

Wild Winter Steelhead Run Timing Additional Analysis

In response to recent discussions with NOAA Fisheries and WDFW staff, additional information is being provided regarding run timing of winter steelhead in the lower Columbia River. The document produced by the Joint Staff on February 27, 2004, implied that the hypothesis described in the document, titled "Wild Winter Steelhead Run Timing," was the only explanation for the differential run timing of wild winter steelhead stocks to escapement areas in lower Columbia River tributaries. This implication is not correct and is not what the Joint Staff intended. In fact alternate hypotheses do exist with respect to wild winter steelhead run timing based on returns to escapement areas. In addition, it has been determined that the dates described for the Kalama and Toutle stocks should have been represented as the week beginning dates and not as week ending dates. The tables from the previous report have been updated for these two areas.

One alternate hypothesis is that the differential timing observed at escapement areas does reflect some level of differential timing in the fishing area. In this case the data included in Table 1 and Figure 1 would suggest that run timing does vary between the stocks for which we have that data. This data does suggest that the Willamette ESU may be slightly earlier timed than the Lower Columbia ESU. Additionally, this data would indicate that there is a difference in run timing for stocks within the lower Columbia ESU with the North Fork Toutle stock being the earliest timed and the Clackamas River stock being the latest timed. Net mark data collected by the WDFW during 2002 also suggested a run timing pattern where Toutle and Kalama stocks were earlier timed than winter steelhead crossing Bonneville Dam.

It is important to remember that the run timing data used in these analyses were collected at tributary escapement areas and not in the fishing area. Use of run timing data to escapement areas requires additional information (i.e. travel time estimates by stock) to accurately estimate the run timing to the fishing area; therefore, these data require interpretation regarding its relevance to run timing to the fishing area. The data necessary to estimate wild winter steelhead run timing to the fishing area is not currently available and would require funding of additional on-water sampling to collect the necessary data.

Ultimately, the Joint Staff believes that because the data available applies to escapement areas and not directly to the fishing area that the use of this data to determine stock specific run timing differences to the fishing area is difficult. The states believe that the hypothesis that wild winter steelhead in the Lower Columbia and Upper Willamette ESU's are significantly differentially timed and would be exposed to significantly different handle rates is not correct. Run timing may differ somewhat between the two ESU's with the Upper Willamette ESU being slightly earlier timed than the Lower Columbia ESU. According to the data presented in Table 3, the percentage of the fish available in the fishery is not significantly different.

Table 1. Wild Winter Steelhead Run Timing to Escapement Areas in Selected Tributaries of the Lower Columbia River

	Willamette	Clackamas	Hood	Sandy	Kalama	NF Toutle
11/1	0.1%	0.0%	0.0%	0.0%	0.1%	0.4%
11/8	0.5%	0.1%	0.0%	0.0%	0.1%	
11/15	0.8%	0.1%	0.1%	0.3%	0.2%	0.6%
11/22	1.1%	0.2%	0.1%	0.4%	0.2%	
11/29	1.4%	0.4%	0.1%	0.4%	0.4%	0.7%
12/6	1.6%	0.9%	0.1%	0.6%	0.5%	
12/13	1.9%	1.4%	0.2%	1.2%	0.9%	1.0%
12/20	2.2%	1.7%	0.2%	1.2%	1.2%	
12/27	3.0%	1.9%	0.3%	1.4%	2.1%	1.6%
1/3	5.0%	2.1%	0.3%	2.2%	2.5%	
1/10	7.1%	2.3%	0.4%	3.1%	3.2%	
1/17	9.3%	2.6%	1.1%	3.4%	4.5%	1.7%
1/24	10.2%	3.0%	1.2%	4.3%	5.5%	
1/31	12.2%	3.3%	1.6%	1.7%	5.9%	1.7%
2/7	17.3%	3.7%	2.4%	7.6%	7.0%	
2/14	22.0%	4.3%	3.2%	9.6%	7.6%	3.5%
2/21	28.0%	5.0%	4.0%	12.0%	8.6%	
2/28	33.2%	6.2%	4.9%	16.4%	10.0%	7.7%
3/6	34.5%	7.2%	6.6%	18.9%	12.6%	
3/13	43.3%	8.5%	9.1%	24.1%	16.5%	17.1%
3/20	49.1%	9.5%	13.1%	30.2%	23.6%	
3/27	59.8%	11.2%	18.3%	39.8%	33.2%	44.8%
4/3	67.2%	13.3%	24.5%	49.1%	38.5%	
4/10	76.8%	17.4%	37.0%	59.5%	52.1%	
4/17	83.9%	22.7%	49.5%	68.5%	68.6%	70.6%
4/24	90.4%	29.5%	63.1%	74.7%	78.4%	
5/1	94.6%	41.1%	74.7%	84.3%	84.5%	92.3%
5/8	98.8%	57.1%	83.0%	87.8%	89.8%	
5/15	100.0%	73.0%	90.0%	91.9%	94.9%	98.2%
5/22		85.9%	95.3%	95.5%	98.1%	
5/29		94.5%	97.6%	97.5%	99.0%	99.8%
6/5		98.0%	99.3%	98.1%	99.7%	
6/12		99.4%	99.6%	98.7%	99.9%	
6/19		99.8%	99.9%	99.1%	99.9%	
6/26		99.9%	100.0%	99.1%	100.0%	

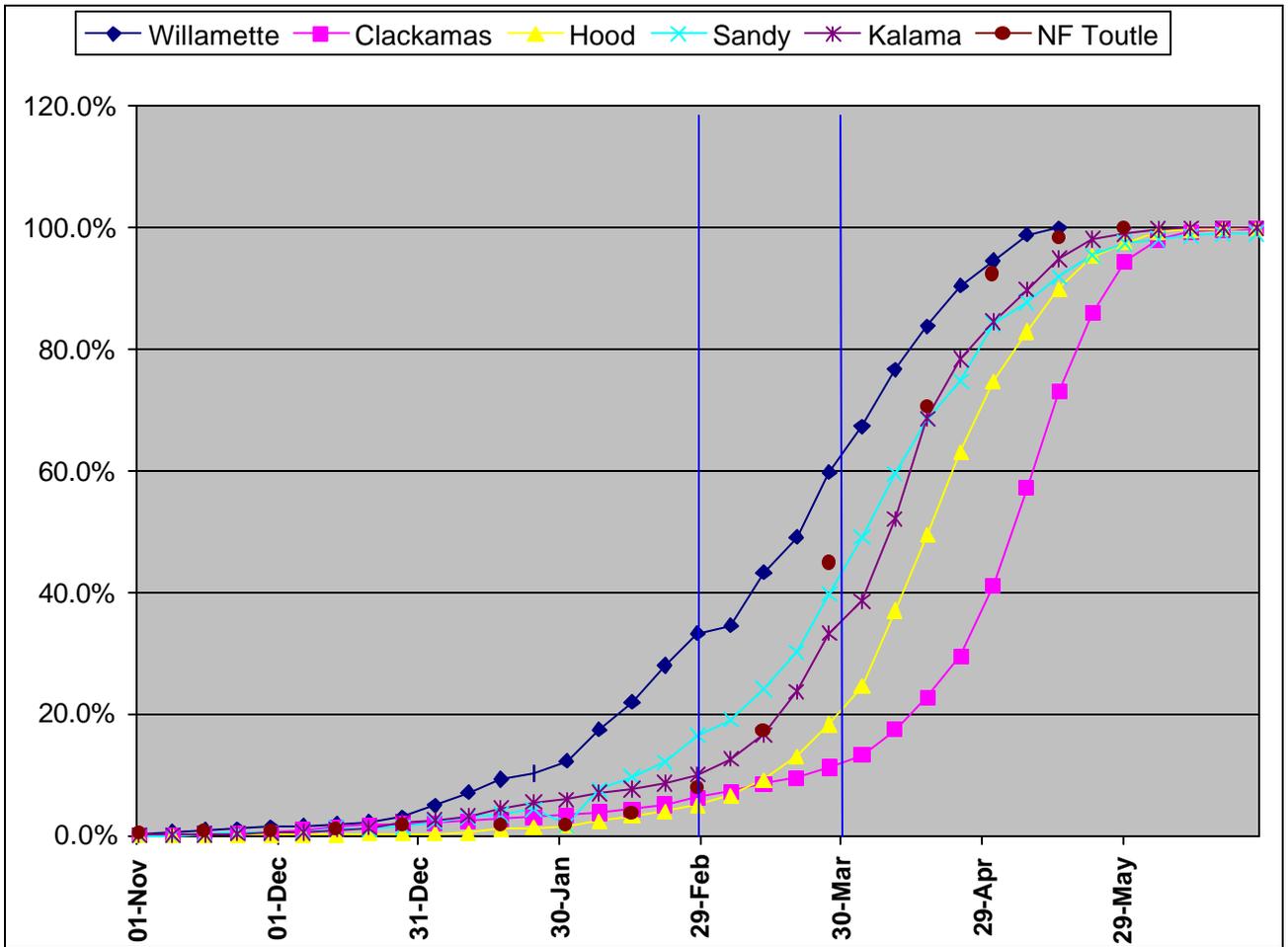


Figure 1. Wild Winter Steelhead Run Timing to Escapement Areas in Selected Tributaries of the lower Columbia River.

Table 2. Steelhead Returns to Traps/Weirs in Selected Tributaries of the Lower Columbia River ¹

Tributary	River Miles			Percent of Total Passage		Date of 50% Passage
	Tributary ²	Columbia ³	Total ⁴	Prior to March 20	During Feb 28-Mar 27 ⁵	
Kalama	11	73	84	30%	25%	08-Apr
N. F. Toutle	29	68	97	24%	37%	03-Apr
Willamette	27	101	128	49%	27%	20-Mar
Sandy	30	121	151	30%	23%	03-Apr
Clackamas	51	101	152	11%	5%	04-May
Hood	4	169	173	13%	13%	17-Apr

1. Sorted by total river miles from Columbia River mouth to location of trap or weir.
2. River miles from tributary river mouth to location of trap or weir.
3. River miles from Columbia River mouth to tributary river mouth.
4. River miles from Columbia River mouth to location of trap or weir.
5. Expected time period of commercial fishery.

Table 3. Steelhead Returns to Traps/Weirs in Selected Tributaries of the Lower Columbia River ¹

Tributary	River Miles			Percent of Total Passage		Date of 50% Passage
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1. Sorted by percent of total passage occurring during February 28 through March 27.
2. River miles from tributary river mouth to location of trap or weir.
3. River miles from Columbia River mouth to tributary river mouth.
4. River miles from Columbia River mouth to location of trap or weir.
5. Expected time period of commercial fishery.

WDFW/ODFW
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