BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

Petition for Rulemaking to Implement	)
Reasonable and Prudent Alternatives in	)
Biological Opinions from the U.S. Fish and	)
Wildlife Service and National Marine	)
Fisheries Service for Toxic Water Quality	)
Criteria in Idaho Water Quality Standards	)

I. Introduction

For the reasons detailed below, Northwest Environmental Advocates ("NWEA") hereby petitions the U.S. Environmental Protection Agency ("EPA") to promulgate rules implementing reasonable and prudent alternatives ("RPAs") included in the 2014 National Marine Fisheries Service's ("NMFS") and 2015 U.S. Fish and Wildlife Service's ("FWS") and Biological Opinions for the Idaho Water Quality Standards for Numeric Water Quality Criteria for Toxic Pollutants (the "Proposed Action").[1] These RPAs require EPA to promulgate aquatic life criteria for Idaho waters for chronic arsenic, acute and chronic cyanide, chronic lead, acute and chronic nickel, acute and chronic zinc, and to remove the low hardness floor. As indicated in the Biological Opinions, implementation of these RPAs is needed to avoid jeopardy to numerous species listed as threatened or endangered under the federal Endangered Species Act ("ESA"), including Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon,

[1] *See generally*, National Marine Fisheries Service, Final Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Water Quality Toxics Standards for Idaho, NMFS No. 2000-1484 (May 7, 2014), *available at* https://www.northwestenvironmentaladvocates.org/blog/wp-content/uploads/2014/07/2014_05_07-NMFS-BiOp-Idaho-Toxics.pdf (last visited 7 Feb. 2023) (hereafter, "NMFS Biological Opinion"); Fish and Wildlife Service, Biological Opinion for the Idaho Water Quality Standards for Numeric Water Quality Criteria for Toxic Pollutants, OlEIFW00-2014-F-0233 (June 15, 2015), *available at* https://northwestenvironmentaladvocates.org/wpdm-package/fws-idaho-biop-toxics/ (hereafter, "FWS Biological Opinion").

Snake River Basin steelhead, Snake River physa, Bliss Rapids snail, Banbury Springs lanx, Bruneau hot springsnail, bull trout, and Kootenai River white sturgeon. Yet EPA has not implemented the RPAs for these criteria. Absent implementation of these RPAs, EPA is likely causing or contributing to the take of these listed species in violation of the ESA.

Moreover, as demonstrated in the following chart, the dates for completion of the RPAs set out in the Biological Opinions have all passed, as have the dates for EPA to initiate ESA consultation on the criteria adopted pursuant to the RPAs. Because EPA has not even completed these RPAs, EPA has not, and could not have met, the deadlines to initiate consultation ESA consultation on the RPAs.

Date RPA published	**Aquatic Life Criteria or Action Required by the RPA**	**Date for RPA Completion**	**Date for EPA initiation of ESA consultation for RPA**
2014 NMFS 2015 FWS	Removal of hardness floor	May 7, 2017	–
2014 NMFS 2015 FWS	Chronic arsenic	May 7, 2021	May 7, 2020 December 23, 2020
2015 FWS	Acute and chronic cyanide	May 7, 2021	December 23, 2020
2015 FWS	Acute and chronic nickel	May 7, 2022	December 23, 2021
2015 FWS	Acute and chronic zinc	May 7, 2022	December 23, 2021
2015 FWS	Chronic lead	May 7, 2023	December 23, 2022

This petition is brought pursuant to the Administrative Procedure Act ("APA"), which requires that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule."[2] The APA further imposes an obligation on EPA to timely respond to this petition, by requiring that "[w]ith due regard for the convenience and necessity of the parties or their representatives and within a reasonable time, each agency shall proceed to conclude a

[2] 5 U.S.C. § 553(e).

matter presented to it."[3] Timely notice includes not only affirmative action but also any decision to deny this petition, in whole or in part.[4]

II. Legal Background

Congress adopted amendments to the Clean Water Act ("CWA") in 1972 in order "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[5] The CWA establishes an "interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife[.]"[6]

To meet these goals, the CWA requires states to develop water quality standards that establish, and then protect, the desired conditions of each waterway within the state's regulatory jurisdiction.[7] Among other things, water quality standards include numeric and narrative criteria specifying the water quality conditions—such as maximum concentrations of toxic pollutants—that are necessary to protect the designated uses.[8] Water quality standards must be sufficient to "protect the public health or welfare, enhance the quality of water, and serve the purposes of [the CWA]."[9]

States must review their water quality standards at least every three years and submit all new and revised water quality standards to EPA for review and approval.[10] A state-developed water quality standard does not become effective until EPA approves it.[11] If EPA approves a new or revised standard, it must notify the state within 60 days of the state's submission of the

[3] *Id*. § 555(b).
[4] *Id*. § 555(e).
[5] 33 U.S.C. § 1251(a).
[6] *Id*. § 1251(a)(2).
[7] *Id*. § 1313(a).
[8] *Id*. §§ 1313(c)(2); 1313(d)(4)(B); 40 C.F.R. Part 131, Subpart B.
[9] 33 U.S.C. § 1313(c)(2)(A).
[10] *Id*. §§ 1313(c)(1), (3).
[11] *Id*. § 1313(c)(3); 40 C.F.R. § 131.21(c).

standard.[12] EPA must then review and approve or disapprove any revised or new standards for consistency with the federal CWA.[13]

If EPA determines that a standard is not consistent with the requirements of the CWA, within 90 days of the state's submission, EPA must notify the state of EPA's intent to disapprove the standard and specify changes to the standard that are necessary to comply with the CWA.[14] If the state does not cure the problems with the standard within a second 90-day period, EPA must "promptly" promulgate a substitute standard.[15] EPA must also establish new or revised water quality standards whenever the agency determines that new or revised standards are necessary to meet the requirements of the CWA.[16]

The CWA's requirements often intersect with those of the federal Endangered Species Act ("ESA") because many species listed as threatened or endangered pursuant to the ESA are found in or depend on water for their survival. The ESA's purpose is to "provide a program for the conservation of . . . endangered species and threatened species" and to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved[.]"[17] One overarching requirement of the ESA is that all federal departments and agencies must "seek to conserve" threatened and endangered species.[18] The terms "conserve" and "conservation" mean "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided

[12] 33 U.S.C. § 1313(c)(3).
[13] *Id*. § 1313(c)(2).
[14] *Id*. § 1313(c)(3).
[15] *Id*.; *id*. § 1313(c)(4)(A).
[16] *Id*. § 1313(c)(4)(B).
[17] 16 U.S.C. § 1531(b).
[18] *Id*. § 1531(c)(1).

pursuant to [the ESA] are no longer necessary."[19] In addition, all federal agencies must, in consultation with and with assistance from the Secretaries of Interior and Commerce—the Secretaries vested with responsibility for administering the ESA—"utilize their authorities in furtherance of the purposes of [the ESA] by carrying out programs for the conservation of" ESA-listed species.[20]

The ESA requires the Secretary of Interior or Commerce to list species that the Secretary believes may become extinct in the near future as being either "threatened" or "endangered."[21] A species is "endangered" if it "is in danger of extinction throughout all or a significant portion of its range."[22] A species is "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."[23]

Under ESA Section 7, all federal agencies must ensure that "any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species[.]"[24] The ESA's implementing regulations define "jeopardy" to an endangered or threatened species as "an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed

[19] *Id*. § 1532(3).
[20] Id. § 1536(a)(1).
[21] *Id*. § 1533.
[22] *Id*. § 1532(6).
[23] *Id*. § 1532(20).
[24] *Id*. § 1536(a)(2). The ESA defines critical habitat as two specific categories. First, "the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection." *Id*. § 1532(5)(A)(i). Second, critical habitat means "specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species." *Id.* § 1532(5)(A)(ii).

species."[25] Agencies must also ensure that agency actions are not likely to "result in the destruction or adverse modification of [critical] habitat."[26] This is a separate determination from whether the action will jeopardize the continued existence of threatened or endangered species. EPA's approval of a state's proposed water quality standard is an agency action subject to section 7.[27]

Whenever a federal agency determines that a proposed action may affect one or more ESA-listed species it must consult with NMFS and/or the FWS (together the "Services"), depending on the species.[28] The "may affect" threshold that triggers ESA section 7 consultation is low: "any possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers the formal consultation requirement."[29] A federal agency proposing an action that "may affect" a listed species must prepare and provide to the relevant Service a "biological assessment" ("BA") of the effects of the proposed action.[30] For those actions that may affect a listed species, the Service must review all information provided by the action agency, as well as any other relevant information, to determine whether the proposed action is likely to jeopardize a listed species or destroy or adversely modify its designated critical habitat.[31] This determination is set forth in a "biological opinion" from one or both of the Services.[32] If the Service concludes that the proposed action is likely to jeopardize a listed species or destroy or adversely modify its critical habitat, it must

[25] 50 C.F.R. § 402.02.
[26] *Id.*; *see also id.* § 402.14(g)(4).
[27] *See* Memorandum of Agreement Between the Environmental Protection Agency, Fish and Wildlife Service and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act, 66 Fed. Reg. 11,202, 11,214 (Feb. 22, 2001) ("Section 7 consultation is required if EPA determines that its approval of any of the [state or tribal water quality standards] may affect listed species or designated critical habitat.").
[28] 50 C.F.R. § 402.14(a).
[29] *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 496 (9th Cir. 2011) (citing 51 Fed. Reg. 19,926, 19,949 (June 3, 1986)).
[30] 16 U.S.C. §§ 1536(a)(2), (c); 50 C.F.R. § 402.14(a). These may also be termed "biological evaluations."
[31] 50 C.F.R. § 402.14(g)–(h).
[32] *Id*. § 402.14(h); 16 U.S.C. § 1536(b)(3)(A).

identify and describe any reasonable and prudent alternatives ("RPAs") to the proposed action that it believes would avoid jeopardy and adverse modification.[33] If the agency believes there is no RPA, the biological opinion must so state.[34]

Implementation of RPAs is technically optional, but only to the extent that the action agency can choose to either implement the RPAs or assume the risk of taking an action which may cause illegal take of ESA-listed species.[35] In *Bennett v. Spear*, the U.S. Supreme Court clarified that RPAs in a biological opinion are essentially a set of "terms and conditions" that an action agency must follow in order for the biological opinion's incidental take statement[36] to be applicable to the action.[37] If the agency chooses to not implement the RPAs, "it does so at its own peril (and that of its employees), for 'any person' who knowingly 'takes' an endangered or threatened species is subject to substantial civil and criminal penalties[.]"[38]

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[33] 16 U.S.C. § 1536(b)(3)(A). Jeopardy findings have become increasingly rare. A 2015 analysis of seven years of FWS consultation found that out of 81,461 informal and 6,829 formal consultations, only two resulted in jeopardy determinations. Jacob W. Malcom and Ya-Wei Li, *Data contradict common perceptions about a controversial provision of the US Endangered Species Act*, 112 Proceedings of the National Academy of Sciences 15844, 15845 (Dec. 2015) (hereinafter "Malcom and Li").
[34] 50 C.F.R. § 402.14(h)(2).
[35] When RPAs are not feasible, the action cannot move forward absent an exemption by a special committee. Malcom and Li, *supra* n.33 at 15845; *see also*, 16 U.S.C. § 1536(g)(3)(A).
[36] Where one of the Services concludes in a biological opinion that an action will not jeopardize the continued existence of a listed species but may result in incidental takings of listed species, the Service must include a written "incidental take statement" in the biological opinion authorizing such takings. *See ONRC v. Allen*, 476 F.3d 1031, 1034 (9th Cir. 2007); *see also* 16 U.S.C. §§ 1536(b)(4), (o).
[37] *Bennett v. Spear*, 520 U.S. 154, 169–70 (1997).
[38] *Id*. at 170.

III. EPA has Failed to Implement RPAs Designed to Protect Idaho's ESA-Listed Species from Jeopardy.

In 2013, NWEA brought suit against NMFS, FWS, and EPA for failing to carry out their mandatory statutory duties under the CWA and ESA.[39] Among other things, NWEA alleged that the Services had failed to complete Section 7 consultation for EPA's action of approving Idaho's 1994 and 1997 toxic criteria.[40] Despite having prepared draft biological opinions finding jeopardy, the Services had still—more than 10 years later—not produced final biological opinions.[41] The suit resulted in a court-enforceable settlement that required the Services to complete their much-delayed biological opinions related to EPA's approval of Idaho's toxic water quality standards.[42]

As a result of NWEA's lawsuit—and after over 17 years of delay—in 2014 and 2015, respectively, NMFS and FWS finally fulfilled their ESA Section 7 responsibilities by releasing final Biological Opinions that concluded EPA's approval of certain Idaho water quality standards jeopardizes certain listed species and destruction or adverse modification of their critical habitats.[43] Specifically, NMFS made the following jeopardy determinations:

- Potential effects of using **25 mg/L hardness floor** in calculating metals discharge limits will rise to the level of jeopardizing the Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead, and will result in the adverse modification of designated critical habitat for these species.[44]

[39] *See* Stipulated Order of Dismissal of All Claims Against Defendants National Marine Fisheries Service and U.S. Fish and Wildlife Service, *Northwest Environmental Advocates v. The National Marine Fisheries Service,* No. 1:13-cv-00263-EJL (2015), ECF No. 37 at 1–3.
[40] *Id*. at 2–3.
[41] *Id*. at 2.
[42] *Id*. at 3–4.
[43] The FWS and NMFS Biological Opinions were conducted for purposes of EPA's approval of certain Idaho water quality criteria (the "Proposed Action"). The history of these criteria, and EPA's review and consultation over them, is complex, and set forth in the FWS and NMFS Biological Opinions. *See* NMFS Biological Opinion at 1–4; FWS Biological Opinion at 1–2. The specific criteria over which EPA was consulting on for purposes of the Biological Opinions are set forth Table 1.3.1 of NMFS's Biological Opinion. *See* NMFS Biological Opinion at 6–8; *see also* FWS Biological Opinion at Table 1, pp. 8–10.
[44] NMFS Biological Opinion at 274–75.

- Potential effects of the proposed **chronic arsenic criterion** of 150 µg/L would jeopardize the Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead, and is likely to result in the adverse modification of designated critical habitat for these species.[45]

- Potential effects of the proposed **acute and chronic copper criteria** are likely to jeopardize the Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead, and are likely to result in the adverse modification of designated critical habitat for these species.[46]

- Potential effects of the proposed **chronic cyanide criterion** of 5.2 µg/L will jeopardize the Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead, and result in the adverse modification of designated critical habitat for these species.[47]

- Potential effects of the proposed **chronic mercury criterion** of .012 µg/L will jeopardize the Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead, and will adversely modify designated critical habitat for these species.[48]

- Potential effects of the proposed **chronic selenium criterion** of 5 µg/L will jeopardize Snake River spring/summer chinook salmon, Snake River fall chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead, and will adversely modify designated critical habitat for these species.[49]

Given these jeopardy determinations, NMFS's Biological Opinion included a series of final RPAs that, if implemented, NMFS believed would avoid jeopardizing the continued existence of the listed species and avoid the destruction or adverse modification of critical habitat.[50] The final outstanding RPAs and their status are as follows:

[45] *Id*. at 6, 275.
[46] *Id*. at 276.
[47] *Id*. at 6, 276.
[48] *Id*.
[49] *Id*. at 6, 277.
[50] *Id*. at 281; *see also*, 16 U.S.C. §1536(b)(3)(A).

- Removal of the **low-end hardness floor** by May 7, 2017.[51] *EPA failed to implement this RPA by the deadline and to date has not promulgated the RPA.*[52] Furthermore, NMFS strongly encouraged IDEQ to consider removing the hardness floor in a comment on IDEQ's 2020 triennial review.[53] IDEQ expressly rejected the suggestion.[54]

- Ensure, either through EPA promulgation of a criterion or EPA approval of a state-promulgated criterion, that a new **chronic criterion for arsenic** is in effect in Idaho by May 7, 2021 and is consistent with the discussion and analysis in the NMFS Biological Opinion.[55] Initiation of consultation on a new criterion was required by May 7, 2020. *EPA has failed to implement this RPA by the deadline and to date has not promulgated a criterion consistent with the RPA*.[56]

- Ensure, either through EPA promulgation of a criterion or EPA approval of a state-promulgated criterion, that a new **chronic criterion for mercury** is in effect in Idaho by May 7, 2021 and that the criterion is consistent with the discussion and analysis in the NMFS Biological Opinion.[57] Initiation of consultation on a new criterion was required by May 7, 2020. On October 4, 2022, EPA and NWEA entered into a stipulated order that extended the deadline for implementing the mercury RPA until April 4, 2024 (18 months after the entry of the stipulated order).[58]

As noted, FWS also made a number of jeopardy determinations in its Biological Opinion.

Specifically, FWS determined that:

- The proposed **chronic arsenic criterion** of 150 µg/L level likely is likely to jeopardize the Snake River physa, Bliss Rapids snail, Banbury Springs lanx, Bruneau hot springsnail, bull trout, and Kootenai River white sturgeon, and is likely to adversely modify designated critical habitat for these species.[59]

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[51] NMFS Biological Opinion at 281.
[52] *See* IDAPA 58.01.02, "Water Quality Standards" sec. 210.03.c.i. https://adminrules.idaho.gov/rules/current/58/580102.pdf. (last visited 21 Feb. 2023).
[53] Idaho DEQ, *2020 Triennial Review of Idaho Water Quality Standards*, 10 (2020), https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15165.
[54] *Id*.
[55] NMFS Biological Opinion at 282.
[56] *See* IDAPA 58.01.02, "Water Quality Standards" sec. 210.03.a.
[57] NMFS Biological Opinion at 284.
[58] Stipulated Order on Remedy, *Northwest Environmental Advocates v. The National Marine Fisheries Service,* No. 1:13-cv-00263-DCN (2022), ECF No. 119. This stipulated order on remedy requires EPA to issue draft mercury criteria by March 30, 2024; determine whether ESA consultation is required within 9 months of that publication; and sign a final criteria rule within 8 months of concluding the ESA consultation or, if EPA determines no consultation is required, finalize the rule within 8 months of that determination. *Id*. at ¶ I.1–4.
[59] FWS Biological Opinion at 258.

- The proposed **acute and chronic copper criteria** are likely to jeopardize the Snake River physa, Bliss Rapids snail, Banbury Springs lanx, Bruneau hot springsnail, bull trout, and Kootenai River white sturgeon, and is likely to adversely modify designated critical habitat for the fish species.[60]

- The proposed **acute and chronic cyanide criteria** of 22 µg/L and 5.2 µg/L, respectively, are likely to jeopardize bull trout and Kootenai River white sturgeon, and are likely to adversely modify designated critical habitat for these species.[61]

- The proposed **chronic lead criterion** is likely to jeopardize the Banbury Springs lanx.[62]

- The proposed **chronic mercury criterion** of 0.012 µg/L is likely to jeopardize bull trout and Kootenai River white sturgeon, and is likely to adversely modify designated critical habitat for these species.[63]

- The proposed **chronic selenium criterion** of 5 µg/L is likely to jeopardize bull trout and Kootenai River white sturgeon and is likely to adversely modify designated critical habitat for these species.[64]

- The proposed **acute and chronic zinc criteria** are likely to jeopardize bull trout and Kootenai River white sturgeon, and are likely to adversely modify designated critical habitat for these species.[65]

- The proposed **acute and chronic nickel criteria** are likely to jeopardize the Snake River physa, Bliss Rapids snail, Banbury Springs lanx, and Bruneau hot springsnail.[66]

Like NMFS's Biological Opinion, FWS's Biological Opinion included a series of final RPAs that, if taken, FWS believed would avoid jeopardizing the continued existence of the listed species and avoid the destruction or adverse modification of critical habitat.[67] The final outstanding RPAs and their status are:

- Ensure, either through EPA promulgation of criteria or EPA approval of a state-promulgated criteria, that **new acute and chronic criteria for cyanide** are in effect in

[60] *Id*.
[61] *Id*.
[62] *Id*.
[63] *Id*.
[64] *Id*.
[65] *Id*.
[66] *Id*. at 259.
[67] *Id*. at 267–68; *see also*, 16 U.S.C. § 1536(b)(3)(A).

Idaho by May 7, 2021 and are consistent with the discussion and analysis in the FWS Biological Opinion.[68] Initiation of consultation on new criteria was required by December 23, 2020. *EPA has failed to implement this RPA by the deadline and to date has not promulgated the RPA*.[69]

- Ensure, either through EPA promulgation of a criterion or EPA approval of a state-promulgated criterion, that **a new chronic criterion for lead** is in effect in Idaho by May 7, 2023 and is consistent with the discussion and analysis in the FWS Biological Opinion.[70] Initiation of consultation on a new criterion was required by December 23, 2022. *EPA has failed to implement this RPA by the deadline and to date has not promulgated the RPA*.[71]

- Ensure, either through EPA promulgation of criteria or EPA approval of a state-promulgated criteria, that **new acute and chronic criteria for zinc** are in effect in Idaho by May 7, 2022 and are consistent with the discussion and analysis in the FWS Biological Opinion.[72] Initiation of consultation on new criteria was required by December 23, 2021. *EPA has failed to implement this RPA by the deadline and to date has not promulgated the RPA*.[73]

- Ensure, either through EPA promulgation of criteria or EPA approval of a state-promulgated criteria, that **new acute and chronic criteria for nickel** are in effect in Idaho by May 7, 2022 and are consistent with the discussion and analysis in the FWS Biological Opinion.[74] Initiation of consultation on new criteria was required by December 23, 2021. *EPA has failed to implement this RPA by the deadline and to date has not promulgated the RPA*.[75]

- FWS provided the same RPAs as NMFS for the **low-end hardness floor, arsenic, and mercury,** all of which can be found in the above discussion.[76]

Further, in acknowledgment that the final RPAs require Idaho and/or EPA to undergo rulemaking, the Services included interim RPAs to be implemented as a part of the CWA Section

[68] FWS Biological Opinion at 277. In the absence of specific data, the Service's best estimate of adequately safe cyanide concentrations for acute and chronic exposures, respectively, is 13 and 2.5 µg/L.
[69] *See* IDAPA 58.01.02, "Water Quality Standards" sec. 210.03.a.
[70] FWS Biological Opinion at 278.
[71] *See* IDAPA 58.01.02, "Water Quality Standards" sec. 210.03.a.
[72] FWS Biological Opinion at 282.
[73] *See* IDAPA 58.01.02, "Water Quality Standards" sec. 210.03.a.
[74] FWS Biological Opinion at 283.
[75] *See* IDAPA 58.01.02, "Water Quality Standards" sec. 210.03.a.
[76] FWS Biological Opinion at 269. *See id*. at 285 (interim RPA for the low-end hardness floor), 272 (interim RPA for arsenic), 274 (interim RPA for *copper)*, 279 (interim RPA for mercury), and 280 (interim RPA for selenium).

402 NPDES permit process.[77] The intended purpose of the interim RPAs is to temporarily protect listed species until the rulemaking process is complete.[78] Each of the criteria for which the Services reached jeopardy determinations—with the exception of the hardness floor—was given final and interim RPAs. [79] In addition to each of these specific interim RPAs, FWS noted that EPA "consults with the Service over each new or reissued NPDES permit in Idaho to ensure that it will not cause jeopardy to the species or adverse modification to critical [] habitat." [80] It is unclear, however, the degree to which this consultation has been occurring.

The interim RPAs, along with EPA's authority to consult with the Services on NPDES permits, were only meant to "minimize any adverse effects during the implementation period *while new criteria [were] developed and adopted*."[81] The Services did not determine, in either Biological Opinion, that permanent use of the interim RPAs would be protective of listed species, even if EPA were to diligently apply them. Furthermore, in 2018, EPA authorized Idaho to administer the NPDES program in the state, making Idaho, not EPA, the agency responsible for writing and issuing NPDES permits.[82] As a NMFS employee noted in a 2018 email exchange, this shift in permitting authority raises questions regarding whether Idaho knows to, and is in fact, implementing the RPAs.[83] The exchange also noted concerns about the Service's lack of authority

[77] FWS Biological Opinion at 286.
[78] FWS Biological Opinion at 270.
[79] NMFS Biological Opinion at 282 (arsenic); FWS Biological Opinion at 271–72 (arsenic); FWS Biological Opinion at 279 (mercury); NMFS Biological Opinion at 284 (mercury); FWS Biological Opinion at 275–77 (cyanide); NMFS Biological Opinion at 284 (cyanide); FWS Biological Opinion at 278 (lead); FWS Biological Opinion at 281 (zinc); FWS Biological Opinion at 283 (nickel).
[80] *Id*. at 270.
[81] *Id*. (emphasis added).
[82] *See* Idaho NPDES Program Authorization, https://www.epa.gov/npdes-permits/idaho-npdes-program-authorization.
[83] E-mail from Johnna Sandow, Fish Biologist, NOAA Fisheries West Coast Region to Patricia Shaw-Allen, Ecotoxicologist, NOAA Fisheries (Oct. 10, 2018, 9:32 AM) (on file with author) ("I'm not sure Idaho

over the state.[84] In fact, there is none. But despite the change in NPDES permitting authority, EPA still bears the responsibility to carry out the RPAs. The transition underscores the importance of timely EPA action to do so.

Notably, FWS stated in its Biological Opinion that if the final RPAs are not completed by their effective dates, "all interim measures identified in the individual RPA shall be adopted as final for purposes of establishing aquatic life criteria in association with Idaho's water quality standards."[85] The meaning of this statement is unclear—i.e. whether the incorporation of the interim measures by rule would become the final RPA or whether their interim status continues until such date as the final RPAs are implemented. Regardless, EPA has failed and continues to fail to meet its obligation to implement the final RPAs, there is no assurance that the interim RPAs are being used by IDEQ in issuing NPDES permits, and the agencies did not find the interim RPAs adequate, in and of themselves, to avoid jeopardy and adverse modification of critical habitat.

The below tables set forth the final and interim RPAs included in FWS's and NMFS's Biological Opinions, the deadlines by which those RPAs were to be implemented, and the status of that implementation.

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understands that they need to implement those RPAs as they prepare permits for facilities discharging to waters with anadromous species/critical habitat.").

[84] E-mail from Patricia Shaw-Allen, Ecotoxicologist, NOAA Fisheries to Johnna Sandow, Fish Biologist, NOAA Fisheries West Coast Region (Oct. 10, 2018, at 6:39 AM) (on file with author).

[85] FWS Biological Opinion at 285.

Table 1: Outstanding NMFS Reasonable and Prudent Alternatives				
Element	**Risks to listed species at Idaho Criteria**	**RPA**	**Implementation Deadline[86]**	**Status as of 03/31/2022[87]**
Hardness Floor (General aspect)	- increase in mortality - decreases in growth and survival of juvenile salmonids NMFS Biological Opinion at 117.	Remove the low hardness floor on the hardness dependent metals criteria equations and instead calculate using actual site conditions. No interim measure. NMFS Biological Opinion at 281.	**5/7/2017**	Incomplete[88]
Arsenic	**Effects on listed snails:** - reduced food resources **Effects on listed salmonids** - reduced prey availability - reduced growth in juveniles - liver and organ damage - behavioral modifications - reduced reproductive success NMFS Biological Opinion at 124-25.	Adopt a new chronic criterion incorporating dietary exposure. Interim: Ensure that the 10 µg/L human health recreational use standard is applied. NMFS Biological Opinion at 282.	**5/7/2021**	Final RPA Incomplete[89] Interim Measure Unknown
Mercury	**Effects on salmonids:** - endocrine disruption - brain damage - behavioral abnormalities - reproductive impairment - reduced feeding efficiency and competitive ability NMFS Biological Opinion at 149-50.	Adopt a new chronic criterion for mercury. Interim: Use the 2001 EPA/2005 Idaho human health fish tissue criterion of 0.3 mg/kg wet weight. For water bodies for which fish tissue data are not available the water body will be presumed to meet the fish tissue criterion of 0.3 mg/kg wet weight if the geometric mean of measured concentrations of total mercury in water is less than 2 ng/L. If not, fish tissue data shall be collected. NMFS Biological Opinion at 284.	**5/7/2021**	Under Stipulated Order[90] **Draft by March 30, 2024**

*Additional Interim Measure: EPA to consult with NMFS over each new or reissued NPDES permit to ensure it will not cause jeopardy or adverse modification.[91]

[86] If EPA needed to initiate consultation about the new criteria, it was to have done so 135 days before the implementation deadline for each criterion. All deadlines retrieved from FWS Biological Opinion at 285.

[87] Idaho DEQ, *Water Quality Standards*, §210, https://adminrules.idaho.gov/rules/current/58/580102.pdf.

[88] DEQ believes that implementation of the interim measures identified in the Biological Opinion, along with implementation of other aspects of Idaho water quality standards, are sufficient to protect species listed under the ESA. Idaho DEQ, *2020 Triennial Review of Idaho Water Quality Standards*, 10. https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15165.

[89] DEQ will prioritize adoption of a new arsenic standard when updates to EPA's 304(a) guidance are finalized. *Id*.

[90] *See* description of Stipulated Order, *supra* n.58.

[91] NMFS Biological Opinion at 286.

Table 2: Outstanding FWS Service Reasonable and Prudent Alternatives[92]				
Element	**Risks to listed species at Idaho Criteria**	**RPA**	**Implementation Deadline[64]**	**Status as of 03/31/2022[93]**
Cyanide	- Mortality - reduced growth - reduced swimming performance - reduced egg production - similar effects on prey. FWS Biological Opinion at 166-70.	Adopt new acute and chronic criteria using a temperature/toxicity correlation equation.[94] Interim: a zone of passage limited to no more than 25% of the volume of a stream must be maintained around any mixing zone for discharges that include cyanide. FWS Biological Opinion at 275-77.	**5/7/2021**	Incomplete
Lead	**For pulmonate Banbury Springs lanx snail:** - Reduced growth - Reduced egg production FWS Biological Opinion at 176.	Adopt a new chronic criterion. Interim: discharges must meet the chronic lead criterion at the end of pipe; no mixing zone is allowed. FWS Biological Opinion at 278.	**5/7/2023**	Incomplete
Nickel	**For listed snail species:** - Mortality - negative effects to reproduction, numbers, and distribution FWS Biological Opinion at 218-19.	Adopt new acute and chronic criteria. Interim: the mixing zone for discharges of nickel into snail habitat must be limited to no more than 25% of flow. No mixing zone for discharges into lanx habitat. FWS Biological Opinion at 283.	**5/7/2022**	Incomplete
Zinc	**For the bull trout:** - impaired ability of habitat to provide for normal reproduction, growth, and survival. **For the Kootenai River white sturgeon:** - reduced growth and survival - impeded reproduction and maintenance or increase of the wild population. - impaired ability of critical habitat to provide for normal behavior, reproduction, and survival. FWS Biological Opinion at 204, 207-08.	Adopt new acute and chronic criteria. Interim: maintain a zone of passage sufficient to allow unimpeded passage of adults and juveniles. Zone must be limited to less than or equal to 25% of the volume of the stream. FWS Biological Opinion at 281-82.	**5/7/2022**	Incomplete

[92] FWS incorporated the NMFS RPAs into its Biological Opinion. The duplicative RPAs are not included in the above table.
[93] Idaho DEQ, *Water Quality Standards*, §210. https://adminrules.idaho.gov/rules/current/58/580102.pdf
[94] In the absence of specific data, the Service's best estimate of adequately safe cyanide concentrations for acute and chronic exposures, respectively, is 13 and 2.5 µg/L. FWS Biological Opinion at 277.

IV. ESA-listed Species are Likely to be Harmed Absent Implementation of the RPAs.

As stated above, RPAs are rare and only occur when the Services determine that an agency action jeopardizes ESA-listed species or risks destruction or adverse modification of its critical habitat. If EPA continues to fail to implement the RPAs, it is subjecting listed species to the very conditions that caused the Services to make jeopardy decisions in the first place. EPA's failure to implement the RPAs can, therefore, result in significant harm to listed species. The below sections address the harm posed to Idaho's listed species due to EPA's failure to implement the RPAs.

A. Low Hardness Floor

Water hardness is defined by the amount of dissolved minerals, primarily calcium and magnesium, in water.[95] Some metals criteria proposed by IDEQ are hardness-dependent, "meaning that rather than establishing a criterion as a concentration value, the criteria are defined as a mathematical equation using the hardness of the water as the independent variable."[96] The criteria that vary based on site-specific hardness are the following: cadmium, copper, chromium III, lead, nickel, silver, and zinc.[97] Instead of using site-specific water hardness for determining criteria, IDEQ proposed a "low-hardness floor" of 25 mg/L, meaning that the lowest number used in calculating criteria would be 25 mg/L, even if the actual hardness were much lower. The use of a hardness floor of 25 mg/l in calculating acceptable levels of metals allows an increased exposure of listed fish to levels that result in adverse effects, ranging from a direct increase in mortality to decreases in growth and survival of NMFS-protected juvenile Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River Sockeye salmon and Snake River

[95] U.S. Geological Survey, Water Science School, Science, Hardness of Water, https://www.usgs.gov/special-topics/water-science-school/science/hardness-water#overview
[96] NMFS Biological Opinion at 102.
[97] *Id*.

Basin steelhead,[98] and FWS-protected species bull trout, Kootenai River white sturgeon, and Banbury Springs lanx.[99]

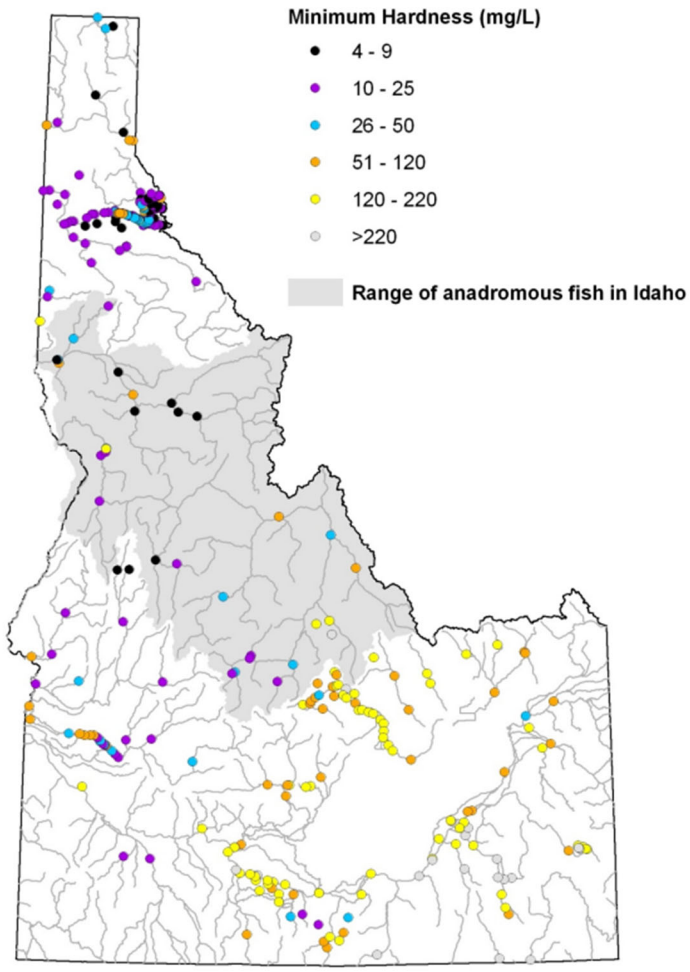
Fish maintain their internal mineral balance through osmoregulation, and at lower hardness levels (aka soft water), the energy required to maintain that balance can be high.[100] Devoting energy to this task can lead to reduced growth, reduced swimming ability, and reduced ability to recover from severe exercise when compared to fish in hard water.[101] Furthermore, as hardness decreases and it becomes more energy intensive for fish to maintain homeostasis, fish may simultaneously become more sensitive to metals that inhibit ionoregulation.[102] Fish such as salmonids, which migrate throughout their lifetimes, may be even more susceptible to changes in water hardness and metal toxicity. For example, a 2010 study of rainbow trout demonstrated that fish acclimated to or incubated in soft water may continue to experience increased sensitivity to metal toxicity even after the fish move into higher hardness water.[103] According to the NMFS Biological Opinion:

> This has implications for salmonid life histories and habitats. Water hardness tends to be lowest near the headwaters of streams and increase downstream, and some salmonids tend to ascend streams to spawn in the upper reaches of watersheds and after emerging, their fry move downstream into higher hardness waters.[104]

Within the range of listed salmon or steelhead, water hardness tends to decrease from south to north and can be highly variable with values as low as 4 mg/L having been measured in soft water

[98] *Id*. at 117.
[99] FWS Biological Opinion at 275 (copper and hardness floor), 278 (lead and hardness floor), 283 (nickel and hardness floor).
[100] *Id*. at 105.
[101] *Id*.
[102] *Id*. at 106.
[103] *Id*.; *see also*, Mebane, C.A., D.P. Hennessy, and F.S. Dillon. 2010. Incubating rainbow trout in soft water increased their later sensitivity to cadmium and zinc. *Water, Air, and Soil Pollution*. 205(1-4): 245–250.
[104] NMFS Biological Opinion at 106–107.

areas.[105] "[H]owever, the true minimum hardnesses [sic] in streams in granitic watersheds are probably close to that of snowmelt, which is in the range of 0.5 to 1 mg/L total hardness."[106] The figure below shows minimum hardness values measured at 323 sites in Idaho between 1979 and 2004.[107]



There are, as the figure indicates, many waters in Idaho with hardness levels below IDEQ's proposed hardness floor. Calculating criteria for metals that are hardness dependent using the

[105] *Id*. at 112.
[106] *Id*.
[107] *Id*. at 114.

proposed hardness floor of 25 mg/L instead of the true water hardness can therefore result in hardness dependent metals at levels in listed species' habitats that are not protective.

B. Zinc

Zinc criteria are hardness dependent, as described above.[108] If the criteria were calculated with the proposed hardness floor of 25 mg/L the acute and chronic criteria would be 35 and 32 µg/L respectively.[109] A 2012 study on rainbow trout found that at 36 µg/L zinc in water with a hardness value of 7 mg/L, 80 percent of the trout were killed.[110] Furthermore, NMFS determined that:

> Increased levels of zinc over natural body concentrations can result in mortality, growth retardation, histopathological alterations, respiratory and cardiac changes, and inhibition of spawning and many other elements critical to fish survival. Exposure to high zinc concentrations can result in damage to the gills, liver, kidney and skeletal muscle and cause a physiological shift to occur, making gas exchange more difficult."[111]

Salmonids appear to have varying sensitivity zinc at different life stages with the greatest effects occurring during the first two months after hatching.[112] The majority of the information shows that in waters with a hardness less than about 25 mg/L, the proposed criteria would not be sufficiently protective of listed Snake River salmon and steelhead if they were exposed at their most sensitive life stages.[113]

The proposed zinc criteria are also likely to cause mortality of juvenile bull trout and reduce bull trout prey abundance.[114] One study of the proposed acute criterion for zinc found substantial

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[108] NMFS Biological Opinion at 187, 193.
[109] The acute and chronic criteria are nearly the same presumably because zinc is a "fast-acting toxicant that is no more toxic in long-term exposures than in short-term exposures." FWS Biological Opinion at 197.
[110] NMFS Biological Opinion at 108.
[111] *Id.*
[112] *Id*. at 193; *see also* FWS Biological Opinion at 202.
[113] *Id*. at 193.
[114] FWS Biological Opinion at 266.

mortality rates to larger juvenile fish at low water hardness values with a pH of 7.5.[115] In Idaho, waters occupied by bull trout with similar hardness and pH to those from the study are common.[116] Resident (non-anadromous) and juvenile migratory bull trout prey on terrestrial and aquatic insects, macro-zooplankton, and small fish, while adult bull trout are piscivores.[117] Some information suggests that elevated zinc concentrations could cause measurable losses of bull trout prey insect species.[118] One study found that zinc concentrations just slightly above the proposed criteria level decimated the mottled sculpin, a forage fish prey species.[119] IDEQ's proposed zinc criteria are also likely to cause mortality of Kootenai River white sturgeon and cause sub-lethal effects to normal sturgeon behavior, resulting in decreased reproduction and survival and causing reductions in their prey species.[120] As with bull trout and salmonids, white sturgeon show greater sensitivity to zinc at earlier life stages.[121] A test on Columbia River white sturgeon showed that "the apparent threshold for adverse effects of zinc to white sturgeon was the [Idaho acute] criterion concentration [that] indicates the potential for adverse effects from short-term exposures of zinc to a sensitive life stage of white sturgeon."[122] The proposed zinc criteria are also likely to adversely affect freshwater mussels, a major food item for white sturgeon, as well as algae and diatoms, which in turn would cause a loss of herbivore species that are also prey for the sturgeon.[123] "Reduced prey availability would mean reduced sturgeon body weight, increased energy expenditure to procure prey, decreased energy available for reproduction, and generally reduced

[115] *Id*. at 203.
[116] *Id*.
[117] *Id*. at 203–04.
[118] *Id*. at 204.
[119] *Id*.
[120] *Id*. at 267.
[121] *Id*. at 206.
[122] *Id*.
[123] *Id*.

survival."[124]

C. Nickel

Nickel criteria are also hardness dependent.[125] At water hardness values of 10, 25, 50, 100, and 250 mg/L, the acute nickel criterion value is 67, 145, 260, 468, and 1017 µg/L, respectively, while the chronic criterion values are 7, 16, 29, 52, and 113 µg/L, respectively.[126] As noted above, the proposed action uses a hardness floor when calculating metal criteria that "presumes that at a water hardness of 10 mg/L, nickel is no more toxic than at a water hardness value of 25 mg/L."[127] FWS did not find any evidence supporting this presumption, and in fact found evidence to the contrary for nickel.[128] One 2007 study using water fleas found that sensitivity to nickel decreased as water hardness increased.[129]

Exposure to nickel at the proposed acute and chronic criterion likely jeopardizes the Banbury Springs lanx.[130] FWS found that the proposed acute criterion is likely to cause "severely retarded growth" to the species while the proposed chronic criterion is likely to cause mortality and population reductions.[131] A 2013 study identified the 96-hour lethal concentration to 50 percent of snails exposed to nickel at 445 µ/L at a water hardness of 85 mg/L, similar to the proposed acute criterion of 408 µ/L.[132] A 2010 laboratory study on snails from the same family as the Banbury Springs lanx found that exposure to nickel at 1.6 µg/L for 21 days in waters with a

[124] *Id*.
[125] NMFS Biological Opinion at 163.
[126] FWS Biological Opinion at 214.
[127] *Id*.
[128] *Id*.
[129] *Id*. at 215.
[130] *Id*. at 219, 258.
[131] *Id*.
[132] *Id*. at 215.

hardness value of 212 mg/L led to adverse effects for 20 percent of the population.[133] At the same water hardness, the proposed Idaho nickel chronic criterion would be 98 µg/L, "which indicates that the proposed chronic water quality criterion for nickel would be severely underprotective of [Banbury Spring lanx]."[134] A second laboratory study in 2014 revealed similar adverse effects at levels well below the proposed chronic criterion.[135] Finally, a 2011 study testing the "effects of long-term nickel exposures to complex pond-like communities" found a slight decline in snail abundance at 24 µg/L and, significantly, that snail species were completely extirpated at exposures of 48 and 96 µg/L.[136] "The 48 µg/L treatment with extirpated snails was almost the same nickel concentration as the IDEQ proposed chronic aquatic life criterion of 52 µg/L (tests waters had mean hardness of 100 mg/L, dissolved organic carbon of 3.8 mg/L, and pH of 8.6.)."[137] On this basis, FWS concluded that the proposed acute and chronic criteria for nickel are likely to jeopardize the Banbury Springs lanx throughout its range.

D. Lead

The proposed chronic criterion for lead is hardness dependent.[138] At water hardness values of 10, 25, 50, 100, and 250 mg/L, the chronic criterion values for lead are 0.2, 0.5, 1.2, 2.5, and 6.7 µg/L, respectively.[139] As discussed above, the proposed IDEQ criteria provide for a hardness floor of 25 mg/L that "presumes that at a hardness value of 10 mg/L, lead is no more toxic than at a hardness of 25 mg/L."[140] However, FWS did not find any scientific evidence to support this

[133] *Id*. at 216.
[134] *Id*.
[135] *Id*. at 217.
[136] *Id*. at 218.
[137] *Id*.
[138] FWS Biological Opinion at 171.
[139] *Id*.
[140] *Id.*

assumption and did not rely on it for its analysis.[141]

The proposed chronic criterion for lead is likely to jeopardize the Banbury Springs lanx by adversely affecting growth and egg production.[142] The Banbury Springs lanx is a pulmonate snail considered to be in the family Lymnaeidae.[143] "Pulmonate snails in the family Lymnaeidae have been shown to be hypersensitive to chronic lead toxicity."[144] The reasons for this hypersensitivity appear to be related to the high demand for calcium by juvenile pulmonate snails, relative to their body size and the role of lead in mimicking and disrupting calcium uptake." [145] One study demonstrated a 20 percent reduction in growth of juvenile snails when exposed to a dissolved lead concentration of about 3 µg/L in water with a hardness of about 102 mg/L.[146] A second study that tracked egg production as a measure of reproductive output found that snails exposed to 1 µg/L lead in water with a hardness value of 87 mg/L experienced reduced egg production.[147] The proposed chronic criterion at that hardness value is 2.2 µg/L.[148] That same study estimated that a no-effect concentration of lead would be 0.4 µg/L, less than one fifth the amount allowed by the proposed criteria.[149] Because of the hypersensitivity of pulmonate snails in the family Lymnaeidae, the proposed chronic lead criterion is likely to adversely affect the Banbury Spring lanx.

E. Arsenic

For arsenic, the primary concern for ESA-listed species is from bioaccumulation through

[141] *Id*.
[142] *Id.* at 176, 258.
[143] *Id*. at 172.
[144] *Id*.
[145] *Id.*
[146] *Id*.
[147] *Id.* at 174.
[148] *Id*.
[149] *Id.*

the food chain.[150] For listed snail species, the proposed arsenic levels are likely to significantly impact algal communities, thereby reducing the availability of a significant food resource throughout the snails' habitat ranges.[151] Studies have shown that exposure to arsenic at levels as low as 22 µg/L can impair photosynthesis in algal communities by 50 percent.[152] For fish, studies conducted using rainbow and bull trout have demonstrated that arsenic ingestion at levels below the proposed water quality criterion are associated with liver and other organ damage, reduced growth in salmonid juveniles, and adverse physiological effects.[153] Specifically, arsenic at proposed criterion levels is likely to cause reduced growth and survival, organ damage, and behavioral modifications to bull trout species.[154] For the Kootenai River white sturgeon, exposure to arsenic is likely to cause altered feeding behavior, and reduced body weight, prey availability, reproductive success, and survival.[155] NMFS's review of waterborne arsenic concentrations in Idaho and Montana waters suggested that, through bioaccumulation, concentrations harmful to salmonids may even occur in streams with dissolved arsenic concentrations on the order of 10 µg/L or less.[156] The chronic criterion proposed by IDEQ was 150 µg/L. Furthermore, Idaho's proposed criterion is based on dissolved arsenic, which evidence suggests is less of a concern than

[150] The majority of studies and literature suggest that waterborne exposure to arsenic at concentrations near the proposed standard does not affect salmonids (NMFS Biological Opinion at 118), although one study suggested that arsenic concentrations of 42 to 134 µg/L were estimated to be associated with the onset of embryo mortality (lethal concentrations killing 1% to 10% of tested fish). FWS Biological Opinion at 143. However due to reporting issues, that study could not be critically reviewed.
[151] FWS Biological Opinion at 140, 260.
[152] *Id*. at 142.
[153] NMFS Biological Opinion at 119–20; FWS Biological Opinion at 143–44.
[154] FWS Biological Opinion at 260.
[155] *Id*. at 261.
[156] NMFS Biological Opinion at 120; FWS Biological Opinion at 144.

particulate arsenic, which is more important as a source to aquatic food webs.[157] In other words, the proposed arsenic criterion may not protect against levels of particulate arsenic, including protection of sediment quality that is key to protecting species from arsenic.[158] Both NMFS and FWS agree "that the dissolved arsenic criterion may be less relevant than a sediment, dietary, or tissue residue based criterion."[159]

The arsenic RPAs assumed that most of Idaho waters are subject to human health criteria of 10 µg/L.[160] However, EPA disapproved Idaho's 10 µg/L criteria for protection of human health in 2016 following a lawsuit by NWEA.[161] As part of that same disapproval action, EPA also disapproved Idaho's 1999 adoption of 50 µg/L criteria for human health.[162] Neither Idaho nor EPA has yet promulgated a new arsenic criterion, and in the interim EPA has recommended that Idaho use its narrative criteria to apply EPA's far more stringent 304(a) criteria.[163] Idaho has not taken this position, and instead considers the disapproved 10 µg/L to continue to be the effective criteria.[164] While the water quality standards are ambiguous as to whether these criteria are based on dissolved or total recoverable arsenic, the Services presumed the latter to be the case as

[157] NMFS Biological Opinion at 120–21; FWS Biological Opinion at 146. "Dissolved" metals are those that remain after a water sample is passed through a 0.45 µm filter, are truly in solution, and will not settle from gravity. Particulate metals are larger and are subject to settling due to gravity. NMFS Biological Opinion at 85–86.
[158] FWS Biological Opinion at 148.
[159] *Id*.
[160] *Id*. at 151.
[161] *See* Letter from Daniel Opalski, Director Office of Water and Watersheds, EPA Region 10 to Barry Burnell, Water Quality Program Administrator, IDEQ, Re: EPA Disapproval of Idaho's Arsenic Human Health Water Quality Criteria (Sept. 15, 2016).
[162] *Id.*
[163] *Id*. at 5.
[164] IDEQ, EPA Actions on Proposed Standards, https://www.deq.idaho.gov/water-quality/surface-water/epa-actions-on-proposed-standards/ ("10 µg/L continues to be the CWA effective arsenic criterion for both exposure through fish consumption only and exposure through drinking water+fish consumption").

"[n]either swimmers nor fish can be expected to filter their water prior to ingestion."[165] FWS then evaluated whether this assumed criterion would protect listed species, concluding that, "[w]hile it is much lower than the proposed chronic criterion, in some field settings, adverse effects to fish, or at least elevated arsenic in prey organisms, were reported from locations where the 10 µg/L criterion was only slightly exceeded."[166] However, FWS ultimately concluded that 10 µg/L would likely be protective because harmful concentrations of inorganic arsenic are not usually associated with ambient levels below 10 µg/L.[167] Regardless, EPA must implement the RPA for arsenic if for no other reason than the fact that Idaho has no EPA-approved human health criteria on which the Services relied and EPA has repeatedly sought extensions to provisions of its Consent Decree that require EPA or IDEQ action to adopt new human health criteria.[168]

To summarize, if only direct water exposures were considered, arsenic would be of minimal concern to listed salmonids. However, through bioaccumulation, arsenic concentrations below the chronic criterion of 150 µg/L and even below the purported human health-based criterion of 10 µg/L have been observed to cause harm to salmonids. As such, adverse effects are likely to occur at the chronic criterion via food web transfer.[169]

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[165] *Id*; FWS Biological Opinion at 138.
[166] FWS Biological Opinion at 151.
[167] FWS Biological Opinion at 156.
[168] Consent Decree *Northwest Environmental Advocates v. EPA*, Case 3:15-cv-01151-HZ (June 7, 2016), ¶ 6 ("If EPA signs proposed new arsenic criteria for Idaho by November 15, 2018, and Idaho does not adopt replacement criteria that EPA approves by July 15, 2019, EPA will sign a notice of final rulemaking action on EPA's proposed arsenic criteria for Idaho by July 15, 2019."); U.S. District Court District of Oregon (Portland (3)) CIVIL DOCKET FOR CASE #: 3:15−cv−01151−HZ ("ORDER: Granting Motion 22. The Consent Decree shall be modified by extending the Paragraph 5 deadlines to November 15, 2022, and the Paragraph 6 deadlines to November 15, 2023. Ordered by Judge Marco A. Hernandez. (jp) (Entered: 06/15/2018)"); ("ORDER: Granting Defendant's Unopposed Second Motion to Modify Consent Decree 24. The Consent Decree shall be modified by extending Paragraph 5 deadlines to November 15, 2023 and the Paragraph 6 deadlines to November 15, 2024. Ordered by Judge Marco A. Hernandez. (jp) (Entered: 06/21/2022)").
[169] NMFS Biological Opinion at 124–25.

F. Cyanide

The proposed acute and chronic criteria for cyanide are 22 µ/L and 5.2 µ/L, respectively.[170] The toxicity of cyanide is strongly influenced by water temperature with increased toxicity occurring at lower temperatures.[171] Despite that low temperature waters "c[an] hardly be considered 'unusual'" in Idaho, the proposed criteria make no adjustment to account for this increased toxicity.[172] In fact, Idaho water temperatures are, on average, below 6° C throughout the winter months.[173] NMFS considers an acute criterion protective when exposure to a species at the final acute value (the criterion multiplied by two) causes less than 50 percent of a population to die.[174] One study on rainbow trout by Kovacs and Leduc demonstrated that a lethal concentration of 50 percent occurred after four days of exposure to cyanide at 27 µg/L and 40 µg/L in 6° C and 12° C waters, respectively.[175] The acute cyanide criterion, therefore, is not protective of listed salmonids. One study of the chronic cyanide toxicity effects on juvenile rainbow trout observed reduced growth to exposures of 5µg/L of cyanide at 6° C.[176] The same researchers also observed reduced swimming ability in rainbow trout after a 20-day exposure to 5µg/L of cyanide.[177] These studies demonstrate the inadequacy of the 5.2 µg/L chronic cyanide criterion.

The proposed acute and chronic criteria for cyanide are likely to jeopardize bull trout and adversely modify its critical habitat.[178] Relying on the same studies as NMFS, FWS found that

[170] NMFS Biological Opinion at 139.
[171] *Id*.
[172] FWS Biological Opinion at 166.
[173] NMFS Biological Opinion, at 141, Fig. 2.4.5.1.
[174] NMFS Biological Opinion at 142.
[175] *Id.*
[176] *Id.* at 143.
[177] *Id.*
[178] FWS Biological Opinion at 168–70, 258.

substantial mortality of exposed bull trout likely to occur at the proposed acute criterion.[179] Regarding the proposed chronic criterion of 5.2 µg/L, FWS cited a study showing long-term exposure at a cyanide concentration of 5.6 µg/L caused an 18 percent reduction in egg production for brook trout, a species closely related to bull trout. In cold temperatures, reduced growth and swimming performance in rainbow trout were observed at concentrations less than 4.8 µg/L.[180] In addition to causing these adverse effects, FWS determined "[t]he proposed acute and chronic criterion are likely to create lethal or sublethal chemical barriers that impair or preclude bull trout migration [] and movement between various types of habitats."[181] Migration is essential to the species' survival. Additionally, exposure to cyanide levels at the proposed criteria cause adverse effects to bull trout prey species.[182] A decline in prey affects the bull trout's ability to maintain robust populations, and is therefore likely to adversely affect the species.[183]

FWS determined likely jeopardy and adverse modification of critical habitat for the Kootenai River white sturgeon for the same reasons as for the bull trout as well as two others.[184] First, one study of the bluegill found that spawning was "completely inhibited at a concentration of 5.2 µg/L [hydrogen cyanide]," the same concentration as Idaho's proposed chronic criterion, "which clearly indicates that the criteria cannot be considered fully protective of critical life functions in all fish species."[185] Second, FWS determined that sediment-sorbed cyanide posed a risk to white sturgeon eggs and early life stage juveniles in sturgeon critical habitat: "Sediment

[179] *Id.* at 166.
[180] *Id.*
[181] *Id.* at 169.
[182] *Id.*
[183] *Id.*
[184] *Id*. at 170.
[185] *Id*. (internal quotations omitted).

quality is critically important to the health of white sturgeon critical habitat because all life stages of the sturgeon are extensively exposed to sediments, either through dermal contact (all life stages) or through incidental ingestion while feeding (juveniles and adults)."[186]

Thus, neither the proposed acute nor chronic cyanide criteria are protective for listed salmonids, bull trout, the Kootenai River white sturgeon, or the critical habitats of the bull trout and white sturgeon.

V. Relief Requested by This Petition and Conclusion

EPA has yet to implement all the final RPAs set forth in the 2014 NMFS and 2015 FWS Biological Opinions. In order to protect the ESA-listed species covered by the Biological Opinions from jeopardy and to prevent adverse modification or destruction of those species' critical habitats—and to avoid "take" of these species—EPA must implement these RPAs. Therefore, for the reasons detailed above, NWEA hereby petitions EPA to promulgate rules consistent with the outstanding final RPAs set forth in the May 7, 2014 NMFS Biological Opinion and the June 15, 2015 FWS Biological Opinion (see Tables 1 & 2, *supra* pp. 15–16), with the exception of mercury as EPA is under a stipulated order regarding criteria for that pollutant.[187] Through such rulemaking, EPA would adopt new or revised aquatic life criteria for the State of Idaho, as follows:

- Hardness floor: remove the low hardness floor on the hardness dependent metals criteria equations and instead calculate using actual site conditions
- Arsenic: adopt a new chronic criterion incorporating dietary exposure
- Cyanide: adopt new acute and chronic criteria using a temperature/toxicity correlation equation
- Lead: Adopt a new chronic criterion

[186] *Id.*
[187] *See supra* n.58.

- Nickel: Adopt new acute and chronic criteria
- Zinc: Adopt new acute and chronic criteria

Given that EPA has missed the existing deadlines for implementation of these RPAs, and the fact that—as determined by NMFS and FWS—implementation is necessary to avoid jeopardy to ESA-listed species, NWEA further requests that EPA make a final decision on this Petition within sixty (60) days of receipt. If EPA grants the Petition, NWEA requests that EPA propose the new or revised aquatic life criteria within one (1) year of the date of receipt of this Petition and that EPA thereafter promptly finalize the proposed criteria.

Respectfully submitted,

Nina Bell, Executive Director
Northwest Environmental Advocates
P.O. Box 12187, Portland, OR 97212

Dated this day, the 1st of June, 2023.

Enclosed:

Attachment A: National Marine Fisheries Service, Final Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Water Quality Toxics Standards for Idaho, NMFS No. 2000-1484 (May 7, 2014)

Attachment B: Fish and Wildlife Service, Biological Opinion for the Idaho Water Quality Standards for Numeric Water Quality Criteria for Toxic Pollutants, OlEIFW00-2014-F-0233 (June 15, 2015)