



July 31, 2020

Larry Carpenter, Chair
Washington Department of Fish and Wildlife Commission
PO Box 43200
Olympia, WA 98504-3200

RE: Columbia River Basin Salmon Management (C-3620)

Dear Chair Carpenter, Commissioners:

Trout Unlimited (TU) appreciates this opportunity to comment on the Washington Department of Fish and Wildlife (WDFW) Commission's Columbia River Basin Salmon Management (C-3620) policy review. With over 300,000 members and supporters – including 4,000 members in the state of Washington – and over 220 staff, TU is North America's largest nonprofit organization dedicated to the protection, conservation, and restoration of cold-water fish and their watersheds. Our strength is derived from our grassroots members and volunteers working together with our staff toward the common goal of ensuring resilient fish populations for future generations. TU is dedicated to using the best available science to guide our efforts, and we have the benefit of applying the expertise of our staff fisheries scientists to support policy and science efforts requiring careful analysis.

As an organization dedicated to conserving, protecting, and restoring North America's cold-water fisheries and their watersheds, our concerns with the policy review of C-3620 reflect that mission. With most wild stocks of salmon and steelhead within the Columbia River Basin being listed for protection under the Endangered Species Act (ESA) and recently experiencing some of the worst returns on record, we strongly encourage you to reconsider this shift in policy, uphold the intention as the original policy stated, and not restore year-round non-tribal commercial gill netting to the mainstem Columbia River.

Restoring gill nets to the Columbia River, a practice that has not occurred since the 2016, is a step backward for rebuilding depleted stocks of salmon and steelhead, and in our view, inconsistent with the recovery plan goals for the numerous distinct populations of wild salmonids listed under the ESA, including summer steelhead. While we are pleased to see the language in the most recent draft, which seeks to enhance the overall economic well-being and stability of Columbia River recreational and commercial fisheries in a manner consistent with conservation and recovery goals, and reflects the WDFW statutory mandate (RCW 77.04.012). We do not believe the recommended Fishery Specific Provisions support this.

It is our view that these fishery specific objectives, even with the Guiding Principles and General Provisions within the policy, will create a serious conservation issue for the upstream fisheries and recovery of listed species.

First, we have a serious concern with the lack of studies and understanding about the gill net release mortality impacts on by-catch, particularly the unknown impacts to wild summer steelhead. Both the summer and fall Chinook salmon fisheries, as recommended by WDFW staff, should be operated as mark-selective fisheries. This proposed policy is inconsistent with the primary challenges facing our mixed-stock Columbia River fisheries, which include the conservation and recovery of wild and ESA-listed salmon and steelhead populations, and the need to selectively harvest returning hatchery fish to comply with ESA provisions by limiting genetic and ecological impacts on these ESA-listed stocks (HSRG 2014; ISAB 2015).

Currently, the approved and recommended steelhead mortality rates put forth by the *U.S. v. Oregon* Technical Advisory Committee (TAC) are primarily based on studies conducted on tangle and seine nets provided by the WDFW and Oregon Department of Fish and Wildlife (ODFW) staff to the TAC in a February 2018 proposal. However, caution should be warranted when relying on a single study if that study does not capture all the potential variables influencing post-release survival, such as the case here. For instance, we did not see any information on net drop-out rates, which can range from 2%-8% for Chinook salmon depending on the fishery (CTC 1997). This type of data and information is needed for all species and must be incorporated into estimates of mortality. Consequently, we believe more rigorous research is needed to fully answer this question because underestimating mortality rates poses a serious conservation risk and challenge to recovering highly depleted stocks such as 'B-run' summer steelhead.

Moreover, the mortality rates provided by WDFW and ODFW do not account for sub-lethal effects that reduce the reproductive performance of fish that do survive. For example, a study on sockeye salmon found that 11-29% of the returning adults exhibited clear signs of past entanglement in gill nets (Baker et al. 2009). More than half of the fish that reached their spawning grounds with fishing-related injuries failed to reproduce, and because those effects were not accounted, prior estimates of spawning adults were inflated by a minimum of 5-15% (Baker et al. 2009). Further, Baker et al. (2013) subsequently found that the disentanglement injuries lead to elevated levels of stress hormones and that fish with more severe injuries were correlated with higher levels of plasma cortisol, which delayed or inhibited maturation of fish with disentanglement injuries. The results suggest disentanglement injuries lead to fungal infections that triggers a stress response that ultimately depletes the reproductive capacity of the fish. Ultimately, these types of injuries and their effects on reproductive success can exert disruptive, stabilizing, or directional selection on the population depending on the size distribution of a given population (Baker et al. 2011). These studies, and several others, all suggest that non-retention injuries can exert a significant negative influence, which can result in overestimating the escapement of spawning adults and select for population attributes that may be deleterious to their fitness. Accordingly, non-retention effects need to be accounted for before assumptions are made about the overall impacts of fish that are released or escape from gill nets.

This dearth of necessary data and studies to fully understand the mortality rates of the non-selective gill net fisheries on by-catch is compounded by the lack of onboard vessel monitoring during these

fisheries and is our belief leads to a severe under-reporting of summer steelhead by-catch. Based on a [presentation from WDFW staff at a November 3, 2018](#) Commission meeting, observations of traditional mainstem Chinook salmon gillnet fishery have occurred during only six seasons in the past 23 years. This lack of onboard monitoring and associated reporting only highlights our concerns with under-reported by-catch and release mortality rates.

Given the downward trends of ESA-listed salmonids within the Columbia, now is not the time to roll back the efforts and commitments to mark-selective commercial and recreational fisheries. In order to continue mark-selective fisheries into the future, this policy and WDFW staff must continue, in earnest, the development of the commercial license reduction program as developed in the [License Reduction Research Summary draft](#) from WDFW staff on July 3, 2020.

Additionally, we recommend a transition from a non-selective gill net fishery to a selective method currently being studied in the Lower Columbia. Initial studies of these fish traps, or pound nets, show that the prototype design used from 2016-2018 is a massive step forward from the currently assumed mortality rates of gill nets (Tuohy et al. 2019). The research of a modified passive trap design in 2019 showed that recent engineering advancements can achieve nearly 100% survival of coho and sockeye (Tuohy et al. 2020). With further research of this new design planned for the 2020-2021 season, it is estimated the fish traps will likely achieve essentially 100% survival rates for steelhead and Chinook as well.

Finally, we recommend that this policy strongly considers regular seasonal closures of cold-water refugia and the creation of thermal angling sanctuaries to permanently protect summer steelhead. We appreciate the recommendation to develop a report for thermal angling sanctuaries, as laid out under the General Provisions, but believe immediate action is prudent. This will result in longer fishing seasons, more predictability for recreational anglers and commercial guides, and the cold-water areas will become fundamentally critical to ensuring that steelhead have enough energy to fulfill their spawning migration. Presumably due to the intensive angling pressure, steelhead that use cold-water refuges are less likely to survive to natal basins, are harvested at higher rates, and have greater unknown sources of mortality in the main-stem Columbia (Keefer et al. 2009), thus our recommendation for regular seasonal closures.

We greatly appreciate your consideration of these comments, and we are happy to answer any questions you may have about our concerns.

Sincerely,



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References

Baker, M.R. and Schindler, D.E. 2009. Unaccounted mortality in salmon fisheries: non-retention in gillnets and effects on estimates of spawners. *Journal of Applied Ecology* 46: 752

<https://doi.org/10.1111/j.1365-2664.2009.01673.x>

Baker, M. R., Kendall, N. W., Branch, T. A., Schindler, D. E., and T.P. Quinn. 2011. Selection due to nonretention mortality in gillnet fisheries for salmon. *Evolutionary applications* 4(3): 429–443.

<https://doi.org/10.1111/j.1752-4571.2010.00154.x>

Baker, M.R., Swanson, P., and G. Young. 2013. Injuries from Non-Retention in Gillnet Fisheries Suppress Reproductive Maturation in Escaped Fish. *PLOS ONE* 8(7):

e69615. <https://doi.org/10.1371/journal.pone.0069615>

CTC (Chinook Technical Committee). 1997. Incidental fishery mortality of Chinook salmon: Mortality rates applicable to Pacific Salmon Commission Fisheries Report TCCHINOOK (97)-1, Vancouver, BC.

Hatchery Scientific Review Group (HSRG). 2014. On the Science of Hatcheries ...". *Fisheries*, 39: 548-551. doi:[10.1080/03632415.2014.964396](https://doi.org/10.1080/03632415.2014.964396)

Independent Scientific Advisory Board. 2015. Density Dependence and its Implications for Fish Management and Restoration Programs in the Columbia River Basin. Report ISAB 2015-1. Northwest Power and Conservation Council, Portland, Oregon.

Tuohy, A.M., Skalski, J.R. and Gayeski, N.J. 2019. Survival of Salmonids from an Experimental Commercial Fish Trap. *Fisheries*, 44: 423-432. doi:[10.1002/fsh.10292](https://doi.org/10.1002/fsh.10292)

Tuohy, A.M., Skalski, J.R., and A.T. Jorgenson. 2020. Modified commercial fish trap to help eliminate salmonid bycatch mortality. *North American Journal of Fisheries Management* (accepted for publication July 13, 2020).