

Posted August 24, 2005 RG

Chum Research Questions developed 16 August 05

Questions and Agencies Responsible for Providing Responses

Question 1. What is the maximum fluctuation in daytime Bonneville tailwater elevations that can be tolerated without impacting chum spawning? (Chum Researchers)

Background: the current TW operation for chum is 11.3-11.7 ft or about 125 kcfs depending on backwater effect during daytime hrs; the Action Agencies would like to know if there is flexibility in exceeding this operational range for short times (2 hr) during the day for unexpected increases in flow.

Question 2. What is the maximum nighttime flows that can be tolerated without impacting chum spawning? (Chum Researchers)

Background: during high flow events, high discharges (up to 250 kcfs) have been provided at night to maintain daytime flows within 11.3-11.7 ft. USGS conducted a study this year to evaluate effects of high day and night flows, and although no effect was found for flow blocks up to 175 kcfs this did not include higher flows observed in recent years. Study results also indicates that responses are dependent on whether chum have established a redd site.

Question 3. What are the implications to other BiOp requirements (Apr 10 RCs, spring flows, etc) and the Vernita Bar Agreement of maintaining TWs above the current 11.5 ft throughout spawning, incubation, and emergence? (Action Agencies)

Background: Whether intentional or not, TWs have exceeded the 11.5 ft minimum requirement. Given the storage conditions likely to exist beginning November 1, TMT members would like to know what are the effects of meeting the BiOp requirements and VB by maintaining TWs at higher elevations (ex: 12.0, 12.5, 13.0 ft etc). At TMT, it was discussed the Corps or BPA HydroReg models could be used to assess risks to these requirements using a 50 year period of record in the analysis.

Question 4. If TWs are increased to provide additional spawning habitat and reduce superimposition in the Hamilton Creek area, when would the best time to do this and to what TW to provide the greatest benefits to chum? (Chum Researchers)

Background: Chum researchers have noted high spawning densities and expressed concerns with potential superimposition of chum spawning in the Hamilton Slough area below Hamilton Creek. One strategy to reduce densities and superimposition is to start with a 11.5 ft TW operation early in the spawning cycle but then increase to a higher (ex: 12.5 ft) later in the run (ex: November 15) to allow access to other spawning habitat and "spread out the spawners".

Question 5. What is our best estimate for the number of chum expected to spawn in each of the mainstem areas (Ives Island, Multnomah, I-205) this year as well as tributaries (Hardy, Hamilton, Grays Harbor, etc)? (Chum Researchers)

Background: Chum escapements in each of the spawning areas have declined in recent years; if possible, TMT members would like to know for planning purposes how many chum are forecasted for this year recognizing that forecast tools for chum have not been developed.

Question 6. What are the effects on Bonneville TWs and biological benefits to chum by drafting 4 ft (2055 to 2051 ft) from Lake Pend Oreille? (Action Agencies and Chum Researchers)

Background: Under the BiOp, a four ft draft from Lake Pend Oreille is identified to provide chum spawning flows. Ongoing Lake Pend Oreille research is evaluating the effects of maintaining higher elevations for kokanee spawning (an important food source for listed bull trout) and a request has been made to maintain elevation 2055 ft this year to gain additional data at this higher elevation if the water is not needed for chum flows.