



WQS Triennial Review – Issue Paper:

Salmonid Spawning Use Designation

Introduction

Under section 304(a) of the Clean Water Act, the US Environmental Protection Agency (EPA) is to develop and publish water quality criteria that reflect the latest scientific knowledge on the effects of a constituent concentration on animal and human health. These criteria are published as recommendations to states and authorized tribes for use in setting their water quality standards. While EPA provides scientific recommendations to protect aquatic life and recreation uses, these do not substitute for the Clean Water Act or EPA’s regulations, nor are they regulations themselves. As a practical matter, EPA uses recommended §304(a) criteria as one factor for determining whether to approve a state’s water quality standards. Revisions to Idaho water quality standards must be approved by EPA before they are applicable for Clean Water Act purposes. States must consider adopting new or updated Clean Water Act §304(a) criteria recommendations as part of their triennial review as described under 40 CFR 131.50(a).

The Federal Clean Water Act establishes a national goal that all waters be fishable and swimmable. In Idaho, many water bodies are designated for cold water aquatic life (COLD) and salmonid spawning (SS) uses (IDAPA 58.01.02.110–160). In addition, undesignated waters are protected for COLD and contact recreation (IDAPA 58.01.02.101.01.a). Waters that provide, or could provide, habitat for self-propagating populations of salmonid species are to be protected for SS (IDAPA 58.01.02.100.01.b). SS is considered a more protective subcategory of COLD, and the water quality standards provide specific dissolved oxygen and temperature criteria for waters where SS is a designated or existing use (IDAPA 58.01.02.250.f).

The SS beneficial use adds a seasonal layer of protective temperature and dissolved oxygen criteria in areas used for spawning during the spawning and incubation periods. Depending on when spawning and incubation occurs, the SS criteria may apply during more than one season each year.

As a prerequisite to updating the SS temperature criterion, DEQ needs to review use designations for SS across the state and will begin with the waters in the central Idaho Mountains. This effort originally began when DEQ attempted to revise the current SS temperature criteria using regionally-recommended SS temperature criteria (EPA 2003). The proposed revision would have changed the SS temperature criterion from 13 °C or less with a maximum daily average of no greater than 9 °C, to a single criterion of 13 °C for a 7-day average. However, the US Environmental Protection Agency would not approve this change unless DEQ specified all waters to which the SS criteria would apply. In essence, if DEQ wants to adopt the recommended temperature criterion based on more current science, it must specify in rule all waters where and when SS is an existing use (Macchio 2011).

To more accurately identify when and where salmonid spawning occurs across Idaho, Miller et al. (2014) produced the Geography and Timing of Salmonid Spawning in Idaho detailing the likely timing and spawning habitat of six native species in Idaho. More recently, Beneficial Use Reconnaissance Program data for coldwater species (defined in DEQ 2016, pg. 91–97), Idaho Department of Fish and Game salmonid presence data (accessible via streamnet.org), and the salmonid spawning GIS layer (Miller et al. 2014) were mapped using ArcMap GIS software.

This map provides a clearer description of when and where salmonid spawning occurs in Idaho. Using this map would allow Idaho to protect the SS use at the appropriate locations and times of year and avoids applying SS criteria in locations where, or times when, spawning does not occur. This application would benefit both the resource and those activities affected by water quality criteria.

Used together, these data sets provide a data-driven list of water body units to consider for designation of SS beneficial use during incubation and rearing time periods.

Current Rule

Surface Water Use Designations (IDAPA 58.01.02.100)

Waterbodies are designated in Idaho to protect water quality for existing or designated uses. The designated use of a waterbody does not imply any rights to access or ability to conduct any activity related to the use designation, nor does it imply that an activity is safe. For example, a designation of primary or secondary contact recreation may occur in areas where it is unsafe to enter the water due to water flows, depth or other hazardous conditions. Another example is that aquatic life uses may be designated in areas that are closed to fishing or access is not allowed by property owners. Wherever attainable, the designated beneficial uses for which the surface waters of the state are to be protected include:

01. Aquatic Life.

- a. Cold water (COLD): water quality appropriate for the protection and maintenance of a viable aquatic life community for cold water species.*
- b. Salmonid spawning (SS): waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes.*

Surface Water Quality Criteria for Aquatic Life Use Designations (IDAPA 58.01.02.250)

- 02. Cold Water. Waters designated for cold water aquatic life are not to vary from the following characteristics due to human activities:*

...

- f. Salmonid Spawning. The Department shall determine spawning periods on a waterbody specific basis taking into account knowledge of local fisheries biologists, published literature, records of the Idaho Department of Fish and Game, and other appropriate records of spawning and incubation, as further described in the current version of the “Water Body Assessment Guidance” published by the Idaho Department of Environmental Quality. Waters designated for salmonid spawning, in areas used for spawning and during the*

time spawning and incubation occurs, are not to vary from the following characteristics due to human activities:

i. Dissolved Oxygen

(2) Water-Column Dissolved Oxygen.

a. One (1) day minimum of not less than six point zero (6.0) mg/l or ninety percent (90%) of saturation, whichever is greater.

ii. Water temperatures of thirteen (13) degrees C or less with a maximum daily average no greater than nine (9) degrees C.

Discussion

Should Idaho consider designating SS in waters where it is an existing use? As a potential test case to determine if Idaho should designate SS in waters where SS occurs as an existing use, DEQ will identify a mountainous watershed with temperature data and biological (fish) data showing that a stream is used by salmonid species for spawning or rearing of juvenile fishes. The types of data used would include presence of: anadromous species adults, anadromous juveniles under 100 mm, adult resident species in spawning condition, resident species juveniles, and physical evidence of spawning activity (redds and deceased adults). The streams would be mapped using the National Hydrological Dataset with the sampling locations and the data type.

References

- DEQ (Idaho Department of Environmental Quality). 2016. *Water Body Assessment Guidance*, 3rd ed. Boise, ID: DEQ. www.deq.idaho.gov/media/60179244/water-body-assessment-guidance.pdf.
- EPA (US Environmental Protection Agency). 2003. EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. Seattle, WA: Region 10 Office of Water. EPA 910-B-03-002.
- Macchio, L. 2011. Comments to Idaho's Docket No. 58-0102-1101, Revisions to Idaho's Water Quality Standards; Salmonid Spawning Criteria and Thermal Treatment Requirements. Received by Paula Wilson (Idaho Department of Environmental Quality), May 27, 2011.
- Miller, M., E. Iverson, and D. Essig. 2014. *Geography and Timing of Salmonid Spawning in Idaho*. Boise, ID: BioAnalysts, Anchor QEA, and Idaho Department of Environmental Quality. Prepared for Idaho Department of Environmental Quality.