



# FISH PASSAGE CENTER

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## MEMORANDUM

TO: Fish Passage Advisory Committee  
Bill Tweit, WDFW

*Michele DeHart*

FROM: Michele DeHart

DATE: July 28, 2005

RE: Juvenile passage update

In response to your requests we have updated the juvenile passage data for wild fall Chinook in the Snake River. The following juvenile passage data is updated through July 27, 2005. We plan on continuing to update this data throughout the migration. There are two distinct populations of listed wild fall Chinook in the summer migration through the lower Snake River. Those are the wild Snake River component and the wild Clearwater River component. Both of these stocks are ESA listed. The following update only addresses wild stocks and does not address hatchery stocks. Hatchery managers, anticipating poor outmigration conditions, released production groups two to three weeks earlier than planned. The hatchery portion of the population is large compared to wild production and so often defines and skews the passage distribution and timing of the population as a whole. The passage timing and duration of wild stocks is not apparent from review of the passage-at-large information. For that reason our review relies on wild PIT tagged fall Chinook detections. We discuss the detailed calculations and assumptions in the following discussion. The following points summarize the status of the wild migration to date.

- The Snake River and Clearwater River populations of wild fall Chinook are exhibiting different passage distributions. This is consistent with past years' data where Clearwater fall Chinook traditionally out-migrate later and are present throughout August.
- The recovery of Snake River wild PIT tagged fish at Lower Granite Dam is at 30% to 54% using three methods to estimate the number of tags that passed in spill. This is within the range of expected recovery. While small numbers of this population will continue to pass at Lower Granite Dam, the majority of this segment of the population is past Lower Granite Dam and migrating through the

Snake River. It is important to note that these fish migrate slower in the upper portion of the Snake River than in the lower portions. These Snake River fish have a travel time of 10 days from lower Granite to Little Goose dams, an average 18 day travel time from Lower Granite to McNary Dam and an average travel time of 25 days from Lower Granite to Bonneville Dam.

- The recovery of PIT tagged Clearwater wild fall Chinook passage is at 3% to 5% using all three estimation methods. The average travel time for Clearwater fall Chinook from Lower Granite to Little Goose is 6 days.
- Snake River wild fall Chinook PIT tags have been consistently detected at sites downstream from Lower Granite. At Little Goose Snake River wild fall Chinooks have been detected throughout July. The first detection of Clearwater wild fall Chinook occurred at Little Goose on July 18. In the past week additional Clearwater wild fall Chinook tags have been detected at Little Goose. In the past week Clearwater wild fall Chinook detections have increased consistently at Lower Granite Dam.
- Snake River wild PIT tagged fall Chinook continue to dominate passage at Little Goose and Lower Monumental dams. Snake River fall Chinook have been detected at McNary consistently throughout July.
- Clearwater fall Chinook are migrating downstream. In past years there has been a variable proportion of Clearwater fall Chinook that over winter in various places in the system. A proportion of Clearwater fall Chinook out-migrate as subyearlings. Since over wintering may occur at locations downstream of Lower Granite, both subyearling migrants and potential over wintering migrants benefit from the present spill for fish passage by avoiding turbine passage.
- PIT tag recaptures indicate that the migration of Snake River fall Chinook is continuing through the Snake River and that the downstream migration of Clearwater wild fall Chinook is in the early stage.

We have been working collaboratively with William Connor at US Fish and Wildlife Service in reviewing passage of PIT tagged fall Chinook through the Snake River. Past methods for assessing the outmigration are not applicable in 2005 because spill has not occurred in previous years during the fall Chinook migration. The attached spread sheet and graphs displays three different methods for assessing the percentage of the PIT tagged wild fall Chinook from Snake River and Clearwater River origins which have passed Lower Granite Dam. The methods all expand for spill passage. The expansion marked WPC accounts for PIT tagged fish passing in spill by using a 1.2 to 1 efficiency for spill. Both FPC1 and FPC2 rely on the in-season PIT tagged fish collected at Little Goose Dam and estimates collection efficiency at Lower Granite Dam based on the relation between fish detected at Lower Granite and those that were undetected at Lower Granite. FPC1 is based on all the PIT tagged information, and FPC2 only considers the wild Snake River fall Chinook. These assumptions for estimating passage are based on Snake River fall Chinook data and are also applied to Clearwater wild fall Chinook detections.

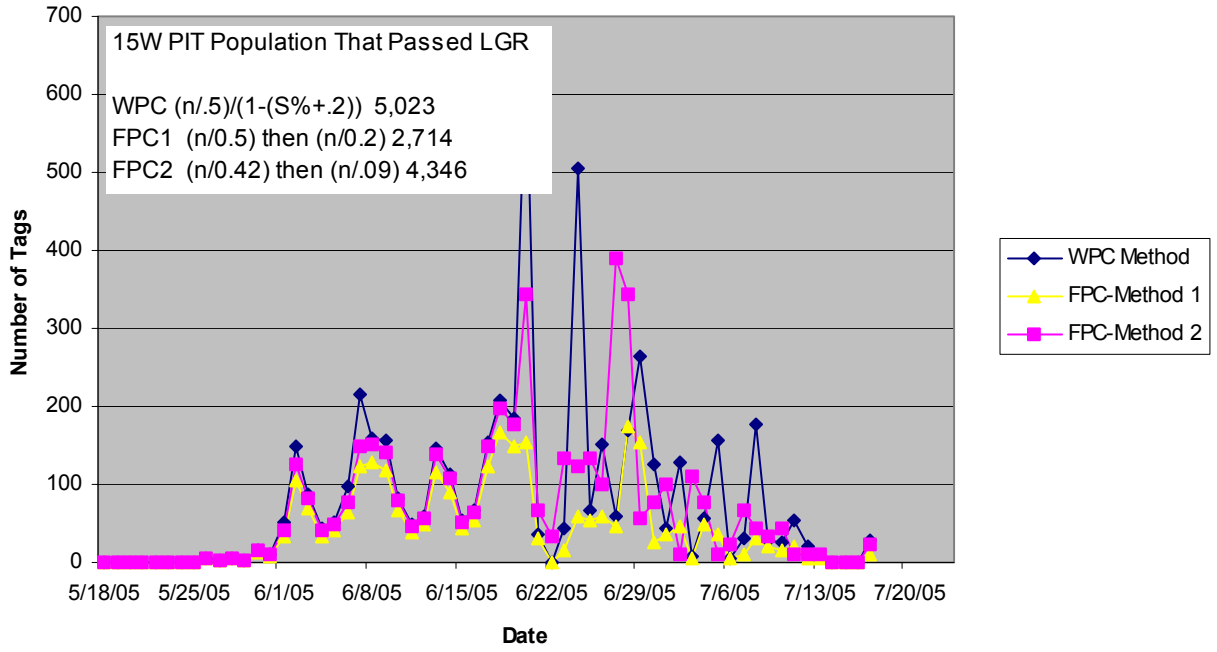
Group	Release Site	N	n	Release Date		FL	Status
				min	max		
<b>Hatchery Production/</b>							
<b>Supplementation Releases</b>							
Oxbow hatchery	Snake	189,119	9,474	28-Apr	28-Apr	80	Complete
Pittsburg Landing	Snake	397,704	2,492	26-May	26-May	86	Complete
Captain John Rapids	Snake	505,087	3,499	25-May	30-May	87	Complete
Couse Creek	Snake	434,221	3,465	23-May	26-May	90	Complete
Grand Ronde	Grand Ronde	482,460	0	24-May	25-May	83	Complete
Big Canyon Creek	Clearwater	510,226	2,498	31-May	31-May	90	Complete
NPT Hatchery	Clearwater	879,309	0	7-May	7-May	78	Complete
<b>Snake River Research Releases</b>							
Snake Wild	Snake		9,302	14-Apr	5-Jul	69	Ongoing
Snake Surrogates	Snake	121,833	121,833	16-May	27-May	75	Complete

<b>Clearwater River Research Releases</b>		WPC diff	1707				
Clearwater Wild	Clearwater	N/A	1,672	3-May	14-Jul	70	Complete
Clearwater Surrogates	Clearwater	45,791	45,790	22-Jun	8-Jul		Complete

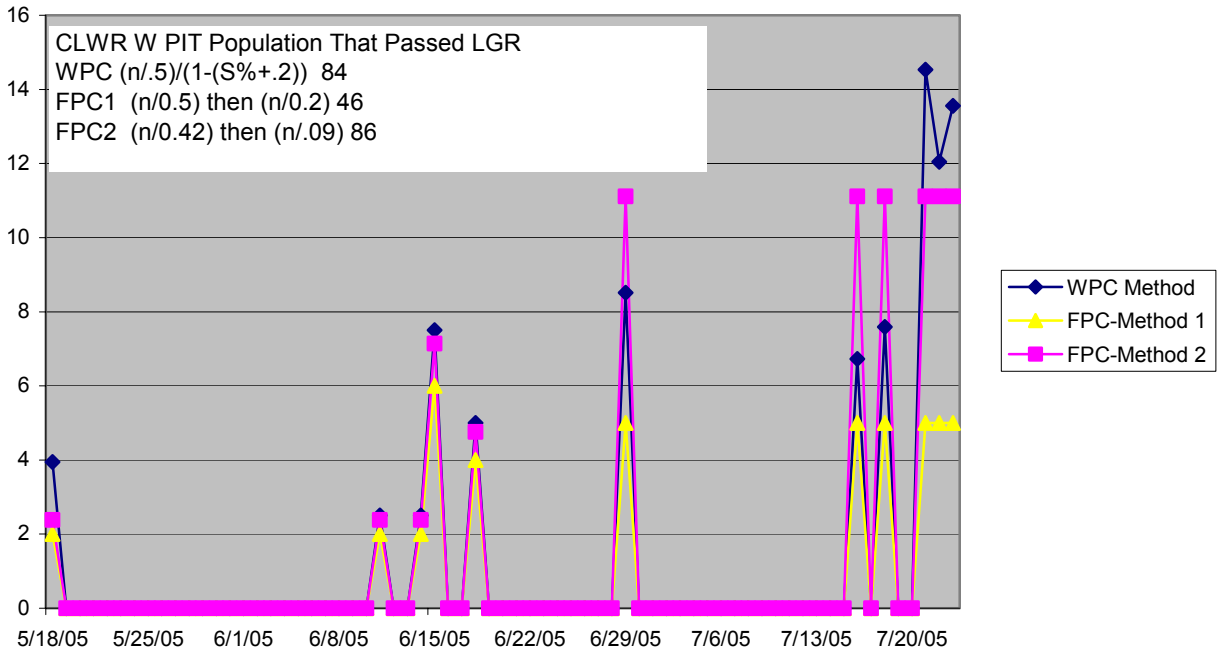
<b>Hanford Reach Marking</b>							
	GAM		22369	31-May	29-Jun		

Updated Pct LGR Detects	srrt	Org	River	Marks	LGR Detects	Pct	
	15W	USFWS	Snake R	9302	1036	11.14%	
	13Ws	NPT	Clearwater R	1807	14	0.77%	
	13H	NOAA	Clearwater R	NA	NA		
	13H	NOAA	Snake R	121833	25425	20.87%	
Number 15Ws Passing LGR including spill as of 7/27/05	WPC (n/.5)/(1-(S%+.2))				5023	54.00%	
	FPC1 (n/0.5) then (n/0.2)				2714	29.18%	
	FPC2 (n/0.42) then (n/.09)				4346	46.72%	
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	13Ws	NPT	Clearwater R	1807			
Number of CLWR 13Ws passing LGR as of 7/27/05	WPC (n/.5)/(1-(S%+.2))				84	4.65%	
	FPC1 (n/0.5) then (n/0.2)				46	2.55%	
	FPC2 (n/0.42) then (n/.09)				86	4.76%	
Average Travel Time for 15Ws LGR-LGS as of 7/27/05				10 days			
Average Travel Time for 15Ws LGR-MCN as of 7/27/05				18 days			
Average Travel Time for 15Ws LGR-BON as of 7/27/05				25 days			
Average Travel Time for CLWR 13Ws LGR-LGS as of 7/27				6 days			

Lower Granite PIT-tag (WPC15W) timing expansion comparison (9,302 tags released)



Lower Granite PIT-tag (CLWR - 13W) timing expansion comparison (1807 tags released)



### Observations at Lower Granite Dam for non-hatchery fall chinook PIT tagged and released in the Clearwater River

