

## ODFW Proposal for Late-returning Chinook to Cougar Trap:

### **Issue Summary:**

- One goal of the ongoing Cougar Dam spring Chinook genetic pedigree study is to determine the proportion of unmarked Chinook collected at the Cougar facility in 2012 that could be assigned as progeny of the previous adult outplants
- In 2011 a lower pedigree assignment rate was observed in the “late” (post 9/1) returning component, but only age-4 adults could be assigned in this year
- 2012 returns showed the same pattern, and both age-4 and age-5 adults could be assigned in this year
- After correction for outplants whose sex was mis-identified in the field, 84% of fish returning prior to 9/1 assigned as progeny of the 2007-2009 outplants; after 9/1, only 21% assigned as progeny of outplants
- If these late-returning fish have mostly originated below Cougar Dam, is it prudent to outplant them above the Dam given the lack of adequate downstream passage?

### **Considerations:**

- Unassigned fish were likely produced below Cougar Dam, although some portion of those fish could be the offspring of fish produced by adfluvial adults (because those parents would not have been sampled during outplanting)
- Downstream passage survival rates at Cougar Dam are estimated to be approximately less than 40% based on 2012 radio tag studies
- The replacement rate for Chinook outplanted above Cougar Dam has been estimated at 0.38.
- If fish were transported down to the mouth of the South Fork McKenzie River, they could potentially spawn in the South Fork McKenzie River or mainstem McKenzie River
- Spawning habitat is likely not limiting in the South Fork McKenzie River downstream from Cougar Dam (except directly below the dam/tailrace)
- Potential impacts to fish by trucking them late in the season (would be true if they were outplanted above the Dam or transported downstream)
- Want to get information on what the fate of these fish is, if they are transported downstream (do they spawn?; if so, where?; do they return to the trap?; etc)
- Interest in including some late run fish in the outplants above Cougar (although it’s not clear if the spawn-timing of these fish would be different than those outplanted earlier)
- A portion (~16%) of fish outplanted prior to 9/1 will likely be of below-dam origin
- Passing unassigned adults to areas upstream from Cougar Dam reduces productivity of wild spring Chinook in the McKenzie River due to poor downstream passage survival through the Project. This will increase pHOS in the reaches below Cougar Dam in 2012, and could potentially reduce wild returns in future years. Unassigned adults passed in 2012 represented

approximately 15 percent of the wild adults passing Leaburg Dam that don't assign to the South Fork McKenzie above Cougar Dam.

### **ODFW Proposal:**

- After 9/1, Chinook returning to the Cougar facility will be floy tagged, sampled for genetics and scale analyses, then transported back downstream and released near the mouth of the South Fork McKenzie
  - Consider a release site in the mainstem just downstream of the mouth of the SFMR at Forest Glen, which is at the upstream end of Blue River. This way, the fish can choose whether to re-enter the SFMR or stay in the mainstem. If fish then showed up again at the trap, it would be even stronger indication that they actually did originate upstream of Cougar Dam (or perhaps in the tailrace).
- These Chinook would be tagged with uniquely numbered tags (pending tag and truck availability)
- Consider radio tagging a portion of the later returns to get more information on their location after being transported downstream
- If tagged fish return to the Cougar facility, they will be outplanted above the Dam
- Information on final disposition and fate of fish transported downstream and outplanted fish will be recovered during spawning surveys in the South Fork below and above Cougar and in the mainstem McKenzie
- Continue genetic pedigree study to evaluate proportion of unmarked Chinook that can be assigned as progeny of previous adult outplants
- Adaptively manage outplanting strategy by reviewing information gathered from spawning surveys, tag recoveries, and genetic analysis on an annual basis.