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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF OREGON
PORTLAND DIVISION

NATIONAL WILDLIFE FEDERATION, et al.,

Plaintiffs,

and

STATE OF OREGON,

Intervenor-Plaintiff,

v.

NATIONAL MARINE FISHERIES SERVICE,
et al.,

Defendants,

and

NORTHWEST IRRIGATION UTILITIES, et al.,

Intervenor-Defendants.

Case No. 3:01-CV-00640-SI

STATE OF OREGON'S FOURTH
SUPPLEMENTAL COMPLAINT-IN-
INTERVENTION FOR DECLARATORY
AND INJUNCTIVE RELIEF

INTRODUCTION

1. By this supplemental complaint under Fed. R. Civ. P. 15(d) and LR 15.1, the State of Oregon, intervenor-plaintiff in this action, seeks to address new circumstances and subsequent actions by defendants, the National Marine Fisheries Service (NMFS or NOAA), the U.S. Bureau of Reclamation (BOR or Bureau) and the U.S. Army Corps of Engineers (the Corps).

2. Specifically, Oregon seeks review of the biological opinion for the Columbia and lower Snake River dams and related facilities as issued on May 5, 2008 (the 2008 BiOp), as amended by and integrated into NOAA's supplemental biological opinion issued May 20, 2010 (the 2010 Supplemental BiOp), and as amended by and integrated into NOAA's supplemental biological opinion issued January 17, 2014 (the 2014 Supplemental BiOp) (collectively, "the BiOps"). The 2008 BiOp and the 2010 Supplemental BiOp were the subject of Oregon's Second and Third Supplemental Complaints, respectively. The Corps and BOR issued supplemental records of decision (the 2014 RODs) on February 26 and 28, 2014, respectively, adopting and incorporating the 2014 Supplemental BiOp's revised Reasonable and Prudent Alternative (RPA).

3. As set forth below, the BiOps and the acts and omissions of the Corps and BOR¹ are invalid because they fail to comply with the Endangered Species Act (ESA), 16 U.S.C. §§ 1531 *et seq.*, the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq.*, and the Administrative Procedure Act (APA), 5 U.S.C. §§ 551 *et seq.*

4. This action now encompasses review of the combined 2014, 2010 and 2008 BiOps and the BOR and Corps decisions related to these BiOps. Accordingly, Oregon sets forth a summary of the relevant facts, law and proceedings leading to this juncture.

¹ Oregon challenged earlier Corps and BOR records of decision adopting and relying on the RPA from the 2008 BiOp and 2010 Supplemental BiOp for violations of the ESA in its Second and Third Supplemental Complaints. Oregon intends to seek to amend the Fourth Supplemental Complaint to add ESA claims against the Corps and BOR related to the 2014 RODs and, on September 24, 2014, provided 60 days' notice of intent to sue the Corps and BOR, as required by the ESA, 16 U.S.C. § 1540(g).

5. NOAA prepared the 2008 BiOp following remand and in consultation with the Corps, the Bonneville Power Administration (BPA), and the BOR (collectively, the Action Agencies) under Section 7 of the ESA, 16 U.S.C. § 1536. It superseded NOAA's 2004 Biological Opinion (the 2004 BiOp), which this court invalidated following summary judgment proceedings, and remanded with instructions to correct various defects under the ESA and its implementing regulations. (*National Wildlife Federation v. National Marine Fisheries Service*, 2005 WL 1278878 (D. Or. May 26, 2005) (Docket #986); *National Wildlife Federation v. National Marine Fisheries Service*, CV 01-640-RE, Opinion and Order of Remand (Oct. 7, 2005) (Docket #1087); *aff'd*, *NWF v. NMFS*, 524 F.3d 917 (9th Cir. 2008) (amended opinion)).

6. Although the 2008 BiOp replaced the invalidated 2004 BiOp, NOAA's stated goal on remand was to correct the legal deficiencies found in its 2000 Federal Columbia River Power System (FCRPS) BiOp and Reasonable and Prudent Alternative (RPA). (2008 BiOp at 16.) But the 2008 BiOp did *not* cure the inadequacies of the 2000 BiOp.

7. Instead, the 2008 BiOp analyzed actions substantially similar to the Updated Proposed Action (UPA) of the invalidated 2004 BiOp and the admittedly inadequate RPA from the 2000 BiOp. Despite these earlier determinations, NOAA found that the similar actions in the 2008 BiOp would not cause jeopardy. NOAA did so by viewing those actions through the lens of an analytical approach to jeopardy that was arbitrary and capricious, contrary to law, and not based upon the best available science. NOAA's approach in the 2008 BiOp, first announced in its July and September 2006 memoranda (the Jeopardy Memo and Metrics Memo, respectively), represented a sharp departure from the approach used in the 1995 and 2000 BiOps and from the "Conceptual Framework for the Remand Process Including the Jeopardy Analysis" developed by the parties during the collaborative effort on remand and submitted to this Court in the first remand report (First Remand Report, Docket #1222).

8. Oregon, together with plaintiffs National Wildlife Federation, *et al.* and the Nez Perce Tribe as *amicus curiae*, challenged the analysis and conclusions of the 2008 BiOp. (*See*

State of Oregon's Supplemental Complaint, Docket #1470). On May 18, 2009, following oral argument on cross-motions for summary judgment, the Court issued its letter memorandum outlining its preliminary conclusions. (Letter to Counsel, Docket #1699). The Court expressed reservations regarding the lawfulness of NOAA's new jeopardy standard, which is described further below, but did not rule on its validity. (*Id.*) However, the Court did find that the application of the new jeopardy standard in the 2008 BiOp was arbitrary and capricious in a number of ways, which included relying on "speculative, uncertain, and unidentified" habitat actions in reaching its no jeopardy conclusions, arbitrarily and capriciously assigning actions survival benefits that were not supported by scientific evidence, and failing to provide any means of verifying that the BiOp's habitat measures achieved the results that NOAA found necessary to avoid jeopardy. (*Id.*) The Court further found, among other things, that the 2008 BiOp was deficient in that it failed to provide a rational contingency plan that could be implemented if the proposed actions failed to perform as expected. (*Id.*)

9. In light of the Court's concerns, NOAA and the Action Agencies requested and were allowed nearly 5 months in which to review the 2008 BiOp. As a result of that review, NOAA issued the "Adaptive Management Implementation Plan," or AMIP. (Docket # 1712-2). In submitting the AMIP to the Court, the federal defendants acknowledged problems with uncertainty in the 2008 BiOp. (Federal Defendants' Response at 10, Docket #1712). Nonetheless, NOAA adhered to the 2008 BiOp's conclusions that the proposed operations and mitigation measures, together with the AMIP's modest "enhancements" and highly contingent emergency measures, would successfully avoid jeopardy for each of the listed species. (*Id.*)

10. Following briefing and oral argument regarding the AMIP's procedural and substantive validity, the Court concluded that NOAA could not rely on the AMIP's post-decisional information and analysis to support the conclusions of the 2008 BiOp. (February 10, 2010 Letter to Counsel, Docket #1749.) Accordingly, NOAA and the Action Agencies accepted

a 90-day voluntary remand in which to consider incorporating the AMIP and its supporting administrative record into the 2008 BiOp and its record. (Order, Docket #1950.)

11. On May 20, 2010, after reinitiating consultation with the Action Agencies, NOAA issued the 2010 Supplemental Biological Opinion that was the subject of Oregon's third supplemental complaint. (Notice of Completion of Remand, Docket #1762). The 2010 Supplemental BiOp purported to reconsider the determinations of the 2008 BiOp while incorporating the AMIP into the BiOp's RPA. (*Id.*) It further purported to employ the best available science and updated information regarding the effects of the 2008 RPA and AMIP "as amended by the actions described in [the] supplemental biological opinion. (*Id.*) Ultimately, the 2010 Supplemental BiOp integrated the 2008 BiOp and its RPA, as amended by the AMIP, into the supplemental biological opinion. (*Id.*)

12. On August 2, 2011, this Court held that the 2008 and 2010 BiOps were arbitrary and capricious and again remanded the BiOps to the agencies to reevaluate their fundamental approach to meet their obligations under the ESA. (Opinion and Order, Docket #CITE; *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 839 F. Supp. 2d 1117 (D. Or. 2011)). The 2008/2010 BiOp's no-jeopardy conclusion depended upon extensive mitigation efforts by the Action Agencies, yet failed to specifically identify the mitigation actions to be implemented for the ten-year term. This Court continued to have serious concerns about the lack of scientific support for specific, numeric survival benefits NOAA attributed to habitat mitigation. This Court also found the agencies had not implemented the habitat actions necessary to avoid jeopardy and found no indication that they would be able to identify and implement the actions necessary to catch up. Overall, the Court found that NOAA's approach was "neither cautious nor rational."

13. This Court once again remanded the BiOps, requiring that NOAA shall (1) "reevaluate[] the efficacy of the RPAs in avoiding jeopardy," (2) "identif[y] reasonably specific mitigation plans for the life of the biological opinion, and" (3) "consider[] whether more aggressive action, such as dam removal and/or additional flow augmentation and reservoir

modifications are necessary to avoid jeopardy.” During the remand, the federal defendants were to collaborate with the sovereigns in developing further mitigation and to develop data to support any proposed mitigation. This Court granted, in part, the requested injunction and ordered continuation of previous schedule and levels of court-ordered spill to alleviate some of the short-term irreparable harm to ESA-listed stocks, noting that NOAA had resisted the Independent Scientific Advisory Board’s (ISAB’s) recommendation that spill levels remain at the level previously ordered by the court.

14. On January 17, 2014, after two years on remand, NOAA issued the 2014 Supplemental BiOp,² which supplements the prior 2008 BiOp and 2010 Supplemental BiOp. The 2014 Supplemental BiOp largely repeats and incorporates the problems of the prior BiOps, including a continued reliance on estuary and tributary habitat actions that are not reasonably certain to occur, that have uncertain benefits, or both. For reasons detailed below, the 2014 Supplemental BiOp does not use the best available science to assess whether the proposed action will avoid jeopardy to or adverse modification to critical habitat of the listed species, nor does it use the best available science to determine what alternative operations, contingencies or other actions could be taken to avoid jeopardy and minimize take.

15. This Court has repeatedly stated that the imperiled condition of federally protected Columbia and Snake River salmon and steelhead could not adequately be addressed by minor adjustments to the status quo. This court has rejected NOAA’s efforts to justify proposed operations for power production through novel methodologies and defective science. With the 2008 BiOp, even as amended and integrated into the 2010 Supplemental BiOp, and, now, as further amended and integrated into the 2014 Supplemental BiOp, we return yet again to that same juncture. NOAA has failed to produce a biological opinion that complies with the ESA’s

² At the Court’s request, NOAA provided a copy of the 2014 BiOp to the Court. It, along with related documents are also available at http://www.westcoast.fisheries.noaa.gov/fish_passage/fcrps_opinion/federal_columbia_river_power_system.html

requirements to avoid jeopardy to ESA-listed salmon and steelhead and avoid destruction or adverse modification of their critical habitat by failing to use the best available science or meet the APA standards for agency decisions. As a result, most of the ESUs in the basin remain at unacceptably high risk of extinction and many populations are not viable.

16. Meaningful changes in hydropower system operations readily could occur, and must occur, if the agencies are to avoid reducing the likelihood of both the survival and recovery of the protected salmon and steelhead in the wild. Yet, the Corps and BOR have not evaluated the effects of their proposed operation and maintenance of the FCRPS and compared those effects with the effects of alternatives that would provide greater environmental benefit to these species. In fact, the Action Agencies no longer consult on proposed hydropower system operations, instead consulting on an RPA that incorporates non-hydropower system measures intended to mitigate for the adverse effects of the FCRPS. Even if this procedure is satisfactory for an ESA consultation, it does not satisfy the requirements of the National Environmental Policy Act (NEPA). For this reason, this action also seeks review of the Corps and BOR actions for failure to comply with NEPA.

17. This action seeks a declaration that the actions and decisions of NOAA, the Corps, and BOR are arbitrary, capricious, an abuse of discretion, and not in accordance with law, including the ESA and NEPA, in violation of the APA, 5 U.S.C. § 706(2)(A). This action also seeks injunctive relief to protect ESA-listed salmon and steelhead from harm, including but not limited to jeopardy, destruction and adverse modification of critical habitat, and take until the federal defendants comply with the law. This relief is necessary to correct illegal final agency action and to prevent unlawful agency action that may cause irreparable harm to the environment and species listed for protection under the ESA.

PARTIES

18. The State of Oregon is a sovereign state of the United States of America. Oregon has a unique sovereign interest in the survival and recovery of listed salmon and steelhead in the

Columbia River Basin. Oregon also has a unique sovereign interest in the beneficial attributes of the FCRPS, including power production, navigation, flood control and irrigation. In view of those interests, Oregon has a clearly cognizable interest in the lawful operation of the FCRPS.

19. Defendant National Marine Fisheries Service is part of the National Oceanic and Atmospheric Administration (NOAA), an agency of the United States Department of Commerce responsible for administering the provisions of the ESA with regard to threatened and endangered marine species, including the species of threatened and endangered salmon and steelhead that inhabit the Columbia River basin.

20. Defendant United States Army Corps of Engineers is an agency of the United States Army and the Department of the Defense that constructs and operates federal engineering projects throughout the United States, primarily in rivers, coasts, and wetlands. The Corps has primary management authority over the operation and maintenance of several dams, reservoirs, and associated facilities on the Columbia and Snake Rivers that are at issue in this case.

21. Defendant United States Bureau of Reclamation is an agency of the United States Department of the Interior that constructs and operates federal water projects throughout the United States. The Bureau has primary management authority over several projects on the Snake and Columbia Rivers that are at issue in this action.

JURISDICTION AND VENUE

22. This court has jurisdiction over this action under 5 U.S.C. §§ 701-706 (APA); 28 U.S.C. § 1331 (federal question), § 2201 (declaratory judgment), and § 2202 (injunctive relief); the ESA, 16 U.S.C. § 1540(g); and the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq.*.

23. Venue is properly vested in this Court under 28 U.S.C. § 1391(e).

THE LEGAL DEFICIENCIES OF THE BIOLOGICAL OPINIONS³

24. Unlike the approach taken by the Interior Columbia Technical Recovery Team (ICTRT),⁴ the 2008 BiOp's "potential for recovery" analysis bears no logical or analytical connection to any scientifically-based recovery criteria, yet NOAA fails to rationally explain its decision not to employ the ICTRT approach in its jeopardy analysis. NOAA's "Metrics Memo" approach to analyzing jeopardy represents a sharp departure from NOAA's own past practices, is arbitrary and capricious and contrary to law, and is not based on the best available scientific information. The approach taken in the 2008 BiOp to evaluate the risk to the likelihood of both survival and recovery for each Evolutionarily Significant Unit (ESU) and Distinct Population Segment (DPS) does not rationally address either one, because it fails to consider population viability requirements and the species' minimum requirements for survival and recovery. Because NOAA fails to first determine the point at which survival and recovery are placed at risk, it cannot demonstrate that the likelihood of achieving both will not be appreciably reduced.

25. Both the ICTRT and NOAA begin their analyses with the calculation of "survival gaps," but they use significantly different methodologies. The ICTRT conducts a scientifically-based population viability analysis, in which the likelihood of survival is calculated as a function of abundance and productivity⁵, with varying combinations yielding the same probability of

³ Because the 2014 Supplemental BiOp purports to amend and incorporate, and not replace, the 2008 BiOp and RPA, Oregon adheres to its prior challenges, which remain applicable. This fourth supplemental complaint refers to the 2008 BiOp and RPA directly when addressing various provisions, analyses, or conclusions that appear primarily in the 2008 documents, and which the 2010 or 2014 Supplemental BiOp merely incorporates by reference. Nonetheless, the allegations of this complaint are directed at the 2008 BiOp as amended by and incorporated into the 2010 Supplemental BiOp and as amended by and incorporated into the 2014 Supplemental BiOp.

⁴ This group is composed of scientists appointed by NOAA to assess and describe the minimum requirements for survival and recovery of ESA-listed salmon and steelhead in the interior Columbia River Basin. These scientists were selected based on their recognized and demonstrated expertise, and include non-representative participation from federal, state, tribal and academic scientists.

⁵ Productivity, or recruits per spawner, is the number of returning adult progeny produced from each spawner.

survival. (*Interior Columbia Basin Technical Recovery Team (ICTRT) 2007. Viability criteria for application to Interior Columbia Basin Salmonid ESUs. Review Draft, March 2007*).

Survival in this context is defined as remaining above a “quasi-extinction threshold” (QET), which for this purpose is set at 50 spawning adults per year for a four-year period. As part of this analysis, the ICTRT constructs a suite of “viability curves,” each of which delineates a constant probability of extinction risk. The “viability curves” explicitly incorporate the variability around abundance and productivity, and take into consideration minimum abundance thresholds, as defined by the ICTRT. These thresholds are based on conservation biology science and are calculated using an index of historical stream habitat capacity. The ICTRT incorporates minimum abundance thresholds into its analysis as targets below which average abundance should not fall at any productivity level. Once these viability curves have been generated, actual (empirical) population values of productivity and abundance, including measures of variation, are plotted to determine the current status of the population relative to the specific extinction risk curves. To meet minimum abundance and productivity viability criteria, a population, with consideration of its variance, must be in the region of likely survival on or above the extinction risk curve (i.e., the probability of the population falling below QET= 50 fish for four consecutive years over the course of 100 years is 5% or less). For populations whose current abundance and productivity fall below the relevant viability curve, and thus pose an unacceptably high risk of extinction (i.e., greater than 5%), the ICTRT calculates the percentage increase in abundance and productivity necessary to move the population above the viability curve and into the region of likely survival. The necessary increase in productivity represents the current “survival gap.” (*Interior Columbia Basin Technical Recovery Team (ICTRT) 2007; Required survival rate changes to meet Technical Recovery Team abundance and productivity viability criteria for Interior Columbia River Basin salmon and steelhead populations. November 2007*).

26. The ICTRT further accounted for the need to “roll-up” the status of individual populations to the ESU level. This roll-up is a critical stage in the analysis since it is the entire ESU, rather than individual populations, that is found to be in or out of jeopardy. The roll-up is further required in order to satisfy diversity and spatial distribution population viability criteria, particular patterns of populations across the ESUs. And finally, the effects of variance and uncertainty at the level of individual populations increase when the populations are “rolled-up” to ESU -level effects.

27. NOAA’s jeopardy standard and gap analysis, on the other hand, do not assess population status in relation to minimum requirements for survival and recovery. NOAA’s jeopardy standard and analysis employ four “metrics” in an attempt to address the survival and recovery prongs. These are the quasi-extinction risk, the returns-per-spawner ratio (R/S), the median population growth rate (lambda, or λ), and an abundance trend. Problems with this approach are described below.

28. For purposes of the survival prong of this analysis, NOAA uses only the first metric, quasi-extinction risk. Quasi-extinction risk is the probability that a given population will fall below the QET four or more years in a row over the course of 24 years. (2008 BiOp at 7-15.) NOAA purports to base its calculations of this metric on an acceptable probability $\leq 5\%$ and a QET of 50.⁶ Thus, a population with a greater than 5% chance of averaging less than 50 adult returns for four years in a row over 24 years would have a “survival gap,” or a percentage by which survival would have to improve in order to satisfy this standard. (See 2008 BiOp at 7-7.)

⁶ NOAA “primarily” considered QET=50 in its assessment of this metric, but did calculate extinction risks at QET=30, 10, and 1 as a “sensitivity analysis.” (See 2008 BiOp at 7 18, 7-19.) Since NOAA ultimately discounted its own quantitative analysis in favor of a qualitative approach, (see BiOp at 7-7 and 7-8), the qualitative discussion of this sensitivity analysis appears to have played a significant role in NOAA’s no jeopardy conclusion, but its actual significance cannot be assessed because it is never explained.

29. The 2008 BiOp's survival-risk analysis departs from the ICTRT's methodology without rational explanation and is scientifically deficient in several respects. First, the 2008 BiOp's 24-year (as opposed to the ICTRT's 100-year) time frame for assessing extinction risk, is too short to provide reasonable assurance that the likelihood of survival is not being appreciably reduced. Second, NOAA's assessment fails to consider factors relevant to actual survival and recovery, including minimum abundance thresholds, and fails to adequately account for variance.⁷ Third, the 2008 BiOp calculates survival gaps for some, but not all, of the populations for which sufficient data were available. Fourth, NOAA uses consistently optimistic assumptions about numerous variables, including but not limited to climate and ocean conditions, to produce a more favorable picture of survival and extinction risk than is warranted.

30. Perhaps more importantly than these specific defects, NOAA ultimately does not rely on its quantitative analysis in determining whether the RPA satisfies the survival prong of the jeopardy analysis. Instead, due to "considerable uncertainty" involved in the quantitative assessment of short-term extinction risks, (see. e.g., 2008 BiOp at 8.3-32, 34), NOAA ultimately depends on qualitative factors to make its no jeopardy finding, and presents its quantitative analysis solely "for convenience." (*Id.* at 7-8). Unfortunately, NOAA never provides a rational explanation of how the various factors it lists "qualitatively" provide an appropriate basis for a no-jeopardy finding.

⁷ "Variance" describes the extent to which an actual value may deviate from its statistically predicated value. Under both the survival and recovery prongs of its jeopardy analysis, NOAA failed to adequately consider variance. While NOAA calculated confidence intervals around the baseline point estimates for each metric, NOAA did not consider whether the prospective improvements in the metrics, purported to be achieved once the survival benefits from proposed actions were realized, were within or outside of the baseline confidence intervals. As a result, NOAA could not demonstrate that the desired improvements in the metrics were likely to occur; indeed they could not even demonstrate a statistically significant improvement in status as a result of the RPA. By failing to adequately account for variability, NOAA also failed to meet its burden of demonstrating that the proposed actions will not jeopardize endangered species, and effectively shifts the risk of being wrong onto the protected fish.

31. For NOAA's recovery-prong analysis, NOAA calculates changes in density-independent survival (gaps) necessary for the R/S, lambda, and abundance trend metrics⁸ to equal 1.0, which, according to NOAA, represents a population that is neither increasing nor decreasing. (*Id.* at 7-24). A population meets NOAA's "potential for recovery" standard if there are no survival gaps. Thus, for each of these metrics, so long as they reflect a population that is doing no worse than maintaining status quo abundance, or is projected to do so as a result of the proposed actions (PA) and RPA, NOAA would conclude that the population's likelihood of recovery is not appreciably reduced by the actions under consideration. As with the extinction risk analysis, NOAA's recovery-prong analysis did not account for variance. Survival Gaps were closed by multiplying the point estimates for R/S, lambda and abundance trends by the survival benefits from the PA and the RPA; however the final result fell within the confidence intervals of the initial baseline values for the metrics. Thus, NOAA could not even demonstrate a statistically significant improvement in the likelihood of recovery.

32. NOAA's "potential for recovery" approach does not even adhere to its own standard as described in the Jeopardy Memo and Metrics Memo. These memos require the recovery prong of the jeopardy analysis to demonstrate that species are "trending towards recovery" evidenced by population growth rates greater than one and positive abundance trends. (Metrics Memo at 3.) In contrast, the 2008 BiOp shifts from having to actually demonstrate a trend towards recovery to an even weaker standard characterized as the "potential for recovery" and evidenced by population growth rates and abundance trends that simply close the survival gap necessary for one or more productivity indices to equal at least 1.0, which represents neither

⁸ Over the base period (about 20 years) for a population: R/S is the average logarithmic value, converted back to the base of the logarithm, of the returning number of adult spawners produced per spawner in an earlier year; lambda (λ) is the annualized rate of change (growth rate) in the number of adult spawners on a brood cycle (four years running, summed) basis; abundance trend is the annual rate of change in the logarithmic values of the annual numbers of spawners.

a positive or negative trend. Analytically, it is a remarkably easier burden of proof to simply not be able to detect a trend than it is to demonstrate a positive trend.

33. Finally, neither the survival-prong nor the recovery-prong analyses by NOAA considered that jeopardy needs to be determined at the level of the ESU. By neglecting a sufficient roll-up of status from the individual population level to the ESU level, NOAA failed to adequately consider the diversity and spatial distribution population viability criteria, the importance of particular patterns of populations across the ESUs, and the compounding effects of variance and uncertainty.

34. NOAA's "potential for recovery" approach to the recovery prong of its jeopardy analysis is arbitrary and capricious, contrary to law, and not based on the best available scientific information in at least the following ways:

- It includes no viability component or any other measure of progress towards recovery. Without determining the point at which recovery is placed at risk, it cannot ensure that the likelihood of recovery is not appreciably diminished.
- The standard and assessment fails to adequately consider the tendency of populations to be more productive at lower abundance (i.e., density-dependent population productivity).
- Its trend measurements are dependent upon a timeframe that create the misleading impression of movement toward recovery. Specifically, the trend lines were heavily influenced by the record low abundances in the 1990s and moderately higher abundances of the early 2000s. A line connecting these two time periods demonstrates a positive trend line, even when the long-term pattern is a decline, or when population abundance still remains at critically low levels.
- The trend lines often do not represent a statistically significant fit to the data due to high data variance. Thus where NOAA concludes that their standards are met (i.e., the populations are stable or increasing), their analysis cannot statistically exclude the conclusion that the standard is not met (i.e., the populations are declining). Actually, a population that meets criteria with a median value of 1.0 has a 50% probability that the true value is less than 1.0 and thus a 50% likelihood of not meeting their criteria.
- By setting a standard that requires minimal or no improvement in current population performance, and that fails to assess risk in connection with any time frame for achieving recovery, NOAA permits species to linger at the brink of extinction, without separately considering how prolonged periods of low abundance increase extinction risk and adversely affect the potential for survival and recovery.

- It departs dramatically from the ICTRT's approach and disregards population viability criteria developed by NOAA without rational explanation or scientific basis.
- It departs from the approach used in the 1995 and 2000 BiOps, without any explanation of why the approach of the previous analysis is no longer scientifically valid.
- Without reasoned explanation, it fails to follow the Conceptual Jeopardy Framework developed by the parties and presented to the court in the First Remand Report.
- It is not applied uniformly across populations and species, and relies on vague and irregularly-applied qualitative factors to close survival gaps that otherwise exist.

35. In the 2010 Supplemental BiOp, NOAA purports to review the 2008 BiOp in light of the best scientific information currently available, taking into account the effects of the AMIP and RPA as amended. (2010 Supp. BiOp, § 1 at 2-3.) However, despite NOAA's conclusions, the 2010 Supplemental BiOp fails to address the 2008 BiOp's legal deficiencies. It does not cure the underlying BiOp's fundamental problem of uncertainty regarding the effectiveness of the RPA and the future status of the species. Moreover, it fails to address, much less remedy, the 2008 BiOp's many other flaws. Finally, the 2010 Supplemental BiOp reaches additional conclusions that themselves fail to comply with the requirements of the APA and ESA.

36. For example, the 2010 Supplemental BiOp updates some of the 2008 BiOp's base period survival and recovery-prong metrics with 2 to 5 years of additional data. (2010 Supp. BiOp, § 2 at 10-11.) For many of the affected populations, these "extended" base period metrics have lower values than those estimated and relied upon in the 2008 BiOp's jeopardy analysis. (*Id.* at 3-5, 14-34.) NOAA's response to this new and unfavorable information fails to comply with the requirements of the APA and ESA in at least the following ways:

- By arbitrarily and capriciously concluding that the lower than anticipated trend metrics are not a significant concern in light of the 2010 Supplemental BiOp's "actions to reduce uncertainties associated with climate change," without identifying what those actions are or how they might offset the unanticipated downward deviation in these metrics.
- By downplaying the significance of trend metrics on which NOAA previously placed substantial reliance when it concluded that the hydropower system

operations would not jeopardize listed species, while failing to provide a rational explanation—or any explanation—for this departure from the approach described in the 2008 BiOp.

- By further marginalizing extinction risk metrics that the 2008 BiOp had effectively abandoned in favor of a more favorable qualitative survival analysis.
- By irrationally reasoning that the declines seen in updated base-period data are not significant because new estimates “remain within the range of statistical uncertainty reported in the 2008 BiOp.” This conclusion capitalizes on a major flaw in the 2008 BiOp, namely the existence of very wide confidence intervals bounding the estimated metric values, which precluded NOAA from determining their actual values with any meaningful degree of accuracy.
- By essentially substituting a qualitative assessment of jeopardy that relies upon promises to increase research, monitoring, and evaluation of species status, for the quantitative, but admittedly unverifiable, approach of the 2008 BiOp.

37. In the 2008 BiOp, NOAA, like the ICTRT, used the Comprehensive Fish Passage Model (COMPASS) to adjust the base period survival gaps to reflect the survival improvements NOAA thought would result from changes to the FCRPS that had been implemented between the baseline period and the present. NOAA’s approach differed substantially from that used by the ICTRT, and as a result of this difference and various limitations of the COMPASS model, the 2008 BiOp erroneously underestimated the survival gaps. Thus, even though the 2008 BiOp purported to be grounded in the work of the ICTRT, its unexplained departure from the ICTRT’s approach was arbitrary and capricious and failed to employ the best available science.

38. Remarkably, NOAA’s flawed analysis of the base conditions in the 2008 BiOp indicated that about half of the listed populations of Columbia and Snake River salmon and steelhead were not jeopardized by status quo FCRPS operations, even before adjustments for assumed and predicted survival improvements resulting from current and proposed mitigation in the RPA. Thus, NOAA contended that most populations did not require any improvement in baseline or current status to avoid jeopardy.

39. Rather than correct the 2008 BiOp’s flawed base status assessment, the 2010 Supplemental BiOp compounds its flaws. NOAA does not update its base-to-current or current-to-prospective survival metrics to reflect the lower than expected base period status of most

populations. Instead, NOAA provides only vague, qualitative assurances that any resulting changes would not be large enough to alter the 2008 BiOp's no jeopardy conclusions. NOAA attributes this failure to genuinely update its jeopardy analysis to a lack of available data and the inability to re-convene expert panels to make the necessary updates. (2010 Supp. BiOp, § 2 at 11). A scientifically sound method should be repeatable. However, NOAA was not able to reproduce its own jeopardy analysis with updated data. This illustrates that NOAA's jeopardy analysis fails to meet the rigor of best available science. It further illustrates NOAA's inability to meaningfully assess the current status of species, much less ensure that the future status is not placed in jeopardy.

40. Additionally, the 2010 Supplemental BiOp irrationally ignores the fundamental implication of the extended base period data, which is that at least some of the actions that the 2008 BiOp relied on as part of its jeopardy analysis are not producing their anticipated results. NOAA fails to acknowledge, much less provide a rational explanation for, the evidence that recent actions that were predicted to improve the status of species have failed to do so, and may even have contributed to the further degradation of the species.

41. The 2010 Supplemental BiOp also arbitrarily and capriciously calculates the probability that the actual baseline metrics values for a number listed populations is at or greater than the standard of 1.0. (2010 Supp. BiOp § 2 and App. C.) This assessment is arbitrary and capricious because, among other things:

- NOAA never explains the assumptions it made or the methodology it used to determine the probability that a given metric is at or exceeds the standard. In light of admissions by NOAA staff that such a calculation would be difficult and/or of questionable value, NOAA's decision to make this calculation here, without explanation, is irrational.
- The supplemental BiOp calculates the probability that certain metrics such as λ and the abundance trend are at or greater than 1.0 for certain populations, but fails to calculate those probabilities for other populations and other metrics, such as recruits-per-spawner (R/S), which NOAA has identified as providing "the most realistic assessment of the likelihood that a population will trend towards recovery in the absence of continued hatchery programs." (2008 BiOp at 7-23.) As with

NOAA's chosen methods and assumptions, this decision to disregard other metrics and populations is unexplained.

- NOAA calculates the probability that various base period metrics are equal or greater than 1.0, but fails to do this for any prospective metrics results. Thus they fail to establish any discernible or objective standard of success for any metric or ESU. The 2010 Supplemental BiOp fails to state what level of probability is sufficient to show the standard is met for purposes of the jeopardy analysis, how many populations of what size must meet the standard in order for an ESU to satisfy the jeopardy standard, or what relevance these probabilities have to NOAA's ultimate determination regarding the prospective status of the listed species, which is the determination most relevant to NOAA's obligations under § 7(a)(2) of the ESA.

42. The 2014 Supplemental BiOp does not change the flawed approach to analyze whether the agencies' actions avoid jeopardy to the listed salmon and steelhead even though the 2014 Supplemental BiOp purports to evaluate the current validity of the ESA analysis contained in the 2008 BiOp and 2010 Supplemental BiOp by considering new data concerning the status of the species, the environmental baseline and cumulative effects, as well as new information about effectiveness of the implementation of the RPA. The 2014 Supplemental BiOp repeats the flaws of the 2010 Supplemental BiOp identified above. NOAA fails to explain how it continues to rely upon the RPA and the recovery metrics when none of the populations are approaching values for these metrics that were predicted to occur in 2008. For example, R/S and λ have declined for more than 60% of the populations, while the abundance trend metric has declined for 19% of them. Instead, NOAA arbitrarily relies on large variation around the metrics to conclude that observed changes are not significant. NOAA further fails to explain, why, if the claimed benefits from off-site mitigation habitat actions have already occurred, there is no improvement in the metrics it chose for the jeopardy analysis. NOAA fails to explain how the actions satisfy the jeopardy standard when data show many populations are below replacement levels, even when there is high freshwater productivity.

43. The 2014 Supplemental BiOp arbitrarily relies upon population abundance increases since 2008, rather than the recovery metrics to analyze jeopardy and ignores best available science that requires incorporation of a minimum viable abundance into the jeopardy

analysis. Minimum viable abundances are minimum abundance levels that avoid genetic and demographic risk and are scaled according to basin size, i.e. size of the area where returning adults spawn. In spite of “increases since 2008”, 26% percent of the populations in the Snake River spring/summer ESU are still averaging below 100 fish per year, a position that places them in serious risk of accumulating genetic load⁹. Further, high population volatility is itself a risk factor when abundances are low since it increases the probability of chance extinctions. The ICTRT developed minimum viable abundances for each population. Only seven of forty-five populations are averaging above minimum viability abundance. Changes in abundance since 2008 reflect annual variation; whereas longer-term productivity and abundance trend metrics (R/S and λ) demonstrate that the population abundance continues to decline for most populations. For Snake River Fall Chinook ESU, the abundance has increased and it currently exceeds the minimum viable abundance; however, NOAA fails to explain how this ESU meets the survival and recovery prongs of the jeopardy standard in the wild when naturally-produced fish currently make up only 31% of the natural spawners, and many of the naturally-produced fish are the offspring of hatchery fish.

44. The 2014 Supplemental BiOp is arbitrary, capricious and fails to rely upon the best available science because NOAA introduces bias into its status assessment by shifting the time scale of its data sets. For example, the original baseline for the Snake River fall Chinook population started in 1977, but NOAA shifted the baseline to start in 1990, the year in which the population hit its historic low of only 78 fish, which allows NOAA to report all of the metrics at values above 1.0, even though those results could not be achieved using the 1977 baseline. NOAA also shifts its baseline and again applies predicted benefits from off-site mitigation,

⁹ Genetic load is the accumulation of deleterious, maladaptive genetic material that occurs due to the influence of random genetic and demographic effects in critically small populations. Genetic load can reduce the ability of a population to recover to viable levels.

while, at the same time, asserting that the benefits have already occurred, and, therefore, should already be accounted for in the shifted baseline.

45. Thus, rather than address the recognized problems of uncertainty in the 2008 BiOp, in the 2010 and 2014 Supplemental BiOps NOAA ignores important implications of the new data, downplays its significance for the 2008 BiOp's no jeopardy conclusions, and couches its analysis in the language of certainty but without substance. This approach to uncertainty fails to provide an adequate margin of error to account for the wide confidence intervals bounding the BiOp's status assessments and predictions. Rather than focusing its jeopardy analysis on whether the desired metric values of greater or equal to 1.0 fall within a wide range of possible values (either now or prospectively), NOAA should require the lower 95% confidence bound to fall at or above the standard of 1.0, because this would provide a reasonable probability that the standard is actually met. By failing to provide such a margin of error, NOAA fails to employ the best available conservation science in reaching its no jeopardy conclusions.

46. The 2008 BiOp also relied on non-hydropower system operations to make very significant baseline-to-current adjustments in many—if not most—populations. The 2008 BiOp used actions such as habitat, predator control and hatchery measures to both quantitatively and qualitatively reduce the current survival gaps by adjusting the base survival gaps upward. Unaccountably, many of those measures were virtually identical to those described in the 2004 BiOp, yet NOAA provided no explanation as to why consideration of these same measures in the 2008 BiOp produced such a different result.

47. In fact, the 2008 BiOp's habitat adjustments were based on overly optimistic assumptions about the level of survival improvements that would result from habitat restoration actions in tributaries and estuaries. As is discussed below, these assumptions were not supported by evidence and were arbitrary and capricious. As is also explained, the 2010 and 2014 Supplemental BiOps fail to cure these defects.

48. For any survival gaps that remained following the various base-to-current adjustments of the 2008 BiOp, NOAA made a current-to-prospective adjustment to reflect the expected results of the future actions that constitute the RPA. Although the 2010 and 2014 Supplemental BiOps purport to incorporate the 2008 BiOp, they do not update the base-to-current or current-to-prospective estimates. However, even if it did provide updated estimates, they would remain defective. As noted above, the prospective actions represent only minor modifications of the proposed actions and RPA that did not satisfactorily avoid jeopardy in the 2000 and 2004 BiOps. Thus, NOAA's continued reliance upon them to close the remaining survival gaps is suspect. For the reasons that follow, NOAA's reliance on prospective actions in support of its ultimate finding of no jeopardy is arbitrary and capricious, not reflective of best available science, and contrary to law.

49. NOAA further arbitrarily relies on a jeopardy analysis that has no relationship or linkage to the survival and recovery needs of the fish as scientifically identified in the federal recovery plans or the recovery planning process. *See, e.g.* Lower Columbia River Coho, Chinook, Chum and Steelhead Recovery Plan (2013); Middle Columbia River Steelhead Recovery Plan (2009); Upper Columbia River Spring Chinook & Steelhead Recovery Plan (2007).

50. NOAA's jeopardy analysis is also arbitrary and capricious because the consultation is on the RPA rather than the proposed agency action—the operation and maintenance of the FRCPS. As a result, the jeopardy analysis is arbitrary and capricious because it does not evaluate the adverse effects specific to the operation and maintenance of the FCRPS, the alternatives to the operations and maintenance, and the mitigation necessary to offset those adverse effects attributable to the operation and maintenance of the FCRPS.

51. NOAA arbitrarily relies on a measure of survival through the FCRPS that is based on a percentage survival through each dam that does not account for the full adverse effects of the FCRPS on the life cycle of salmon and steelhead. NOAA fails to explain its failure to

include a Smolt to Adult Return (SAR) metric to measure the survival of populations from the point of their passage down through the FCRPS as juveniles, and back up through the system as adults, set at levels avoid jeopardy to the populations. Specifically, NOAA's survival standards fail to measure the effects of increased travel time, increased predation, the depletion of energy reserves, delayed arrival at the Columbia estuary and delayed entry into the ocean. NOAA fails to explain its failure to include a SAR metric that, when measured from the uppermost dam passed by a population, focuses on mainstem effects. Available data demonstrate that average SARs are at their lowest for species in the Snake, which must pass 7 to 8 dams and SARs increase down river for species that pass fewer dams. Combined with population and ESU metrics such as abundance, productivity, genetic diversity and spatial distribution, the SAR metric would provide a powerful assessment of factors that limit a population's growth and allow for reasoned analysis of RPAs and mitigation that would directly contribute to avoidance of jeopardy and adverse modification of critical habitat. The use of the SAR metric as an FCRPS performance standard provides several other advantages:

- The metric can be made population-specific, which will take into consideration the unique productivity of individual basins, survival to and from the point of reference (for example, smolt survival from the basin to Lower Granite Dam), different ocean distributions and the population growth rate objectives for individual populations.
- The metric can be empirically measured using Passive Integrated Transponder (PIT) tag data. Annual data for many populations are already available.
- The metric can be used to gauge the extent to which the benefits of habitat improvement in basins are being limited by SAR through the FCRPS hydropower system. If SAR is too low, the population will continue to fail to replace itself in spite of the substantial benefit from habitat improvement.
- The results are empirical and represent actual population performance and improvement without the need for assumptions, qualitative assessments or subjectivity.

52. With respect to dam operation measures, and to the extent that the 2010 and 2014 Supplemental BiOps retain the 2008 BiOp's analysis, NOAA's analysis is arbitrary and capricious, contrary to law, and not based on the best available science.

53. COMPASS, as well as other models, has clearly demonstrated that reduction of fish travel time (FTT) through the FCRPS increases both direct juvenile (system) survival as well as smolt-to-adult return (life-cycle) survival of Snake River spring Chinook and steelhead. Recently recognized benefits of spill passage include higher juvenile spring/summer Chinook, fall Chinook, sockeye and steelhead survival and faster juvenile fish travel time through the FCRPS. (Petrosky and Schaller (2010); Haeseker et al. (2012); Marmorek et al. (2011); Hall and Marmorek (2013)) Yet, the 2010 and 2014 Supplemental BiOps and RPAs reduce reliance on actions that are directly aimed at improving in-river migration conditions and thus reducing FTT, such as reductions in water travel time by increasing flows or reducing reservoir elevations, and reductions in fish delays at dams by increasing spill. Instead they clear the way for actions that would clearly impair in-river migration conditions, including reductions of spill compared to recent operations and high water years that apparently benefited fish. As an example, the 2014 Supplemental BiOp reduces duration of spring spill at Snake River projects (potentially eliminating 20 days of spring spill), reduces duration of spring spill at Columbia River projects (potentially eliminating 15 days of spring spill), exchanges a fixed date for change from spring to summer spill operations and curtails summer spill based on criteria that do not provide spill operations for the tail end of populations, and overrides planned spill to artificially create project testing or performance standard testing that are not representative of the flow and migration experience. These changes, and NOAA's failure to incorporate a carefully designed and controlled spill experiment into the RPA to increase SARs for the survival and recovery of the species is arbitrary and capricious.

54. The 2014 Supplemental BiOp fails to provide adequate flow to support juvenile and adult system survivals of listed salmon and steelhead. The flow program must establish weekly targets for flow volume and water velocity at least equivalent to flow objectives, while recognizing that achieving targets is dependent on annual runoff conditions, and ensure frequent forecasting to ensure reservoirs are operated at rule curves at all times. Finally, NOAA must

include a presumptive path to operate Lower Columbia River mainstem reservoirs at minimum operating pool April 10 to September 30, while ensuring irrigation and navigation benefits are maintained and impacts to other resources are mitigated, if proposed spill operations do not yield projected benefits.

55. The 2014 Supplemental BiOp allows the Corps of Engineers to initiate juvenile transportation at Lower Granite earlier than the start date that, since 2007, had been determined through coordination with the Technical Management Team. NOAA's change downplays improved in-river conditions from spill and high water and does not take into account the impacts of spring spill reduction on other listed species that may not benefit from transportation. (Fish Passage Memo July 2013). NOAA fails to consider adverse effects associated with transporting fish; the earlier transportation date is aimed solely at achieving an even proportion of transport and in-river migration with spill and does not incorporate recent data meant to shed light on the operational uncertainties. NOAA misinterprets the spread the risk recommendation provided by the ISAB (Feb. 2010) to mean half transport and-half in-river, when the ISAB's conclusions were to use a combination of transport and in-river migration with spill that spread the risk across species, stocks and the ecosystem, while offering an approach that shed light on uncertainties in a longer term data set. Nowhere does ISAB state a specific ratio to meet a spread the risk strategy. NOAA's adherence to a dam operations strategy that maximizes transportation during some periods of juvenile migration is based on a flawed analysis that:

- a. Overestimates the benefits of transportation compared to in-river migration in the spring by:
 - i. Comparing the survival of transported fish to the survival of in-river migrants that experienced sub-optimal in-river migration conditions resulting from operational decisions by the Action Agencies. The survival of transported fish should only be compared to that of in-river migrants that experience river

migration conditions that are closer to optimal (as have occurred under recent Court-ordered operations);

ii. Including in comparisons fish that were captured in collection facilities at dams and then returned to the river (“by-passed” fish). Often, large proportions of these fish were handled and marked before being returned to the river. By-passed fish, and in particular handled by-passed fish, have lower survivals than fish that migrated in-river over spillways and other routes where they are not collected or handled. The survival of transported fish should only be compared to in-river migrants that are not affected by the collection facilities at the dam in order to provide an accurate basis for comparison.

iii. Relying upon flawed analyses that purport to adjust for effects of using bypassed fish to represent the in-river survival of non-bypassed fish, when these analyses grossly underestimate the extent to which the relative success of the two groups varies from year to year.

b. Fails to take into account risks caused by transportation in the spring. The measure of benefits of transportation need to be based on a risk/benefit analysis that considers net benefits after risks have been accounted for. Risks that have not been adequately accounted for include:

i. Decreased condition and increased pre-spawning mortality of steelhead adults that were transported as juveniles. Adults that are transported as juveniles return to Bonneville Dam slightly later and take a significantly longer time to complete their migration from Bonneville to Lower Granite Dam, than do adults that migrate in-

river as juveniles. (FPC memo dated Jan. 18, 2007). Later return times and delayed migration by adults can decrease fish condition and increase pre-spawning mortality.

- ii. Reduced success in homing to natal basins. Returning adults that are transported as juveniles are significantly less successful (~10% reduction) at homing to their natal basin (i.e., above Lower Granite Dam) than returning adults from juveniles that migrate in-river. This differential includes losses due to straying and other sources of mortality (*Id.*). This represents a loss of fish to the listed population due to transportation.
- iii. Increased straying into non-natal basins. Tagging studies have shown that returning adults that are transported from the Snake River as juveniles are more likely to stray into non-natal basins in the Columbia, particularly into the John Day and Deschutes rivers in Oregon, than fish that migrate in-river (e.g., Keefer *et al.* 2005, *Straying Rates Of Known-Origin Adult Chinook Salmon And Steelhead Within The Columbia River Basin, 2000-2003. Report to the US Army Corps of Engineers and the Bonneville Power Administration*). Increased straying both impacts the local populations that receive the strays, and represents a loss of fish from those populations that were the source of the strays. Snake River hatchery steelhead strays are considered one of the most significant threats to recovery of Oregon's Mid-Columbia steelhead in both the John Day and Deschutes river basins. (Carmichael, R.W. and B.J. Taylor. 2010. *Conservation and*

*recovery plan for Oregon steelhead populations in the Middle
Columbia River Distinct Population Segment).*

- c. Fails to take into account risks caused by transportation in the summer. The 2010 Supplemental BiOp retains the summer spill provisions of the 2008 BiOp, under which spill may be terminated as early as August 1st, barely halfway through the summer spill season. NOAA does not provide an assessment that demonstrates that fall Chinook benefit from spill differently than other listed species, and therefore does not provide a biological basis for reducing spill during summer. NOAA acknowledges that research data is limited regarding the relative benefits of transportation versus in-river migration for fall Chinook. NOAA does not dispute that the court-ordered spill operations may have contributed to the record returns of Snake River fall Chinook returns in 2008. NOAA also does not dispute that a significant portion of fall Chinook from the Clearwater River, comprising approximately one-third of the fall Chinook ESU, migrate in August and would be negatively impacted if spill were terminated during the month of August.

56. The 2008 BiOp relies largely upon hatchery operations to maintain the Snake River Sockeye population, yet acknowledges that this ESU is at a high risk of both extinction and hatchery domestication (loss of genetic diversity and reduction of fitness in the natural environment). In fact, NOAA concludes that the absence of a functional natural population is this ESU's greatest limiting factor. Notwithstanding these findings, as well as NOAA's conclusion that hatchery operations in the future will continue to have both adverse and beneficial effects, NOAA fails to effectively address the need to improve in-river passage conditions to increase the natural population; the RPA will likely have the opposite effect. For example, the RPA continues to reserve the option of terminating spill at Lower Snake River Projects from May 7 through May 20, during which time sockeye smolt migration is often at its height. Transportation has little or no beneficial impact on sockeye, and the increased travel

time resulting from reduced spill will have known adverse consequences. Juvenile sockeye survival and subsequent adult returns improved dramatically during recent outmigration years associated with the court-ordered river operations, which increased spill and reduced smolt transportation. Moreover, the ISAB recently concluded that new data indicates that the smolt-to-adult returns for Snake River Sockeye go down in relation to increased transportation, and up in relation to in-river migration and increased spill, which strongly suggests that sockeye smolts do not benefit from transportation. Thus measures that NOAA claims will improve survival rates for some other ESUs are likely to adversely impact Snake River Sockeye, yet NOAA fails to account for these effects.

57. The 2014 Supplemental BiOp does not cure the arbitrary heavy reliance on uncertain, off-site mitigation, primarily habitat actions, with highly uncertain survival benefits to offset and mitigate for the adverse effects of the FCRPS. The reliance on habitat measures continue to be arbitrary and capricious, contrary to law, and not based on the best available science in the following ways:

- By incorporating the analysis of the 2008 BiOp, the 2010 and the 2014 Supplemental BiOps allocate exceedingly high survival benefits to habitat improvements. While the best available science indicates that under certain conditions smolt production could be increased by freshwater habitat improvements, improvements in survival associated with migration through the FCRPS are required to ensure adequate numbers of these smolts return as adults.
- NOAA fails to consider that benefits from habitat actions are not meaningful if SARs through the FCRPS are not sufficient to return adults to the basins. For example, some populations in the Snake Basin are productive and reside in pristine wilderness areas where habitat actions are not necessary, yet these populations remain SAR-limited and in jeopardy due to mortalities suffered during out-migration.
- Habitat actions may be funded, but not implemented, and, even when implemented, the outcome may not be as expected, and NOAA has no contingency plan in the event that expected benefits never accrue.
- NOAA fails to account for any uncertainty that the habitat improvements will in fact result in the desired survival benefits (Roni et al. 2002), and instead assumes they will be 100 percent effective at producing the benefits they are predicted to provide, rather than empirical demonstration of actual benefits.

- The estimated benefits resulting from habitat improvements fail to consider on-going habitat degradation resulting from upstream human and natural forces.
- NOAA optimistically assumes that highly effective habitat improvement opportunities will be as available in the future as they are now in order to meet overall assumed survival benefits for habitat improvements.
- The 2008 BiOp also relies on contingent habitat improvement measures to replace measures that prove less effective than estimated, yet the availability of funding for these contingent projects is equivocal, at best, thus they are not reasonably certain to occur.
- Habitat protection measures are credited with survival benefits. However, the benefits at best help prevent further decline. Salmon and steelhead mortality from the FCRPS configuration and operations are resulting in survival gaps that are not closing, and widening in some cases, even with implementation of off-site mitigation measures.
- NOAA claims that substantial benefits from habitat actions have already accrued, but fails to explain why the populations are not showing a positive response in the population metrics NOAA chose for the jeopardy analysis. For example, in 2008 NOAA expected the R/S metric for the Pahsimeroi population in the Snake River Spring/Summer Chinook ESU would improve from 0.51 to 1.00 largely as a result of a 41% survival benefit due to habitat improvements. NOAA now claims a 62% survival improvement due to habitat projects implemented through 2011; however, the value of R/S for this population has increased to only 0.59, thus keeping the population well below replacement.

58. The 2010 Supplemental BiOp relies heavily upon the AMIP and its provisions as a means of addressing some of the uncertainties found in the 2008 BiOp's jeopardy analysis and the 2014 Supplemental BiOp continues that reliance. The central feature of the AMIP, which NOAA has incorporated into the biological opinion, is its provision for two "biological triggers," by which NOAA plans to detect the failings of the RPA's measures and trigger responsive actions if and when the species perform far worse than predicted in the 2008 BiOp. The 2010 Supplemental BiOp's reliance on the AMIP, and especially its biological triggers, is arbitrary and capricious, not based upon the best available science, and contrary to law, for at least these reasons:

- The AMIP provides no additional means by which to measure the RPA's success in achieving the biological benefits predicted by the 2008 BiOp, and relied upon in the 2010 Supplemental BiOp in reaching its conclusion that no species would be jeopardized by the continued operation of the hydrosystem as planned.

- The AMIP and related features of the 2010 and 2014 Supplemental BiOps shift NOAA's focus from the current and future status of individual populations and population groups, measured quantitatively using the abundance and productivity metrics, to species-level trends in abundance (measured as aggregate abundance at the dams). Among other things, this unexplained departure from NOAA's prior approach drops critical concerns recognized by the ICTRT, as well as NOAA itself, in the 2008 BiOp. These include such things as population growth rates, spatial structure, and biological diversity, none of which can be measured or addressed at the ESU-level at which NOAA has now focused its attention.
- The AMIP and related features of the 2010 and 2014 Supplemental BiOps also shift the focus of the jeopardy analysis from the prediction and attainment of survival improvements to the attainment of various performance standards, which include the avoidance of the biological triggers and the achievement of adult and juvenile passage standards. However, these performance standards have never been shown to insure that the likelihood of achieving both survival and recovery will not be appreciably reduced. NOAA's reliance on these standards is therefore arbitrary and capricious and a departure from NOAA's prior approach, and one for which NOAA offers no rational explanation.
- NOAA fails to explain or use the best available science to establish performance standards that would assist in avoiding jeopardy, including standards that account for the life cycle of the fish; capture the subsequent mortality through the reservoirs, estuary and ocean that is caused by the impacts from dam passage; and consider the route of dam passage which affects survival in later life stages and adult return rates.
- Even if the existing performance standards were adequate, experimental designs and biases in assessments of dam performance standards inflate survival estimates, including: conduct of the majority of performance standards tests in 2011 and 2012 when flows were above average and do not reflect performance during average or low flow years; use of radio and acoustic tags that do not represent the run-at-large; use of a virtual/paired-release design that has inherent biases as described in Beeman et al. (2011) and Fish Passage Center (FPC) Memos (March 24, 2011; February 15, 2012; March 23, 2012).
- NOAA fails to consider that benefits from habitat actions are not meaningful if SARs through the FCRPS are not sufficient to return adults to the basins. For example, some populations in the Snake Basin are productive and reside in pristine wilderness areas where habitat actions are not necessary, yet these populations remain SAR-limited and in jeopardy due to mortalities suffered during out-migration.

59. The 2010 and 2014 Supplemental BiOps also purport to place significant reliance on an adaptive management approach as a means of ensuring that the proposed hydropower system operations will not jeopardize listed salmon and steelhead. NOAA's reliance on adaptive management as a substitute for binding and effective actions is arbitrary and capricious, not based upon the best available science, and contrary to law, in at least the following ways:

- NOAA's reliance on adaptive management in its jeopardy analysis fails to adhere to any recognized concepts of that approach, and fails to adhere to NOAA's own adaptive management framework. *See Adaptive Management for ESA-Listed Salmon and Steelhead Recovery: Decision Framework and Monitoring Guidance*. (NOAA, 2007). Rather than provide a means of structured evaluation and testing of clearly identified alternatives, the adaptive management provisions of the BiOps are a means of excusing imprecision, uncertainty, and the lack of clearly identified actions and alternatives. The 2014 supplemental BiOp fails to identify with any meaningful degree of clarity what the BiOp's objectives are, what actions NOAA hopes will achieve those objectives, how NOAA will ascertain their success or failure, or what specific alternatives will be implemented in the event that the BiOp's predictions fall short. By failing to adhere to the basic principles of adaptive management, the 2010 Supplemental BiOp fails to employ the best science available.
- NOAA's plan to resort to adaptive management is in many instances presented as the primary plan for ensuring that the likelihood of listed species achieving both survival and recovery is not appreciably impaired. The BiOp's promise that adequately protective solutions will be found at some unspecified point in the future does not satisfy the ESA's mandate that NOAA ensure now, in its biological opinion and RPA, that the proposed operations will not jeopardize listed species.
- NOAA's reliance on adaptive management to satisfy its obligations under the ESA is arbitrary and capricious and fails to employ the best science available because it would repeat past failures. For example, Northwest Power and Conservation Council's 1984 Fish & Wildlife Program relied heavily on an "all-H" adaptive management approach, yet could not prevent the ESA listing of 13 ESUs in the Columbia basin. Since then, conservation science has revealed that for adaptive management to work for these species, it must employ specific and aggressive actions that produce detectable results. NOAA's adherence to actions whose impacts it either cannot or will not measure, backed by vague promises to find new actions if and when NOAA discovers the current efforts have failed, irrationally commits the agencies to an unlawful course of "wait and see," far from the mandate of the ESA and the reasoned decision-making required by the APA.
- NOAA fails to include contingent actions that can be readily taken in the event the agencies miss performance measures. These should focus on the configuration and operation of the FCRPS and should be ready to implement as necessary in order to avoid jeopardy and minimize take. The contingent actions should, at a minimum, include: increased spill; augmentation of mainstem flow; managing reservoir levels to decrease cross-sectional area and increase water velocities; reducing negative impacts of load-following or power peaking; and increased predator control.
- NOAA fails to develop a decision framework for contingency planning to revise the approach if ESA-listed populations are not responding as expected to avoid jeopardy, including triggers explicitly tied to performance expectations, rather than catastrophic declines described in AMIP and the Supplemental BiOps.

60. NOAA recognizes there is considerable uncertainty in its estimates of how listed salmon and steelhead will respond to the measures in the RPA, yet NOAA arbitrarily does not include robust research, monitoring and evaluation (RME) measures. At a minimum, adequate RME would include a marking and monitoring program robust enough to track the status and trend of populations based on appropriate viability criteria; a comprehensive marking and monitoring program to track direct and latent effects of hydropower system operations; a commitment to funding the Coordinated Assessment project to improve data management, reporting and timely delivery of information; commitment to fund coded-wire tagging to inform survival, straying and harvest rates, as well as to resolve uncertainties about trends in population productivity; and an analytical framework to monitor and evaluate each listed stock to assess whether each stock is meeting a jeopardy standard that addresses survival and recovery. Without adequate RME measures, NOAA cannot ensure the actions are avoiding jeopardy.

61. NOAA's approach to global climate change is arbitrary and capricious, fails to employ the best available science, and fails to comply with the ESA, for the following reasons:

- When submitting the AMIP to the Court, NOAA acknowledged that the 2008 BiOp suffered problems with uncertainty, in part due to NOAA's limited "understanding about how climate change may affect these species and their habitats." Despite this concession, neither the AMIP nor the Supplemental BiOps provide corrective actions to address this uncertainty. Instead, the 2010 Supplemental BiOp irrationally claims to address this uncertainty by citing the 2008 BiOp's existing measures that NOAA claims are consistent with the ISAB's recommendations regarding climate change, even though it was the 2008 BiOp that gave rise to the uncertainty to begin with.
- The 2014 and 2010 Supplemental BiOps optimistically assert that climate effects that are manifested over the term of the BiOp are unlikely to be the full effects of climate change, and therefore, like the unexpected downturn in base period status, are likely to be "within the range" of effects considered by the 2008 BiOp. Thus, the Supplemental BiOps irrationally address NOAA's concerns regarding uncertainty by effectively declaring that no uncertainty exists.
- NOAA arbitrarily and capriciously concludes that the 2008 BiOp and RPA "proactively address" the impacts of climate change, when the 2014 and Supplemental BiOps provide for no actual actions to mitigate for the effects of climate change, only planning and further study, and the existing actions proposed by the 2008 BiOp and RPA were deemed to be necessary to offset the effects of

hydrosystem operations, not the effects of global warming (*See, e.g.*, 2008 BiOp at 8.2-32, 8.3-46, 8.4-17, 8.4-23, 8.5-49).

- The Supplemental BiOps ignore the best available science regarding climate change in concluding that there are no near-term impacts of the predicted warming that need to be addressed in the current biological opinion. NOAA irrationally ignores information that is unfavorable to this conclusion.

62. The 2010 and 2014 Supplemental BiOps do not cure the defects in the analysis of adverse modification of critical habitat in the 2008 BiOp. The analysis of whether the 2008 PA/RPA destroys or adversely modifies designated critical habitat of listed salmon and steelhead in the Columbia Basin also is arbitrary and capricious, contrary to law, and fails to use the best available scientific information for reasons that include, but are not limited to, the following:

- The analysis employs an arbitrary definition of the “current pre-Prospective Action condition of designated critical habitat relative to the functionality of its PCEs (primary constituent elements).” 2008 FCRPS BiOp at 7-52. This definition is crucial to the analysis of whether the 2008 PA/RPA destroys or adversely modifies critical habitat because it establishes the basis for comparing the environmental baseline and the likely future state of critical habitat after implementation of the Prospective Actions. NOAA’s approach to defining existing environmental conditions skews this analysis by assuming as part of the environmental baseline current and recent adverse environmental conditions that are to a significant degree under the control of the operating agencies, such as mainstem river flows, amount of spill at mainstem hydroelectric dams, and water temperature. By doing so, NOAA arbitrarily evaluates proposed hydrosystem operations against a baseline that already includes ongoing operations that NOAA acknowledges have adverse impacts on the designated critical habitat of ESA-listed salmon and steelhead.
- NOAA failed to assess whether improvements in operations of the FCRPS that affect PCEs are necessary in order to avoid destruction or adverse modification of critical habitat.
- NOAA arbitrarily evaluates the impacts of the 2008 PA/RPA only on the habitat’s value to the listed ESUs’ “long term *trend toward* recovery” rather than on these ESUs’ actual “likelihood of . . . recovery.” 50 C.F.R. § 402.02 (definition of “destroy or adversely modify”). This allows NOAA to examine only whether the actions’ impacts on critical habitat reduce appreciably the likelihood that salmon and steelhead will trend toward recovery – i.e. the likelihood that their populations will show some increase over time, even if very slight – rather than complying with Section 7’s directive to assess whether the actions’ impacts on critical habitat will reduce appreciably the likelihood that listed ESUs will actually recover, i.e. the likelihood that listed ESUs’ will increase their populations to the point that they may be removed from protection under the ESA.
- By considering only the impacts of the 2008 PA/RPA on each ESU’s “long term trend toward recovery,” rather than the ESU’s likelihood of actual recovery,

NOAA avoids identifying or considering the rate of population growth or any other measure of improvement necessary for the ESUs to actually recover in assessing whether these actions destroy or adversely modify critical habitat, contrary to this Court and the Ninth Circuit's prior decision in this case. *See, e.g. NWF v. NMFS*, 524 F.3d at 936 ("It is only logical to require that the agency know roughly at what point survival and recovery will be placed at risk before it may conclude that no harm will result from "significant" impairments to habitat that is already severely degraded.").

- The analysis of critical habitat-related impacts on listed ESUs also fails to rationally account for potentially serious short-term impacts and fails to consider adequately how these short-term risks affect the conservation of listed salmon and steelhead, again contrary to the decisions of the Court and the Ninth Circuit. *See NWF v. NMFS*, 524 F.3d at 934-935.
- In assessing whether the 2008 PA/RPA destroys or adversely modifies designated critical habitat of the listed ESUs, NOAA further fails to consider the impacts of the actions in light of available information describing steps necessary for salmon and steelhead recovery, as well as in light of available information describing recovered salmonid populations. This information includes, but is not limited to, NMFS, *Viable Salmon Populations* (2000); NMFS, *Habitat Approach* (1999); NMFS, *Proposed Recovery Plan for Snake River Salmon* (1995); Federal Caucus, *Conservation of Columbia Basin Fish* (2000); and Northwest Power and Conservation Council, *Return to the River* (2000), and the more recent work of the ICTRT also discussed herein.
- NOAA concludes that "new scientific information indicates that the RPA, as amended is continuing to improve the functioning of safe passage in the juvenile and adult migration corridors." (2010 Supp. BiOp at 94) NOAA states that actions being implemented as provided for in the 2008 BiOp (such as surface passage facilities at Lower Monumental, John Day, Little Goose, and The Dalles dams) are improving passage conditions, with the result that juvenile reach survival estimates are exceeding the BiOp's expectations. NOAA further concludes that studies "support NOAA's assumptions in the 2008 BiOp that the RPA, as amended, will address factors that have limited the functioning and conservation value of mainstem migration corridor habitat that Interior basin salmon and steelhead use to migrate to and from the ocean." In 2014, NOAA reports that the conditions that limit the functioning of designated critical habitat, as described in the 2008 and 2010 BiOps have not significantly changed, and NOAA reaches a similar conclusion that implementation of the RPA (surface passage routes, efforts to reduce predation and habitat improvements) is substantially improving the critical habitat function. (2014 Supp. BiOp at 477) However, the 2010 and 2014 Supplemental BiOps actually reduce the functioning of critical habitat by allowing for reduction of spill in the spring and summer, which degrades, rather than enhances, passage conditions for in-river migrants and reduces survival for in-river migrants by increasing fish travel times, increasing the proportion of fish passing through turbines and increasing susceptibility to avian predators. Reducing flow as provided for in the 2008 BiOp, as amended and integrated into the 2010 and 2014 Supplemental BiOps, will similarly deteriorate in-river passage conditions and reduce in-river survival.

THE CORPS' AND BOR'S VIOLATIONS OF NEPA

63. The Corps operates a number of the projects in the Columbia and Snake River basins that affect listed salmon and steelhead. The Bureau of Reclamation also operates projects on these rivers and is the primary agency responsible for federal water storage and diversion facilities in the Upper Snake basin. The Corps and BOR, through records of decision, have adopted the RPA in the 2008 BiOp, as amended by and integrated into the 2010 and 2014 Supplemental BiOps. Pursuant to the duties in NEPA and its implementing regulations, the agencies were required to evaluate and disclose in an Environmental Impact Statement (EIS) the direct, indirect and cumulative effects of their proposed actions, identify and consider alternatives to their proposed actions, and describe applicable mitigation measures. 42 U.S.C. § 4321; 40 C.F.R. § 1500.

64. Congress enacted NEPA as a broad national commitment to protecting and promoting environmental quality. Congress enforces that commitment through “action-forcing” procedures requiring federal agencies to take a “hard look” at environmental consequences of their proposed actions in a detailed statement known as an Environmental Impact Statement (EIS). 42 U.S.C. § 4332. NEPA requirements serve two purposes: informed agency decisions and public participation in the decision-making process.

65. NEPA requires federal agencies to prepare an EIS for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C). The EIS must detail “the environmental impact of the proposed action” and “alternatives to the proposed action.” *Id.* § 4332(2)(C)(i), (iii). NEPA further provides that agencies must “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” *Id.* § 4332(2)(E). The discussion must include an analysis and comparison of the environmental impacts of the proposed action to the impacts of alternatives to the proposed action. 40 C.F.R. §§ 1502.14, 1502.16, 1508.25. Agencies must “[r]igorously explore and objectively evaluate all

reasonable alternatives.” 40 C.F.R. § 1502.14(a). An alternative need not be within an agency’s existing legal authority or a complete solution to the agency’s goals to warrant consideration and analysis. When properly conducted, the alternatives section is “the heart” of the EIS because it presents the environmental impacts of the proposal and the alternatives to the proposal in comparative form; “thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14.

66. Agencies also must “insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements.” 40 C.F.R. § 1502.24. An agency’s failure to include and analyze information that is important, significant, up-to-date, available, or essential renders an EIS inadequate. 40 C.F.R. § 1500.1 (“The information must be of high quality.”). Following completion of an EIS, NEPA and its implementing regulations also impose a continuing duty on agencies to prepare a supplemental environmental impact statement whenever “(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. §§ 1502.9(c)(1)(i), (ii).

67. The Corps and BOR decisions to adopt the RPA set forth in the 2008 Biological Opinion, as supplemented in 2010 and 2014 trigger the procedural requirements of NEPA and that the agencies must prepare an EIS in connection with their decisions. Neither agency has satisfied its NEPA duties. The Corps’ 2014 ROD lists three historic NEPA documents as “relevant to this decision” and notes several other “NEPA documents that have been relied upon” in the ROD. *See* Corps 2014 ROD at 9 (listing the 1992 Columbia River Salmon Flow Improvement Measures Options Analysis Environmental Impact Statement, its 1993 supplement, and the 1997 System Operation Review EIS; also listing 2002 Lower Snake River Juvenile Salmon Migration Feasibility Report/EIS, VARQ EIS, Albeni Falls and Inland Avian Predation Environmental Assessment). BOR’s 2014 ROD does not mention NEPA, although BOR’s 2010

ROD includes a footnote with a list of NEPA documents that is substantially similar to the Corps, all completed between 1992 and 2004. 2014 BOR ROD, Attachment A (2010 ROD) at 9, n.8 (listing 1992 Columbia River Salmon Flow Improvement Measures Options Analysis Environmental Impact Statement, its 1993 supplement, and 1997 System Operation Review EIS as the three documents that address “the environmental effects of the FCRPS” and several other site-specific analyses). Neither agency explains how the actions and measures adopted in the 2014 RODs relate to, or are even addressed by, the cited NEPA documents or summarizes the subject matter or analyses contained in these documents. *See* 40 C.F.R. § 1502.20.

68. None of these listed NEPA documents contain the necessary evaluation and disclosure of the environmental impacts of the specific actions and operations that the agencies adopt in their respective RODs, nor do they contain a comparison of the environmental impacts of reasonable alternatives to those actions or operations. In addition, the condition of the environment and the agencies’ options and operations of the FCRPS have changed significantly since the listed NEPA documents were signed. For example, there has been significant new information regarding the impacts of climate change on the Columbia River basin and the benefit of spill levels for salmon and steelhead survival. In addition, new species of salmon and steelhead have been listed as threatened or endangered. None of this significant new information or the substantial changes in the environmental context and circumstances of FCRPS operations, were considered in any of the EISs or other NEPA documents referenced in the Corps’ and BOR’s RODs. *See* 40 C.F.R. § 1502.9(c).

FIRST CLAIM FOR RELIEF

NOAA VIOLATIONS OF THE ESA AND APA

69. The State of Oregon incorporates by reference all preceding paragraphs.

70. NOAA has violated the requirements of ESA Section 7 and its implementing regulations by arbitrarily, capriciously and without any rational basis concluding in the 2008 BiOp, as amended by and integrated into the 2010 Supplemental BiOp, and as amended and

integrated into the 2014 Supplemental BiOp, that the PA/RPA of the Corps, BPA and BOR are not likely to jeopardize any listed species or destroy or adversely modify their critical habitat and by issuing a biological opinion that is otherwise not in accordance with law. The defects in the 2008 BiOp, as amended by and integrated into the 2010 Supplemental BiOp, and as amended by and integrated into the 2014 Supplemental BiOp, are set forth above and incorporated herein.

71. The conclusions of the 2008 BiOp, as amended by and integrated into the 2010 Supplemental BiOp, and as amended by and integrated into the 2014 Supplemental BiOp, are arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law and are reviewable under the APA, 5 U.S.C. §§ 701-706.

SECOND CLAIM FOR RELIEF

THE CORPS' AND BOR'S VIOLATIONS OF NEPA AND APA

72. The State of Oregon incorporates by reference all preceding paragraphs.

73. The Corps and BOR have violated the requirements of NEPA and its implementing regulations because they did not prepare an EIS, Environmental Assessment, or other NEPA analyses for their adoption of the 2014 BiOp's RPA in their 2014 RODs. While an agency may tier a site-specific NEPA analysis to a broader programmatic NEPA analysis, the Corps and BOR do not explain how the actions and measures adopted in the 2014 RODs relate to or are included in the NEPA documents cited in the 2014 RODs. 40 C.F.R. § 1502.20.

74. The Corps and BOR have violated the requirements of NEPA and its implementing regulations because they have not satisfied their continuing duty to prepare a supplemental environmental impact statement whenever the agency makes substantial changes in the proposed action that are relevant to environmental concerns; or when there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. None of the significant new information or substantial changes in FCRPS operations were considered in any of the EISs or other NEPA documents referenced in

the Corps' and BOR's 2014 RODs.

75. By their actions and inactions alleged above, the Corps and BOR are currently violating, and unless enjoined will continue to violate, the National Environmental Policy Act and its implementing regulations. The Corps' and BOR's actions and inactions are arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with the requirements of NEPA and its implementing regulations and are reviewable under the APA, 5 U.S.C. §§ 701-706.

PRAYER FOR RELIEF

WHEREFORE, the State of Oregon respectfully requests that the court:

1. Adjudge and declare that NOAA has violated ESA Section 7 and its implementing regulations by making a no-jeopardy/no-adverse modification finding in the 2008 BiOp, as amended by and integrated into the 2010 Supplemental BiOp, and as amended by and integrated into the 2014 Supplemental BiOp, and issuing an incidental take statement that are arbitrary, capricious, an abuse of discretion and otherwise not in accordance with law;

2. Enjoin NOAA to withdraw the 2008 BiOp, as amended by and integrated into the 2010 Supplemental BiOp, and as amended by and integrated into the 2014 Supplemental BiOp, and the accompanying incidental take statement, notify the Action Agencies of these withdrawals, and reinitiate consultation with the Action Agencies in order to prepare a biological opinion for the FCRPS, its operations, and any related actions that complies with the requirements of the ESA, on a schedule to be set by the court;

3. Adjudge and declare that BOR and the Corps have violated NEPA by failing to prepare an environmental impact statement(s) that addresses the environmental impacts of, and reasonable alternatives to, the decisions in their 2014 RODs to adopt the amended RPA from the 2014 Supplemental BiOp;

4. Grant such preliminary and permanent injunctive relief as may be necessary to protect the ESA-listed species until the court decides the merits of this case or the agency complies with the law;

5. Award costs associated with this litigation; and

6. Grant such further and additional relief as the Court may deem just and proper.

DATED this 3rd day of October, 2014.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on October 3, 2014, the foregoing will be electronically filed with the Court's electronic court filing system, which will generate automatic service upon all Parties enrolled to receive such notice. The following will be manually served by First Class U.S. Mail:

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