

Wild fish passage timing at Willamette Falls

ODFW May 13, 2014

Willamette Spring Chinook:

Daily counts and cumulative counts of spring Chinook at Willamette Falls, for the period 1996 through 2013, are presented in Figures 1a and 1b.

Fish passage timing was determined from average daily fish counts from 1996 through 2013. The fish counts at the falls are for combined wild and hatchery fish, and daily mark rates are not available in the counts. Spring Chinook passing Willamette Falls are about 70% hatchery fish. For this purpose the run timing of wild (ESA-listed) spring Chinook and the total Chinook run are assumed to be the same; however this assumption may be incorrect since hatchery and wild Chinook can have different adult run timings.

The run timing graphs, below, are for the annual period of March 1 through July 31. By convention, the Chinook passing Willamette Falls are called “spring” Chinook through August 15; thereafter the Chinook are called “fall” Chinook. The fall Chinook that remain above Willamette Falls are the naturally-produced offspring of historic plants of hatchery fish. Fall Chinook are no longer being planted above the falls. This conventional date change is artificial, while the persistence of a small number of fall Chinook remains confounding and the biological end of the wild spring Chinook run is uncertain.

However, based on the peak data, it is evident that about 10% of the run, on average in recent years, has passed the falls by April 25. The run can be considered to be starting in March. The peak of the run is in mid-May (average 50% date is May 16). The 90% passage date, given the artificial cut-off date, is June 24, but tail of the run is uncertain and approximately the end of July or mid-August.

Thus to avoid impacts on wild spring Chinook a work window of September through February is recommended.

Willamette Winter Steelhead:

Daily counts and cumulative counts of winter steelhead at Willamette Falls, for the period 1996 through 2013, are presented in Figures 2a and 2b.

Willamette winter steelhead are all wild fish (the last hatchery programs were discontinued in the mid-1990s), but their run timing is confounded by introduced summer steelhead. Hatchery summer steelhead are still planted above the falls, and may pass the falls nearly year-around. By convention historically the “end” of the winter steelhead run was considered to be May 15, however this date is artificial with daily double-digit counts still occurring. The actual run timing probably continues through the end of June.

Based on the peak data, about 10% of the run has passed the falls by January 11. The run can reasonably be considered to start between the middle of December and the first of January. The average peak, or 50% date, is March 12. Based on the historic data the average 90% date has been April 25, however this date is influenced by the artificial cut-off date. The run can more reasonably be considered finished the end of June.

Thus to avoid impacts on wild winter steelhead a work window of July through December is recommended.

Pacific Lamprey:

We do not have sufficient daily passage data to determine a run timing curve for Pacific Lamprey. However, our observations indicate that they are present and passing the falls from May through early August, with a peak in late June.

Summary across species:

Taken all together, a recommended work window that would avoid impacting spring Chinook, winter steelhead, and Pacific lamprey would occur from September through December.

Non-native salmonids, including fall Chinook, Coho and summer steelhead, would be present during this work window.

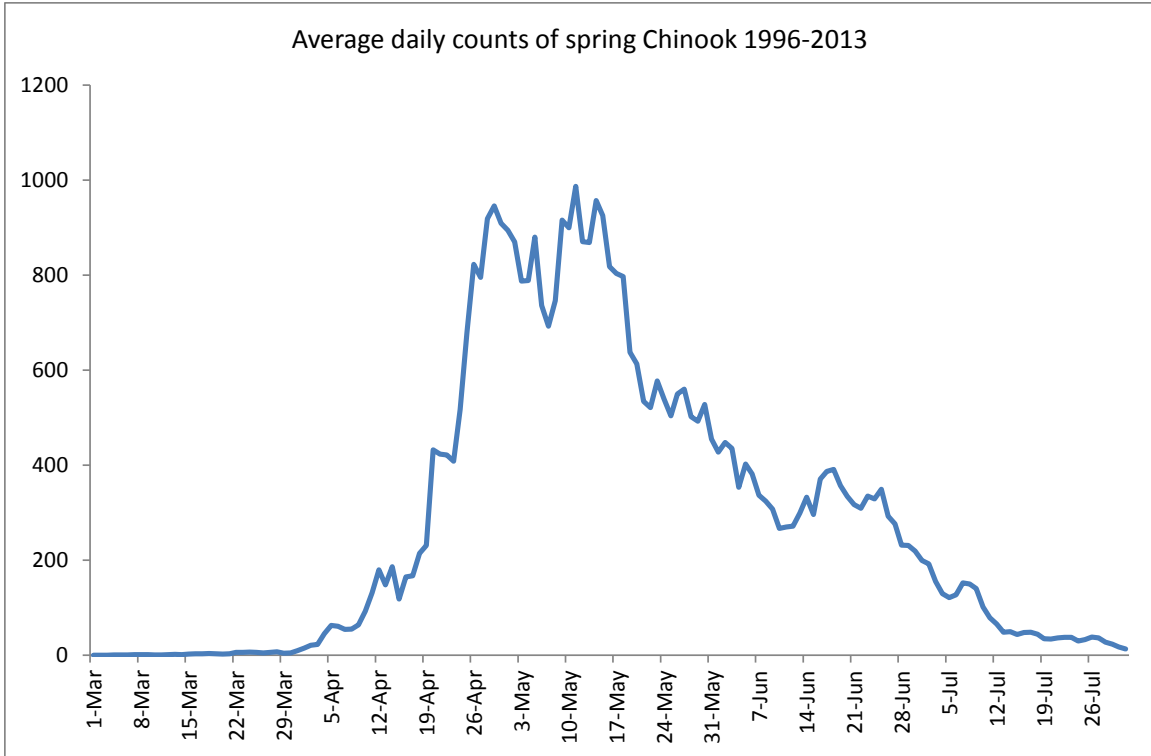


Figure 1a.

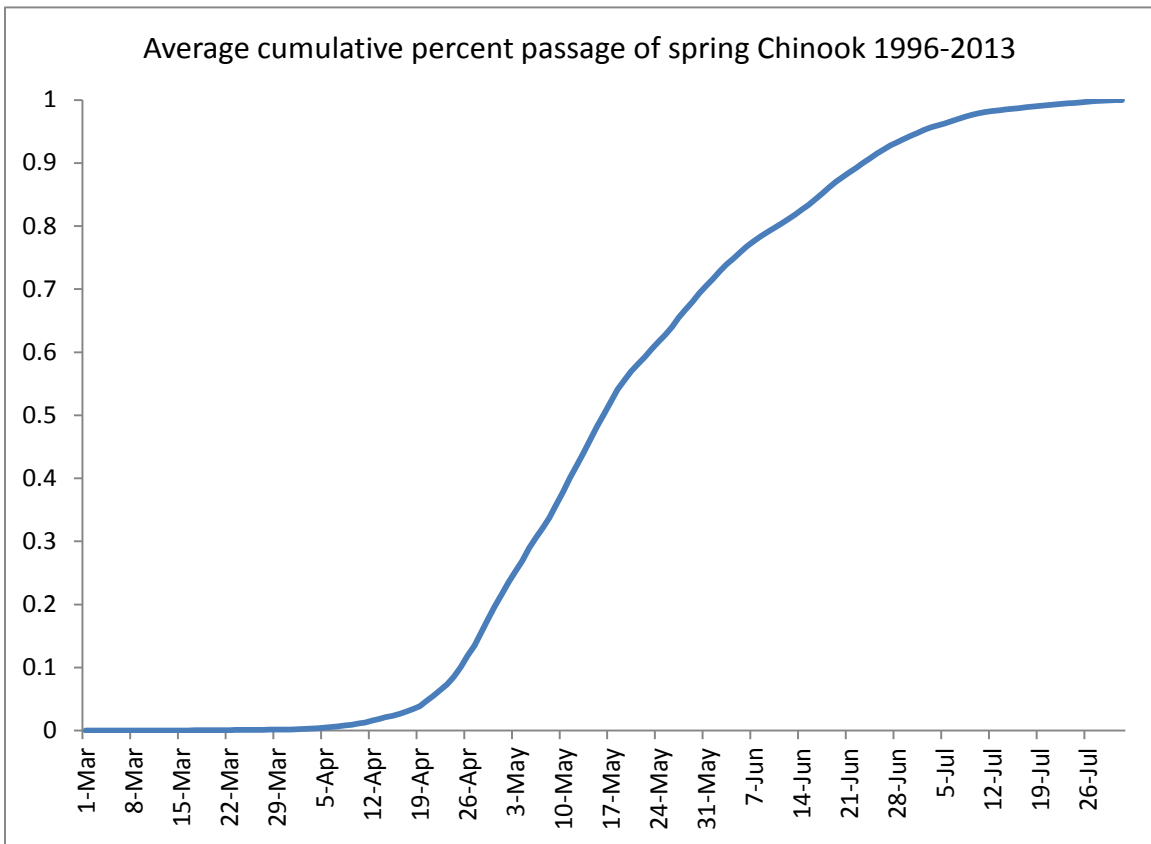


Figure 1b.

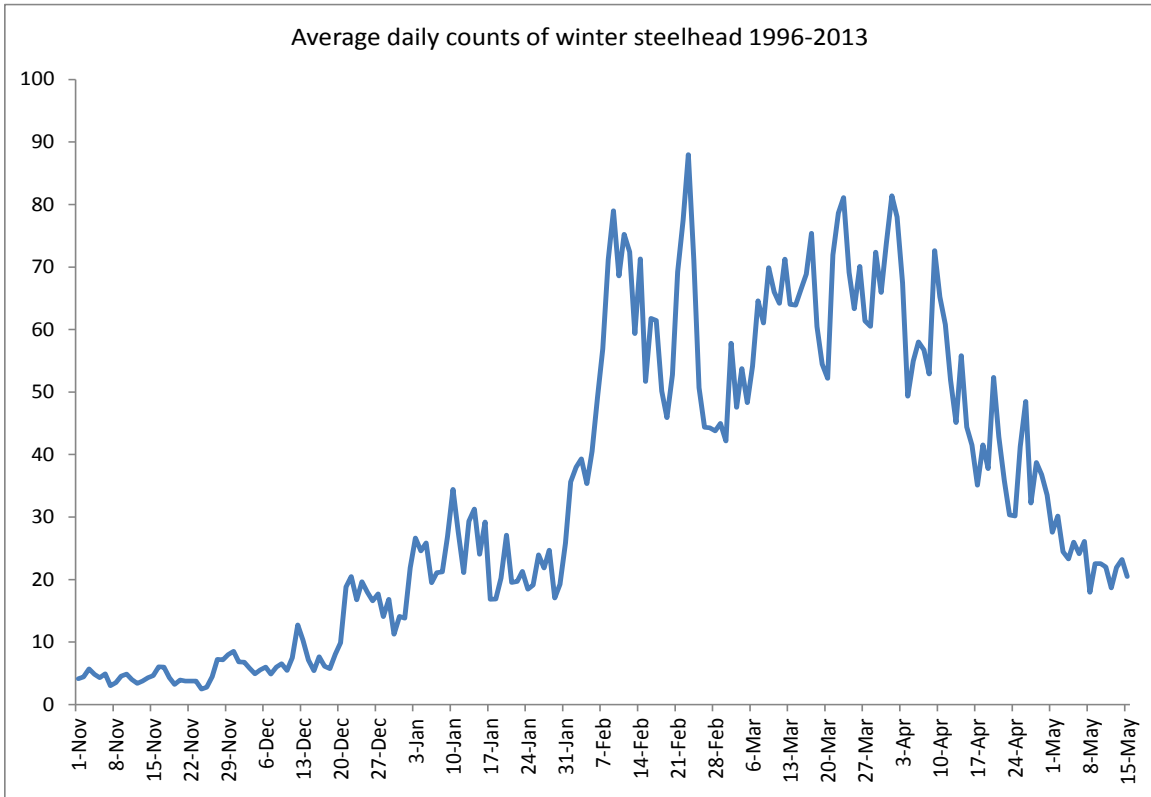


Figure 2a.

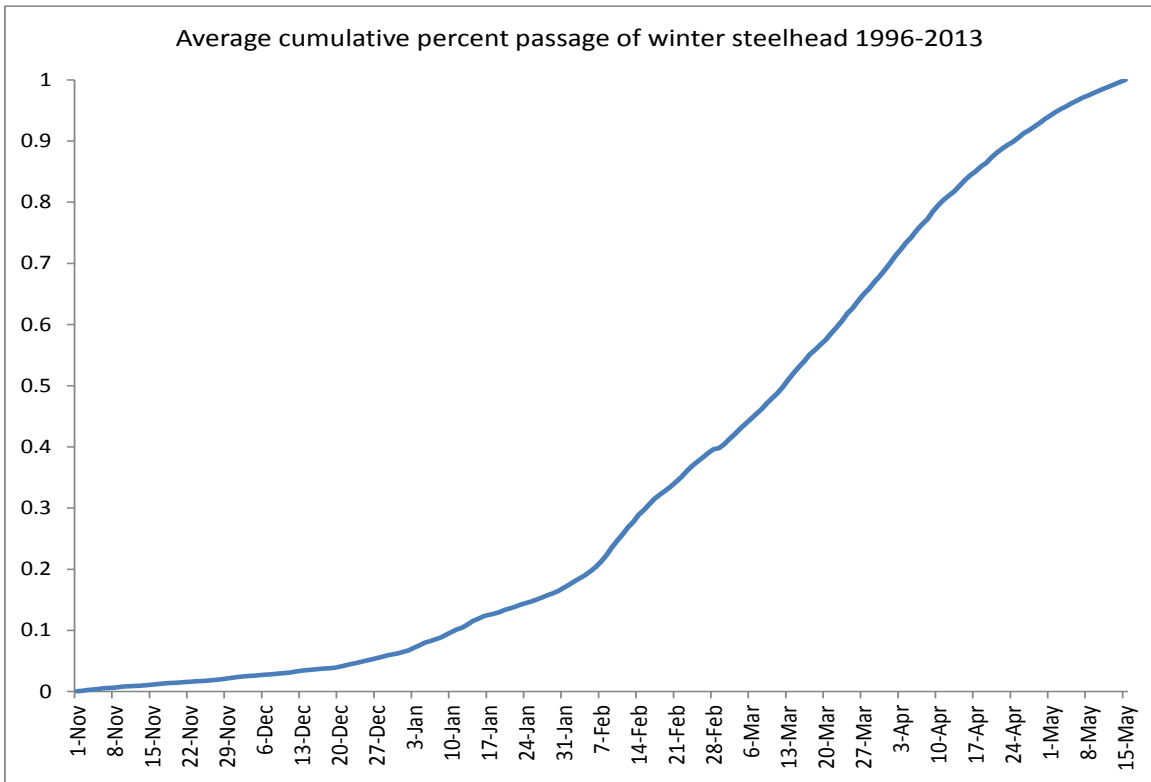


Figure 2b.