IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF OREGON

NATIONAL WILDLIFE FEDERATION, et al.,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES SERVICE, et al.,

Defendants.

Case No. 3:01-cv-0640-SI

OPINION AND ORDER

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Michael H. Simon, District Judge.

Intervenor-Plaintiff State of Oregon ("Oregon") and Plaintiffs (collectively, "Spill Plaintiffs") move under the Endangered Species Act ("ESA") for an injunction requiring the Federal Defendants to provide spring spill beginning in 2017 for each remaining year of the remand period at the maximum spill level that meets, but does not exceed, total dissolved gas ("TDG") criteria allowed under state law ("spill cap") as follows: (1) from April 3 through June 20 at Ice Harbor, Lower Monumental, Little Goose, and Lower Granite dams; and (2) from April 10 through June 15 at Bonneville, The Dalles, John Day, and McNary dams. The Spill Plaintiffs request this spill be on a 24-hour basis using the most advantageous pattern to reduce TDG. The requested injunction, however, would allow for reductions in spill below the spill cap by the Army Corps of Engineers ("Corps") under certain involuntary spill conditions or to address specific biological constraints, provided there is no objection from any member of the Fish Passage Advisory Committee ("FPAC"). The Spill Plaintiffs also move for an injunction requiring the Federal Defendants to operate the juvenile bypass and related Passive Integrated Transponder ("PIT") tag detection system beginning March 1 of each year, commencing in 2017. Currently, this system begins in mid- to late March. The Nez Perce Tribe supports both motions.

Plaintiffs also move under the National Environmental Procedure Act ("NEPA") for an injunction prohibiting the Corps from expending any additional funds on: (1) two planned projects at Ice Harbor Dam, expected to cost approximately $37 million; and (2) any new capital improvement projects or expansion of existing projects at any of the four Lower Snake River dams that would cost more than one million dollars, in the absence of prior approval from the Court. Oregon and the Nez Perce Tribe also support this motion. For the following reasons, both motions are granted in part and denied in part.

STANDARDS

A. Permanent or Preliminary Injunction

Plaintiffs and Oregon explain that they seek "permanent" injunctions until the Federal Defendants comply with the ESA and NEPA. The Federal Defendants, Intervenor-Defendants, and the Amici Curiae who oppose the requested injunctions (collectively, "Defendants") variously discuss both preliminary and permanent injunction standards.

A plaintiff seeking a permanent injunction must show:

> "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction."

Cottonwood Envt'l Law Ctr v. U.S. Forest Svc., 789 F.3d 1075, 1088 (9th Cir. 2015) (quoting eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 391 (2006)).

When seeking a preliminary injunction, a plaintiff must show that: (1) he or she is likely to succeed on the merits; (2) he or she is likely to suffer irreparable harm in the absence of preliminary relief; (3) the balance of equities tips in his or her favor; and (4) that an injunction is in the public interest. Winter v. Nat. Res. Defense Council, Inc., 555 U.S. 7, 20 (2008). In the Ninth Circuit, a plaintiff seeking a preliminary injunction alternatively may show "'serious questions going to the merits' and a hardship balance that tips sharply toward the plaintiff, assuming the other two elements of the Winter test are also met." All. for the Wild Rockies v. Cottrell, 632 F.3d 1127, 1132 (9th Cir. 2011). The standard for a permanent injunction is similar, but not identical, to the standard required for a preliminary injunction. See Amoco Prod. Co. v. Vill. of Gambell, 480 U.S. 531, 546 n. 12 (1987) ("The standard for a preliminary injunction is

essentially the same as for a permanent injunction with the exception that the plaintiff must show a likelihood of success on the merits rather than actual success.").

Injunctions, such as those sought by Plaintiffs and Oregon, are not preliminary in the conventional sense because the Court has already decided the merits of this case. The relief now being sought, however, also is not permanent in the conventional sense because it may be lifted after the Federal Defendants comply with the Court's remand order by preparing a new biological opinion and following NEPA. See S. Yuba River Citizens League v. Nat'l Marine Fisheries Serv., 804 F. Supp. 2d 1045, 1052 (E.D. Cal. 2011). Thus, in practical effect, Plaintiffs seek "interim injunctive measures." Id. Because the Court has already decided the merits of the ESA and NEPA claims in this case, the Court finds the factors for granting permanent injunctive relief to be more appropriate in considering the pending motions, but notes that the requested injunctions will be in place only for a limited duration.[1]

B. Injunction Under the ESA

When considering a motion for an injunction under the ESA, "the ESA strips courts of at least some of their equitable discretion in determining whether injunctive relief is warranted." Cottonwood, 789 F.3d at 1090. In Cottonwood, the Ninth Circuit discussed the Supreme Court's decision in Tennessee Valley Authority v. Hill, 437 U.S. 153 (1978), and explained how Congress in that case "remove[d] several factors in the four-factor test from a court's equitable jurisdiction." The Ninth Circuit stated:

[1] Many Defendants also argue that the Court should apply the heightened standard for a "mandatory" injunction because the Spill Plaintiffs request the Corps to take affirmative action that is different from the "status quo." The states of Idaho and Montana, however, concede that the "law of the case" requires application of the regular, or "prohibitory," injunction standard because that is the standard that Judge Redden and the Ninth Circuit previously used in this case. In addition, it is the "status quo" that is alleged to be harming the listed species, which is the harm to be mitigated. See Wash. Toxics Coal. v. Envtl. Prot. Agency, 413 F.3d 1024, 1035 (9th Cir. 2005).

> Hill held that courts do not have discretion to balance the parties' competing interests in ESA cases because Congress "afford[ed] first priority to the declared national policy of saving endangered species." 437 U.S. at 185. Hill also held that Congress established an unparalleled public interest in the "incalculable" value of preserving endangered species. Id. at 187-88. It is the incalculability of the injury that renders the "remedies available at law, such as monetary damages . . . inadequate." See eBay, 547 U.S. at 391.

Cottonwood, 789 F.3d at 1090 (alterations in original). The Ninth Circuit concluded that although three of the four injunction factors are presumed in an ESA case, "there is no presumption of irreparable injury where there has been a procedural violation in ESA cases." Id. at 1091. The Ninth Circuit noted, however, that "in light of the stated purposes of the ESA in conserving endangered and threatened species and the ecosystems that support them, establishing irreparable injury should not be an onerous task for plaintiffs." Id.

If a court determines that injunctive relief is warranted, such relief must be tailored to remedy the specific harm. Melendres v. Arpaio, 784 F.3d 1254, 1265 (9th Cir. 2015) ("We have long held that injunctive relief must be tailored to remedy the specific harm alleged." (quotation marks omitted)). "Nevertheless, the district court has broad discretion in fashioning a remedy." Id. Further, an "enjoined party's history of noncompliance with prior orders can justify greater court involvement than is ordinarily permitted." Id. (quotation marks omitted).

C. Injunction Under NEPA

In considering injunctions under NEPA, a court applies the normal four-factor test. The Supreme Court has clarified, however, that courts may not put their "thumb on the scales" in considering injunctive relief under NEPA and may not presume any factor as being met or that an injunction is the proper remedy. Monsanto Co. v. Geertson Seed Farms, 561 U.S. 139, 157 (2010).

BACKGROUND

This case has a long history.[2] Its background is well known to the parties and was discussed in the Court's most recent Opinion and Order, which resolved the parties' cross-motions for summary judgment ("2016 Opinion"). See NMFS V, 184 F. Supp. 3d at 869-72, 879-83. Six biological opinions and supplemental biological opinions[3] relating to the operation of the Federal Columbia River Power System ("FCRPS") have been invalidated in this case by three different federal district judges. Throughout the history of this litigation, the Court has expressed significant concern regarding the harm caused to ESA-listed species of salmonids by the operation of the dams on the lower Columbia and Snake rivers.

As relevant here, in its 2016 Opinion, the Court concluded that NOAA Fisheries violated the ESA by adopting the 2014 Biological Opinion ("2014 BiOp"), in part because the 2014 BiOp: (1) relied on an unsound methodology for evaluating whether operations of the FCRPS would jeopardize the continued existence of the listed species; (2) did not adequately take into account ongoing low abundance levels; (3) did not rationally address recovery; (4) did not adequately consider declining recruits-per-spawner (or returns-per-spawner); (5) relied on immediate, specific numeric survival improvements from uncertain habitat improvement actions with uncertain benefits, without allowing any "cushion" in case all of the actions or their

[2] Several previous court opinions from this case will be discussed in this Opinion and Order. They are: *Nat'l Wildlife Fed. v. Nat'l Marine Fisheries Serv.*, 2005 WL 1398223, at *3 (D. Or. June 10, 2005) (granting in part preliminary injunction regarding spill) ("NMFS I"), *aff'd* in part by 422 F.3d 782, 788-93 (9th Cir. 2005) ("NMFS II"); *Nat'l Wildlife Fed. v. Nat'l Marine* Fisheries Serv., 524 F.3d 917, 924 (9th Cir. 2007) (invalidating 2004 BiOp) ("NMFS III"); *Nat'l* Wildlife Fed*. v. Nat'l Marine Fisheries Serv.*, 839 F. Supp. 2d 1117 (D. Or. 2011) (invalidating 2008 and 2010 BiOps) ("NMFS IV"); *Nat'l Wildlife Fed. v. Nat'l Marine Fisheries Serv.*, 184 F. Supp. 3d 861, 869-72, 879-83 (D. Or. 2016) (invaliding 2014 BiOp) ("NMFS V").

[3] These biological and supplemental biological opinions were issued in 1993, 2000, 2004, 2008, 2010, and 2014.

expected benefits were not realized during the BiOp period; and (6) did not adequately consider the effects of climate change. Id. at 898-923. The Court also concluded that the Corps and the Bureau of Reclamation ("BOR") violated NEPA by failing to prepare a single (or comprehensive) environmental impact statement ("EIS"). The Court sought further briefing on the appropriate timing for NEPA compliance and ultimately ordered a five-year schedule, as requested by the Federal Defendants.

DISCUSSION

A. Federal Rule of Civil Procedure 60(b)

Defendants argue that Plaintiffs' and Oregon's motions must be denied because they fail to meet the requirements of Federal Rule of Civil Procedure Rule 60(b). Plaintiffs and Oregon dispute that Rule 60(b) even applies. The Court need not determine whether Rule 60(b) applies because even if it does, the Court would allow Plaintiffs and Oregon to proceed with their motions under Rule 60(b)(6).

In the 2016 Opinion, the Court invited supplemental briefing on "proposed timing for a reasonable NEPA process and other arguments regarding the scope of appropriate injunctive relief relating to NEPA." NMFS V, 184 F. Supp. 3d at 948. Although the Court was aware that in the past there had been allegations that the Federal Defendants had not complied with agreed-upon spill, no issue related to spill was before the Court, and to the Court's knowledge no such problems had occurred in recent years. Thus, the Court was not immediately concerned with crafting an injunction relating to spill, but was instead focused on an appropriate NEPA injunction and its timing.

In responding to the Federal Defendants' proposal regarding the timing of NEPA compliance, Plaintiffs and Oregon (in a joint brief) raised the possibility of requesting the

injunctions they seek in the pending motions. ECF 2074 at 23-26. In response, the Federal Defendants stated:

> Plaintiffs devote over three pages to pondering whether injunctive relief may be appropriate. Plaintiffs are free to move the Court for relief if at some future point they deem it necessary. But they have not done so now, and the Court should not delay entering an order providing a deadline for completing the NEPA process so that the parties and region can move forward in addressing the Court's May 4, 2016 Opinion.

ECF 2078 at 34-35 (emphasis added).

The Court and the parties then focused their immediate efforts on finalizing a remand order that established the timing for NEPA compliance, instead of briefing the additional injunctions now sought by Plaintiffs and Oregon. The Federal Defendants expressly acknowledged that Plaintiffs and Oregon could move the Court at a later time for such injunctions rather than slowing down the process of completing the Court's order establishing the NEPA deadlines.

Additionally, the Court expressly retained jurisdiction over this case to ensure that the Federal Defendants: (1) develop appropriate mitigation measures to avoid jeopardy (which could potentially include additional spill); (2) produce and file a biological opinion that complies with the ESA and APA; and (3) prepare an EIS that complies with NEPA (which could potentially include requiring that the agencies avoid limiting the choice of reasonable alternatives and committing resources that prejudice the selection of alternatives). NMFS V, 184 F. Supp. 3d at 950. Accordingly, assuming without deciding that Rule 60(b) applies, the Court finds that these reasons constitute "other reason[s] that justif[y] relief." Fed. R. Civ. P. 60(b)(6).

B. Whether the Corps and BOR violated the ESA

In the 2016 Opinion, the Court did not expressly address Plaintiffs' Second Claim for Relief in their Seventh Amended Complaint, which alleges that the Corps and BOR violated

Section 7 of the ESA by relying on the 2008, 2010, and 2014 BiOps without conducting an independent analysis to ensure that their activities did not jeopardize the listed species. Defendants argue that this means that Plaintiffs did not prevail on this claim.[4] Plaintiffs argue that it can be implied that they did prevail because these BiOps have been invalidated by the Court, and if it cannot be so implied, the Court should now so find.

In the conclusion of the 2016 Opinion, the Court stated that Defendants' "motions are granted with respect to the claims that NOAA Fisheries did not violate the ESA and the APA in determining in the 2014 BiOp that the RPA does not adversely modify critical habitat and is not likely adversely to affect endangered Southern Resident Killer Whales, and are denied in all other respects." NMFS V, 184 F. Supp. 3d at 950 (emphasis added). Thus, it cannot reasonably be interpreted that in the 2016 Opinion, the Court ruled for the Federal Defendants on this claim and found that the Corps and BOR did not violate the ESA.

In the 2016 Opinion, the Court invalidated the 2014 BiOp, on which the Corps and BOR relied in issuing their 2014 Records of Decision. Notably, in granting Plaintiffs' motions for summary judgment, the Court did not include any similar limitation as it did in granting the Defendants' motions. The Court described the motions it was granting without denying Plaintiffs' motions in all other respects. Thus, even though the Court did not expressly grant Plaintiffs' motion that the Corps and BOR violated the ESA, that conclusion is reasonably implied from the 2016 Opinion.

To the extent it cannot reasonably be implied from the 2016 Opinion, the Court now so finds. The evidence shows that in reaching their 2014 Records of Decision, the Corps and BOR did not conduct any independent analysis but solely relied on the now-invalidated 2014 BiOp.

[4] The Court focused on the arguments emphasized by the parties in their summary judgment briefs. Any failure specifically to address this claim was inadvertent.

This is a violation of the ESA, for the same reasons previously described by Judge Redden regarding an earlier biological opinion:

> In my May 2005 opinion, I found the 2004 BiOp violates the ESA. I now conclude that, in light of their reliance on the 2004 BiOp, the Record of Consultation and Statement of Decision (ROD) issued by the Corps on January 3, 2005, and the ROD issued by the BOR on January 12, 2005, also violate the ESA . . . . The RODs provide no specific analysis nor point to any record evidence to support the assertion that the action agencies conducted independent assessments and reached independent and rational conclusions in adopting them. The RODs reveal that these agencies embraced the same fundamental legal flaws that NOAA attempted to use to justify its circumscription of the action subject to jeopardy analysis. I find, therefore, that in substance the RODs relied on the no-jeopardy finding of the 2004 BiOp without an independent rational basis for doing so.

NMFS I, 2005 WL 1398223, at *3.

C. Spill Injunction

1. Irreparable Harm

The Federal Defendants repeatedly have concluded that the operations of the FCRPS jeopardize the listed species—thus the need for reasonable and prudent alternatives ("RPA") in the biological opinions. In the 2016 Opinion, the Court emphasized that despite the 73 RPAs from the 2008 and 2014 BiOps, the most recent data shows that the listed species remain in a "precarious," "imperiled," and "perilous" state. See NMFS V, 184 F. Supp. 3d at 872, 876, 879, 890, 892, 918, 947 (citing relevant data); see also NMFS III, 524 F.3d at 933 (emphasizing the "highly precarious status" of the species at issue in this case).

In light of the ongoing imperiled status of the listed species, the Court does not find any reason to disturb the following finding of Judge Redden in his 2011 Opinion and Order:

> As I have previously found, there is ample evidence in the record that indicates that the operation of the FCRPS causes substantial harm to listed salmonids. . . . NOAA Fisheries acknowledges that the existence and operation of the dams accounts for most of the

> mortality of juveniles migrating through the FCRPS. As in the past, I find that irreparable harm will result to listed species as a result of the operation of the FCRPS.

NMFS IV, 839 F. Supp. 2d at 1131. Accordingly, continuation of the status quo is likely to result in irreparable harm to the listed species.[5]

The Federal Defendants and some intervenors argue that the Spill Plaintiffs must prove that operating with Court-ordered spill during the next two years will pose an imminent threat at the species level. This is not the appropriate standard. As the Ninth Circuit discussed in affirming Judge Redden's previous spill order, after the Court has found that the operation of the FCRPS causes irreparable harm to the species and has invalidated the governing biological opinion, the Court is faced with the choice of either allowing an operation that violates the ESA to continue or ordering modifications. NMFS II, 422 F.3d at 796. The Ninth Circuit gave no indication that to order modifications would require a separate finding that during the time remaining in the remand period the species is in imminent danger of becoming extinct or that only the operations relating to the proposed modification (e.g., spill) must be causing the irreparable harm.[6] To do so runs contrary to the ESA. See Nat'l Wildlife Fed. v. Burlington N. R.R., 23 F.3d 1508, 1512 n. 8

[5] Defendant-Intervenor RiverPartners argues that the Spill Plaintiffs must connect any harm to the species to themselves and that they have failed to do so. RiverPartners cites in their brief, and relied on at oral argument, Idaho Rivers United v. United States Army Corps of Engineers, 156 F. Supp. 3d 1252 (W.D. Wash. 2015), for this proposition. Idaho Rivers, however, is inapposite. In that case, the court found that the plaintiffs had adequately shown that harm to the species, the lamprey, would affect the Nez Perce Tribe. Id. at 1260-61. What the plaintiffs did not show was that the lamprey was at risk of irreparable harm. Id. at 1261-62. Thus, because the plaintiffs' harm was derivative of the lamprey's harm, and harm to the lamprey was not shown, harm to the plaintiffs was not shown. Id. Here, the Court has found harm to the listed species. Thus, Idaho Rivers is distinguishable. The Court also finds that the Spill Plaintiffs have adequately shown how harm to the listed species will affect the Spill Plaintiffs.

[6] To the contrary, even though the injunction at issue involved only spill, Judge Redden and the Ninth Circuit considered the harm caused by the full operation of the FCRPS, not just spill or lack thereof.

(9th Cir. 1994) ("We are not saying that a threat of extinction to the species is required before an injunction may issue under the ESA. This would be contrary to the spirit of the statute, whose goal of preserving threatened and endangered species can be achieved through incremental steps."). Additionally, as the Court has already found, operation of the FCRPS jeopardizes the listed species at a species level—the dams are the largest source of mortality of juveniles. Moreover, even if the operation of the FCRPS did not jeopardize the species, proving harm to the entire species is not necessary for an injunction under ESA Section 7, rather "[e]vidence that the [listed] salmon will suffer imminent harm of any magnitude is sufficient to warrant injunctive relief." Yurok Tribe v. United States Bureau of Reclamation, 2017 WL 512845, at *24 (N.D. Cal. Feb. 8, 2017) (citing Big Country Foods, Inc. v. Bd. of Educ., 868 F.2d 1085, 1088 (9th Cir. 1989); Nat'l Wildlife Fed. v. Burlington N. R.R., 23 F.3d 1508, 1512 n.8 (9th Cir. 1994); Marbled Murrelet v. Babbitt, 83 F.3d 1060, 1066 (9th Cir. 1996)). This is not a case where the court is considering the loss of only a small number of animals within the listed species. See, e.g., Defenders of Wildlife v. Salazar, 812 F. Supp. 2d 1205, 1209-10 (D. Mont. 2009) (concluding that the loss of a few individual wolves did not constitute irreparable harm when there was no evidence that the loss "would be significant for the species as a whole").

2. Other Injunction Factors

The ESA "strips" the Court of the equitable discretion to weigh the other traditional factors relating to injunctive relief. Cottonwood, 789 F.3d at 1090. The Court does, however, consider Defendants' arguments relating to the potential harm to the listed species and to human life versus the benefits asserted by the Spill Plaintiffs in evaluating the appropriate injunctive relief. As instructed by the Supreme Court and the Ninth Circuit, however, the Court does not weigh the public interest or balance the equities, for example by weighing any potential

implications on the power system or costs to the Federal Defendants. Id. And the Court presumes that monetary damages are insufficient. Id.

3. Whether Injunctive Relief is Appropriate

The current situation is similar to the situation that was before the Ninth Circuit when it affirmed in part Judge Redden's previous injunction in this case relating to spill. See NMFS II, 422 F.3d at 795-99. The Court has invalidated the 2014 BiOp, found that the listed species remain in an imperiled state, and concluded that continued operation of the FCRPS is likely to result in irreparable harm to the listed species. The question now before the Court is "what interim remedy [is] appropriate to redress the ESA violations." Id. at 795. As before, one of the "primary complications of this case is that the operations in question are, by necessity, ongoing." Id. This means that the Court is

> faced with a continuing operation that it had concluded would cause irreparable harm to threatened species. Thus, the district court [is] confronted with two choices: (1) continue the status quo, the foundation of which the court had rejected as violative of the ESA and the continuation of which it had concluded [is likely to] irreparably harm listed species, or (2) order modifications.

Id. at 796.

The Court intends to order modifications. As discussed in the 2016 Opinion, the listed species are highly vulnerable for many reasons, including because they have precariously remained at low abundance for some time, are susceptible to devastating effects from climactic events, such as occurred in 2015, and are without any survival "cushion" in the 2014 BiOp and its RPAs.

4. Whether Additional Spill is Supported

All parties agree that previously-ordered spill has generated survival benefits and has been good for salmonid survival. The current dispute lies in whether the benefits of additional

spill has undergone sufficient study and is sufficiently supported. The parties, intervenors, and amici provide competing expert declarations discussing the purported benefits and potential downsides of additional spill. Additionally, the Spill Plaintiffs primarily rely on the Comparative Survival Study ("CSS") annual reports, workshops, and other analyses that study and hypothesize that additional spill will provide significant increased juvenile survival and adult returns, and Defendants primarily rely on the Independent Scientific Advisory Board's ("ISAB")[7] February 20, 2014, review of a spill experiment proposal based on a 2013 CSS study.

The spill experiment proposal reviewed by ISAB involved spill at higher levels than requested in the current injunction—125 percent of TDG in the tailrace of each dam. The current request is for 115 percent in the forebay and 120 percent in the tailrace. As the Spill Plaintiffs point out, the Corps itself has explained that spill at this level is safe:

> The GBT monitoring program has consistently shown over the years of implementation that signs of GBT are minimal when TDG is managed to the criteria levels of 115/120 percent TDG. Historically signs of GBT do not approach the action criteria until TDG levels are near 130 percent supersaturation levels in the tailraces, or forebays, of dams. The 2013 TDG was managed close to the 115/120 percent criteria, and the low incidence of signs of GBT observed this year reflects that management.

ECF 2165-4 at 14 (Bowles Reply Decl. Ex. 8 at 14).

Additionally, a close review of ISAB's critique shows that ISAB's primary concern was that the spill experiment proposal was not a detailed study with a hypothesis, study design, consideration of various approaches, updated data, monitoring, and adaptive management. See ECF 2146 (ISAB report). ISAB concluded that it lacked sufficient information to answer basic questions regarding the study, such as whether it had an adequately researched hypothesis. Id.

[7] ISAB serves NOAA Fisheries and others by providing independent scientific advice and recommendations regarding relevant scientific issues.

at 97 (report at 4). The underlying concept that increased spill may well benefit salmonids, however, was not rejected. To the contrary, ISAB noted:

> Despite these concerns with the statistical analyses used to support implementation of the spill test, it appears that the increased spill hypothesis stands as a possible candidate for testing. Other changes to hydrosystem operations have so far been inadequate to meet SAR targets required to conserve endangered salmon populations, even with structural changes that have been made at the dams such as surface spill weirs. It appears that increasing the amount of water spilled at lower Columbia and Snake River dams has merit as a hypothesis to test, but additional review of literature and analysis of data would be worthwhile.
>
> Increasing spill is expected to allow a greater proportion of migrants to avoid the powerhouse intakes and speed their migration through forebays.

Id. at 98 (ISAB report at 5). ISAB also stressed the importance of monitoring and adaptive management in this type of experiment. Id. at 100-101 (ISAB report at 7-8).

Thus, ISAB concluded that additional spill appears to have merit and is worth testing. ISAB is not alone in this conclusion. Others, in addition to the CSS, have similarly called for increasing spill, or at least for testing increased spill. See Howard A. Schaller, et al., Evaluating River Management During Seaward Migration to Recover Columbia River Stream-type Chinook Salmon Considering the Variation in Marine Conditions, Can. J. Fish. Aquat. Sci. Vol. 71 (2014) ("Our study highlights the importance of considering river management options in face of variable ocean conditions for Snake River Chinook salmon. In particular, our retrospective SRI [survival rate index] regression results, and those of Petrosky and Schaller (2010) and Haeseker et al. (2012) suggest that hydrosystem-related direct and delayed mortality may be reduced substantially through actions (e.g. spill, surface passage, increases in water velocity through drawdown, or dam removal) that reduce the number of powerhouse passages, speed water velocity, and juvenile migrations, as well as reduce reliance on juvenile collection and

transportation. . . . A practical management experiment would be to evaluate increasing managed spill levels at the dams during the spring migration period and evaluate the population responses on the results of empirical survival estimates (Haeseker et al. 2012).") (NMFS037802); Steven L. Haeseker, et al., Assessing Freshwater and Marine Environmental Influences on Life-Stage-Specific Survival Rates of Snake River Spring-Summer Chinook Salmon and Steelhead, Transactions of the American Fisheries Society, 141:1, 121-38 (2012) ("In conclusion, the models that were developed for characterizing variation in overall life cycle morality rates indicate that increases in spill levels and reductions in water transit times are expected to increase stage-specific survival rates . . . as well as cumulative smolt-to-adult survival rates. Across a range of ocean conditions, higher spill levels and reductions in water transit time are expected to result in higher SARs than would occur with lower spill levels and higher water transit times. . . . These predictions would provide quantitative, testable hypotheses on the predicted survival responses that could occur under a true adaptive management experiment conducted within the FCRPS, where spill and water transit times are extended beyond the range of available data and the resulting survival rates are monitored to determine whether the expected increases are realized.") (NMFS012460); C.E. Petrosky and H.A. Schaller, Influence of River Conditions During Seaward Migration and Ocean Conditions on Survival Rates of Snake River Chinook Salmon and Steelhead, Ecology of Freshwater Fish 19:520-36 (2010) ("Given projections for degrading ocean conditions (i.e., global warming), our analysis suggests that a precautionary management approach would focus on improving in-river migration conditions by reducing WTT [water travel time], relying on increased spill to reduce passage through powerhouse turbines and collection/bypass systems, or other actions that would increase water

velocity, reduce delay at dams and substantially reduce FTT [fish travel time] through the FCRPS.") (NMFS035961).

Despite these widespread calls for testing increased spill, the Federal Defendants do not appear to have crafted any such experiment. At oral argument, counsel for the Federal Defendants indicated that in response to the 2016 Opinion, they "heard the Court," are moving forward to "solve these issues," have been "prodded" in the direction of additional spill, and thus additional spill may be considered as an action for the next biological opinion. But, as the Court has repeatedly found over the last 20 years, the listed species are in need of additional survival protections now. "Kicking the can down the road" after invalidating each of the FCRPS biological opinions, although necessary under the circumstances of this case, provides little protection to the listed species that are in an ongoing state of peril. As Judge Redden found in 2005, however,—over the Federal Defendants, intervenors, and amici's vigorous objections—spill is something that can offer immediate survival benefit and is worth trying. That conclusion by Judge Redden has proven accurate, as all parties now agree. The Court finds it similarly applicable today, if implemented appropriately.

The Court also finds particularly instructive the Declaration of Bill Tweit, submitted in support of the State of Washington's opposition to the requested injunction. Mr. Tweit states that "there is a growing scientific body of evidence from the decades of data on the beneficial value of spill at the higher levels seen in recent in years in promoting juvenile survivals and subsequent adult returns." ECF 2137 at 2 (Decl. ¶ 2). He continues, noting that "[c]onducting effective scientific investigations, while also allowing operators and fish managers the latitude to make in-season modifications as necessary to protect out-migrating and returning salmonids from unforeseen circumstances, is complex and requires flexibility." Id. (Decl. ¶ 3). Mr. Tweit

recognizes the "increasing consensus among federal, state, and tribal researchers and fish managers that increased spill has the potential to appreciably increase the probability that Snake River spring/summer Chinook and steelhead" will attain significant survival improvement. Id. at 10 (Decl. ¶ 15). He notes that Oregon's proposal of additional spring spill "is credible, and deserving of further scientific investigation." Id. at 10 (Decl. ¶ 16). He adds, however, that it is problematic in "that it treats spill as a uniform variable at each of the FCRPS dams, but it is well known that each dam must also be considered individually in designing spill operations, particularly at the higher levels of spill proposed by Oregon." Id. He concludes by stating that "[i]t is prudent to take the time necessary to craft a spill experiment . . . to maximize benefits [and] minimize costs and impacts" and that "[i]deally, the work to develop a new spill regime would be scheduled with a goal to implement by the 2018 migration season and carried forward into a the new bridge biological opinion beginning in 2019[.]" Id. at 13 (Decl. ¶ 23). Thus, Mr. Tweit (and the State of Washington) did not dispute the science behind the Spill Plaintiffs' request, only the timing and specific method of implementation.

The concerns expressed by Mr. Tweit are not unique to him. In reviewing the voluminous record relating to this motion, the Court notes that much of the opposition to the injunction is not based on a concern that increased spill at the requested level will necessarily harm salmonids, but instead on "rushing" the process, treating spill at all eight dams the same, and changing the adaptive management process to one that allows Oregon an operational "veto." As Ritchie J. Graves, Chief of the Columbia Hydropower Branch for the NMFS West Coast Region (Interior Columbia Basin Office) states in his Reply Declaration, he is not opposed to operational studies to reduce mortality; he is "opposed to 'rushing' into an action that could be detrimental to fish or that would provide no ability to scientifically assess the effectiveness of the action." ECF 2181

at 2 (Reply Decl. ¶ 2); see also ECF 2139 at 31 (Graves Decl. ¶ 71) (noting that NMFS is "prepared to engage our partners through the regional forum process" and others as needed regarding testing increased spill in a "rigorous" and "thoroughly vetted" manner).

There is nothing in the record to indicate that the current spill level is the precise or "magic" level that achieves all the possible survival benefits with the minimum of risk. The CSS analyses support that there will be beneficial effects of increasing spill to the spill caps. Defendants do not offer similarly scientific studies showing that the CSS analyses are wrong. Rather they challenge whether the proof relied on by CSS is good enough, properly vetted, or in the correct format. As the court in Yurok Tribe concluded, however, in response to similar arguments that evidence of flushing flows was not certain to reduce harm to listed salmon in the Klamath River and had not been "properly tested through a comprehensive scientific process," the ESA does not require perfect knowledge to support an injunction to protect a listed species, rather it requires action to protect a species consistent with the best available scientific information. Yurok Tribe, 2017 WL 512845, at *29.

The CSS has studied and described the benefits of increased spill. ISAB and others have encouraged testing of increased spill. Oregon's experts describe the benefits of increased spill. Further, as the State of Washington has acknowledged, there is a growing scientific body of evidence and growing consensus supporting higher levels of spill. Although Defendants provide expert testimony expressing concerns regarding increased spill, most of these concerns can be addressed with an appropriately-tailored injunction. Other expressed concerns are not appropriate in the context of an injunction under the ESA or the Court finds not as compelling as the evidence supporting additional spill. Accordingly, the Court concludes that there is sufficient scientific support for a limited injunction requiring increased spill to benefit the listed species.

5. Tailored Injunctive Relief

a. Timing for additional spill

The Court has found that the ongoing operation of the FCRPS is likely to cause irreparable harm to the listed species. This weighs in favor of granting an immediate injunction. The Court, however, shares many of the concerns raised by Defendants that implementing increased spill beginning April 3, 2017, is too rushed and does not provide sufficient time to ensure that the increased spill will not cause unintended negative consequences.

The Court recognizes that concerns for both human safety and the listed species require calculating appropriate spill patterns in advance of increasing spill. As Defendants describe, the Corps implements spill using particular spill patterns at each dam, and any change to spill can change the spill pattern and result in eddies or other flow issues that might delay or preclude juveniles from downstream migration, prevent adults from upstream migration, and negatively affect navigation through the lock systems.

The Corps has a testing facility in Vicksburg, Mississippi—the Engineer Research and Development Center ("ERDC"). This facility contains scale models of all eight dams and provides the ability to test spill patterns resulting from increased spill. These models also allow testing of spill patterns and flow to determine effects on navigation and the lock systems of the dams, particularly with regard to tug and barge tows. See ECF 2154 at 5-6 (Decl. of Robert Rich ¶ 16). Testing at the ERDC can be time-consuming because there are other agencies that use the facility, so one has to get "in the queue;" further, the models have to be repaired or rebuilt, and there are trial-and-error periods of testing spill patterns to find the pattern that is most advantageous. See id. at 6 (¶¶ 18-19). Delaying the increase in spill until the 2018 spring migration season provides time for testing and development of appropriate spill patterns that will maximize juvenile migration, minimize harm to juveniles, minimize harm to adult migration, and

protect human life in the navigation system.[8] Intervenor-Defendant Inland Ports and Navigation conceded at oral argument that delaying the increased spill injunction until 2018 would resolve its concerns regarding human safety. The Federal Defendants conceded that delaying until 2018 would resolve concerns regarding having enough time to test for appropriate spill patterns.

The Court also recognizes that each dam is unique and an "across-the-board" approach to spill is likely not the most effective means to increase salmonid survival at each dam. There are specific considerations at each dam that affect both juvenile and adult migration, and providing time to study and prepare for the increase in spill will allow proper analyses on the best methodology for each dam. Additionally, it also allows sufficient time to consider whether there may be other unintended negative consequences unrelated to salmonid survival, such as the concern expressed with erosion relating to Bonneville Dam.

The Spill Plaintiffs have shown a willingness for spill to be tailored to the needs of each dam as Defendants have raised specific concerns (e.g., offering to reduce requested spill at Bonneville to avoid erosion and at John Day to avoid causing an eddy). The problem with this approach is that Defendants have been raising these concerns in a rushed period while briefing the pending motion. There needs to be sufficient time to identify, test, and address the dam-specific spill needs and issues. Although the Court intends to provide for a robust adaptive management program to allow flexibility to respond to such unintended consequences, having adequate time to prepare beforehand should reduce the number and extent of unintended negative consequences and thus will reduce the number of fish that die while awaiting changes to be implemented under adaptive management.

[8] The Court notes that there must be a way safely to handle navigation during increased spill because there have been times when involuntary spill has been required at levels equal to or greater than those requested by the Spill Plaintiffs.

b. Adaptive management

The Spill Plaintiffs request a new system of adaptive management in which the Corps may make unilateral adjustments to spill under certain involuntary spill conditions and can only make spill adjustment for biological conditions if no member of the FPAC objects. The Court is not inclined at this time to order a new system for implementation, monitoring, and adaptive management of additional court-ordered spill. As explained by Juliet H. Ammann, Chief, Reservoir Control Center, Northwestern Division of the Corps, there is a system currently in place that has been implementing existing court-ordered spill. See ECF 2140 at 7-9 (Decl. ¶¶ 16-22). This system includes the Fish Passage Operations and Maintenance group, Technical Management Team ("TMT"), and Regional Implementation Oversight Group ("RIOG"). Specifically, TMT is tasked with recommending real-time operations through monitoring river conditions and provides opportunities for making adjustments. Id. at 8 (Decl. ¶ 20). TMT can submit requests to consider changes to planned operations, and if consensus is not reached, RIOG will resolve the issue. Id. at 9 (Decl. ¶ 21). The Court also remains available to the parties.

The Spill Plaintiffs offer no evidence that the current system is not sufficiently working to be able to implement additional spill. The Spill Plaintiffs express concern that minority voices need the opportunity to be heard and that current decisionmakers are more policy-focused than science-driven. This latter concern was also echoed by Defendant-Intervenor CSRIA. The Court appreciates that there may be a different system that could be implemented that would include more scientists. But the Court leaves such decisions in the first instance to be made by the experts in the region. Accordingly, at this time, the Court declines to mandate that adaptive management be through a system requiring unanimity among the members of the FPAC. The parties shall confer on an appropriate adaptive management system. If agreement is not reached, the Court will leave the current system (using TMT and RIOG) in place. If, after additional spill

begins, the Spill Plaintiffs or any other party has evidence that the current system is not working, that party may then file a motion with the Court.

c. Spill implementation plan and injunction order

Because the Court is not ordering increased spill to begin until the spring 2018 migration season, the parties and experts in the region have sufficient time to consider an appropriate protocol and methodology for spill at each dam, incorporating the most beneficial spill patterns. Moreover, the Federal Defendants argue that the Spill Plaintiffs' proposed injunction is inappropriate because no shorter-term, within season tests have been performed on any of the dams using increased spill. Now the Federal Defendants have the 2017 spring migration season to conduct short-term tests to consider at least the immediate effects of increased spill. They can evaluate whether unexpected eddies or other problems arise and make immediate adjustments without worrying about being in violation of a court order. These types of tests should inform the experts in the region as they develop appropriate protocols for increased spill in 2018.

The Court will set periodic status conferences to ensure that the parties are making sufficient progress toward a spill implementation plan and proposed injunction order. The Court expects the parties, amici, and other regional experts to work together to reach consensus. If the parties cannot reach agreement, the Court will set a briefing schedule and further hearings to resolve any outstanding issues before the 2018 spring migration season.

6. PIT Tag Monitoring

The Spill Plaintiffs assert that there are some indicators that certain listed species are migrating early. The Spill Plaintiffs request that the Federal Defendants begin PIT tag monitoring on March 1 of each year, using established smolt monitoring protocols. The Spill Plaintiffs argue that early monitoring will provide data regarding the important early "tail" of the salmon and steelhead runs, which will help inform future management decisions. The Spill

Plaintiffs offer expert testimony that early monitoring will provide a biological benefit by providing an alternative to turbine passage for outmigrating fish during the pre-spill period and that the early and late tails of a run are particularly important for species diversity. The State of Washington, through its expert Mr. Tweit, agrees that the proposal for earlier PIT tag monitoring "should be considered for immediate implementation. There is strong scientific evidence that the tails of salmon and steelhead runs contain a disproportionate amount of the population traits that support adaptation to environmental changes, such as the conditions witnessed in 2015. Collection of this additional data should begin now . . . ." ECF 2137 at 11 (Decl. ¶ 17).

Defendants do not dispute that early and late tails of a run are important for diversity. Nor do they dispute that there is some evidence that fish are migrating earlier, although they do question the volume of fish that may be migrating early. The primary objections to early PIT tag monitoring are that it is not feasible to begin in 2017 and that Oregon should have made this request through the regional process and not through the Court.

The Court agrees that it is too late this year to begin earlier PIT tag monitoring in 2017. But in light of the importance of the tails of a run for diversity and species adaptation, the Court orders that PIT tag monitoring begin on March 1 of each year of the remand period, beginning in 2018.

D. NEPA Injunction

Plaintiffs argue that the Court should enjoin large capital expenditures at the four Lower Snake River dams because to allow significant sums of money to be spent in long-term investments at the dams for the remaining 4.5 years of the NEPA remand period may result in biased analyses that essentially foreclose the reasonable alternative of breaching, bypassing, or removing dams. Plaintiffs rely primarily on two provisions in NEPA's implementing regulations, 40 C.F.R. §§ 1502.2(f) and 1506.1(a). Section 1502.2(f) provides that: "Agencies shall not

commit resources prejudicing selection of alternatives before making a final decision." Section 1506.1(a) provides that: "Until an agency issues a record of decision as provided in § 1505.2 . . . no action concerning the proposal shall be taken which would: (1) Have an adverse environmental impact; or (2) Limit the choice of reasonable alternatives."

The Court will not enjoin any spending that is necessary for the safe operation of any dam. Regardless of the NEPA process, the Federal Defendants are currently under a statutory obligation to operate the dams and must be allowed to operate them safely. The Court finds that any benefit to the NEPA process in enjoining spending may be outweighed by the risk to human health and safety if dams are not allowed to continue operating in a safe manner. With regard to projects and expenditures that are not required for safe dam operations, however, the Court considers the factors for interim injunctive relief.

1. Success on the Merits

In the 2016 Opinion, the Court found that the Corps and BOR violated NEPA and remanded the case for the agencies to create a single EIS covering FCRPS operations. Thus, Plaintiffs have already succeeded on their underlying NEPA claim.

2. Irreparable Harm

The harm that Plaintiffs seek to redress with this injunction is a biased NEPA process. The Court agrees that generally speaking, this type of harm can be irreparable harm for purposes of a NEPA injunction. The Court is persuaded by the reasoning in Sierra Club v. Marsh, 872 F.2d 497, 500 (1st Cir. 1989), which discusses what is sometimes described as the "bureaucratic steamroller" or "bureaucratic momentum" theory, as follows:

> NEPA is not designed to prevent all possible harm to the environment; it foresees that decisionmakers may choose to inflict such harm, for perfectly good reasons. Rather, NEPA is designed to influence the decisionmaking process; its aim is to make government officials notice environmental considerations and take

> them into account. Thus, when a decision to which NEPA obligations attach is made without the informed environmental consideration that NEPA requires, the harm that NEPA intends to prevent has been suffered. . . . Moreover, to set aside the agency's action at a later date will not necessarily undo the harm. The agency as well as private parties may well have become committed to the previously chosen course of action, and new information—a new EIS—may bring about a new decision, but it is that much less likely to bring about a different one. It is far easier to influence an initial choice than to change a mind already made up.
>
> It is appropriate for the courts to recognize this type of injury in a NEPA case, for it reflects the very theory upon which NEPA is based—a theory aimed at presenting governmental decision-makers with relevant environmental data before they commit themselves to a course of action. This is not to say that a likely NEPA violation automatically calls for an injunction; the balance of harms may point the other way. It is simply to say that a plaintiff seeking an injunction cannot be stopped at the threshold by pointing to additional steps between the governmental decision and environmental harm.
>
> In the present case plaintiffs would suffer harm if they were denied an injunction, if the lease sale took place, and if the court then held that a supplemental EIS was required. In that event, the successful oil companies would have committed time and effort to planning the development of the blocks they had leased, and the Department of the Interior and the relevant state agencies would have begun to make plans based upon the leased tracts. Each of these events represents a link in a chain of bureaucratic commitment that will become progressively harder to undo the longer it continues. Once large bureaucracies are committed to a course of action, it is difficult to change that course—even if new, or more thorough, NEPA statements are prepared and the agency is told to "redecide." It is this type of harm that plaintiffs seek to avoid, and it is the presence of this type of harm that courts have said can merit an injunction in an appropriate case.

Id. at 500 (quoting Commonwealth of Massachusetts v. Watt, 716 F.2d 946, 952-53 (1st Cir. 1983) (emphasis added in Marsh)); see also Friends of the Earth v. Hall, 693 F. Supp. 904, 913 (W.D. Wash. 1988) (noting that "the risk of bias resulting from the commitment of resources prior to a required thorough environmental review is the type of irreparable harm that results from a NEPA violation"); cf. Calvert Cliffs' Coordinating Comm. v. Atomic Energy

Comm'n, 449 F.2d 1109, 1128 (D.C. Cir. 1971) (noting that where large investments affect the NEPA analysis, the NEPA process becomes a "hollow exercise").

Although the Ninth Circuit has not yet expressly adopted the "bureaucratic steamroller" theory, other district courts in this circuit have found it persuasive. For example, in Protecting Arizona's Res. & Children ("PARC") v. Fed. Highway Admin., 2015 WL 12618411 (D. Ariz. July 28, 2015), the court concluded that "under Marsh, the Court may consider bureaucratic momentum as a factor in assessing whether environmental harm is likely to occur based on failure to comply with NEPA procedures." Id. at *5.

Moreover, the Ninth Circuit has found that financial commitment can constitute an irretrievable commitment of resources for purposes of NEPA. See Wildwest Inst. v. Bull, 547 F.3d 1162, 1169 (9th Cir. 2008). In Wildwest, the Ninth Circuit analyzed what it means for an agency to take an action that limits the agency's choice of alternatives, which is prohibited under 40 C.F.R. § 1506.1(a). Id. at 1168-69. The court analogized this provision to the provisions that trigger when an EIS must be completed. Id. at 1168. In those cases, the court had interpreted an EIS as being required only when an agency has "irreversibly and irretrievably" committed resources. Id. (citing Metcalf v. Daley, 214 F.3d at 1143 (9th Cir. 2000).

In Wildwest, the Ninth Circuit discussed how, in cases analyzing when the need for an EIS has been triggered, the commitment of resources was generally natural resources. Id. at 1168-69 (discussing Metcalf, 214 F.3d at 1144; Friends of Southeast's Future v. Morrison, 153 F.3d 1059, 1063-64 (9th Cir. 1998); Conner v. Burford, 848 F.2d 1441, 1446, 1449 (9th Cir. 1988)). It is not surprising that, in cases addressing when an EIS is triggered, the primary issue would often involve a commitment relating to natural resources. NEPA requires an EIS for major federal actions that significantly affect the quality of the human environment. 42 U.S.C.

§ 4332(2)(C). The Ninth Circuit in Wildwest extended this line of reasoning from the cases discussing when an agency commitment is sufficient to trigger the need for an EIS to when an agency commitment is sufficient to limit its alternatives under 40 C.F.R. § 1506.1(a). 547 F.3d at 1168-69. Thus, the Ninth Circuit held that an agency's "irreversible and irretrievable" commitment of resources may limit its alternatives under Section 1506.1(a). Id. In doing so, the court concluded that financial investment alone can, in some circumstances, be an irreversible and irretrievable commitment of resources. Id. at 1169.

Defendants argue that tens of millions of dollars cannot rise to the level of commitment required by Wildwest because the Ninth Circuit mentioned, by way of example, a commitment of all or most of an agency's limited budget in preparation for only one alternative. That is unavailing for two reasons. First, the Ninth Circuit was providing only one example of when a financial commitment may be considered limiting an agency's alternatives, and there is no indication that example was meant to be exclusive.

Second, the discussion by the Ninth Circuit in Wildwest does not mean that a similar level of commitment is required under 40 C.F.R. § 1502.2(f), which prohibits agencies from "prejudicing" the selection of alternatives. The Court must give meaning to the fact that the agency used the term "prejudicing" in § 1502.2(f) and "limiting" in § 1506.1(a). Cf. Nat'l Fed'n of Indep. Business v. Sebelius, 132 S. Ct. 2566, 2583 (2012) (noting in the context of statutory interpretation that "[w]here Congress uses certain language in one part of a statute and different language in another, it is generally presumed that Congress acts intentionally"). If "prejudicing" alternatives is construed identically as "limiting" alternatives in § 1506.1(a), then § 1502.2(f) would be superfluous. This is contrary to "the canon of construction that courts interpret statutes so as not to render any section meaningless." Meng Li v. Eddy, 324 F.3d 1109, 1110 (9th

Cir. 2003) (citing Beck v. Prupis, 529 U.S. 494, 506 (2000)); see also United States v. Harrell, 637 F.3d 1008, 1010-11 (9th Cir. 2011) (noting that courts must give effect to each word and "must 'mak[e] every effort not to interpret a provision in a manner that renders other provisions of the same statute inconsistent, meaningless or superfluous'" (alteration in original) (quoting United States v. Cabaccang, 332 F.3d 622, 627 (9th Cir. 2003) (en banc))).

The term "limiting" connotes a more definitive restriction than does "prejudicing." See BLACK'S LAW DICTIONARY (10th ed. 2014) (defining "limit" as: "1. A restriction or restraint. 2. A boundary or defining line. 3. The extent of power, right, or authority." and defining "prejudice" as "1. Damage or detriment to one's legal rights or claims. . . . 2. A preconceived judgment or opinion formed with little or no factual basis; a strong and unreasonable dislike or distrust. — Also termed preconception." (emphasis in original)). Thus, the level of commitment required to "limit" an agency's alternatives is higher than the level commitment required to "prejudice" an agency's alternatives. Accordingly, even if it were required for an agency to spend most or all of its budget on one alternative before it could be found to violate § 1506.1(a) (which the Court does not find is necessitated by the holding in Wildwest), the Court holds that a lesser commitment may nonetheless violate § 1502.2(f).

The Court noted in the 2016 Opinion that a compliant NEPA analysis in this case "may well require consideration of the reasonable alternative of breaching, bypassing, or removing one or more of the four Lower Snake River Dams." NMFS V, 184 F. Supp. 3d at 942. The "touchstone" of NEPA's alternatives analysis is whether the EIS's "selection and discussion of alternatives fosters informed decision-making and informed public participation." Headwaters, Inc. v. Bureau of Land Mgmt., Medford Dist., 914 F.2d 1174, 1180 (9th Cir. 1990) (quotation marks omitted). The reality is that economic considerations are part of that decisionmaking. In

weighing the environmental benefits of removing, breaching, or bypassing the dams, the costs of such actions also likely will be weighed, as well as the costs of operating the dams. That analysis will be affected if the dams require hundreds of millions in expenditures versus having just had hundreds of millions spent in improvements and maintenance. Considering this fact, the "bureaucratic momentum" theory, the constraints on the Corps dictated by § 1506.1(a), and the limitations on the Corps' actions placed by § 1502.2(f), the Court finds that spending hundreds, tens, or even millions of dollars on the four Lower Snake River Dams during the NEPA remand period is likely to cause irreparable harm by creating a significant risk of bias in the NEPA process. See, e.g., Wildwest, 547 F.3d at 1169; Marsh, 872 F.2d at 500; Calvert Cliffs', 449 F.2d at 1128; Hall, 693 F. Supp. at 913.

3. Balancing the Harms and Considering the Public Interest

a. Current Ice Harbor Projects

Plaintiffs challenge two projects at Ice Harbor Dam: Ice Harbor Turbine Runner Design and Replacement and Ice Harbor Stator Winding Replacement. These projects are estimated to cost $37 million in fiscal years 2018 and 2019. Plaintiffs challenge the replacements at two turbines, Units 1 and 3. Plaintiffs do not challenge improvements being made to Unit 2.

Unit 2, which is not being challenged, is being improved with state-of-the-art nonadjustable blades that are designed to improve fish survival. This design, however, is not suitable at all hydraulic flow levels. Thus, at certain hydraulic flows, Unit 2 cannot operate. Currently, Unit 3 also has nonadjustable blades, due to interim repairs that were previously required. Unit 3 thus cannot be the backup unit when hydraulic flows do not allow Unit 2 to operate.

Unit 1 is the operative adjustable blade unit. Unit 1, however, has had failures in recent years. Thus, if it is not replaced, as currently scheduled, it will at a minimum need repair. The

replacement, however, is with an improved adjustable blade design that is intended to increase juvenile fish survival. If the expected improved fish passage is realized, the Corps intends to implement the new design in other FCRPS dams.

Unit 3 also has had failures in recent years. The interim repairs done to keep the turbine operating potentially increase the harm to fish passage and result in less efficient operation. Additionally, even with interim repairs, the turbine performs poorly and needs replacement.

The Court recognizes the importance of an unbiased NEPA process and the chance for all reasonable alternatives to be considered without undue economic influence. These specific Ice Harbor Dam projects, however, have a primary benefit of increasing fish survival. As the Court has repeatedly noted, including in this Opinion and Order in discussing increased spill, the fish are in need of improved survival now. Improvements at Ice Harbor Dam that result in immediate increased survival of listed species are given great weight in balancing the harms and considering the public interest. Cottonwood, 789 F.3d at 1090 (noting that saving endangered species is given the highest priority and is of incalculable public interest). Although the Court has found likely irreparable harm from significant expenditures, in considering these specific projects, the Court finds that the balance of harms and public interest weighs against the specific injunction being requested. See Marsh, 872 F.2d at 500 (noting that even when irreparable harm is found, it does not necessitate an injunction because "the balance of harms may point the other way" (emphasis in original)).

b. Future Projects

The Court cannot evaluate the balance of harms or public interest in unknown future projects. As the Court has noted, it will not enjoin projects that are needed for the safe operation of the dams. The Court also is not inclined to enjoin projects that provide substantial immediate

survival improvement for the listed species. Thus, the Court does not find a blanket injunction against all future projects of more than $ 1 million to be appropriate.

The Court, however, is concerned with the potential for the irreparable harm that the Court has found likely. Accordingly, the Court will require the Federal Defendants to disclose sufficient information to Plaintiffs regarding the planned projects at each dam during the NEPA remand period, at appropriate and regular intervals. If Plaintiffs believe that a project is not needed for safe operation of the dams and substantially may bias the NEPA process, Plaintiffs may file a new motion with the Court to enjoin any such project.

Within 14 days from the date of this Opinion and Order, the Federal Defendants, after conferring with Plaintiffs, shall submit their proposal for a reasonable process and schedule for providing Plaintiffs the information, including timing (quarterly, annually, etc.) and what information should be included in their disclosure to Plaintiffs. Plaintiffs may, at their discretion, file any response or objection within 14 days. Defendants may then have 14 days to reply.

CONCLUSION

The motions for injunctive relief requested by Plaintiffs, including Oregon, (ECF 2112 and 2114) are GRANTED IN PART, as set forth in this Opinion and Order. The Court intends to hold periodic status conferences regarding the increased spill that must take place in 2018 and its related planning before then. Within 28 days, the parties shall confer and file with the Court their joint or separate recommendations for a schedule of periodic status conferences.

IT IS SO ORDERED.

DATED this 27th day of March, 2017.

/s/ Michael H. Simon
Michael H. Simon
United States District Judge