

**SYSTEM OPERATIONAL REQUEST #\_\_\_ - USFWS/IDFG -2010-1**

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**FROM:** Chip Corsi, Regional Supervisor, Idaho Department of Fish and Game  
Bryon Holt, Acting Assistant Field Supervisor, U.S. Fish and Wildlife Service

**SUBJECT:** Request to implement a 2010-2011 winter lake elevation of 2055' for Lake Pend Oreille, Idaho.

**SPECIFICATIONS:**

Draw Lake Pend Oreille down to a winter minimum control elevation (MCE) no lower than 2055' while minimizing or eliminating the need to spill at Albeni Falls Dam. During the past four years, kokanee spawning has commenced around November 8-10 (earlier than years prior). We therefore request that the drawdown be completed by November 8 if reasonably possible. If this is not possible, the MCE should be reached no later than November 15 and should not be dropped below this elevation for the duration of the winter. This proposed operation is not anticipated to cause exceedence of the state maximum total dissolved gas standards at downstream projects barring unforeseen circumstances. The lake will then be held within 0.5' above the MCE to the end of kokanee spawning [monitored by Idaho Department of Fish and Game (IDFG)] or December 31, whichever comes first.

**JUSTIFICATION:**

In Lake Pend Oreille, bull trout are heavily dependent upon kokanee as forage. Without kokanee, the Lake Pend Oreille bull trout population is at risk of becoming severely depressed, threatening recovery efforts in both the Idaho and Montana portions of the Pend Oreille basin. Examples of this negative population interaction include Flathead Lake, Montana and Priest Lake, Idaho. Adult kokanee in Lake Pend Oreille are at low levels, with an estimated number of 59,000 female kokanee expected to spawn this fall. Research indicates three decades of annual deep draw downs during the winter months was the primary factor contributing to the large declines in kokanee abundance observed from the 1970's into the 1990's. More recently, the combined predation effects of lake trout and rainbow trout have limited kokanee recovery, despite improved egg-to-fry survival as a result of modified winter lake level management. Both populations of predators are being intensively researched, managed, and controlled to reduce their impacts on kokanee abundance, but kokanee recovery efforts will require adequate egg-to-fry survival to be successful.

A draft decision tree has been developed (Table 1) to help guide selection of Lake Pend Oreille winter elevation. This decision tree recommends an elevation for this winter of 2055'. The primary factors guiding this recommendation are as follows:

First, the National Weather Service's Climate Prediction Center forecast on September 16 was for above normal precipitation during November, December, and January. Given the strong La Nina conditions in the Pacific, it is unlikely that the October forecast will shift from above average to below average precipitation. Only a below average forecast would result in a 2051' recommendation in the decision tree. Keeping Lake Pend Oreille winter elevation at 2055' in years with above average November – January precipitation may benefit Chum salmon below Bonneville Dam by reducing flows during the spawning period in November, and thus helping to reduce the probability that redds will be established at elevations that could be dewatered in the late winter-early spring before complete fry emergence.

Second, keeping the Lake Pend Oreille elevation higher during the winter following a full draw down the previous winter has been shown to result in higher quality spawning habitat for kokanee. The higher lake level inundates shoreline areas that were previously exposed to wave action, thus providing more abundant gravel substrate for spawning. Given that Lake Pend Oreille has been held at 2051' the past two winters, spawning habitat has been improved and should provide excellent spawning conditions if the lake is held at 2055' this winter. Surveys conducted by IDFG indicate that kokanee spawner abundance has increased annually since 2007. Also, kokanee survival rates have increased substantially since 2007, indicating that predation is playing a reduced role in kokanee population dynamics. Thus, providing the greatest opportunity for high egg-to-fry survival this year is important for taking advantage of both improved spawner abundance and survival rates that should allow a higher proportion of fry to reach maturity.

For these reasons, we recommend drafting Lake Pend Oreille to elevation 2055' during the upcoming winter and maintaining the spawning elevation as the minimum through kokanee emergence.

Start

Table 1. **Draft** decision tree to guide selection of the winter lake level for Lake Pend Oreille.

What is the weather forecast for precipitation during Nov, Dec, and Jan by the National Weather Service, Climate Prediction Center on the third Thursday of September (<http://www.cpc.noaa.gov/products/predictions/90day>). Prediction is for the majority of the Columbian River watershed.

