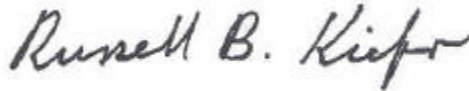


## **SYSTEM OPERATIONAL REQUEST: #2006-6**

*The following State, Federal, and Tribal Salmon Managers have participated in the preparation and support this SOR: U.S. Fish & Wildlife Service, Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, NOAA Fisheries, Nez Perce Tribe, Shoshone-Bannock Tribes, and the Columbia River Inter-Tribal Fish Commission.*

<b>TO:</b>	<b>Brigadier General Gregg F. Martin</b>	<b>COE-NWD</b>
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**FROM:** Russ Kiefer, Chairperson, Salmon Managers

**DATE:** July 28, 2006

**SUBJECT:** Dworshak Flow

**SPECIFICATIONS:** Maintain current outflow of 12 Kcfs from Dworshak Dam. Reevaluate Dworshak outflow on Monday morning, July 31, 2006.

**JUSTIFICATION:** There are presently both adult and juvenile fish of concern migrating through the Snake River. Passage indices for subyearling fall Chinook at Lower Granite Dam have ranged between 395 and 646 fish per day over the past four days. While the numbers of fish passing LGR appear to be relatively low, it is likely that more than half of the fish in the sample are of wild origin (based on the proportion of unclipped fish in the sample). In the past two weeks the percentage of unclipped subyearling chinook passing Lower Granite Dam has averaged 83% of those sampled. Compared to hatchery releases, which were roughly 44% adipose-clipped, it appears that a good portion of wild fish are passing the project at this time. Based on the ratio of clipped hatchery releases reported above, 870 clipped subyearlings in the sample would equate to roughly 1,977 total hatchery subs ( $870/0.44$ ) of which 1,107 ( $1977 - 870$ ) would be unclipped hatchery fish. With 4,344 unclipped fish sampled, there would be 3,237 ( $4,344 - 1,107$ ) unclipped wild fish. Based on these numbers, we estimate that approximately 62% ( $3,237/5214$ ) of the fall chinook passing Lower Granite are of wild origin. Further, from the PIT-tag data 15 of 18 wild PIT-tagged fish were from marking conducted in the Clearwater

River. Thus, it is likely that many of the unmarked wild fish are from the Clearwater River as well. In addition, a total of 46 endangered adult sockeye have been detected and are passing through the Snake River at this time and adult steelhead numbers have increased above 100 fish per day at Ice Harbor Dam.

The general guidance being used to operate Dworshak Dam during the summer is to provide temperature control and flow augmentation, with the shaping of augmented flows to avoid exceeding the Lower Granite tailrace temperature standard of 68°F. If water temperatures at Lower Granite, as measured in the tailrace, exceed 67°F on a 24 hour rolling average and appear likely to exceed the temperature standard (68 °F) based on weather and flow forecasts, Dworshak will provide additional flow above powerhouse capacity, but not to exceed the total dissolved gas standard (approximately 14 kcfs).

Flows at Lower Granite Dam are well below the summer flow targets and temperature in the tailrace has been above 67°F most of the month, but slightly below the 68°F water quality standard. At the July 26<sup>th</sup> TMT meeting a decision was made to decrease outflow from Dworshak Dam to powerhouse capacity at midnight on July 28, 2006. On July 26, the tailrace temperatures at Lower Granite Dam exceeded 68°F during 10 of the 24 hours sampled. On July 27, 2006 the water quality standard for temperature of 68°F was exceeded at both the forebay and tailrace of Lower Granite Dam for a daily average. Thus far today the temperature has exceeded 68°F for 4 of 14 hours in the forebay and 13 out of 14 hours in the tailrace.

Excessive hot weather upriver of Hells Canyon Dam has persisted in keeping Snake water temperatures very warm. Boise daily air temperatures have been 100-107 °F since July 20. Colder air is expected to move over the region starting Saturday. However, this air will have more benefits in the northern tier of the basin than in the southern tier (i.e., Idaho). Air temperatures will cool down in the Snake, to the mid 80s, but only on Sunday and Monday. Air temperatures are expected to return to mid-90s by the middle of next week (see Table) and remain in that range for the foreseeable future. Hence, water temperatures in the Snake at Anatone are expected to remain high. The following graphs show the average daily water temperatures through July 27 for the Snake at Lower Granite.

Given that temperatures are expected to remain high we believe that it would be prudent to maintain flow of 12 Kcfs from Dworshak into Monday morning, July 31, 2006. FPAC will meet Monday morning at 0900 hours to review conditions and will make further recommendations at that time.

Air Temperature forecast (NOAA / NWS MRF model)		
Lewiston	Tmin	Tmax
28-Jul		97
29-Jul	63	93
30-Jul	61	86
31-Jul	56	85
1-Aug	57	90
2-Aug	58	93
3-Aug	58	93
4-Aug	59	94
"normals"	60	90

