SYSTEM OPERATIONAL REQUEST: #2016-1A

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, Idaho Department of Fish and Game, Washington Department of Fish and Wildlife, NOAA National Fisheries Service, Nez Perce Tribe, Shoshone-Bannock Tribes, and the Columbia River Inter-Tribal Fish Commission.

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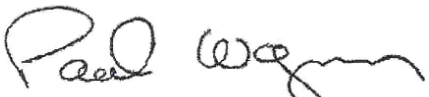

FROM: Paul Wagner, FPAC Chairperson

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 until the number of PIT-tag sockeye detections indicate the bulk of the outmigration has passed Lower Monumental Dam. Based upon forecast flow conditions and past year's sockeye passage data, it is estimated that it will take approximately three weeks for the bulk of the outmigration to pass Lower Monumental Dam. The objective of this operation is to increase sockeye 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. Developing an operation that allows both spill and transport to occur during the month of May is desired to balance the effectiveness of transportation for sockeye and steelhead. The transport benefit for steelhead shows the highest degree of uncertainty from the Lower Monumental project. Therefore, this project has been chosen as the site to balance the competing needs of allowing a greater percentage of sockeye to remain in-river than being transported. At Snake River flow levels observed during the past week, spill has averaged only approximately 22% at Lower Monumental Dam, and these flow levels are projected to continue for at least the next 10 days. The Snake River sockeye smolt outmigration this year includes a relatively large number of wild/natural smolts produced from adults released for natural reproduction in 2014. Hatchery Snake River sockeye smolt releases are currently occurring and are scheduled to be completed on Monday the 16th. Hatchery Snake River sockeye smolt releases are scheduled to coincide with the normal peak of the wild/natural smolt outmigration. However, with the warm spring and early runoff, it appears that wild/natural Snake River sockeye smolts, like many other wild/natural smolts, are out-migrating earlier this year and significant numbers of these wild/natural smolts are already passing Lower Monumental Dam. This will result in a combined wild/natural and hatchery Snake River sockeye salmon smolt outmigration that is more protracted than normally observed. The intent is to transition to a uniform spill pattern and maintain this operation until detections of PIT-tagged sockeye shows a significant decrease in numbers, estimated to be approximately three weeks.

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.