To Whom it May Concern:

Thank you for the opportunity to comment on the Columbia River System Operations (CRSO) Draft Environmental Impact Statement (DEIS). Since 1973, the Idaho Conservation League (ICL) has been Idaho’s voice for clean water, clean air and wilderness—values that are the foundation for Idaho’s extraordinary quality of life. The Idaho Conservation League works to protect these values through public education, outreach, advocacy and policy development. As Idaho’s largest state-based conservation organization, we represent over 20,000 supporters, many of whom have a deep personal interest in anadromous and resident fish recovery, renewable energy, and rural Idaho communities. ICL represents members whose livelihoods depend on the return of abundant, harvestable populations of salmon and steelhead. Ensuring the restoration of these species is of paramount importance and directly impacts our members.

Part of the purpose for this DEIS is to “evaluate how to insure that the prospective management of the System is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat, including evaluating mitigation measures to address impacts to listed species.”¹ ICL believes that recovery of endangered Snake River salmon and steelhead populations is inherently important, but also valuable for Idaho communities.

We believe the action agencies should alter the Preferred Alternative to include the measures included in MO3. The DEIS and other research has shown that breaching of the lower Snake River dams leads to the highest probability of recovering endangered salmon and steelhead, and that there is no other path toward abundant, harvestable populations of these fish. Our provided comments (attached) focus on MO3 and the current Preferred Alternative, with regard to each alternative’s impacts on fish, Idaho communities, and renewable energy.

¹ DEIS, page 16
On many subjects, we show that the DEIS does not conduct complete analysis of the alternatives by excluding a particular trend or using inappropriate metrics. Our comments here do not encompass all instances of this, but we focus on where they overlap with our organization’s interests. If analysis of these topics was more robust, it would show MO3 as the alternative most beneficial to the region. We thus also advocate for higher quality analysis as part of editing this DEIS into a final document.

Please do not hesitate to contact me with any questions regarding our comments.

Sincerely,
Justin Hayes
Executive Director
jhayes@idahoconservation.org
208-345-6933 ext. 24
National Environmental Policy Act

The National Environmental Policy Act (NEPA) is our “basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). For significant actions agencies comply with NEPA by assembling an Environmental Impact Statement that will “provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.” 40 C.F.R § 1502.1. Considering a range of alternatives to the proposed action “is the heart of the environmental impact statement” and the action agencies must “rigorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R § 1502.14. This evaluation must be based on “accurate scientific analysis, expert agency comments, and public scrutiny.” 40 C.F.R. § 1500.1(b). Moreover, “Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements.” 40 C.F.R. § 1502.24.

Salmon and Steelhead

1. The Preferred Alternative will not recover endangered salmon and steelhead to ESA-delisting status, and certainly not to abundance.

ICL is concerned that the Preferred Alternative does not address critical issues for Snake River spring/summer Chinook salmon and steelhead trout. It is clear that the DEIS process went awry from the start on this subject, when the objectives for CRS operations were limited to merely improving conditions for juvenile and adult migration through the system. The DEIS used no quantitative goals, beyond assessing whether a given alternative was better or worse than the No Action Alternative (NAA). Indeed, the Action Agencies have already been directed to not operate under the NAA, because those conditions put endangered fish populations in jeopardy of extinction.

The Preferred Alternative does not improve that situation. In a time when regional wild salmon recovery goals are generally agreed upon as a Smolt to Adult Return (SAR) rate of 2 to 6% annually, averaging at least 4%, the Preferred Alternative falls well short. The model used to predict relative benefits to Snake River fish runs (CSS) showed that under the Preferred Alternative, Spring/Summer Chinook SAR would increase by 35% and steelhead SAR would increase by 28%.\(^2\)

Taking average SAR’s from Snake River populations as a baseline for these predicted improvements, the results are still short of regional recovery standards. Across a 10-year period, SAR’s average 1.20% for wild Snake River Spring/Summer Chinook (LGR-BON, Juv. Migration 2006-2016) and 2.42% for wild Snake River steelhead (LGR-BON, Juv. Migration 2006-2016).\(^3\) The CSS results predict those metrics improving to 1.62% and 3.10%, respectively. If only recent returns are investigated, the results are even worse. For juvenile migration years 2014 to 2016, average SAR’s for the same populations are 0.44% for Spring/Summer Chinook and 1.07% for steelhead. Improvement, as predicted by CSS, would result in SAR’s of 0.60% and 1.37%, respectively. The LCM was not able to report results on steelhead (another

\(^2\) DEIS, page 33
\(^3\) Idaho Department of Fish and Game
critical flaw in a well-funded and long-developing document), but its results for Chinook similarly do not bring that population within recovery standards.

In addition, the Fish Passage Center (FPC), which developed the CSS and provided results to the Action Agencies for this report, is careful to note that model results for the Preferred Alternative are likely overestimates. Because of the nature of the flow data provided to FPC, the model cannot provide results at high enough resolution to factor in changes in spill during the day. Migrating fish are more likely to encounter the powerhouse during at night than during the day, and powerhouse encounters are a known contributor to mortality. Lower “performance standard” spill in evening or nighttime hours would thus increase powerhouse encounters (measured by the PITPH index).

PITPH is an input for the CSS model, so a higher PITPH is very likely to lead to lower estimates for survival and SAR. The benefits claimed for fish under the Preferred Alternative, which already do not meet regional standards for recovery, could thus be vastly overstated. Analysis of the Preferred Alternative through CSS could be redone using flow and spill data at hourly resolution, which will factor in the timing of low spill operations and provide more accurate estimates of the impact to anadromous fish under the Preferred Alternative.

2. MO3 would most benefit ESA-listed species, but was not accepted as the Preferred Alternative.

The DEIS includes an alternative under which much higher returns are predicted. MO3 presents improvements that would place Snake River SARs well within regional standards. Under MO3, the CSS model predicts that Snake River Spring/Summer Chinook SAR would increase by 170% and steelhead SAR would increase by 178%.

Taking the 10-year Snake River SAR (LGR-LGR, Juv. Migration 2006-2016) averages (0.94% for wild Spring/Summer Chinook, 1.74% for wild steelhead), CSS predicts SARs of 2.54% for Chinook and 4.69% for steelhead under MO3. Again, if we factor in only recent years of returns (0.36% for wild Spring/Summer Chinook, 0.74% for wild steelhead), CSS predicts SARs of 0.98% for Chinook and 2.06% for steelhead. These predicted SAR’s are still mostly below the 4% average criterion, but it is clear from the analysis that the cornerstone of any plan to restore Snake River salmon and steelhead is breaching of the lower Snake River dams. Operational changes as proposed under the Preferred Alternative seem unable to achieve the same results.

3. The DEIS uses different metrics to compare MO3 and the Preferred Alternative.

Confusingly, the DEIS does not use the same SAR metrics for its comparisons of alternatives. For MO3, the CSS model predictions are based around SAR’s for juvenile fish that passed Lower Granite dam (LGR) and returned as adults to the same location. For the Preferred Alternative, CSS predictions are

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5 DEIS, page 25
instead based around LGR-BON SAR’s, which compare juvenile fish counted at Lower Granite with adult fish returning to Bonneville dam. These predictions for the Preferred Alternative exclude passage through the CRS as adults. This exclusion is significant because the Preferred Alternative could have negative impacts on adult fish migration through the system because of greater spill. When dams release more water to benefit juveniles, it can lead to fallback for migrating adults, or masking of the fish ladder. Each of these phenomena make upstream adult migration more difficult, with a clear effect on SAR.

Thus, reported CSS predictions from Chapter 7 and the Executive Summary cannot truly be compared with CSS predictions reported for MO3. Predictions made for the Preferred Alternative are artificially inflated, as adults returning to Bonneville do not all return to Lower Granite, and this difference could be made even more significant by the spill regime included in the Preferred Alternative.

4. The DEIS does not adequately analyze future impacts of climate change on either a reservoir system retained under the PA or the riverine system created under MO3.

Climate change is not properly addressed in the DEIS analysis of the multiple objective alternatives and the Preferred Alternative. While an analysis of climate change effects does appear in Chapter 4, these effects are never covered in comparing the alternatives and their relative impacts to fish and wildlife.

Chapter 4 shows that climate change will have major effects on water quality and quantity in the Columbia River Basin. Higher air temperatures and an altered hydrograph could lead to increased water temperatures. This is a particular problem in the Snake River where parts of the system are already approaching or above lethal limits for steelhead, and fishway temperatures already cause fallback for Chinook, sockeye, and steelhead. This effect will increase as river temperatures rise and “could cause moderate to severe changes in salmon and steelhead populations.”

It is clear that MO3 would cause large changes in the temperature regime of the lower Snake River, with much greater cooling at night, compared to operations under the NAA. Salmon suffer when water temperatures reach 68°F or higher, as it currently does much of the time on the lower Snake River in the summer. With climate change, these temperatures, which already devastated Snake River sockeye in 2015, will continue to routinely ravage annual salmon and steelhead runs. Restoring the lower Snake River to its riverine form would allow the river to cool more quickly, providing cold water refugia for salmon and steelhead to migrate in as adults.

The Preferred Alternative does little to mitigate the ongoing trend of warming water in the lower Snake River reservoirs. Predicted water temperatures under the PA are very similar to those under the NAA,

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6 DEIS, page 1-101
7 DEIS, page 4-34
8 DEIS, page 4-33
9 DEIS, page 3-270, page 3-275
11 Fish Passage Center, Requested data summaries and actions regarding sockeye adult fish passage and water temperature issues in the Columbia and Snake rivers (Oct. 28, 2015).
which are already dangerous for migrating adult salmon and steelhead. The DEIS predicts exceedances of water quality standards, even during average years. In average flow years, temperatures are expected to exceed 68°F for much of the adult salmon migration season at each of the lower Snake River dams, and to exceed 72°F at Ice Harbor dam.13 These predictions are based on historical operations, and do not reflect the expected effects of climate change. Hot summers with low flows, as occurred in 2015, will happen more and more frequently and it is imperative that salmon populations are given a migration corridor resilient to these effects.

The DEIS acknowledges that for each of the alternatives, climate change will likely reduce the benefits and increase adverse effects to salmon and steelhead.14 However, no more specific analysis on any of the alternatives is completed, so it is impossible to ascertain the magnitude of effects (beneficial or adverse) of each alternative under a changing climate. Given this lack of depth, it is also not possible to conclude whether a given alternative will actually improve conditions for salmon and steelhead.

Before any real conclusions can be made about whether an alternative improves conditions for salmon and steelhead, an analysis of each alternative under the expected impacts of climate change must be completed. Climate change is not a hypothetical “scenario” which might occur: it is a certainty, and its impacts need to be investigated as part of all alternatives.

Energy

The DEIS fails to rigorously explore and objectively evaluate alternatives to maintaining the electric system while meeting other multiple objectives. Here ICL comments on three aspects - the failure to use industry best practices to assess energy system options, the misrepresentation of the impact to system reliability, and the failure to properly include climate change in analysis of replacement generation portfolios. These are not the only flaws in the energy analysis portion of the DEIS. ICL incorporates by reference here the comments on this DEIS filed by the Northwest Energy Coalition.

I. The DEIS did not use well-known industry best practices to assess the need for and cost of replacement energy resources.

The agencies state in the purpose and need to be met here that: “This EIS will also allow the co-lead agencies and the region to evaluate the costs, benefits and tradeoffs of various alternatives” to meet multiple objectives, including the ability to “provide an adequate, efficient, economical, and reliable power supply that supports the integrated Columbia River Power System.”15 All of the Multiple Objective Alternatives developed here would change the energy services provided by the CRS when compared to the No Action alternative. Thus, one of the most critical parts of this DEIS is captured in Appendix H, which analyzes the impact of the alternatives on the Columbia River System projects and transmission system.16 Here, the most important step in the analysis is to determine the “Need for

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13 DEIS, page 7-84
14 DEIS, page 4-37 to 4-38.
15 DEIS, page 16
16 DEIS, Appendix H
Replacement Power Resources and Cost of Resources.” This DEIS Replacement Power Analysis is irretrievably flawed due to the use of stale data, inadequate analytical tools, and misrepresenting the facts on the ground.

Considering a range of alternatives to the proposed action “is the heart of the environmental impact statement” and the action agencies must “rigorously explore and objectively evaluate all reasonable alternatives.” This evaluation must be based on “accurate scientific analysis, expert agency comments, and public scrutiny.” And the agencies must “insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements.” For decades, electric system operators in this region, and across the country, have used established industry best practices to perform this analysis through Integrated Resource Planning. For this DEIS the federal agencies did not use these established methodologies nor explain why the approach taken has scientific integrity.

The agencies could have paired a legitimate Integrated Resource Plan with an Environmental Impact Statement. The Tennessee Valley Authority (TVA) published just such an analysis in 2019, which documents the hallmarks of a rigorous, scientific approach commonly used throughout the United States. The TVA IRP is highly instructive and relevant because this agency is essentially equivalent to the Bonneville Power Administration as a corporate agency of the United States with the mission of marketing power from federal resources to local power customers and providers.

The most glaring difference between the TVA approach and the CRSO DEIS is the lack of alternatives the CRSO action agencies considered here. TVA evaluated 30 portfolios of resource options to determine the optimal portfolio to meet future needs. This is standard industry practice also used in the Northwest Region. PacifiCorp is a major electric system operator in the region with an IRP that considers 50 different portfolios to find the optimal mix of resources. Similarly the Idaho Power Company IRP considered 44 portfolios. By stark contrast, for the CRSO EIS the federal agencies considered just four alternatives to the No Action Alternative.

Beyond the narrow range of alternatives, the CRSO EIS is further inadequate because each alternative was not an optimized collection of related measures, rather a hand selected, narrow choice of measures that does not properly incorporate how the CRS actually operates and the obvious technological and pricing trends in the industry. The Replacement Power analysis applied to these alternatives failed to follow industry standards and thus failed to take the requisite “hard look” required under NEPA.

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17 40 C.F.R § 1502.14
18 40 C.F.R. § 1500.1(b)
19 40 C.F.R. § 1502.24
21 TVA 2019 IRP at ES-6
Industry best practice is for power system planners to use software tools to develop the optimal portfolio of options to meet electric system needs. Known as “capacity expansion models,” these common software tools allow for power system planners to iterate towards a collection of measures optimized to meet system needs.\(^{24}\) In one of the most glaring failures of the CRSO EIS, the agencies here did not use the capacity expansion tool specifically designed by the Northwest Power and Conservation Council, the Regional Portfolio Model, to assess the optimal portfolio of options specific for the CRS.\(^{25}\) Instead, the agencies use a different tool, GENESYS, that is designed to assess the adequacy of a single option. By using the wrong tool when the right tool is known, available, and specifically designed to address the issue under consideration here, the federal agencies failed to “insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements.”\(^{26}\)

2. **The DEIS misrepresents the impact of planned coal generation retirement on regional reliability and resource adequacy.**

Along with failing to develop adequate, science-based alternatives, the federal agencies applied an unfounded assumption to critique the ability of the alternatives to meet the purpose and need. Maintaining a reliable electric system is a legitimate purpose and need for this DEIS. Where the agencies fail though is in misrepresenting the impact of planned retirement of coal-powered generation plants in the region. The agencies state: “without coal, more of the capability or replacement capability of the lower Snake River (LSR) projects would be needed for power system reliability.”\(^{27}\) This assumption is demonstrably false. The federal agencies do not have any ownership interest in coal plants, rather regulated utilities in the region own and operate these plants under regulation by their respective state utility commissions. PacifiCorp, who is the primary owner of every coal plant in the region, has an Integrated Resource Plan that documents the path to exit coal plants while maintaining reliable and affordable energy.\(^{28}\) The LSR projects are not a part of the plan, and thus the assertion these dams are needed for reliability is not accurate. By misrepresenting facts in the analysis, the federal agencies here failed to “insure the professional integrity, including scientific integrity, of the discussions and analysis in environmental impact statements.”\(^{29}\)

3. **The DEIS does not properly account for the impacts of climate change on generation operations under any alternative.**

Climate change is not properly addressed in the DEIS analysis of the multiple objective alternatives and the Preferred Alternative. While an analysis of climate change effects does appear in Chapter 4, these

\(^{24}\) TVA IRP at Chapter 6, PacifiCorp IRP at chapter 7, Idaho Power IRP at chapter 8.

\(^{25}\) NWPCC Regional Portfolio Model described in Appendix L to the 7th Northwest Power Plan, available at: [https://www.nwcouncil.org/sites/default/files/7thplanfinal_appdixl_rpm_3.pdf](https://www.nwcouncil.org/sites/default/files/7thplanfinal_appdixl_rpm_3.pdf)

\(^{26}\) 40 C.F.R. § 1502.24

\(^{27}\) DEIS Appendix H, line 653


\(^{29}\) 40 C.F.R. § 1502.24
effects are never covered in comparing the alternatives and their relative impacts to power generation and transmission.

Chapter 4 shows that climate change will have major effects on both demand for electricity (load) and on the annual hydrograph, causing shifts in annual generation patterns for the CRS projects. Because the Replacement Power Analysis is only based on a single year, 2022, it does not factor in these significant and fairly well-understood trends. Across the 25-year horizon the DEIS claims to analyze when assessing impacts, the River Management Joint Operating Committee (RMJOC) concluded that, compared to present conditions, the spring peak flow would occur earlier, and summer flows would be generally lower.\(^{30}\) Generation is thus expected to be at low levels for longer in the summer. Demand will generally increase in the summer and decrease in the winter as air temperatures rise across the region.\(^{31}\)

The DEIS thus acknowledges that generation and load will both be altered by climate change, and in a way that brings CRS generation patterns out of sync with load. The region is predicted to have even higher load during summer, exactly when the CRS is at its low point for generation. The existing hydroelectric system is simply not suited to the task of meeting this load change, and avenues for system change and diversification should be sought to properly adjust. The DEIS, however, simply concludes that “climate change does not affect the overall conclusion regarding the net effect of any of the MO alternatives relative to NAA.”\(^{32}\) No details about the scope, methodology, inputs, or results leading to this conclusion are provided in the DEIS. Blanket statements without adequate explanation that contradict other information in the DEIS is the hallmark of arbitrary agency action.

Beyond the failure to analyze the impact of climate change on the energy system, the DEIS also dismisses any possibility that a replacement power portfolio for the lower Snake River dams could contribute to mitigation for the effects of climate change. The lower Snake River dams are especially vulnerable to such effects, being run-of-river projects that are dependent on upstream storage to regulate flow. A different portfolio of resources could better respond to climatic changes, while diversifying BPA’s overall resource mix to better serve the uncertain conditions that climate change will bring alongside well-modeled trends.

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\(^{30}\) DEIS, page 4-5
\(^{31}\) DEIS, page 4-53, 4-54
\(^{32}\) DEIS, Appendix J
Recreation Economy

1. The DEIS does not sufficiently analyze the socioeconomic impacts of CRS operations on communities in Idaho that depend on the Snake River, its tributaries, and the runs of anadromous fish that migrate upstream.

ICL is similarly concerned that the DEIS did not include nearly enough analysis on the impacts of the alternatives to communities outside the area of the CRS projects, especially Idaho communities on upstream tributaries of the Snake River. Actions taken under any alternative will have major effects on the recreation-based economies of these towns. To a large degree, the recreation economy in towns like Riggins, Orofino, Salmon, Whitebird, and Kamiah is centered on salmon and steelhead: guides, outfitters, and tackle shops cater to anglers wanting to catch fish. Stores, restaurants, gas stations, and hotels rely on the tourist dollars spent in their communities. Collectively, through direct and indirect spending, the dollars spent in these small communities are vital and difficult to replace. Other tourism businesses depend on fish to bring visitors to the area in the first place. Many small communities are nearly entirely dependent on recreational fishing, and will not survive if salmon or steelhead seasons are closed due to the low returns that have become commonplace in recent years.

Fish hold inherent value as a species to be seen in these places as well. Recreationists who don’t fish are often just as captivated by the thought of seeing a Chinook salmon 900 miles from the ocean. Idaho’s wilderness and beauty bring visitors to Central and North Idaho for rafting trips, float trips, camping excursions, and retreats. Salmon and steelhead are an integral part of Idaho’s appeal.

The DEIS contains no analysis of how CRS operations impact these places and people. The 2002 CRSO EIS addressed the subject, but now is under apparent doubt from the Action Agencies:

“In contrast, applying the results of the contingent behavior study conducted for the 2002 EIS would yield an estimate that would range from approximately 1.2 to 3.4 million annual visits (adjusted and unadjusted for population) under MO3 in the long term, depending on whether or not California estimates are included. As described above, the Corps has expressed concerns that the 2002 EIS may have overstated recreation benefits from dam breach.” (3-1219)

Despite the “concerns” of the Army Corps, no real reevaluation of these estimates was completed in the current DEIS process, just vague generalizations about past studies. We believe that if this analysis were to be completed again, it would show significant economic benefits to Idaho, Oregon, Montana, and Washington communities related to recovering fish populations. In Idaho’s rural river towns, even modest amounts of spending related to salmon and steelhead angling are integral parts of the economy. With an improved fishery, Idaho’s river communities would thrive.

This is the only statement in the DEIS that relates improved salmon and steelhead returns to economic benefits for the recreation economy.

“The MOs that improve fish survival and abundance would generally result in beneficial effects for recreational fishing, while MOs that reduce fish survival and abundance would adversely affect recreational fishing. In particular,
the presence of additional fish may improve the quality of existing recreational fishing trips (e.g., through increased catch rates), resulting in additional value (consumer surplus) for anglers (i.e., a higher UDV). Additional fish may also generate additional trips as more anglers could be supported (Melstrom et al. 2015; Poe et al. 2013).” (page 3-1181)

The DEIS includes no comprehensive economic analysis that goes beyond stating the obvious: more fish make for better fishing. The loosely discussed “fishing trips” account for $8.6 million per month for B-run Clearwater steelhead alone. Unfortunately, this figure is only known because that fishery was shut down in 2019 due to low returns. Clearwater River communities missed out on the lifeblood of their economy because too few steelhead passed through the CRS on their way back to natal streams in the Clearwater basin.

Because the DEIS did not include a comprehensive review of impacts to upstream communities, we can only analyze the economic impact that salmon and steelhead have on Idaho’s recreation economy based on old data. An Idaho Department of Fish and Game survey shows that in 2003, anglers spent $438 million in direct expenses while fishing in Idaho, broken down as follows:

- $148 million spent at restaurants and on groceries
- $91 million for transportation
- $60 million for equipment (boats, camping, etc.)
- $62 million for fishing tackle
- $45 million on hotels and campgrounds
- $32 million on outfitters and guides

Considering trends in adventure tourism, it is fair to estimate that these totals have significantly increased since 2003, perhaps approaching $1 billion annually. In any given year, there are more than 2,000 licensed outdoor guides working in the state of Idaho. Many of them rely on robust returns of salmon and steelhead, which are almost entirely dependent on CRS operations.

The DEIS does not adequately address the economic impact that recreational fishing for salmon and steelhead has on the rural Idaho economy. This is a glaring flaw of the document, and it cannot be considered a comprehensive analysis of how the CRS impacts its environment until it includes a much more robust investigation of these impacts under the alternatives.

33 “Survey: Fishing Has Major Impact on Idaho Economy” Idaho Department of Fish and Game.