August 20, 2020

Chris Hladick, Regional Administrator
U.S. Environmental Protection Agency, Region 10
Park Place Building
1200 6th Avenue
Seattle, WA 98101

*Sent via email to:* ColumbiaRiverTMDL@epa.gov

**Re: Columbia and Lower Snake River Temperature TMDL**

Dear Regional Administrator Hladick:

The undersigned organizations (hereinafter, "we") submit these comments regarding the U.S. Environmental Protection Agency's (EPA) Temperature Total Maximum Daily Load for the Columbia and Lower Snake Rivers (TMDL). We appreciate the decades of technical and policy work by EPA Region 10 staff that culminated in this much-needed TMDL.

The TMDL contains important scientific information that should assist the restoration of the Columbia River basin's imperiled salmon and steelhead. The TMDL's analysis clearly shows that the four Lower Snake River dams, and certain Columbia River dams, cause significant

temperature problems throughout the summer and fall.[1] For instance, the Lower Snake River dams can raise the temperature of the Lower Snake between .7 and 3.2 degrees C from July to October—often causing or contributing to water quality standards violations.[2] The analysis also suggests that a free-flowing Lower Snake River would cool periodically throughout summer in a manner that would facilitate fish migration even during otherwise hot years.[3] These important conclusions, from an expert scientific agency, should inform efforts to restore Columbia River basin salmon and steelhead.

EPA's use of the RBM10 model is a well-documented, scientific approach that yields conservative load allocations based on daily average water temperatures to implement the applicable water quality criteria. Like any model of a complex natural system, RBM10 contains assumptions and uncertainties.[4] Nevertheless, it is an appropriate and defensible tool to produce temperature load allocations for Columbia and Lower Snake river dams.[5]

Finally, we object to EPA's suggestion that Oregon and Washington weaken their water quality standards rather than address the actual water temperature issues impairing salmon and steelhead migration and survival. The purpose of a TMDL is to meet water quality standards, not weaken them.[6] EPA's repeated suggestion that the states employ Use Attainability Analyses[7] is, at its core, an invitation to abandon salmon recovery efforts in the Columbia and Snake rivers. A Use Attainability Analysis is a Clean Water Act procedure by which states may, under limited circumstances, remove a designated use for a specific water body.[8] Here, EPA is asking Oregon and Washington to remove salmon migration, spawning, and rearing as uses of the Columbia and Lower Snake rivers. EPA's suggested course of action is, frankly, unconscionable and directly at odds with the Pacific Northwest's long-standing effort to conserve and restore Columbia River basin salmon runs and ensure sustainable fisheries. Use Attainability Analyses will not restore healthy salmon runs or sustainable fisheries; EPA should withdraw its inappropriate request and focus on concrete actions to reduce water temperatures.

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[1] TMDL at p. 43 ("EPA's analysis of the cumulative nonpoint source heat loading from dam impoundments shows that the dam impoundments have a greater temperature impact than point sources and tributaries."); *see also id.* ("The 15 dams within the TMDL area have a cumulative warming effect during the summer and early fall.").
[2] TMDL at pp. 47–50.
[3] *See* TMDL at p. 70 (predicting minimum monthly average daily temperatures in the free-flowing Lower Snake that are significantly below the 20 degree C criterion and significantly cooler than current minimum temperatures in the dammed river).
[4] This comment hereby incorporates by reference the comments submitted by Paul Pickett regarding the TMDL (enclosed).
[5] To alleviate any potential confusion by future readers of the TMDL, EPA should add the label "Load Allocation" to the heading of Column H in Tables 6-6 through 6-9 of the TMDL.
[6] Given that EPA's approval of Oregon's *current* water quality criteria for temperature violated EPA's duty not to jeopardize the continued existence of many Columbia River basin salmon and steelhead populations, it is difficult to see how EPA could approve less-protective criteria without violating Section 7 of the Endangered Species Act. *Cf.* National Marine Fisheries Service, *2015 CRSO Biological Opinion on EPA's Proposed Approval of Certain Oregon Water Quality Standards*, p. 1 (2015).
[7] TMDL, pp. 2, 71.
[8] *See* 40 C.F.R. § 131.10(g).

With a few important revisions detailed below, we anticipate the TMDL will be a useful analysis and tool to help guide salmon recovery efforts in the Lower Snake and Columbia rivers.

Sincerely,

Miles Johnson
Senior Attorney
Columbia Riverkeeper

*On behalf of:*

**Idaho Rivers United**
**Snake River Waterkeeper**
**Columbia Riverkeeper**
**Institute for Fisheries Resources**
**Northwest Environmental Advocates**
**Pacific Coast Fed. of Fishermen's Assoc.s**
**Save Our Wild Salmon Coalition**
**Defenders of Wildlife**
**Northwest Sportfishing Industry Assoc.**
**National Wildlife Federation**
**Association of Northwest Steelheaders**
**Great Old Broads for Wilderness**
**Fly Fishers International**
**Wild Salmon Center**
**Orca Conservancy**
**Washington Chapter, Sierra Club**
**Oregon Chapter, Sierra Club**
**Idaho Conservation League**
**Idaho Chapter, Sierra Club**
**American Rivers**
**Natural Resources Defense Council**
**NW Guides and Anglers Association**
**Endangered Species Coalition**

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## Legal and Technical Comments

### *I. EPA's reliance on a .3 degree C "human-use" allowance is not supported by applicable state or tribal water quality standards or the underlying facts.*

EPA set the temperature targets in the TMDL at .3 degrees C above the applicable numeric temperature criteria.[9] To justify for this approach, EPA relied on a so-called "human-use" allowance, summarized in the TMDL as follows:

> "when the receiving waters are not attaining standards, the available increase in loading capacity for human-caused sources in the Columbia River is 0.3°C above the criterion. Washington WQS have an analogous 0.3°C allowance, resulting in an available increase in loading capacity for anthropogenic sources of 0.3°C above the criteria . . . ."[10]

As explained below, however, EPA's use of a .3 degree C human-use allowance to set temperature targets for this TMDL was inappropriate and unjustified.

#### *a. WAC 173-201A-320(3)(a) is not an across-the-board .3 degree C increase in Washington's temperature criteria.*

Throughout the TMDL, EPA purports to rely on WAC 173-201A-320 to support EPA's position that Washington's water quality standards contain a .3 degree C human-use allowance.[11] However, WAC 173-201A-320 is not related to human-use allowances or TMDL target setting in any way. This regulation—which EPA selectively cites for the proposition that a "measurable change" is a "[t]emperature increase of 0.3°C or greater"[12]—applies ***only*** in the context of Tier II review.[13] EPA's reliance on language in WAC 173-201A-320 to justify TMDL temperature targets above Washington's temperature criteria is, therefore, misguided and illegal. Moreover, clinging to an out-of-context phrase in Washington's Tier II review regulations strongly signals that EPA knows that (as explained below) Washington's *actual* human-use allowance does not apply under these circumstances.

EPA also cannot credibly assert that .3 degrees C is the smallest temperature increment that can be used when setting TMDL targets or load allocations. In fact, much of the TMDL's distribution of allowable human-caused temperature pollution—between point sources, tributaries, and dams—is premised on divvying up the .3 degree C human use allowance. It is arbitrary and capricious for EPA to simultaneously assert that .3 degrees C is the smallest

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[9] TMDL, p. 35 ("The criteria + 0.3°C are therefore the temperature targets for the TMDL . . . .").
[10] TMDL, p. 40.
[11] TMDL, p 9; Appx. A, p. 4, fn. 1; Appx A, p. 7, fn. 9.
[12] WAC 173-201A-320(3)(a) (explaining that "*In the context of this regulation*, a measurable change includes a: (a) Temperature increase of 0.3°C or greater" (emphasis added)).
[13] Under Washington's water quality standards, Tier II review can be invoked to lower the quality of a water that is currently cleaner than the applicable criteria when doing so is "necessary and in the overriding public interest." WAC 173-201A-320(1).

measurable temperature increment while purporting to assign fractions of that increment to different categories of polluters.

*b. Washington's .3 degree C human-use allowance does not apply here.*

For the following reasons, Washington's human-use allowance is not applicable to the Columbia and Lower Snake rivers, and EPA should not have used it to set temperature targets in the TMDL. Washington's human-use allowance regulation reads, in its entirety:

> "When a water body's temperature is warmer than the criteria in Table 200(1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F)."[14]

The circumstances on the Lower Snake and Columbia rivers in Washington do not justify EPA's use of the .3 degree C increment. Accordingly, EPA's use of this increment will result in TMDL load allocations that are not "established at a level necessary to implement the applicable water quality standards,"[15] as required by the Clean Water Act.

*1. EPA did not determine whether the Lower Snake and Columbia rivers are warmer than the temperature criteria "due to natural conditions."*

EPA cannot rely on the .3 degree C human-use allowance because EPA has not determined ***why*** the Lower Snake and Columbia rivers are warmer than the temperature criteria. Washington's human-use allowance only applies when a water exceeds a temperature criterion "due to natural conditions."[16] As explicitly stated in the TMDL, EPA did not examine or determine whether the temperature exceedances in the Lower Snake and Columbia rivers are due to natural conditions or human impacts.[17] Without this critical piece of information, it was arbitrary and capricious for EPA employ Washington's human-use allowance to set temperature targets in the TMDL.

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[14] WAC 173-201A-200(1)(c)(i).
[15] 33 U.S.C. § 1313(d)(1)(c).
[16] WAC 173-201A-200(1)(c)(i); *see also Letter from Washington Department of Ecology to EPA regarding the proper application of Washington's human use allowance*, pp. 1–2 (Sept. 12, 2001) ("'Natural Conditions' for temperature means water temperatures as they are best assessed to have existed before any human-caused pollution or alterations. If the Snake or Columbia Rivers are found to have a natural condition higher than the standard, no additional heat pollution can be added that will result in raising the temperature by more than an additional 0.3 degrees centigrade.")
[17] TMDL, p. 11 (explaining that "For this TMDL, EPA has not attempted to estimate the natural conditions of the mainstems of the Columbia and lower Snake Rivers" and "there is no functional basin-wide water quality model for estimating the natural conditions of the Columbia and lower Snake Rivers").

*2. Global warming has already consumed any available human-use allowance.*

Even if EPA could justify applying the human-use allowance to the Columbia and Lower Snake rivers, the .3 degree C human-use allowance would already be consumed by the effects of human-caused global warming. Global warming has caused temperatures in the Lower Snake and Columbia rivers to increase by 1 to 2 degrees C since the 1960s.[18] EPA does not and cannot seriously dispute that the current, rapid trend in global warming is largely or entirely due to human actions, specifically atmospheric carbon pollution. Therefore, human actions that result in global warming have already caused the Lower Snake and Columbia rivers to increase by more than the theoretically allowable .3 degree C increment.[19] EPA's attempt to allocate the .3 degree C increment between point sources, tributaries, and the dams is therefore arbitrary and capricious because any theoretically available temperature increment has already been consumed by human-caused climate change.

## *II. The TMDL does not ensure that temperature criteria will be met at critical places and times.*

The Clean Water Act requires EPA to establish TMDL load allocations at "level[s] necessary to implement the applicable water quality standards."[20] At best, the load allocations in this TMDL would implement some state temperature standards, at some times and places, under some circumstances. Sometimes meeting temperature standards falls far short of EPA's mandate. For the times, places, and conditions identified below, the TMDL's load allocations are not sufficient to ensure compliance with the temperature standards.

*a. The TMDL's focus on tailrace temperatures ignores persistent temperature problems in fishways and dam forebays.*

By focusing exclusively on tailrace temperatures,[21] the TMDL does not study or address the long-recognized problem of higher-than-average water temperature in fishways and dam forebays. Warmer water in fishways[22] and forebays[23] frequently violates numeric and narrative water quality standards and can create migration blockages, delays, and fall-back problems—all of which decrease adult salmon survival and reproductive success. Modifications at certain

[18] TMDL, p. 30 ("Based on available information, the estimated increase in river temperatures since 1960 ranges from 0.2°C to 0.4°C per decade, for a total water temperature increase to date of 1.5°C ± 0.5°C.").
[19] WAC 173-201A-200(1)(c)(i) (explaining that "human actions considered cumulatively may not cause the . . . temperature of that water body to increase more than 0.3°C").
[20] 33 U.S.C. § 1313(d)(1)(c).
[21] *See* TMDL, p. 35 ("All of the TMDL's target sites are at the tailraces of dams.").
[22] Fish Passage Center, *Requested data summaries and actions regarding sockeye adult fish passage and water temperature issues in the Columbia and Snake rivers*, p. 7 (2015); *see also* Fish Passage Center, *Review of April 2016 Draft of NOAA Fisheries report 2015 Sockeye Salmon Passage Report* (2016).
[23] EPA, *Draft Technical Memorandum Characterizing Columbia River Temperature Variability*, pp. 8–14 (August 9, 2019) (describing warmer temperatures at the surface of forebays of John Day and McNary dams).

fishways in recent years have improved migration, but temperature-driven migration blockages at other dams persist. Under the Clean Water Act, a TMDL must be "established at a level necessary to implement the applicable water quality standards."[24] Further, EPA has stated that "No TMDL will be approved if it will result in a violation of water quality standards."[25] State water quality standards for temperature apply in the fishways and at dam forebays; to the extent that each dam creates site-specific temperature hot-spots in the fishways, forebay, or elsewhere,[26] the TMDL should include those locations in its list of temperature targets. Failing to address this important aspect of the temperature problem in the Columbia and Lower Snake rivers is contrary to the language of the Clean Water Act and counterproductive to the goal of restoring adequate migratory habitat for salmon and steelhead.

*b. The TMDL's focus on average monthly maximum temperatures in July through October is not sufficient to implement the applicable water quality standards.*

The TMDL should address violations of the daily water quality criteria that can occur in late June in the lower Columbia and Lower Snake rivers. The states' 20 degree C water quality criteria apply in June, but the TMDL only "evaluates water quality exceedances from July – October."[27] This results in a TMDL that does not provide load allocations in late June and, therefore, violates the Clean Water Act by failing to implement the water quality standards.[28] This is no mere clerical error; late-June water temperatures above the criteria do occur and can have devastating effects on salmon and steelhead. For instance, in 2015, water temperatures reached "20°C (68°F) at the peak of the [sockeye] run, in late June."[29] That late-June hot water event precipitated the death of roughly 250,000 adult sockeye in the Columbia and Lower Snake rivers.[30] Accordingly, EPA's focus on average monthly maximum temperatures does not protect beneficial uses or ensure compliance with the standards at critical times.

When setting temperature load allocations for the dams, EPA should have used the worst-case conditions—not the observed monthly maximums averaged over a six-year period. EPA's guidance clearly states that:

> "When developing a TMDL . . . an attempt is made to use a reasonable 'worst case' condition. For example, stream analysis often uses a low flow (e.g., 7-day low flow, once

[24] 33 U.S.C. § 1313(d)(1)(c).
[25] EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 32 (1991).
[26] For instance, Lake Roosevelt's partial stratification and long retention time can cause a wide range of water temperatures to occur simultaneously at different locations throughout the reservoir. Therefore, it is arbitrary and unrealistic for EPA to assess this 150-mile-long, partially stratified reservoir's compliance with water quality standards based on a single temperature target at the Grand Coulee Dam tailrace, and while using a 1-dimentional temperature model.
[27] TMDL, p. 12, fn. 4.
[28] 33 U.S.C. § 1313(d)(1)(c).
[29] EPA, *Draft Columbia River Cold Water Refuges Plan*, p. 55 (October, 2019).
[30] *See EPA's answer in* Columbia Riverkeeper v. Pruitt, para. 4 (May 15, 2017) (admitting "that the death of roughly 250,000 adult sockeye salmon [in 2015] was attributable primarily to warm water.").

in 10-years commonly known as 7Q10 or biologically-based 4-day 3-year flows) high temperature design condition."[31]

Indeed, when developing Waste Load Allocations for the point sources in this TMDL, EPA appears to have attempted something along these lines.[32] When describing the loading capacity of the rivers more generally, however, EPA did not use a reasonable worst-case low flow/high temperature design condition, such as a 7Q10, as required by its own guidance. Instead, EPA appears to have used the *average* monthly maximum temperatures in the Columbia and Lower Snake during July, August, September, and October from 2011 to 2016.[33] This does not comply with EPA's guidance or ensure that the TMDL's load allocations will be sufficient to meet the criteria and protect salmon and steelhead during periods of above-average water temperature.

*c. The TMDL fails to address Oregon's narrative temperature criteria.*

EPA's TMDL does not require fall cooling necessary to meet Oregon's narrative water quality standards. Oregon's water quality standards require that the "seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern."[34] EPA's regulations require TMDLs to attain such "narrative" water quality criteria.[35] Columbia and Lower Snake river dams significantly minimize and delay the natural fall cooling pattern that should prevail in these waterways.[36] Accordingly, the dams are causing a significant departure from the "natural seasonal thermal pattern" in violation of Oregon's narrative standard. The TMDL focuses exclusively on meeting numeric criteria and does not purport to protect or restore the natural seasonal thermal pattern of the Columbia and Snake rivers—despite the National Marine Fisheries Service's conclusion that such the narrative criteria were necessary to mitigate the numeric migration criterion adopted by Oregon.[37] Accordingly, the TMDL illegally fails to attain Oregon's narrative water quality criteria for temperature.

The TMDL also does not ensure compliance with Oregon's narrative water quality standard requiring sufficiently well-distributed cold water refugia. EPA's temperature refuges plan should explain what it would mean to have the sufficiently well-distributed cold water refugia in the Columbia River required by Oregon's narrative temperature criteria (and whether

[31] EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 47 (1991).
[32] *See* TMDL, p. 51 (setting waste load allocations based on "90th percentile" flow and temperature conditions).
[33] *See* TMDL, p. 39.
[34] O.A.R. 340-041-0028(4)(d); *see also* TMDL, Appx. 1, pp. 12, 18, 23.
[35] 40 C.F.R. § 130.7(c)(1) ("TMDLs shall be established at levels necessary to attain and maintain the applicable *narrative* and numerical WQS *with seasonal variations*") (emphasis added).
[36] *See generally* Columbia Riverkeeper *et al.* Comments on the CRSO DEIS (April 14, 2020) (discussing the dams' seasonal alterations of the rivers' natural temperature regime) (enclosed).
[37] National Marine Fisheries Service, *2015 CRSO Biological Opinion on EPA's Proposed Approval of Certain Oregon Water Quality Standards*, p. 164 (2015) (explaining that the sufficiency of the 20 degree C criterion depends on "the effectiveness of the narrative criteria in protecting [cold water refugia] CWR and ensuring that the natural seasonal thermal pattern exists in the Columbia and Snake Rivers.").

they exist).[38] Compliance with a valid, final temperature refuges plan should achieve compliance with Oregon's narrative criteria for thermal refuges and, therefore, be a requirement of this temperature TMDL. Instead of providing for its thermal refuges plan to become a requirement of the TMDL, EPA cites its draft thermal refuges plan, claiming that the draft remains "under review" and asserting that its "preliminary findings provide a framework" for assuring that the refugia narrative criterion is met.[39] This is meaningless. By placing the refuges plan outside the TMDL, EPA claims credit for its research on refuges while undermining any future attempts to enforce the refuges plan. Ultimately, EPA's TMDL provides no concrete protections for thermal refugia and does not ensure Oregon's narrative criteria will be met—undermining EPA's tremendous investment of time and resources in studying thermal refuges to support adult steelhead and fall Chinook migration in the context of the hydrosystem and climate change.

### *III. The TMDL lacks reasonable assurances that the dams will meet their load allocations.*

The TMDL correctly identifies certain dams as significant sources of heat pollution and assigns those dams load allocations to help meet temperature standards. Unfortunately, the TMDL lacks the requisite "reasonable assurances"[40] that those dams will actually meet their load allocations. As EPA has explained:

> "when a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, the TMDL must provide "reasonable assurances" that nonpoint source control measures will achieve expected load reductions . . . . This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards."[41]

Given the circumstances and history described below, EPA's claim that such reasonable assurances exist with respect to federal dams[42] is disingenuous and arbitrary.

Recent Clean Water Act Section 401 Certification actions by Washington and Oregon for eight federal dams on the Columbia and Lower Snake rivers might provide reasonable assurances—if EPA would acknowledge those 401 Certifications in this TMDL and stop working to undermine them. In response to a request from EPA, the Washington Department of

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[38] The current draft of EPA's thermal refuges plan does neither of these things. *See generally* Northwest Environmental Advocates, *Comments on EPA's Draft Columbia River Cold Water Refuges Report* (2019) (enclosed).
[39] TMDL, p. 32.
[40] EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 6 (1991) (explaining that each TMDL must contain "Reasonable assurances that the nonpoint source load allocations established in TMDLs (for waters impaired solely or primarily by nonpoint sources) will in fact be achieved.").
[41] EPA, *Reconsideration of EPA's Approval of Vermont's 2002 Lake Champlain Phosphorus Total Maximum Daily Load ("TMDL") and Determination to Disapprove the TMDL*, p. 8 (January 24, 2011).
[42] TMDL, p. 73 ("The regulatory and non-regulatory measures described . . . in . . . federal dam operation plans provide adequate reasonable assurance for the temperature wasteload and load allocations in this TMDL.").

Ecology (Ecology) recently issued 401 Certifications for eight federal dams on the lower Columbia and Lower Snake rivers.[43] Ecology's 401 Certifications require the Corps' dams to "meet the load allocations in the Columbia and Lower Snake River Temperature Total Maximum Daily Load."[44] Section 401 Certifications for dams are federally enforceable, permit-like documents that can provide reasonable assurances for TMDL purposes,[45] and EPA has committed to partner with states and use all available federal and state laws and regulatory programs—such as Clean Water Act Section 401 Certifications—to achieve TMDL load allocations for nonpoint sources.[46] EPA inexplicably ignores these eight recent 401 Certifications that are expressly conditioned to implement the TMDL's load allocations. EPA has also previously withdrawn, and continues to withhold, final NPDES permits for the Corps' dams in a misguided effort to avoid Ecology's 401 Certifications.[47] EPA also recently promulgated new Clean Water Act regulations in an illegal attempt to strip states and tribes[48] of their authorities to issue 401 Certifications.[49] By ignoring and working to undermine 401 Certifications for federal dams on the Columbia and Lower Snake rivers, EPA is violating its own TMDL guidance and removing any reasonable assurance that the federal dams will meet this TMDL's load allocations.

The federal agencies overseeing the hydrosystem have proven extremely resistant to *any* actions to improve temperature conditions for salmon and steelhead—let alone the

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[43] *See* Washington Department of Ecology, *Orders on Clean Water Act Section 401 Certification*, No.s 18143–18150 (May 7, 2020); *see also* Oregon Department of Environmental Quality, *Letter objecting to EPA's proposed NPDES permits for Lower Columbia River dams under Clean Water Act Section 401(a)(2)* (May 15, 2020).

[44] *See, e.g.* Washington Department of Ecology, *Order No. 18146 Granting Water Quality Certification for the Bonneville Project*, Condition B(2)(a) (May 7, 2020).

[45] For instance, this very TMDL (p. 73) touts Ecology's 401 Certifications for non-federal PUD dams on the mid-Columbia River as providing reasonable assurances that these non-federal dams will meet the load allocations in the TMDL.

[46] EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 5 (1991) ("For all section 303(d)-listed waters impaired solely or primarily by nonpoint sources, each EPA Region should work in partnership with each State to achieve TMDL load allocations for nonpoint sources. All available Federal, State, and local programs and authorities should be used, including . . . regulatory . . . programs authorized by Federal, State, or local law."); *see also* TMDL, p. 73 ("EPA expects the States to work within their authorities to implement activities to reduce nonpoint source heat loading.").

[47] On February 1, 2019, EPA abruptly withdrew draft NPDES permits and a previous request for 401 Certifications for federal dams on the Columbia and Lower Snake rivers. EPA provided no explanation for its decision. Notably, EPA's decision to withdraw the requests for 401 Certification came one day after *The Seattle Times* ran a front-page story describing the temperature crisis on the Columbia and Snake rivers and Ecology's 401 Certification authority. *See* Lynda Mapes, *Washington state to regulate federal dams on Columbia, Snake to cool hot water, aid salmon*, The Seattle Times (Jan. 31, 2019); *see also* Lynda Mapes, *EPA ices Washington state's effort to regulate hot water in Columbia, Snake rivers*, The Seattle Times (Feb. 6, 2019).

[48] Affiliated Tribes of Northwest Indians, *Resolution #2020-25*, p. 3 (2020) (supporting "401 Certifications for dams on the Lower Snake and Columbia rivers to address temperature and other water quality issues and meet the Load Allocations in EPA's temperature TMDL"; requesting the "Corps to withdraw its appeal of Washington's 401 Certifications"; and requesting "EPA to withdraw its recent re-interpretation of Clean Water Act Section 401, through which EPA purports to deprive tribes and states of their authority, granted by federal law, to protect water quality and fisheries.") (enclosed).

[49] EPA, *Clean Water Act Section 401 Certification Rule*, 85 Fed. Reg. 42,210 (July 13, 2020).

transformative, structural changes likely necessary to achieve the TMDL's load allocations for the Columbia and Lower Snake river dams. Nevertheless, EPA says that "implementation of this TMDL depends on . . . river temperature reduction efforts by other federal agencies."[50] For the reasons below, EPA's 'dependence' on federal dam managers to address temperature problems is completely unfounded and does not provide any reasonable assurance that the dams will meet their load allocations.

As EPA well knows, federal agencies like the Corps have long sought to obscure, and avoid responsibility for, their dams' impacts on water temperature in the Columbia and Lower Snake rivers. EPA's sudden reliance on the Corps and others to voluntarily meet the TMDL's load allocations is, therefore, perplexing and arbitrary. Nearly twenty years ago, the Corps prevailed upon EPA to bury the TMDL at issue here. When EPA took up the TMDL again several years later, the Corps pressed EPA to pretend that the impacts of the dams were somehow part of the natural river system and beyond the reach of the TMDL.[51] Rebuffed, and concerned that EPA would issue a TMDL containing load allocations for the dams, the Corps pressured the State of Oregon to eliminate salmon and steelhead as Clean Water Act-protected uses of the Columbia River[52] (an invitation Governor Kulongoski pointedly refused). Now that EPA has issued this TMDL, the Corps is asking the Washington Pollution Control Hearings Board to invalidate the 401 Certifications that make the TMDL's dam load allocations legally enforceable.[53] Perhaps most troubling from a "reasonable assurances" standpoint, the Corps' 401 Certification appeal asserts (albeit without specifics or substantiation) that complying with the TMDL's load allocations would be beyond the Corps' legal authorization.[54] In other words, the Corps claims that meeting the TMDL's load allocation would be illegal.[55] Given the Corps' long-running and highly successful campaign to avoid acknowledging or addressing the dams' water quality standards violations, EPA's reliance on the Corps' "river temperature reduction efforts"[56] is cynical, misguided, and provides no assurance that the dams will meet the TMDL's load allocations.

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[50] TMDL, p. 72.
[51] Army Corps, *Comments to EPA on the Preliminary Draft Columbia/Snake River Mainstem Temperature Total Maximum Daily Loads*, p. 4 (Nov. 6, 2002) ("The Corps recommends that the thermal effects due to the existence of the dams be included in the baseline").
[52] *See, e.g., Letter from Army Corps, Bureau of Reclamation, and EPA to Oregon Department of Environmental Quality encouraging Use Attainability Analyses for the Columbia and Snake Rivers* (May 9, 2005).
[53] *See, e.g.,* Army Corps, *Notice of Appeal to the Washington Pollution Control Hearings Board re Ecology Order No. 18146 Granting Water Quality Certification for the Bonneville Project* (June 8, 2020).
[54] *See id.* at 4.
[55] If the Corps is right, industrial and municipal point sources discharging into the Columbia and Lower Snake rivers will be saddled with the burden of addressing the dam's temperature problems. *See* EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 15 (1991) ("Where there are not reasonable assurances, under the CWA, the entire load reduction must be assigned to point sources."); *see also* 40 C.F.R. 130.2(i).
[56] TMDL, p. 72.

The federal plans and reports mentioned in the TMDL[57] similarly do not contain the "reasonable assurances" required by EPA's guidance requires. Specifically, the TMDL states that:

> "The Final EIS and Biological Opinion [for the federal hydropower system] may identify water temperature improvement projects for the Columbia River, similar to those identified in the Water Quality Plan for Total Dissolved Gas and Temperature (USACE 2009) and the Sockeye Salmon Passage Report (NOAA 2016)."[58]

None of these four documents provide "reasonable assurances" that the dams will meet their load allocations. The CRSO BiOp and EIS explicitly state that **the Corps will not change the configuration or operation of its dams to reduce heat pollution caused by the reservoirs** or meet the TMDL's load allocations.[59] Accordingly, EPA's reliance on the BiOp and EIS to meet the TMDL load allocations is arbitrary and contradicted by the plain text of these documents. Furthermore, the Corps' *Water Quality Plan for Total Dissolved Gas and Temperature* and NMFS' *2016 Sockeye Salmon Passage Report* have made little to no impact on average river temperatures over the last decade, so any temperature improvements "similar to" the measures in those documents will not help meet the dams' load allocations. Three decades of illegal plans by the CRSO agencies have not alleviated the dams' temperature pollution; the 2020 BiOp and EIS explicitly continue this approach and, in fact, promise *not* to take actions that could meet the dams' load allocations.

EPA also has no reasonable basis to expect that Oregon and Washington's TMDL programs will help meet the load allocations for tributaries in this TMDL. EPA claims that, "As Washington and Oregon continue to develop and implement TMDLs for tributaries, EPA expects modest improvements in mainstem Columbia River temperatures."[60] This expectation is unfounded. EPA provides no evidence that Oregon and Washington's TMDLs have resulted in tributary temperature improvements thus far or will in the future. Washington's TMDL program has ground to a halt,[61] and Oregon's existing temperature TMDLs violate the Clean Water Act by allowing temperatures higher than numeric criteria.[62] EPA cannot rely on these other TMDLs as reasonable assurances.

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[57] *See* TMDL, pp. 72–73 (mentioning the CRSO Biological Opinions and Environmental Impact Statements, as well as NMFS' 2016 Sockeye Salmon Passage Report).
[58] TMDL, p. 72.
[59] *See, e.g.,* Army Corps, *CRSO EIS*, Executive Summary, p. 39 ("The Preferred Alternative is expected to have similar effects as the No Action Alternative on water temperature."); *see also, e.g.,* NMFS, *2020 CRSO BiOp*, p. 513 (Adult Snake River sockeye migration survival is not expected to improve under the dam operation regime proposed in the 2020 EIS "because the minor improvements and impairments discussed [in the BiOp] should, on the whole, result in no substantial differences" in water temperature.).
[60] TMDL, p. 63.
[61] *See Northwest Environmental Advocates v. EPA*, Case 2:19-cv-01537-BJR, Complaint, Para. 6 (September 26, 2019) ("Ecology has completed only one TMDL in the past three fiscal years").
[62] *Nw. Envtl. Advocates v. United States EPA*, 2018 U.S. Dist. LEXIS 209529 (D. Or. Dec. 12, 2018).

Reasonable assurance that the dams will meet their TMDL load allocations might be achieved by the following actions:

- EPA incorporating Washington's 401 Certification conditions (and Oregon's 401(a)(2) Objections) into the pending NPDES permits for the dams and issuing these NPDES permits;

- EPA revising the TMDL to make the dams' temperature allocations into Waste Load Allocations (as discussed in Section V, below); and

- The Corps withdrawing its appeals of Washington's 401 Certifications for eight dams on the Columbia and Lower Snake Rivers that require compliance with the TMDL's load allocations for dams.

Without such actions to provide reasonable assurances that the dams will meet their load allocations, the Clean Water Act requires EPA to significantly reduce or eliminate the temperature waste load allocations for industrial and municipal dischargers.[63]

## *IV. The TMDL must address the intensifying effects of climate change on water temperatures.*

The TMDL should include strategies to address climate change and its predictable impact on the rivers' attainment of water quality standards over the next several decades. Due to the effects of climate change—including reduced snowpack, increased water temperatures, and lower summer flows—the frequency of temperature criteria exceedances will likely increase.[64] While EPA has done important technical work to identify the effects of climate change on river temperatures thus far, the TMDL's baseline conditions and load allocations do not address foreseeable *future* temperature increases linked to climate change. Importantly, EPA has committed to "consider climate change impacts when developing . . . load allocations in Total Maximum Daily Loads."[65] This TMDL should be no exception to that goal. Failing to propose load allocations, or other "adaptive management approach[es],"[66] sufficient to address foreseeable future climate conditions and increases in water temperature is a departure from EPA's stated policy and will result in a TMDL that quickly becomes outdated and unhelpful.

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[63] EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 15 (1991) ("Where there are not reasonable assurances, under the CWA, the entire load reduction must be assigned to point sources."); *see also* 40 C.F.R. § 130.2(i).
[64] National Marine Fisheries Service, *2015 CRSO Biological Opinion on EPA's Proposed Approval of Certain Oregon Water Quality Standards*, p. 163 (2015) ("Climate change is likely to make it more difficult to attain a biologically protective temperature [for salmon] in migration corridors, but it is not likely to change what constitutes a biologically protective temperature for this use.").
[65] EPA, *National Water Program 2012 Strategy: Response to Climate Change*, p. ES-7 (2012).
[66] *Id.* at 58.

## *V. EPA should treat dams as point sources of temperature pollution and assign them Waste Load Allocations.*

EPA should have assigned the dams Waste Load Allocations. Instead, the TMDL miscategorized the dams' heat pollution as nonpoint source pollution and, consequently, assigned the dams Load Allocations.[67] Heat pollution from the dams and reservoirs is point source pollution within the meaning of Clean Water Act Section 301(a), 33 U.S.C. § 1311(a).[68] Heat is a pollutant;[69] dams are point sources;[70] and the Columbia and Snake rivers meet any definition of the waters of the United States. The only outstanding issue was whether the dams caused the "addition" of heat to the rivers, and the TMDL conclusively answers that question in the affirmative.[71] EPA's reliance on the 40-year-old *Gorsuch* decision is unavailing; that case is distinguishable on the facts[72] and its reasoning has not convinced subsequent courts.[73] Neither does the Water Transfer Rule support EPA's position, as EPA expressly disclaimed that its rule applies to dams.[74] The reasoning in *LA County Flood Control District* also cannot save EPA's failure to properly categorize the dams' heat pollution because that opinion was premised on the intervening point source *not* adding a pollutant to the water.[75] Here, as EPA's TMDL conclusively demonstrates, the dams and reservoirs cause the addition of heat pollution to the rivers. Accordingly, they are point sources of temperature pollution that should receive Waste Load Allocations in the TMDL.

In addition to complying with the purpose and plain meaning of the Clean Water Act, assigning the dams Waste Load Allocations would allow EPA to satisfy the "reasonable assurances" requirement discussed in Section III, above, because the Waste Load Allocations

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[67] TMDL, p. 1 ("In developing this TMDL, EPA evaluated the temperature impacts from . . . nonpoint source heat loading from dams"); pp. 43–44 ("In this TMDL, heat contributed by impounding the river in reservoirs behind the dams is considered a nonpoint source of pollution (and given a load allocation), while discharges from cooling water structures, transformers, and sump pumps are considered point sources (and given wasteload allocations). Wasteload allocations are incorporated in NPDES permits during implementation . . . ."

[68] *See generally* Enion, M. Rhead, *Rethinking National Wildlife Federation v. Gorsuch: The Case for NPDES Regulation of Dam Discharge*, 38 *Ecology Law Quarterly* 4, pp. 797–850. (2011).

[69] 33 U.S.C. § 1362(6).

[70] *Nat'l Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 165 n.22 (D.C. Cir. 1982) ("The pipes or spillways through which water flows from the reservoir through the dam into the downstream river clearly fall within th[e] definition" of point sources.).

[71] *See* TMDL, pp. 47–50 (May 18, 2020) (Columns E and F in Tables 6-6 through 6-9 show the heat pollution caused by the four Lower Snake River dams individually and cumulatively during the summer and fall.); *see also* EPA, *Columbia River Temperature TMDL: State and Tribal Meetings PowerPoint Presentation*, Slides 32, 44 (January 2020) (Explaining that the dams are the "biggest source" of heat pollution and that "Each of the four Snake River dams and John Day contribute to temperature impairments . . . throughout the [summer and fall].")

[72] The discussion of temperature pollution in *Gorsuch* focused on reservoirs that merely stratified heat that already existed in the river when it entered the reservoir; in the Columbia and Snake river reservoirs, however, little to no stratification occurs and the reservoirs themselves accumulate additional heat pollution.

[73] *See, e.g., Greenfield Mills, Inc. v. Macklin*, 361 F.3d 934, 947–48 (7th Cir. 2004).

[74] National Pollutant Discharge Elimination System (NPDES) Water Transfers Rule, 73 Fed. Reg. 33,697, 33,705 (June 13, 2008).

[75] *L.A. Cty. Flood Control Dist. v. NRDC, Inc.*, 568 U.S. 78, 82–83 (2013).

would become enforceable effluent limits in EPA's pending National Pollution Discharge Elimination System permits for the dams on the Lower Snake and Columbia rivers. This would cure a legal defect in the TMDL and relieve other industrial and municipal point source dischargers of the burden of addressing the Corps' heat pollution.[76]

## *VI. The TMDL Fails to Include an Adequate Margin of Safety*

The TMDL's implicit margin of safety is arbitrary and inadequate. All TMDLs must include a margin of safety to ensure compliance with state and tribal water quality standards despite inherent uncertainties.[77] For the following reasons, this TMDL's implicit margin of safety is not adequate:

- As explained in more detail in the comments of Paul Pickett, incorporated herein by reference, the reserve allocation for point sources is not a margin of safety. EPA alternatively describes the "reserve" as a margin of safety and part of the increment that states can distribute to industrial and municipal point source dischargers. It is arbitrary and illogical for EPA to assert that the "reserve" is both things at once.

- The TMDL's use of monthly average maxima in development of temperature allocations is not a conservative assumption supporting an "implicit" margin of safety. As explained in Section II(b), above, and in other comments submitted by the Idaho Conservation League, the average monthly maxima strategy relied on by EPA does not even satisfy the requirement to provide a reasonable worst-case analysis. This inadequate methodology certainly cannot provide an additional, implicit margin of safety.

- Focusing on summer temperatures from 2011 to 2016 cannot form the basis of an implicit margin of safety. While these temperatures are warmer than average summer temperatures during the last few decades, climate data suggest that they are part of an ongoing and intensifying trend. The Columbia and Snake rivers are unlikely to revert to historical average temperatures in the near future, so the use of recent temperature data does not provide a margin of safety. As explained Section IV, above, the failure to include any load allocations or adaptive measures to address the foreseeable impacts of future climate change makes the implicit margin of safety inadequate.

[76] *See* EPA, *Guidance for Water Quality-Based Decisions: The TMDL Process*, p. 15 (1991) ("Where there are not reasonable assurances, under the CWA, the entire load reduction must be assigned to point sources."); *see also* 40 C.F.R. § 130.2(i).
[77] 33 U.S.C. § 1313(d)(1)(c).

## *VII. An inadequate TMDL risks jeopardizing species protected by the Endangered Species Act.*

Adequate protections for water temperature are necessary to ensure the continued existence of Columbia and Snake river salmon and steelhead, and the Southern Resident Killer Whales that depend on them. Some Chinook salmon from the Columbia and Snake Rivers migrate through the Salish Sea. The Salish Sea contains Critical Habitat for endangered Southern Residents, and the National Marine Fisheries Service has proposed expanding that Critical Habitat designation to include the marine waters traversed by all Columbia and Snake river Chinook. These Chinook salmon contribute to availability and quality of prey for Southern Residents, which are a Primary Constituent Element of their Critical Habitat. With a population of 72, any action—including a deficient TMDL—that further degrades their habitat and prey availability jeopardizes the continued existence of Southern Residents in violation of Section 7 of the Endangered Species Act.

## *VIII. The TMDL does not implement applicable tribal water quality standards for temperature in the Columbia River.*

The TMDL's temperature targets and load allocations do not address the water quality standards of the Spokane Tribe of Indians or the Confederated Tribes of the Colville Reservation. **Unless EPA's efforts to engage these two tribes in full government-to-government consultation about the TMDL have <u>expressly</u> stated EPA's intention to sidestep[78] these tribal nations' water quality standards, EPA likely is not fulfilling its consultation obligation.** Additionally, ignoring tribal water quality standards "applicable"[79] to the Columbia River results in a TMDL that is not "established at levels necessary to attain and maintain the applicable narrative and numerical [water quality standards]."[80] The tribal water quality standards are significantly different, and in some ways more protective of water temperature and fisheries, than Washington's standards. For instance, the Spokane Tribe of Indian's temperature criteria is 13.5 degrees C in September and October, while Washington's criteria at that time and place is 16 degrees C. Accordingly, a TMDL designed to meet Washington's water quality standards is not a legal or functional substitute for meeting tribal water quality standards. Considering EPA's position that "[i]mplementation of this TMDL is largely the responsibility of State and Tribal governments,"[81] EPA might have at least designed the TMDL to meet the applicable tribal water quality standards.

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[78] TMDL, p. 6 ("In this TMDL, the EPA has not relied upon the CTCR or the Spokane WQS for temperature; this TMDL does not establish allocations for Tribal waters.").
[79] TMDL, p. 6 ("This Section identifies the *applicable* temperature WQS for the mainstems of the Columbia and lower Snake Rivers, including those WQS that have been federally promulgated or adopted by the four governments with jurisdiction over these rivers and approved by EPA: Confederated Tribes of the Colville Reservation (CTCR), Spokane Tribe of Indians, Oregon, and Washington.") (emphasis added).
[80] 40 C.F.R. § 130.7(c)(1).
[81] TMDL, p. 74.

**Enclosures:**

- Paul Pickett, *Technical Comments on Columbia/Snake TMDL* (2020)
- Affiliated Tribes of Northwest Indians, *Resolution #2020-25*.
- Northwest Environmental Advocates, *Comments on EPA's Draft Columbia River Cold Water Refuges Report* (2019).
- Fish Passage Center, *Requested data summaries and actions regarding sockeye adult fish passage and water temperature issues in the Columbia and Snake rivers* (2015).
- Fish Passage Center, *Review of April 2016 Draft of NOAA Fisheries'* 2015 Sockeye Salmon Passage Report (2016).
- Columbia Riverkeeper *et al.*, *Comments on the CRSO Draft Environmental Impact Statement* (2020).