

2021-2024 Triennial Review
Temperature – Fresh Water Uses Criteria



Fact Sheet

The Alaska Department of Environmental Conservation (DEC) is considering inclusion of Temperature - Fresh Water Uses during the 2021-2024 Triennial Review cycle.

SUMMARY: Determining the degree of variability in ambient water temperature can be a challenge as each of Alaska's waters are unique in their physical and chemical characteristics. Historically, DEC has not explicitly defined the applicable duration period to be used in the assessment process. DEC would consider adoption of language in state water quality standards that would explicitly define the duration period to be used for determining whether an exceedance has occurred.

BACKGROUND: Alaska's water quality criteria for temperature (freshwater) are listed in 18 AAC 70.020(10). The criteria are biologically-based as the values are designed to be protective of aquatic life (i.e., salmonids) during specific life stages. The criteria were first recommended by the EPA in 1977 and adopted by Alaska in 1979.

Current EPA guidance recommends adoption of the Seven Day Average of Daily Maximum (7-DADM) as a duration value. The 7-DADM represents the arithmetic average of seven consecutive measures of daily maximum temperatures and reflects an average of maximum temperatures that fish are exposed to over a week-long period but is not overly influenced by the maximum temperature of a single day. The 7-DADM for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date. Such an approach assumes that acute or chronic conditions occur over longer time frames and is supported in the scientific literature.

Alaska's temperature criteria at 18 AAC 70(b)(10)

(10) TEMPERATURE, FOR FRESH WATER USES	
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed 15° C.
(A) Water Supply (ii) agriculture, including irrigation and stock watering	May not exceed 30° C.
(A) Water Supply (iii) aquaculture	May not exceed 20° C at any time. The following maximum temperatures may not be exceeded, where applicable: Migration routes 15° C Spawning areas 13° C Rearing areas 15° C Egg & fry incubation 13° C For all other waters, the weekly average temperature may not exceed site-specific requirements needed to preserve normal species diversity or to prevent appearance of nuisance organisms.
(A) Water Supply	May not exceed 25°C
(B) Water Recreation	Same as (10)(A)(ii)



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(i) contact recreation	
(B) Water Recreation (ii) secondary recreation	Not applicable
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (10)(A)(iii)

NOTE: All rulemaking is subject to the Administrative Procedures Act and must be reviewed and approved of by the U.S. Environmental Protection Agency (EPA) prior to application in Clean Water Act- approved programs (e.g., wastewater discharge permits, waterbody recovery plans).