

FINAL EPA TEMPERATURE GUIDANCE

April 23, 2003



Guidance Goal: Recommend how States and Tribes can designate uses and establish temperature criteria that will protect salmonid populations throughout the Pacific Northwest.

Scope: Applies to Chinook, Coho, Sockeye, Chum and Pink Salmon, and Steelhead, Coastal Cutthroat and Bull Trout.

Disclaimer: Since document is not a rule, EPA cannot bind itself to approve a water quality submission that conforms to the guidance. However, following the guidance will expedite the approval process.

Recommendations: The Guidance sets out 3 categories of recommendations:

1. Identify temperature sensitive salmonid life stages and the numeric criteria to protect those uses
2. Protect existing cold water
3. Protect salmonids from thermal plume impacts

Numeric Criteria

States and Tribes can adopt subcategories of uses for different fish life stages.

Seasonal uses are also appropriate.

EPA recommends 7 numeric criteria – 4 for summer and 3 for spring/fall.

Summer Criteria

- Bull Trout rearing: 12C/55F
- Salmon/Trout *core* rearing (moderate to high density use, generally a basin's middle to upper reaches): 16C/61F
- Salmon/Trout *noncore* rearing (migration and moderate to low density juvenile rearing, generally in the middle to lower reaches): 18C/64F
- Salmon/Trout migration : 20C/68F (and all feasible steps must be taken to protect and restore the natural thermal regime of the corridor).

Spring/Fall Criteria

- Bull Trout spawning: 9C/48F
- Salmon/Trout spawning: 13C/55F
- Steelhead smoltification: 14C/57F

Criteria should be expressed as 7 day average of daily maximum (DADM) temperatures. Criteria should not apply during unusually warm conditions (i.e. the 7-day average maximum during the warmest week of the year could exceed the criteria once every 10 years on average. Criteria should be applied at the lowest downstream extent of the use (and upstream beyond actual use as needed to ensure downstream temperatures are maintained).

States and Tribes can include a “de minimus” allowance for human use, such as an allowable increase of .25C cumulatively for all sources.

To make this work, States and Tribes should develop detailed information on where and when these life stages occur, including designation of core habitats.

State and Tribal Alternatives to the Recommended Biological Numeric Criteria

Option 1: Adopt alternative numeric criteria that reflect site specific conditions that fully support the designated use .

Option 2: Adopt alternative numeric criteria that are based on an estimate of the natural background temperature conditions. Natural thermal conditions are presumed to support healthy salmonid populations.

Option 3: Adopt a narrative natural background provision that takes precedence over numeric criteria when natural background temperatures are higher than the numeric criteria. This narrative can be utilized in TMDLs to set water quality targets and allocate loads.

Option 4: Redesignate (downgrade) beneficial uses where a water body cannot achieve either the numeric criteria or natural thermal conditions (identified in option 1 and 2 above), or is only achievable at the cost of adverse widespread economic or social impacts. This submission triggers a use attainability review. This process results in the designation of a marginal or secondary salmonid use category and alternative numeric temperature criteria.

Protect Existing Cold Water

States and Tribes should adopt strong regulatory protection for existing cold water areas with ESA-listed species. This could be done using one or more of the following alternatives:

- A narrative criterion prohibiting more than a de minimus increase to summer maximum temperatures.
- The antidegradation process (prohibit temperature degradation)
- A maximum allowable increase provision, or
- A narrative provision or more stringent numeric criteria that apply to ecologically significant cold water

Protect Salmonids from Thermal Plume Impacts

Most of these recommendations involve modifications to NPDES source outfall design and configurations. States and Tribes should:

- Prevent short term lethal temperatures everywhere (prohibit 10 seconds at 32C or more at the ZID).
- Prevent thermal shock (prohibit sudden increases to temperatures warmer than 26C in more than 5% of the river).
- Prevent migration blockages (Prevent 21C from occurring in more than 25% of a cross-section of the stream.
- Prevent impacts to spawning and egg incubation areas.