US Army Corps of Engineers ®
Portland District

June 25, 2015

MEMORANDUM FOR THE RECORD

SUBJECT: Comments on 15CGR02 Fish Facility Recycling, and McKenzie Chinook 2015 Fish Management by NMFS and ODFW
PREPARED BY: NWP-PM-E-FP

Wild spring Chinook in the McKenzie have declined in recent years for unknown reasons, while other Willamette populations have remained stable or increased. Lack of dam passage and effects from hatchery fish spawning in the wild (pHOS) are cited as the major limiting factors for McKenzie spring Chinook, however there have been no significant changes to these limiting factors that would indicate a cause for the recent decline.

This year is one of the hottest and driest on record. Pre-spawn mortality (PSM) of spring Chinook, a major issue in the Willamette Basin, is expected to be high as a result. Fishermen have already reported many dead Chinook in the lower Willamette River, where temperatures are above their lethal threshold.

We are concerned that changes being implemented by ODFW and NMFS to reduce pHOS in the McKenzie will further increase PSM in the wild, genetic legacy population, and erode progress made to establish a locally adapted sub-population of spring Chinook above Cougar Dam.

1. Leaburg Dam fish ladder dip netting: ODFW and NMFS will be removing stray hatchery Chinook by dip netting, both wild and hatchery Chinook, from the Leaburg Dam ladder. This operation necessitates one of the two ladders to be blocked up to 24hrs a day, eliminating volitional passage and significantly increasing delay. This combination of delay and handling will result in elevated stress levels and physical injuries, significantly increasing the PSM rate.
2. 100% downstream transport of wild Chinook collected at Cougar Trap: ODFW and NMFS have also requested the Corps recycle all wild Chinook downstream from Cougar Trap and, passing only those that return to the trap a second time above Cougar Dam. This change will significantly increase delay, handling and stress for wild fish prior to their spawning. We are concerned that with this new trapping protocol, many of the recycled fish will spawn (if they survive) below Cougar Dam where water quality is less optimal than above the dam (especially this fall, when it is anticipated temp ops will not be possible beginning in late July this year). Therefore more hatchery fish will need to be placed above Cougar Dam to meet the established thresholds (400 females/200 males), eroding any local adaptation that we have worked hard to establish.

Additionally, the above-Cougar population will also likely experience additional delay and stress this year due to issues currently limiting operations of the Cougar trap and water temperature control (turbine debris issues and low reservoir levels, respectively).

Waiting for improvements in downstream fish passage at Cougar will not address declines in the existing Chinook population below the dam. Actions to reduce effects of hatcheries, and the inter-related harvest programs, should be seriously considered by ODFW and NMFS to help maintain and restore wild Chinook in the McKenzie, while the Corps pursues fish passage improvements at Cougar Dam.

Specific comments on NMFS and ODFW 100% recycling protocol (15CGR02 Fish Facility Recycling):
For reasons outlined below, the Corps does not recommend changing the existing Cougar AFF protocols until the current protocol is further evaluated, options considered, and a trap operation and reintroduction plan is completed for the Cougar AFF.

To date NMFS and ODFW have not performed any kind of analysis looking at the cost:benefit ratio for balancing the benefit of reduced PHOS against the increased mortality of wild adult Chinook salmon from these new management activities at Leaburg and Cougar. If such an analysis shows significant risks to wild fish (which is likely), ODFW and NMFS should explore new alternatives that do not directly impact wild adults.

Evidence collected to date indicates the current protocol sufficiently protects the population below the dam, while still allowing for transportation of fish that originated upstream of Cougar Dam to their natal habitat.

a) The current trapping protocol (to recycle adults after September 1st) was implemented in 2013 and continued in 2014. Pedigree data analyzed for 2013 indicate the number of unassigned unmarked adults passed above Cougar in 2013 was reduced to a level meeting or nearly meeting the new 2% goal.
    i. Prior to Sept 1, 21 of the unmarked adult Chinook transported upstream were unassigned in 2013. This represents up to 1.9% (21/1081) of the McKenzie population below Cougar Dam in 2013.
    ii. After September 1st, 2013, only 7 of the 15 Chinook released above Cougar Dam after September 1st were unassigned.
    iii. Therefore, a total of 28 unassigned fish in 2013, or 2.6% of the McKenzie population (28/1081) were transported upstream.
    iv. This 2.6% estimate is an over estimate since the pedigree data are known to be biased low (i.e. some of the unassigned fish were actually produced above Cougar).
b) The Corps is currently processing funding of pedigree analysis for two additional years (2014 and 2015) to support continued evaluation of the trapping protocol.
c) Results from more than one year should be considered before making changes, given inter-annual variability in the Chinook run and environmental conditions.

The population above Cougar cannot develop a locally adapted phenotype or contribute to the below dam population if it is not afforded upstream passage. Information on adult return timing (G. Taylor pers. com.) indicates that local adaptation is occurring rapidly at Fall Creek with adults now returning one month earlier than the original hatchery stock that was used for reintroduction. We are concerned that under the ODFW/NMFS proposed protocol many of the recycled fish will spawn below the Dam where there is less optimal water quality (especially this fall, when it is anticipated temp ops will not be possible beginning in late July this year). Therefore more hatchery fish will need to be placed above Cougar Dam to meet the established thresholds (400 females/200 males), further eroding any local adaptation that we have worked hard to establish.

The basis for the proposed goal to limit the transportation of the below-Cougar population to 2% or less is not provided, but should be included. When developing this goal, did NMFS and ODFW consider what abundance below Cougar is needed to maintain the current population viability status? Some variation in annual abundance is expected and acceptable, and should be accounted for when determining this management goal. Isn't some intermixing above and below Cougar healthy? The level of acceptable intermixing should also be accounted for when determining this management goal. The adaptive management section of the protocol should define how this goal will be measured, and what margin of error is acceptable.

What work is being done by ODFW and NMFS to determine the cause of declining Chinook run sizes in McKenzie Basin below Cougar Dam, as cited as an ongoing concern in the revised draft Cougar AFF protocol? We understand ODFW and NMFS have formed a workgroup outside of WATER on this subject. We would appreciate an update on any progress made by the group. Given the impact from transportation is less than 5% (especially when you factor in 0.4-0.6 cohort replacement rate, not zero) the transportation of these individuals is almost certainly NOT the most limiting factor for the fish below Cougar. Historically the SF McKenzie contributed 25% of the McKenzie basin UWR Chinook population (NOAA 2008, 4.3.1.1). Recent returns to the SF McKenzie are on par with this rate. This is alarming given the very poor passage conditions documented at Cougar Dam. Additionally we have recently seen wild fish runs increase in the North and South Santiam rivers where federal projects impact and block significantly more habitat than in the McKenzie. Even Fall Creek in the MFW has recently seen fish runs roughly half the size of those in the McKenzie in spite of the spatially limited habitat and significant barriers to passage.

A long-term reintroduction plan needs be completed. The Corps is working to improve fish passage at dams to improve conditions for ESA-listed spring Chinook and winter steelhead. However, we recognize the NMFS and ODFW also balance hatchery management and harvest goals, which impact the level of benefit that can be achieved from Corps investments. Reintroduction plans for Chinook and steelhead in each targeted subbasin needs to be completed now, and should include defining goals and the fish management actions that will occur to successful achieve reintroduction in association with the Corps' fish passage improvements. These plans should also define the metrics that will be monitored to ensure goals are being achieved, how they will be measured, and the associated data needs. Without these plans, the Corps is being asked to invest in fish passage from which assumed benefits may not be achieved. Further more ODFW and NMFS have requested the Corps continue to fund pedigree and

other data analysis without a plan for how the data would be used. We provided comments on a draft Cougar Chinook reintroduction plan shared by NMFS and ODFW in March 2013, and are waiting for comments to be addressed.

It is not clear if the Corps has ESA take coverage or adequate NEPA completed to carry out the proposed 100% recycling of wild Chinook at Cougar AFF. We will contact NMFS to confirm that there is sufficient "take" coverage, and review our NEPA compliance records.