



# FISH PASSAGE CENTER

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## MEMORANDUM

TO: Fish Passage Advisory Committee

FROM: Fish Passage Center

DATE: May 24, 2018

SUBJECT: Clarifications and Adjustments to Fish Passage Center Passage Indicator

After a long debate during the Fish Passage Advisory Committee meeting on May 22, 2018 regarding spring adult Chinook passage progress, the Fish Passage Center (FPC) felt the need to clarify the interpretations and make an improvement to FPC's [passage indicator](#) accordingly.

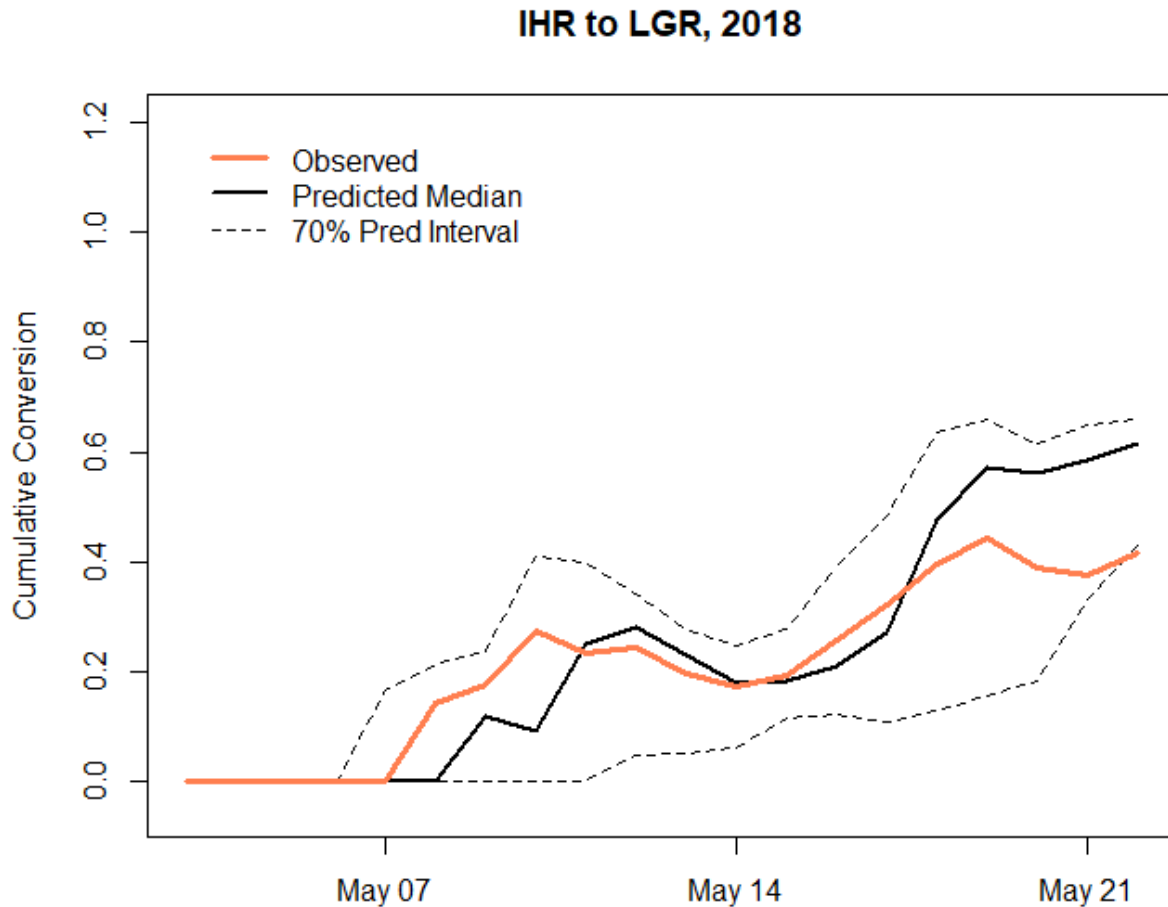
- As of May 22, 2018, observations indicated a slowdown in passage; however, based on the PIT-tag data, the passage progress was within the bounds of prediction and not out of the ordinary.

Current adult count data gave us a status of adult passage, but it was not a complete picture of the passage progress. The Technical Management Team (TMT) stated in March of 2018 that a main objective of adult passage monitoring analysis was to identify adult passage rates by incorporating deterministic variables such as seasonality, river flow, and water temperature. Furthermore, TMT acknowledged that an objective assessment for passage progress should rely on both adult count and PIT-tag data. The Fish Passage Center (FPC) agreed with this view. We stated in a previous memorandum, "Users of passage indicator should consider multiple assessments while monitoring adult passage progress. Assessments should all predominantly agree with one another, and users should investigate conflicting evidence before taking any management actions that may be detrimental for other life stages" (FPC, 2018).

- Due to a late start for 2018 adult spring Chinook upstream migration, passage progress at the lower Snake River dams was still at an early stage (on May 22<sup>nd</sup>). The passage progress at this early stage could fluctuate quickly and predictions could be unreliable.

We cautioned against drawing conclusions at an early stage of migration because 1) prediction could be unreliable due to a small sample size, and 2) passage progress has not yet

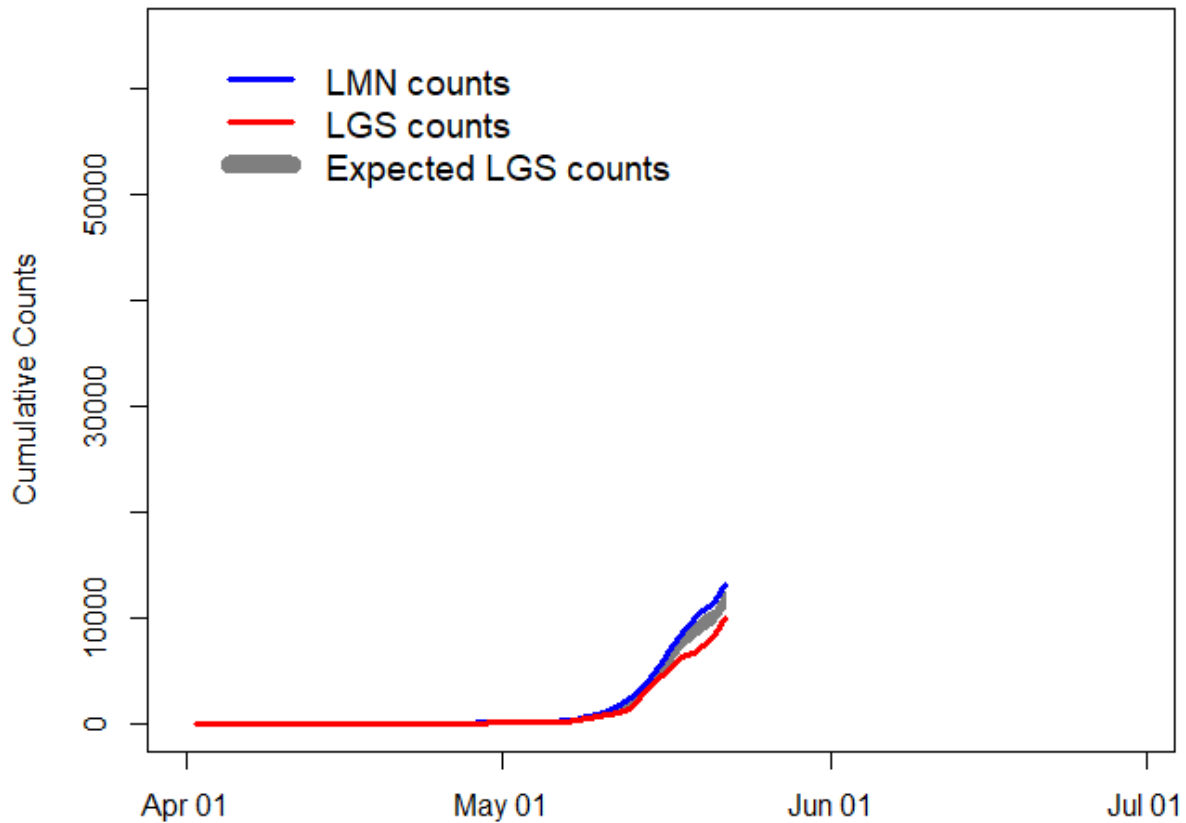
“stabilized” and could still fluctuate. As of May 22<sup>nd</sup>, we observed approximately 170 PIT-tagged adult spring Chinook at Ice Harbor dam (Figure 1). The sample size in this case was adequate to make a reasonable prediction; however, with current default setting of 300 iterations, each set of simulations seemed to produce slightly different ranges of prediction bounds. Also, the trajectory of the passage progress seemed unsettled at this stage. It is worth noting that in the previous years, we have observed that adult passage progress slowed down at an early migration stage and caught up soon after without altering project operations (e.g. 2008, 2009, 2011, and 2012).



**Figure 1: Cumulative conversion for IHR to LGR, 5/3 to 5/22/2018.**

In order to better inform users of the passage indicator, FPC made an adjustment to the scale display for the Lower Monumental to Little Goose adult counts (Figure 2). We set the upper limit for the cumulative fish counts at a minimum of 64,000, the mean total passage at Lower Monumental dam from 1991 to 2017. By doing so, users of passage indicator may get a sense of current passage progress in term of adult upstream migration as a whole in comparison to past years’ plots. We also set the default number of simulations to 1,000 iterations, so the range of prediction bounds would be more stable when the sample size was small.

## LMN & LGS Counts, 2018



**Figure 2:** Cumulative counts for LMN and LGS under the adjusted scale.

As with previous memorandums and presentations regarding adult passage monitoring analysis, we strongly encourage all users to go through the [documentation](#) regarding the background, methods, and assessment process of passage indicator if they have not done so (FPC 2018).

### Reference

Fish Passage Center. 2018a. Passage Indicator: An Interactive Application for Passage Progress Assessment of Adult Spring/Summer Chinook (May 15, 2018). <http://www.fpc.org/documents/memos/26-18.pdf>.