

SYSTEM OPERATIONAL REQUEST: #2000-36

- *The following State and Federal Salmon Managers have participated in the preparation and support this SOR: Oregon Department of Fish & Wildlife, U.S. Fish & Wildlife Service, and the Washington Department of Fish and Wildlife.*

TO: **Brigadier General Strock** **COE-NPD**
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Marv Yoshinaka

FROM: **Marv Yoshinaka, Chairperson, Salmon Managers**

DATE: **December 5, 2000**

SUBJECT: **Bonneville Project Operations – Ives/Pierce Island**

SPECIFICATIONS:

- Manage the hydrosystem operation flows, which the federal operators have predicted to range from 150 kcfs to 160 kcfs throughout the month of December, to benefit spawning, incubation and rearing of lower river chum salmon to the maximum extent possible.
- These operations will effectively determine new minimum, spawning, incubation and rearing operations for the remainder of the 2000-2001 season.
- Operate Bonneville Dam to provide a stable minimum flow condition below the dam for the Ives Pierce Islands chum salmon spawning area.
- Maintain consistent day to nighttime flows, avoiding reverse load factoring at Bonneville Dam.
- Maintain a minimum tailwater elevation during predicted periods of low tides and low Vancouver Gauge elevations to avoid deterioration of spawning and incubation and reduction of gauge 1 and 2 elevations at the Ives/Pierce Islands complex. In addition to the streamflows recommended above, the following minimum tailwater elevations should be maintained:

<u>Flow (kcfs)</u>	<u>Tailwater (ft)</u>
150	13.5
155	14.0
160	14.5

- Avoiding reverse load factoring at Bonneville Dam, using water to maintain minimum tailwater elevations when necessary.

JUSTIFICATION: Listed lower Columbia River chum salmon continue to utilize the Pierce/Ives Islands spawning area. Surveys completed on December 4, 2000 indicate that active chum spawning is continuing in the area and new redds have been constructed. Over 400 chum have returned to the area thus far, with additional fish expected over the next two weeks. These recommendations are especially critical considering the benefit that would be realized by this listed stock of chum salmon by providing good quality spawning habitat during a year when good numbers of adults could spawn successfully. This kind of opportunity to boost production is one of the most significant steps that could be taken to help recover this stock. Low precipitation has limited the areas in tributary streams available to these fish. Low flow conditions have impacted chum salmon spawning in the Ives complex and throughout the lower Columbia River. Very little of the potential chum salmon and fall chinook habitat has been made available to date due to low flows. Review of gauge 1 and 2 elevation data shows that gauge 2, located at established chum habitat has less than 1 foot of water at flows below 150 kcfs. These conditions are inadequate for chum spawning. Mainstem habitat is increasingly important under the present conditions of low tributary flow.

The specifications of this request are designed to moderate the base hydropower operation to provide some benefit to listed chum stocks attempting to utilize the limited natural spawning area available at the Ives Pierce Complex below Bonneville Dam. The federal operators and regulators have advised us that flows will be maintained in the range of 150 to 160 kcfs throughout the month of December to meet power requirements. At expected average daily flows of 150-155 kcfs, fluctuations should be avoided. Fluctuations below this level during daylight hours would essentially eliminate new spawning habitat on the north shore of Ives Island. Fluctuations below this level at night (along with the corresponding fluctuations above this level during the day) would be likely to dewater chum salmon redds. At expected average daily flows of 160 kcfs and greater, fluctuations should also be avoided. If required, fluctuations should be limited to plus or minus 5 kcfs with higher flows during daylight hours. Spawning habitat would be maximized during daylight hours, and the corresponding fluctuations to lower flows at night would be sufficient to maintain water over redds. (See Memorandum titled "Proposed Protection Measures for the Ives/Pierce Islands Spawning Area" dated September 18, 2000).