



Oregon

Kate Brown, Governor

Department of Fish and Wildlife

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(minor revision re-sent 10.22.2018)

Chris Walker
U.S. Army Corps of Engineers
Operations Division



RE: ODFW Comments on 18FOS04 Holding Unmarked Chinook Salmon at Foster Fish Facility (and other outplanting strategies).

Dear Mr. Walker:

Thank-you for the opportunity to provide comments on “18FOS04 Holding Unmarked Chinook Salmon at Foster Fish Facility (and other outplanting strategies)”, received September 13, 2018, followed by an updated version received September 25, 2018. These comments pertain to the September 25, 2018 updated version.

ODFW agrees with and supports the comments provided by NMFS emailed on October 11, 2018, and provide some additional information below.

The Foster MOC regarding holding adults calls out high holding density. After reviewing the NMFS criteria and holding pond design, assuming a maximum of 100 unmarked adults were held in a long-term holding pond, pond densities of 0.3ft³/lb of fish would be well below the NMFS criteria of 0.75 ft³/lb of fish. For perspective, only 88 unmarked Chinook adults were collected in 2018. Also, consideration should be given to the Foster design; long- term holding of both marked and unmarked Chinook was a design criteria.

The MOC proposes using a 7-day average maximum temperature to determine when not to outplant. Continuing to outplant fish when we know the water is warm enough to have sub-lethal and potentially lethal effects runs contrary to what is trying to be achieved with the outplanting program. Waiting until the 7-day average is above 20C means increasing numbers of listed fish will be exposed to above-criteria temperatures for multiple days before outplanting is ceased. As a rule, we see 7-10 day cycles in temperatures at the release site (a 7-10 day increase in temperature followed by a 7-10 day cooling pattern. Therefore an outplanting approach using a 7 day average seems likely to expose fish to extreme temperatures at the outplant sites, and be counterproductive to achieving our goals.

The MOC also notes disease issues related to holding. Since Foster began operation in 2014, the prevalence of disease has been extremely low. In fact, many prophylactic treatments are not necessary that are standard at other adult holding facilities. Here is a fish health summary since 2014:

At the time of collection, Spring Chinook broodstock held at Foster were injected with Oxytetracycline to treat for Columnaris and furunculosis. To treat for bacterial kidney disease (BKD) fish were injected with Erythromycin in 2014, 2017, and 2018. In 2015 and 2016, Erythromycin was unavailable for purchase, and fish were instead injected with Draxxin. With the aid of these antibiotics, cool water temperatures over the summer, and deep ponds that limit stress, there have been few fish health problems during holding. One exception to this was the drought year 2015. Of the two pre-spawn

mortalities submitted for examination, both had BKD and one also had a necrotic intestine associated with the parasite Ceratonova shasta.

Kidney samples from all spawned females are tested by ELISA for BKD. Results are variable, with most years having low BKD prevalence but 2015 was markedly higher (see Table below). A 60 fish sub-sample is also assessed for presence of virus in ovarian fluid and tissues (kidney, spleen and pyloric caeca). Thus far, no virus has been detected in spring Chinook tested at Foster from 2014 through 2018. There are still a few 2018 samples pending, but so far this year all have been negative.

Year	# Fish Tested	% Positive	#High	#Medium	#Low
2014	426	1.4	2	1	3
2015	512	18.2	12	46	35
2016	488	0.6	1	1	1
2017	749	0.3	0	1	1
2018	548	0.4	0	0	2

Please let me know if you have questions on the information provided. I can be reached at Kelly.e.reis@state.or.us or by phone at 541-726-3515, ext. 29.

Sincerely,



Kelly Reis
Willamette Fish and Wildlife Policy and Program Manager

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