Exhibit (E)

2021 Sport Fishing Regulations

Supplemental
Public Correspondence
received as of August 5, 2020

July 28, 2020

Mary Wahl, Chair
Oregon Fish and Wildlife Commission
4034 Fairview Industrial Drive SE
Salem, OR 97302

Curt Melcher, Director
Oregon Dept. of Fish and Wildlife
4034 Fairview Industrial Drive SE
Salem, OR 97302

Chair Wahl, Director Melcher and Commissioners,

We are concerned that the Oregon Fish and Wildlife Commission is scheduled at its Friday, August 7 meeting to adopt rules permanently closing areas of the Columbia River in the Columbia River Gorge to angling (thermal angling sanctuaries) without the additional public meetings promised by agency staff or first considering the results of identical closures that were adopted for 2020 through temporary rules. With temporary rules in place for 2020, We hope you will delay the consideration of permanent closure regulations until the agency has conducted additional public outreach and can receive feedback on the temporary closure areas that will be in place this year.

We understand that the Commission has been discussing the establishment of thermal angling sanctuaries for many months. However, much of this discussion has taken place at Commission meetings that are ill-suited for public participation, particularly for those who must work on weekdays. While ODFW staff did provide an overview of the issue at a 2019 meeting of a local sportfishing organization in The Dalles, there have not been additional in-person public meetings since.

Due to the COVID-19 pandemic, ODFW held a virtual public briefing on March 25, 2020 where a staff presentation was streamed online. During that public briefing Tucker Jones, ODFW Ocean Salmon and Columbia River Program Manager, indicated that the agency planned to adopt temporary rules for the 2020 season and that the agency planned to "provide additional in-person meetings on this topic in the future." During the Director's Report agenda item of the April 17, 2020 Commission meeting, Mr. Jones went on further to say that "we need to have a robust public process to inform you guys and us" before moving forward with permanent rules.

We commend Mr. Jones for his commitment to transparency and public involvement and encourage the Commission to honor these commitments before adopting permanent rules. Delaying any final action until later this year or early next year will allow ODFW to hold additional meetings, whether in-person or online, and allow the public and the agency to benefit from the experiences learned from the two new closures areas added this year (Eagle Creek and Herman Creek).

We appreciate your consideration of this request.

Sincerely,

Daniel Bonham
House District 59

Lynn Findley
Senate District 30

Chuck Thomsen
Senate District 26

NORTHWEST ENVIRONMENTAL ADVOCATES

November 19, 2019

John Palmer
Region 10
U.S. Environmental Protection Agency
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Seattle, WA 98101 *Via email only*: palmer.john@epa.gov

Re: **Columbia River Cold Water Refuges Plan, DRAFT (Oct. 2019)**

Dear John:

Approximately a quarter century after the Oregon 1992–1994 triennial review that ended in 1996—the first triennial review in which the importance of thermal refugia was first identified as a key part of providing designated use protection—the U.S. Environmental Protection Agency (EPA) has issued a purported plan to ensure that such refugia offset the hazards salmonids face in migrating through the increasingly hot waters of the Columbia River. Two lawsuits against EPA later; two lawsuits against the National Marine Fisheries Service (NMFS) later; two NMFS biological opinions later, two EPA Region 10 temperature guidance documents later . . . EPA has finally issued a draft plan to identify, evaluate, and possibly protect thermal refugia in the Columbia River. EPA, *Columbia River Cold Water Refuges Plan, DRAFT* (Oct. 2019) (hereinafter "Plan").

In our opinion, while the scientific information about salmonids' use of refugia is impressive and generally easy to understand, the "plan" aspect of this plan is so seriously lacking as to not exist. Plan: "a method of achieving an end." Merriam-Webster, *available at* https://www.merriam-webster.com/ dictionary/plan. Plan: "An orderly or step-by-step conception or proposal for accomplishing an objective" or "[a] proposed or intended course of action." The American Heritage Dictionary of the English Language, 5th Edition, *available at* https://www.wordnik.com/words/plan. This EPA plan is not a plan. It is a very nice report that contains a conclusion—that there are likely sufficient refugia now but will not be in the future—and that cites many other plans and makes such tepid recommendations that one is fearful of calling them recommendations. Certainly recommending that someone, somewhere, at some time, follow some other group of plans is not a plan itself. It's a dodge. It is EPA failing to do anything at all to generate a sense of urgency to state governments that they must take actions to address their failing nonpoint source control programs (and other related failings, such as water flow management, dams, etc.), and to set out the actions that EPA and other federal agencies must take or should take. In a plan that relies heavily on statements about protecting riparian

vegetation, remarkably EPA says absolutely nothing about its own role in ensuring that states protect and restore forested riparian vegetation. In fact, this plan says very little about changing fundamental aspects of the regulatory status quo under the Clean Water Act and state legal authorities even in those instances when EPA hints broadly at it.

Prior to jumping into the first section on the regulatory background, this document should give a short discussion of why temperature is an important water pollution issue to address, why the Columbia is of particular importance, why EPA believes that thermal refugia offer relief from a 20º C criterion but not warmer temperatures, the role of uncertainty in EPA's beliefs, and briefly discuss that which is rather obliquely referred to later in the document, namely the 2015 death of sockeye that EPA describes as "the use of CWR [cold water refugia] is seen as an ineffective migration strategy for these fish." *Plan* at 24.

I. Page by Page Review

1.1 Regulatory Background

Page 2 – This page includes what is purportedly a quotation from Oregon's water quality standards that says "the Lower Columbia River: 'must have coldwater refugia that's sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body.'" Despite its having quotation marks, this is not an accurate quotation because Oregon's water quality standards are not grammatically incorrect and do not include contractions. Also, there should be a citation added: OAR 340-041-0028(4)(d). In addition, EPA should include information about the designated uses in the Columbia River as designated by the State of Washington. *See* WAC 173-201A-602. Instead, EPA focuses only on those waters that are covered by the Oregon narrative criterion, as if the designated uses on their own—which presumably are identical or near identical in both states—do not demand the same protection to salmonids as that provided by the Oregon narrative criterion, namely the ability to migrate through the Columbia River to their natal streams. EPA should make clear that its analysis meets Washington's water quality standards as well as the Reasonable and Prudent Alternative set out in the NMFS Biological Opinion that caused EPA to issue the plan. *See* NMFS, *Endangered Species Act Biological Opinion on the Environmental Protection Agency's Proposed Approval of Certain Oregon Water Quality Standards Including Temperature and Intergravel Dissolved Oxygen* (Nov. 3, 2015) (hereinafter "NMFS Biological Opinion").

The same is true with regard to Oregon's definition of cold water refugia, which requires only that the refugia be "at least 2 degrees Celsius colder than the daily maximum temperature of the adjacent well mixed flow of the water body." While the NMFS Biological Opinion did not find that this definition jeopardizes salmonids, it is obvious that at some set of elevated temperatures that are two degrees Celsius from each other, this definition no longer protects the designated

uses even if the lower of the temperatures poses less of a threat. Given that EPA finds that Lower Columbia River temperatures "reach peak temperatures of about 22°C in mid-August," *Plan* at 24, and EPA has also found that two degrees less than 22º C, namely 20º C, causes "significant disease risk," *Plan* at Table 4-1, the definition is already inconsistent with facts in the water. As EPA goes on to predict rising temperatures in both the Columbia River and the tributaries that provide the thermal refugia, EPA's failure to discuss the definition, as if it were set in regulatory stone, is a significant misstep. These increased temperatures are in the range of very high deleterious effects, as demonstrated by the summary of those effects in Table 4-1. Elsewhere, as in Recommendation No. 26 part c, EPA mentions that steps might be taken under the Clean Water Act to provide more protection so it is not as if EPA considers such matters as outside the scope of this document. *See Plan* at 161 ("Consider special designations, antidegradation policies, and/or narrative water quality criteria as appropriate to prevent warming above current temperatures and maintain existing flows in the 12 priority CWR tributaries.").

Page 2 – We humbly suggest that EPA should cite the name of the case that invalidated the Endangered Species Act consultation that led to this plan. The citation for that case is: *Northwest Environmental Advocates v. U.S. E.P.A.*, 855 F.Supp.2d 1199, 1128 (2012). Note that the original NMFS Biological Opinion listed cold water refugia as a mitigating factor for the adverse effects of the EPA-approved water quality standards on salmonids. *Id.* In fact, three of the six mitigating factors were about refugia. *Id.* ("To support its conclusion, the NMFS listed six mitigating factors, including: . . . (3) the provision for cold water refugia, (4) consideration of aspects of water temperature cycles and refugia, (5) the narrative criterion protecting migration without significant adverse effects[.]"). But for this NWEA lawsuit, NMFS would not have developed any analysis demonstrating that the State of Oregon was ignoring this key provision of the EPA-approved water quality standards. But for this lawsuit, EPA would not have developed any analysis of whether the cold water refugia are and will be in the future sufficient to protect migrating salmon in the Lower Columbia River.

Page 3 – It is unclear why EPA makes reference to NMFS's having concluded that "evidence in the record" indicated the refugia narrative criterion was not being implemented. There was no "record" other than what NMFS compiled in the course of its evaluation.

Page 3 – This EPA plan should make reference to the Willamette and what is or is not happening with that corollary plan but the word literally is not to be found in this document.

1.2 TYPES OF COLD WATER REFUGES

Page 3 – The discussion of refugia in stratified reservoirs mentions that fish may reside in "cooler water at depth." It does not state whether this cooler water may be impaired in other ways, such as lack of dissolved oxygen, that would render it unsuitable for salmonids.

1.3 Overview of the Columbia River Cold Water Refuges Plan

Pages 3–5 – EPA states that the geographic scope of its plan is "focused on the Lower Columbia River between the mouth and river mile 309 (Oregon-Washington border), where the Oregon cold water narrative criteria applies (Figure 1-1)." EPA's plan is inadequate as it suggests a lack of a legal requirement to protect the migrating salmon from the 20º C criterion in Washington State based on the lack of a similar refugia-specific narrative criterion. The Clean Water Act is clear that designated uses must be protected regardless of the criteria. *PUD No. 1 of Jefferson Cnty. v. Wash. Dept. of Ecology*, 511 U.S. 700 (1994). We agree that EPA should have, as it says it did, extended its analysis to the Snake River even though the rationale—"since the Snake River entry at river mile 325 is near the Oregon-Washington border"—is flawed. Based on the current August mean water temperature reported by EPA, *Plan* at Fig 2-1, and Washington's designated uses, EPA should have included the portion of the Columbia River in Washington State.

Pages 9–10 – Figures 2-5 and 2-6 are of significant importance and should be available for the public and various agencies to see with the kind of detail that cannot be achieved in a print format, or at least the print format that EPA offers here. Specifically, EPA should offer the reader the ability to access these figures online with the ability to zoom in on details and/or it should print portions of the overall map at a scale that allows the details to be read. Without the details, the information is not useable. Likewise, Figure 2-7 should be prepared with an on-line version that labels all of the tributaries.

Page 25 – EPA shows on Figure 3-1 that the "[r]efuge use" is during the period of time in which temperatures at Bonneville Dam exceed 20º C. However, the text and Figure 3-2 say something different: "As shown in Figure 3-2, migrating steelhead begin to use CWR when the Columbia River temperature reaches 19°C, and when temperatures are 20°C or higher approximately 60-80% of the steelhead use CWR." Therefore, the indication of refugia use on Figure 3-1 is incorrect because it does not reflect the use of refugia when temperatures reach 19º C and it purports to include steelhead.

Page 28 – EPA needs to discuss the ramifications for its conclusion that some salmonids are not using cold water refugia to mitigate their exposure to high water temperatures. EPA's approval of the Oregon 20º C criterion was based on the narrative criteria that accompany it. If some species of salmonids are being harmed by or are not protected by the 20º C criterion and do not use the thermal refugia to mitigate that harm, then Oregon's water quality standards are not performing the function for which they were adopted and approved by EPA. Specifically, EPA finds that sockeye "are most susceptible to warm temperatures with limited mortality at 19-20°C and significant mortality at 20-21°C." *Plan* at 45. Sockeye do not appear to use refugia. *Id*. at 54. Yet, in 2015, "Lower Columbia river temperatures were significantly warmer than average during the June-July sockeye run, reaching 20°C (68°F) at the peak of the run, in late June." *Id.*

at 55; *see also id.* Fig 4-7. EPA recounts the results that year:

> In early June when river temperatures were below 19°C, survival between the two dams was high (90-100%). During week 4 in Figure 4-8 (June 22–28), when river temperature climbed above 20°C, survival dropped to 70% for Columbia River sockeye and 50% for Snake River sockeye (10% for Snake River sockeye transported as juveniles). In weeks 5-8, when river temperatures exceeded 21°C, survival was very low (0-20%). Because most of the Snake River sockeye migrated in late June and July, the overall survival for Snake River sockeye between Bonneville Dam and McNary Dam was only 15% in 2015 (FPC 2015).

Id. at 55. EPA's own conclusion demonstrates that Oregon's temperature standards do not protect sockeye. Either new numeric criteria that correspond to the runs of species that are not using the river during the very highest temperatures but that are affected by high temperatures during their period of river use need to be adopted or some other solution must be found in the water quality standards. The fact that this plan finds that the refugia do not provide mitigation to all salmonids migrating through the Lower Columbia River means that this plan must set out a solution to that regulatory problem. It does not, however, even engage in the topic.

3.4 Steelhead Use of Cold Water Refuges

Pages 30–35 – EPA explains how it has calculated the number of steelhead using the refugia and the estimated density. It does not mention here that the density in combination with the temperatures to which the fish are exposed increase adverse impacts of fish disease. Later in the plan, we see that EPA has identified the carrying capacity of the refugia as an issue that needs research. *Plan* at 157 ("high densities of adult fish are known to contribute to the spread of disease."). Nonetheless, EPA should address the issue to the best of its ability without the benefit of the research it has flagged is needed. The very heart of the question of whether there are sufficient refugia, as the plan is required to address, involves whether use of the refugia identified are sufficient to harbor fish, including without increasing their risk of disease from proximity. Instead, the plan's only references to disease, other than in the context of the needed research, is the disease caused by higher temperatures.

3.5 Fall Chinook Use of Cold Water Refuges

Pages 35–37 – Same comment as immediately above.

Pages 38–39 – EPA concludes that salmonids did not historically rely on cold water refugia to the degree that they do now, with the higher river temperatures. Again, this suggests that EPA should discuss the impact of fish disease and the metabolic effects of holding in refugia on this reliance.

4.1 Adverse Temperature Effects to Migrating Adult Salmon and Steelhead

Page 45 – In the first paragraph, EPA states that Oregon and Washington have a 20º C maximum water quality criterion for the Columbia River, which is consistent with EPA's recommended criteria. This is incorrect. First, as EPA knows, Oregon's standard includes additional narratives—one of which is the subject of this very document—because 20º C is not sufficiently protective. Second, EPA Region10's recommendations to states on water quality standards for temperature mirror EPA's belief that the 20º C criterion is not sufficiently protective:

> To protect this use, EPA recommends a 20°C maximum 7DADM numeric criterion plus a narrative provision that would require the protection, and where feasible, the restoration of the natural thermal regime. EPA believes that a 20°C criterion would protect migrating juveniles and adults from lethal temperatures and would prevent migration blockage conditions. However, EPA is concerned that rivers with significant hydrologic alterations (e.g., rivers with dams and reservoirs, water withdrawals, and/or significant river channelization) may experience a loss of temperature diversity in the river, such that maximum temperatures occur for an extended period of time and there is little cold water refugia available for fish to escape maximum temperatures.
>
> In this case, even if the river meets a 20°C criterion for maximum temperatures, the duration of exposure to 20°C temperatures may cause adverse effects in the form of increased disease and decreased swimming performance in adults, and increased disease, impaired smoltification, reduced growth, and increased predation for late emigrating juveniles (e.g., fall chinook in the Columbia and Snake Rivers). Therefore, in order to protect this use with a 20°C criterion, it may be necessary for a State or Tribe to supplement the numeric criterion with a narrative provision to protect and, where feasible, restore the natural thermal regime for rivers with significant hydrologic alterations. Critical aspects of the natural thermal regime that should be protected and restored include: the spatial extent of cold water refugia (generally defined as waters that are 2°C colder than the surrounding water), the diurnal temperature variation, the seasonal temperature variation (i.e., number of days at or near the maximum temperature), and shifts in the annual temperature pattern. The narrative provision should call for the protection, and where feasible, the restoration of these aspects of the natural temperature regime. EPA notes that the protection of existing cold water refugia should already be provided by the State's or Tribe's antidegradation provisions or by the cold water protection provisions discussed in Section V.2 below. Thus, the new concept introduced by the narrative provision EPA recommends here is the restoration of the natural thermal regime, where feasible.

EPA, *EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards* (April 2003) at 29.

4.5 Energy Loss and Pre-Spawning Mortality of Fall Chinook Salmon from Exposure to Warm Migration Temperatures

Page 54 – The paragraph on the likely effects of climate change ("Under simple temperature increases of . . . .") on timing of and survival after increased temperatures is oddly placed in the document. We do not object to its being here so long as the information is also repeated later on in the document where climate change is discussed.

4.6 Increased Mortality and Shift in Run Timing of Sockeye and Summer Chinook from Warm Migration Temperatures

Page 54 – Discussing the hazards to sockeye of delaying migration by using cold water refugia omits any statement as to whether the timing of their migration is the same as it was historically or it is altered. This is relevant information that should be included one way or the other. What EPA describes in this section is sockeye that are stuck between a "rock and a hard place." On one hand, if they use the refugia and delay, they will be harmed by warmer upstream temperatures and by not using the refugia they are harmed by the downstream temperatures.

Page 55 – Fig. 4-7 should have temperatures converted or added to reflect the Celsius temperatures used throughout the document. The same is true of Fig. 4-11 on page 59 and possibly other figures.

Pages 56–57 – The information set out in this section supports the need for EPA to interpret the designated uses and existing uses, as protected under the antidegradation policies of the states consistent with federal rules, of the Columbia as requiring protection, as discussed above. For example, EPA states that, "[o]ver time, because the June sockeye migrants are more successful, the genetic traits of the June migrants increase as a percentage of the population, contributing to the shift in migration timing (Crozier et al. 2011)." And, EPA says that "Figure 4-10 shows how increasing July river temperatures at Bonneville Dam (Panel B) over the past 60 years has resulted in earlier migration of Columbia River sockeye salmon." Likewise, EPA states that, "much like the sockeye salmon run, the summer Chinook run has also shifted to earlier in the year, likely in response to rising July temperatures." *Plan* at 59. EPA is silent on protection of these species as existing uses even though they are protected by state water quality standards. *See, e.g.*, OAR 340-04100004(1); *Northwest Environmental Advocates v. U.S.E.P.A.*, 855 F.Supp.2d 1199, 1220-1222 (D. Or. 2012).

5.1 Historic Temperature Conditions of the Lower Columbia River

Page 61 – When "EPA notes that flow regulation, land use changes, natural variability, and other factors likely influenced the observed changes, and increased water temperatures may not be ascribed solely to anthropogenic climate change influences," EPA should also note that it is long overdue to prepare a temperature Total Maximum Daily Load (TMDL) for the Columbia River, pursuant to section 303(d) of the Clean Water Act, a regulatory document in which this refugia information must be included.

5.2 Future Temperature Conditions of the Lower Columbia River and Its Tributaries

Pages 64–67 – EPA concludes:

> It is therefore likely that fewer salmon and steelhead will migrate in the Lower Columbia River during mid-July through August in the future under these warming trends, resulting in a change in the timing of salmon and steelhead runs. Adult sockeye salmon and summer Chinook will likely continue to migrate earlier as already observed, with very few migrants in July. Adult fall Chinook are likely to migrate later with minimal migrants in August, and those that do migrate then will likely need to use CWR to have sufficient energy to successfully spawn. Steelhead may use CWR for longer duration to avoid peak temperatures, or they may not be able to use CWR over the mid-summer like they currently do because mainstem temperatures are too warm in late July/early August for steelhead to reach the CWR in the Bonneville reach. If the latter proves true, this may result in a bi-modal migration pattern for steelhead with early summer and late summer runs. However, whether these species can shift their migration timing to adapt to the rate of warming, and whether such shifts can be done successfully without disruption to their full freshwater life cycle, is uncertain (Crozier et al. 2011 and Keefer & Caudill 2017).

Plan at 64. On page 66, EPA goes on to say that

> Temperatures in the tributaries to the Lower Columbia River, including the 23 tributaries that currently provide CWR, are also predicted to increase due to climate change. Table 5-1 displays the predicted increase in August mean temperatures for the 23 CWR tributaries (12 primary CWR highlighted in blue) using the NorWeST SSN model (Appendix 12.17). August mean temperatures for the CWR tributaries are predicted to increase by 1.2–1.5°C by 2040 and by 2.1–2.7°C by 2080 relative to current baseline (1995–2011).

> Of significant concern are those primary CWR tributaries that are predicted to have August mean temperatures that exceed 18°C. Tributary temperatures exceeding 18°C, although still serving as CWR if more than 2°C cooler than the Columbia River, are at levels associated with increased risk of disease and energy loss. For instance, by 2040, the Deschutes, Lewis, and Sandy Rivers are predicted to exceed 18°C, temperatures that will diminish their CWR function. By 2080, the Cowlitz, White Salmon, and Klickitat Rivers are predicted to have August mean temperatures exceeding 18°C, diminishing their CWR function.

Id. at 66. So how does EPA conclude that there are sufficient thermal refugia to meet the standard?

6.1 CWR SUFFICIENCY ASSESSMENT FRAMEWORK

Page 67 – EPA complains that evaluating whether the existing refugia are sufficient to meet the requirements of the Oregon water quality standards that it approved is "complex" because Oregon does not have "quantitative metrics to define what is sufficient." This lack of clarity is a reflection of EPA's own disinterest in the role of the refugia in real life. Oregon clearly, by its inaction that was highlighted by the NMFS BiOp, was only interested in tacking on the cold water refugia narrative criterion in order to get EPA to approve a temperature criterion of 20º C that it knew was not protective of salmonids. At the time of the EPA approval, EPA was well aware that Oregon had no plan and no intention to implement this criterion, including because Oregon claimed that it would do so through NPDES permits, which was an obviously false assertion. EPA's complaints come across as whining when instead the agency should reflect on its own shortcomings in approving the provision in the first place, when it knew that it was just a paperwork exercise. Only by being honest about its failings can the agency not repeat its mistakes in the future.

Page 67 – EPA should include the source for the statement: "mortality of caught and released fish" in cold water refugia. We believe that EPA has obtained information from NMFS on this topic and that it should reveal the source because it would be useful for the fish and wildlife agencies in pursuing restrictions on fishing in the cold water refugia where without restrictions the fish cannot, in fact, obtain refuge.

Page 67 – We appreciate EPA's recognition that "although CWR can help mitigate adverse effects to migrating salmon and steelhead when Columbia River temperatures exceed 20°C, the CWR narrative standard should not be interpreted to 'allow for' or to 'fully compensate for' Columbia River water temperatures higher than the 20°C numeric criterion." Note that this is not what EPA argued in its briefs to the court. *See, e.g.*, *Nw. Envtl. Advocates v. EPA*, Civil No. 05-1876-HA, United States' Memorandum in Support of United States' Cross-Motion for Partial Summary Judgment on Clean Water Act Claims and in Opposition to Plaintiff's Motion for

Partial Summary Judgment on Clean Water Act Claims (Jan 14, 2011) at 29. We believe that this point should be made in any summaries of EPA's findings and recommendations so as to not leave the wrong impression with readers that the presence of refugia somehow means there are no problems with temperature in the Columbia nor hazards associated with the 20º C criterion.

Page 68 – We fully support EPA's evaluation of the sufficiency of refugia in the three time frames. However, it is unclear on what basis EPA stops at 2040, especially in light of its own predictions that temperatures will dramatically rise in both the Columbia River and the tributaries that provide thermal refugia by the year 2080. *See Plan* at 66, Table 5-1.

Page 74 – On this page, EPA concludes that,

> the lack of CWR in the nearly 100 miles between the Deschutes River and McNary Dam, including the John Day reservoir which has the highest temperatures in the Lower Columbia River, is of concern. This nearly 100-mile reach poses the greatest risk from warm temperatures for migrating salmon and steelhead. Thus, it is difficult to conclude that CWR distribution is sufficient based solely on locations. In addition, there is very little opportunity to restore CWR in this reach, and even under natural conditions there were likely only a few small tributaries (e.g. Willow Creek, Rock Creek) and the Umatilla River that provided CWR.

While it does little or nothing for the fish themselves, this conclusion leads to the result that EPA must revisit its approval of the Oregon 20º C criterion for this stretch of the Columbia River. In addition, EPA should reconcile this conclusion with its other conclusion that there are, in fact, sufficient thermal refugia. The facts should guide the conclusion, not the desire to justify EPA's approval of the water quality standard.

Page 74 – EPA concludes that "[t]he strongest line of evidence that the current amount of CWR is sufficient under current Columbia temperatures is the adult survival rates from Bonneville Dam to McNary Dam. As discussed in Section 4.4, the adult survival rate after accounting for harvest and straying for Snake River steelhead and fall Chinook is over 90%." EPA then cites NOAA's conclusion that it "does not view adult migration conditions in this river segment as 'substantially impaired' for upper Columbia and Snake River steelhead and Snake River fall Chinook." Frankly, this is an odd conclusion. First, it fails to address the species that do not rely on refugia and are, nonetheless, adversely affected by the 20º C criterion, e.g., sockeye. Second, this statement only applies to the already and admittedly severely depressed populations of steelhead and Chinook. Were the species' populations to increase, would the refugia be sufficient? Presumably the desired goal of the Clean Water Act is not to maintain salmonid populations at a level at which they are defined as at risk of extinction, known as "threatened" and "endangered" under the Endangered Species Act. Third, is the definition of a protective

water quality standard one that does not cross a line that is defined as "substantially impaired"? That is not how we read the Clean Water Act and EPA's implementing regulations. 40 C.F.R. § 131.11(a) ("the criteria shall support the most sensitive use"). Fourth, having estimated that the same survival rate applies to both hatchery and wild Snake River fall Chinook, Plan at 50, did EPA calculate the effect of that rate on the wild fish population? Fifth, after citing the assertion that temperature-related mortality is not currently "substantially impairing" the recover of Snake River steelhead and fall Chinook, did EPA combine this less-than-substantial loss with other losses to consider that species on the verge of extinction do not necessarily need to owe their status to any single adverse impact on their populations? And, finally, given that to have the in-the-water effect of protecting, enhancing, and/or restoring thermal refugia—which EPA confirms are essential elements to Oregon's water quality standards and salmonid survival of Columbia River migration—the extraordinarily slow wheels of regulation must begin to move, the trees must be protected and planted, the best management practices for nonpoint sources must be implemented—that is to say there is zero time to waste to get ready for a hotter future—how does EPA draw any conclusion that suggests the problem of inadequate thermal refugia is not upon us now? EPA cannot turn a switch on twenty years down the road to protect the fish; that switch must be turned on now.

Page 75 – EPA concludes that, "primarily because there does not appear to be capacity limitations on the use of CWR in the Lower Columbia River, and adult steelhead and fall Chinook migration survival rates exceed 90% in this reach, EPA's assessment is that the current amount of CWR is sufficient under current Columbia River temperatures." This statement is not supported by EPA's failure to evaluate capacity limitations, particularly with regard to disease. The finding rests on an extremely flimsy basis of something not appearing to be a problem about which nothing is known. In addition, EPA concluded that "the lack of CWR in the nearly 100 miles between the Deschutes River and McNary Dam . . . is of concern. *Plan* at 74.

Page 76 – On this page, EPA summarizes the uses of thermal refugia and concludes that the spatial and temporal extent "appears to be sufficient" now but "may not be in the future." First, how is it that EPA can conclude it "may" not be in the future when EPA has predicted very high temperatures under future conditions? And on the same page conclude that "there is significant risk that the Lower Columbia River adult migration survival rates for steelhead and fall Chinook will decrease in the future"? There doesn't seem to be any "may" about it. Second, there is a lot of science in this report that is titled a plan. How is it that EPA comes to a conclusion that it "appears" there are sufficient refugia? It seems more likely that EPA has concluded that the refugia that exist are all that are there rather than they are sufficient. Because EPA in this very document states that historically refugia were not the critical key to salmonid survival than they are today. Since EPA goes on to conclude that by 2040, "there is significant risk that the current amount of CWR will not be sufficient to minimize the risk to migrating salmon and steelhead," EPA should draw a single conclusion: that there are not sufficient refugia. When EPA approves a water quality standard, it is not approving it for a limited period of time but, rather, based on the

science it has before it. Instead, EPA divides the future into periods for which it draws different conclusions, and then fails to sound the alarm, an alarm that might have led to a plan that called for urgent action rather than the tepid response laid out in the remainder of this document.

7 Actions to Protect & Restore Cold Water Refuges

Page 77 (and Appendix 12.20) – In this opening to the beginning of the plan aspect of the plan, EPA starts with its conclusion from the analysis part of the plan that there are sufficient refugia. As we stated immediately above, that is a problem. EPA establishes zero sense of urgency in any of its proposals. Then, EPA highlights two refugia in addition to the 12 primary tributaries: the Umatilla River and Fifteenmile Creek. As EPA points out, the Umatilla is "the only significant opportunity for increased CWR in the warm 93-mile reach between the Deschutes River CWR and McNary Dam." It errs, however, when it chooses to lean on the TMDLs that have been completed "indicating the potential for decreased summer temperatures in the river (Appendix 12.20)." To the extent that EPA is relying on completed TMDLs for predicted temperatures, this is in error. TMDLs, seeking to meet the now-vacated natural conditions criterion that allowed purportedly natural conditions to supersede the numeric criteria, modeled purported natural temperatures. The problem with these temperatures is that they did not remove all anthropogenic impacts in the modeling process. In fact, many of them are quite explicit as to what anthropogenic impacts remain. One of the more obvious impacts that remain in the purportedly natural temperatures is the heat from the majority of streams miles in a basin. As Oregon generally only modeled the mainstem rivers, assumptions had to be made about what to use for tributary inputs. These assumptions ranged from the use of current temperatures to the numeric criteria. Some TMDLs and their extensive appendixes state this piece of information clearly and others do not. As a result of using an assumption that does not reflect the removal of current anthropogenically-influenced conditions such as existing lack of vegetation, lack of tributary flows, dams, wide channels, width:depth ratios, loss of groundwater inputs, and loss of channel complexity, the modeling outputs predicted temperatures that could not have been "natural." As NWEA detailed in a brief to a successful federal court challenging EPA's approval of numerous Oregon TMDLs, and citing the administrative record in that case:

> Anthropogenic influences that were omitted from determinations of purportedly natural criteria are set out at: AR00005 at 63 (Rogue, Applegate; channel armoring and wetland draining), *id*. at 90 (current tributary temperatures and flows); AR0034 at 1131 (Snake: upstream sources, impoundments, changes in flow, channel straightening, diking, and removal of riparian vegetation); AR0085 at 4203 (Umatilla, Walla Walla: channel armoring, wetland draining, urbanization); AR0086 at 4329 (Umatilla, Walla Walla: mainstem and tributary flows); AR0108 at 4913 (Willamette: some dams, tributary temperatures), *id.* at 4914 (dams, flow, simplified channel), *id*. at 4915 (loss of channel complexity, velocities); *id*. at 4918 (deepening, bank armoring, dike construction, aggregate

> mining, wetlands and floodplain reclamation); AR0166 at 10598 (Umatilla, Willow Creek: channel conditions, hydrology); AR0182 at 11137 (Umpqua: floodplain connectivity, large woody debris, channel complexity), *id*. at 11118 (dam reservoirs); AR0218 at 12760 (Rogue, Bear: loss of off-channel areas, natural stream widths), *id*. at 12764, (irrigation activities); AR0253 at 13720 (Molalla-Pudding: tributary temperatures and flows); AR0283 at 14427 (Rogue: stream location, hydrology), *id*. at 14434 (58 dams); AR0309 at 15505 (Middle Columbia, Miles Creeks: dams), *id*. at 15527 (estimated tributary natural conditions); AR0319 at 15782 (Lower Grande Ronde: channel width and bank stability); AR0342 at 16825 (Malheur: all changes except riparian vegetation); AR0371 at 17823 (John Day: groundwater and sinuosity); AR0373 at 18071 (John Day: current tributary temperatures).

Nw. Envtl. Advocates v. EPA, Plaintiff's Motion for Summary Judgment on Clean Water Act and Endangered Species Act Claims, Civil No. 3:12-cv001751-AC (Nov. 25, 2014) at 19– 20, fn 16. It is highly inappropriate for EPA to cite to the so-called natural temperatures that come from these TMDLs because they do not represent the lowest temperatures that could be achieved.

The cited appendix is a memorandum that includes a discussion of the Umatilla TMDL that states: "significant restoration needs to be completed on the Umatilla before it becomes a viable cold water refuge. The TMDL identifies improved water use efficiency and riparian vegetation to restore floodplain connectivity as well as improving water quality to col water temperatures[.]" Appendix 12.20 at 2. EPA notes about Fifteenmile Creek that "the Fifteenmile Creek TMDL, which models temperatures under fully restored conditions and describes actions needed to restore the watershed. The modeling analysis in the temperature TMDL for this creek indicates that if flow and shade were restored to near "natural" conditions, the summer river temperatures could be significantly reduced and flow restored to the point that a CWR could be formed at the creek's confluence with the Columbia River." *Id*. at 4. Naturally, it is not rocket science that increasing flows and shade would lead to cooler waters. That is an early view of one of the primary problems with this plan.

EPA concludes that in the absence of analysis, i.e., TMDLs, completed for "the other 10 non-primary CWR tributaries and potentially other tributaries to the Lower Columbia River," it can only conclude that these "may have the potential to be restored to provide additional CWR. Restoration activities, such as riparian planting, bank stabilization, or water efficiency improvements in the other 10 non-primary CWR tributaries may increase the quality and quantity of their CWR. The EPA had limited information to quantify temperature improvements after restoration, so this Plan focused on areas with temperature TMDLs and other available information to select the two "restore" tributaries as described above." *Id*. at 4. Thus, in Table 1 of this appendix, EPA identifies eight potential refugia tributaries —Skamokawa Creek, Mill Creek, Abernethy Creek, Germany Creek, Bridal Veil Creek, Wahkeena Creek, Oneonta Creek,

Rock Creek—for which there is "no information on restored natural temperatures," the basis for not identifying them as priorities for restoration. This is a poor basis upon which to reject any potential refugia. First, the impacts of climate change and the uncertainty of the carrying capacity issue suggest that this is an emergency and the definition of an emergency is to do everything possible. Second, the results of the TMDL modeling exercises are inherently flawed so waiting on them seems pointless. Third, the TMDLs do not, in fact, guide any activities that are aimed at controlling nonpoint source pollution, the primary source of stream warming. EPA is pointlessly letting a technicality stand in the way.

Unless a tributary is simply not able to provide any benefit to migrating salmonids, it seems foolish to eliminate it from consideration for a lower priority restoration. In a warming world in particular, it should be true that all potential refugia be treated to the treatment EPA proposes for the 12 primary tributaries plus the Umatilla and Fifteenmile Creek, namely "to: 1) avoid human actions that could increase temperatures of the tributary, and 2) restore the tributary to cool temperatures to potentially partially or fully counteract predicted warming from climate change" or "to restore . . . watersheds to provide additional CWR." The only reason to treat a less useful tributary differently is the allocation of restoration funding. However, all regulatory actions that should be taken, most of which are not discussed in this so-called plan, do not require such funding.

On page 7 of this appendix, there is note to the author to "cite memo" for "Factors influencing temperature: riparian vegetation" that you probably would like to fix.

Pages 81–82 – Table 7-1 includes only four "Actions to Protect and Restore CWR," namely to restore stream morphology, limit new water withdrawals, maintain/restore riparian shade, and to address sedimentation at the mouth. Again, this is not rocket science. This plan falls well short of explaining how these changes are going to come about, step by step. Needless to say, each of these identified refuges includes a check mark on riparian shade protection and all but one includes stream morphology. Repeating what scores of other plans and reports have to say is not itself a plan to protect, enhance, and restore cold water refugia.

Pages 83–152 – Comments set out below pertaining to subsections 7.3 through 7.16 are both specific to those subsections and apply generally to all of the subsections. For example, the comment pertaining to page 83 below that discusses ambiguities in EPA's language applies to all such use of language in describing the same information for the other refugia. In another example, the comment pertaining to Figure 7-4 on page 85 applies to all such figures in the subsections. We have attempted to refrain from repeating ourselves when it would serve no purpose other than to increase the length of these comments.

7.3 COWLITZ RIVER (RIVER MILE 65) – PROTECT AND ENHANCE

Page 83 – EPA states:

> The lower portion of the Cowlitz River is designated for salmonid spawning, rearing, and migration by the Washington Department of Ecology, which assigns a water quality criterion of 17.5°C for maximum water temperatures. The maximum water temperature modeled for the Cowlitz River is 21°C (1993-2011) (Appendix 12.18). Based on actual maximum temperature readings, the lower Cowlitz River is on the 303(d) list for temperature impaired waters.

It is unclear, from the U.S. Forest Service website cited in the Appendix 12.18, what "maximum temperatures" are being modeled. These presumably are not the modeled natural temperatures that could be achieved if flows, vegetation, channel morphology and the like were restored. So, what are they? And why are they relevant? EPA does not say. EPA also does not say why a waterbody described as violating water quality standards currently is under a title termed "protect and enhance." Enhance seems to be a lesser level of effort than "restore," the word used for the two non-primary refugia that are in worse shape. It is inconsistent and misleading to use different words and, at the very least, EPA should explain why one 303(d) listing is of better quality than another 303(d) listing such that some waters do not warrant being labeled for restoration by EPA.

Page 84 – The fact that this refuge is the equivalent of "approximately 622 Olympic-sized swimming pools" is not any kind of explanation of crowding that might take place and cause disease-related problems. Perhaps it helps to visualize it but it's not particularly helpful. It would be more helpful if one is trying to make relative comparisons to put the information into a table.

Page 85 – EPA states that "[t]he riparian forests along the lower 20 miles of the Cowlitz River have been severely degraded through industrial and commercial development, and channelization in these areas limits potential for recovery." This is a rather important area, as it is the refuge area, and therefore, even if, say, the river is too wide to be shaded (this information is not given), making it more fish-friendly would seem to be a priority. Concluding that its potential for "recovery," a vague term, does not state what really might be able to be accomplished. It is unclear what the point of a plan is when it seems to give up pretty readily, rather than to really dive in and see if something could be done or it is completely hopeless.

EPA also states that "[r]estoration of riparian shade on private forestlands, which cover much of the lower Cowlitz basin, is expected to improve through time and implementation of Washington's State Forest Practice Rules." This is the first of many references to the states' logging rules. Remarkably, EPA does not distinguish between the better Washington rules and

the really terrible Oregon rules that we will discuss below. But the Washington logging practices are not fully protective of designated uses, as Ecology can attest to, and EPA knows full well. *See, e.g.*, Washington Department of Ecology, *2009 Clean Water Act Assurances Review for Washington's Forest Practices Program* 3 (July 15, 2009) ("After ten years, no studies have been completed or data collected that provide an indication of whether or not the forest practices rules are improving water quality or maintaining forested waters in compliance with the water quality standards."); Memorandum from Mark Hicks, Ecology, to Forest Practices Board, Re: *Clean Water Act Milestone Update* (April 22, 2019) ("It has been almost 20 years since the Assurances were first granted, but the effectiveness of the rules remains largely untested."); William Ehinger and Stephanie Estrella, Ecology, and Greg Steward, Northwest Indian Fisheries Commission, *Type N Hard Rock Study Stream Temperature/Shade*, presentation to the TFW Committee Meeting (Oct. 5, 2017). Therefore, in what appears to be an emergency setting—will there be sufficient thermal refugia to support migrating salmon throughout the entire Columbia River basin?—a mention of the existing logging practices without any corresponding mention of how they must be improved is stunning. What kind of plan is this that just says "OK, people, just keep doing whatever you're doing"? The Washington logging practices are not adequate. What does EPA think should happen with these logging practices to address a current or imminent emergency bearing in mind that trees that have been cut take many years in which to grow and provide full shade (and protect streams from sedimentation etc.)? The answer to that would be the start of a real plan.

Page 85 – Figure 7-4 and others like it in this document, are not explained and could, just conceivably, be the most important contribution from this document. Who did the analysis; where can it be found in more granular detail and better color differences; how was "maximum potential shade" identified; what is the width of the riparian area that constitutes "maximum potential shade"; how does this area relate to forest and agricultural practices; which areas of greatest difference between potential maximum and current shade would require new regulation or funding to address (e.g., are on agricultural lands versus are replanted areas that were logged); what are the temperature ramifications of the various shade differences; what types of land use are most causing the shade differences; why does EPA conclude in its discussion of these results that "[r]estoration of riparian shade on private forestlands, which cover much of the lower Cowlitz basin, is expected to improve through time and implementation of Washington's State Forest Practice Rules"; in what timeframe does EPA believe that what percentage of this undershaded watershed will be remedied under current regulations; how does EPA factor in "higher potential for restoration" to achieving protection, enhancement, and restoration of thermal refugia? In short, how does EPA suggest that the data and findings reflected in Figure 7-4 (and similar maps for other refugia) be used and why does it not provide any recommendations specifically to use them?

Page 86 – EPA's conclusion that climate change will "exacerbate low summer flows in the mainstem Cowlitz River, because of lower snowpack melt in the summer" points to the need for

recommendation on flows. There is nothing. EPA's conclusions about the effects of climate change here, as throughout this document, should point to the need for immediate actions yet there is nothing urgent in the "plan" aspects of the plan. Since one primary attribute of a watershed that is capable of maintaining the coldest possible waters is forested riparian areas, and forested riparian areas can only come about if they are fully protected as they exist or they are given the longest possible timeframe in which to grow before temperatures rise, it is difficult to understand why EPA has not identified as an urgent priority maintaining or restoring buffers of a sufficient width, density, and height to protect maximum shade and the other attributes of a waterbody that maintains colder water (e.g., channel morphology). While logging and farming are not the only incursions into a future with full forested riparian buffers, EPA does not address these two sources of stream warming. If EPA's conclusion is that we should just give up in our attempt to keep water at temperatures appropriate for cold water salmonids—which to all appearances it has already done—it should just come out and say so. This continued appearance of talking about temperature standards and temperature TMDLs without any concurrent action that actually provides protection to the fish is hypocritical and unseemly. Finally, EPA should make clear that under the circumstances it has identified with regard to climate change, the water quality goal for this refuge is not to meet existing water quality standards. It should be to exceed them to the maximum extent possible. This goal should be reflected in Washington's (and Oregon's) water quality standards, which should be revised. Anything else is merely acquiescence in the warming that will occur, warming that will reduce the efficacy of this waterbody's acting like a thermal refuge from the ever-increasing temperatures of the Columbia River. EPA should make recommendations for different approaches that could be used to effect that goal, and not a goal that shows up merely on paper. For example, Washington could make all or parts of the watershed a Tier III Outstanding Natural Resource Water. However, stopping with that designation, rather than spelling out specifically how it would be implemented, would be a meaningless gesture as ONRW status has no implications for nonpoint sources in the absence of specific and deliberate actions. ONRW status also does not address restoration needs.

Page 87 – EPA recommends that someone (passive voice) should "[i]Implement under Washington State Forest Practice Rules for riparian management on state and private forest lands." *See* comments for page 85 above.

Page 87 – EPA's "plan" to "protect and enhance" this cold water refuge is to implement plans that have already been written or are being drafted; we count four such plans for this particular refuge. Big picture, what is EPA doing here? What value added is there to EPA's enumerating these plans and implying, without any apparent review, that they are sufficient to protect and enhance this refuge? Why if the lower part of this refuge is violating water quality standards, does EPA say nothing about the need to "restore" it? The NMFS Biological Opinion stated that the purpose of this plan was to "adequately interpret the narrative criterion to allow for implementation of the criterion through DEQ's Clean Water Act authorities" and to "identify and prioritize potential actions by DEQ and/or other parties to protect, restore or enhance CWR."

NMFS Biological Opinion at 270-271. Yet, nothing in the EPA recommendations for this refuge identifies any priorities for potential action other than to say that two of the existing watershed management plans "detail key priorities contributing to recovery and mitigation in the basin, such as managing regulated stream flows through the hydropower system and restoring floodplain and riparian function." EPA does not even state that the priorities already identified in those plans are key to protecting the coldest possible water in this refuge. EPA does not even assert that the cited plans are consistent with the goal of protecting this cold water refugia. Although one might assume that to be the case, there is no basis for concluding it is so. Such watershed plans could, for example, be more focused on spawning habitat. There is no discussion anywhere in the plan that discusses, in general, Ecology's or DEQ's Clean Water Act authorities, a discussion that could and should be the jumping off point for EPA's recommendations as to specifically which of those authorities could be used in what specific fashion to accomplish the end desired for this refuge or any of the identified refugia. There is nothing in this Washington refuge recommendations that explains what EPA or Oregon DEQ could do to obtain improvements by Washington using its Clean Water Act or other authorities.

With regard to Oregon's authorities, for example, in this plan EPA does not recognize that EPA itself has concluded that Oregon's logging practices are inadequate to meet water quality standards. EPA/ National Oceanic and Atmospheric Administration, *NOAA/EPA Finding that Oregon has Not Submitted a Fully Approvable Coastal Nonpoint Program* 4 (Jan. 30, 2015) ("the State has not identified or applied additional management measures that fully address the program weaknesses the federal agencies noted in the January 13, 1998, Findings for Oregon's Coastal Nonpoint Program. Specifically, the State has not implemented or revised management measures, backed by enforceable authorities, to (1) protect riparian areas for medium-sized and small fish-bearing (type "F") streams and non-fish-bearing (type "N") streams; (2) address the impacts of forest roads, particularly on so-called "legacy" roads; (3) protect high-risk landslide areas; and (4) ensure adequate stream buffers for the application of herbicides, particularly on non-fish-bearing streams."). EPA is also well aware that Oregon DEQ has authority over logging practices in several ways, one of which is by having the DEQ's Environmental Quality Commission petition the Board of Forestry if it believes the state Forest Practices Act rules are not adequate for achieving water quality standards. *Id*. at 3 – 4. Another is that DEQ has the authority to develop and implement load allocations for forestlands in TMDLs. *See* Memorandum from Larry Knudsen, Senior Assistant Attorney General, Natural Resources Section, Oregon Department of Justice, to Neil Mullane, Water Quality Division Administrator, Oregon DEQ, Re: *DEQ Authority to Develop and Implement Load Allocations for Forestland Sources* 2 (July 2, 2010) ("If the BOF [Board of Forestry] does not adopt basin-specific BMPs or if the DEQ finds that the BOF's BMPs are not as protective as the safe harbor BMPs, the DEQ will require the forestland owner to comply with the safe harbor BMPs [developed by DEQ to be adequate to meet the load allocation in a TMDL], or to develop its own BMPs and submit them to the DEQ for review and approval."). Rather than to suggest that DEQ should continue to defer to the Oregon Board of Forestry on logging practices that according to EPA do not meet

water quality standards, let alone load allocations in TMDLs, EPA could specifically recommend the steps that DEQ could and should take to achieve the goal of protecting and enhancing, and possibly even restoring, thermal refugia. Or, perhaps, logging practices are not the top priority for a specific refuge, in which case EPA should identify the priorities, whether they are for agricultural practices, instream water flows, dam operation, etc. and then spell out specifically what steps need to be taken and by whom.

Going back to Washington, although EPA states that "[t]he Cowlitz River watershed is one of the most intensely farmed basins in western Washington," *Plan* at 86, the recommendations include precisely zero actions that any Washington agency could take to address riparian buffers along waters that move through farmland. The section instead, discusses water rights and water consumption, an obviously highly important issue to achieving sufficient and sufficiently cold water in the refuge. *See id.* Notwithstanding an EPA conclusion in the text that, given the absence of instream flow rules and the lower mainstem's being open to new water rights, "[l]imiting additional water use will help maintain CWR plume volumes and colder water temperatures," EPA does not include any reference to water rights in its recommendations. There is no sense from the text whether EPA reviewed the other plans to which it defers to see if they are based on science or based on compromise (e.g., fail to mention riparian vegetation needed on agricultural lands), whether they are consistent with the protection and restoration of this water as a thermal refugia, whether the priorities are consistent with that aim, and whether there is anything in the plans that are specific and clear. For all we know, these plans are as vague as the EPA draft plan we are looking at here, a plan that, for example, says to implement logging practices established by the states that EPA knows are not sufficient to provide the maximum thermal protection. In short, as a plan, this is a travesty.

7.4 Lewis River (River Mile 84) – Protect and Enhance

Page 88 – *See* comments for page 83 of the Plan above with regard to the discussion of the applicable criteria, the "maximum water temperature," and 303(d) listing.

Page 90 – *See* comments for page 85 above with regard to Figure 7-8 and accompanying text.

Page 90 – On what basis is this helpful: "Further, the East Fork Lewis is currently listed as impaired for temperature. Having already developed a Quality Assurance Project Plan, Washington Department of Ecology is scheduled to develop a watershed action plan for temperature for the East Fork Lewis in 2019." Please explain why this future plan will lead to actual actions that will protect and enhance—to say nothing of restore—temperatures in this refuge. *See* comments for pages 83–87 above.

Page 91 – EPA states: "The Washington Department of Ecology is developing a watershed plan to address high levels of coliform bacteria and temperature in the East Fork Lewis River. Both

plans provide excellent analysis and recommendations for prioritized restoration actions in the watershed. The 2010 plan meets Endangered Species Act and state habitat and salmon recovery requirements. Recommended actions include mitigating the effects of diking and channelization, increasing water discharge from dams in times of low flow, and increasing riparian protections." *See* comment for page 90; *see also* comments for pages 83–87 above.

Page 92 – EPA states that someone should "[i]mplement Washington's Forest Practice Rules on state and private forests on the lower Lewis River, as noted in the Washington Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan appendix on the Lewis River. This includes road maintenance and bank stabilization to reduce sediment build-up at the confluence." *See* comments for pages 83–87 above. EPA also states that riparian shading would be particularly helpful in rivermiles 0 – 15 but fails to identify the steps to make that happen. EPA also states that a future plan for the East Fork Lewis River should include actions "that maintain high flows and cold temperature downstream." This is not helpful; it's stating the obvious. EPA should explain the steps needed to make this outcome take place.

7.5 Sandy River (River Mile 117) – Protect and Enhance

Page 95 – EPA states that: "[w]ater quality modeling in ODEQ's Sandy River Basin TMDL (2005) predicted a temperature increase of approximately 0.5ºC with maximum potential vegetation under low flow conditions. Increased riparian shade can help to reduce sedimentation and maintain CWR volumes and temperatures." *See* comments for page 77 (and Appendix 12.20) above about relying on TMDLs.

Page 97 – EPA recommends that someone should "[i]Implement Oregon's Forest Practices Act on state and private forest lands throughout the watershed." *See* comments for pages 77, 83–87 above.

7.6 Tanner Creek (River Mile 141) – Protect and Enhance

Page 102 – EPA states that "[a]ctions to protect and enhance the Tanner River CWR include: . . . [c]onsider[ing] special designations, antidegradation policies, and/or narrative water quality criteria as appropriate to prevent warming of the creek above current temperatures and maintain existing flows." *See* comments for pages 83–87 above. EPA's suggestion is so vague as to be meaningless. Even if EPA elaborated a little more, to suggest for example that Tier III of the antidegradation policy could be applied, it could still be as meaningless to the fish. For a plan to have meaning to the designated uses, it must explain how precisely an action will be helpful. In that example, a Tier III status would not be helpful absent specific policies intended to protect water quality from nonpoint sources.

7.7 Eagle Creek (River Mile 143) – Protect and Enhance

Page 103 – *See* comments for page 83 of the Plan above with regard to the discussion of the applicable criteria and the "maximum water temperature."

Page 107 – EPA urges someone to "[i]mplement Oregon's Forest Practices Act at the mouth of Eagle Creek" as well as the generic "[c]onsider[ation of] special designations, antidegradation policies, and/or narrative water quality criteria as appropriate to prevent warming of the creek above current temperatures and maintain existing flows." *See* comments for pages 83–87, 102 above.

7. 9 Herman Creek (River Mile 147.5) – Protect and Enhance

Page 112 – Once again, EPA offers up the generic actions to protect and enhance Herman Creek and Herman Creek Cove to include consideration of "special designations, antidegradation policies, and/or narrative water quality criteria as appropriate to prevent warming of the creek above current temperatures and maintain existing flows." *See* comments for pages 83–87, 102 above.

7.9 Wind River (River Mile 151) – Protect and Enhance

Page 113 – *See* comments for page 83 of the Plan above with regard to the discussion of the applicable criteria, the "maximum water temperature," and 303(d) listing.

Page 115 – EPA states that "[w]ater quality modeling in Washington Department of Ecology's Wind River Watershed Temperature TMDL (2001) predicted that maximum potential vegetation could decrease water temperatures at the mouth from 18°C to 14°C under average flow conditions." It is likely that this undercalculates the temperature that could be achieved but EPA cannot know without examining the assumptions that Ecology used in its modeling calculations. *See* discussion about OregonTMDLs for page 77 (and Appendix 12.20) above.

Pages 115–116 – EPA states that "[w]ater rights are heavily allocated for agricultural uses" and "[b]ecause water use is high and supply is limited, more water use may reduce the CWR plume volume and increase temperatures in the CWR," but offers nothing more than a tepid recommendation to "[c]onsider additional SWSLs and instream flow rules, given current limited stream flows."

Page 116 – EPA states, without any useful comment, that "[f]urther, there currently exists a temperature TMDL, developed in 2002." It would be useful if EPA told us how much that TMDL has accomplished in the 17 years since it was completed. That would set the foundation for any recommendations EPA might make about the states' using their 303(d) programs and

authorities to actually protect and restore thermal refugia. Instead, EPA is silent. Evaluation of the science without a concurrent evaluation of the regulatory structure that either works is not working to protect and restore refugia should be key to this plan. *See* comments for pages 83–87 above.

Page 117 – EPA recommends that someone "[i]mplement Washington's Forest Practice Rules on state and private forest lands on the middle and lower Wind River" along with "actions in the mainstem Wind River, Panther Creek, and Upper and Lower Trout Creek noted in the Wind River Habitat Restoration Strategy and Wind River Temperature TMDL." EPA does not explain what "actions" are set out in the cited TMDL, whether they are adequate, whether there is any history of acted on the actions, and whether the purported actions are specific and clear enough to rely on. EPA merely tells the reader this is a plan to implement a plan the sufficiency of and ambiguity in which we have not bothered to investigate. Further, despite noting that "[w]ater rights are heavily allocated for agricultural uses," *Plan* at 115, the recommendations are silent on what might be necessary to ensure shading of streams traversing agricultural lands.

7.10 Little White Salmon River (River Mile 158.7) – Protect and Enhance

Pages 118–122 – *See* comments for pages 83–87 above.

7.11 White Salmon River (River Mile 165) – Protect and Enhance

Pages 123–127 – *See* comments for pages 83–87 above.

7.12 Hood River (River Mile 166) – Protect and Enhance

Pages 128 –132 – *See* comments for pages 83–87 above.

7.13 Klickitat River (River Mile 177) – Protect and Enhance

Pages 133–137 – *See* comments for pages 83–87 above.

Page 137 – EPA recommends that someone "[i]mplement Little Klickitat River Temperature TMDL targets for increased riparian shade in the Little Klickitat River." Published in 2002, roughly 17 years ago, EPA should evaluate whether anybody has, in fact, implemented anything in this TMDL since it was published. Such analysis would inform EPA as to the degree that it can or should rely on states' 303(d) programs and what kind of recommendations are required that are more than simply citing to other plans as the solution to the problem. What does EPA mean by implementing "TMDL targets for increased riparian shade"? The TMDL showed that "an increase in effective shade from riparian vegetation buffers have the potential to significantly decrease the water temperatures in the mainstem of the Little Klickitat River." Ecology, *Little*

Klickitat River Watershed Temperature Total Maximum Daily Load (July 2002) at 51. It also showed that "[d]ecreasing the channel average wetted W/D ratio decreases the water temperature further, with the exception of the section below Bloodgood Creek which has a low W/D ratio due to mechanical channelization." *Id*. No offense to the modelers who did this work but the impact of shade and width:depth ratio is not rocket science and it does not instruct as to what actions must be taken to meet water quality standards. The TMDL goes on to make essentially the same observations about various prongs of the Little Klickitat River. *See id.* at 53. The TMDL sets out "effective shade targets" in Table 10 and summarizes the load allocations for nonpoint sources as the need for effective shade and, in some instances, a width:depth ratio. *Id*. at 58–59. It then wraps up with a laundry list of what one might call allusions to BMPs, or pre-BMPs, namely vague references to various types of best management practices without any quantification, without any clarity of what implementation is necessary or required. So when EPA says in this plan that someone should implement the TMDL targets for increased riparian shade, it first ignores the other random list of non-quantifiable actions the TMDL seemingly recommends. Second, EPA cites only to a set of effective shade targets that, while expressed numerically, are not translated into anything clear. What do these shade targets mean for not cutting down trees or the need to plant trees? Specifically, they have not been translated into the height, width, and density of riparian buffers that are needed to be maintained on lands used for farming and logging. It is not clear that Ecology has used these shade targets in any of its work. And third, would the effective shade targets once translated into numeric riparian buffers also control sediment such that the width:depth ratios could be restored or protected from degradation? In short, in its plan EPA cites to a plan that, while being a TMDL, is similarly meaningless and without teeth or substance and certainly does not readily translate into any meaningful actions on the ground or in the water.

7.14 Fifteen Mile Creek (River Mile 188.9) – Restore

Page 138 – *See* comments for page 83 of the Plan above with regard to the discussion of the applicable criteria, the "maximum water temperature," and 303(d) listing.

Pages 139–142 – EPA states:

> Fed by snow-melt runoff and groundwater contributions, Fifteenmile Creek could potentially deliver cold water down to the confluence, providing additional CWR for migrating salmonids with continued water quantity and riparian habitat restoration. However, agriculture is vital to the local economy, valued at roughly $22 million per year. Agricultural land types include orchards, vineyards, and pasture. Primary agricultural products include wheat, cattle, and cherries.

* * *

> There is a substantial area for additional riparian vegetation restoration in the lower watershed along the tributary streams and creeks on the mainstem (Figure 7-44). The lower watershed was widely denuded for use as agricultural land.
>
> * * *
>
> The conversion of riparian areas to agricultural lands has resulted in the removal of tall grasses and small trees. Water quality modeling in ODEQ's Middle Columbia-Hood (Miles Creek) Subbasin TMDL (2008) predicted that maximum potential vegetation and increased flows could decrease water temperatures at the mouth from 25°C to 18°C under low flow conditions, a significant decrease.

Despite this description of the significant improvement in temperature that could be achieved and noting that agriculture is the primary reason why it is not, EPA recommends only that someone should:

> Maintain the riparian restoration work done in previous years as noted in the Fifteen Mile Creek Basin Aquatic Habitat Restoration Strategy and Middle Columbia-Hood (Miles Creek) TMDL. . . . [and] [e]ncourage private landowners to enter riparian buffer programs. Fund fencing projects for pasture lands near riparian areas to minimize the impacts of grazing.

This is not a plan; it's a statement that if shade and other attributes that come from forested riparian buffers are not present, temperatures will remain high and if they are installed and protected, temperatures will decrease. This is mere musing by EPA and is not a plan to protect or restore cold water refugia to save salmon on the Columbia River and meet water quality standards. *See also* comments for pages 83–87 above.

What is really obnoxious about EPA's description of this watershed is its implied assumption that use of the land and water by agriculture means that nothing can or will be done. EPA says: "However, agriculture is vital to the local economy, valued at roughly $22 million per year." "However" is like the "though" in the sentence "I would like you to do us a favor, though." "However" here means "nothing is going to happen here for salmon and in fact, we, the EPA, don't even think it should happen," just as "though" means a *quid pro quo*. From that statement likely springs the fact that EPA does not even recommend that the state consider regulating farmland to require riparian buffers, let alone actually use its legal authorities. Rather, it says, the state should encourage landowners to get paid to protect public waters from their private activities. EPA does not even recommend an additional funding program to make sure that cold water refugia exist for salmon in the future.

7.15 Deschutes River (River Mile 201) – Protect and Enhance

Page 143–147 – *See* comments for pages 83–87 above.

7.16 Umatilla River (River Mile 284.7) – Restore

Page 148 – *See* comments for page 83 of the Plan above with regard to the discussion of the applicable criteria, the "maximum water temperature," and 303(d) listing.

Pages 149–150 – *See* comments for pages 77, 83–87, 137, 139–142 above.

Pages 151–152 – EPA's comments that "[e]fforts to conserve and increase water flows will help to cool water temperatures and increase CWR volume" is really not helpful and not a plan. It's merely a statement of the obvious. Citing other plans or general propositions that are laid out in other plans that may or may not be implemented—and EPA can be sure that the TMDLs are not implemented—also is not a plan. In this context, the least EPA could do is to identify the barriers to implementing TMDLs and other plans and make recommendations to address them. EPA could also state what it will do if the states fail to use their existing legal authority to make the needed changes.

7.17 Summary of Actions to Protect and Restore Cold Water Refuges

Protect Through Regulatory Programs

Page 153 – As explained above, an EPA plan that says keep on implementing, even if you aren't, all the "existing programs and regulatory actions that help keep waters cool" is not a recipe for success and neither is using the "state forest practice regulations" that EPA knows are not adequate to meet water quality standards and therefore are not adequate to protect, enhance, or restore the thermal refugia upon which EPA has shown in this document the salmonids migrating in the Columbia River rely. Being silent on the lack of agricultural practices to protect water temperatures is not a plan. Reiterating that "minimizing additional water withdrawals will help" is not helpful or a plan. Neither is reiterating the extremely unhelpful and vague comment that "[w]ater quality standard updates, such as special designations, antidegradation policies, or narrative criteria could be a means for helping maintain current river temperatures in the primary CWR tributaries." Yes, they "could be" but if EPA doesn't explicitly recommend some changes that it thinks will be helpful, they probably won't be. Moreover, EPA does not address the disconnect between water quality standards, millions of dollars of studies for TMDLs etc., and thousands of pages of all sorts of plans and . . . the fish. EPA does not even go so far as to recommend that state actually protect cold water at the temperatures current achieved. What is horribly missing from a section entitled "protect through regulatory programs" is any discussion of, you know, actual regulatory programs and how they might be made to work.

Restore Riparian Shade, Stream Morphology, and Instream Flow

This is more of the same that EPA has already spent scores of pages reiterating: it would be nice if someone implemented all the existing plans. EPA states that:

> Restoration of the CWR in all primary and "restore" tributaries can be accomplished by the following actions, many of which are outlined in the salmon recovery plans and TMDLs:
> 1) Restoring riparian shade: Restoration of riparian shade should be targeted to those areas that have the greatest potential for increased shade in the watershed and are river reaches important for salmon habitat restoration.
> 2) Restoring stream morphology and complexity, including narrower channels and increased pools: Increasing the amount of instream large woody debris to create pools of cold water and trap sediment that would otherwise reach the river mouth will aid in keeping waters cool as they reach the tributary mouth and join the Columbia River.

But this is what every temperature TMDL says to one degree or the other. EPA has added absolutely nothing new to the equation. It has not set out any recommendation to take steps to actually implement the TMDLs. We reiterate: none of this material about how to protect and restore stream temperature is rocket science. Such basic statements by EPA cannot possibly be what NMFS had in mind when it instructed EPA to develop a plan to actually protect refugia for the salmonids that actually depend upon them to migrate through the hot temperatures of the Columbia River.

7.18 Action to Address Fishing in Cold Water Refuges

Page 154 – As we commented above, EPA should include the citation(s) regarding the data that show that "fishing in CWR reduces the survival of steelhead that use CWR compared to those that do not, offsetting the benefits to fish using CWR." Hiding the ball here make it only harder to achieve the goal of updating the fishing regulations that EPA suggested "could be considered," with emphasis on the word "could" because it would apparently be too extreme for EPA to say "should" even as it admits that would protect the fish, the designated use for which this entire exercise has been to support.

8 Uncertainties and Additional Research Needs

Density Effects and Carrying Capacity of Cold Water Refuges

Page 157 – EPA admits that "[t]here is no research on the carrying capacity of CWR for adult salmon or steelhead" and "[i]t is therefore fairly speculative as to what densities cause fish to

avoid or leave CWR." Notwithstanding this conclusion, EPA has determined that there are sufficiently distributed refugia. Stunningly, while noting that "[a]lso, high densities of adult fish are known to contribute to the spread of disease." EPA concludes only that "[t]his could be a concern for CWR that are colder than the Columbia River but are in the 18-20°C range, which are temperatures at which disease risk is elevated (e.g., Deschutes River)." It certainly is a concern and will increasingly be one. EPA's conclusion that "[t]he extent to which CWR use at varying densities contributes to increase disease (and associated mortality) is unknown," should be followed by the acknowledgment that in fact EPA does not know and on that basis cannot determine if there are currently sufficient refugia to mitigate the effects of a 20º C criterion let alone the actual temperatures in the Columbia River. The issue of disease has been well documented by EPA itself in the scientific papers that supported the Region 10 guidance for temperature standards. This should have been a major factor in its evaluation.

9 SUMMARY AND RECOMMENDATIONS

Pages 158–162 – Our comments on this section are short because we have said most of what is necessary above and do not choose to repeat it. That should not be read as an endorsement of the extremely thin recommendations found in this section, which are a reflection of those found throughout the document.

Pages 158–162 – EPA purports to set out the water quality standards for temperature for the Columbia River:

> The water quality standard for the Lower Columbia River is 20°C, which is intended to minimize the risk of adverse effects to migrating salmon and steelhead from exposure to river temperatures that are warmer than 20°C.

As explained above, this is incorrect and should be fixed. A standard is not a criterion.

Sufficiency of Cold Water Refuges to Support Migrating Adult Salmon and Steelhead

EPA concludes that "the spatial and temporal extent of existing CWR appears to be sufficient under current and 20°C Columbia River temperatures but may not be in the future." We find this to be misleading. EPA found quite clearly that they would not be in the future and at best found that it cannot determine if there are sufficient refugia in the present. Moreover, "maintaining the current temperatures, flows, and volumes of the 12 primary CWR in the Lower Columbia River" is more than "important to limit significant adverse effects to migrating adult salmon and steelhead from higher water temperatures elsewhere in the water body," it is critical to those adverse effects. That is EPA's conclusion but its summary of its conclusion suffers from the same passive view and passive voice found throughout the entire document. EPA continues to say that "[a]dditional CWR in the Lower Columbia River may be needed due to the predicted

continued gradual warming of the Columbia River," when it can only be concluded that, based on the climate change evaluation set forth in the document, there is no "may" about the need. Again, it is a necessity. Whether the fish will survive even if EPA and the states made their best efforts is another question. In that matter, EPA can afford to not be definitive and can tell us the truth: they may not survive although it is our legal and moral obligation to try to save them.

Watershed Characteristics of 12 Primary Cold Water Refuges

EPA makes the following observation regarding the importance of dams on four of the refuges:

> Four of the primary tributaries (Cowlitz, Lewis, Sandy, Deschutes Rivers) have upstream storage dams that can influence summer temperatures by releasing water from cooler depth within the storage reservoir and by controlling summer release flows.

But EPA fails to go beyond making this observation, namely to suggesting that it will itself, or ask some other agency to, take actual steps to order or negotiate changes in the operation of these dams. A "plan" should be a plan for action, not a set of musings. And then, EPA muses some more:

> Although the 12 primary CWR tributaries are relatively cool, there are impacts within the watershed that can warm the tributary, including floodplain degradation, water withdrawals and reduced summer flow, sedimentation, and loss of riparian shade. Climate change has already warmed all tributaries to some extent and is predicted to continue to warm these tributaries in the future. Restoration of the anthropogenic impacts within the watershed can help offset predicted warming.

Recommended Actions to Protect and Restore Cold Water Refuges

This musing leads to some extremely limited comments on what could be done to protect, enhance, and restore the maximum amount of cold water available in these refuges. As its "Recommended Actions to Protect and Restore Cold Water Refuges," EPA states that someone should:

> 26. Protect existing 12 primary CWR through the implementation of existing programs and regulatory actions that help keep waters cool.
>
> a. Since extensive portions of the priority CWR tributaries include forest lands, important protective actions include continued implementation of U.S. Forest Service plans and State Forest practice regulations.

b. Since additional water withdrawal during the summer can diminish the size and function of the primary 12 CWR tributaries, minimize additional water withdrawals that would decrease summer flows.
c. Consider special designations, antidegradation policies, and/or narrative water quality criteria as appropriate to prevent warming above current temperatures and maintain existing flows in the 12 priority CWR tributaries.

In addition, EPA suggests that someone should:

27. Restore degraded portions of the 12 primary CWR watersheds to enhance the quality of the CWR and to counteract predicted future increases in tributary river temperature by: 1) restoring riparian shade, 2) restoring stream morphology and complexity, including narrower channels and increased pools, and 3) implementing watershed conservation measures to restore summer flows.

And then someone should act on the fact that,

30. [B]ased on information provided in completed temperature TMDLs, EPA identified the Umatilla River and Fifteenmile Creek as having the potential to provide increased CWR in the Lower Columbia River if thermally-degrading features of the watersheds were restored.

EPA is remarkably mealymouthed in this set of recommendations, the summary of which takes up less than one page in the document. The word "consider" and the overall use of the passive voice could not make these recommendations sound less urgent. The lack of specificity guarantees that they will be ignored, taking up more room on the bookshelves along with all of the other plans. We trust that by now in these comments we need not say more to make the point.

Recommended Action Regarding Fishing in Cold Water Refuges

This recommendation that information "could be considered" is more of the same, no urgency, no actual plan, just more musing. Instead, EPA should recommend that the fishing agencies make this a priority. There is certainly no point in taking all of the expensive, time-consuming and difficult actions proposed or hinted at throughout this plan and then letting recreational fishing people harass the very fish that are attempting to see "refuge" from dangerously high water temperatures.

II. What is Fundamentally Missing from EPA's Plan

The comments above explain what is largely the problem with this plan, namely that it is not a plan. But here, we add a little bit more, certainly well short of writing a plan ourselves.

A. The Biological Opinion and the Reasonable and Prudent Alternative

EPA had asserted to NMFS that it "expects the cold water refugia provision to be primarily considered in NPDES permits and TMDLs." *NMFS Biological Opinion* at 173. As NMFS subsequently found, EPA was sadly and profoundly mistaken in its assumption, expectation, or general cop-out, whichever it was. In fact, NMFS found that:

> Overall, the narrative criterion pertaining to CWR does not, to date, appear to be an effective means for minimizing the adverse effects likely to be experienced by migrating salmon and steelhead under the 20°C migration corridor criterion. In the Willamette River TMDL, the DEQ mentions only two specific streams as possibly providing refugia, even though substantial research on off-channel habitats that may provide such refugia has been done in this river. The John Day River TMDL does not even attempt to directly address the narrative criterion. Also, according to EPA, the state has not provided any analyses of or determinations as to the part of the narrative criterion that requires that CWR "are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body". The DEQ apparently has not released any work on CWR in the Columbia River.

Id. at 176 (footnotes omitted). As a consequence, NMFS set out the primary intended outcome of the Reasonable and Prudent Alternative that required this plan: "The purpose of the CWR plan is to adequately interpret the narrative criterion to allow for implementation of the criterion through DEQ's Clean Water Act authorities [including to] identify and prioritize potential actions by DEQ and/or other parties to protect, restore or enhance CWR." *NMFS Biological Opinion* at 270–271 (emphasis added). Without the "implementation . . . through Clean Water Act authorities" specifically called for by NMFS, this would be like any other plan: much paper with no benefit to fish. But that is not what NMFS required. It is clear that EPA has not met the terms of the Reasonable and Prudent Alternative.

B. Some Suggestions

In addition to addressing our comments set out above, EPA should:

- Drop the passive voice.

- Direct the states to rewrite all the relevant temperature TMDLs with specific direction that each establish clear, measurable actions, including quantitative BMPs, that are tied to meeting the TMDLs' load allocations. It is well past time to make sure that state agencies and private land owners are held accountable for the measures that are necessary to implement the TMDLs. They cannot be if the measures are not clear. For example, the ambiguity of the TMDLs precludes a pathway to their use to ensure adequate logging practices. It allows for the continued failure of states to regulate agriculture. It precludes a willing landowner from knowing what actions to take. A heavy reliance on TMDLs to protect and restore the refugia of the Columbia River by EPA points in one direction: TMDLs that do not need translation to understand what actions are required by whom in order to meet water quality standards.
- Require Oregon and Washington to meet the precise terms of the Clean Water Act section 319(b)(2), namely to identify the BMPs that are necessary to meet water quality standards (including load allocations), the programs through which those BMPs will be implemented, and a schedule with annual milestones for implementing them at the earliest possible date.
- Call for immediate forest practices rule changes to protect these refugia.
- Call for the states to use their legal authority to ensure that agricultural BMPs are put in place.
- Identify the means by which dam operations can be regulated to protect thermal refugia.
- Set out a list of actions that EPA will take if states fail to make schedules to implement nonpoint source controls and carry out that implementation including NPDES actions and withholding section 319 funds.
- Not use this document to count on TMDLs that are based on illegal and now vacated water quality standards and flawed analysis that fails to evaluate purely natural conditions when identifying the temperatures that could be achieved.
- Add page numbers to appendixes.
- Place more emphasis in its summary and conclusions on the uncertainty inherent in this exercise, such as the complete lack of knowledge about the carrying capacity and concerns about disease transmission within refugia.
- Express some modicum of urgency to its findings and recommendations.
- Distinctly call out the fact that the Columbia River water temperatures do not support healthy salmon populations including because some species do not use thermal refugia, because there is no assurance that the refugia are sufficiently well distributed, and because temperatures are not meeting water quality standards.
- Call out the fact that the sockeye require different criteria at different times of year than are currently in Oregon and Washington standards.
- Not leave the casual reader with the impression that there is no reason to be concerned about either the 20º C criterion or current water temperatures in the Columbia River because EPA has concluded that there appear to be sufficient cold water refugia created by the tributaries.

- Say something about the Willamette River.
- Note clearly that implementation of the Oregon temperature standards must mirror the basis for EPA's approval and NMFS's Biological Opinion of the numeric criteria for salmonid rearing—that are themselves the water quality goals for the thermal refugia in Oregon as tributaries—namely that those criteria would be met at the farthest point downstream where the uses are designated, *see e.g. NMFS Biological Opinion* at 193, and set out the ways in which this implementation must take place, for example in evaluating waters pursuant to 303(d), developing TMDLs, and in establishing BMPs for nonpoint sources.
- Provide some analysis of the other narrative provision associated with the Oregon 20º C criterion for the Columbia River, to the extent that EPA has developed information about it: "the seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern." OAR 340-041-0028(4)(d). While it is a separate criterion, it is also linked to the refugia criterion as the content of this plan shows. It would be helpful for that information to be pulled into a separate section. Note that EPA's extensive discussion of timing and use should explain the role of the existing use protection for designated uses provided by the antidegradation policy. In failing to address the intersection of migration timing and use of cold water refugia, EPA misses the boat because both criteria are required in order to protect the designated uses. One without the other leaves a two-legged stool that does not protect the uses.
- Recognize, discuss, and make recommendations pertaining to the fact that Oregon has a provision in its temperature standards that is intended to protect existing temperatures that are below numeric criteria called the Protecting Cold Water criteria. *See* OAR 340-041-0028(11).

In conclusion, EPA has a lot of work to do to turn this report into a plan that will allow for the implementation of the thermal refugia criterion through Oregon DEQ's Clean Water Act authorities.

Sincerely,

Nina Bell
Executive Director

Attachments:

Washington Department of Ecology, *2009 Clean Water Act Assurances Review for Washington's Forest Practices Program* (July 15, 2009)

Memorandum from Mark Hicks, Ecology, to Forest Practices Board, Re: *Clean Water Act Milestone Update* (April 22, 2019)

William Ehinger and Stephanie Estrella, Ecology, and Greg Steward, Northwest Indian Fisheries Commission, *Type N Hard Rock Study Stream Temperature/Shade*, presentation to the TFW Committee Meeting (Oct. 5, 2017)

Memorandum from Larry Knudsen, Senior Assistant Attorney General, Natural Resources Section, Oregon Department of Justice, to Neil Mullane, Water Quality Division Administrator, Oregon DEQ, Re: *DEQ Authority to Develop and Implement Load Allocations for Forestland Sources* (July 2, 2010)

From: Tucker Jones
To: John Seabourne
Subject: FW: Thermal sanctuaries
Date: Wednesday, March 11, 2020 8:47:58 AM

PC

Tucker Jones
971.673.6067

-----Original Message-----
From: Mike Stockman <stockman.mike059@gmail.com>
Sent: Tuesday, March 10, 2020 7:35 PM
To: tucker.a.jones@state.or.us
Subject: Thermal sanctuaries

Mr. Jones, you used this excuse a couple of years ago, it didn't pass the smell test then, and it still doesn't! Initially it seemed You were being very secretive as to the reasoning for this closure. Later You tried to clarify that it had to do with protecting Steelhead even though Washington was permitting Steelheading just downriver at the same time. In my conversations with you then, I pointed out to you that the waters being fished at the MoD were completely different waters for Salmon and Steelhead. Nobody that I ever saw were fishing the steelhead waters nearer the Oregon shore nor were there many (if any) incidental steelhead caught by Salmon fishers who fish the deeper waters closer to mid-river and nearer Miller island. You admitted as much in our e-mails. Washington came up with a very workable boundary for this area that I believe Oregon (you) initially rejected. it eliminated any fishing what so ever in the waters favored by steelhead, Leaving Eastern Oregon, Washington and Idaho fishers with no realistic fishing alternative. Please re-think this thermal sanctuary so that we have a place to fish without having to travel so far. It's bad enough all ready with Oregon and Washington abandoning the agreements made with sportfishers years ago to eliminate commercial gillnetting from the mainstem of the Columbia, and then continue to steal money from us in the CRE endorsement and further reintroduce the barbless rule that was only demanded by the gillnetters even though state biologists testified that barbs had no impact on Salmon mortality rates. Leave MoD as it was last year with the sanctuary boundary proposed by Washington. Mike Stockman, Oregon fisherman.

From: Tucker Jones
To: John Seabourne
Cc: John North
Subject: FW: Mid-Columbia Cold Water Refuges
Date: Wednesday, March 11, 2020 10:31:44 AM

PC

Tucker Jones
971.673.6067

From: Brad Smith <bdsmithpics@gmail.com>
Sent: Wednesday, March 11, 2020 10:25 AM
To: tucker.a.jones@state.or.us
Subject: Mid-Columbia Cold Water Refuges

Hello,

I am for closures at vital cold water refuges along the Columbia when temperatures and run conditions necessitate it. Many anglers are unaware such a thing exists and it's importance to fish. Education would me necessary here.

Thank you,
Brad Smith

From:	Tucker Jones
To:	John Seabourne
Cc:	Chris Kern; John North
Subject:	FW: Thermal sanctuary areas on Eagle and Herman Creeks
Date:	Wednesday, March 11, 2020 8:56:12 AM

PC

Tucker Jones
971.673.6067

From: Jameshthrower <jameshthrower@aol.com>
Sent: Wednesday, March 11, 2020 8:48 AM
To: tucker.a.jones@state.or.us
Subject: Thermal sanctuary areas on Eagle and Herman Creeks

I have fished Eagle and Herman creeks for many years. There are few places on the Columbia where people without boats can fish with some level of success and these are among the few.
In my experience there is little mortality of wild steelhead in these fisheries from sports fishing. Barbless hooks are used and unclipped fish are released with care. I am certain that the single biggest cause of mortality for steelhead is the Native American gillnetters.

Before you implement draconian measures that may have little or no effect you have a responsibility to study this issue, do scientific research and make decisions based on facts, not some hunch or opinion. As sportsmen we expect you to make decisions based on science.

I would also like to note that during the past few years there has been little fishing in these areas. First there was the Eagle Creek fire and both were closed to access during that season.
In the past two years there have been severe restrictions on fishing in the Columbia and consequently in these two creeks which are under Columbia River regulation. Most of the time there has been an outright ban on sport fishing for steelhead.

In closing, I encourage you to make decisions based on science and perhaps working to make a sanctuary from gillnets and their indiscriminate harvest.

James H. Thrower, Ph.D.
Sisters, Oregon

From: Tucker Jones
To: John Seabourne
Subject: FW: "Thermal Angling Sanctuaries"
Date: Wednesday, March 11, 2020 8:48:10 AM

PC

Tucker Jones
971.673.6067

From: Jim Kirk <fwgastrojim@gmail.com>
Sent: Tuesday, March 10, 2020 9:07 PM
To: tucker.a.jones@state.or.us
Subject: "Thermal Angling Sanctuaries"

I have no problem with the concept, but I think you need a different name. What is "thermal angling," and why do thermal anglers need "sanctuaries?" Those were the first questions I had when I started reading the press release. How about something like "salmonid thermal sanctuaries?"

From: Tucker Jones
To: John Seabourne
Subject: FW: Thermal sanctuary for Summers
Date: Wednesday, March 11, 2020 8:48:44 AM

PC

Tucker Jones
971.673.6067

From: Mitch Webb <kevinsdriftboat@gmail.com>
Sent: Wednesday, March 11, 2020 4:51 AM
To: tucker.a.jones@state.or.us
Subject: Thermal sanctuary for Summers

I am for it. Please send info, so I can share. Unlike the FB link in your article which took me to a turkey page? I can't share this until it's fixed. thank you.

NORTHWEST ENVIRONMENTAL ADVOCATES

March 12, 2020

Tucker Jones, John North
Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive, S.E.
Salem, OR 97302

Via email only: tucker.a.jones@state.or.us;
john.a.north@state.or.us

Re: **Rulemaking to Create Thermal Angling Sanctuaries**

Dear Messrs. Jones and North:

Northwest Environmental Advocates understands that the Oregon Department of Fish and Wildlife (ODFW) has scheduled a public meeting on March 25, 2020 "to discuss the potential establishment of Thermal Angling Sanctuaries in select Oregon tributaries upstream of Bonneville Dam." By this letter, we urge you to swiftly adopt rules to protect wild salmonid populations that are using thermal refugia in the Columbia River from predation by anglers. This action is long overdue as the ODFW is the only agency that can close these areas to fishing.

In addition to the scientific necessity for adopting such rules, which is set out in the documents attached, we would like to emphasize the importance of doing so in another context, namely the failure of the three water protection agencies to do their jobs to maintain the lowest possible temperatures in Oregon and Washington's waters. These agencies are, as you know, the U.S. Environmental Protection Agency (EPA), the Oregon Department of Environmental Quality (DEQ), and the Washington Department of Ecology. Recently, EPA submitted a draft plan to National Marine Fisheries Service (NMFS) —characterized by NMFS as "[a]t most . . . a conceptual plan"—to purportedly protect and restore thermal refugia in the Columbia River. *See* EPA, *Columbia River Cold Water Refuges Plan, DRAFT* (Oct. 2019). This plan was intended to meet the mandatory reasonable and prudent alternatives ("RPA") established by NMFS to address the jeopardy caused by EPA's approval of the Oregon DEQ's 20º C temperature criterion—along with associated narrative criteria that pertain, in part, to thermal refugia—for the Columbia River. The RPA requires EPA to issue a plan to "adequately interpret the narrative criterion to allow for implementation of the criterion through DEQ's Clean Water Act authorities [including to] identify and prioritize potential actions by DEQ and/or other parties to protect, restore or enhance [the cold water refuges]." NMFS, *Endangered Species Act Biological Opinion on the Environmental Protection Agency's Proposed Approval of Certain Oregon Water Quality Standards Including Temperature and Intergravel Dissolved Oxygen* (Nov. 3,

2015) at 270–271.

As you can see from the attached comments of Northwest Environmental Advocates, EPA's draft plan does not begin to meet the requirements of the RPA. *See* Letter from Nina Bell, NWEA, to John Palmer, EPA Region 10, Re: *Columbia River Cold Water Refuges Plan, DRAFT (Oct. 2019)* (Nov. 19, 2019). For example, EPA's plan urges Oregon to use its existing logging practices, practices that both EPA and the National Oceanic and Atmospheric Administration (NOAA) recently concluded are not adequate to meet Oregon's water quality standards. *See id*. at 18-19; *see also* EPA/ NOAA, *NOAA/EPA Finding that Oregon has Not Submitted a Fully Approvable Coastal Nonpoint Program* 4 (Jan. 30, 2015). In fact, there is literally nothing in EPA's draft plan that would change what wild fish will experience in their habitat in the future.

Without a plan that sets out the concrete steps that should, must, or will be taken to actually protect or improve water quality in areas offering thermal refuge to migrating salmonids in the Columbia River, it is a foregone conclusion that no steps will be taken by any agency. In that context, it is particularly incumbent on ODFW to use its authority to protect the wild fish that are dependent upon these areas for relief from habitat conditions that no longer support them. The only thing that ODFW can do is to protect them from being fished while they are seeking refuge from the too-warm waters of the Columbia River.

The science has been done but there has been no corresponding regulatory action to respond to that science. Protecting wild fish is your job; we urge you to do it.

Sincerely,

Nina Bell
Executive Director

Attachments:

EPA, *Columbia River Cold Water Refuges Plan, DRAFT* (Oct. 2019)

NMFS, *Endangered Species Act Biological Opinion on the Environmental Protection Agency's Proposed Approval of Certain Oregon Water Quality Standards Including Temperature and Intergravel Dissolved Oxygen* (Nov. 3, 2015)

Letter from Nina Bell, NWEA, to John Palmer, EPA Region 10, Re: *Columbia River Cold Water Refuges Plan, DRAFT (Oct. 2019)* (Nov. 19, 2019)

From: Tucker Jones
To: John Seabourne
Cc: John North; Chris Kern
Subject: FW: Thermal Angling Sanctuaries
Date: Monday, March 16, 2020 1:38:55 PM

FYI

Tucker Jones
971.673.6067

From: Y Lind <yancy.lind@gmail.com>
Sent: Friday, March 13, 2020 4:33 PM
To: tucker.a.jones@state.or.us
Subject: Thermal Angling Sanctuaries

Yes, absolutely create Thermal Angling Sanctuaries and close them to ALL fishing. The larger and longer the better. Our wild anadromous fish need all the help they can get right now.

Yancy Lind
PO Box 633
Bend OR 97709

From: Tucker Jones
To: Chris Kern; Ed Bowles; John Seabourne
Subject: FW: Thermal Angling Sanctuaries_1
Date: Monday, March 23, 2020 8:11:48 AM

Fyi, PC.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: Holly Akenson <hollyakenson@gmail.com>
Date: 3/22/20 23:32 (GMT-08:00)
To: Tucker Jones <Tucker.A.Jones@state.or.us>, John North <john.a.north@state.or.us>, Mary Wahl <maryodfw@gmail.com>
Subject: Thermal Angling Sanctuaries

For Oregon Fish & Wildlife Commission

Hi Tucker and John,
As you know, I am in strong support of ODFW creating and maintaining Thermal Angling Sanctuaries in the Columbia River, particularly for protection of natural origin summer steelhead. Very warm Columbia River temperatures in recent years have created extra stress and higher mortality rates on adult steelhead. Steelhead are evolutionarily adapted to seek out cold water refugia to minimize thermal stress and mortality. Steelhead use thermal refugia in the Columbia River and have been documented (University of Idaho research) residing at these sites for week to months until the main river temperature moderates. Unfortunately, fishermen target these same areas because steelhead and salmon congregate at these cold water sites when the river is too warm. Even if fisheries are catch-and-release, steelhead may be hooked multiple times, resulting in immediate and latent higher mortality rates for steelhead that seek out cold water (U of Idaho research). This evolutionary adaptation, essential to the future of steelhead survival with increasing challenges from climate change, will be genetically diluted by differential mortality rates due to fishing on these thermal refugia. The locations of thermal refugia within the Columbia River are known. The Deschutes River, Herman Creek, and Eagle Creek are good first efforts for ODFW to establish Thermal Angling Sanctuaries in the Columbia River for native fish conservation and limiting excess mortality on ESA listed species. Please send recommended rule changes to the Commission to improve the conservation efforts and protections for natural origin summer steelhead through adopting Thermal Angling Sanctuaries in the Columbia River.

I would be happy to discuss Thermal Sanctuaries with Commissioners who have an interest, since this is a topic I have become well informed about.

Holly Akenson
Past Oregon Fish & Wildlife Commissioner

March 24th, 2020

Tucker Jones

John North

17330 S.E. Evelyn St.

Clackamas, OR 97015

Re: Comments on the establishment of Angling Closures at several mid-Columbia tributary mouths

Tucker/John,

I am writing today on behalf of myself as a concerned citizen regarding the proposed of angling closures in the cold-water refuges (CWR) of the Columbia River. While utilization of thermal sanctuaries for upstream migrating salmonids in the Columbia River is well documented, the conservation benefit of this proposed management action is very uncertain.

A key rationale for the proposal to prohibit angling in "cold water refugia" (CWR) is that high water temperatures cause increased stress for salmonids, becoming more acute as temperature increases, and handling under such conditions can lead to increased physiological stress and thus potentially elevated mortality rates. As a salmon biologist who has participated in all manner of studies and fish handling over approximately 20 years, I am well aware of the phenomenon and do not deny the risk of handling cold-water fish at ever increasing temperatures. However, given this principle, it seems counter intuitive to the stated goals of reducing handling mortality rates to prohibit angling in select cooler water areas, while continuing to allow angling in warmer water areas. If the concern is truly handling fish above a temperature threshold shouldn't the warmest waters be closed first? This may in fact lead to an entirely counterproductive scenario where if anglers are prompted to instead focus on the warmer waters, such as the mainstem Columbia River, where incidental mortality rates would be expected to be higher.

As proof of the angling impacts on steelhead using CWR a migration study conducted by the University of Idaho (UI) using radio telemetry is often cited. The study reported that 8% fewer steelhead (hatchery and wild combined) that used CWR reached their spawning tributaries than those that did not stop in CWR. For wild fish, which are not subject to sport harvest, a 4.5% decrease in survival was attributed to use of cold-water refuge. A hypothesized mechanism for this survival decrease was incidental mortality from catch and release angling, as well as tribal harvest in the zone 6 fisheries. While there can be concentrated fish effort in CWR areas, and no doubt there must certainly be instances

where a wild fish succumbs after being caught and released in a CWR, as is the case in ANY fishery, attributing all of this mortality to increased catch and release events in CWR would be an inappropriately simplified assumption for a greatly nuanced situation. Fact is that there are many reasons a fish might die on its spawning migration other than being handled by sport anglers. Countless studies of anadromous salmonids suggest that faster migrating fish tend to survive better. It may be less exposure to predators, or disease organisms, or any number of hazards. Tribal fishers also take their share, and one would expect that the longer a steelhead lingers in the zone 6 reach the greater its chance of being caught in tribal fisheries, including a fishery by the Yakima Nation that occurs entirely within Drano Lake, which is the largest CWR in the Columbia Gorge by volume, and was shown by the UI telemetry research to be the most highly utilized CWR by summer steelhead. But these harvests, even if facilitated by steelhead using CWR, are well within the rights of the treaty tribes and their carefully managed fisheries. In any case, *even if* the entire differential survival rate could be attributed to sport fisheries in CWR, this 4.5% rate is far below the 10% incidental catch and release mortality rate typically used for managing wild fish handling impacts in Columbia River mixed stock fisheries.

Anglers should not be vilified for fishing where the fish are to be found, and in the best available water temperatures for them to survive the experience. I accept that in years when fish runs are at low abundance restrictions on angling may need to be imposed to support escapement goals. However, it should be done logically and equitably, and it should be based on empirical data and established facts, not on loose assumptions. I for one would be quite interested in seeing a survival study in the Columbia basin comparing the post release survival of steelhead (and other salmonids) of those caught in the warm water of the Columbia River itself, and those in the various CWR areas. Something of that sort could provide key data to make informed, and defensible, decisions for establishing fishing regulations in both CWR and adjacent areas. As it is the population level benefits of closures of only CWR are tenuous at best. But it would most certainly serve to alienate, or dare I say enrage, a substantial portion of the angling public. This in turn would lead to a further reduction in license sales and added political heat from anglers, which reduces management resources and further erodes trust in the management agencies. Not to mention the negative economic impacts to local communities in the Columbia Gorge that benefit from these fisheries.

Thank you for the opportunity to comment,

Ryan Gerstenberger

Hood River, OR 97031

From: Tucker Jones
To: Chris Kern; John Seabourne
Subject: FW: Comments on proposed cold water angling closures
Date: Tuesday, March 24, 2020 1:56:37 PM
Attachments: CWR angling sanctuaries comments Ryan Gerstenberger.docx

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PC

Tucker Jones
971-269-9796

-----Original Message-----
From: Ryan Gerstenberger <ryan.gerstenberger@gmail.com>
Sent: Tuesday, March 24, 2020 1:52 PM
To: tucker.a.jones@state.or.us; John.a.north@state.or.us
Subject: Comments on proposed cold water angling closures

Tucker and John,

I wish to submit comments on a proposal that has come to my attention to institute summer steelhead fishery closures at various locations in the Columbia River Gorge. I was planning to attend a meeting for public comment that was scheduled to take place in Hood River Wednesday March 25th. I am presuming that based on restrictions to gatherings in response to the Coronavirus pandemic that is not occurring as scheduled.
Please keep me informed for any rescheduling of that meeting. Given the gravity of the impacts to the community I do hope the public will still be allowed to participate in this process, even if it requires deferring advancing the the topic to the fish and wildlife commission until such time as due process can be conducted.

Sincerely,

Ryan Gerstenberger

From:	Tucker Jones
To:	Chris Kern; John Seabourne
Subject:	FW: Comments on ODFW"s proposed angling sanctuary at cold water refuge in the mid-Columbia
Date:	Tuesday, March 24, 2020 9:26:01 AM
Attachments:	angling_sanctuaries.docx

PC

Tucker Jones
971-269-9796

From: garth wyatt <wyattgarth@hotmail.com>
Sent: Tuesday, March 24, 2020 9:00 AM
To: tucker.a.jones@state.or.us; john.a.north@state.or.us
Subject: Comments on ODFW's proposed angling sanctuary at cold water refuge in the mid-Columbia

Tucker/John

Attached are my comments related to the proposal to create angling sanctuaries at CWR in the mid-Columbia. Thank you for the opportunity to comment. Could you please forward the virtual meeting login information?

Garth

March 16th, 2020

Tucker Jones

John North

17330 S.E. Evelyn St.

Clackamas, OR 97015

Re: Comments on the establishment of thermal Angling Sanctuaries at several mid-Columbia tributary mouths

Tucker/John,

I am writing today on behalf of myself as a concerned citizen regarding the establishment of thermal angling sanctuaries in the cold-water refuges (CWR) of the Columbia River. While utilization of thermal sanctuaries for upstream migrating salmonids in the Columbia River is well documented, the conservation benefit of this proposed management action is uncertain.

Review of assumed conservation benefit

It is assumed that the elimination of recreational angling in the identified CWR will result in a conservation benefit for summer steelhead. This assumption relies on two studies that found that the migration success to spawning tributaries for those steelhead (hatchery and wild) using the CWR was about 8% less than steelhead that did not use the CWR (Keefer, 2009). The asserted mechanism for what was considered a counter intuitive result, extensive sport fisheries may have an impact. However, incidental fishing mortality is not the only possible source of mortality for migrating steelhead. It is also plausible, perhaps likely, that the zone 6 commercial fishery (including the Tribal fishery in Drano Lake) could explain Keefer's (2009) apparent mortality observations. In another paper, Keefer (2017) noted steelhead utilizing the CWR held for an extended period, up to 1 month. The difference in the temporal distribution of passage over The Dalles Dam between those fish that used the CWR, and those that did not, may be confounding the assertion that catch and release mortality was solely responsible for the differential in migration survival. Indeed, median passage times through the combined Bonneville to John Day reach were five times longer for fish recorded using cool-water tributaries (32 days, n = 1662) than for fish not recorded in tributaries (6 days, n = 1046)(Keefer, 2009). The differential in successful migration between fish that utilized the CWR and those that didn't could be explained increased the likelihood CWR fish are encountered (either directly or incidentally) by the zone 6 fishery (opened on September 9th in 2019), or any number of other mortality sources, relative to those fish that did not use the CWR and escaped prior to the zone 6 fishery.

This early-season harvest hypothesis is supported by the escapement summaries for unknown-origin steelhead reported in Keefer et al. (2005), which showed that Hydrosystem survival was lowest for steelhead that passed Bonneville Dam in late May and June (Keefer, 2009). Presumably due to incidental harvest in the spring ceremonial/subsistence/commercial Zone 6 fishery. The magnitude of impact on summer steelhead from the zone 6 fishery can be inferred from IDFG that noted that ESA listed wild Snake River steelhead comprised 23% of the unclipped summer steelhead caught in the Zone 6 Tribal fishery (Byrne et. al 2018). From 2013-2015 Tribal fishers annual harvest averaged 11,910 clipped steelhead and 7,793 unclipped steelhead and over half (56%) of the early fall period steelhead harvest occurred from August 31 to September 25 when CWR fish would have likely resumed their upstream migration (Byrne et. al 2018). Further, more wild (10.8%) than hatchery fish (8.3%) were reported harvested in main stem fisheries, more hatchery (9.7%) than wild fish (4.7%) were last recorded in refugia sites, and more hatchery (75.7%) than wild fish (71.5%) returned to Lower Granite Dam or Snake River tributaries (Keefer, 2009). For example, of all known-origin fish that passed The Dalles Dam, those that used refugia downstream in Bonneville reservoir homed and were harvested at similar rates as fish that did not use Bonneville refugia (Keefer, 2009). Which supports the notion that mainstem harvest (zone 6) is a bigger limiting factor determining migration success for wild summer steelhead than recreational catch and release mortality.

Finally, the 4.5% reduction in the migration success of wild steelhead attributed to post release mortality is interesting to consider in context of regional fishery impact rates and the assumed conservation benefit associated with the proposed angling sanctuary. Generally lower Columbia fisheries encountering ESA listed fish utilize a 10% post-release mortality rate to calculate total fishery impact rates. The 4.5% mortality rate noted by Keefer (2009) is 65% lower than assumed in the lower Columbia, indicating that the intensive CWR summer steelhead fisheries are operating in an environment conducive to catch and release. Which is logical when considering the protracted residence times (sufficient time to ameliorate previous physiological stressors) in water that is between 8 and 16 degrees Celsius (migration history steelhead 24-73; EPA, 2019). The impact rate of the fishery is appreciably less than the 27% lost to other impacts (73.0% migration success; Keefer, 2009). Indicating fisheries conducted in the CWR may experience higher post-release survival relative to other mainstem Columbia fisheries. Calling into question the assumed conservation benefit at the population viability level created from an angling sanctuary in the CWR.

In addition to direct harvest, anecdotal observations of abrasions caused by gill-nets on steelhead are common place as far upstream as the Clearwater River in Idaho. Dermal abrasions can increase the fish's susceptibility to disease and likely differentially effect migration success relative to those that escape prior to the Zone 6 fishery.

The aforementioned data illustrates the need to determine if the assumptions made to justify the angling sanctuary are in fact true to make an informed decision to achieve the desired conservation benefit. The EPA (2019) clearly stated that more sophisticated

studies would likely be needed to answer the question quantitatively (presumably of benefit) resulting from the creation of angling sanctuaries.

Precedent

A summary of temperature effects to migrating adult salmon and steelhead in the lower Columbia River was documented by the Environmental Protection Agency (2003). This table indicated that temperatures less than 18 degree Celsius were noted to have minimal effects to salmon and steelhead. While steelhead experience higher water temperature in the mainstem Columbia prior to entering a CWR like Drano Lake, the ambient temperatures in the lake during occupancy were noted to be between ~ 8.5-16 degrees Celsius (Keefer et. al. 2017). Curtailment of the CWR fishery based on the assumption of high catch and release mortality in the aforementioned water temperatures could set a conservation precedent to close almost every fishery with a listed species in the state of Oregon after close to or shortly thereafter May 1st. Drastically limiting angler opportunity for summer steelhead, spring/summer/fall Chinook, and Coho, under the auspices of a conservation benefit. Fisheries that could be closed under similar rationale include, but are not limited to (dates are approximate depending on water year):

1. Lower Columbia (including Buoy 10) upstream to McNary Dam mixed stock fall Chinook from August 1st- October 1st.
2. Lower Columbia mixed stock coho fishery from the Buoy 10 upstream to McNary Dam from August 1st-October 1st.
3. Upper Columbia River fall Chinook/steelhead fishery from McNary Dam upstream to Chief Joseph Dam from July 1st -October 31st.
4. Willamette River spring Chinook from approximately May 1st through the end of the run
5. The lower Deschutes River summer steelhead/fall Chinook upstream of the CWR boundary to Mack's Canyon (RM 26) from July 1st-October 15th.
6. John Day River from the mouth upstream to Service Creek May 1st-November 15th.
7. Klickitat River from the mouth upstream to the town of Klickitat May 1st-October 15th.
8. Yakima River spring Chinook/fall Chinook from the confluence with the Columbia upstream to Prosser Dam May 1st-October 31st.
9. Snake River spring/summer/fall Chinook/summer steelhead from the confluence with the Columbia upstream to Hells Canyon Dam May 1st-October 31st.

While this list of potential closures is not comprehensive the geographic area and species impacted by utilizing water temperature standards to manage impacts is large enough in scope to effectively close the majority of summer and fall salmon/steelhead sport fishing in the Columbia Basin.

Lack of empirical data that suggests the elimination of recreational angling will achieve the desired conservation benefit

Given the unvalidated assumptions and lack of quantifiable benefit presented (at this point) with the proposal to create angling sanctuaries at CWR in the mid-Columbia, we are

left with obtaining examples where this type of management action has succeeded in increasing population viability. I would ask that examples of where creating an angling sanctuary has been quantified to provide a benefit at the population viability level, be summarized and included in the final proposal to provide more context to this critical decision.

Opportunity loss if the proposal is adopted

Anglers - Currently the majority of recreational summer steelhead harvest (likely greater than 95%) in the mid-Columbia (Bonneville-McNary Dam) occurs in or near the confluence with CWR on both the Washington and Oregon shores. Absent the opportunity to angle in a CWR, mid-Columbia anglers will lose the fisheries that sustain their opportunity and WDFW/ODFW will likely lose some level of stakeholder support for fish recovery in the mid-Columbia area. Many older anglers rely on fisheries where access is relatively easy to maintain their connection to the resource. These anglers have physical limitations that prevent them from utilizing the remaining areas open to angling that require floating or negotiating the hazards of wading/hiking. Youth anglers also utilize CWR to learn to fish as CWR are in relative proximity to local gorge communities while catch per unit effort is high enough to keep kids engaged. Angling in CWR represent a valuable recruitment tool to add resource stakeholders that may otherwise not get engaged. Further, regulation proposals such as this can put one angling group (boat fishermen) at odds with another (tributary fly-fishermen) as there would be inconsistent application of conservation thresholds applied by geographic region. On principal, how is the fisherman at river mile 4 on the Deschutes River catching Snake River bound summer steelhead in 19-degree water allowed to fish, and the boat angler fishing in 15-degree CWR water not allowed to fish? Fractioning user groups divides what should be a unified voice to conserve our fisheries.

The extremely popular "plume fisheries" for fall Chinook will likely be impacted. Most mid-Columbia fall Chinook fisheries will essentially be closed as a result of the angling sanctuaries or geographic area reduced to facilitate the angling sanctuary to protect summer steelhead. Resulting in greatly reduced opportunities to harvest fall Chinook and a decline in the angling experience (crowding in reduced available area to fish).

Management - Management will also lose a valuable tool to manage hatchery summer steelhead (harvest opportunity). In 2015 Bryne et. al. (2018) noted that more summer steelhead were retained in the mid-Columbia (n = 8,951) than lower Columbia (n = 8,772) with the majority (likely over 95%) of that harvest taking place in the CWR of the mid-Columbia. The curtailment of angling in these key interception areas for hatchery steelhead will likely increase the percentage of hatchery origin spawners and reduce the percentage of natural origin spawners in Oregon tributaries such as the Grande Ronde, Imnaha, Umatilla, John Day, and Deschutes River. Keefer (2009) noted that stocks with the longest passage times and highest rates of refugia use were Oregon tributary bound fish in the Grande Ronde, Imnaha, John Day, and Umatilla. Losing this management tool could result in further hatchery production decreases to comply with HGMP benchmarks in the aforementioned basins compounding the reduction in summer steelhead harvest opportunities in future years.

Local Economy - The communities of Bingen, White Salmon, Home Valley, Stevenson, Cascade Locks, The Dalles, Biggs Junction, and others, all benefit economically from CWR fisheries. Anglers purchase food, tackle, gas, and lodging. Should the angling sanctuary proposal be adopted local businesses will lose valuable revenue

ODFW Mission Statement:

"To protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations."

Without angling in the CWR there is no summer or early fall opportunity for the present generation of Oregonians. To assert that a legitimate opportunity to hook a summer steelhead still exists outside of the CWR in the mid-Columbia for the aforementioned time period is a fallacy.

Unfortunately, at the time of writing these comments I have yet to see the specific numerical thresholds for closing the CWR to angling. I am left assuming that a blanket CWR closure at a temperature threshold will occur at all escapement levels. Based on my interpretation of the data used to make this recommendation I assert that the proposed angling sanctuaries may not provide a conservation benefit at the population viability level while unnecessarily taking away opportunity. If eliminating summer/fall harvest (direct or incidental) at the confluence of tributaries with the Columbia River is managements goal than it should be based on escapement thresholds, run forecasts at Bonneville Dam, and a quantifiable benefit to the population viability of summer steelhead.

<u>Potential Alternative</u>

Use existing data to re-evaluate migration success of steelhead that utilize the CWR relative to those that don't to better define the conservation benefit of angling sanctuaries prior to creating a permanent rule. In recent years angling has been curtailed yet escapement and conservation goals may not have been met. Establishing escapement thresholds and quantifiable benefits is paramount to any proposed conservation plan.

To that end perhaps a better strategy to achieve a quantifiable conservation benefit would be to increase the resolution of in-season harvest management at CWR in the mid-Columbia. Managing the fisheries impact in real time (in-season), as is done for ESA listed spring Chinook management in the lower Columbia, may be a better option instead of blanket closures based on pre-season forecasts and in-river temperatures. Given the known number of steelhead over Bonneville Dam and delayed passage timing over The Dalles Dam, along with a robust creel program in OR/WA, could provide the necessary resolution to enact in-season closures based on a numerical ESA impact by CWR. Increasing agency presence at CWR would also provide a deterrent to illegal harvest. While acknowledging the limited resources available to our resource managers, a fishery of this magnitude and importance merits the investment and should not be closed based on solely on an *assumption* of conservation benefit. Rather the benefit must be quantified and/or modeled at a population viability level (as was done to justify the removal of marine mammals at Willamette Falls) prior to the adoption of any plan to ensure that conservation goals are met, and opportunity is not unnecessarily constrained. The goal of any proposal

should be of facilitating a fishery in the CWR, while meeting a stated ESA impact on summer steelhead for mid-Columbia.

Thank you for the opportunity to comment,

Garth Wyatt

Oregon City, Oregon 97045

Sources

Byrne, A., Hymer, J., Ellis, S., Dick, R., Keller, K., Steele, C., Begay, M., Miller, T. 2018. A GENETIC ANALYSIS OF THE SUMMER STEELHEAD STOCK COMPOSITION IN THE COLUMBIA RIVER AND THE SNAKE RIVER TRIBAL AND SPORT FISHERIES. Prepared for the Idaho Department of Fish and Game. IDFG Report Number 18-106

Environmental Protection Agency, Columbia River Cold Water Refuges DRAFT Plan. October 2019.

Keefer, M. L., C. A. Peery, and B. High. 2009. Behavioral thermoregulation and associated mortality trade-offs in migrating adult steelhead (Oncorhynchus mykiss): variability among sympatric populations. Canadian Journal of Fisheries and Aquatic Sciences 66:1734-1747.

Keefer, M. L., and C. C. Caudill. 2016. Estimating thermal exposure of adult summer steelhead and fall Chinook salmon migrating in a warm impounded river. Ecology of Freshwater Fish 25:499-611.

Keefer, M. L., and C. C. Caudill. 2017. ASSEMBLY AND ANALYSIS OF RADIOTELEMETRY AND TEMPERATURE LOGGER DATA FROM ADULT CHINOOK SALMON AND STEELHEAD MIGRATING THROUGH THE COLUMBIA RIVER BASIN. Prepared for Tetratech and the U.S. Environmental Protection Agency. Technical Report 2017-1

From:	Tucker Jones
To:	Chris Kern
Cc:	John Seabourne
Subject:	FW: Columbia River
Date:	Wednesday, March 25, 2020 10:10:07 AM

PC

Tucker Jones
971-269-9796

From: brad staples <bradstaplesfishing@gmail.com>
Sent: Wednesday, March 25, 2020 10:04 AM
To: Tucker Jones <Tucker.A.Jones@state.or.us>; john.a.north@state.or.us
Subject: CWR: Columbia River

Hi Tucker and John, please base the proposed CWR sport fishing restrictions on facts, not emotions from a couple of special interest groups or people. If you don't have the actual facts of catch and release mortality in these areas then how can you enforce a potential closure?

If there are not enough fish in the system to satisfy the escapement goals, then a closure is needed. If we see fish dying like there were during the drought conditions of 2015, then close or restrict fishing.

Thank you for your consideration,

Brad Staples
(503) 250-0558

From: Tucker Jones
To: Chris Kern; John Seabourne
Cc: John North
Subject: FW: Live Streaming Broadcast - March 25, 2020
Date: Monday, March 30, 2020 11:04:49 AM

PC

Tucker Jones
971-269-9796

From: Dub Burnum <ball4@web-ster.com>
Sent: Wednesday, March 25, 2020 9:38 PM
To: tucker.a.jones@state.or.us
Subject: Live Streaming Broadcast - March 25, 2020

Hello Tucker,

First and foremost, I wish for you and yours good health through our current pandemic.

I was looking forward to attending your scheduled workshop for input on "Potential Thermal Sanctuaries" at several mid-Columbia tributary mouths, which was previously scheduled for Hood River. Although I live in Canby I was in attendance at your meeting last year in The Dalles.

I want to commend you and others for this afternoon's live streaming presentation. It was thoughtfully structured with good and current science data to support it.

I am a retired public servant who spent my entire career working in water environment related issues. I can greatly appreciate the complex position you and ODFW staff have in navigating through the many concerns related to fisheries management.

Also, I would be grateful if I might be able to chat with you by phone regarding this subject in the near future. I think my information would be useful. Let me know when you have time to talk.

Sincerely,

Dub Burnum
503-487-7045

From: Jack Smith
To: odfw.commission@state.or.us
Subject: Questions
Date: Wednesday, March 25, 2020 6:15:01 PM

Isn't it better to catch and release in cooler water than warmer water outside of these areas?
Sent from my iPhone

From: Tucker Jones
To: Chris Kern
Cc: John Seabourne
Subject: FW: CWR closures
Date: Wednesday, March 25, 2020 1:21:54 PM

FYI

Tucker Jones
971.673.6067

From: Nicholas Grzych <ntgrzych@gmail.com>
Sent: Wednesday, March 25, 2020 12:56 PM
To: Tucker.A.Jones@state.or.us
Subject: CWR closures

I am writing this letter as a concerned citizen in response to the proposed blanket closure of CWR of the Columbia River basin. I have concerns about managing agencies taking away opportunities based on very loose assumptions and no data to back up their claims this action will improve escapement numbers.

I believe any angler or conservationist who truly respects the resource is always going to do the right thing in their mind to protect it for future generations. However, these decisions, when made by a governing agency, must be made with valid scientific modeling, at very least, to predict the results of a given management strategy. In this case, there is none.

Science has widely agreed salmonids have thermal temperature thresholds that contribute to their stress levels and ability to recover after handling. Why then, would the closure of CWRs occur when the mainstem Columbia River is left open to angling? There is a percentage of salmonids who do not recover after being handled, but this percentage has been shown to be lower in CWRs than in other areas. If you are going to handle a salmonid for release, it wold make more sense to do so in an area where they are less thermaly stressed. If it is necessary to close these CWRs due to escapement goals, the only responsible and reasonable thing to do, in my opinion, would be a basin wide closure including a zone 6 Tribal Fishery during the times where native harvest on summer run steelhead is highest. Data has shown Drano lake net harvest is a far more limiting factor than catch and release fishing for summer steelhead (Byrne et. al 2018)

There are many more reasons I and many others oppose this knee jerk reaction to close CWRs. I implore you to actively listen to and strongly consider the arguements of citizens, fisheries managers, and biologists from the area which oppose this proposal.

Thankyou for the opportunity to comment,

Nicholas Grzych
Hood River, OR, 97031

From: 5418060404@mms.uscc.net
To: odfw.commission@state.or.us
Date: Wednesday, March 25, 2020 6:03:29 PM
Attachments: ATT00001.txt

What rivers are being considered by WA state for steelhead TAS

From: Tucker Jones
To: Michelle Tate
Cc: John North; John Seabourne; Chris Kern
Subject: RE: Question: Columbia River Coldwater Refuge/Thermal Angling Sanctuary Update
Date: Thursday, March 26, 2020 1:47:07 PM
Attachments: image001.png

Thanks Michelle,

We're soliciting questions and input on this, so we'll add this to the list.

tj

Tucker Jones
971-269-9796

From: Michelle Tate
Sent: Thursday, March 26, 2020 1:35 PM
To: Tucker Jones <Tucker.a.Jones@coho2.dfw.state.or.us>
Subject: FW: Question: Columbia River Coldwater Refuge/Thermal Angling Sanctuary Update

Hi Tucker, do you want to answer this or should it go through the PRR process?

From: Levi Strayer <LStrayer@smokehouseproducts.com>
Sent: Thursday, March 26, 2020 11:05 AM
To: odfw.commission@state.or.us
Subject: Question: Columbia River Coldwater Refuge/Thermal Angling Sanctuary Update

In Tucker Jones' online video presentation (March 25, 2020) regarding the thermal angling sanctuaries, a slide was used showing the 'Returns of Wild A- and B-Index Summer Steelhead to Bonneville Dam, 2001-2019', can you provide the amount of hatchery fish placed in the Columbia and Snake River basins during these years? Can you also provide these numbers per each hatchery location? The hatchery programs are a large proponent of these fish numbers and it would be beneficial to understand this variable when discussing management of the entire steelhead program, part of which is the thermal angling sanctuaries being discussed.

Thank you,

Levi Strayer
General Manager, Smokehouse Products
O: 541.386.3811 | C: 503.290.8982
2070 Country Club Rd
Hood River, OR 97031
www.SmokehouseProducts.com

From: Tucker Jones
To: Chris Kern
Cc: John Seabourne; John North
Subject: FW: Support Cold Water Refugia
Date: Monday, March 30, 2020 8:20:11 AM

PC

Tucker Jones
971-269-9796

-----Original Message-----
From: Mike Taylor <mike@coalitionforthedeschutes.org>
Sent: Sunday, March 29, 2020 7:06 PM
To: tucker.a.jones@state.or.us; john.a.north@state.or.us
Subject: Support Cold Water Refugia

I want to express my personal support for the Columbia River cold water refugia for steelhead. If anything it should be expanded and better monitored.

Stay well,
Mike

Mike Taylor
Board President
Coalition for the Deschutes
mike@coalitionforthedeschutes.org

From:	Tucker Jones
To:	Chris Kern; John Seabourne
Subject:	FW: Cold Water Refugia
Date:	Monday, March 30, 2020 8:19:35 AM

PC

Tucker Jones
971-269-9796

From: Y Lind <yancy.lind@gmail.com>
Sent: Monday, March 30, 2020 7:06 AM
To: tucker.a.jones@state.or.us
Subject: Cold Water Refugia

Just FYI: https://coinformedangler.org/2020/03/29/more-on-cold-water-refugia-for-columbia-steelhead/

In summary: the refugia should be larger, enforcement from OSP is need, along with a way of measuring effectiveness.

Best wishes,

Yancy Lind

From:	Tucker Jones
To:	John Seabourne; Chris Kern
Cc:	John North
Subject:	FW: WSC Columbia River Cold Water Refuge Comments
Date:	Tuesday, March 31, 2020 4:45:35 PM
Attachments:	WSC Columbia Cold Water Refugia Comments.pdf

PC

Tucker Jones
971-269-9796

From: Rich Simms <rks57@yahoo.com>
Sent: Tuesday, March 31, 2020 2:46 PM
To: Tucker Jones <tucker.a.jones@state.or.us>; Tweit William M (DFW) <william.tweit@dfw.wa.gov>
Cc: WSC Board <wscbod@wildsteelheadcoalition.org>
Subject: WSC Columbia River Cold Water Refuge Comments

Dear ODFW and WDFW,

Please find the Wild Steelhead Coalition's letter regarding our comments supporting the cold water refuge areas proposed by ODFW.

Wild steelhead are at a tipping point in the Columbia basin and any effort to protect them should be considered. Thank you for taking our comments and providing leadership for this important habitat issue in the Columbia River when wild steelhead are most vulnerable.

We would like more information on WDFW's plans and work with you developing this plan on the Washington side of the Columbia.

Sincerely,

Wild Steelhead Coalition
Rich Simms
Founding Board Member

WILDSTEELHEAD
COALITION

March 31, 2020

Dear Tucker Jones and Bill Tweit,

On behalf of the Wild Steelhead Coalition's thousands of members, thank you for your extensive work on Columbia River coldwater refuges and for the opportunity to submit comments to support your work on this critical issue. As an organization dedicated to the protection of wild steelhead, we greatly appreciate your efforts to develop a plan to create thermal angling sanctuaries and protect our diminishing runs of wild steelhead. We truly believe this work is essential for protecting declining steelhead and salmon populations in one of Washington's most important salmonid strongholds.

While in the grand scheme of things recreational angling is only responsible for a fraction of salmonid decline, especially compared to issues such as the Lower Snake River Dams, angling impacts can exacerbate population decline when runs are struggling. This fact is especially true when rivers are warm in the hot summer months and fish tend to congregate in coldwater refuges created by tributaries, where they can be more easily targeted by recreational fishermen.

To that end, we applaud Oregon and Washington for taking swift action in the past and temporarily closing steelhead fisheries in these coldwater refuges when the runs are particularly vulnerable. Additionally, we applaud Oregon for taking the forward-thinking step of creating temporary rules in 2020 for Thermal Angling Sanctuaries to ensure wild summer steelhead have sufficient access to coldwater refuges. In that vein, we encourage the Washington Department of Fish and Wildlife to follow Oregon's lead and implement the Thermal Angling Sanctuary concept on the Washington side of the Columbia, as some of the most important coldwater refuges are in Washington's waters.

We recognize that the departments are still in the early stages of this work and intend to hold more public meetings once the COVID-19 pandemic subsides. We look forward to being engaged in this process as it unfolds and are happy to assist in any way we can.

Thank you again for your continued work to protect wild steelhead in the Columbia Basin and for your forward-thinking efforts to mitigate the impacts of climate change on our imperiled wild summer steelhead.

Sincerely,

RICHARD K. SIMMS

Rich Simms
Board of Directors
Wild Steelhead Coalition

From: Tucker Jones
To: John Seabourne
Cc: Chris Kern
Subject: FW: Thermal Sanctuaries for Fish
Date: Thursday, April 9, 2020 9:59:32 AM

PC

Tucker Jones
971.673.6067

-----Original Message-----
From: Michelle Tate <Michelle.L.Tate@coho2.dfw.state.or.us>
Sent: Thursday, April 9, 2020 9:58 AM
To: Tucker Jones <Tucker.a.Jones@coho2.dfw.state.or.us>
Subject: FW: Thermal Sanctuaries for Fish

-----Original Message-----
From: Dave Hendrie <lt.ridgehunter@gmail.com>
Sent: Wednesday, April 8, 2020 7:29 PM
To: odfw.commission@state.or.us
Subject: Thermal Sanctuaries for Fish

I strongly support the adoption of a Thermal Sanctuaries for our Fresh water salmon and steelhead in the Columbia and it's tributaries. Anything we can do to provide relief to our declining population of these fish should be explored. Targeting fish in these protected watersheds (Herman Creek, Deschutes River at the mouth) should not be allowed. Please consider this proposal.

Dave Hendrie

Sent from my iPad

From:	Michelle Tate
To:	Tucker Jones
Subject:	FW:
Date:	Thursday, April 9, 2020 10:33:59 AM

From: Cody Booth <ctbooth@gmail.com>
Sent: Wednesday, April 8, 2020 3:40 PM
To: odfw.commission@state.or.us
Subject:

Dear Oregon Fish and Wildlife Commissioners,

I support the Thermal Angling Sanctuaries (TAS) draft proposal that ODFW has submitted for your approval. Columbia River Basin summer steelhead face numerous challenges on their upstream migration to their natal spawning grounds. Angling pressure in coldwater refuges is one obstacle that is both unsporting and unnecessarily harmful and should no longer be allowed to occur in our state.

The regulations proposed by staff are sensible, easy to understand, and uphold the agency's commitment to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

When these regulations are posed to the Commission for approval, I hope you'll join me and many other Oregonians in supporting Thermal Angling Sanctuaries on the Columbia River.

P.S. Scientific evidence has shown an accurate link between warm water temps and mortality rates for anadromous species. The Deschutes River and PGE's warm water release upstream at the Pelton dam has had many detrimental effects on aquatic biodiversity. Insect life histories have substantially changed and smallmouth bass are continuously found higher above the mouth of the Deschutes each year. Not only should we impose restrictions at the mouth, but also anytime the water temperatures of these cold water sanctuaries reaches 70 degrees and above if we are to help protect our native species.

Respectfully,

Cody Booth

--
Cody T Booth
CTBooth@gmail.com
(720) 352-4682

From:	Michelle Tate
To:	Tucker Jones
Subject:	FW: Thermal angling sanctuaries for Columbia River summer steelhead
Date:	Thursday, April 9, 2020 10:40:38 AM

From: Kenny <kenobione@gmail.com>
Sent: Wednesday, April 8, 2020 2:49 PM
To: odfw.commission@state.or.us
Subject: Thermal angling sanctuaries for Columbia River summer steelhead

Dear Oregon Fish and Wildlife Commissioners,

I support the Thermal Angling Sanctuaries (TAS) draft proposal that ODFW has submitted for your approval. Columbia River Basin summer steelhead face numerous challenges on their upstream migration to their natal spawning grounds. Angling pressure in coldwater refuges is one obstacle that is both unsporting and unnecessarily harmful and should no longer be allowed to occur in our state.

The regulations proposed by staff are sensible, easy to understand, and uphold the agency's commitment to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

When these regulations are posed to the Commission for approval, I hope you'll join me and many other Oregonians in supporting Thermal Angling Sanctuaries on the Columbia River.

Respectfully,

Kenny Woehr
60994 Geary Dr.
Bend, OR 97702
(503) 577-5180

From:	Tucker Jones
To:	John Seabourne
Cc:	Chris Kern
Subject:	FW: Thermal Angling Sanctuaries
Date:	Thursday, April 9, 2020 9:59:02 AM

PC…form letter…

Tucker Jones
971.673.6067

From: Michelle Tate <Michelle.L.Tate@coho2.dfw.state.or.us>
Sent: Thursday, April 9, 2020 9:58 AM
To: Tucker Jones <Tucker.a.Jones@coho2.dfw.state.or.us>
Subject: FW: Thermal Angling Sanctuaries

From: Matt Millette <expeditionsonthefly@gmail.com>
Sent: Wednesday, April 8, 2020 8:46 PM
To: odfw.commission@state.or.us
Subject: _\|/_ Potentially Risky URL in Email - Click Carefully _\|/_ Thermal Angling Sanctuaries

Dear Oregon Fish and Wildlife Commissioners,

I support the Thermal Angling Sanctuaries (TAS) draft proposal that ODFW has submitted for your approval. Columbia River Basin summer steelhead face numerous challenges on their upstream migration to their natal spawning grounds. Angling pressure in coldwater refuges is one obstacle that is both unsporting and unnecessarily harmful and should no longer be allowed to occur in our state.

The regulations proposed by staff are sensible, easy to understand, and uphold the agency's commitment to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

When these regulations are posed to the Commission for approval, I hope you'll join me and many other Oregonians in supporting Thermal Angling Sanctuaries on the Columbia River.

Respectfully,

Matt Millette
Principal
MILLETTE VENTURES
406-551-0503
www.millette.ventures

From:	Michelle Tate
To:	Tucker Jones
Subject:	FW: Support Thermal Angling Sanctuaries
Date:	Thursday, April 9, 2020 10:33:11 AM

From: Matt Richardson <richardson034@gmail.com>
Sent: Wednesday, April 8, 2020 4:02 PM
To: odfw.commission@state.or.us
Subject: Support Thermal Angling Sanctuaries

Dear Oregon Fish and Wildlife Commissioners,

In a changing warming climate we need to do more to protect our fisheries. We need to do this all up the West coast

I support the Thermal Angling Sanctuaries (TAS) draft proposal that ODFW has submitted for your approval. Columbia River Basin summer steelhead face numerous challenges on their upstream migration to their natal spawning grounds. Angling pressure in coldwater refuges is one obstacle that is both unsporting and unnecessarily harmful and should no longer be allowed to occur in our state.

The regulations proposed by staff are sensible, easy to understand, and uphold the agency's commitment to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

When these regulations are posed to the Commission for approval, I hope you'll join me and many other Oregonians in supporting Thermal Angling Sanctuaries on the Columbia River.

We have already experimented with closing rivers to all fishing on the Truckee river in California. Please extend similar protections with TAS.

Respectfully,

Matt Richardson
UCSB Biology 1995
1855 Green St.
SF CA 94123

From:	Michelle Tate
To:	Tucker Jones
Subject:	FW: Thermal Angling Sanctuaries
Date:	Thursday, April 9, 2020 10:11:16 AM

From: Travis Vance <tvance@squarespace.com>
Sent: Wednesday, April 8, 2020 4:50 PM
To: odfw.commission@state.or.us
Subject: Thermal Angling Sanctuaries

Dear Oregon Fish and Wildlife Commissioners,

I support the Thermal Angling Sanctuaries (TAS) draft proposal that ODFW has submitted for your approval. Columbia River Basin summer steelhead face numerous challenges on their upstream migration to their natal spawning grounds. Angling pressure in coldwater refuges is one obstacle that is both unsporting and unnecessarily harmful and should no longer be allowed to occur in our state.

The regulations proposed by staff are sensible, easy to understand, and uphold the agency's commitment to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

When these regulations are posed to the Commission for approval, I hope you'll join me and many other Oregonians in supporting Thermal Angling Sanctuaries on the Columbia River.

Respectfully,

TRAVIS VANCE

From: Tucker Jones
To: Chris Kern
Cc: John North; Rod French; John Seabourne
Subject: FW: Deshutes River
Date: Friday, June 26, 2020 3:39:58 PM

PC

Tucker Jones
971.673.6067

From: Stephen Borg <salmonsteve@charter.net>
Sent: Friday, June 26, 2020 3:30 PM
To: 'tucker.a.jones@state.or.us' <tucker.a.jones@state.or.us>; 'charlesparker2@embarqmail.com' <charlesparker2@embarqmail.com>
Subject: Deshutes River

Dear Tucker, just checked and the USGS water temperature graph at Moody Rapids on the Deshutes River was at 72+ degrees peak temperature the last several days. With the mountains getting fresh snowfall in the last two weeks and this new runoff from the warm weather that is now in progress, this seems totally ridiculous. The main stem of the Columbia at The Dalles Dam yesterday the 25th was 62.5. You proposed a "Cold Water Sanctuary" at the mouth of the Deshutes along with whom ever else was involved. Should be the other way around. Columbia "Sanctuary". I understand manipulation at Pelton has something to do with it, but this shows that the temperature is "man" controlled with no real basis for regulating in the manner ODFW proposes. Just doesn't make sense as far as I can see it. Truly, Steve Borg

From: Michael Gauvin
To: Lisa Kingsley
Subject: FW: Crystal Creek Regulation Changes
Date: Monday, July 27, 2020 8:49:46 AM

PC for the Packet

From: Y Lind <yancy.lind@gmail.com>
Sent: Saturday, July 25, 2020 1:41 PM
To: Michael Gauvin <michael.w.gauvin@state.or.us>
Cc: Karl Wenner <kcwenner@gmail.com>; William Tinniswood <William.R.Tinniswood@state.or.us>
Subject: Crystal Creek Regulation Changes

Mike,

Regulation changes must be the last thing on your mind right now but we hope you can give our concerns serious consideration. As you know, fish in Klamath Lake and its tributaries are in serious decline. There are many culprits but the recent dropoff is most likely from prolonged drought / global warming. Of course, this makes cold water refugia of critical importance, a need that was highlighted when ODFW recently created cold water refugia areas on the Deschutes River for heat-stressed summer steelhead.

The headwater springs of Crystal Creek are one of the most important refugia and spawning areas on the western side of Klamath Lake. The Klamath Falls ODFW office believes it is the primary source of wild, native redbands in the Pelican Bay area and out into the lake. There are several springs at the headwaters emerging at 48 degrees. Redband trout start to accumulate in the springs as early as May when the Upper Klamath Lake begins to warm. Their numbers swell all summer and max out well before the season closes when spawning has already begun.

These concentrated fish are very vulnerable to fishing pressure, pressure that was previously quite low but has recently grown rapidly. Word of mouth, increased pressure in general, and land ownership changes have markedly increased fishing activity on the springs. Unfortunately, bait fishing, which was almost unknown in recent years, has returned with a vengeance, as evidenced by the amount of gear festooning the willows over the most productive spring. The two of us have been fishing this area for years and can readily see the changes and are quite alarmed by them.

We believe the regulations need to be immediately changed to single barbless hook, catch and release only from the Malone Springs boat ramp up to the headwaters. This would keep more than half of the creek under current regulations. We believe there is no time for delay or public discussion. In fact, public discussion would be detrimental as it would help spread the knowledge of this still somewhat unknown area.

Thank you for your prompt attention to this matter and best wishes,

Yancy Lind, ODFW R&E Board
Karl Wenner, Chair, Oregon Conservation & Recreation Fund Board and landowner on Crystal Creek

Lisa Kingsley

From: John von Schlegell <jevs@endeavourcapital.com>
Sent: Tuesday, July 28, 2020 4:05 PM
To: odfw.commission@state.or.us
Subject: August meeting—angling changes Southeast Zone

As a local landowner and outdoorsman, I heartily support these changes in Agency Lake, Wood River and Crystal, et al. It's one the states most special resources that needs to be saved. Thanks!

John von Schlegell
Ft. Klamath

John E. von Schlegell
Endeavour
503-223-2721

Lisa Kingsley

From: Kurt Thomas <kurt@agencyranch.com>
Sent: Tuesday, July 28, 2020 4:27 PM
To: odfw.commission@state.or.us
Subject: Proposed angling regulations for Southeast section

Dear ODFW,

My family and I own a property near Agency Lake at the confluence of Crooked Creek and OOD RIVER. We are very much in support of your proposed sport fishing regulation changes for our area which limit angling to flyfishing and artificial lures. Our population of Redband is decreasing at an alarming rate and we must eliminate all bait fishing from this area!

Thank you for your consideration.

Regards,

Kurt Thomas
661-619-3465

Lisa Kingsley

From: Jeff Evershed <jeffevershed@gmail.com>
Sent: Wednesday, July 29, 2020 12:43 PM
To: odfw.commission@state.or.us
Subject: Support of angling changes in Southwest District

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Forwarded to Fish

This e-mail is to endorse and support the proposed angling changes in the Southwest District. I am a frequent angler in the Kalamath Basin, and believe the proposed changes will enhance the angling in those areas - particularly Crystal Creek and Agency Lake.

Jeff Evershed
655 Cherry Circle
Lake Oswego, Oregon. 97034

Sent from my iPad

From:	Chris Santella
To:	odfw.commission@state.or.us
Subject:	Please adopt Thermal Angling Sanctuary regulations into permanent rule
Date:	Tuesday, August 4, 2020 1:23:46 PM

Greetings –

I'm writing today to encourage ODFW to adopt Thermal Angling Sanctuary spatial and temporal boundaries into permanent rule to help protect wild steelhead and salmon in the Columbia Basin. Such protections will benefit endangered wild stocks and will ultimately provide more angling opportunities for ethical anglers who are not focusing efforts on vulnerable fish seeking refuge from dangerous water temperatures.

Thanks for your consideration.

Sincerely yours,
Chris Santella

Chris Santella
Principal, Steelhead Communications
chris@steelhead-communications.com
503-280-0445

Just released: Fifty Places To Rock Climb Before You Die
Fifty Place to Surf Before You Die Featured in USA Today
Listen to The Last Steelhead: An Eco-Rock Opera
Watch the premiere of Harney County: A Country Opera (recorded live on June 6, 2017)

From: Sanders Nye
To: odfw.commission@state.or.us
Subject: Staff Recommendation on cold water refuge
Date: Tuesday, August 4, 2020 12:59:54 PM

Dear ODFW Commission,

Thanks for all the hard work you do!

I am writing you regarding the recommended cold water refuge areas on the Columbia. I urge you to permanently adopt these rules as we are clearly at a breaking point for these fish which define our region. With the current decline in salmon and steelhead and the projected temperature increase, this seems like a no brainer, even for those parties that regularly benefitted by fishing these areas as they will have more fish in the future if we can give these areas to the fish.

Thanks for your time and energy.

Sanders Nye
541.390.3000

Lisa Kingsley

From: David Moskowitz <theconservationangler@gmail.com>
Sent: Wednesday, August 5, 2020 8:08 AM
To: odfw.commission@state.or.us
Cc: Tucker Jones
Subject: Testimony in Support of Permanent Rules on Thermal Angling Sanctuaries
Attachments: TCA Memo on Cold Water Refugia - OR FW Commission 8-4-20.pdf

Dear Commissioners,
The Conservation Angler supports the ODFW Staff recommendation to adopt permanent rules in support of establishing and regulating angling within cold water refugia at critical sites along the Columbia River to protect ESA-listed wild steelhead.

The permanent rule proposal is specific, discreet, biologically meaningful, easily identifiable and enforceable.

It is a reasonable and meaningful response to a significant conservation concern in the Columbia River for ESA-listed summer steelhead returning to home waters in nationally renowned Oregon Rivers including the Deschutes, John Day and Grand Ronde.

We urge you to adopt the ODFW Staff Recommendation.

Sincerely,

David Moskowitz

David A. Moskowitz
Executive Director
971-235-8953 (Direct)
theconservationangler@gmail.com
www.theconservationangler.org

THE CONSERVATION ANGLER

Conservation means fair and honest dealings with the future, usually at some cost to the immediate present. It is simply morality, with little to offset the glamour and quick material rewards of the North American deity, ”Progress”. Roderick Haig-Brown

Columbia River Wild Steelhead Need A Permanent Thermal Sanctuary Protective Rule

To: Mary Wahl, Chair, Oregon Fish & Wildlife Commission, Fish & Wildlife Commissioners
Cc: Curt Melcher, ODFW Director, Tucker Jones, Ocean Salmon and Columbia Region Fisheries Manager
Fr: David Moskowitz, Executive Director, The Conservation Angler
Dt: August 2, 2020
Re: **The Conservation Angler Urges Rule Adoption of Thermal Angling Sanctuaries Along the Columbia River to Protect ESA-Listed Wild Steelhead as proposed by ODFW Staff**

First, The Conservation Angler (TCA) appreciates ODFW's work developing the Thermal Angling Sanctuaries (TAS) temporary rule concept. The environmental conditions in and along the Columbia River, together with the depressed adult returns of ESA-listed wild steelhead to the Columbia River and their natal spawning tributaries warrant permanent rule implementation of a strong conservative angling regime. **Thermal Angling Sanctuaries are a targeted and discreet strategic regulatory structure aimed to protect ESA-listed wild steelhead migrating in the Columbia River during their summer and fall migration.**

The permanent rules are based on years of groundbreaking scientific research, multiple public reviews since 2017 and they include ecologically based measures related to critical metrics, including:

- ✓ Appropriate longer-term averages of historic wild steelhead run sizes,
- ✓ Typical river temperature increases below Bonneville, The Dalles and John Day dams,
- ✓ Identifiable, understandable, and enforceable rules on location, size, and angling practices.

The widely acclaimed and ground-breaking cornerstone scientific research undertaken by the University of Idaho and Idaho Dept. of Fish & Game and highlighted by the US EPA in their October 2019 Draft provides the credible science-based underpinnings of the conservation principles being applied to these regulations.

Rationale to Adopt Permanent Rules Now:

1. Creates a strong public understanding of the circumstances, expectations, practices, and benefits.
2. The temporal application (July – September) addresses a critical period that provides contemporary protection for depressed ESA-listed wild steelhead populations that will require the protection offered by permanent rules as the water quality in the Columbia is not likely to improve in the near-term.
3. ESA-listed wild steelhead (particularly wild B-run fish) rely on thermal refugia, they are the most threatened salmonid and they face additional angling pressure within their natal rivers.
4. USEPA and NOAA found that angling encounters within thermal sanctuaries resulted in a loss of migratory benefit to those wild salmonids that used the thermal sanctuaries trying to reduce stress and escape hot water.
5. The regulations are a significant and important element in regional efforts to recover ESA-listed wild steelhead migrating to Washington, Idaho, and Oregon.

In conclusion, TCA is grateful for the ODFW staff work on these issues. The regulations are appropriate given the ESA status of Columbia River wild steelhead. Also, both current and former Fish and Wildlife Commissions deserve credit for studying, advocating for development of these conservation areas in the Columbia River.

One word of caution to the Commission – it will essential for ODFW to work with the other state agencies responsible for water quality and quantity protection in order to develop impactful plans to protect the cold water sources of these critical salmon and steelhead cold water refugia. **EPA's modeling shows that without action, the number and quality of Cold Water Refugia currently present and providing a safe migratory corridor will steadily erode and disappear by 2040 – a mere 20 years away**.

Lisa Kingsley

From: Y Lind <yancy.lind@gmail.com>
Sent: Tuesday, July 28, 2020 2:14 PM
To: ODFW.Commission@state.or.us
Cc: Michael Gauvin; benji.s.ramirez@state.or.us; William Tinniswood
Subject: ODFW Commission Aug 7 Meeting Public Testimony

Categories: Forwarded to Fish

Hello,

I would like to give public testimony at the August 7th meeting on the last agenda item, 2021 Sport Fishing Regulations. Below are the comments I would like to make.

Commissioners,

Thank you for allowing me to address you on the proposed fishing regulation changes in the Klamath Basin. As you know, fish in Klamath Lake and its tributaries are in serious decline. There are many culprits but the recent dropoff is most likely from prolonged drought / global warming. Of course, this makes conservation and cold water refugia of critical importance, a need that was highlighted when you recently created refugia areas on the Deschutes River for heat-stressed summer steelhead.

I am thankful for the proposed changes on Agency Lake, the Williamson River, and the Sprague River, but do not believe the proposed changes on Crystal Creek are sufficient where currently all forms of fishing as well as harvest are allowed. I believe that the upper part of Crystal Creek should be single barbless hook, catch and release only.

The headwaters of Crystal Creek is the most important refugia and spawning area on the western side of Klamath Lake. It is believed to be the primary source of wild, native redbands in the Pelican Bay area and out into the lake. There are several springs at the headwaters emerging at 48 degrees. Redband trout start to accumulate there as early as May when Upper Klamath Lake begins to warm. Their numbers swell all summer and max out well before the season closes when spawning has already begun.

The headwaters of Crystal Creek ***was*** truly one of the last, great "secret" places in Oregon to fish for trophy-sized wild, native redband trout. The closest public access is the Malone Springs ramp, mainly used by canoes and kayaks traveling downstream to Rocky Point. It takes me over 45 minutes in my drift boat using an outboard motor to travel upstream to the headwaters. As a result, in over a decade of fishing this area, until this summer I had only encountered one other angler.

This lack of angling pressure allowed the trout population to remain robust even while bait and harvest are permitted. A recent change in land ownership, however, has markedly increased fishing activity. A new lodge on the headwaters is now promoting visitors to catch and eat these magnificent trout. While there remain a good number of fish in the headwaters today, this critical and fragile population will not survive a shift to catch and eat fishing. I hope you can prevent a problem from occurring rather than reacting to it after the fact.

I believe the regulations need to be immediately changed to single barbless hook, catch and release only from the Malone Springs boat ramp up to the headwaters. This would keep more than half of the creek under more general regulations and provide a reasonable balance between conservation and opportunity.

Thank you for your consideration.

Yancy Lind
541-788-5514
yancy.lind@gmail.com

Lisa Kingsley

From: Tom Keelin <tom@hexageniaranch.com>
Sent: Tuesday, August 4, 2020 9:43 AM
To: odfw.commission@state.or.us
Subject: Comment on proposed 2021 Sport Fishing Regulations

Dear ODFW Commission,

The agenda summary for your upcoming meeting regarding the Southeast Zone (Exhibit E_Attachment 1_Agenda Item Summary 2021 Regs.pdf) appears to be in error where it says "In the Williamson River from the mouth to Chiloquin Bridge, the fishery is managed as a catch-and-release fishery under current regulations." In fact, the entire Williamson River (not just the part from the mouth to the Chiloquin Bridge) is managed as a catch and release fishery, and appropriately so. As landowners on the Williamson, we strongly support the continuation of this rule and also the additional proposed conservation measures for the redband trout.

Since the entire river is catch and release, so should be the new rule that would limit anglers to using one single point hook. We respectfully request that the Commission adopt the following simpler, more appropriate rule for the entire Williamson River (not just the part from the mouth to the Chiloquin Bridge): "catch and release, artificial flies and lures only with one single point hook only."

Thank you for your consideration.

Sincerely yours,

Tom and Beth Keelin
Hexagenia Ranch
32935 Hwy 97 N
Chiloquin, OR 97624

From:	Chris Daughters
To:	odfw.commission@state.or.us
Subject:	testimony: Columbia River Thermal Angling Sanctuaries Regs
Date:	Wednesday, August 5, 2020 6:24:44 AM

Good Morning,

I strongly support option 1:

1. Adopt Thermal Angling Sanctuary spatial and temporal boundaries into permanent rule; provide Commission guidance on implementation.

   Protecting wild steelhead and salmon are critical to the future angling on the Columbia system. These sanctuaries are needed and I commend the ODFW staff for considering implementation.

Chris Daughters
The Caddis Fly Angling Shop
Eugene, OR 97401
541 342 7005