



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232

October 23, 2019

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Elliot Mainzer, Administrator
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Dear Ms. Coffey, Ms. Gray and Mr. Mainzer:

RE: Recent average abundance of Snake River steelhead relative to the Adaptive Management Implementation Plan Early Warning Indicators.

In consultation with your agencies, NOAA Fisheries adopted abundance-based Early Warning Indicators and Significant Decline Triggers as part of an Adaptive Management Implementation Plan (AMIP) which was first incorporated into the 2010 Supplemental Federal Columbia River Power System Biological Opinion (May 20, 2010). Consistent with the AMIP, and after receiving input from the Regional Implementation and Oversight Group (RIOG), an abundance and trend (rate of decline) metric was formally added on December 13, 2010. The AMIP, including both the Early Warning and Significant Decline triggers and the abundance and trend metric, was also included in the 2014 and 2019 biological opinions on the operation of the Columbia River System.

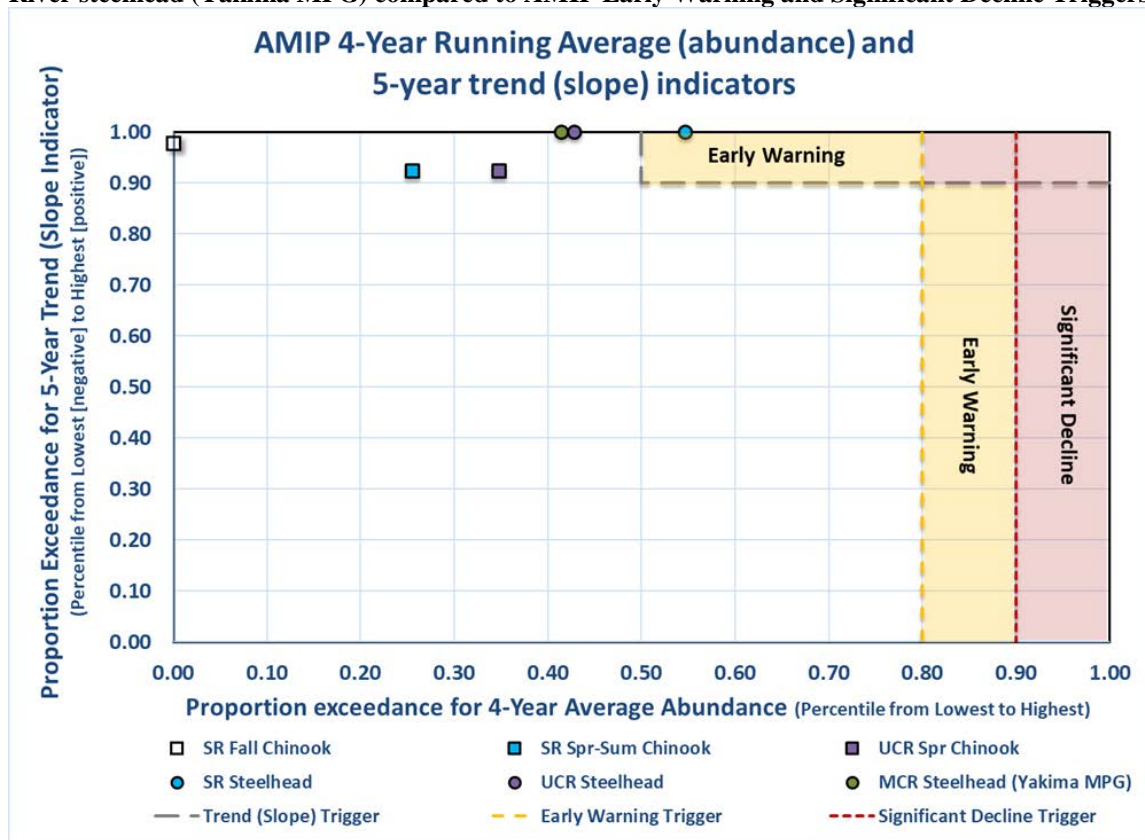
The purpose of this letter is to inform you that the Early Warning Indicator (based on the abundance and trend metrics) has been triggered for Snake River (SR) steelhead based on the run reconstruction estimates of natural origin adult steelhead at Lower Granite Dam, as updated to include the 2018-19 migration (Figure 1). This indicator is triggered if the four-year average abundance falls below the lowest 50 percent of returns, and the trend in abundance (defined as the slope of the last five years of annual abundance estimates) falls into the lowest ten percent abundance trends in the base period (i.e., if 90 percent of the slopes were more positive than this number). For SR steelhead, the corresponding AMIP abundance and trend metrics are a four-year average abundance of 17,975 and a slope of -0.233. The four-year average abundance of SR steelhead ending in 2018-19 is 17,705 (less than the 50th percentile) and the trend has a slope of 0.-408 (more negative than the lowest 10th percentile abundance trend).¹

¹ Upper Columbia and Middle Columbia River (Yakima River Major Population Group) steelhead are experiencing similar declines in average abundance and abundance trends, but did not trigger the early warning indicator using the base periods established pursuant to the 2009 AMIP.



The 4-year average abundance (17,705) is well above the abundance based 20th percentile Early Warning and 10th percentile Significant Decline triggers. As intended, the trend (slope) indicator, is highly sensitive to declining abundance. In 2014-15, an estimated 45,789 naturally produced steelhead passed Lower Granite Dam [the highest number since this data series began in the mid-1980s], five years later, only 8,182 passed the project [the lowest return since the 1994-95 and 1995-96 migrations]. The high return in 2014-15, coupled with the poor ocean conditions experienced beginning with the 2015 smolt outmigration, appear to be the primary cause for this indicator being triggered as Columbia River System operations, harvest, and other potential causative factors have been relatively stable during this period.

Figure 1. Proportion exceedance for four-year average abundance and five-year trends (slope) for Snake River spring-summer Chinook salmon, fall Chinook salmon, and steelhead (at Lower Granite Dam); Upper Columbia River spring Chinook salmon (at Rock Island Dam) and steelhead (at Priest Rapids Dam); and Mid-Columbia River steelhead (Yakima MPG) compared to AMIP Early Warning and Significant Decline Triggers.



Based on these findings, NOAA Fisheries believes that further consideration is warranted and propose that we implement the AMIP process triggered by this Early Warning Indicator for SR steelhead to determine 1) if there is a likelihood of triggering the Significant Decline Trigger in the next one to two years, and 2) if additional actions are warranted to further protect the

species. This would need to be accomplished in 120 days per the AMIP procedures.² Our approach consists of the following steps.


- 1) Evaluate the status of Snake River steelhead, including estimating a new four-year average abundance estimate, by mid-January, after the 2019 dam counts are available (about 90 percent of SR steelhead pass Lower Granite Dam by December 31 each year), assuming recent ratios of naturally produced adult estimates to total dam counts.
- 2) Determine the potential (the abundance required) for reaching the Significant Decline Trigger in 2019-20 or 2020-21. This analysis would be based on previous year's abundance, coupled with any preseason forecast information that may be available, including relevant ocean condition indicators.
- 3) If the analysis reveals a likelihood of reaching the Significant Decline Trigger in 2019-20 or 2020-21, initiate a review of potential Rapid Response Actions and initiate appropriate actions as outlined in the AMIP.

Please let me know if you concur with the approach. We will inform the RIOG of this event and share the results of our analysis under actions 1 and 2 above as soon as they are available.

Also, we note that several Rapid Response Actions identified in the AMIP, which are likely to increase abundance and productivity, or have the potential to do so, have already been implemented in recent years. First, in 2019 the Action Agencies implemented the flexible spill operation at the eight mainstem lower Snake and lower Columbia River Dams, generally increasing spill levels, which some hypothesize will reduce latent mortality and thereby improve productivity by 25 percent or more (see our 2019 CRSO biological opinion). Second, the transport start date was moved earlier beginning in 2018 (from May 1 to April 24) which increases the rate at which steelhead are transported. Because transported steelhead often return at higher rates than bypassed fish, this would be expected to increase adult steelhead returns (see 2019 CRSO biological opinion). Lastly, harvest managers curtailed recreational steelhead fisheries in 2019 beyond what was required by the sliding scale harvest agreement.

Please contact Ritchie Graves of my staff if you have any questions.

Sincerely,



Barry A. Thom
Regional Administrator

² An Early Warning Indicator: This indicator will alert NOAA Fisheries and the Action Agencies to a decline in a species' abundance level for natural-origin adults that warrants further scrutiny because it indicates that a Significant Decline (see below) may be reached in one to two years. The indicator for each species will be a running four-year mean of adult abundances that falls below a 20% likelihood of occurrence.

Within 120 days of NOAA Fisheries' determining that the Early Warning Indicator abundance levels have been observed, the Action Agencies, in coordination with NOAA Fisheries, the RIOG, and other regional parties will determine whether the species in question is likely to decline to a level that will trip the Significant Decline Trigger. This evaluation will be based on additional indicators and predictors of status (e.g., jack counts, ocean conditions, and habitat disturbances). If the early implementation of Rapid Response Action(s) is warranted, the evaluation will determine which actions to take. The Action Agencies will implement the Rapid Response Actions as soon as practicable, but no later than 12 months from the date the indicator is observed. [2009 AMIP, p. 12]