Salmonid Spawning – When and Where

Rule

Surface Water Quality Criteria for Aquatic Life Use Designations – Salmonid Spawning (IDAPA 58.01.02.250.02.f.ii)

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.

(1) Intergravel Dissolved Oxygen.

(a) One (1) day minimum of not less than five point zero (5.0) mg/l.

(b) Seven (7) day average mean of not less than six point zero (6.0) mg/l.

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

Discussion

DEQ needs to revise use designations for salmonid spawning across the state as a prerequisite to update of temperature criteria to protect salmonid spawning. This effort originally began several years ago when DEQ attempted to revise the current salmonid spawning temperature criteria using regionally recommended salmonid spawning temperature criteria (USEPA, 2003). DEQ proposed update of its criteria for salmonid spawning temperature from its current 13^{o} C or less with a maximum daily average of no greater than 9^{o} C to a single criterion of 13^{o} C 7 day average.

DEQ halted this previous attempt unable to adopt these recommendations because the Department was unable to specify everywhere the new criterion would apply, which EPA said was needed in order for them to approve. In essence if the Department wants to use the newer criterion based on more current science it must specify in rule both for all waters where salmonid

spawning is an existing use, and when that use occurs. The Department cannot simply apply the criterion to just waters currently designated for salmonid spawning.

In order to more accurately identify when and where salmonid spawning occurs across Idaho, DEQ hired a contractor to produce a detailed report indicating where and when 6 native species spawn in Idaho (http://www.deq.idaho.gov/media/1117405/geography-timing-salmonid-spawning-report-0414.pdf). Data was included from StreamNet, IDFG, NMFS, USFWS, NOAA Fisheries, Universities, BPA, Idaho Fish and Wildlife Information System and DEQ's own BURP database. The data included not only current and historic spawning data, but also included potential spawning habitat that was disconnected from existing spawning area by things like culverts. The actual spawning areas are not included in the report, but rather as a GIS layer file and corresponding maps. The maps, along with the report which includes the methods, were sent out to different state and federal agencies, tribes, and other entities to allow biologists to review and amend based upon professional knowledge, literature, and field observations.

The resulting product is a significant shift which includes additions of new spawning areas along with the deletions of current salmonid spawning. In essence DEQ now has a more accurate and very detailed description of when and where salmonid spawning occurs throughout the state. This description identifies salmonid spawning on a sub-WBID level down to the week of the year. This highly valuable resource allows Idaho to be protective of this use in the appropriate location at the right times of year and avoids applying salmonid spawning temperature criteria in locations where spawning does not occur. This is a benefit to the resource and those activities impacted by water quality criteria.

Currently a major obstacle to implementing this project on the ground is that DEQ's water quality standards cannot reference maps outside the rules. Placing detailed maps into rule - the simplest and clearest means of defining when and where salmonid spawning is occurring - is not practicable. Additionally, the issue is confounded by the fact that DEQ designates uses on a WBID level, and the product is a departure from that method because it identifies potential use designations on at a finer resolution; an assessment unit level.

The benefit of this project and associated use designation and rule makings are twofold: the first being that the standard changes to a simpler, easily applied 7 day average of 13^{o} C that is protective of salmonid spawning; secondly, it protects the critical spawning habitat and future potential habitat by identifying those areas where salmonid spawning could occur. This better adheres to Idaho's description in rule of the salmonid spawning use as "waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes" [emphasis added] (IDAPA 58.0102.100.01.b).

References

USEPA. 2003. *EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards.* EPA 910-B-03-002. Region 10 Office of Water, Seattle, WA.

Miller, Mark[1]; Iverson, Erin[2]; and Essig Don[3], 2014. Geography and Timing of Salmonid Spawning in Idaho. Bioanalysts[1], Anchor QEA[2] and DEQ[3] prepared for Idaho Department of Environmental Quality.