7-DADMax). "7-day average of the daily maximum temperatures" is the arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-day maximum, in contrast to the annual daily maximum, better reflects the response of fish to high water temperature. Fish can often endure one day of 75° F water by eating more or moving into zones of cooler water. However, if the water peaks at 75° F for a week, these survival strategies are less effective. The table below lists the temperature criteria for each of the aquatic life use categories for salmonids in the Okanogan River Basin.

Aquatic Life Temperature Criteria in Fresh Water

Category for aquatic life uses	Highest 7-DADMax	Season	Critical Period
Salmon and Trout Spawning and Incubation	13°C (55.4°F)	Spring	February 15 – June 15
Core Summer Salmonid Habitat	16°C (60.8°F)	Summer	June 15 – September 15
Salmonid Spawning, Rearing, and Migration	17.5°C (63.5°F)	Fall through Spring	September 16 – June 14

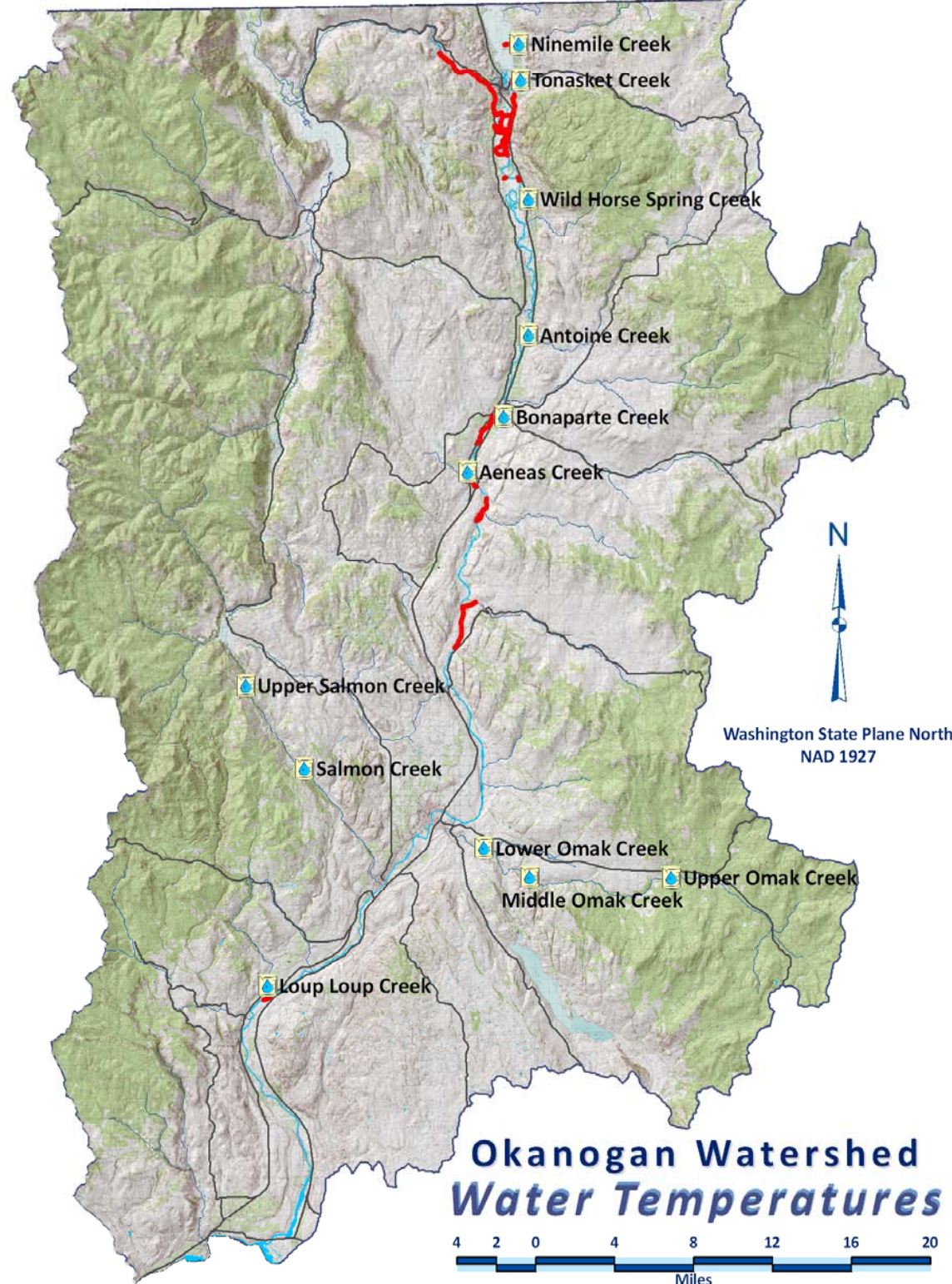
- When a water body's temperature is warmer than the criteria in Table 200 (1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).
- Temperatures are not to exceed the criteria at a probability frequency of more than once every ten years on average.

Number of exceedances of the 7-day average (during critical period)	✓ less than or equal to 5 exceedances	⚠ more than 5 but less than or equal to 25 exceedances	✗ more than 25 exceedances	
	Temperatures recorded in 2007			
Location of sampling point	Salmon and Trout Spawning, and Incubation	Core Summer Salmonid Habitat	Salmonid Spawning, Rearing, and Migration	Potential sources and/or causes of high temps
Loup Loup Creek	✓ 0	✓ 3	✓ 1	high ambient air temperatures, little over-stream shading along lower Loup Loup Creek, and diminished flows
Salmon Creek	⚠ 12	✗ 116	✓ 0	high ambient air temperatures, little over-stream shading along lower Salmon Creek, and diminished flows
Upper Salmon Creek	⚠ 12	✗ 114	✓ 0	high ambient air temperatures
Lower Omak Creek	✗ 66	✗ 80	✓ 0	high ambient air temperatures, little over-stream shading along lower Omak Creek, and diminished flows
Middle Omak Creek	⚠ 12	✗ 141	✓ 0	high ambient air temperatures
Upper Omak Creek	⚠ 6	✗ 122	✓ 0	high ambient air temperatures
Aeneas Creek	✗ 33	✓ 0	✓ 0	high ambient air temperatures and little over-stream shading
Bonaparte Creek	✗ 54	✗ 159	✓ 1	high ambient air temperatures and little over-stream shading
Antoine Creek	✗ 36	✗ 66	✓ 0	high ambient air temperatures and little over-stream shading
Wild Horse Spring Creek	✓ 0	✓ 0	✓ 0	
Tonasket Creek	✗ 75	⚠ 19	✓ 0	high ambient air temperatures, little over-stream shading, and diminished flows
Ninemile Creek	✗ 53	✗ 61	✓ 0	high ambient air temperatures, little over-stream shading, and diminished flows

NOTE: Loup Loup, Aeneas, and Tonasket Creeks were not measured after mid- to late-June due to lack of flow.

NOTE: The Ashnola and Pasayten Rivers (part of administrative WRIA 48) and the Columbia River interfluvium north of Foster Creek (part of administrative WRIA 50), which are recommended by the Okanogan River Basin Planning Unit to be included in WRIA 49, are not depicted on this map because there are no temperature data for these areas.

- Colville Tribal Temperature sampling points
- Okanogan and Similkameen Rivers reaches exceeding temperature standard



SOURCES: Okanogan County GIS, WA Department of Ecology, Colville Tribal Fisheries, and Okanogan Conservation District

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 Cartographer: Bob Clark