# *Friends of the Clearwater*

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April 6, 2020

US Army Corps of Engineers
Attn: CRSO EIS
P.O. Box 2870
Portland, OR 97208-2870

Via online: https://comments.crso.info/

Re: Columbia River System Operations Draft Environmental Impact Statement

Dear USACE,

We were disappointed that you chose not to extend this comment period, especially for such a large environmental impact statement and in light of an ongoing pandemic. In light of minimizing exposure to COVID-19, we are trying an online submission. Because the online submission form limits the submission to five attachments, we are going to have to make multiple submissions to provide all of the works cited for our content that you should review. We will label our comments "Part 1," "Part 2," etc., and will add "END" to the final part submitted. All of the subsequent parts are the documents that support our comments, which are in Part 1. Please consider these comments as one integrated comment that we had to divide into multiple parts because of the limitations with submitting this online.

We request notification by mail, pursuant to 40 C.F.R. § 1506.6 of any action taken relevant to this environmental impact statement.

The science we have provided pursuant with the discussion below is the best available science. If any agency is relying on other science, we request an explanation as to why the agency is relying on the other science instead of what we have provided.

Our grassroots organization watchdogs federal-agency activities that impact the Clearwater Basin of North-central Idaho and participates in the public process with comments based on the best science and information that we have. The Clearwater Basin of North-central Idaho is the northern half of the *Big Wild*, which is the largest undeveloped watershed complex left in the Lower 48. It is also the southern boundary of the largest known inland temperate rainforest in the world. The Nez Perce and Clearwater National Forests make up a good portion of the Clearwater Basin, and our mission area is home to spawning and breeding grounds of rare and imperiled species that include bull trout, salmon, and steelhead. Because these fish are born and migrate back to our mission area, we are uniquely situated to discuss some of the cumulative effects that we don't think the draft EIS for the Columbia River System Operations has properly considered. Particularly, we noticed a couple of instances where the agency assumes that actions are mitigation impacts when, based on the best available information and defining mitigation as actions that ease injury to a fish species, these actions are more properly categorized as adverse cumulative impacts.

NEPA-implementing regulations define "mitigation" as including:

> (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
> (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
> (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
> (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
> (e) Compensating for the impact by replacing or providing substitute resources or environments.

40 C.F.R. § 1508.20. And these regulations define "cumulative impact" in the following way:

> Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7. Whether hatcheries are short-term mitigation or adverse long-term impacts depend upon how we define the injury. Hatcheries impose adverse cumulative effects on the existence of wild fish populations. Some habitat programs, funded by the Northwest Power Act, are also probably and inadvertently propping up increased logging levels. The agency needs to discuss this and assess the impacts of business-as-usual, especially since the funding meant to mitigate for salmon and steelhead is actually funding negative cumulative impacts to salmonids from hatcheries and habitat.

**CUMULATIVE IMPACTS**

NFMS recognizes the following factors as those that limit the recovery of wild salmonids:

* Mainstem Columbia River hydropower-related adverse effects,
* Impaired tributary fish passage,
* Degraded, including degradation in floodplain connectivity and function, channel structure and complexity, riparian areas and large woody debris recruitment, stream flow, and water quality as a result of cumulative impacts of agriculture, forestry, and development,
* Impaired water quality and increased water temperature,
* Related harvest effects, particularly for B-Index steelhead,
* Predation, and
* Genetic diversity effects from out-of-population hatchery releases

NMFS 2018 Biological Opinion and EFH Consultation FEIS, p. 146. Our government has done a fantastic job in isolating these impacts and discussing them in different EIS vacuums where the responsible agency can just minimally gloss over the other environmental impacts. Salmon and steelhead face four main threats: hydropower, harvest, hatcheries, and habitat, and they all add up. The existence of harvest depends upon hatcheries, and vice versa. The combination of the above factors is driving our wild salmonids towards extinction, and unless the government takes an action that can make the biggest change, like breaching the lower four Snake River dams, all of these cumulative impacts will press wild salmonids out of existence. Because this pressure is increasing from all sides in terms of cumulative impacts, the cumulative impacts discussion in this draft EIS is woefully insufficient. We elaborate below.

**Hatcheries hurt wild fish populations**

Hatcheries and their adverse impacts on salmon and steelhead deserve a weight and discussion that the USACE has not adequately considered. In Chapter 5, the agency cites Bonneville's Lower Snake River Compensation Plan and the hatcheries that are funded as mitigation. In Chapter 6 (p. 2) the EIS again calls hatcheries "positive and offsetting" to negative impacts. In the most simplistic narrative, hatcheries replace numbers of fish lost for human consumption. However, hatcheries impose negative ecological and genetic impacts that are becoming more widely understood than when salmon and steelhead were listed and the National Marine Fisheries Service implemented regulations that allow for hatcheries. *See* 50 C.F.R. § 223.203. In the past fifteen years, more science has emerged about the negative impacts of hatcheries. In conjunction with dams, hatcheries are suppressing the ability of salmon and steelhead to recover at best, and may be driving wild salmonids towards extinction at worst. For the below reasons, hatcheries are negative cumulative effects for wild fish, and the draft EIS must acknowledge and discuss this. We've provided the best available science on this subject in addition to other agencies' NEPA documents that recognize the negative impacts of hatcheries.

Large releases of hatchery fish increase ecological risk factors. "Several studies have specifically implicated large numbers or high proportions of hatchery fish as contributing to a decrease in wild fish productivity, abundance, or survival. Kostow 2009. Kostow discusses a historical example of what the cumulative effects of large-scale hatchery programs, habitat loss and degradation, and high harvest rates can wreak, using the Columbia River Basin:

> A specific example of this pattern is the lower Columbia River, which historically produced abundant wild Chinook, coho and chum salmon and steelhead. Extensive releases of hatchery fish, particularly of Chinook and coho, occurred throughout the twentieth century. By the early 1990s, Oregon Department of Fish and Wildlife (ODFW) was releasing about 28–35 million fall Chinook, 8–9 million spring Chinook and 11 million coho annually into the lower Columbia and its major tributary the Willamette River (Kostow 1995). Washington was releasing additional Chinook and Coho salmon in the same area. These releases produced tens of thousands of adult hatchery fish that supported high harvest rates (Wright 1993; Flagg et al. 1995; Good et al. 2005). The hatchery fish that escaped the harvest returned to natural production areas in the lower Columbia River basin that by the 1990s contained no more than a few hundred adult wild fish (Wright 1993, Kostow 1997). By the early 2000s, many wild Chinook and coho salmon populations in the lower Columbia were considered to be extirpated (Good et al. 2005) and the remaining wild fish were listed under the ESA, along with the steelhead and chum populations in the same geographic area. Although the specific mechanisms of hatchery–wild fish interactions were not assessed, the large numbers of hatchery fish released and the high harvest rates in fisheries targeting the hatchery fish were among the factors found to contribute to the poor status of these populations in the reviews leading to the final ESA listing decisions (Flagg et al. 1995; Weitkamp et al. 1995; Myers et al. 1998; Good et al. 2005).

Kostow 2009.

Large hatchery releases negatively impact wild fish survival. The group size of hatchery fish, whose individuals do not disperse as far as wild fish, attract predators. The group-size attraction, compounded with exhibiting behavior not typical of wild fish ("aggressive displays, surface feeding, and failure to seek cover"), increase predation risks: "Wild fish are typically intermingled among the hatchery fish, and so are also consumed at higher than natural rates when the hatchery fish are present and attracting predators (Collis et al. 1995; Nickleson 2003)." Kostow 2009.

Hatchery fish pressure the environment's carrying capacity, and highly inflated numbers of hatchery fish will cause density-dependent fish mortality not typically experienced in natural populations. This means that, for more than one offspring to replace a parent, and for populations to recover from events that might lower abundance, the density of parents, eggs, and juveniles, in the environment must be relatively low. Kostow 2009.

In addition to ecological impacts, hatchery-reared fish commonly exert negative genetic effects on wild populations, including lower survival and reproductive fitness. Araki et al. 2010. Numerically rare wild fish will mate with the abundance of fish from hatcheries, and the offspring are genetically predisposed to have low fitness in a wild setting. Studies on segregated broodstocks with a nonlocal origin "indicate very low relative fitness[1] of the hatchery fish." Araki et al. 2008. A summary of these studies points to a fish's genetic makeup as a reason why. Scientists think that the mechanism that most likely explains fitness decline is selection imposed by domestication: "Domestication selection has long been known to be a strong evolutionary force intentionally changing the characteristics of captive-reared organisms, and unintentional selection is likely to occur in typical supplementation programs as well." Araki et al. 2008. One study has confirmed this, finding that some of the genetics selected for captivity are severely maladaptive in wild environments, and resulting fitness decline in succeeding generations can be rapid. Christie et al. 2016.

Researchers studying the genetic effects of domestication have found that hatcheries produce fish that are genetically predisposed to have low fitness in natural stream environments. This lower fitness arises after only a few generations of domestication selection, leading researchers to suggest "repeated use of captive-reared parents to supplement wild populations should be carefully reconsidered." Araki et al 2007. This study was repeated in 2016 by NOAA scientists with similar results. Ford et al.2016.

Lower relative fitness from hatchery fish carries over to their wild-born descendants, thus impacting wild fish populations. In a study published by Araki et al, researchers reconstructed a genetic pedigree on steelhead trout and estimated reproductive fitness of wild-born descendants. In comparison to fish with two wild-born parents, wild-born fish with a single hatchery parent have a relative fitness of 87%, while wild-born fish with two hatchery parents have a very low relative fitness of 37%. Araki et al. 2009. These data are relevant to the long-term success of wild-born salmon. This is particularly concerning when it is clear that more hatchery-born fish are added every year into these systems. The fitness of wild-born fish appears to be in danger, and there is a distinct possibility of extinction that needs to be explicitly considered, and needs to be considered in a way that incorporates the reduction in genetic diversity since the beginning of segregated hatchery programs. The cumulative effects of this over generations could absolutely become significant and are amplified in a dwindling wild fish population.

Steelhead provide a good illustration of hatcheries' negative impacts. Idaho steelhead hatcheries are not for the recovery of wild fish—they exist to provide the only sport fishing and harvest opportunity available for steelhead. NMFS 2019 EA pp. 9, 13-14 (pdf pp. 26, 30). The Idaho-operated steelhead hatchery fish are genetically isolated from the wild steelhead. NFMS 2017 p. 2.

> NMFS defines integrated hatchery programs as those that are reproductively connected or "integrated" with a natural population, promote natural selection over hatchery-influenced selection, contain genetic resources that represent the ecological and genetic

[1] Relative fitness is "the survival and/or reproductive rate of a genotype (or phenotype) relative to the maximum survival and/or reproductive rate of other genotypes in the population." https://www.radford.edu/~rsheehy/GraphingDemo/fitness1.html. Essentially, this is how many offspring one genotype of an organism leaves behind (in comparison to anther genotype) that make it to the breeding stage. Offspring production can fail for fish that don't hatch or survive their early life states, for fish that don't make it upstream, or for fish that don't mate.

> diversity of a species, and are included in a salmon ESU or steelhead DPS. When a hatchery program actively maintains distinctions or promotes differentiation between hatchery fish and fish from a native population, then NMFS refers to the program as "isolated" (also referred to as segregated). Isolated programs promote domestication or selection in the hatchery over selection in the wild and may culture a stock of fish with phenotypes (e.g., different ocean migrations and spatial and temporal spawning distribution) different from the natural population.

NMFS 2017, p. 1. As discussed above, maintaining a hatchery population that is intentionally distinct from a wild population will not contribute towards conservation of the wild population—the hatchery population introduces a risk of cross-breeding, which will reduce the genetic fitness of the wild population. *See* McClure et al. 2008,[2] Weigel et al. 2019.

The numbers of steelhead passing Lower Granite Dam are at an all-time low. *See* Fish Passage Center Lower Granite dam adult counts. The wild-born and the wild-born B-run are even smaller fractions of those numbers. Hatchery programs like the South Fork Clearwater program are not designed for conservation of wild fish and have no conservation benefit. When hatchery fish aren't caught, these hatcheries are providing adverse genetic consequences pulling steelhead towards an extinction vortex by adding domesticated genes into the wild fish population. Even accepting the premise that the non-local broodstock for steelhead has genetic remains from the extirpated North Fork Clearwater steelhead population, it has also had generations of domestication selection at the hands of humans—this genetic line has been repeatedly propagated and reared at Dworshak before released as juveniles. For this reason, even for some broodstock that might have a minor genetic legacy of its ancestry (the extent of which has only ever been discussed anecdotally) from a neighboring basin, artifacts of domestication selection cannot be ignored. In the last ESA status review for steelhead, the Northwest Fisheries Science Center updated risk assessments for major population groups of steelhead in Clearwater River (Major Population Group). The Center renewed the Lower Clearwater steelhead population at a "moderate risk" for abundance and productivity. The Center issued a "high risk" rating on abundance and productivity for Lolo Creek and South Fork Clearwater, where "[t]here are relatively large and consistent hatchery releases into the area." Northwest Fisheries Science Center (NFSC 2015). The Center stated,

> The PBT results for the initial year of adult hatchery returns (2012) indicate substantial numbers of hatchery fish are available to spawn after accounting for known removals. It is not possible at this time to generate productivity estimates for this grouping since estimates of the total number of spawners including hatchery fish are not available. For this review, the provisional high-risk A/P ratings applied in prior reviews will be carried forward.

NFSC 2015 p. 116.

In Idaho's Final Steelhead Hatcheries Proposed Evaluation Pending Determination (PEPD), the authors admitted that "interbreeding and competition with hatchery fish that outnumber natural-origin fish" are one of the reasons that Snake River Steelhead DPS remain threatened, and that "[h]atchery effects are likely more pronounced when the program occurs on a listed population." Idaho Steelhead Proposed Evaluation Pending Determination, p. 6. Then the PEPD listed various streams where the fraction of hatchery fish exceeded 50 percent: Tucannon, Asotin Creek, Lolo Creek, South Fork Clearwater, Little Salmon River, Pahsimeroi, Lemhi, East Fork Salmon, and Upper Salmon River. If a smaller fraction of hatchery fish could pose a significant effect, having the majority of fish in the area be the hatchery fish significantly compounds that.

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[2] Hatcheries are more appropriate for a short-term recovery goal, but can cause problems if used to recover a fishery in the long term. Because these hatcheries have become long-term operations, they are not contributing to the recovery of steelhead, as is evidenced by their distinguished genetic line.

Continued plans for the release of hatchery fish will continue to compound the negative impacts of hydropower on threatened salmonids. The release of hatchery steelhead dramatically outnumbers wild B-run fish. And these two types of fish are not identical -- hatchery steelhead are genetically divergent because of artificial selection, which causes offspring that survive poorly in natural stream environments. Christie et al. 2012. Hatchery fish that mate with wild fish will pass along the genetic divergence to their offspring. Specifically, hybrid offspring are much less fit than B steelhead born of two wild parents and raised in nature. Araki et al. 2009. Natural-born steelhead therefore face a one-two punch given their rarity: they will very likely mate with hatchery fish and then produce offspring that are poorly suited to survive.

Based on the science of genetics and operation of hatcheries, hatcheries are negative cumulative impacts to wild fish. Hydropower contributes to this if hatcheries release numbers of fish based upon how many pass the dams on their return migration. The draft EIS must properly recognize and analyze hatcheries' negative impacts to wild fish and how hatchery funding from cooperating agencies contribute to these cumulative impacts. If one looks at mitigation from the viewpoint of wild salmonids, hatcheries are not mitigation.

**Habitat mitigation is probably supporting increases in logging on the Nez Perce-Clearwater National Forests, which nullifies the mitigation efforts in these national forests**

We would like USACE and its partnering agencies, including the Bonneville Power Administration, to know that, while you are claiming the funds spent on restoring upstream habitat is making spawning grounds better, the U.S. Forest Service is relying upon some of this restoration to increase its logging levels, which undo any mitigative efforts. The Forest Service does not separate out its funding sources, which means that money funding salmonid-habitat improvement can be added into a pool where the Forest Service then uses that money to mitigate the adverse impacts of its own logging and roadbuilding projects. The clearest evidence to suggest this might be happening was in the Lolo Creek Watershed of the Nez Perce-Clearwater National Forests.

The Forest Service has existing legal obligations under the National Forest Management Act to meet and comply with its forest plan. The applicable forest plan in this case, the Clearwater Forest Plan, has fishery habitat standards, including standards for Lolo Creek and its tributaries. Generally, if fishery habitat does not meet the requirements in the Clearwater Forest Plan for that stream, then the plan prohibits the Forest Service from approving activities (e.g., logging and roadbuilding) that would further degrade fish habitat because "all management activities undertaken by the Forest Service must comply with the forest plan, which in turn must comply with the Forest Act, which requires that wildlife habitat must be managed to maintain viable populations of native and desired non-native wildlife species." *Idaho Sporting Cong. Inc. v. Rittenhouse*, 305 F.3d 957, 962 (9th Cir. 2002). Compliance with the Forest Plan is separate and distinct from BPA-funded restoration.

The Northwest Power Act provides money to mitigate for hydropower losses. One of the express purposes of the Northwest Power Act is to "protect, mitigate, and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries, particularly anadromous fish…." 16 U.S.C. § 839(6). To achieve this purpose, the Bonneville Power Association (BPA) developed a program to protect, mitigate, and enhance fish and wildlife in the Columbia River Basin, and the BPA is authorized to use the BPA funds to protect and enhance fish and wildlife to mitigate for the operation of dams in the Columbia River system. See 16 U.S.C. § 839b(h)(1)(A), (h)(10). BPA funds are expressly to be used <u>in addition to other existing legal obligations</u>: "Expenditures of the Administrator pursuant to this paragraph shall be in addition to, not in lieu of, other expenditures authorized or required from other entities under other agreements or provisions of law." 16 U.S.C. §

839b(h)(10)(A) (emphasis added). So, the Forest Service is prohibited by law from using BPA funds to meet its own forest-plan obligations.

Both the BPA and the Forest Service have reiterated that BPA funds should not be used to mitigate for Forest Service projects in a Memorandum of Understanding (MOU) for BPA-funded projects. But, the Forest Service does not keep BPA funds separate from other funds. In 2014 Friends of the Clearwater submitted a Freedom of Information Act request to the Nez Perce-Clearwater National Forests, asking how the agency differentiates between sediment-reduction activities done to mitigate Forest Service projects such as roadbuilding and timber sales and sediment-reduction activities funded by the BPA. We asked for guidance, policy, and accounting about how to differentiate these projects, in addition to a list of projects where both categories of restoration had taken place between 2009 and 2014. *See* FOC Watersheds FOIA 2014. The Forest Service responded that there existed no guidance on how to separate out sediment-reduction projects by funding mechanism, claiming that "projects are generally not differentiated by funding mechanism during the NEPA stage." FS Watershed FOIA response.pdf (in BPA folder). The Forest Service's lack of accounting of BPA money creates a situation where the Forest Service risks using BPA funds in order to offset the Forest Service's own timber-harvest activities (mitigation activities such as decommissioning roads). And, based on some of what the Forest Service has reported back to the BPA, this might be happening.

Two major recipients of BPA funding for habitat restoration on the Nez Perce and Clearwater National Forests are the Nez Perce Tribe and the Forest Service. The Nez Perce Tribe has invested a substantial amount of BPA money and work into restoring the Lolo Creek Watershed. According to the BPA's status report on the Lolo Creek Watershed, BPA has provided over two million dollars to the Tribe for restoration work specific to the Lolo Creek watershed. Completed as of 2018 includes culvert prioritization and assessment, installation of an offsite water source, twenty-eight culvert replacements, eleven culvert removals, 1600 ft. of stream bank stabilization, 16 miles of fence installation, and over 22,000 riparian trees planted. Additionally, the Tribe has decommissioned 101 miles of road in the Lolo Creek watershed as part of this restoration funding; the Tribe started restoration work in 2001 and it is ongoing. BPA 2018. This restoration work is why the existing fisheries habitat condition is better than it was.

The Forest Service has also utilized a considerable amount of BPA funds to restore the Lolo Creek watershed. The same BPA report also shows that BPA has provided approximately $345,000 to the Forest Service for Lolo Creek Watershed Restoration. With this money, the Forest Service has also replaced culverts and has decommissioned over twenty miles of roads in the Lolo Creek Watershed. The Forest Service's contract work began in 2007 and ended in 2010.

In 2018, the Forest Service authorized a 3,387-acre logging project in the Lolo Creek watershed. This approved logging project included the construction of 15 miles of temporary road and a lot of other road work on the National Forest System Roads. USDA FS 2018; USDA FS 2018a. Even though the Forest Service generally claims that road decommissioning in its projects are not intended to offset timber harvest, decommissioning roads mitigate the logging projects and the road activities associated with them. This is because road decommissioning improves watersheds and timber harvest impairs watershed. When these two activities are combined and analyzed in one project, the benefits of the road decommissioning will offset the timber harvest. Substantively, this is also how the Forest Service defines mitigation: "Measures designed to counteract environmental impacts or make impacts less severe." USDA FS 2018 FEIS p. 294.

In the Lolo Insects and Disease Project, the Forest Service could not show that streams in the Lolo Creek watershed were meeting their beneficial uses absent BPA-funded mitigation. Records we've pieced together suggests that the Forest Service is using BPA funds to decommission roads that were intended to offset timber harvest impacts for previous logging projects in the Lolo Watershed area. For example, in the White/White Project (approved 2007), the Forest Service proposed over 2,300 acres of vegetative management, including regeneration cuts, commercial thinning, and pre-commercial thinning. *See* USDA FS 2007 p. 5. In White/White, the Forest Service intended to restore aquatic conditions for the express purpose of meeting forest plan conditions, among other things, and so proposed to construct and obliterate approximately 6.45 miles of temporary road for the timber sale and decommission approximately 16.2 miles of existing road, which amounts to 22.65 miles of road decommissioning and obliteration in total. USDA FS 2007 p. 5. In a completely separate report to the BPA for the time period 2007-2010, the Forest Service reports using BPA funding to decommission approximately 23 miles of road under the work-element titles, "White-White Road Decommissioning" and "White-White II Road Decommissioning." BPA 2018 Status Report for Lolo Creek Watershed, p. 14. In order to demonstrate that the Forest Service had performed BPA-funded work in addition to, and not in lieu of, its own NFMA and forest-plan obligations for the White/White Project, the Forest Service would have had to show an accounting that it decommissioned approximately 45 miles of road in the White Creek watershed(s)—22.65 miles of road decommissioning to offset impacts from timber harvest, and 23 miles of road decommissioning using BPA funds to offset the impacts from dams.

Similarly, in the Yakus Creek timber sale (approved 2008), the Forest Service proposed 11.5 miles of road decommissioning, which would offset 450 acres of timber harvest and about 6 miles of road construction. USDA FS 2008 Yakus Creek Record of Decision, p. 1. The BPA report reflects the Forest Service reported to use BPA funds to decommission 10 miles of roads for "Yakus Creek Road Decommissioning" between 2007 and 2010. BPA 2014 Status Report for Lolo Creek Watershed, p. 14. In order to demonstrate that the Forest Service had performed BPA-funded work in addition to, and not in lieu of, its own NFMA and forest-plan obligations for the Yakus Creek timber sale, the Forest Service would have had to demonstrate approximately 21.5 miles of road decommissioning in Yakus Creek—11.5 miles of road conditioning to offset timber harvest and an additional 10 miles funded by BPA to mitigate for dams.

During the NEPA process for the Lolo Insect and Disease Project, Friends of the Clearwater raised this concern and asked for this accounting, but the Forest Service summarily dismissed this request, providing no information. The Forest Service refused to provide any accounting or details that could demonstrate or rebut FOC's concern that the BPA-funded restoration work in this watershed area *was not* the primary reason why the watershed's conditions were meeting forest-plan standards. *See* USDA FS 2018b Objection Response to FOC Lolo Insects and Disease Objection, p. 2. Without such an accounting and by refusing to provide one, there is a real possibility that the Forest Service is unlawfully spending BPA funds to meet its own forest plan obligations in order to approve future habitat-degrading activities, i.e. timber harvests and the road-building that accompanies them. There is also a real possibility that, for areas like the Lolo Creek watershed's existing condition (a result of BPA money and the Tribe's excellent work), the Forest Service is relying on the improved existing condition to demonstrate that the area meets the minimum standards required by the Clearwater Forest Plan. Meeting the minimum forest-plan standards means the agency can approve more habitat-degrading logging and roadbuilding in the area. So, BPA funds are potentially mitigating for logging projects, and can't also be counted as mitigating for hydropower impacts. So long as the Forest Service isn't correcting this, USACE and BPA cannot count this as mitigation.

What we have provided is just an example. This double-dipping—that the USACE and BPA are counting as habitat restoration to mitigate for dams while the Forest Service is counting the same habitat restoration to mitigate for its own habitat-degrading activities—is relevant to the draft EIS analysis because it suggests that mitigation is having much less of an impact than assumed.

To compound the problem that Northwest Power Act money might be mitigating for current timber harvests, upstream habitat may get much, much worse in the foreseeable future because of an upcoming forest-plan revision. The USACE must recognize and discuss this reasonably foreseeable negative cumulative impact. The Forest Service is revising the forest plans for the Nez Perce and Clearwater National Forests—the draft revised forest plan and EIS was released December 2019. We've provided the 2014 Forest Service assessment on fisheries (Ch. 1) for the revised forest plan so NMFS can see what the current condition was in 2014. The upstream habitat for fisheries is still impaired in many places. USDA FS 2014. And this was with measurable, quantifiable standards. Whereas the 1987 Nez Perce Forest Plan and the 1987 Clearwater Forest Plan had measurable fisheries standards that related to cobble embeddedness, See USDA FS 1987a (Nez Perce Forest Plan Ch. II, p. 19 and Appendix A) and USDA FS 1987 (Clearwater Forest Plan, Ch. II p. 27, Appendix K), this new combined plan has no measurable standards for fisheries and the Forest Service has only proposed action alternatives that increase logging, one alternative up to four times the current levels. USDA FS 2019c p. 13. An increase in logging means an increase in roads, and an increase in roads means more fine sediment distributed to upstream habitat. If the Forest Service does not amend this trajectory, BPA money could not mitigate the Forest Service's impact on salmon and steelhead habitat from logging activities, much less even come close to mitigating for the impact downstream dams have on fish.

For these reasons, the funding going into upstream habitat projects, specifically in the Nez Perce-Clearwater National Forest, may not have the mitigative effects the USACE is relying upon to make up for the injuries to wild fish from hydropower. This needs to be properly disclosed to the public and discussed.

**Please choose the Multiple Objective Alternative 3: Breaching the Snake River Dams**

While we recognize that breaching dams is tricky with some potential short-term negative impacts, there is some great research from the Elwha Dam decommissioning about some species—specifically the bull trout—rapidly (and positively) responding to a post-dam environment. Brenkman et al. 2019. Please review it—the potential short-term issues with dam breaching is outweighed by incredible potential to recover wild salmonids and the long-term benefits of doing so.

For the above reasons, wild salmonids are facing dire cumulative threats that, without drastic action, will keep them listed under the ESA in the best scenario, and will drive them into extinction in the probable scenario. Our organization and our members value wild species. What the agency and cooperating agencies presume to be mitigation is having nullified and even adverse cumulative impacts to wild fish in all alternatives. For these reasons, the best option to counter these impacts and preserve wild salmonids is with dam removal. While hatcheries, habitat, and harvest all need to be addressed, hydropower has the potential for the biggest impact by far. For these reasons, we strongly encourage you to very seriously consider breaching the lower four Snake River dams instead of throwing your money into hatcheries and habitat with the irrational belief that will save wild fish. Not only will it not save wild fish, but it is contributing to their demise.

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