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Subject: Pump Operation for the Chelan River Habitat Channel
Date: Saturday, August 09, 2014 5:35:51 PM

Dear Chelan River Fishery Forum: This email is to inform you of actions taken by Chelan PUD regarding operation of the Chelan River Project as of last week.

As I am sure you are all aware, we have been experiencing abnormal, extreme hot weather in the Wenatchee area over the past month or so, with air temperatures exceeding 100⁰ F on many days. During our regular 5-year Lake Chelan Hydroelectric Project Federal Energy Regulatory Commission (FERC) inspection that occurred on Monday, August 4, the group touring the Chelan River Habitat Channel observed dead Chinook salmon in the pool at the outlet structure to the pump station canal. Discussion amongst the group centered on the potential for Chelan River water temperatures being higher than normal for this time of year due to the extreme heat, and whether that could be a contributing factor to the observed Chinook salmon mortalities.

Out of concern from the observed mortalities, Chelan PUD staff measured water temperatures on August 7 directly in the Chelan River at the following three locations: 1) immediately below the Low Level Outlet (LLO); 2) in the pool at the canal outlet structure; and 3) near the pump station intakes in the tailrace. Water temperatures at these locations were as follows: 1) below the LLO = 23.2⁰ C; 2) in the pool at the canal outlet structure = 24.8⁰ C; and 3) in the tailrace at the pump station intakes = 23.3⁰ C. In response, Chelan PUD turned on one pump (approximately 50 cfs discharge) at the pump station in the morning on August 8. Water temperatures measured that afternoon were as follows: 1) pool above the outlet structure = 24.3⁰ C; and 2) in the Habitat Channel immediately below the entrance log structure = 23.6⁰ C. The data indicate that adding ~ 50 cfs pumped flow from the tailrace to the 80 cfs Chelan River minimum instream flow reduced the water temperatures in the Habitat Channel by ~ 0.7⁰ C (from 24.3⁰ C to 23.6⁰ C). Chinook salmon holding in the pool at the canal outlet structure were observed nosing close to the outlet structure grating, clearly holding in the cooler water.

Chelan PUD staff will be assessing pump station operations and observing Chinook behavior and mortalities in the next several weeks. Temperature data from thermographs located throughout the Chelan River and Habitat Channel used for regular monitoring will be assessed as additional data.

As always, please feel free to give me a call if you have any questions.

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