SYSTEM OPERATIONAL REQUEST: #2016-1B

WALLA WALLA DISTRICT

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

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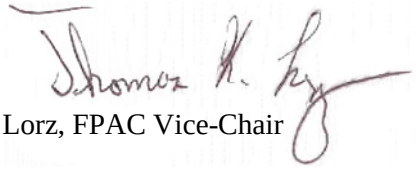

FROM: Tom Lorz, FPAC Vice-Chair

DATE: May 13, 2016

SUBJECT: SOR for Lower Monumental Operations

SPECIFICATIONS

Objective: As soon as reasonably possible, switch from the bulk spill pattern to the uniform spill pattern at Lower Monumental Dam and maintain through June 20 or until the number of PIT-tag sockeye detections indicate the outmigration has passed Lower Monumental Dam. The objective of this operation is to increase salmon spillway passage.

JUSTIFICATION

Data for the past four years indicate that adult sockeye that were transported as juveniles have poorer conversion rates to the Sawtooth Valley during warm water conditions than non-transported juveniles. This information is depicted in Table 1 below and was also discussed in the FPC memo dated October 28, 2015.

Average daily spill was less than 22% on May 9th at the observed spill levels at Lower Monumental Dam, and these flow levels are projected to continue for at least the next 10 days. Transport benefits are uncertain to occur from Snake River projects, including the Lower Monumental project. Although enhancing spill percentages at all FCRPS projects would decrease powerhouse passages and thus benefit survival, Lower Monumental has been chosen for this SOR because spill proportions there are lower than desired, and changing to a uniform pattern will provide an increase in the proportion while effectively reducing TDG production typically caused by the bulk pattern. It is expected that by changing to the uniform spill pattern a greater percentage of juveniles will remain in-river and as such will reduce negative effects described for transported sockeye without exceeding TDG criteria. The intent is to transition to a uniform spill pattern as soon as possible and maintain this operation until no longer than June 20, or possibly sooner if passage data so indicate.

Table 1. Estimated annual survival rates of adult Snake River sockeye salmon by adult migration year and juvenile migration history from Bonneville Dam to the Sawtooth Valley (yellow-shaded cells) indicate significant differences, $P < 0.05$.

Adult Migration Year	Juvenile Migration Year	Number at Bonneville	Survival Estimates (%)			
			BON to MCN	MCN to LGR	BON to LGR*	LGR to Sawtooth Valley
2010	In-river	32	84	96	**81**	77
	Transported	8	88	74	**63**	80
2011	In-river	307	64	97	**62**	75
	Transported	209	69	95	**66**	77
2012	In-river	111	57	94	**53**	64
	Transported	11	55	67	**36**	50
2013	In-river	136	76	76	**57**	33
	Transported	69	49	38	**19**	31
2014	In-river	216	71	93	**66**	56
	Transported	129	43	95	**41**	55
2015	In-river	320	26	33	**8**	29^
	Transported	357	5	0	**0**	0

* The survival estimate for the BON to LGR reach is the product of survival from (BON to MCN) x (MCN to LGR). For example, (0.84) x (0.96) = 0.81 or 81%.

^ There were 27 detections of PIT-tagged adults at Lower Granite Dam in 2015 (all of which had an in-river juvenile migration history). Three of the 27 adults were transported to the hatchery for spawning and 24 migrated instream. Of these 24, only 7 (i.e., 29%) were detected in the Sawtooth Valley.