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UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
PORTLAND DIVISION

NATIONAL WILDLIFE FEDERATION, *et al.*,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES
SERVICE, *et al.*,

Defendants.

Civil No. 01-CV-640-RE

**MEMORANDUM IN SUPPORT OF
FEDERAL DEFENDANTS'
SUPPLEMENTAL CROSS MOTION
FOR SUMMARY JUDGMENT AND
COMBINED OPPOSITION TO
PLAINTIFFS' SUPPLEMENTAL
MOTIONS FOR SUMMARY
JUDGMENT**

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AMIP	Adaptive Management Implementation Plan
BA	Biological Assessment
BiOp	Biological Opinion
BMP	Best Management Practices
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
BRT	Biological Review Team
CA	Comprehensive Analysis
CVP	Central Valley Project
DPS	Distinct Population Segment
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FCRPS	Federal Columbia River Power System
FPOM	Fish Passage Operations Maintenance Subcommittee
FWS	United States Fish & Wildlife Service
ICTRT	Interior Columbia Technical Recovery Team
IMW	Intensively Monitored Watersheds
ISAB	Independent Scientific Advisory Board
ISRP	Independent Scientific Review Panel
ITS	Incidental Take Statement
MOA	Memorandum of Agreement
MOP	Minimum Operating Pool
NOAA	National Oceanic & Atmospheric Administration
NWPPC	Northwest Power and Planning Council
PDO	Pacific Decadal Oscillation
PIT	Passive Integrated Responder
RIOG	Regional Implementation Oversight Group
RM&E	Research Monitoring and Evaluation
ROD	Record of Decision
RPA	Reasonable and Prudent Alternative
R/S	Recruits-to-Spawners
SCA	Supplemental Comprehensive Analysis
SPS	Salmon Population Summary
SR	Snake River
UCR	Upper Columbia River
WDFW	Washington Department of Fish and Wildlife

CITATION FORMAT:

References to “Dkt. ____” refer to docket entries in the above-captioned case. References to “NWF Br.,” “NWF SOF,” and “NWF ER ____” refer to NWF’s supplemental memorandum in support of NWF’s supplemental motion for summary judgment (Dkt. 1794), NWF’s statement of facts (Dkt. 1800), and NWF’s excerpts of record (Dkt. 1804), respectively. References to “OR Br.” refer to Oregon’s memorandum in support of supplemental motion for summary judgment (Dkt. 1801). References to “NPT Br.” refer to the Nez Perce Tribe’s memorandum in support of supplemental motion for summary judgment (Dkt. 1795).

References to “NOAA __,” “Corps __,” and “BRS __” refer to NOAA Fisheries, the U.S. Army Corps of Engineers, and the Bureau of Reclamation’s Administrative Record filed on August 27, 2010 (Dkt. 1780-1781). References to “2008 NOAA,” “2008 Corps,” and “BR__” refer to NOAA’s Administrative Record and Supplement to the Administrative Record (Dkt. 1480, 1534, respectively) and the Action Agencies’ Administrative Records (Dkt. 1512), respectively. For NOAA’s administrative record, the citation format “NOAA xxxx at yyyy” indicates that “xxxx” is the document within the administrative record, whereas “yyyy” is the page number within that particular document. For the Corps and BOR’s administrative records, the citation format “Corps xxxx at yyyy” and “BRSxxxx at yyyy” indicates that “xxxx” is the document within the administrative record, whereas “yyyy” is the Bates stamped number in the lower right hand corner.

For commonly referenced documents, such as the 2010 BiOp, the administrative record citation is provided once and thereafter only the document’s name and citation to the relevant page within the document are provided (e.g., 2010 BiOp, § 1, at 1).

COMMON ADMINISTRATIVE RECORD CITATIONS:

2008 FCRPS Biological Opinion (“2008 BiOp”): 2008 NOAA A.1	Supplemental Comprehensive Analysis (“SCA”): 2008 NOAA A.2
Comprehensive Analysis (“2007 CA”): 2008 NOAA B.92	FCRPS Biological Assessment (“2007 BA”): 2008 NOAA B.89
2008 Response to Comments: 2008 NOAA C.1155	Columbia Basin Fish Accords (“Fish Accords”): 2008 Corps 372, 380, 404, 397
Adaptive Management Implementation Plan (“AMIP”): NOAA A.1	2010 FCRPS Supplemental Biological Opinion (“2010 BiOp”): NOAA.AA.1
2010 Response to Comments (“2010 RTC”): NOAA CC.200	2008 Annual Progress Report: NOAA BB.376; Corps 1813
2010-2013 Implementation Plan: Corps 005.	2010 Corps Supplemental Record of Decision: Corps 009
2010 BOR Supplemental Record of Decision: BRS000001.	2010 BPA Supplemental Record of Decision: Corps 1425
2009 Estuary Habitat MOA and Record of Decision (“Estuary MOA”): Corps 728.	

INTRODUCTION

Over the last five years, four agencies, NOAA Fisheries (“NOAA”), U.S. Army Corps of Engineers (“Corps”), Bureau of Reclamation (“BOR”), and Bonneville Power Administration (“BPA”), have meticulously followed this Court’s instruction and developed a biological opinion for the Federal Columbia River Power System (“FCRPS”) that fully complies with Section 7(a)(2) of the Endangered Species Act (“ESA”). During this time there have been significant changes – a new Administration, the development of the Adaptive Management Implementation Plan (“AMIP”), and the production of the 2010 Supplemental Biological Opinion (“2010 BiOp”) – but throughout there has been one constant: Snake River fall Chinook have continually returned in record-breaking numbers. The other Evolutionary Significant Units (“ESUs”) and Distinct Populations Segments (“DPSs”) are not far behind; Snake River sockeye continue to shatter all expectations and this year we experienced, yet again, one of the best steelhead runs in recent memory. The technological advancements that aid in the hydrosystem migration have given the agencies the capacity to safely guide juveniles to the estuary so that, when ocean conditions allow, as they have in recent years, the species experience record-setting adult returns, and now, largely attributable to the Columbia Basin Fish Accords (“Fish Accords”), these returning adults will be provided significantly expanded spawning and rearing habitat.

The Court has stressed its desire to have the Federal government truly listen to the other sovereigns when developing these operational adjustments and habitat restoration plans. Collaboration is the foundation on which this BiOp was built, and it has also become the method by which every major decision affecting the system is made. Whether it is choosing a habitat project, adjusting spill, or making operational changes in hatcheries, the agencies’ course of business is to consult, listen, and make informed decisions, almost always adjusting in light of sovereign expertise. This process is so firmly ingrained through the various technical and policy groups that collaboration is no longer some abstract idea; it is an integral part of managing the Columbia and Snake Rivers.

Indeed, the Reasonable and Prudent Alternative (“RPA”) before the Court today is the product of one of the most intense and rigorous examinations of any biological opinion. Not only have all the States and Tribes evaluated its merits, but now two Administrations have delved deeply into the science and technical details. With the advice of federal scientists, and non-federal scientists who had no stake in this decision, the current Administration determined that the best available science has indeed been used and that the analyses are sound. Moreover, as this Administration has noted, the FCRPS generates a significant amount of the Pacific Northwest’s power with virtually zero carbon emissions and the capability of integrating renewable energy such as wind and solar. In this day of climate change, the system’s importance in limiting carbon emissions cannot be underscored enough. The entire reexamination process resulting in the 2010 BiOp -- spanning nearly a year of intense focus and work, followed by a comprehensive updating of the science -- was guided by Dr. Jane Lubchenco, an eminently qualified NOAA Administrator familiar with Columbia River salmon and steelhead. The affirmation of the RPA as reflected in the 2010 BiOp by the United States, three States, six Tribes, and the region’s most qualified experts speaks for itself.

It is clear that there is a difference of opinion as to whether all of the funding and actions that collectively comprise the FCRPS BiOp should proceed, or conversely, whether all of the sovereigns should return to the proverbial drawing board. We know the Plaintiffs' position, and we now unequivocally know where this Administration stands. On this record, and in accordance with the law, we respectfully submit that the RPA protects salmon and steelhead as the ESA requires and that this Court should grant Federal Defendants' cross motions for summary judgment.

FACTUAL BACKGROUND

I. THE OBAMA ADMINISTRATION’S REVIEW OF THE FCRPS BIOLOGICAL OPINION

Following the parties in-chamber meeting on April 2, 2009, the Obama Administration embarked on a scientific and legal review of the 2008 BiOp.¹ The nature of this review is well documented in Federal Defendants' previous briefings and will not be repeated here. *See* Fed. Defs.' Resp. Court's May 18, 2009, Letter (Dkt. 1712); Fed. Defs.' Comb. Reply to Pls.' Resp. (Dkt. 1733). However, the details and the extent of the independent scientific review by some of the country's preeminent scientists, and how their recommendations ultimately manifested in the development of the AMIP and 2010 BiOp modifications, warrant further explanation.

A. Independent Scientist's Review and the Development of the Adaptive Management Implementation Plan and Supplemental Biological Opinion

When the Court issued its May 18, 2009, Letter, setting out preliminary views as to the 2008 BiOp, the Administration had already begun its review by soliciting various viewpoints throughout the region, including the Plaintiffs' criticisms and arguments. AMIP, App. 1., Ex. A. The issues presented in these forums were complex, and while the vast majority of Federal, State, and Tribal scientists fully supported the analyses in the 2008 BiOp, the new leadership paid particular attention to the dissenting voices. AMIP App. 1, Ex. B, C.

As a result, NOAA convened some of the most respected scientists in this country and requested their expertise in reviewing issues related to the 2008 BiOp. FER 10 (Thom 6/5/09, Att 1) ("This is in response to Dr. Lubchenco's request to Dr. Varanasi and me regarding establishment of an additional scientific review of components of the 2008 FCRPS Biological Opinion."); *see also* FER 11 (Denit 6/5/09); AMIP at App. 1, Ex. A. These scientists, most of whom did not participate in the development of the 2008 BiOp itself, were convened for their opinions as to the quality of NOAA's biological analyses. *Id.* Their expertise presented the Administration with an independent perspective in their respective fields, which included: habitat

¹ Four different Cabinet-level agencies and the White House were represented in this process. The lead official for each agency in this review was: NOAA Administrator Dr. Jane Lubchenco for the Department of Commerce; Council on Environmental Quality Chair, Nancy Sutley for the White House; Principal Deputy Assistant Secretary of the Army, Terrence "Rock" Salt for the Department of Defense; Associate Deputy Secretary, Laura Davis for the Department of Interior; and, for the Department of Energy, Bonneville Power Administration Administrator Steve Wright. *See* AMIP, Appendix 1 ("App. 1") at 1.

restoration; climate change; population dynamics; conservation biology; species status; and productivity. The wide range of expertise was indicative of the breadth of subject matter and extent of the Administration's review. *Id.*

These scientists, at the Administration's request, spent a considerable amount of time reviewing the 2008 BiOp and underlying pertinent information to formulate their opinions. These efforts culminated in a two-day workshop at the Department of Commerce in Washington, DC, where they questioned NOAA staff as to their methodologies, modeling, and analyses, among other issues. NOAA CC.121. During this time, the scientists probed and questioned nearly every aspect of the 2008 BiOp and became intimately familiar with these complex issues, including the concerns raised by the Court and Plaintiffs. *Id.* Att. 1 at 3 (describing the legal scientific and legal issues); FER 16 (Zabel 7/13/09, Att.1). Ultimately, these scientists presented their views to Dr. Lubchenco and the new leadership.

The opinion from these scientists was that the analyses and methodologies in the 2008 BiOp were excellent and NOAA had indeed "used the best available science." FER 15 (Costanza 7/10/09); FER 16 (Zabel 7/13/09, Att.1) ("Overall scientific analysis in the BiOp was great. Data for Hydro and harvest components were great."). These scientists were particularly impressed with the level of sophistication and stated that the choices made by NOAA were reasonable. FER 15 (Costanza 7/10/09) ("Overall: they said it was an excellent analysis that used the best available science that was used in an extremely thoughtful way. The assumptions made were perfectly reasonable and it was done as well as it could have been done."); *see also* FER 17 (Cooney 7/13/2009) (Dr. Kareiva, "you guys did a terrific job on [the] biop--some of the most thoughtful conservation science analysis in a tough [pragmatic] situation i have ever seen. the whole committee was impressed").² Besides the accolades, like any true scientific discussion, the focus turned to what was not known and the areas of uncertainty associated with the predicted future and the RPA. FER 16 (Zabel 7/13/09, Att.1) ("The invited scientists emphasized

² *See also* FER 12 (Karieva 07/9/09); FER 13 (Karieva 07/09/09); FER 14 (Ruckelshaus 07/10/09).

that the assumptions made were not unreasonable, but that they had a great deal of uncertainty.”). To these issues, they added their considerable expertise and recommended various actions, monitoring protocols, and studies that could reduce the level of uncertainty and that would position the agencies to quickly realize whether the predicted outcomes had significantly changed for any number of reasons. *Id.* Att. 1 at 1-2 (suggesting adult and juvenile trend monitoring, habitat trend monitoring, abundance based triggers, reductions in harvest and hatchery production, studies on reintroduction, monitoring of climate change and thermal refugia, increased attention to Intensively Monitored Watersheds (“IMWs”), invasive species, better modeling).

These independent recommendations were closely heeded, and NOAA, with the Action Agencies, spent a great deal of time formulating practical applications that would effectuate these scientists’ intent. The administrative records filed with the Court document the logical progression from this independent science review, Dr. Lubchenco’s direction to NOAA staff, and finally the development of applications that could be used throughout the Columbia and Snake River basins for salmon and steelhead. FER 20 (Ferguson 7/30/09) (discussing Dr. Lubchenco’s direction to address actions to control predators, address non-native species, and introduce/re-introduce stocks).³

The correlation between these scientists’ recommendations and the newly created AMIP provisions are unmistakable. *See* FER 22 (Ferguson 8/7/09, Att. 1) (independent scientists review of the draft AMIP provisions); NOAA C.182 (Simberloff review of draft AMIP provisions); AMIP at 9-16 (documenting additional estuary action, reintroduction study, predator control; enhanced monitoring for adult and juvenile trends, habitat trends, IMWs, climate change; new lifecycle modeling; abundance based triggers and short and long term contingency actions); Fed. Defs.’ Resp. Court’s May 18, 2009, Letter at 7-19 (discussing the AMIP’s

³ *See, e.g.*, Corps 769 at 16826-833 (August 26 Independent Scientist comments on draft BiOp briefing papers); Corps 786 at 17056-58 (developing language for avian predation rapid response plans); Corps 810 at 17365-372 (review of RM&E tasks associated with AMIP development); Corps 817 at 17415-420 (comments on development of the Significant Decline Trigger).

provisions and how they relate to the 2008 BiOp). During the development of these additional precautions, the new leadership carefully considered the Court's suggestions in its May 18, 2009, Letter, and in many cases made significant modifications. *See* AMIP, App. 1 at 5-24 (responding to the Court's concerns in the May 18, 2009, Letter). As a result of these efforts and with these added components, in a briefing for the Secretary of Commerce, Dr. Lubchenco presented NOAA's position: "Having fully considered the issues raised by the various stakeholders and litigants in this process, NOAA believes the Government's defense of the biological opinion in the pending litigation is justified, as the biological opinion is based on sound science, and satisfies the Endangered Species Act (ESA) and other legal requirements." FER 19 (Denit 7/20/09, Att. 1) (Briefing Memorandum to Secretary Locke from Dr. Lubchenco). More importantly, as Dr. Lubchenco stated in her letter regarding the AMIP, "the culmination of our recent efforts represents a significant step forward for listed salmon and steelhead in the Columbia and Snake River basins." BRS015165 at 15167.

II. THE 2010 SUPPLEMENTAL FCRPS BIOLOGICAL OPINION

A. Federal Defendants' Request for Voluntary Remand

After a hearing on November 23, 2009, the Court requested additional briefing on whether it could properly consider the AMIP in light of the Plaintiffs' procedural objections. *See e.g.*, Fed. Defs.' Suppl. Brief (Dkt. 1740). Significant briefing ensued over various options, but none of the parties contested whether the Court possessed the discretion to allow the Federal Defendants to conduct a voluntary remand, and none do so now.

On February 10, 2010, the Court issued a letter providing its views on the parties' options for proceeding with this litigation. The Court acknowledged the positive attributes of the AMIP, but agreed with the Plaintiffs that it could not properly consider these efforts in that procedural posture. *See* Feb. 10, 2010, Letter (Dkt. 1749):

The Adaptive Management Implementation Plan ("AMIP") is a positive development. Federal Defendants deserve credit for developing additional mitigation measures, enhanced research, monitoring and evaluation actions, new biological triggers, and contingency actions to address some of the flaws in the 2008 BiOp. The AMIP, however, is not part of the Administrative Record, and it

does not fall into any exception to the record-review rule. Federal Defendants must formally incorporate the AMIP into a final agency decision before I can consider it in evaluating the 2008 BiOp.

The Court continued, noting that “[a] voluntary remand provides a mechanism by which Federal Defendants can cure this procedural defect, without starting from scratch,” and without “develop[ing] a new jeopardy framework.” *Id.*

On February 19, 2010, the Court entered the voluntary remand order and provided the agencies with three months during which time they were “to consider, among other actions, integrating the Adaptive Management Implementation Plan and its administrative record into the 2008 BiOp.” Voluntary Remand Order at 2-3 (Dkt. 1750). The Court retained jurisdiction during the pendency of the remand and stated it did “not make any formal ruling as to the validity of the 2008 Federal Columbia River Power System Biological Opinion (“2008 BiOp”) at this time, and . . . will review the legal adequacy of the agency actions upon completion of this voluntary remand.” *Id.* at 2. On May 20, 2010, Federal Defendants filed a notice of completion of remand providing NOAA’s 2010 Supplemental BiOp, as well as the Action Agencies’ amended Records of Decision (“RODs”). Fed. Defs.’ Notice Compl. Remand (Dkt. 1762).

After the Court’s remand order, the Action Agencies reinitiated consultation pursuant to 50 C.F.R. § 402.16 and sought NOAA’s guidance on the parameters of the consultation. BRS000001. On May 4, 2010, NOAA acknowledged the Action Agencies’ decision to reinitiate consultation and explained that it would be “reconsidering all of its ESA determinations concerning the effects of the FCRPS as operated in accordance with NOAA’s 2008 reasonable and prudent alternative (RPA) for each listed species or designated critical habitat considered in that BiOp.” Corps 155. NOAA also explained that while one of the objectives of the consultation was “integrating the [AMIP] . . . into the 2008 BiOp,” it would also be gathering and considering information that has become available since the 2008 consultation. . . .” *Id.* at 2.

Consistent with the Court’s guidance, NOAA, with the aid of the Northwest Fisheries Science Center (“Science Center”) and ISAB, began the 90-day remand period by compiling a list of all relevant science and data that had become available since 2008. 2010 BiOp, § 1, at 3;

NOAA CC.127. NOAA also requested that the States, Tribes, and the parties to the litigation consider this list of scientific material and provide any additional information that they believed relevant to its consideration during reinitiation. 2010 BiOp § 1, at 3. Prior to and during this remand phase a number of organizations provided NOAA with their assessments of the Administration's AMIP. NOAA BB.390 (WDAFS Letter); NOAA CC.167 (Martin Letter). With respect to the more critical critiques, NOAA requested that the independent scientists who had participated in the review of the 2008 BiOp also review these new criticisms.⁴ 2010 BiOp, § 1, at 3; BRS022186 (independent scientists' review of WDAFS and Martin letters). The Action Agencies also provided NOAA with "new technical and scientific information including details about actions called for in several Fish Accord Memoranda of Understanding . . ." and NOAA took into account "[p]rogress in implementing the 2008 BiOp," including the 2008 Annual Progress Report and the draft 2010-2013 Implementation Plan. 2010 BiOp, § 1, at 3; Corps 005 (Implementation Plan); NOAA BB.376 (2008 Annual Progress Report).

The format of the 2010 BiOp is relatively straightforward. In Section 2, the 2010 BiOp reviews the significance of the new information and discusses how this information relates to the 2008 BiOp and AMIP. 2010 BiOp, Reference List, at 1-37 (detailing approximately 380 new studies); *id.*, § 2. Within this analysis, NOAA examined: (1) the status of the species (the 13 ESUs and DPSs, orcas, and green sturgeon); (2) the habitat conditions and ecological interactions with these species, including climate change; (3) hatchery programs; (4) harvest rates; and (5) new information on RM&E. *Id.*, § 2, at 1-2. Section 3 amends the AMIP to

⁴ Notwithstanding NWF's assertions, many of these scientists did not find the WDAFS and Martin critiques compelling. NWF ER 134 (Kareiva 4/20/10) (characterizing the WDAFS's discussion of dam breaching as "misleading"); NWF ER 137 ("I also wanted to say that, upon further reflection, my comment about initiating scientific and economic studies of Snake River Dam breaching options surely goes beyond the scope of NOAA's BiOp responsibilities . . . NOAA's charge in the BiOp isn't to serve all stakeholder interests, but instead to deal with ESA issues surrounding the hydrosystem."). In any event, the fact that NOAA did not adopt the WDAFS and Martin suggestions is legally beside the point. There is no question that NOAA gave these critiques considerable thought and provided a cogent and reasonable explanation as to why they did not agree. 2010 Response to Comments ("RTC") at 1-26 (NOAA CC.200) (discussing these concerns). This is all that is required. *See Trout Unlimited v. Lohn*, 559 F.3d 946, 959 (9th Cir. 2009) ("NMFS is entitled to decide between conflicting scientific evidence.").

include additional implementation actions for specific AMIP actions, and formally integrates the AMIP into the RPA. *Id.*, § 1, at 3. Section 4 reviews whether this collective RPA (including the amended AMIP) is likely to jeopardize the listed species and/or modify or destroy designated critical habitat. *Id.*, § 4. Finally, Section 5 amends the Incidental Take Statement (“ITS”) to address research on the transport of adult sockeye salmon as a method of increasing late summer survival from Lower Granite Dam to Sawtooth Valley lakes. *Id.*, § 5.

B. The FCRPS Reasonable and Prudent Alternative

The picture that emerges from the Plaintiffs’ briefs is one of inaction, useless monitoring, and academic studies that are divorced from any meaningful effect on these listed species. *See* NWF Br. at 5 (“The 2010 BiOp and AMIP do not identify, fund, or require any additional tributary or estuary habitat actions.”); OR Br. at 1 (“The 2010 BiOp adds nothing of legal significance . . .”); NPT Br. at 1 (“the 2009 AMIP and the 2010 Supplemental BiOp offer nothing . . .”). These assertions are not accurate and misconstrue the Administration’s scientific review, development of the AMIP, and the ultimate incorporation of all actions developed since 2007 into one RPA through the 2010 BiOp.

It is the collective RPA (not just the AMIP and 2010 BiOp) that represents one of the most ambitious wildlife mitigation plans ever implemented, with unsurpassed certainty of funding. 2010 BiOp, § 3, at 3 (integrating the 2008 BiOp and its RPA); *see also, id.*, App. G (discussing the Fish Accords). As an example, under the RPA the following actions have occurred since the 2008 BiOp:

- The Corps recently completed construction on a \$51.3 million spill wall at The Dalles Dam to ensure that the juvenile survival performance standards are achieved. This completed project has increased juvenile dam passage survival to approximately 96.4% for Chinook, 95.3% for steelhead, and 94.0% for subyearling Chinook -- a 2-6% increase (depending on species). 2008 BiOp RPA 19; Corps 1927 at 38228–323 (updated COP for The Dalles Dam).
- As one of the hundreds of tributary habitat projects, the agencies in partnership with other entities completed (at a cost of over \$1.5 million) a restoration project (the “P-9 project Primary Reach”) for the Pahsimeroi spring/summer Chinook population. This project opened Big Springs Creek to important coolwater spawning and rearing habitat, secured instream water rights to provide flow for the reconnected areas, and resulted in a substantial increase in redds. *See* BRS015615 (before and after project descriptions).

- The agencies have completed numerous projects in the estuary, including the acquisition of Willow Grove (at a cost of over \$340,000). *See* Corps 1813 at 34006 (project 2003-011-00 link). This project permanently protects 304 acres of intertidal wetland habitat that had been altered by past land use practices and that provides important rearing habitat for juvenile steelhead. *Id.* at 33794 (long-term management includes, *inter alia*, maintaining and restoring the habitat through vegetation enhancement, control of invasive species, placement of large wood material, enhancing fish access to the wetland complex).
- In partnership with the Colville Tribe, and as part of the Fish Accords, the Action Agencies have provided \$43 million to fund a new safety net hatchery that will significantly contribute to the survival and recovery of UCR spring Chinook and UCR steelhead. 2008 Corps 394; Corps 005 at 454. This investment will allow for the reintroduction of UCR spring Chinook into the Okanogan Basin. Corps 1813 at 33855.

All of this has occurred simultaneously with the scientific review and on-going litigation. While these actions are an incredibly small sampling of the Action Agencies' efforts under the RPA, they alone evidence significant on-going technical work, collaboration with the States and Tribes, and above all, a continuing commitment to achieving survival benefits to avoid jeopardy to listed species. *See also* NOAA BB.376 (2008 Annual Progress Report).

Based on all of the actions in the RPA, including the AMIP with its new additive qualities, and viewing these actions in the context of the best available science and data that has emerged since 2008, NOAA determined that the RPA is not likely to jeopardize (with an adequate potential for recovery) the 13 ESA-listed species of salmon and steelhead or destroy or adversely modify designated critical habitat for these species. 2010 BiOp, § 4, at 1-11. NOAA further concluded that the RPA is not likely to adversely affect the Southern Resident Killer Whale DPS or the Southern Resident North American Green Sturgeon DPS. *Id.* at 11-12.

STANDARD OF REVIEW

Plaintiffs seek to frame the inquiry as whether the 2010 BiOp "correct[s] the flaws in the 2008 BiOp." NWF Br. at 1. Besides starting from a faulty premise, this distorts the proper standard of review. It is the process over the last five years leading to, among other things, the development of the Biological Assessments ("BAs"), the Comprehensive Analysis ("CA"), the Supplemental Comprehensive Analysis ("SCA"), the Fish Accords with three States and five Tribes, the three BiOps for the FCRPS, Upper Snake, and *U.S. v. Oregon* harvest agreement, the

Administration's AMIP, and now NOAA's 2010 BiOp and the Action Agencies' Supplemental Record of Decisions ("ROD") that form the collective record upon which this Court is asked to evaluate whether the conclusions, indeed the NOAA Administrator's conclusions, are "so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Southwest Ctr. for Biological Diversity v. U.S. Forest Serv.*, 100 F.3d 1443, 1448 (9th Cir. 1996) (emphasis added).⁵ Plaintiffs' attempts to constrain the inquiry and ignore the underlying foundation of the FCRPS BiOp cannot satisfy the requisite "high threshold" needed to overturn NOAA's decision. *See River Runners for Wilderness v. Martin*, 593 F.3d 1064, 1070 (9th Cir. 2010). The questions presented here are undoubtedly matters of scientific dispute, and this is exactly where the Court must be at its most deferential. *Trout Unlimited*, 559 F.3d at 956.⁶

ARGUMENT

Many, if not all, of the arguments presented in the Plaintiffs' most recent filings recycle familiar themes: allegations involving jeopardy, habitat, climate change, adaptive management, cormorants, kelts, hatcheries, Pacific smelt, killer whales, critical habitat, and even a Clean Water Act claim. But to a large extent we have come full circle back to the 2000 BiOp challenge. The common theme that pervades is uncertainty. Whether couched as a challenge to the latest recovery metrics and statistical confidence intervals, or as a desire for a 10-year habitat project list (which in their estimation would guarantee survival benefits), at bottom the Plaintiffs seek an absolute – a guarantee that this BiOp will recover these species. As explained below, the

⁵ Similar to the 2010 BiOp, which brought all of NOAA's prior analyses and actions together into one collective agency action, Federal Defendants' prior submissions to the Court on the 2008 BiOp, the AMIP, the remand, and now the collective FCRPS BiOp are all relevant to the Court's review and are expressly incorporated herein by reference.

⁶ Although not required, NOAA has repeatedly solicited public comment on its analyses. 2008 NOAA C.1155 (Response to Comments); 2010 RTC. Plaintiffs' arguments were carefully reviewed by NOAA and, in turn, there is a reasoned explanation responding to Plaintiffs' criticisms. While Plaintiffs' arguments are addressed in detail below, NOAA's response to comments throughout this process provides a reasonable resolution of complex scientific and legal issues and is entitled to deference. *Trout Unlimited*, 559 F.3d at 956 (directing courts to "stay our hands" and not "second-guess NMFS's resolution of . . . scientific question[s]" just because there are conflicting views).

Plaintiffs' technical critiques are incorrect but, more fundamentally, the legal standard they seek to impose on all facets of this analysis far exceeds the regulations, statute, and case law.

Section 7(a)(2) of the ESA speaks in terms of likelihoods and it is an assessment of probabilities. 16 U.S.C. § 1536(a)(2) (“not *likely* to jeopardize”) (emphasis added). The determinations are not absolutes or guarantees, and there will always be a question of uncertainty; that is the very essence of a probability. This Court knows, perhaps better than anyone, that NOAA and the Action Agencies' efforts over the last five years far exceed the 2000 BiOp and bring a level of mitigation and certainty unsurpassed in any Section 7 consultation. And now, the NOAA Administrator, after a searching scientific review, developed multiple measures to increase the certainty of NOAA's predictions. Even with all of this, uncertainty admittedly remains. But the Plaintiffs' quest for a level of precision that does not exist and an absolute guarantee that the species will recover, while unquestionably desirable, is not a sustainable legal argument. *See Arizona Cattle Growers' Ass'n v. Salazar*, 606 F.3d 1160, 1164 (9th Cir. 2010) (“[T]he ESA accepts agency decisions in the face of uncertainty,” as the statute “does not require that the [agency] act only when it can justify its decision with absolute confidence”). After five years of collective and nearly non-stop work, Federal Defendants respectfully submit that NOAA's and the Action Agencies' resolution of uncertainty, fully supported by the entire record and endorsed by nine other sovereigns, is reasonable, complies with Section 7(a)(2), and merits this Court's deference.

I. NOAA'S JEOPARDY ANALYSIS IS REASONABLE AND ENTITLED TO DEFERENCE.

The Plaintiffs once again contest NOAA's interpretation of its own regulation and the analytical methodology underlying its jeopardy determinations. The Nez Perce, in particular, appear to have been tasked with recycling familiar arguments alleging that NOAA has failed to conduct a lawful recovery analysis. *See* NPT Br. at 4-9; NWF Br. at 25-26 (adopting the NPT's arguments). These arguments are not new: the Administration was fully aware of the Plaintiffs'

position, BRS021964 at 21965-69 (NWF's comments), and the Court has indicated that NOAA did not need to develop a "new jeopardy framework" during the remand. Feb. 10, 2010, Letter.

Nonetheless, during its review, the Administration critically evaluated the Plaintiffs' jeopardy concerns, even to the point of looking at alternative methodologies, but ultimately concluded that NOAA's interpretation and methodology were legally and scientifically sound.⁷ See FER 19 (Denit 7/20/09, Att. 1) ("NOAA believes the Government's defense of the biological opinion in the pending litigation is justified, as the biological opinion is based on sound science, and satisfies the Endangered Species Act (ESA) and other legal requirements.")⁸ Nevertheless, the Plaintiffs are steadfast that, in order to conduct a lawful recovery analysis, NOAA must set forth "recovery population abundance levels and recovery timeframes" for each ESU and DPS. NPT Br. at 7. The Plaintiffs continue to attempt to graft these additional components into the regulation, but after nearly three years they have yet to cite any statute, regulation, or case that enumerates such a requirement.

⁷ NWF correctly notes that the Science Center was tasked by Dr. Lubchenco to look at alternative jeopardy methodologies. See NWF ER 48 (McClure 6/01/09), Att. at 2-3 (setting forth options for alternative methodologies). After examining these alternatives, NOAA ultimately rejected creating a new jeopardy methodology because the alternatives were sufficiently addressed in the existing framework or proved infeasible. For example, spatial structure and diversity considerations were taken into consideration previously as part of a qualitative recovery analysis. 2008 BiOp at 7-37. Similarly, NOAA explained that it cannot meaningfully model specific abundance based targets for all of the ESUs and DPSs in the consultation because data for most populations is not extensive. 2008 NOAA C.1155. In short, NOAA critically evaluated these alternatives in light of the Plaintiffs' criticisms and ultimately found that the existing methodology was scientifically and legally sound.

⁸ Federal Defendants have been clear that NOAA's recovery standard was "adequate potential for recovery" as instructed by the Ninth Circuit. 2008 BiOp at 1-10; *NWF v. NMFS*, 524 F.3d 917, 930 (9th Cir. 2008). As part of this inquiry, NOAA evaluates a number of metrics and, where the data allows, made factual findings. 2008 BiOp at Chapter 7 and 8. The 2010 BiOp updates these metrics for the base period, which allowed NOAA to revisit its factual finding in light of the most recent data. 2010 BiOp, § 2, at 10, 28. Based on these updated metrics and numerous other considerations, NOAA is confident that there is a high likelihood of survival and an adequate potential for recovery. 2010 BiOp, § 4, at 1-11. NOAA cannot say when these species will recover, but it can definitively say that the RPA is contributing towards recovery and that recovery is not being precluded. This RPA provides more than a "reasonable assurance that the agency action in question will not appreciably reduce the odds of success for future recovery planning, by tipping a species too far into danger." *NWF v. NMFS*, 524 F.3d at 936.

In contrast, Federal Defendants have demonstrated that Plaintiffs' desired analyses are actually part of the recovery planning process of Section 4 of the ESA and that binding Ninth Circuit law clearly provides that the separate and distinct obligations set forth in Section 4 should not be conflated with Section 7's consultation requirements. *NWF v. NMFS*, 524 F.3d at 936. There is no question NOAA conducted a robust recovery inquiry here; in fact, almost the entirety of Oregon's brief focuses on NOAA's 2010 evaluation of the metrics that inform NOAA's recovery analysis of the RPA. But in the absence of clearly enumerated statutory or regulatory direction, Plaintiffs are not free to impose additional requirements onto that analysis simply to advance their own stated objectives. *Lands Council*, 537 F.3d at 991 ("Nor may we impose 'procedural requirements [not] explicitly enumerated in the pertinent statutes.'") (quoting *Wilderness Soc'y v. Tyrrel*, 918 F.2d 813, 818 (9th Cir. 1990)).

Since the last round of briefing, the Ninth Circuit has been even more explicit on this point. In *Homebuilders v. FWS*, 616 F.3d 983 (9th Cir. 2010), the plaintiffs argued that the U.S. Fish and Wildlife Service ("FWS") must determine the timeframe or the precise point when a species will be "conserved" (defined as recovery) before it can lawfully designate critical habitat. Like the case here, the plaintiffs argued that "[i]f FWS does not know *when* the species in question will be brought to this point [recovery], ... it cannot know what physical or biological features are required to bring the species there." *Id.* at 989. In rejecting this argument, the Ninth Circuit turned to the statutory text and noted that the "ESA does require a determination of criteria for measuring when a species will be conserved, but that requirement applies to the preparation of a recovery plan." *Id.* (citing 16 U.S.C. § 1533(f)(1)(B)(I)). It found that requiring FWS to determine when a species would recover prior to designating critical habitat would improperly import recovery planning into "a completely different part of the ESA." *Id.* at 990.⁹

⁹ The Ninth Circuit reasoned that the inclusion of recovery planning requirements in Section 4, such as objective criteria and timeframes, is evidence that Congress acted intentionally and purposely in excluding those requirements from other statutory provisions. *Id.* at 990 ("inclusion of the requirement for recovery plans shows that if Congress had intended such a requirement to apply to critical habitat designations, it would have said so." (citing *Russello v. United States*, 464 U.S. 16, 23 (1983))). "Congress's decision to apply the extra requirement to recovery plans

Ultimately, the Ninth Circuit stated, “as the district court held in this case, there is no reason why FWS cannot determine what elements are necessary for conservation without determining exactly when conservation will be complete.” *Id.* at 989 (citing *Arizona Cattle Growers Ass’n v. Kempthorne*, 534 F. Supp. 2d 1013, 1025-26 (D. Ariz. 2008), *aff’d on other grounds*, 606 F.3d 1160).

Homebuilders is dispositive to the Court’s inquiry. Like critical habitat designations, Section 7 does not incorporate into its provisions the separate recovery planning obligations, and NOAA likewise can determine whether an action is likely to appreciably reduce the likelihood of recovery without determining exactly when the species will be recovered. NOAA’s analysis found that there is a high likelihood of survival over the next 24 years and that, for every single ESU and DPS, there is an adequate potential for recovery. Within this finding, NOAA exhaustively documented what was necessary for recovery and demonstrated that this entire action, with mitigation, would not preclude recovery and in fact moved the species closer to that goal. *See e.g.*, 2008 BiOp at 8.2-26 through 29; 2010 BiOp, § 2, at 28-29. This finding is supported by both quantitative and qualitative assessments and has been evaluated in light of the newest scientific data.¹⁰ *Id.* The fact that NOAA did not provide abundance targets and a timeframe for achieving recovery is not impermissible; it just means that NOAA did not

but not to critical habitat designations is logical because there is no deadline for creating a recovery plan, but there is a one-year deadline for designating critical habitat.” *Id.*

¹⁰ In 2008, the Plaintiffs’ experts clearly stated the Plaintiffs’ position on jeopardy by articulating that it was necessary to establish when a species would recover in order to determine whether an action would appreciably reduce the likelihood of recovery. 2008 Orzack Decl. ¶¶ 21-23 (Dkt. 1502); 2008 Bowles Decl. ¶ 18 (Dkt. 1510). In response, NOAA’s Dr. Toole explained: “Just from a logical standpoint, one can determine *whether* a condition can be attained independently from calculating *when* that condition will be attained. . . . Recovery planners have recognized that the likelihood of meeting recovery goals can be assessed without analyzing whether that will occur within a specific time period.” 2008 Toole Decl. ¶¶ 24-25 (Dkt. 1566). This is remarkably similar to the Ninth Circuit’s most recent holding where it provided a particularly apt analogy: “[plaintiff] does not explain why it is impossible to determine the elements essential to a goal without determining when the goal will be achieved. A seller of sporting goods should be able to identify which rod and reel are essential to catching a largemouth bass, but is not expected to predict when the customer will catch one.” *Homebuilders*, 616 F.3d at 989. NOAA clearly articulated its recovery analysis, but the fact that it cannot predict when the species will recover does not render its analysis arbitrary or illegal.

subscribe to Plaintiffs' preferred formulation or engage in Section 4(f) recovery planning. Every court that has encountered this recovery issue has resoundingly rejected similar attempts to graft additional components where none exist in the regulation and statute, and this Court should do the same here.¹¹ *Salmon Spawning & Recovery Alliance v. NMFS*, 342 Fed. Appx. 336, 2009 WL 2487917 (9th Cir. Aug. 14, 2009); *Northwest Environmental Defense Center v. NMFS*, 647 F. Supp. 2d 1221, 1238 (D. Or. 2009); FER 38 (*CBD v. BLM*, 06-cv-4884 (N.D. Cal.)).

The Ninth Circuit's recent decision in *Wild Fish Conservancy v. Salazar*, -- F.3d --, No. 09-35531, 2010 WL 4948477 (9th Cir., Dec. 7, 2010), further confirms the reasonableness of NOAA's analytical approach here. In *Wild Fish Conservancy*, the FWS was faulted for failing to conduct a prospective effects analysis for the on-going operation and maintenance of Leavenworth hatchery beyond the term of five years. *Id.* at *8-*9. The court suggested that with an on-going action, the proper ESA inquiry analyzes the long-term effects of the action until those effects become "so unpredictable" that there is no longer a meaningful analysis. *Id.* at *8 n.9. However, the court clarified a number of times throughout the opinion that although the consultation Services must conduct a prospective effects analysis, the mechanics of such an analysis should be left to the Services discretion, *id.* at *8 ("Although it is not for us to dictate precisely how long the term of the analysis should be in this case, it must be long enough for the Service to make a meaningful determination . . ."), or, at the very least, the Services must explain why a long-term analysis cannot be done, *id.* at *9 ("the Service was required to issue a

¹¹ In a candid moment, NWF states: "Actions that admittedly are unlikely to achieve recovery surely must appreciably reduce the likelihood of recovery." NWF Br. at 26 n.29. This statement really crystallizes our dispute. NWF apparently believes that if an action is unlikely to "achieve recovery," it has *per se* "appreciably reduced the likelihood of recovery" and therefore is insufficient to avoid jeopardy as that term is defined in 50 C.F.R. § 402.02. However, many actions, like this RPA, contribute to the recovery of a species and allow for that potential, but cannot achieve recovery by themselves and certainly cannot do so within a ten year timeframe. This does not mean, however, that there is an appreciable reduction in the likelihood of recovery. Contributing towards recovery and allowing for that potential at some point in the future is vastly different from proving an action will "achiev[e] recovery." That is why NOAA, consistent with Ninth Circuit instruction, asks whether an agency action will result in a high likelihood of survival and allow for an "adequate potential for recovery." Plaintiffs' insistence that an action must "achieve recovery" before finding that there is no "appreciable reduction in the likelihood of recovery" unquestionably imports Section 4 recovery planning into a Section 7 consultation.

comprehensive biological opinion taking a long view of the Hatchery's effects on the bull trout, or to explain adequately why any such effort would be unproductive in assessing the long-term impact"). With the FCRPS BiOp, NOAA performed both a long-term effects analysis beyond the scope of a ten-year BiOp and rationally explained why the analysis became less meaningful as it projected into the future.¹² Imposing additional components not found in the regulation or statute would circumvent the Ninth Circuit's holding.

A. NOAA's Jeopardy Analysis, Including the Consideration of Recovery, is Analytically Sound and Utilizes the Best Available Scientific Data.

Both Oregon and NWF contest NOAA's evaluation of new population-level data for salmon and steelhead and argue that various runs are not "surviving" as anticipated. OR Br. 14-24; NWF Br. 21-25. As in the past, the Plaintiffs focus on isolated metrics, at the exclusion of every other metric and data that do not support their theory, and fail to understand the analysis in the 2010 BiOp.

A significant component of the 2010 BiOp is the review of new adult salmon and steelhead data. 2010 BiOp, § 2, 3-35. NOAA analyzed available *species-level* abundance and trend data and *population-level* abundance and trend data. *Id.*, § 2, at 3-4. All of this information was reviewed and thoughtfully analyzed in the 2010 BiOp and, while much of it is very technical, NOAA provided a transparent and credible evaluation of what this new data

¹² For example, although the term of the FCRPS BiOp is ten years, the effects analysis – the aspect the Ninth Circuit was concerned with in *Wild Fish Conservancy* – projects forward over the next 24 years. 2008 BiOp at 7-7 to 7-11 (explaining the survival inquiry as extinction risk over the next 24 years). NOAA modeled the next 24 years using two assumptions: (1) that all of the actions contemplated in the BiOp occur during the ten year term, and (2) none of the actions occur over the next ten years. 2008 BiOp at 8.3-59. Using both reference points, NOAA concluded that there was less than a 5% extinction risk over the next 24 years for all of the ESUs and DPSs. *See e.g. id.* at 8.2-29. NOAA also looked at additional long-term effects through consideration of VSP factors. *Id.* at 7-35 to 37. These assessments were revisited in the 2010 BiOp and affirmed in light of the best available science. 2010 BiOp, § 4, at 7-11. Importantly, NOAA also explained that modeling these actions past 24 years was not meaningful because future projections become increasingly more unreliable the further one goes out into the future, *i.e.*, the uncertainty of the estimates increases with time or, in the Ninth Circuit's words, becomes "so unpredictable." *See* BiOp at 7-18 (explaining that the "precision of risk decreases with longertime horizons."); *see also* 2008 NOAA C.1155. This is precisely the type of analysis the Ninth Circuit approved in *Wild Fish Conservancy*.

meant for each ESU and DPS and how it relates to the 2008 BiOp conclusions. *Id.*, § 2, at 28-33 (discussing the overall relevance to the 2008 BiOp and AMIP).

Part of this new information includes new data on species-level abundance. NOAA found that in general there were very high adult returns (abundance) between 2001-2004, with lower returns between 2005-2007, followed by higher returns in 2008, including SR sockeye which had the highest number of returning adults since 1968. *Id.*, § 2, at 6. NOAA also combined population-level data to draw species-level conclusions and found that, all “ESUs are stable or increasing over the time period 1990 through the most recent year (2007, 2008, or 2009, depending on the species).” *Id.*¹³

NOAA also examined the performance of populations individually using new data sets from the Science Center’s Salmon Population Summary Database (“SPS”). For most populations, this added two to five new years of data. *Id.*, § 2, at 8 (Table 1 & 2). This new data set *revised* previous yearly estimates and *added* additional years of data (2-5 years depending on the population). *Id.*, § 2, at 10. With the revised and extended data set, NOAA created a new “extended base” period that, for most populations, now extends from 1980 to 2008. *Id.* NOAA also recalculated the metrics used in the 2008 BiOp by using this extended base period, but only did so for the base period estimates. *Id.*, § 2, at 4. These recalculations included average abundance, extinction risk, recruits to spawners (“R/S”), median population growth rate (lambda), and BRT trend (these are commonly referred to as the “new base period estimates”). *Id.*

¹³ Oregon takes issue with the classification of “stable” and alleges that there is a discrepancy between NOAA’s findings of trend within the BiOp for various species and this new information. OR Br. at 10. There is no discrepancy because the 2010 BiOp’s discussion of “trends” are based on calculation of BRT trend for individual populations in the same manner as in the 2008 BiOp and were clearly separated from discussions of aggregate ESU “stability” as informed by the NOAA report to Congress. This new ESU-level information is important because it shows that at the aggregate population level, species have been stable or increasing over the last decade rather than declining. This suggests that the actions in the RPA, which are expected to improve survival in various life-history stages, should not only avoid jeopardy but continue to improve the species’ status such that they will generally trend upwards when the RPA is implemented, as anticipated in the 2008 BiOp. 2010 BiOp §4 at 28.

The results of new recalculations for each of the ESUs and DPSs are exhaustively documented and explained in the 2010 BiOp. *Id.*, § 2, at 7-28; *see also id.* (Appendices A, B, C, D). In brief, each of the metrics responded differently to the revised and extended base period data set. For example, NOAA found that the most recent ten-year average abundance was 17-160% higher than the abundance estimated in the 2008 BiOp (with the sole exception of Wenatchee UCR steelhead). *Id.*, § 2, at 12-13 (Table 3). Depending on the ESU or DPS, extinction risk increased or decreased. *Id.*, § 2, at 4 (e.g., unchanged or decreasing risk for most populations of UCR steelhead; increasing risk for most populations of SR spring/summer Chinook). Estimates for R/S and lambda (HF=1 assumption¹⁴) decreased compared to the original base period estimates, while estimates for BRT trend and lambda (HF=0) increased for most populations. *Id.*, § 2, at 3-33. Underlying all of the recalculations were conservative assumptions such as hatchery supplementation stops immediately (something that will not occur during the term of this BiOp). *Id.*, § 2, at 5.

In discussing the relevance of this new data to the 2008 BiOp, NOAA explained that “two to five new years of adult return data for a subset of populations indicates higher average abundance for all but one population and stable or increasing extended base period abundance trends for most populations.” *Id.*, § 2 at 31-32. However, for other metrics typically indicative of productivity (R/S and lambda (HF=1)), the base period estimates declined, and for some populations, extinction risk estimates increased. *Id.* at 32. NOAA explained that, while the new data sets created new point estimates both up and down depending on the metric, all of the base period metrics “are within the range of statistical variation reported in the 2008 BiOp and are consistent with the patterns of returns based on dam counts that were described in both the AMIP and the Action Agencies’ 2008 Progress Report.” *Id.* These variations in the metrics were expected because it is only natural that “productivity would decline as abundance increased” and

¹⁴ Two assumptions regarding reproductive success of hatchery-origin spawners were applied to lambda estimates in the 2008 and 2010 BiOps: hatchery-origin spawners are equally successful (HF=1); and hatchery-origin spawners are completely unsuccessful (HF=0). 2008 BiOp at 7-24.

that these variations will “continue in the future to fluctuate both positively and negatively.” *Id.* (referencing 2008 BiOp Chapter 7.1).¹⁵

In simplified terms, the new base period estimates generally capture the effects to salmon (good and bad) from 1980-2008 and provides NOAA with a picture during this timeframe. But these recalculations of metrics merely represent one temporal step of the analysis (1980-2008). As NOAA explained, “[c]hanges in base period estimates are relevant to the 2008 BiOp analyses, but the critical quantitative information for the 2008 BiOp’s conclusions were the ‘prospective’ estimates that included the effects of RPA implementation and continuing current management actions that were not reflected in the base period population performance.” *Id.*, § 2, at 5. That is, to complete the entire picture in the 2010 BiOp, NOAA needed to evaluate the effect of the entire RPA (which is largely all beneficial) in a new prospective analysis.¹⁶

B. NWF Confuses the Base Period Estimates with the Prospective Analysis.

NWF argues that the new metrics demonstrate that salmon are “not surviving as predicted” and therefore NOAA’s conclusions are arbitrary. NWF Br. at 21-23. But to reach

¹⁵ Abundance and productivity are recognized to fluctuate because of density-dependent effects, such as interference and competition for resources that generally occur during spawning and freshwater rearing. If a population experiences very high abundance levels (like those recorded in the early 2000s where there were incredible returns of adults), each of those adults would need to replace itself with another adult to keep productivity even (1.0) – in essence, each broodyear thereafter would have to be bigger than the previous year for productivity to consistently exceed 1.0. As NOAA explained, “if more naturally-spawning adults return than the adults that produced them, the R/S estimate will be greater than 1.0.” 2010 BiOp, § 2, at 32. This is not sustainable because of density dependence. Moreover, salmon populations inherently go up and down and this is why NOAA expects there to be variation in both metrics over the years. This highlights the importance of not seizing on one metric over the other, but instead taking all of the information into account before making a collective judgment.

¹⁶ To incorporate the significance of the new base period estimates in the qualitative prospective analysis, NOAA considered information “such as the magnitude of the base period changes and how close the 2008 BiOp’s prospective estimates were to metrics indicative of a low risk of extinction . . .” and for the other metrics, like R/S, lambda, and BRT trend, this magnitude of change was represented as a ratio “of extended base period vs. the 2008 BiOp base period estimates . . .” 2010 BiOp, § 2, at 5. What this means is that NOAA examined the difference in change between the old base period estimates and the new base period estimates to determine whether this new data and information would be likely to change its predictions as to the effect of the RPA on some of the populations. The magnitude of change between the old base period estimates and the new base period estimates was important, but it was just one factor and one step in NOAA’s analysis.

this conclusion, NWF examines only one metric – R/S – and ignores other metrics in the analyses. *See* 2010 BiOp, § 2, at 29 (showing an increase in average abundance); *id.*, § 2, at 31 (showing no change or an increase in both BRT trend and median population growth rate [λ with HF=0] for most populations). More fundamentally, NWF’s argument confuses the new base period estimates with NOAA’s prospective analysis.

The new calculations relied on by NWF are only *base period* estimates (generally 1980-2008 depending upon population) and do not reflect the prospective analysis. *Id.*, § 2, at 8-11 NWF’s argument, that these populations are not “surviving” as anticipated (even assuming it was correct to seize on isolated metrics), fails to acknowledge that these recalculations do not fully reflect management changes that occurred in the latter part of the base period and do not include mitigation that has influenced survival of fish that were spawned after 2003-2005. *Id.*, § 2, at 11 (“the base period estimates do not fully reflect the effects of management changes that have taken place during the latter portion of the base period, such as reductions in harvest rates, construction of bypasses and changes in operations at hydro projects.”). Further, the base period estimates do not include prospective actions including: (1) management actions taken since approximately 2007; (2) the 2008 BiOp; (3) the Fish Accords; (4) the AMIP actions; and now (5) the collective FCRPS RPA as reflected in the 2010 BiOp. *Id.* (“the 2008 BiOp further adjusted the current status metrics to assess the likely future effects of the management actions contemplated in the RPA”). NWF confuses the base period estimates in the 2010 BiOp with the prospective estimates that were performed in the 2008 BiOp. 2008 BiOp at 7-8.¹⁷

NWF also erroneously argues that NOAA has “switched standards” by evaluating multiple metrics, including average abundance. This argument is premised on the erroneous

¹⁷ NWF compounds this mistake by confusing NOAA’s discussion of the confidence intervals and the new base period point estimates. NOAA did not substitute lower confidence limits for 1.0 in its qualitative prospective analysis because it did not perform these calculations. It did, however, qualitatively address possible changes in prospective estimates because critical information was not available to make quantitative prospective estimates. Those qualitative assessments were concerned with potential changes in the mean or median prospective point estimates, not with the lower end of the confidence limits. 2010 BiOp, § 2, at 20 (“The results discussed above pertain to mean estimates and the discussion of prospective implications is based on the recent climate scenario.”).

assertion that NOAA did not consider abundance in the 2008 BiOp. *See* NWF Br. 24 (“The 2008 BiOp, however, rejected an abundance-based metric to evaluate whether the RPA would avoid jeopardy.”) (citing 2008 BiOp at 7-27 to 7-28). The BiOp text that NWF alleges supports its contention, does not reject abundance as a relevant factor in the jeopardy analysis; rather it stated the difficulty of modeling abundance goals because only a select few populations have data sufficient to conduct a meaningful analysis. 2008 BiOp at 7-27, 7-11. The remainder of the text discusses the effect of density dependence on productivity as abundance increases. *Id.* NOAA did not set forth future abundance standards, but this does not mean NOAA ignored abundance as a relevant factor in the 2008 BiOp. *See* 2008 Declaration of Dr. Chris Toole (Dkt. 1566).¹⁸

NWF seeks to distract the Court by arguing that NOAA has “switched standards” and deviated from prior protocols, but in reality NOAA merely considered new information that became available since 2008, just as the Court instructed in its remand order and just as it had done in the 2008 BiOp. The apparent reason for NWF’s vigorous opposition is that the new abundance data paints an optimistic picture. NOAA BB.376 at 4 (total abundance); 2010 BiOp, App. at 1-4 (graphs of ESU abundance trends). Almost uniformly, each ESU and DPS have experienced increased adult returns, some of which have shattered recent records, and the abundance trend for most ESUs is undeniably up. *Id.* Indeed, as members of NWF’s coalition can attest, fishing has rarely been better. However, as promising as this information is, NOAA did not blindly adhere to this singular metric; it examined all of the information and carefully described both the good and the bad. Ignoring abundance information, as NWF urges the Court

¹⁸ A lengthy discussion of how NOAA considered abundance at each step of its jeopardy analysis is provided in the 2008 Toole Decl. at 5-8 (Dkt. 1566). As just some examples, NOAA described the status of each population in terms of its recent abundance and compared the current abundance with the ICTRT’s minimum abundance thresholds. *See e.g.*, 2008 BiOp at 8.3-5 and 8.3-47. NOAA also compared recent abundance to quasi-extinction abundance levels. *Id.* at 8.3-29, 8.3-32, 8.3-33, 8.3-36. In the recovery analysis, NOAA calculated expected changes in abundance trends by evaluating proportional changes in mean survival. *Id.* at 7-7 through 7-12. In fact, the conclusions in the 2008 BiOp explicitly addressed abundance: “The status of the species has been improving in recent years, compared to the base condition, *and abundance is expected to increase in the future as a result of additional improvements.*” *Id.* at 8.3-42 (discussing SR spring/summer Chinook) (emphasis added). This prediction is confirmed in the 2010 BiOp.

to do here, is not scientifically justified nor would it comply with the law. 16 U.S.C. § 1536 (a)(2) (“best scientific and commercial data *available*.”) (emphasis added).

C. **Oregon’s Technical Critiques of the Base Period Estimates Do Not Demonstrate that NOAA’s Conclusions or Methodology Are Arbitrary.**

Oregon first contends that NOAA “turns a blind eye” to unfavorable information and irrationally dismisses a “deteriorating population status.” OR Br. at 14-15. Even a cursory review of the 2010 BiOp demonstrates that NOAA thoroughly evaluated all relevant information and cogently explained the relevance of these metrics to the 2008 BiOp. Similarly, Oregon, like NWF, seizes on the metrics that declined, but never reconciles that other metrics demonstrated improvement. *See* OR Br. at n.15. In fact, not once does Oregon wrestle with the undisputed fact that average abundance has increased dramatically in the last ten years. 2010 BiOp, § 2 at 13, Table 3 & App. A at 1-4.

Compounding its singular focus, Oregon asserts that all of the point estimates for the new base period have declined and that, because the new point estimates fall within the confidence interval, NOAA dismisses the information as irrelevant. OR Br. at 15. This is a mischaracterization. For example, for those base period R/S point estimates that declined, NOAA carefully analyzed what significance this had to the prospective R/S estimates that were the basis of the 2008 BiOp’s jeopardy analysis. *See id.*, § 2, at 30-31 (discussing the significance of the only populations where prospective R/S estimates would be likely to shift from greater than 1.0 to less than 1.0 (Loon Creek, Wenatchee, and Entiat)). NOAA explained how the likely shifts in prospective R/S estimates for these three populations were not significant enough to alter previous conclusions for the affected ESUs. *Id.* at 30 (discussing how Camas Creek population productivity is likely to be strong thereby reducing concerns with the Loon Creek population); *id.* at 31 (discussing the Entiat population and how legacy hatchery effects reduce productivity and are persistent but that the RPA will work toward reversing these effects); 2008 BiOp at 8.7-10 to 11, 38; 2007 CA at 9-9.

More generally, NOAA examined the relevance of these changes and explained that this new data set and the decrease in R/S and lambda (HF=1 assumption) point estimates were likely the result of increasing abundance and/or the effects of density dependence. 2010 BiOp, §2 at 32 (“Variations in annual abundance and productivity were anticipated in the 2008 BiOp – in particular, the BiOp in Chapter 7.1 described the expectation that productivity would decline as abundance increased); *see also id.*, § 4, at 8:

The reduction in productivity for the high-abundance brood years from the early 2000s is also consistent with the expectations of stock recruitment, in which productivity generally declines following years of higher abundance, in part due to density dependence (2008 BiOp Chapter 7.1). That is, stock-recruit functions predict interference or competition for resources at high abundance, which reduces the number of recruits produced per spawner, compared to the productivity at low abundance and density.

What Oregon ignores is that adding 2-5 years of new data from the 2003-2008 timeframe captures a trough of productivity following a peak of very high abundance. The 2008 BiOp expected this inverse relationship (declining productivity following high abundance in the early 2000s) as well as the inherent variability in the populations. *Id.*; 2008 BiOp at 7-22, 7-27.¹⁹ As the explanations in the 2010 BiOp fully evidence, NOAA did not conclude that just because a point estimate fell within a confidence interval, it could “turn a blind eye” to this data. Instead, NOAA carefully analyzed the new data and formed reasonable conclusions based on sound and established scientific principles. *Trout Unlimited*, 559 F.3d at 956.

D. Oregon’s Technical Disagreement with NOAA’s Prospective Analysis is Legally and Factually Incorrect.

Unlike NWF, Oregon recognizes that NOAA must evaluate the future effects of the RPA before making jeopardy determinations in the 2010 BiOp, but Oregon takes issue with this prospective analysis by arguing that: (1) NOAA should have recalculated quantitative

¹⁹ An additional factor (besides density dependence) NOAA considered is that juvenile migrants from these brood years encountered extremely poor ocean conditions in 2003-2005, which were three of the worst years in the last 12 for near-shore ocean productivity. NOAA BB.303 (Peterson et al.). The resulting poor adult returns in 2005-2007 were consistent with those poor ocean conditions and were an additional cause of the declines in average R/S productivity in the updated and extended base period results. The combination of high abundance in the early 2000s with poor juvenile ocean conditions contributes to the reduced productivity metrics.

prospective estimates; (2) the “base to current” adjustment in the 2008 BiOp is inaccurate; and (3) there was a failure to explain the relevance of this information. Each issue is addressed in turn.

NOAA explained in the 2010 BiOp that it could not perform a quantitative prospective analysis because it could not recalculate, for example, the “base to current” tributary habitat adjustments. 2010 BiOp, § 2, at 11. Oregon contends that the inability stems from a deficient analysis, but this is not correct. It is because NOAA lacks the necessary information, not because there is some inability to replicate the calculations. *See id.* (“This quantitative [prospective] analysis cannot be done in this reinitiation because all of the information necessary to do this is not currently available.”); *id.* (“For example, new estimates of tributary base to current adjustment factors would require reconvening the expert panels that made the original estimates.”). It might be preferable to have these prospective estimates in hand, but NOAA is not under any legal obligation to affirmatively create data that does not exist in order to rerun the calculations. *Northwest Ecosystem Alliance v. U.S. Fish and Wildlife Serv.*, 475 F.3d 1136, 1147 (9th Cir. 2007) (“Of course a rigorous, large-scale study of Washington gray squirrels' behavior and morphology would be preferable, but in the absence of such a study, credible anecdotal evidence represents the 'best scientific ... data available' and cannot be ignored.”).²⁰

Oregon also disputes the original “base to current” adjustment in the 2008 BiOp and asserts that reflecting survival improvements from management actions taken in the late 1990s and early 2000s is unwarranted because some of the metrics declined. OR Br. at 19. This argument is not sound. Using Oregon’s example of the hydro system, juvenile salmon survival through the hydrosystem in the 1980s and 1990s was considerably worse than it is today and there have been vast improvements in operations and configurations. *See* 2008 BiOp at 7-9

²⁰ As this Court noted in *Kandra v. United States*: “[a]n agency has wide latitude to determine what is 'the best scientific and commercial data available.' The Ninth Circuit has interpreted this provision to mean an agency cannot ignore available biological information.” 145 F. Supp. 2d 1192, 1208 (D.Or. 2001) (*citing Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)); *Southwest Center for Biological Diversity*, 215 F.3d at 60 (“The 'best available data' requirement makes it clear that the Secretary has no obligation to conduct independent studies.”).

(Figure 7.1-1: hydro survival from 1980 to 2000, showing clear improvement). Significant amounts of spill to enhance juvenile survival at all eight dams only began following the 1995 FCRPS BiOp. 2008 Corps 1677 at 33068-072; 2007 BA, App. A. It has been well documented that these operational changes are clearly working and have measurable benefit; accordingly, NOAA made the requisite adjustment based on these improvements.²¹

Oregon's contention that hydro improvements do not have any effect because the base period point estimates for R/S and lambda are "declining" is entirely inconsistent and directly conflicts with its long-held position that spill is beneficial for migrating juveniles. OR 2008 MSJ Mem. at 20-22 (Dkt. 1508). The decrease in R/S and lambda point estimates, as explained above, are a function of poor ocean conditions, the inverse relationship between abundance and productivity caused by density dependence, and inherent variability – not that operational configuration improvements have failed to work. 2010 BiOp, § 2, at 32-33. Moreover, Oregon never explains why there was an increase in average abundance during the same time period, which is an even better indicator of whether the "base to current" adjustment was reasonable. *Id.*, § 2, at 29 (10-year geometric mean abundance estimates are 17-160% higher).

Oregon also incorrectly argues that NOAA did not provide any explanation as to the significance of the new base period estimates and how these relate to the qualitative prospective analysis. OR Br. at 23. To the contrary, NOAA explained "[t]hat the recent downturn in natural productivity, if it continued over many years, would be a cause for concern, since it would lead to declines in abundance. However, annual variations in productivity are to be expected based on the historical record." *Id.*, § 4, at 8. It also explained that this was likely a function of high abundance and density dependence. *Id.* With regard to extinction risk, NOAA explained that

²¹ See Corps 539 at 12125 ("The estimates of concrete survival from yearling Chinook salmon, juvenile steelhead, and subyearling Chinook salmon met the precision goal and were greater than the minimum survivals mandated by the current Biological Opinion (NOAA Fisheries, 2008"); Corps 687 at 14280-312 (citing 2008 and 2009 NOAA memos on preliminary survival estimates for passage during the spring migration of juvenile salmonids through Snake and Columbia River reservoir and dams; Corps 827 at 18226-341(citing Battelle Report on Synthesis of Biological Research on Juvenile Passage and Survival 1990 to 2006 at Lower Granite Dam); see also 2008 BiOp at 7-9 (explaining the 22% adjustment).

the modeled result for UCR steelhead and UCR spring Chinook (the two most affected) overstated the risk because it assumed all hatchery production ceases immediately, when under the RPA there will be continued supplementation. *Id.* NOAA also explained: “Even considering the potential changes in prospective extinction risk and natural productivity at face value, they would have little influence on the 2008 BiOp’s jeopardy analysis for SR spring/summer Chinook and UCR steelhead” *Id.* And, while NOAA will continue monitoring for UCR spring Chinook, it believes that “the combination of the 2008 BiOp habitat actions and the [Fish Accords] adds to NOAA Fisheries’ confidence that habitat improvements over the term of the BiOp will meet or exceed expectations for these UCR Chinook populations.” *Id.* This is reasoned decisionmaking.

It is clear that Oregon disagrees with NOAA’s conclusions, but its argument that NOAA failed to consider this information and explain its conclusions is factually incorrect. NOAA thoroughly addressed the data by recalculating new base period estimates and rationally explained the significance of this information to the 2008 BiOp, and now to the collective FCRPS RPA. Oregon’s erroneous allegations only serve to highlight the well-established principle that the Court should be at its most deferential “in an area involving a ‘high level of technical expertise.’” *Lands Council*, 537 F.3d at 993 (citation omitted).²²

II. NOAA’S HABITAT AND CLIMATE CHANGE ANALYSES ARE REASONABLE AND ENTITLED TO DEFERENCE.

A. NOAA’s Analysis of the Tributary and Estuary Habitat Actions Complies With the ESA, Will Benefit Salmon and Steelhead, and Should be Upheld.

Following issuance of the 2008 BiOp, the Administration closely scrutinized the tributary and estuary habitat RPA actions, including new and emerging scientific information and the Action Agencies’ progress in implementing the expansive tributary and estuary habitat programs. *See* 2010 BiOp, § 1 at 3. With the leadership and direction of Dr. Lubchenco, NOAA concluded that the tributary and estuary habitat programs are scientifically sound and sufficiently

²² NWF’s additional arguments regarding sockeye and critical habitat were thoroughly addressed in Federal Defendants’ previous briefing incorporated herein by reference. 2008 Fed. Defs. Mem. Supp MSJ at 62-72; 2008 Fed. Defs. Reply Supp MSJ at 40-42.

precautionary to justify NOAA's continued reliance on these actions in the FCRPS BiOp. *Id.* § 2 at 81-89, App. F, G; Corps 102 at 3136 (NOAA Overview) (the new scientific evidence reinforced that the 2008 BiOp, as strengthened by the AMIP, "provided the right framework to develop and implement effective actions for fish, while simultaneously recognizing variability and adapting to new science as that emerges").

More importantly, State, Tribal, local, and Federal parties are working *in partnership* to protect and restore stocks of salmon and steelhead throughout the Columbia and Snake River basins and the estuary. *See* NOAA BB.376 at 1 (2008 Annual Report). The agencies have expanded the tributary habitat program, targeting habitat actions to populations with the greatest biological need and utilizing local expert panels to identify and prioritize the most biologically appropriate actions for those populations. 2010 BiOp, § 2, at 83; AMIP at App. 1 at 7-14; NOAA BB.376 at 13; BRS008271 (Grande Ronde Expert Panel); BRS011256 (Upper Columbia Expert Panel); BRS010981 (Upper Salmon Expert Panel); BRS009579 (Clearwater/Lower Snake Expert Panel). The agencies maintained or expanded their current overall level of effort for other anadromous fish populations. NOAA BB.376 at 13. In 2008 alone, salmonids benefitted when over 41,684 acre-feet of water was protected, over 45 miles of streams and 1,203 acres of habitat were improved, and over 274 miles of improved access to habitat were attained. *Id.*

In the estuary, the agencies expanded funding to implement on-the-ground projects to address biological priorities and key factors that limit fish survival in the estuary, including protecting high-quality off channel habitats, reducing invasive plants, and protecting and restoring riparian and wetland areas. *Id.* at 16 (completing eight projects, with another three in the planning and development phase). In 2008, streams and channels were improved and restored over 6 linear miles, floodplains were restored over 60 acres, native vegetation protected on 285 acres, invasive plant species removed on 303 acres, riparian areas restored on 57 acres, riparian areas protected through 5 miles of fencing, and 380 acres were acquired to allow for future restoration actions. *Id.* at 17.

The next two years will see a substantial increase in these on-the-ground actions and associated benefits to salmon and steelhead. The 2010-2013 Implementation Plan identifies nearly 80 broad watershed based projects that are funded and contracted for implementation in the 2010-2012 period, and these projects encompass *hundreds* of specific actions ranging from stream restoration and installation of fish screens to acquisition of water rights. Corps 005 at 552-568 (containing links to project scope and metrics addressed); Corps 174 at 4961 (identifying wide diversity of habitat projects). Under the Fish Accords, an additional 18 watershed based projects with a significant number of associated actions are also scheduled to be implemented during the 2010-2012 period, with the benefits for these projects assessed during the next expert panel workshop (2013-2015). Corps 005 at 552. Well over 20 broad-scale estuary projects are contracted for and scheduled for implementation between 2010-2013, *see id.* at 570-73; AMIP, App. 3 at 23-25 (Estuary MOA project list), with additional projects under development with the potential for implementation in the 2010-2013 period, Corps 005 at 574-576, and the agencies are engaging in hundreds upon hundreds of RM&E actions that track the full scope of the BiOp's RM&E requirements, *see id.* at 581-661; NOAA BB.376. The amount of dedicated funding to secure the tributary and estuary habitat restoration projects likewise is staggering. *See* AMIP, App. 1 at 7 (documenting the nearly \$1 billion dedicated to tributary habitat restoration and RM&E); Corps 728 at 15165 (documenting nearly \$150 million dedicated to estuary habitat restoration and RM&E).

Accordingly, the agencies have established rigorous, scientific processes and methodologies to restore and rehabilitate tributary and estuary habitats, and the region is working in partnership to ensure that salmon and steelhead benefit as predicated and analyzed in the FCRPS BiOp. Although Plaintiffs endeavor to marginalize and trivialize these efforts through strained attacks on the science and highly selective characterizations of the record, the science

and the facts do not support their challenge.²³ As demonstrated below, NOAA's judgment on the effectiveness of the tributary and estuary programs is sound and merits this Court's deference.

1. NOAA's Analysis of the RPA Habitat Actions Complies With The Legal Requirements of the ESA and Ninth Circuit Law.

In Section 7, Congress provided for the use of RPAs that NOAA "believes would not violate subsection (a)(2)" and that "can be taken by the Federal agency or applicant in implementing the agency action." 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R. § 402.02 (defining "reasonable and prudent alternatives" as those actions that "can be implemented..."). These statutory requirements define the scope of NOAA's inquiry in a BiOp, and the Ninth Circuit has been unequivocal that these standards may be neither altered nor enlarged upon review. *See Lands Council*, 537 F.3d at 993-94 (Courts may not "impose 'procedural requirements [not] explicitly enumerated in the pertinent statutes.'"); *League of Wilderness Defenders v. Forest Service*, 549 F.3d 1211 (9th Cir. 2008) (confirming this instruction in regulatory context).

Nonetheless, Plaintiffs continue to ask this Court to depart from these legal standards in reviewing the RPA. They argue that the RPA requirements to achieve specific and defined habitat quality survival improvements are unlawful because all of the predicate steps needed to obtain those improvements are not defined. *See* NWF Br. at 5-6, 12. The ESA, however, does not restrain NOAA to considering only those RPAs that guarantee a result, as the Ninth Circuit has expressly held in *Southwest Center for Biological Diversity v. Bureau of Reclamation (Lake Mead)*, 143 F.3d 515, 518 (9th Cir. 1998) (upholding commitment to obtain and protect 1,400 acres of replacement habitat, where the specific parcels, funding, contract provisions, or other

²³ Plaintiffs' reluctance to engage NOAA's scientific analysis is highlighted most visibly by their baseless claim that NOAA's actions were driven by "political pressure." *See* NWF Br. at 6 n.8 (citing NWF ER 41). NWF ER 41 actually demonstrates Dr. Lubchenco's disagreement with the guidance from Washington Senators to meet only with the sovereigns and the record shows that this guidance was not heeded. AMIP, App. 1 at 27-31 (meetings with numerous, non-sovereign entities); FER 19 (Denit 7/20/09, Att. 1) (confirming NOAA Administrator met "with various constituents on both sides of the litigation as well as a scientific workshop"). The remainder of Plaintiffs' claim in this regard is based on Plaintiffs' assumption that meeting with political entities is tantamount to undue influence. *See* NWF Br. at 6 n.8; NWF SOF ¶ 3 (Dkt. 1800) (citing emails where NOAA communicated with politicians and their representatives). However, just as NOAA's meetings with environmental advocacy groups does not impugn its analysis, AMIP, App. 1 at 27-31, neither does NOAA's meetings with other entities or interests.

details necessary to perform the RPA action were not identified); *Natural Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 358-59 (E.D. Cal. 2007) (“A court must leave to the agency the application of its expertise and authority to manage the complex hydrologic, legal, financial, physical, and logistical aspects of protecting the [listed species].”).

Similarly, Plaintiffs argue that the benefits stemming from an RPA action must be certain to occur and preemptively validated; otherwise, they contend, the RPA cannot ensure that the needed benefits will accrue. *See* NWF Br. at 10-12. Again, this standard is divorced from the ESA, which permits NOAA to make *reasonable* predictions on the effectiveness of RPA actions. 16 U.S.C. § 1536(b)(3)(A). For instance, in *Lake Mead*, the Ninth Circuit approved an RPA that required the agency to continue *developing* a cooperative conservation plan. 143 F.3d at 518-19, 523 (FWS’s finding that, under the RPA, listed species would “survive through the [conservation plan] process until ... *an extensive ecological restoration could be undertaken*” (emphasis added)). Obviously, FWS could not prove or demonstrate the precise extent to which the undeveloped conservation plan would benefit species; rather, it was enough that FWS had a reasonable basis to conclude that the conservation plan would benefit listed species. *Id.* at 519 n. 1; *see also Selkirk Conversation Alliance v. Forsgren*, 336 F.3d 944, 949-50 (9th Cir. 2003) (upholding reliance on mitigation measures that FWS “believed” and “assum[ed]” would sufficiently mitigate the adverse effects associated with the project); *In re Operation of Missouri River System Litigation*, 421 F.3d 618, 635 (8th Cir. 2005) (rejecting claim that lack of evidence that proposed mitigation measures will work violates Section 7 and citing with approval continued monitoring and adaptive management of mitigation measures).

In fact, the Ninth Circuit recently held that the consulting agencies are permitted, indeed required, to evaluate the effects of future modifications to the agency action, even when the future operations and the effects stemming from the future operations are not certain to occur. *Wild Fish Conservancy*, 2010 WL 4948477, *3 n. 2, *6-*8. In *Wild Fish Conservancy*, FWS considered modifying hatchery structures and operations *to benefit bull trout*, *id.* at *6, *9, and the Ninth Circuit held that FWS was *required* to consider these planned modifications because,

inter alia, it had “enough information about the [future modifications]” to perform an effects analysis. *Id.* at *9. Like in *Lake Mead*, the Ninth Circuit held that an agency is not limited to considering only those actions and associated effects that are certain to occur. *Id.*; *see also id.* at *8 n. 9 (finding that an agency is justified in failing to consider effects associated with future operations when such operations are “so unpredictable;” otherwise, an agency should “address any already planned subsequent modifications in its BiOp”). Thus, Plaintiffs’ continued assertions that NOAA is constrained to ignore all future actions where every detail is not fully defined, and where the effects associated with future actions are not guaranteed, run directly counter to controlling Ninth Circuit precedent and must be rejected. *See* NWF Br. at 4-12.²⁴

Finally, Plaintiffs now contend that the extent of agency control over the required mitigation is irrelevant, as they wholly fail to address this factor. In *NWF v. NMFS*, 524 F.3d 917 (9th Cir. 2008), the Ninth Circuit pointedly explained that NOAA properly may consider mitigation measures “in fact under agency control.” 524 F.3d at 936 & n.17. As this Court iterated in 2003, the extent to which the agencies have control over mitigation measures speaks directly to the likelihood of their implementation; that is, measures under the control of the action agencies provide assurances that the measures are reasonably certain to occur. *NWF v. NMFS*, 254 F. Supp. 2d 1196, 1213-15 (D. Or. 2003) (invalidating BiOp reliant on mitigation

²⁴ Plaintiffs’ contention that NOAA must preemptively demonstrate, with statistical certainty, that an RPA action will be effective runs directly counter to the ESA’s regulatory regime, which expressly recognizes and accounts for the uncertainties inherent in issuing a BiOp. 50 C.F.R. § 402.16 (regulatory standards requiring reinitiation of consultation, should the BiOp’s assumptions prove to be incorrect); *Wild Fish Conservancy*, 2010 WL 4948477, *9 (reinitiation regulation addresses uncertainty inherent in issuance of a Section 7 BiOp). Further, the ESA does not distinguish between consideration of adverse and beneficial effects, but requires NOAA to consider “the effects of the action *as a whole*.” 50 C.F.R. § 402.14(c) (emphasis added). By equating the effects of mitigation actions -- or the “reasonably certain to occur” standard itself -- with a requirement to obtain proof that a particular effect will occur, Plaintiffs’ proffered standard also would excise a wide category of *adverse effects* associated with less than certain actions from consideration in a ESA consultation. *See* 50 C.F.R. § 402.02 (“effects of the action” and “cumulative effects” must be “reasonably certain to occur”). This strained construction is neither consistent with nor would facilitate the purposes of the ESA. *See* Final Rule on Interagency Consultation Regulations, 51 Fed. Reg. 19926, 19933 (June 3, 1986) (“‘reasonably certain to occur’ does not mean that there is a guarantee that an action will occur”); *Arizona Cattle Growers’ Ass’n v. Kempthorne*, 534 F. Supp. 2d 1013, 1036 (D. Ariz. 2008) (rejecting invitation “to fashion an entirely new requirement, unsupported by any ESA-related precedent, simply based upon what Plaintiff believes to be sound environmental policy”).

actions by the NWPPC, States, Tribes, and private parties). Here, the agencies possess the authorities, funding, resources, and capabilities necessary to engage in region-wide tributary and estuary habitat restoration actions; thus, while Plaintiffs rehash the same arguments they made challenging the 2000 BiOp, they ignore the dramatic increase in habitat mitigation and the fact that the habitat program is managed by and under the control of the Federal agencies.

In short, by arguing that every habitat project must be identified, and the benefits of the projects preemptively validated, Plaintiffs unabashedly seek to enlarge the ESA's dictates to the extent of advocating *against* the consideration and development of habitat restoration and improvement activities in an ESA consultation. NWF Br. at 12 n. 6. Their familiar refrain of supporting habitat restoration while seeking to impose standards irreconcilable with the science or the law cannot be sustained.²⁵ The Ninth Circuit plainly endorses the use and reliance on reasonable mitigation measures directed toward the protection, restoration, and conservation of on- and off-site habitat. *Lake Mead*, 143 F.3d at 522-23 (upholding RPA that relied on acquisition and protection of mitigation habitat); *Selkirk Alliance*, 336 F.3d at 955 (affirming off-site habitat may be used to mitigate for the adverse effects of an action); *Butte Environmental Council v. U.S. Army Corps of Engineers*, --- F.3d ----, 2010 WL 3420071, *946-47 (9th Cir. 2010) (recently affirming use and reliance on off-site, compensatory mitigation as a “critical tool” in environmental protection).

2. NOAA Identified and Rationally Relied on the Tributary and Estuary Habitat Actions.

In accordance with the ESA and Ninth Circuit law, NOAA considered whether the Action Agencies' adherence to a rigorous, scientific process and methodology governing implementation of tributary and estuary restoration is capable of implementation and likely to achieve the habitat quality survival improvements specified in RPA 35 and 37. Although these numerous, interconnected habitat actions collectively comprise the RPA habitat programs,

²⁵ Indeed, Plaintiffs' challenges to the RPA habitat programs are at odds with Oregon's own reliance on watershed-based habitat restoration to support ecosystem function for salmonid recovery. See Oregon Plan, Biennial Report for 2007-2009, www.oregon.gov/OWEB/docs/pubs/07-09BR/07-09BR_1.pdf.

Plaintiffs continue to portray the RPA as containing a “bare commitment” to achieve a survival improvement. *See* BRS021964 at 21966 (NWF remand comments); NWF Br. at 5-6; NPT Br. at 10-11. These claims cannot withstand scrutiny, as the RPA habitat actions are extensive:

- The RPA habitat programs are governed by methodologies developed during the collaboration process that, among other things, utilize expert panels and the technical experts most knowledgeable of local habitat conditions to identify and evaluate limiting factors and habitat functions, identify specific habitat projects for implementation, and provide the data necessary to estimate benefits derived from project implementation. *See* 2008 BiOp RPA 35, 37; AMIP, App. 1 at 7-14 (summarizing methodologies).²⁶
- The habitat programs include robust project identification and selection processes, such that projects are proposed, solicited, and vetted through defined and established frameworks. *See* 2010 RTC at 14 (“Habitat projects are selected within the framework of regionally developed draft and final recovery plans”); AMIP, App. 1 at 8-9 (estuary project selection); *id.* at 10-12 (tributary project selection); Corps 1425 at 27470-71.
- The habitat programs incorporate independent scientist review throughout the stages of project selection, implementation, and review, and the “independent science reviews and assessments common to all of these project selection processes are designed to ensure that the most knowledgeable experts are reviewing potential projects for their biological value to salmon and steelhead and incorporating the results of RM&E in that process.” AMIP, App. 1 at 12; *id.* at 22 (“[I]ndependent scientists are not only reviewing all tributary and estuary habitat actions, but are also significantly involved throughout the project selection process via the expert panels and ISRP.”).²⁷
- The habitat programs require project implementation, as well as implementation of replacement projects, necessary to achieve survival changes and benefit salmon and

²⁶ Plaintiffs appear to revive their challenge to the estuary methodology by citing, without explanation, NOAA Science Center’s pre-2008 review of the estuary module. *See* NWF Br. at 9 (citing NOAA 2008 C.680). However, Plaintiffs fail to address the Science Center’s more recent analysis of the estuary methodology, where it concluded that the BiOp’s approach to “[e]stimating the benefits of estuary actions to improve survival of juvenile salmon is based on ecosystem principles and the best available science.” FER 8 (Ferguson 5/19/09, Att. 2) (explaining that the estuary methodology: (1) is buttressed by the RPA 37 expert panels; (2) provides independent scientific review to evaluate “projects for implementation;” (3) requires identification and implementation of substitute projects to achieve survival benefits to fish; and (4) incorporates “all subsequent information on the relationship between actions, habitat and salmon productivity models developed through the FCRPS research, monitoring, and evaluation efforts”). This comprehensive estuary methodology therefore provides “greater ecological benefits” to salmon and species by “[p]lacing potential projects through a scientifically rigorous framework.” *Id.* Att. at 3.

²⁷ For example, the Independent Scientific Review Panel (“ISRP”) evaluates tributary and estuary habitat projects to determine whether the projects are based on “sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation of results,” 16 U.S.C. § 839b(h)(10)(D)(iv), and the results are actively incorporated into the tributary and estuary habitat programs, *see, e.g.*, 2010 RTC at 15 (explaining that some “projects have been temporarily delayed in order to address independent scientific critiques and to ensure quality projects on the ground”).

steelhead, such that the habitat programs are not dependent on the success of any single restoration or rehabilitation project. *See* 2008 BiOp RPA 35 (“[T]he Action Agencies will ensure implementation of comparable replacement projects in the next implementation cycle to maintain estimated habitat quality improvements at the population level and achieve equivalent survival benefits”), *id.* RPA 37 (same); Kratz Decl. ¶¶ 13, 19-21 (Dkt. 1564); Kratz R. Decl. ¶ 44 (Dkt. 1650).

- Procedures are in place, such as the Comprehensive Evaluations in 2013 and 2016, to confirm project implementation, performance, and projected survival improvements and ensure that any needed adjustments can be made to satisfy the performance measures in RPAs 34-37. 2008 BiOp RPA 34-37; 2010 RTC at 2 (“The RPA calls for Comprehensive Evaluations in 2013 and 2016. During these evaluations, the agencies will conduct an assessment to whether the RPA is being fully implemented and is on track to provide the expected biological benefit.”); 2010 BiOp, § 4 at 9 (evaluations include “an assessment of whether the 2008 BiOp’s biological expectations are likely to be realized”); AMIP, Appx. 1 at 22-23, App. 2 at 14-16.
- The habitat programs contain a robust suite of RM&E measures to evaluate whether the RPA habitat actions are having the intended effect on salmon and steelhead survival, ensure that estimated benefits of habitat restoration actions are reasonable by informing the relationships between habitat conditions and fish survival, and improve the scientific understanding of the entire salmonid lifecycle. *See* AMIP at 11; 2008 BiOp RPA 56-61.
- Through adaptive management mechanisms, new information available from RM&E efforts, recovery plans, scientific literature, and independent science review will be applied to the tributary and estuary programs. *See* 2008 BiOp RPA 34-37, 56-61; AMIP App. 4 & 5; 2010 BiOp, § 2, at 88 (“Therefore, the process is in place to incorporate the new findings identified above through adaptive management as well as future advancements from RM&E activities.”).
- And the agencies have secured and dedicated an enormous amount of funding to implement on-the-ground projects, RM&E, and adaptive management actions, thereby providing that the habitat programs can and will be implemented throughout the term of the FCRPS BiOp. AMIP, App. 1 at 7 (Fish Accords commit the Action Agencies to the expenditure of nearly \$1 billion over ten years, much directed at habitat improvements); Corps 728 at 15165 (Action Agencies committing to expend nearly \$150 million through 2018 in the estuary, increased by \$4.5 million annually by the Estuary MOA).

Far from a “bare commitment” to achieve specific survival improvements, all of these components *collectively* constitute the actions NOAA rationally determined are capable of implementation and likely to result in the habitat quality survival improvements specified in RPAs 35 and 37, and the record clearly confirms that NOAA has “identified the actions on which it relies.” NWF Br. at 5; NPT Br. at 11-12.²⁸

²⁸ The RPA habitat actions contain all of the factors (measurable goals, action measures, and a certain implementation schedule) that are characteristic of a viable mitigation strategy under the ESA. *Natural Resources Defense Council v. Kempthorne*, 506 F. Supp. 2d 322, 355 (E.D. Cal. 2007); *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp.2d 1139, 1153 (D. Ariz. 2002). For this reason, Plaintiffs simply refer to *Kempthorne* and *Rumsfeld*, without actually addressing

In the few instances where Plaintiffs actually engage the substance of the RPA actions, they confirm their fundamental misunderstanding with how the RPA actions actually work. Plaintiffs assert that the habitat methodologies do not account for ongoing changes to habitat quality. NPT Br. at 13; NWF Br. at 10 n. 13. Plaintiffs are wrong, and recent implementation of the tributary habitat actions demonstrates why. In 2009, the agencies convened expert panels to provide updated descriptions of 2007-2009 tributary habitat actions, performance metrics like miles of stream protected, and changes to the functioning of limiting factors associated with project implementation *and* environmental factors. *See* BRS009361 at 9361 (expert panels considered the “estimated changes in habitat function for relevant limiting factors”); BRS017441 at 17445-653 (detailed descriptions of updated tributary habitat action information); BRS015552 at 15554-59. As part of that process, the expert panels identified new limiting factors, such as barriers, *see, e.g.*, BRS017441 at 17530 (Tucannon population); *id.* at 17553 (Secesh River population), and the panels adjusted the *current* functioning of limiting factors either positively due to the effects of habitat project implementation or downward due to natural factors such as fires, *see, e.g., id.* at 17530 (for the Tucannon population, “due to School fire, value for 10 (and 25??) year potential needs to be decreased in the database”); *id.* at 17553, 17556 (expert panels adjusting the functioning of limiting factors, such as sedimentation, downward due to fires).²⁹

Pursuant to these habitat methodologies, the results of the expert panel evaluations are utilized in project selection and implementation, evaluation of survival changes, and NOAA’s oversight of the habitat programs, demonstrating that the RPA actions are, in fact, responsive to changes in habitat quality. *See, e.g.*, 2010 RTC at 15 (expert panels “evaluate what is actually implemented in 2007 to 2009 or beyond and estimate the associated changes in habitat function);

the holdings of the cases as applied to the RPA actions they challenge here. *See* NWF Br. at 11-12; NPT Br. at 12; OR Br. at 13.

²⁹ This same expert panel process is employed in the estuary. *See* 2008 BiOp RPA 37; Kratz Decl. ¶ 32 (Dkt. 1564); Corps 106 at 3320-3417 (estuary expert panel meeting notes); Corps 115 (outlining process of developing final expert panel scoring process); Corps 053, 106, 115, 127, 199, 203, 266, 390, 432, 480, 591, 860, 886, 890 (progression of the use of the expert panels during estuary implementation).

2008 BiOp RPA Table at 43 (in the 2013 and 2016 reviews, NOAA considers, *inter alia*, whether the “habitat based survival improvements were significantly overstated”).³⁰

Likewise, Plaintiffs argue that the agencies have failed to meet the RPA 35, Table 5 survival improvements for the Pahsimeroi SR spring/summer Chinook population. NWF Br. at 7-8. Yet, the Action Agencies *already have achieved* the RPA Table 5 survival benefits. In 2009, the expert panels reviewed limiting factors, habitat conditions, and projects implemented during 2007-2009. *See* BRS017441 at 17578 (2009 expert panel evaluation of 2007-2009 projects and metrics); *id.* at 17584 (2009 expert panel adjustments to habitat function values). The expert panel process confirmed that those projects needed to obtain a 41% survival improvement were fully implemented. BRS025430 at 25431 (calculating a 41% survival improvement for projects implemented between 2007-2009).³¹ Despite meeting the RPA 35, Table 5 targets, the agencies are *continuing to implement actions* to benefit the Pahsimeroi population, with an additional 6% survival improvement estimated for the 2010-2012 implementation cycle through the expert panel process and tributary methodology. *See id.* at 25433 (calculating estimated 2018 HQI value of 1.059, or a 5.9% survival improvement); Corps 005 at 555 (6% survival improvement for 2010-2012 funded and contracted for projects).³²

³⁰ Plaintiffs suggest the RPA habitat actions are not sufficiently precautionary, yet they refer to an email (NWF ER 45) that was not reviewing the habitat actions, let alone the precautionary actions imposed in the AMIP. NWF Br. at 12 n. 15. Plaintiffs also rely on an email (ER 48) that was presenting “options,” not “suggesting” a course of action. *Id.*; *see also id.* at 5 (citing NWF ER 1, an email discussion “options” and not undermining the final analysis or determinations). Neither these emails nor Plaintiffs’ speculation can overcome NOAA’s considered finding that “the best means for addressing [uncertainty] is not to disregard habitat improvement opportunities, but rather through improved RM&E to reduce this uncertainty and more robust contingency planning [as] described in detail in the AMIP.” AMIP at App. 1, at 7.

³¹ For the 2018 HQI figures in BRS025430, a 1.01 figure represents a 1% estimated increase in survival stemming from projects reviewed by the expert panel. *See generally* BRS15552 at 15558-559 (explaining methodology and calculations used to derive the estimated survival improvements and explaining that, for instance, a 1.07 value “represents a 7% increase”).

³² NWF points to NOAA’s response to comments to assert that the expert panels estimated changes in habitat conditions for both the 2007-2009 and 2010-2013 tributary habitat projects. NWF Br. at 7 n. 10 (citing NOAA CC.200 at 14-15). This is correct. However, Plaintiffs err in assuming these estimates were then *combined* in the 2010-2013 Implementation Plan project tables. *See* Corps 005 at 552 (“The first two tables summarize ... 2012 habitat quality

Accordingly, Plaintiffs' characterizations of the habitat methodologies are inaccurate, and their broader efforts to disregard the full extent of the RPA habitat actions fail to demonstrate that NOAA's analysis is arbitrary and capricious under the law. *See Selkirk Conservation*, 336 F.3d at 964 (rejecting plaintiff's challenge to a biological opinion because it "overlooks the extensive analysis" relied upon by the agency).

3. The Scientific Foundation of the Tributary and Estuary Habitat Actions is Sound.

The science demonstrates that tributary and estuary habitat improvement actions are an increasingly important component of salmon recovery. NOAA BB.323 at 1 (NOAA Science Center) ("The recovery of salmonid stocks requires restoration of estuarine habitats"); NOAA BB.41 (Bisson et al. 2009) ("[T]here is broad consensus within the scientific community that the recovery of at-risk salmon cannot be achieved without protecting currently productive freshwater habitat, maintaining watershed processes, and restoring those aquatic ecosystems that have been damaged by human activity."). NOAA has continuously evaluated the scientific underpinnings of the extensive habitat restoration programs to ensure that these RPA actions are sound.

In the AMIP and again in the 2010 BiOp, NOAA evaluated the new and emerging science which demonstrated, among other things, that: reconnecting habitats and restoration actions have proven effective in "increasing local fish abundance under many circumstances," NOAA B.11 (Roni 2008); changes to habitat conditions are linked to improved egg survival in Chinook populations, NOAA BB.168 (Honea 2009); larger numbers of habitat rehabilitation actions are associated with higher parr-smolt survival of Chinook populations, NOAA B.10 (Paulsen/Fisher 2005); wetland restoration in the estuary is linked to upstream biological benefits to Chinook populations through modeling, NOAA BB.365 (Teel 2009); and estuary restoration can increase production, buffer against climate change stresses, and comprise an important element to the "stability and resilience of salmon populations in the Columbia River basin," NOAA CC.109 at 2-4. *See* 2010 BiOp, § 2, at 82-89.

improvement estimates"). The survival estimates for the 2007-2009 projects, as well as the estimated benefits for 2010-2012 projects, are contained at BRS025430.

Through this exhaustive review, NOAA confirmed the scientific merit of the BiOp's approach to habitat restoration and rehabilitation, including the RPA's focus on addressing the root causes of salmon habitat degradation and that tributary and estuary habitat restoration actions that address the root causes of habitat degradation are linked to improved survival and productivity of salmonid populations. *See id.*, § 2 at 81 ("the RPA, as amended, addresses factors that have limited the functioning and conservation value of spawning and rearing habitat and *will increase the survival of the affected populations.*" (emphasis added)); *id.* at 82 (analyzing studies finding that habitat programs should address the root causes of degradation, such as the RPA's focus on improving the functioning of habitat limiting factors throughout the tributary and estuary habitats); 2010 RTC at 2.

Faced with habitat restoration programs that are "on the cutting edge of science," 2010 RTC at 9, Plaintiffs ignore the science and instead selectively characterize the independent scientist reviews. *See* NWF Br. at 10 (citing NWF ER 119, 123). The independent science reviews, however, support NOAA's reliance on the tributary and estuary habitat actions. In responding to the inquiry of whether habitat improvements are likely to lead to an increase in smolts, Dr. Simberloff responded that yes, we "would expect that." NWF ER 123, Att. at 4. Contrary to Plaintiffs' claims, Dr. Travis rejected the notion that NOAA overstated "the benefits of habitat restoration" actions, confirming that these competing claims "will be resolved only by empirical results. The intuition of habitat experts may incline opinion in one or other direction, and that intuition should be heeded, but the data will tell the tale in the end." BRS022186 at 22192. Dr. Travis, and the other independent scientists, confirmed that NOAA's analysis and findings cannot be preemptively dismissed upon the current state of scientific knowledge. *See* NWF ER 123, Att. at 2 (independent scientists finding NOAA's analysis and analytical methods "quite good"); *id.* Att. at 3 (Kareiva) (habitat conclusions are "not unreasonable"); *id.* Att. at 8 (Bisson) (estuary program is "well-guided/monitored").³³ That NOAA's analysis finds support

³³ Plaintiffs also rely on comments by Dr. Bilby and Dr. Bisson that studies are needed to "quantitatively" link benefits stemming from restoration actions and that such correlations were not clear from past restoration actions due to, for instance, "lack of [explicit] data." NWF ER

in the record is dispositive. *See McFarland v. Kempthorne*, 545 F.3d 1106, 1113 (9th Cir. 2008) (“If an agency's determination is supportable on any rational basis, we must uphold it. ... This is especially true when an agency is acting within its own sphere of expertise.”).

Plaintiffs also argue that the agencies are unable to determine whether any habitat quality survival improvements have been obtained. *See* OR Br. at 7-8 (relying on Hinrichsen (2010b) (NOAA BB.161) to argue that NOAA cannot determine survival changes accruing from habitat actions); NWF Br. at 11 (same). Plaintiffs are correct that scientists are examining various methods by which survival improvements can be statistically measured; in Hinrichsen (2010b), the author reported the details of using certain statistical methods to detect changes in survival associated with an experimental habitat restoration project and design. NOAA BB.161 at 1, 4. Other scientists are performing similar analyses and studies to improve upon the existing means to estimate benefits associated with habitat restoration actions. *See* NOAA BB.190 (Jorgensen 2009) (identifying a modeling framework that converts “suites of restoration actions into changes in habitat condition” and “linking habitat conditions to population status”).

Plaintiffs are entirely incorrect, however, in presuming that these studies in any way undermine NOAA’s analysis. As NOAA explained, these studies do “not question the survival improvements expected from habitat restoration.” 2010 BiOp, § 2, at 129; BRS018638 at 18668 (analyzing Hinrichsen (2010) and its effects on the RPA). Rather, the science confirms that survival improvements are correlated with habitat restoration actions, and NOAA has identified

123, Att. at 4. NWF Br. at 10. The experts did not dispute the fundamental point that habitat restoration is linked to survival changes in salmonid populations, nor did they dismiss the effectiveness of the AMIP and RPA actions that improve data sources and perform those studies that facilitate more precise evaluations of the survival benefits associated with wide-scale habitat restoration actions. *See, e.g.*, FER 24 (Jordan 8/12/09, Att. 3) (explaining that IMW studies address the independent scientists comments discussing past efforts to link habitat actions to survival changes in fish); BRS022186 at 22197 (Dr. Kareiva) (the agencies’ “implementation of the habitat improvements is in conjunction with monitoring efforts aimed at learning what works. This is exactly what adaptive management is all about.”). In fact, even Plaintiffs must agree, albeit reluctantly, with the reasonableness of the RPA habitat actions. NWF Br. at 9 (“no one disputes that habitat restoration is generally a good idea”); NPT Br. at 12 n. 6 (“The Tribe is on record ... supporting implementation of the [tributary] projects”); NPT AMIP Resp. at 17 (Dkt. 1724) (“The Tribe has previously emphasized that while continued refinement of habitat projects as they are implemented is laudable.”).

rational and supported methods – such as use of the tributary and estuary expert panel process and associated methodologies – to estimate those benefits associated with the habitat restoration actions. *See, e.g.*, AMIP, App. 1 at 7-14; 2010 RTC at 12-15; Kratz Decl. ¶¶ 5, 11-13, 29 (Dkt. 1564); Kratz R. Decl. ¶¶ 4-7, 28-33, 44 (Dkt. 1650) (demonstrating the BiOp’s approach to estimating benefits associated with habitat restoration actions is scientifically credible and sound); Corps 1654 at 30749 (explaining survival benefits analyses under the estuary methodology); BRS015552 at 15554-559 (explaining tributary expert panel process and methodology used to identify estimated survival benefits). Plaintiffs’ apparent belief that the ESA precludes NOAA from relying on a methodology to assess the benefits of habitat restoration actions where statistical certainty cannot be achieved is irreconcilable with Ninth Circuit law. *Lands Council*, 537 F.3d at 997-98 (rejecting requirement for “a particular type of proof that a project would maintain a species’ population” and deferring to an agency’s informed assessment of its chosen methodology).

Moreover, NOAA provided numerous RM&E measures that reduce the uncertainty associated with estimating survival benefits associated with habitat restoration actions. In particular, NOAA provided a coordinated set of RM&E that requires: (1) monitoring and reporting of project performance metrics (e.g., miles of stream protected, stream flows acquired, *see* Corps 174 at 4965 (identifying metrics)) to evaluate performance of habitat actions; (2) fish population and habitat status and trends monitoring that allows for comparison of fish monitoring data with local habitat conditions and facilitates evaluation of the effectiveness of habitat projects; (3) site-specific, reach-level action effectiveness monitoring and research, which allows for evaluation of habitat and fish responses to different habitat conditions and provides further ecological response and assessment data on the effectiveness of habitat restoration actions; (4) watershed level, Intensively Monitored Watershed (IMW) actions that study population-level fish responses from restoration actions occurring within a watershed;³⁴ and (5)

³⁴ Both NWF and Oregon attempt to discredit the IMWs because there is purportedly a “lack of projects” and funding in the IMWs. NWF Br. at 11 (citing NWF ER 77); OR Br. at 7. The references they cite (NWF ER 77, 78), however, indicate that, *theoretically*, a lack of projects in

and ecosystem treatment and habitat response modeling, which utilizes relationships derived from habitat quantity and quality data, fish population abundance data, the results of IMWs, status and trends monitoring data, and project effectiveness studies to estimate and extrapolate the cumulative fish and habitat responses expected from implementation of the suite of habitat restoration and rehabilitation actions. *See, e.g.*, FER 9 (Kratz 5/22/09) (summarizing RM&E measures that contribute to the basis for estimating survival improvements); FER 21 (Scranton 8/3/09) (discussing suite of RM&E added to the FCRPS BiOp through the AMIP); BRS002793 (presentation on integrated status and effectiveness monitoring program); Corps 174 (presentation of the RPA RM&E program to the ISAB).³⁵

This collective suite of RM&E facilitates evaluation of whether habitat restoration actions are having the intended effect on salmon and steelhead, ensures that estimated benefits of habitat restoration actions are reasonable by informing the relationships between habitat conditions and fish survival, and improves the scientific understanding of the entire salmonid lifecycle. *See* AMIP at 11; 2010 BiOp, § 2, at 127 (evaluating and discussing new science, such as NOAA BB.323, that enable the agencies to better “detect the results of restoration actions”).

IMWs would be a flaw. Neither NOAA nor the independent scientists actually concluded that there is a lack of projects or funding relating to IMWs, but rather found that all of the IMWs “are fully-ongoing” and “underway.” *See* FER 18 (Kratz 7/15/09) (further noting that not all IMWs “have implementation started, but all are in pre-action monitoring and have project implementation experimental designs in place.”); 2010 RTC at 10 (explaining that the agencies are implementing IMWs “to correlate population level fish response to specific treatment types or suites of actions, all in coordination with other similar federal and state undertakings”); AMIP at 24-25 (explaining accelerated measures relating to the IWMs); FER 24 (Jordan 8/12/09, Att. at 8) (explaining that the Action Agencies currently fund IMW pilot basin studies in six basins, and “NOAA also funds approximately \$1.2 million annually for IMW studies in Oregon, Washington, and Idaho”); *id.* at 2 (extending results from IMWs to other watersheds “should be easy (cheap) to achieve through some minimal programmatic RME design and standardized implementation).

³⁵ *See also* BRS011648 (discussing increased and ongoing monitoring, research, and modeling of salmon survival associated with restoration projects in the tributary habitats); Corps 1877 at 36078-110 (documenting ongoing research to allow the region to evaluate the cumulative response to the lower river and estuary ecosystem from completion of multiple restoration actions); Corps 1056 at 21268-272 (synopsis of estuary research projects, including studies on the relationship between estuary restoration and survival changes in salmonid populations); FER 24 (Jordan 8/12/09) (Science Center, explaining that BPA is implementing existing fish-in/fish-out monitoring activities with the addition of \$12.25 million in BiOp placeholder funds).

That is, the most recent data will be used to help determine whether habitat projects are addressing limiting factors and the estimated benefit from habitat projects, and this assessment will in turn guide future implementation to ensure that the required habitat quality survival improvements are achieved. *See* AMIP at 11-12, 20-25; 2010 RTC at 6, 9-10, 15 (“Convening the expert panels every three years allows for science updates to be considered in the habitat improvement estimates”). Plaintiffs urge that this RM&E is immaterial, but they offer no principled explanation or justification as to why these RM&E measures will be ineffective, in stark contrast to NOAA’s detailed and credible scientific review.³⁶ *See* BRS022186 at 22192 (Dr. Travis) (“enhanced monitoring, when planned in a thoughtful, quasi-experimental design, can contribute to reducing uncertainties in our knowledge of many critical ecological parameters.”); NOAA BB.41 (Bisson et al. 2009) (demonstrating importance of habitat mitigation that better incorporates natural variability and relies on new scientific data to improve the success of habitat restoration activities).

Accordingly, Plaintiffs’ challenges to this extensive suite of RM&E, as well as their broader contention that these habitat restoration programs are new and therefore have not been preemptively validated, fail to identify any flaw in the FCRPS BiOp. *See Ohio Valley Environmental Coalition v. Aracoma Coal Co.*, 556 F.3d 177, 205 (4th Cir. 2009) (“[T]he novelty of a mitigation measure alone cannot be the basis of our decision to discredit it. When an agency is called upon to make complex predictions within its area of special expertise, a reviewing court must be at its most deferential.”).

³⁶ For example, Plaintiffs argue that *improving* the agencies understanding of relationships between habitat quality and fish response is a “research career topic,” NWF Br. at 11 (quoting NWF ER 81), but whether scientific certainty will be achieved in our lifetime neither speaks to the reasonableness of NOAA’s RM&E measures nor justifies a decision to abandon habitat mitigation entirely. Similarly, NWF refers to Dr. Mantua’s comments to argue that the RM&E measures are a “recipe for inaction,” yet they ignore the point of his comment: “I believe that a focus on identifying vulnerable habitats ... and identifying actions to reduce those vulnerabilities, offers a more promising and immediately available pathway for improving the status of the Columbia Basin’s resources.” NWF ER 135, Att. At 1. This is exactly what the RPA actions accomplish – through the RPA expert panel processes, habitat limiting factors are identified and addressed through a comprehensive suite of estuary and tributary habitat projects and, through RM&E and adaptive management measures, the actions are continually improved upon throughout the term of the BiOp. 2010 RTC at 6-7 (responding to Dr. Mantua’s comments).

4. NOAA Rationally Analyzed the Agencies' Implementation of the Tributary and Estuary Habitat Actions.

Aside from generally disregarding the science and the FCRPS BiOp's habitat actions, the crux of Plaintiffs' challenge appears to be that certain delays and implementation problems in the tributary and estuary habitat programs demonstrate that the entire habitat program, and NOAA's evaluation of the program, should be set aside. NWF Br. at 6-9; NPT Br. at 13-14. Plaintiffs' arguments are fundamentally flawed in several important respects.

First, Plaintiffs' contention that certain implementation delays are "new" information unconsidered by NOAA is baseless. NWF Br. at 8-10. NOAA, the agencies, and the sovereigns expressly recognized that, with a habitat mitigation program of this magnitude and scope, implementation delays will occur and initial predictions and assumptions may not be validated based on the newest scientific data and biological information available. This is why the RPA requires the agencies to implement replacement projects should the original projects prove infeasible, 2008 BiOp RPA 35, 37, and this is why the RPA provides for the use of expert panels and independent science review throughout the term of the BiOp, so that new science and expertise could be applied to correct deficiencies, adjust project implementation, and realize new opportunities to benefit listed species. AMIP, App. 1 at 7-14; 2010 RTC at 13-15. The extensive RM&E measures also were crafted to enable the agencies to identify implementation delays and shortcomings and make the necessary adjustments. 2010 RTC at 6 (RPA "utilizes a continuous feedback loop between action implementation and monitoring and ensures the benefits of the actions are reasonably certain to occur").

Second, during the first two years of implementation, the record confirms that the Action Agencies have identified the implementation problems that have arisen and aggressively responded, precisely as NOAA provided in the BiOp. In the tributary, the agencies have ramped up the implementation and are working with local entities, such as the salmon recovery board, to integrate habitat projects with other salmon recovery efforts in the Upper Columbia area. BRS002212 at 2229-31. The agencies have identified specific habitat implementation partners

to aid in habitat restoration and rehabilitation efforts and are performing technical studies that will improve the certainty of implementing biologically successful projects. BRS000001 at 69, 71.³⁷ Tributary habitat actions are further being coordinated with the IMW effort and other research and monitoring to test the effectiveness of habitat improvement actions. *Id.* at 69. “This extensive expansion of effort by the Action Agencies took a year or more to fully establish and the program is now proceeding efficiently to achieve the performance requirements of the BiOp.” BRS002212 at 2231; BRS025300 (describing initial adaptive management measures to respond to the findings of the expert panels on tributary habitat implementation).³⁸

The agencies also are aware that estuary habitat actions are behind schedule; although 94% of the anticipated 2000-2006 benefits from estuary actions were achieved, the agencies fell short in achieving the estimated survival benefit changes for the 2007 to 2009 period. Corps 1654 at 30751. Because the agencies are required to “implement replacement projects in the

³⁷ For instance, BOR’s ongoing Tributary and Reach Assessment effort assesses the natural potential of selected river and habitat systems in their current form. BRS000001 at 71 “This added biological information improves the region’s understanding of local (including reach scale) limiting factors and threats, which in turn improves project selection. The Expert Panels are therefore able to focus on the highest priority habitat restoration actions with the correct sequencing in time and space.” 2010 RTC at 12; 2010 BiOp, § 2, at 81. BOR has made substantial progress in completing Reach Assessments throughout the Interior Columbia Basin. *See* BRS002878; BRS003912; BRS004045; BRS004508; BRS004626; BRS005101; BRS006653; BRS007097; BRS007503; BRS007849; BRS011680; BRS015717; BRS016723.

³⁸ For example, through the RPA’s monitoring and RM&E measures, the agencies are aware that more habitat projects benefiting the Tucannon spring/summer Chinook population are needed to reach the RPA Table 5 target of 17%. Corps 005 at 371, 554. But contrary to Plaintiffs’ claims (NWF Br. at 8), the agencies have developed a process to implement replacement projects necessary to obtain these requisite survival improvements, and they have done so through the RPA’s adaptive management framework. *See* BRS025300 (tributary implementation strategy). The agencies are actively working to develop and expand project implementation, including increased coordination with the Lower Snake River Salmon Recovery Board and other local entities. *Id.* at 25302 (“BPA intends to develop and fund a Programmatic Habitat Project for the Tucannon River populations to coordinate, prioritize and manage the increased level of effort. A narrative proposal would be prepared for [ISRP] review in the summer/fall of 2010 with the goal of initiating implementation contracts beginning in FY11. Implementation may need to continue ramp up throughout the 2010-12 implementation period and beyond.”). Plaintiffs’ presumption that these strategies will not work is unsupported by *any* evidence, contrary to the considered judgment of NOAA, and thus should be rejected. *See* 2010 RTC at 13-15; Kratz ¶¶ 19-22 (Dkt. 1564) (rebutting similar allegations); *Sacora v. Thomas*, --- F.3d ---, 2010 WL 4925437, *5, *7 (9th Cir. Dec. 6, 2010) (Under the APA, an agency “is entitled to use its expertise in interpreting and administering a statute” and to “rely on its experience, even without having quantified it in the form of a study”).

2010-2013” cycle pursuant to RPA 37, they have assessed and qualified the remaining difference to be achieved during the 2010-2013 implementation cycle, incorporated those values into the 2010-2013 implementation targets, and developed in consultation with NOAA a comprehensive strategy to achieve the survival improvements in the estuary as anticipated in the RPA. *See* Corps 1654 (Program Management Plan for the Estuary Habitat Restoration Action Plan); Corps 005 at 440 (agencies have reviewed accomplishments, identified limiting factors, and developed strategies to accelerate the pace of project implementation and more effectively develop, select, and implement estuary projects); BRS022211 at 22212 (NOAA staff review of the key “elements of the actions plan developed by the [Action Agencies] to increase the pace of implementation” in the estuary, including content addressing “the implementation delays”; noting that “NOAA staff was supportive”).³⁹

This strategy provides for increased effort in selecting and implementing restoration and rehabilitation actions by actively engaging local organizations to assist in project implementation. BRS002212 at 2231. The agencies have modified their strategies to place more emphasis on larger, more complex projects to increase the level of biological benefit and further accelerate the pace to achieve the RPA’s commitments. *Id.* At the same time, the agencies continue to have projects reviewed by the RPA 37 Expert Regional Technical Group and obtain survival estimates for potential projects early in development to more efficiently identify projects

³⁹ As part of this strategy, the agencies have identified nine broad elements to achieve the RPA’s survival improvements in the estuary, ranging from identifying methods to prioritize projects to securing new partners to streamlining environmental compliance processes. Corps 1654 at 30751-52, 30754-55; Corps 005 at 370, 372 (actions include developing joint project selection criteria, active pursuit of partnerships on both the Oregon and Washington shores, identification of large tracks of land where major restoration projects could be accomplished, and identification of sites where dredged material could be used to restore or create shallow-water habitat.). The agencies also have outlined implementation of near-term and intermediate/long-term actions to close the 2000-2009 survival benefit gap and meet the 2010-2013 survival benefits targets, and the agencies have bolstered the already rigorous monitoring and reporting requirements of the RPA. Corps 1654 at 30755-58 (near term and longer term actions); *id.* at 30758-62 (detailed monitoring, reporting, and oversight components of the implementation strategy). And the agencies’ firm commitments to ensuring the plan is successful are apparent from the record. Corps 1109 at 21825 (General Rapp) (“I want to reiterate the need for some hard thought about how we could make both shortterm and longer term increases in the amount of work that we could budget for and complete in the Columbia River estuary for salmon habitat.”).

that will have the greatest benefit. Corps 005 at 440; Corps 324 at 7659 (agencies pursuing the Sandy River Delta Project, which has “the highest survival benefit of any projects in the estuary” and “several other big projects could be identified on the 1500 acre site making the Sandy potentially the most ready-to-go restoration site in the estuary.”). “As with the effort in the Upper Columbia tributaries, the increase in effort has required a ramp up in infrastructure to execute the program, and the Agencies have made a concerted effort to build the program capacity needed to achieve the estuary performance requirements during the term of the BiOp.” BRS002212 at 2231; Corps 005 at 370 (showing tangible benefits are being achieved through restoration and rehabilitation actions and that action effectiveness monitoring will aid in adaptively managing the estuary habitat program).⁴⁰

Tellingly, Plaintiffs entirely disregard the Estuary MOA and its effects on the broader estuary restoration program. The agencies executed the Estuary MOA specifically to accelerate implementation of estuary projects, Corps 728 at 15183; AMIP, App. 3, at 10, 16, 23-25, and the agencies are expediting MOA projects with high survival benefits, *see* Corps 005 at 440-45; Corps 001 at 1-21 (feasibility cost share agreement between WDFW and the Corps to initiate the Estuary MOA Abernathy Tidal Restoration project, also an IMW project); Corps 013 at 1117-1150 (letter of intent for the Estuary MOA Shillapoo Lake Tidal Reconnection Project and the Elochoman Slough Tidal Reconnection Project); Corps 1077 at 21657 (NOAA finding the Shillapoo Lake project “[p]rovides a better connection between the lake and the mainstem Columbia” and would “[c]reate fish habitat in the lake for ESA-Listed salmon and steelhead”). The Estuary MOA also increases the certainty of these efforts by providing substantial secure

⁴⁰ Plaintiffs’ criticism (NWF Br. at 9) that the location of three of estuary projects (the pile structure removal program) is undetermined reinforces their misunderstanding of the estuary projects, as these projects relate to surveys and studies needed to obtain condition data, design scientific approaches to restoration, and prepare the final Pile Structure Program Plan to be implemented by 2018 in accordance with RPA 38. Corps 005 at 444-45; NOAA BB.376 at 16-17; 2010 BiOp, § 2, at 91. Likewise, Plaintiffs continue to complain that project descriptions are carried over from 2007-2009 project lists, NWF Br. at 9, yet they refuse to address the straightforward explanation previously provided – that the agencies in many cases retain the same project description to allow for expedited implementation of different components of the broader habitat restoration actions. *See* Fed. Defs.’ Comb. Reply at 20 (Dkt. 1733).

and dedicated funding to estuary restoration and RM&E. *See* Corps 728 at 15165 (increasing estuary funding by \$4.5 million annually, or \$40.5 million over the term of the BiOp, to a cumulative total of \$149.4 million directed to estuary restoration through 2018).

Third, NOAA has reviewed and continues to evaluate implementation of the tributary and estuary habitat actions, and NOAA rationally determined that “[l]onger term implementation remains on track to achieve performance standards” identified in RPA 35 and 36. 2010 RTC at 15. Specifically, NOAA evaluated implementation of the tributary and estuary habitat program, including the use of the expert panel process to evaluate limiting factors and prioritize tributary habitat restoration actions. 2010 BiOp, § 2, at 83 (“The Expert Panels have met several times over the past year to develop a common understanding of the array of physical attributes” and incorporated “information from recovery planning documents” and other sources into their decision framework). NOAA considered the 2008 Annual Progress Report, the 2010-2013 Implementation Plan, and other information on implementation of the habitat program in the context of the emerging scientific information. *See id.* at 83-84 (describing and discussing the nature of and importance of the 2008 Annual Report, Implementation Plan, and BOR’s Tributary and Reach Assessment effort). NOAA found these implementation actions and efforts, in consideration of the emerging science on habitat restoration, are consistent with the RPA and are critical to the ultimate success of the habitat programs. *Id.*, § 2 at 84; 2010 RTC at 11-15.⁴¹

Contrary to Plaintiffs’ claims (NWF Br. at 7 n. 9), NOAA also reconsidered the effects of the Fish Accords on the tributary habitat program, finding that the Accords secure substantial funding, projects, and key partnerships that allow for the realization of habitat improvement

⁴¹ As this discussion demonstrates, Plaintiffs’ repeated claims (*see, e.g.*, NWF Br. at 12) that NOAA conducted “no new analysis” of the action agencies’ implementation of the RPA habitat actions are plainly refuted by the record. *See also* Corps 1077 (NOAA review of Corps proposed estuary projects, including Estuary MOA projects, in terms of benefits to fish and implementation potential); BRS022211 at 22211-13 (documenting NOAA’s comments on tributary and estuary project implementation in 2009 and 2010, including annual reports and the implementation plan); BRS027761 (documenting NOAA and RIOG review of the 2010-2013 Implementation Plan, including tributary and estuary habitat implementation); BRS025451 (documenting NOAA’s consideration of Reclamation’s Tributary and Reach Assessment effort); BRS018614 (documenting NOAA’s consideration of progress in tributary and estuary habitat implementation, including consideration of annual reports and implementation plans).

objectives required by the RPA. *Id.* at 84, App. G. As NOAA explained, the Accord projects supplement those projects already being implemented in the tributary habitats such that, when all habitat actions are combined for specific populations, the expected survival improvements to salmon and steelhead in many cases exceed those required by RPA 35, Table 5. *Id.* § 2, at 84 & n.24; Corps 005 at 557 (considering Accord projects, demonstrating a projected 8% survival improvement for the Wenatchee Chinook population through projects implemented by 2018, over three times the benefits provided for in RPA 35, Table 5).⁴² Through this secure funding and additional habitat projects, the Accords increase the “confidence that habitat improvements over the term of the BiOp will meet or exceed those expectations for the affected populations.” 2010 BiOp, § 2, at 84, n. 24; *id.* App. G at 39 (“Accords directly address certainty of implementation to achieve biological benefits”).

For these reasons, Plaintiffs’ assertions that NOAA failed to analyze these factors in the 2010 BiOp miss the mark – NOAA accounted for contingencies arising in the implementation of estuary and tributary habitat projects in developing the RPA Actions, and NOAA has consistently reviewed implementation and determined that the Action Agencies remain on course to achieve the expected survival improvements by 2018. Indeed, one of the many strengths of the RPA habitat actions is that, despite the success or lack thereof with past implementation, the agencies must continue to identify, prioritize, fund, and implement habitat actions or replacement actions, through the RPA’s mechanisms, until the RPA survival improvements are attained.

⁴² Plaintiffs contest implementation related to the Entiat River Upper Columbia spring Chinook population. NWF Br. at 8 n.11. They disregard, however, the effect of the Accord actions on meeting the RPA 35, Table 5 survival improvements. For this population, NOAA projected a 22% survival improvement associated with all projects by 2018. 2008 BiOp RPA Table 5 at 44. Through the tributary expert panel process, the planned 2010-2012 projects are estimated to result in a 2-8% estimated survival improvement, and the Accord projects are expected to result in an *additional* 19% estimated survival improvement. Corps 005 at 557. Considering that the agencies “have invested very high effort in improving Upper Columbia habitat, and substantial momentum has built in this area so that large benefits are projected by the next expert panel process;” additional projects will be identified for implementation in the 2013-2015 and 2016-2018 cycles; habitat projects associated with the Entiat IMW that are planned for implementation in 2010-2012 were not evaluated by the expert panels and encompassed with the 2010-2012 estimates; and the effects of the Accord projects, the record establishes the Action Agencies are on track to achieving the RPA 35, Table 5 survival improvements. BRS025300 at 25303-04; BRS017441 at 17594-99.

Corps 005 at 440 (the agencies “will provide funding for implementation of projects as needed to achieve the total FCRPS BiOp estuary survival benefits by 2018.”); Kratz R. Decl. ¶ 44 (Dkt. 1650). This process, with the attendant substantial increase in the level of effort in both the tributary and estuary, is working and should be allowed to work for the benefit of salmon and steelhead throughout the Columbia and Snake River basins.

B. NOAA Thoroughly Considered Climate Change Science and Data and the RPA is Responsive to This Information.

Both NWF and Oregon contest NOAA’s analysis and treatment of climate change science for a number of reasons. Their arguments are difficult to reconcile. While the Plaintiffs spend a great deal of time arguing that the agencies must address the effects of climate change, they ignore fundamental operational adjustments and disparage the habitat restoration program that is designed to address precisely those effects. OR Br. at 27. This disconnect is further compounded by the Plaintiffs’ repeated refusal to recognize any value to the Fish Accords, the Estuary MOA, and over \$1 billion dedicated to restoration actions designed to address the effects of climate change in the tributaries and estuary. *See* NPT Br. 12 n.6; *see also* NWF Br. at 7 n.9 (characterizing the Fish Accords as “surmised benefits”). Besides these contradictions, Plaintiffs do not understand the RPA’s treatment of climate change and NOAA’s recent evaluation of the emerging science and data.

The 2008 BiOp recognized that there had been a 1° C increase in air temperature over the last century in the Pacific Northwest and that temperatures would continue to rise 0.1-0.6°C per decade over the next century. 2008 BiOp at 7-12 and 7-13; 2010 BiOp, § 2, at 38 (“ISAB (2007a) and the 2008 BiOp (Section 7.1.1) noted that average air temperature has risen approximately 1°C in the last century and predicted to rise approximately 0.1-0.6°C per decade.”). NOAA took this data into account by using the ISAB’s recommendations on climate change (ISAB 2007a) to develop a number of actions that are responsive to the potential long-term effects of climate change. *See* 2008 BiOp at 8-17 to 8-22. After 2008, new information emerged, and the AMIP discusses this science in considerable detail and explains the responsive

actions or modifications. AMIP at 25 ("The Administration's review recognized the importance of detecting and tracking climate change and its effects on listed species."); *id.*(enhancing RPA 56-61 to monitor ocean conditions; enhancing RPA 35 & 37 to guide tributary and estuary project selection with climate change information through the expert panel process; enhancing RPA 7 to improve forecasting abilities). In the 2010 BiOp, each facet of NOAA's analysis was reconsidered in light of new climate change science, its relevance to the 2008 BiOp was fully discussed, and where appropriate NOAA amended the AMIP with actions to address the new data. 2010 BiOp, § 2, at 37-64 (discussing air temperature, ocean conditions, sea level height, ocean acidification, effects on juveniles and adults).

The new substance or conclusion that emerged was not that there would be a likely increase in temperature over the next century (the 2008 BiOp already assumed this to be true). *Id.* at 39 ("Recent projections for future temperature changes in the Pacific Northwest remain 0.1 - 0.6°C per decade (Mote and Salathe 2009) as described in the 2008 BiOp. . . .Maximum weekly water temperatures are expected to increase generally <1°C by 2020s, but 2-5°C by the 2080s . . ."). Rather, the 2010 BiOp concluded that new studies "provide additional details on effects previously considered and suggest that the adult life stage may need particular attention through monitoring and proactive actions envisioned in the AMIP." *Id.*, at 62.⁴³ NOAA determined that the RPA, with the AMIP and 2010 BiOp actions, was sufficient to address the effects associated with a changing climate and positions the agencies to respond to any unexpected change.

This is the point the Plaintiffs miss – NOAA assumed in the 2008 BiOp that there had been an increase in temperature from the historical record and that there would be continued

⁴³ The greatest area of concern that emerged from this new information was that migrating adults may seek areas of thermal refugia within the mainstem during periods of high water temperature and experience higher mortality as a result. The problem, however, does not appear to lie with a temporary increase in water temperature, but rather the study suggests that mortality is associated with recreational fisheries heavily targeting those areas of thermal refugia. 2010 BiOp, § 2, at 50 ("Keefer et al. (2009) show that steelhead that migrate during high temperature periods are 8% less likely to successfully home to natal tributaries, but suggest it is likely due to high harvest in thermal refugia in the lower Columbia River tributaries, rather than direct exposure to high temperatures."). To address this concern, the 2010 BiOp provided a number of new actions, one of which in particular would study these areas of thermal refugia and, if necessary, take further corrective action. *Id.*, § 4, at 5-6.

warming, and accordingly formulated operational and habitat actions to address these effects. 2008 BiOp at 8-22. The new information strengthens, and in some respects confirms, NOAA's previous conclusions, but it does not present an effect that was not already contemplated or addressed. NOAA found that there will be no significant change beyond that which was initially anticipated during the eight remaining years of this BiOp and that the appropriate responses to long-term uncertainty were the additional precautionary monitoring and studies formulated in the AMIP and 2010 BiOp.⁴⁴ 2010 BiOp, § 2, at 62 ("temperature and precipitation ... have not changed in the last two years"; "new flow information ... does not appear to fundamentally differ from general regional patterns previously considered"; and "[b]road scale climate patterns reflected in the PDO and Multivariate ENSO index indicate that conditions during the past decade have clearly been within the range, and below the average, of both the base period and the 'Warm PDO' climate conditions considered in 2008 BiOp modeling.").

To document this approach, there are two appendices that specifically discuss how the RPA actions relate to and address this new information. *See* 2010 BiOp, App. E, at 21- 30 (water temperature actions and climate change); *id.* App. F, at 31-33 (climate change – RPA and other program habitat implementation). The first appendix discusses the hydro system operational actions that address the effects of climate change. *Id.* App. E, at 24 ("These include fish passage actions such as spill for fish passage, use of spillway weirs, juvenile bypass systems, and juvenile transportation – all of which reduce juvenile migration time and reduce exposure to warmer river temperatures."). NOAA also explained: "In addition to fish passage at the dams, storage reservoirs are operated to enhance fish survival by augmenting river flows to help

⁴⁴ In questioning NOAA conclusions, Plaintiffs rely exclusively on Crozier, et al. (2008), for the proposition that there is some new, unaccounted deleterious effect not previously considered. NWF Br. at 18 n.20. However, this study is not new information. The Crozier study was discussed at length in the 2008 BiOp and was taken into account when formulating actions consistent with the ISAB's recommendations. 2008 BiOp at 7-14 (discussing the study and noting the limited relevance, in part, because it assumed instantaneous implementation of 2040 climate conditions to model potential survival); *id.* at 8-22 (reflecting tributary actions in accordance with ISAB in light of Crozier's study). On a more technical level, Plaintiffs seem to confuse the quantitative modeling assumption of an instantaneous thirty-year climate change in this study with present day circumstances. *See id.* at 7-14 (discussing the lack of "ramp-up" and relevance of the 2040 time period to the time period under consideration in the BiOp).

juvenile migration and adult spawning, and to cool water temperatures.” *Id.* (noting as well operation at Minimum Operating Pool (“MOP”) to reduce travel time). Appendix E also details each of these operational actions, how they correspond to each potential issue with climate change, the effect of increased temperature on adult passage, and long-term planning through compilation of monitoring data and studies. *Id.* at 21-30 (discussing monitoring, modeling, temperature studies, in-season management, flow augmentation, project operations, forecasting). Based on this analysis, NOAA concluded that “the physical effects of climate change are likely to be within the range of effects considered in the 2008 BiOp,” *see* 2010 BiOp, § 4, at 9, and that “the types of potentially beneficial actions identified by the ISAB (2007a) and implemented through the RPA are consistent with the types of adaptation actions described in current literature,” *id.*, § 2, at 63.

The significance of these operational actions is best illustrated by the Plaintiffs’ comparison to the Central Valley Biological Opinion (“CVP BiOp”). NWF Br. at 19-20. In contrast to FCRPS (with eight run-of-river dams that have sophisticated juvenile and adult passage facilities) the CVP system is composed of several major terminal reservoirs which block any further upstream passage to the species’ traditional spawning and rearing grounds. NOAA BB.281 at 665 (recommending the installation of fish ladders because none exist); *id.* at 666 (recommending temporary and long term juvenile passage alternatives because none exist). Similarly, the FCRPS’s comprehensive flow management regime, which includes highly coordinated releases from at least six FCRPS storage projects and Canadian storage projects, and the ability to regulate temperature, for example from Dworshack reservoir, is substantially different than the CVP system’s current abilities. *Compare* 2010 BiOp, App. E, at 25-26 (discussing the FCRPS ability to manage flow beneficially), *with* NOAA BB.281 at 6 (CVP BiOp) (“even after all discretionary actions are taken to operate Shasta and Folsom reservoirs to reduce adverse effects of water operations on listed anadromous fish, the risk of temperature related mortality of fish and eggs persists . . .”). Using the CVP system as an example to argue that the FCRPS system should address passage and temperature only highlights Plaintiffs’

ignorance of the FCRPS technological advancements that are already in place and how this sophisticated system is already managed. *See* 2010 RTC at 24 (addressing Plaintiffs' CVP argument).

Plaintiffs' additional argument -- that taking these actions into account is some kind of "double-counting" -- lacks any legal basis whatsoever. Besides being an explicit concession that NOAA did in fact formulate operational actions that are responsive to climate change, the Plaintiffs' novel "double counting" argument is devoid of any citation to any legal authority, and for good reason. *See Pacific Coast Fed'n of Fishermen's Assoc. v. BOR*, 426 F.3d 1082, 1093 (9th Cir. 2005) (rejecting relative apportionment and requiring NOAA to ask whether the action avoids jeopardy in the context of the environmental baseline irrespective of allocation). More importantly, it evidences a misunderstanding as to NOAA's factual findings that during the next eight years there are no new unaccounted effects that were not previously addressed and that, beyond the term of the BiOp, the uncertainty is not significant enough to warrant *additional* operational modifications except for the heightened monitoring and data collection suggested by the independent scientists and implemented by the Administration as precautionary measures.⁴⁵ 2010 BiOp, § 3, at 1-4 (amending the AMIP to include studies of thermal refugia; enhanced fish population monitoring; water quality information gathering; coordination of IMWs and habitat effectiveness studies with new climate change information; invasive species and toxicology issues). Regardless of the label that attaches to the action, NOAA believes this suite of actions

⁴⁵ NWF highlights an email requesting information on existing FCRPS temperature controls and facilities. NWF Br. at 20 (discussing NWF ER 125 (Toole 4/6/10)). Besides demonstrating that NOAA did not take NWF's comments lightly, that email discusses how the *existing* RPA actions are already performing functions similar to the CVP BiOp RPA and avoiding jeopardy. NWF ER 125 ("The actions in the Central Valley biop are basically water release strategies and development of models to determine the best times to release cold water from storage projects and assessments of how much water needs to be left in reservoirs to ensure some minimal amount of water for the next year and investigation of selective release structures at one or two projects. I think that FCRPS is doing similar things but we haven't called them out as being responsive to effects of climate change and I would like to summarize any relevant information."). NWF's argument is really just form over substance and ignores the real issue -- whether the RPA avoids jeopardy to the species. Regardless of whether an action is called out as "mitigating for climate change" or some other adverse effect, NOAA asked the right question and formulated the correct response by developing an RPA throughout all four-H's that avoids jeopardy.

will avoid jeopardy. *Id.*, § 4, at 9; FER 22 (Ferguson 8/7/09 Att. 2) (“Although there may be no FCRPS supported projects that are designed solely to examine potential climate change effects on fish populations, as indicated later in the document, many of the on-going RM&E efforts are collecting data that are relevant to understanding possible climate change impacts.”).

Plaintiffs also contend that NOAA has improperly dismissed long-term climate change information while at the same time relying on benefits from habitat restoration and preservation, some of which will accrue in the distant future. Once again, this illustrates Plaintiffs’ misapprehensions. Long-term benefits of habitat projects were only credited with respect to actions that occurred 2007-2009 (those that were clearly defined). *See* 2008 BiOp at 7-45 (“NOAA Fisheries was able to quantitatively or qualitatively consider the post-2018 effect of identified [tributary habitat] actions proposed for implementation between 2007 and 2009”). For all of the other projects that were not identified, NOAA did not assume any benefit after 2018. *Id.* (“[I]n contrast, because the specific habitat projects that will be funded between 2010 and 2018 have not been identified, the type and magnitude of the long-term benefits emerging beyond 2018 cannot be described.”). Contrary to NWF’s suggestion, the 2008 BiOp made no quantitative assumptions about post-2018 survival improvements from the vast majority of the habitat projects implemented under the RPA. Moreover, warming over the long-term was assumed and addressed in the 2008 BiOp through a number of pessimistic assumptions and correlating actions, including habitat restoration. *See* 2010 RTC at 24-25 (explaining that “recent” and “warm PDO” scenarios assumed in the BiOp have proven to be more pessimistic than actual ocean conditions).

As part of the strategy to address these effects, NOAA required significant habitat projects in the areas most likely to encounter these effects first – the tributaries. 2010 BiOp, App. F (describing the various actions). Yet, NWF contends that “the benefits of tributary habitat actions . . . will not accrue – *if at all* – for decades . . .” NWF Br. at 17 (emphasis added). Here lies the crux of the dispute, NOAA in its expertise believes that there is a proven benefit to tributary habitat restoration and that these projects will ameliorate and address the adverse

effects on survival from climate change, while NWF takes the position very little benefit will accrue, “if at all”, from tributary habitat restoration. BRS015615 (illustrating immediate effects to salmonid survival and productivity associated with habitat restoration actions). NWF’s position cannot be squared with the vast amount of scientific study, which indicates that the Action Agencies should be focusing their considerable energies on these critical areas by preserving and rehabilitating riparian areas, securing in-stream water rights, and providing greater passage into higher, cooler areas – all of which will have a beneficial effect on the species. 2008 BiOp at 7-45 (“NOAA Fisheries finds, from available scientific literature on the subject of salmon habitat restoration, that many habitat restoration projects can improve salmon survival over relatively short periods of time.”); *see also* Section II.A.3, *supra* (discussing the extensive methodology and supporting scientific literature). There is certainty and consensus that habitat restoration has immediate and long-term beneficial effects, while there is substantial uncertainty as to what effect a more rapidly warming climate will have on listed species. 2010 BiOp, App. F, at 33. NOAA’s resolution of climate change uncertainty with actions and attendant adaptive management, as well as recognizing the very real and important benefit to habitat restoration, is entirely reasonable.⁴⁶ *Id.* (“The full effects of climate change are unlikely to be realized during the period covered by this BiOp . . . As those effects become more evident, the periodic updates and assessments under the BiOp’s expert panel process will be able to respond to changing conditions and mitigate for new or more extreme climate-induced limiting factors.”); *see also* *Center for Biological Diversity v. Kempthorne*, 588 F.3d 701, 712 (9th Cir. 2009) (“Although the specter of climate change made the Service’s prediction less certain than it would be otherwise, such uncertainty is not ‘high uncertainty,’ but only that quotient of uncertainty which is always present when making predictions about the natural world. Again, we

⁴⁶ Plaintiffs never acknowledge that the FCRPS hydroelectric system is incredibly beneficial in mitigating for the effects of climate change. The underlying action itself avoids carbon emissions by generating massive amounts of electricity and integrating wind generation that would otherwise require carbon-based fuel sources, or significant new infrastructure. Corps 1425 at 27475-77 (BPA Supp. ROD). While providing carbon free electricity to the Pacific Northwest is without question a significant long-term benefit, the Action Agencies did not assume any beneficial credit for such action.

grant the Service great deference as it made a scientific prediction within the scope of its technical expertise.”). Indeed, if the Plaintiffs’ argument is followed to its logical end, it would create a significant obstacle to pursuing habitat restoration at exactly the moment when it is needed most, just because there is some level of uncertainty with climate change.

C. **NOAA’s Adaptive Management RPA is Reasonable and Far Exceeds Its Own Guidance.**

Both NWF and Oregon contest NOAA’s adaptive management framework by arguing that the 2008 BiOp, AMIP, and 2010 BiOp are not sufficiently specific, ignore NOAA’s own adaptive management guidance, and arbitrarily rely on the AMIP “triggers” to avoid jeopardy. These arguments are almost entirely recycled and have been addressed in Federal Defendants’ previous briefings and NOAA’s response to comments. *See* Fed. Defs.’ Resp. Court’s May 18, 2009, Letter (explaining the adaptive management framework and how the AMIP strengthens the existing performance standards and RM&E); Fed. Defs.’ Comb. Reply to Pls.’ Resp. at 3-8 (explaining the hydro, tributary, estuary performance standards, existing and strengthened RM&E designed to ensure that the performance standards are achieved, and the development of contingency triggers); 2010 RTC at 2-11 (NOAA explaining the adaptive management framework and how the triggers relate to the RPA). Instead of meaningfully engaging these explanations and the structure of the RPA, the Plaintiffs ignore them altogether, except to concede that “adaptive management can play a role in fulfilling NOAA’s obligations under the ESA.” OR Br. at 4. Adaptive management, as it is structured in the RPA, allows science to inform real-world management decisions on a daily basis; it is not some abstract “experimental design” but is necessary to address highly dynamic conditions and allow the system to detect changing conditions and adapt accordingly to achieve clearly identified performance standards.⁴⁷

⁴⁷ On survival alone, the administrative record is replete with examples of the Action Agencies constantly modifying operations to achieve juvenile and adult performance standards. *See* Corps 004 at 345; Corps 148 at 4486 (“Existing data on fish survival at Bonneville Dam indicate that 50 kcfs may be too low of a minimum spill level and that 75 kcfs may be more appropriate and provide a greater degree of protection for summer migrants”); Corps 009 at 1040-78. It is important to note that all of these changes are thoroughly vetted through the regional forums and the agencies collaborate closely with the States and Tribes before they take any action. Corps 69

When the RPA, and the AMIP in particular, are compared to NOAA's adaptive management guidance, there is no question that the BiOp's measures far exceed this guidance. *See* OR Br. at 12 n.10 (outlining the factors). The structure of the RPA provides clearly articulated commitments within each of the four-H's. 2008 BiOp RPA Table 50-73. These commitments and the "management strategies are regularly revisited." *Id.* at RPA 1 (implementation plans); RPA 2 (annual progress reports); RPA 3 (comprehensive evaluations in 2013 and 2016 which will "include a discussion of the Action Agencies' plan to address any shortcomings of current estimated survival improvements as compared to the original survival estimates identified in the Comprehensive Analysis . . ."). This process uses "conceptual models" to guide "strategy and action planning." *See id.* at RPA 7, 15, 30, 35, 37, 55, 56, 57, 61; *see also* AMIP at 20-22, 24 (lifecycle and improved habitat modeling). There are a "range of potential management actions." *See e.g.* 2007 BA at B.2.6-5 through B.2.6-20; B.2.6-10, B.2.6-12; 2008 BiOp RPA 35, RPA 57, RPA Table at 82-83. And there are no less than *twenty-four* independent RPA requirements, one of which is the *entire AMIP* that expressly was developed to provide "monitoring and evaluation" so that science can be continually used to inform management decisions within a "collaborate structure" with other sovereigns. *Id.* at RPA 50-73; *see also* 2010 BiOp, § 3, at 3; AMIP at 14, 40-41 ("activities will incorporate the best available science and will be discussed with the sovereign states and tribes through the RIOG. Instances in which there is disagreement among sovereigns on specific scientific issues can be submitted for independent scientific review . . ."). This collective RPA is one of the most sophisticated adaptive management plans ever created under Section 7, and Plaintiffs cannot seriously argue that it fails to address or comply with any aspect of NOAA's adaptive management guidance.

at 2077; Corps 216 at 6042; Corps 259 at 6524-33 (FPOM meeting notes); Corps 282 at 7060-64 (March 11, 2010 RIOG meeting minutes).

Oregon's familiar refrain, that NOAA relies on the AMIP triggers to avoid jeopardy, is equally ineffectual.⁴⁸ OR Br. at 9. Oregon bases its charge entirely on the following passage from the 2010 BiOp:

Even considering the potential changes in prospective extinction risk and natural productivity at face value, they would have little influence on the 2008 BiOp's jeopardy analysis for SR spring/summer Chinook and UCR steelhead as described in Section 2.1.1.4. For UCR Chinook, NOAA Fisheries and the Action Agencies will continue to monitor population performance closely with respect to AMIP triggers and ensure that all RPA and Accord actions are implemented as planned.

2010 BiOp, § 4, at 8. Oregon apparently believes that the phrase "will continue to monitor population performance closely with respect to AMIP triggers" – a commitment that was made explicitly in the AMIP – is a wholesale renunciation of the entire jeopardy analysis, performance standards, and RM&E. This is an untenable position.

The passage that Oregon relies upon discusses the relevance of the new base period estimates to the overall jeopardy conclusion for this ESU. *Id.* NOAA recognized that its conclusion for this particular ESU was the most affected by extended base period data set and discussed how the metrics significantly overstated the risk because the "extinction risk estimates for UCR steelhead and UCR spring Chinook assume that all hatchery production ceases immediately" (risk that is further addressed by the Chief Joseph hatchery constructed by the Colvilles under the Fish Accords). *Id.*; 2008 Corps 394 at 5816-17; Corps 1813 at 33855.

NOAA's reference to AMIP triggers is merely recognition that there is a safety-net in place with

⁴⁸ NWF in contrast acknowledges that the triggers do not monitor jeopardy, but they contest the scientific basis of the Early Warning and Significant Decline triggers and seem to suggest that NOAA should have adopted a standard first proposed by an independent scientist of "abundance declin[ing] 4 years in a row." NWF Br. at 30. The problem with a 4-year abundance decline is that if there is just a slight abundance increase in one year out of the four, the standard is effectively re-set so that the species would wait another four years before the trigger is met. As long as there is a slight increase once every three years, this standard could allow for a continual decline without technically triggering contingency actions as long as there is a slight increase once every three years. Such a standard is not sufficiently protective and that is why, after considerable thought and evaluation, NOAA proposed something much more stringent and protective. *See* FER 23 (Zabel 8/12/09 Att 1 at 1-2); *see also* NOAA C.182 (independent review discussing triggers and false positives: "I applaud the development of the 2 triggers, and especially the Unexpected Severe Decline (USD) trigger, as a great addition to the management plan – in fact, I think this should become a model for management plans for other T&E species."). NWF's trigger critique illustrates why scientific issues should remain within the province of scientists.

contingent actions ready for implementation should something *unexpected* occur to the ESU.⁴⁹ AMIP at 30-39 (explaining triggers and short and long-term contingencies). Federal Defendants have been clear throughout – the AMIP triggers are not used to monitor the RPA actions, that is the role of RM&E. Nevertheless, these triggers represent an extremely precautionary approach under the ESA. Fed. Defs.’ Comb. Reply to Pls.’ Resp. at 5-9 (Dkt. 1733); *see also* FER 22 (Ferguson 8/7/09 Att. 4) (“[T]his trigger idea is very important practical work, and is likely going to be an approach needed for many species, populations, and systems beyond salmon.”).

III. PLAINTIFFS’ MISCELLANEOUS ARGUMENTS LACK MERIT.

A. NOAA’s Analysis of Double-Crested Cormorant Predation And Steelhead Kelt Management Is Reasoned And Supported By The Record.

NWF contends that NOAA did not fully analyze cormorant predation in the 2010 BiOp, but NOAA’s analysis belies this claim. NWF Br. at 13-14. Following issuance of the 2008 BiOp, NOAA repeatedly evaluated its analysis of cormorant predation. *See* Graves Decl. ¶¶ 45-50 (Dkt. 1562); Graves R. Decl. ¶¶ 53-56 (Dkt. 1648); NOAA BB.126, BB.127. Through NOAA’s updated and extended base period calculations in the 2010 BiOp, NOAA considered the recent effects of cormorant predation on salmon and steelhead, including years when cormorant population’s were at their highest levels. *See* 2010 BiOp, § 2 at 10-12 (discussing extended base period analysis with data obtained after 2006); NOAA BB.127 at 3, Table 4 (cormorant population levels peaking in 2006). NOAA also analyzed the current predation rates in the estuary, finding among other things that predation rates “are higher than analyzed in the

⁴⁹ Work is currently underway on developing the rapid response actions for the AMIP short-term contingencies. Corps 606 at 103174-177. The Action Agencies also have been closely monitoring abundance and how it relates to the AMIP triggers. Corps 1798 at 33585 (estimating future abundance based on jack counts), Corps 1829 at 35376 (Tab B Columbia Adult Fish Returns). Based on ocean conditions, the Science Center anticipates that there will be high abundance in the near future for this ESU. Corps 1813 at 33784-33785 (“Ocean ecosystem indicators during juvenile migration year 2008 were the best overall since 1999-2000. As a result, the [Science Center] forecasts that spring Chinook runs in 2010 and 2011 should rival the high returns seen in 2001 and 2002, while returns of coho in 2009 should be somewhat lower”).

2008 BiOp particularly for upriver steelhead ESU's and the LCR Chinook ESU, largely due to predation by double-crested cormorants.”⁵⁰ 2010 BiOp, § 2, at 93; NOAA BB.127 at 3, Table 4.

NOAA also integrated its analysis, 2010 BiOp § 4 at 1-2, 4, 6-7, 10-11, and through RPA 47 and other mechanisms, NOAA provided measures and actions specifically calculated to address any increase in cormorant predation rates through 2018. *See* 2008 BiOp RPA 47, RPA Table at 65; AMIP, App. 5 at 2-3; Graves R. Decl. ¶ 54 (NOAA concluded that RPA 46 “will at least be effective enough to prevent cormorants in the estuary from increasing their consumption of juveniles salmonids, beyond those rates currently being observed – a net Current to Prospective adjustment of zero.”); 2010 BiOp, § 2 at 91-92 (RPA 38 pile dike removal program expected to reduce avian predation by removing perches for cormorants). Thus, Plaintiffs’ bare claim that NOAA did not fully consider cormorant predation in its analyses lacks merit, and Plaintiffs’ efforts to compare the effects of cormorant predation to other factors *also expressly addressed by NOAA* do not demonstrate the contrary. *See* Kratz ¶ 31.⁵¹

Notwithstanding the BiOp’s actual RPA actions, Plaintiffs assert that measures to address cormorant predation are ineffectual. *See* NWF Br. at 14 (selectively quoting 2010 BiOp, § 2, at 91 that there is “no evidence” that methods to control predation will be successful). Plaintiffs

⁵⁰ Cormorants are highly generalized predators, and large shifts in the percentages of different species they consume have been documented in recent years. For example, at East Sand Island, the annual percentage of salmonids documented in the cormorants’ diet has varied from 2 to 25%, likely related to the abundance of other prey species such as anchovies – the cormorant’s most prevalent prey. As a result, shifts in availability of prey species related to ocean conditions and other marine cycles can result in increased proportions of juvenile salmonid predation even without an increase in population size or in the number of nesting pairs. Corps 1576 at 29985-287; Corps 260 at 6560-62.

⁵¹ In a footnote, Plaintiffs contest NOAA’s consideration of tern predation, yet they inexplicably fail to address NOAA’s evaluation of tern predation in the AMIP or 2010 BiOp. NWF Br. at 13 n. 17; *see* AMIP at 35, App. 5 at 2-3; 2010 BiOp, § 2, at 89-92, 100; *id.* § 4, at 6, 11. Likewise, Plaintiffs reassert that NOAA erred in failing to adjust the benefits of tern control measures due to compensatory mortality, NWF Br. at 13 n. 17, but they neither address NOAA’s analysis on this issue nor the inherent inconsistency in Mr. Olney’s comments upon which they rely, *see* Graves Decl. ¶ 45; Graves R. Decl. ¶¶ 52, 56 (addressing NOAA’s consideration of this issue and demonstrating Mr. Olney’s inconsistent application of compensatory mortality). NOAA expressly considered and addressed whether to apply a *theoretical* compensatory mortality adjustment, and Plaintiffs’ mere disagreement with that decision identifies no legal defect in NOAA’s analysis. *See* 2010 RTC at 26; *Trout Unlimited*, 559 F.3d at 959 (“NMFS is entitled to decide between conflicting scientific evidence.”).

badly distort NOAA's analysis, where NOAA actually said that "initial efforts" to attract cormorants to sites outside of the basin have not been successful. 2010 BiOp, § 2, at 91. The effectiveness of initial efforts does not undermine NOAA's analysis of the actual RPA actions be implemented throughout the term of the BiOp. *Id.* at 100 ("NOAA Fisheries still expects the cormorant management plan in RPA Action 46 to be the appropriate mechanism for identifying and implementing specific management measures."); *id.* at 93 ("the new scientific information indicates that efforts to reduce avian predation rates are moving forward as anticipated for this point in the 10-year term of the 2008 BiOp"); Corps 005 at 374, 465-66, 467-68, 527-28 (documenting progress in implementing cormorant RPA actions).

Plaintiffs' challenge to NOAA's analysis of kelt management suffers from many of the same problems. The crux of Plaintiffs' challenge relies on an ISRP report (Corps 2004) reviewing a single kelt reconditioning project proposed by the Yakama Nation. NWF Br. at 14-15. RPA Action 33, however, calls for the development and implementation of a kelt *management plan*, and NOAA identified a estimated 6% improvement in B-run steelhead productivity stemming from implementation of a combination and array of viable management actions. 2008 BiOp RPA 33, 42, 53, 54; Graves Dec. ¶ 39 (Dkt. 1562). NOAA's evaluation of the kelt management actions and associated survival improvements certainly does not stem from or depend upon any single project.⁵²

⁵² The Action Agencies have developed a 2009-2010 kelt management plan (Corps 293 at 7167-7230), which has been presented to the ISAB for independent science review (*id.* at 7231-7237). The kelt management plan illustrates the breadth of viable management actions to facilitate improved productivity of kelts, including: PIT tagging kelts to determine if in-river survival rates have improved; continued intensive researching into kelt reconditioning; completed construction of a temporary kelt collection, holding, and transportation facility at Lower Granite Dam; and development of plans for a permanent kelt facility at Lower Granite Dam. *Id.* at 7191-93. The Action Agencies also are continuing efforts to facilitate in-river survival of kelts pursuant to RPA 54; for instance, the agencies have tested off-season sluiceway operations for kelts at The Dalles Dam. *See* Corps 2035 at 41317 (operation passing 1,766 kelts and adult overwintering steelhead in 2008); Corps 1463 at 28088 (operation passing 1,985 kelts and adult steelhead in 2009). Pursuant to RPA 53, the agencies also have developed and are implementing an interim trigger for the Bonneville Dam Corner Collector to facilitate kelt in-river passage, with positive results. *See* Corps 289 at 7147; Corps 1191 at 23739 (researching into Bonneville Dam Corner Collector operations relating to kelt in-river passage); Corps 1070 at 21383 (same). Numerous additional kelt management actions and RM&E are scheduled for the 2010-2013 implementation cycle. *See* Corps 005 at 431, 549, 551, 557-58 (projects); *id.* at 630, 647-49 (RM&E).

Moreover, Plaintiffs fail to account for the fact that NOAA analyzed and evaluated the same concerns identified in the ISRP report. For instance, the ISRP discusses the uncertainty associated with the success of kelt reconditioning. NWF Br. at 14-15. NOAA likewise analyzed and accounted for this issue, finding that recent research indicated that kelts which return to spawn may be significant to many populations, but that there is some uncertainty in the actual success of reconditioned kelts. SCA, Appendix J at 1-4. Given this uncertainty, and despite the demonstrated success of kelts in spawning, NOAA conservatively considered that the assumed success rate of long-term reconditioned kelts might be 50%. *Id.*; Graves R. Decl. ¶ 60. Further, neither Plaintiffs nor the ISRP demonstrate that uncertainties in kelt management cannot be addressed and resolved through the RPA processes. *See* Corps 2004 at 40233-34 (ISRP noting the potential for additional actions to address its concerns and that ISRB review of the kelt management plan “should inform kelt reconditioning strategies in the Basin, including this project”); Graves Decl. ¶ 43.

In sum, Plaintiffs make clear that they disapprove of any mitigation measures where the “effectiveness” of those measures previously has not been demonstrated. NWF Br. at 15. This argument asks the Court to endorse a legal standard that allows agencies to engage in valuable mitigation actions only to the extent they can guarantee a particular result. Fortunately for species, the ESA does not contain such a cramped standard, *see Greenpeace Action v. Franklin*, 14 F.3d 1324, 1336-37 (9th Cir. 1992) (the law does not require achieving certainty before action is taken), and Plaintiffs mere disagreement with NOAA’s expert analysis is insufficient to overturn this BiOp, *see League Of Wilderness Defenders Blue Mountains Biodiversity Project v. Allen*, 615 F.3d 1122, 1131 (9th Cir. 2010) (explaining the Ninth Circuit “went en banc to foreclose precisely [that] type of second-guessing of the [agency]” (citing *Lands Council v. McNair*, 537 F.3d at 993).

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B. NOAA's Analysis of the Action Agencies' Programmatic Hatchery Funding Did Not Assume Any Improper Benefit.

NWF also attacks NOAA's analysis of the Action Agencies' programmatic hatchery consultation, arguing that NOAA has impermissibly relied on benefits from future site-specific consultations to support its conclusions. NWF Br. at 15-16. NWF continues to misconstrue the RPA as well as various emails in the administrative record. NOAA did not assume any benefit from future site-specific consultations, but rather recognized that the Action Agencies' programmatic consultation, which conditions hatchery funding on various Best Management Practices ("BMPs"), will have a beneficial effect – an effect NOAA is obligated to consider. 402 C.F.R. § 402.02.

The future site-specific consultations at issue here and referenced in RPA 39 recognize that over 100 hatchery programs will need to undergo site-specific consultations for their operation and maintenance in the future, most of which are subject to court order in *U.S. v. Oregon*. 2008 BiOp RPA 39. These hatcheries are not operated by the Action Agencies; instead, it is the States, Tribes, and FWS that run these facilities. Corps 861 (July 7, 2009, Letter to Hatchery Operators providing the program funding criteria); Corps 509 (Feb. 2, 2010, Letter to Hatchery Operators). The emails that NWF cites confirm that NOAA did not assume any benefit from these future site-specific consultations, but rather only considered the effect of the Action Agencies' programmatic funding criteria. NWF ER 25 (NMFS "cannot quantify any benefits from the implementation of RPA 39 until site-specific ESA consultations for the 100 plus hatchery programs are completed and the resulting changes in hatchery operations can be analyzed."). NOAA explained it assumed benefits from actions that had already occurred in the past, which were reflected as "estimated ... base-to-current survival multiplier for hatchery actions affecting nine populations", *id. citing* (SCA App. I), and for the remaining site-specific actions yet to be undertaken, NOAA explained: the "implementation of BMPs at action-agency funded hatchery programs under RPA 39 were *only afforded qualitative consideration* in the FCRPS Bi-Op jeopardy analysis." *Id.* (emphasis added). NOAA did not assume any benefit for

future site-specific consultations and only recognized the long-term beneficial effect of the Action Agencies' programmatic funding criteria. Fed. Defs.' 2008 MSJ Mem. at 52-53.

NWF also argues that NOAA has not completed these site-specific consultations in accordance with the schedule in RPA 39. Almost all of these consultations are subject to the production agreements in *US v. Oregon*. The Federal government is committed to harmonizing its *US v. Oregon* obligations with its ESA consultation duties, and substantial progress within that forum has been made developing operating plans and pursuing efficiencies of scale. More importantly, the fact that there is a delay in completion does not alter NOAA's previous conclusions because it did not assume any benefit from these future site-specific consultations. NWF's delay argument, at bottom, elevates form over substance.

C. NOAA's Concurrence for the Southern Resident Killer Whales Complies with the ESA and is Scientifically Sound.

In yet another argument not joined by Oregon or the Nez Perce Tribe, NWF revives its challenge to NOAA's analysis of Southern Resident Killer Whales. NWF Br. at 32-34. Plaintiffs, however, continue to rely upon the same faulty legal premise that permeated their original challenge; that is, they disregard NOAA's analysis of the effects of *the FCRPS RPA* on the whales and focus instead on the baseline-level impacts to whales. NWF Br. at 34 (arguing that the prey available to the whales is insufficient to avoid reductions in survival or recover the species). As the Ninth Circuit has clearly explained, this is the wrong legal inquiry.

Under Section 7(a)(2), "the agency action' at issue" does not "include all independent or baseline harms to listed species." *NWF v. NMFS*, 524 F.3d at 930. Rather, Section 7(a)(2) requires review of whether the agency action under review is likely to cause "some new risk of harm." *Id.* ("To 'jeopardize' ... means to 'expose to loss or injury' or to 'imperil.'"). Thus, NOAA was tasked with evaluating whether the RPA (the "agency action") is likely to adversely affect the whales, and NOAA performed the requisite legal inquiry by evaluating whether *the effects of the FCRPS and RPA* are likely to adversely affect the whales. See NOAA CC.201. Plaintiffs' continued efforts to undermine NOAA's analysis by pointing to the current status of

the whales, rather than the effects of the RPA, should be rejected. *See* 50 C.F.R. § 402.13(a) (requiring NOAA to determine whether “the action” is “likely to adversely affect listed species”); *Forest Guardians v. Johanns*, 450 F.3d 455, 457-58 (9th Cir. 2006) (upholding informal consultation regulatory framework allowing NOAA to determine, in the first instance, whether the agency action is likely to adversely affect listed species).

Plaintiffs’ claims that NOAA’s analysis is not sufficiently conservative also lack merit. In every Section 7 analysis, NOAA applies the same conservative methodology in assessing the likely effects of an agency action on killer whales. *See* Fed. Defs.’ 2008 MSJ Reply at 46-47 (Dkt. 1645) (demonstrating that the FCRPS analysis for killer whales followed the same analytical framework and performed the same rigorous analysis as the formal consultation completed and upheld in *U.S. v. Oregon*). NOAA utilized this conservative methodology and rationally concluded that, in the short term, hatchery production directly attributable to the FCRPS system fully offsets the *overall* mortality of juvenile migrating Chinook in the FCRPS system and, in the long term, implementation of the RPA will positively affect the killer whales’ prey availability. *See* 2008 BiOp at 9-16 to 9-19, 9-21; 2010 BiOp, § 2, at 134 (concluding that the “updated information provides a better context for considering changes in prey availability, however, it does not affect the conclusion that the hatchery production offsets losses to the killer whale prey base and the action does not reduce the quantity of prey available to the whales”).

Notably, Plaintiffs do not dispute NOAA’s finding that the “Columbia basin hatchery production offsets losses to the killer whale prey base due to the existence and operation of the hydrosystem.” 2010 BiOp, § 2 at 130. Instead, they seek to pit NOAA’s analysis in past BiOps with NOAA’s analysis here. NWF Br. at 34-35 (for instance, arguing that the CVP BiOp is inconsistent with the FCRPS consultation because CVP hatcheries “produce more Chinook salmon than are killed in project operations”). This tactic fails, as Plaintiffs distort these prior BiOps. In the CVP BiOp, NOAA concluded that the agency action, as proposed, would permanently reduce listed winter-run and spring-run Chinook prey available to the killer whales. NOAA BB.281 at 440, 573-74. For non-listed Chinook, NOAA found that hatchery production

offset mortality attributable to the CVP, but that the action disproportionately affected natural-origin Chinook and that the long-term viability of the non-listed Chinook species could not be assured. NOAA BB.281 at 443-44, 573-74.

These findings bear no resemblance to the situation before NOAA in the FCRPS consultation, as the FCRPS RPA is not likely to result in either short-term or long-term reductions of Chinook stocks available to killer whales in their coastal waters. 2008 BiOp at 9-16 to 9-19, 9-21; 2010 BiOp, § 2, at 134.⁵³ The RPA “will continue to positively affect the survival and recovery of listed salmon and steelhead,” 2010 BiOp, § 4 at 11; NOAA’s finding for the killer whales in the FCRPS BiOp were reached in full consideration of past biological opinions, data, and analyses, *see, e.g., id.*, § 2, at 133; 2008 NOAA B.12; NOAA performed a complete, updated analysis of whales on remand, NOAA CC.201; and NOAA’s findings are the product of a careful and updated review of the scientific information and are founded upon adherence to a conservative methodology, Fed. Defs.’ 2008 MSJ Mem. 73-75. NOAA’s analysis should be upheld.⁵⁴

⁵³ Plaintiffs reference agency emails evaluating whether it is scientifically supportable to presume differences between hatchery- and natural-origin Chinook. NWF Br. at 34 n. 40. This debate continued and was resolved on the merits of the science, where NOAA found that the Columbia River system data “does not support a conclusion about differences in size between hatchery- and natural-origin Chinook.” 2010 BiOp, § 2, at 134, *id.* § 4 at 11; NOAA BB.208 (Krasnow 2010) (comparing the size hatchery and natural-origin Chinook, finding more unclipped (largely natural-origin) Chinook at the lower *as well as the* higher end of the spectrum); Fed. Defs’ 2008 MSJ Mem. at 77 (Dkt. 1559). Plaintiffs’ selective citation to emails identifies nothing more than preliminary comments that were clarified “as understanding of the [] issues expanded, [and] the factual record developed.” *Friends of the Earth v. Hintz*, 800 F.2d 822, 834 (9th Cir. 1986).

⁵⁴ Plaintiffs incorrectly assert that the Action Agencies failed to consult on the Southern DPS of the Pacific eulachon, which was listed as “threatened” one month after consultation was reinitiated. NWF Br. at 35, n. 41. The agencies are currently engaged in consultation on eulachon, and the Action Agencies have determined that FCRPS operations may affect, but are not likely to adversely affect, eulachon. *See* BRS027985; BRS000072 at 72-73 (further consulting on the critical habitat designation for green sturgeon issued in October 2009). Because eulachon typically spawn in tributaries, they are also unlikely to be affected by any change in total dissolved gas levels below the Dam. BRS027985 at 27997. On the other hand, changes in water releases and improvements in predator control and water quality resulting from implementation of the FCRPS RPA may similarly benefit eulachon, as well has habitat actions in the estuary and lower Columbia River and tributaries. *Id.* In accord, the Action Agencies found that ongoing RPA implementation would not violate ESA Section 7(d), 16 U.S.C. §1536(d), as it does not foreclose the formulation or implementation of any RPA that may be developed during

D. The Administration Considered Dam Breaching.

The Nez Perce Tribe's suggestion that nothing has changed on dam breaching from the 2008 BiOp could not be farther from the truth. While dam breaching was not included in the RPA, Administration officials reviewed dam breaching when developing the AMIP. Corps 2749 at 058973. Furthermore, the independent scientists evaluating the 2008 BiOp also examined the potential benefits and detriments of dam breaching, and while they recognized the estimated long-term benefits, they also noted that those benefits may be compromised by short-term negative biological effects (construction, sediment, contaminants).⁵⁵ AMIP at 36-37; NOAA CC.121 at 8. The Administration's review ultimately determined that dam breaching was not necessary because of the improving status of the Snake River stocks and because the RPA is sufficient to avoid jeopardy. AMIP at 37. This finding is perhaps confirmed best by Oregon's decision to open fishing for SR fall Chinook in Hells Canyon for the first time in recent history.⁵⁶ As a contingency of last resort, should the Snake River stocks exceed the Significant Decline Trigger, the dam breaching study will be initiated within six months, unless the best available science demonstrates that dam breaching is not necessary to address and alleviate the biological trigger conditions for the applicable Snake River species. *Id.* at 38.

the ongoing eulachon consultation. BRS027985. Finally, the Action Agencies' "may affect" and Section 7(d) determinations are supported by NMFS's finding in the eulachon listing determination that the RPA of the 2008 BiOp, as implemented through the AMIP, would benefit eulachon. 75 Fed. Reg. 13012, 13022 (Mar. 18, 2010). Thus, Plaintiffs' claims regarding eulachon are misplaced. So, too, are Plaintiffs' claims (NWF Br. at 25, n. 28) that the agencies did not consider seeking a state certification under § 401 of the Clean Water Act, as those legal requirements are inapplicable as a matter of law to NOAA's issuance of an ITS. Fed. Defs.' 2008 MSJ Mem.at 78-89 (Dkt. 1599); Fed. Defs.' 2008 MSJ Reply at 50-55 (Dkt. 1645).

⁵⁵ It is the NPT who conveniently ignores this evaluation when it suggest that the agencies failed to consider the Court's suggestion of an independent scientific evaluation. NPT Br. at 17. Indeed, the independent scientists characterized this possible contingency as "risky business" for these ESUs. FER 15 (Costanza 7/10/09) ("Their comments stressed that it [dam breaching] is an extreme option to consider, and should be the 'last among many options' and would be 'risky business.'").

⁵⁶ See <http://www.dfw.state.or.us/news/2010/august/081910.asp> (ODFW Aug. 19, 2010 Press Release ("We've had a great spring chinook season, a huge steelhead return is on its way and now there's a new opportunity to retain fall chinook," said Jeff Yanke, ODFW district fish biologist in Enterprise. "We encourage anglers to take advantage of the excellent fall fishing in Hell's Canyon.")).

The NPT implies that the agencies have purposefully designed the dam breaching contingency so that any study will not be undertaken until it is too late. NPT Br. at 12. This argument ignores record evidence showing that the agencies are already taking the necessary steps to ensure that the study can be undertaken in a timely manner, should the contingency arise. The AMIP committed the Corps to develop a breaching study plan by March 2010. Corps 297.⁵⁷ The AMIP also calls for updating the life-cycle models and developing a module to assess the short-term, transitional, and long-term biological effects of breaching one or more dams. AMIP at 38. Since May 2010 the federal agencies have been working with the Northwest Fisheries Science Center on this modeling effort. The agencies anticipate that the result will be peer reviewed by independent scientists, in addition to being discussed with the RIOG. *See id.* at 23. These efforts will ensure that the best available science is on hand to determine whether dam breaching is necessary and to present to Congress to support any request for authorization to breach one or more dams, if and when it is determined to be necessary.

Finally, the NPT suggests that seeking authorization before these studies are completed would somehow avoid a “political fight.” NPT Br. at 18. On the contrary, seeking authorization in the abstract, especially when SR ESUs are returning in record numbers, is more likely to ensure that any such debate focuses only on politics and not the biological needs of the fish.

CONCLUSION

During the many years it has taken to develop the FCRPS BiOp, NOAA, the Corps, BOR, BPA, Tribes, States, and countless eminently qualified experts have painstakingly collaborated, evaluated, and reviewed all of the relevant science and the best methods for ensuring that these exceptional salmonid species are not only protected, but are provided with the conditions and habitats that will significantly contribute to the recovery of these species. This

⁵⁷ The draft Plan of Study was reviewed by NOAA and the other action agencies, as well as the RIOG, and the study plan was completed in March 2010. Corps 297. The Plan of Study defines the scope, work tasks, products, responsibilities, and the level of detail necessary to prepare a dam breaching feasibility study. *Id.* It also defines the authorization decision process to be followed by the Corps, should breaching be deemed necessary. *Id.*

collaboration worked: the Federal agencies, States and Tribes have reached historic agreements to identify and, importantly, *implement* hydrosystem, habitat, hatchery, and harvest actions specifically targeted to protect and enhance the condition of Columbia and Snake River salmon and steelhead. While litigation is necessarily focused on paper, this BiOp is predicated on providing fish what they need. The fish need tangible actions developed in tandem with the region's best scientists, where the unilateral views of one entity do not dictate the fate of these species. The fish need experts continually reviewing tributary and estuary habitat restoration projects in a manner that brings to bear the latest and best science on climate change. The fish need robust monitoring and adaptive management, so that that performance of the BiOp's measures can be tracked, assessed, evaluated, and modified as necessary to benefit salmon and steelhead. And the fish need oversight by entities such as NOAA, to ensure that progress is being made and the expected benefits to salmon and steelhead come to fruition. These, and hundreds of other measures and actions, were identified, developed, provided in the RPA, and collectively comprise the FCRPS BiOp.

This product of the collaboration and near-continual review has garnered the unwavering support of the United States, three States, six Tribes, and numerous other entities and experts that are dedicated to facilitating salmonid recovery in the Pacific Northwest. As demonstrated herein, the Plaintiffs' claims reach far beyond anything the law reasonably requires, and Federal Defendants respectfully request that the Court uphold the BiOp and allow the agencies to continue forging collaborative relationships with the other sovereigns, work within the framework established by the FCRPS BiOp, and implement actions to protect and conserve the Columbia and Snake River salmon and steelhead.

Respectfully submitted: December 23, 2010.

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CERTIFICATE OF SERVICE

Pursuant to Local Rule Civil 100.13(c), and F.R. Civ. P. 5(d), I certify that on December 23, 2010, the foregoing will be electronically filed with the Court's electronic court filing system, which will generate automatic service upon on all Parties enrolled to receive such notice. The following will be manually served by regular or overnight mail:

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