UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS, *et al.*, Plaintiff, v. GINA RAIMONDO, *et al.*, Defendants.	No. 1:20-cv-00431-DAD-EPG ORDER RE MOTIONS TO REMAND WITHOUT VACATUR; STAY; AND IMPOSE INTERIM INJUNCTIVE RELIEF
THE CALIFORNIA NATURAL RESOURCES AGENCY, *et al.*, Plaintiffs, v. GINA RAIMONDO, *et al.*, Defendants.	No. 1:20-cv-00426-DAD-EPG ORDER RE MOTIONS TO REMAND WITHOUT VACATUR; STAY; AND IMPOSE INTERIM INJUNCTIVE RELIEF

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I. INTRODUCTION

These related cases involve challenges to a pair of "biological opinions" ("BiOps") issued by the National Marine Fisheries Service ("NMFS") and the Fish and Wildlife Service ("FWS") in 2019 pursuant to the Endangered Species Act ("ESA"), 16 U.S.C § 1531 *et seq*. The 2019 BiOps address the impact on various ESA-listed species of implementing an updated plan issued by the U.S. Bureau of Reclamation ("Reclamation") and California's Department of Water Resources ("DWR") for the long-term operation[1] of the Central Valley Project ("CVP") and the State Water Project ("SWP") (collectively, "Water Projects" or "Proposed Action"). FWS's 2019 BiOp addresses Water Project impacts on the ESA-listed delta smelt; NMFS's 2019 BiOp addresses impacts on various other aquatic species, including several salmonid species discussed in this order.

Plaintiffs[2] in both cases allege that the NMFS and FWS violated the Administrative Procedure Act ("APA"), 5 U.S.C. § 706, in various ways by concluding that the Water Projects would not jeopardize the continued existence of the ESA-listed species addressed in each biological opinion. (*PCFFA* Doc. No. 52; *CNRA* Doc. No. 51.)[3] Both sets of plaintiffs also bring claims against Reclamation under the ESA and the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq*, related to Reclamation's adoption and implementation of the Proposed Action (*Id*.)[4] The State Plaintiffs' complaint in *CNRA* also alleges that Reclamation has violated the APA by failing to comply with the California Endangered Species Act

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[1] Some of the parties refer to this operational plan for "long term operations" as the "LTO".

[2] Plaintiffs in *Pacific Coast Federation of Fishermen's Associations v. Ross*, 1:20-cv-00431-DAD-EPG ("*PCFFA"*), are a coalition of six environmental organizations (collectively referenced herein as "PCFFA"). Plaintiffs in *California Natural Resources Agency v. Ross*, No. 1:20-cv-00426-DAD-EPG ("*CNRA"*), are the People of the State of California, California's Natural Resources Agency, and California's Environmental Protection Agency ("State Plaintiffs").

[3] Hereinafter, the court will omit the "*PCFFA*" designation from record documents in that case but will continue to distinguish documents of record in the *CNRA* case by retaining the "*CNRA*" designation when citing documents from *CNRA*.

[4] Collectively, NMFS, FWS, and Reclamation, along with the individual named heads of those agencies, are referred to as the "Federal Defendants" herein.

("CESA"), conformance with which State Plaintiffs maintain is required by various provisions of federal law. (*CNRA* Doc. No. 51 ("CNRA FAC"), ¶¶ 145–54.)

Before the court for decision are multiple motions, including motions for voluntary remand without vacatur, a request to impose a stipulated package of interim injunctive relief measures in the *CNRA* case that would govern operations for the remainder of the 2022 "Water Year" ("WY")[5], and what is effectively a cross-motion filed by PCFFA to impose a competing package of interim injunctive measures. Because the package of pending motions is so complex, the court will provide some background before even attempting to summarize them.

II. BACKGROUND

A. The Endangered Species Act (ESA)[6]

"Under the ESA, the Secretary of the Interior and the Secretary of Commerce are charged with identifying threatened and endangered species and designating critical habitats for those species." *Nat. Res. Def. Council v. Jewell*, 749 F.3d 776, 779 (9th Cir. 2014) ("*NRDC v. Jewell"*) (citing 16 U.S.C. § 1533). FWS and NMFS administer the ESA on behalf of the Departments of the Interior and Commerce, respectively. *See* 50 C.F.R. §§ 17.11, 222.101(a), 223.102, 402.01(b). Most pertinent to these cases is Section 7 of the ESA. 16 U.S.C. § 1536 ("Section 7"). Section 7(a)(2) imposes a procedural duty on the federal agencies to consult with the FWS or NMFS, depending on the protected species,[7] to "insure that any action authorized, funded, or

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[5] For purposes of this case, a "Water Year" runs from October 1 of the preceding calendar year through September 30 of the current calendar year. (*See* Declaration of Les Grober ("Grober Decl."), *CNRA* Doc. No. 223, ¶ 26.)

[6] While other statutes are implicated in these cases, the ESA forms the core of the parties' arguments and therefore is the focus of the court's attention. Relevant aspects of other statutes, such as NEPA, CESA, and the APA, are discussed as necessary.

[7] Generally, FWS has jurisdiction over species of fish that either (1) spend the major portion of their life in fresh water, or (2) spend part of their lives in estuarine waters, if the remaining time is spent in fresh water. *See Cal. State Grange v. Nat'l Marine Fisheries Serv.*, 620 F. Supp. 2d 1111, 1120 n. 1 (E.D. Cal. 2008), *as corrected* (Oct. 31, 2008). NMFS is granted jurisdiction over fish species that (1) spend the major portion of their life in ocean water, or (2) spend part of their lives in estuarine waters, if the remaining portion is spent in ocean water. *Id*. Relevant to the cases before the court, FWS exercises jurisdiction over the delta smelt; NMFS exercises jurisdiction over the winter-run and spring-run and the CV steelhead.

carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of critical habitats of listed species. 16 U.S.C. § 1536(a)(2). An agency "action" is defined to mean all activities carried out by federal agencies, including, among other things, the granting of licenses and permits. *See* 50 C.F.R. § 402.02. "If a contemplated agency action may affect a listed species, then the agency must consult with the Secretary of the Interior, either formally or informally." *Am. Rivers v. NMFS*, 126 F.3d 1118, 1122 (9th Cir. 1997).

Formal consultation results in the issuance of a BiOp by the relevant wildlife agency (FWS or NMFS). *See* 16 U.S.C. § 1536(b). If the BiOp concludes that the proposed action would jeopardize the species or destroy or adversely modify critical habitat, *see id.* § 1536(a)(2), then the action may not go forward unless the wildlife agency can suggest a "reasonable and prudent alternative[]" ("RPA") that avoids jeopardy, destruction, or adverse modification. *Id.* § 1536(b)(3)(A). If a BiOp concludes that the proposed action (or the action implemented in conjunction with actions described in the RPA) will cause incidental taking of protected species, but that despite this taking, the action will not jeopardize the species or threaten critical habitat, the wildlife agency

> shall provide the Federal agency and the applicant concerned, if any with a written statement that—
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> (i) specifies the impact of such incidental taking on the species,
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> (ii) specifies those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact,
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> (iii) . . . , and
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> (iv) sets forth the terms and conditions (including, but not limited to, reporting requirements) that must be complied with by the Federal agency or applicant (if any), or both, to implement the measures specified under clauses (ii) and (iii).

Id. § 1536(b)(4). This required written statement, with its "reasonable and prudent measures" ("RPMs") and associated terms and conditions, is referred to as an "Incidental Take Statement" ("ITS"), which, if followed, exempts the action agency from the prohibition on takings found in Section 9 of the ESA. *Id*. § 1536(o); *Aluminum Co. of Am. v. Adm'r, Bonneville Power Admin.*,

175 F.3d 1156, 1159 (9th Cir. 1999).

B. Listed Species at Issue

The Delta smelt (*Hypomesus transpacificus*) is a "small, two-to-three inch species of fish endemic to the San Francisco Bay/Sacramento–San Joaquin Delta Estuary [("Delta")]." *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 595 (9th Cir. 2014) ("*San Luis v. Jewell"*). In 1993, FWS concluded the delta smelt's population had declined by ninety% over the previous twenty years and listed it as a "threatened" species under the ESA. Determination of Threatened Status for the Delta Smelt, 58 Fed. Reg. 12,854, 12,855–56 (Mar. 5, 1993).

Longfin smelt (*Spirinchus thaleichthys*) "range from the fresh waters of the Delta during their spawning season from January through March down to the coastal waters outside the Golden Gate." (First Declaration of Bruce Herbold ("Herbold First Decl."), *CNRA*, Doc. No. 55, ¶ 31.) Longfin smelt "generally live for two years and have almost always been more abundant than Delta Smelt." (*Id*.) Nonetheless, Longfin smelt populations "have been in severe decline since the drought of the mid-1980s." (*Id*., ¶ 32.) Longfin smelt are listed under CESA but not the ESA. (*See id*., ¶ 19.)

The winter-run and spring-run Chinook salmon (*Oncorhynchus tshawytscha*), and California Central Valley ("CV") steelhead (*Oncorhynchus mykiss*), are "anadromous" fish, meaning that they live most of their lives in salt water, but "are born, mature, lay eggs, and often die in inland freshwater lakes and rivers." *San Luis & Delta-Mendota Water Auth. v. Locke*, 776 F.3d 971, 986–87 (9th Cir. 2014) ("*San Luis v. Locke"*).

> After they grow from fry (baby fish) to smolts (juvenile fish) in fresh water, anadromous salmon outmigrate through rivers and deltas into the oceans and seas where they will spend most of their adult lives. When it is time to reproduce, these salmon migrate back through the deltas to the rivers and lakes in which they were born to lay eggs. During this migration, salmon must pass impediments in inland rivers such as locks, dams, channels, and pumps.

Id. at 987.

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Winter-run Chinook salmon are listed as endangered under the ESA. (Doc. No. 85-2 (2019 NMFS BiOp) at p. 65[8].) Before construction of Shasta Dam, the winter-run had access to the Sacramento River upstream of Shasta Dam's present location and to the upper tributaries where springs provided cold water throughout the summer. (*Id.* at pp. 69–70.) Shasta Dam and Keswick Dam (a smaller, regulating dam that sits nine miles downstream of Shasta) now block access to this extensive former spawning habitat of the winter run. (*Id*. at p. 70.) As a result, the only population of winter-run spawns exclusively in the reaches of the Upper Sacramento River below Keswick Dam and this "single population . . . has been supported by cold water management operations at Shasta Dam." (*Id*.) Generally, winter-run adults migrate upstream through the San Francisco Bay-Delta region during the winter and spring months and spawn in the upper Sacramento River in the summer months. (*Id*. at pp. 70–71.)[9] The ocean stage of the winter-run life cycle typically lasts three years. (*PCFFA*, Doc. No. 85-18 (2009 NMFS BiOp) at p. 87.)

Spring-run Chinook salmon are listed as threatened under the ESA. (2019 NMFS BiOp at p. 79.) They are somewhat more geographically widespread than winter-run, with populations at varying levels of viability known to spawn on several tributaries to the Sacramento River. (*Id*. at p. 89.) The ocean stage of the spring-run life cycle typically lasts one to five years. (*Id*. at p. 88.) Spring-run adults typically migrate upstream, unsurprisingly, in the spring, from January to June. (*Id*. at p 89.) In at least one location (Clear Creek), adult spring-run "hold" for several months in the mid-to-late summer before spawning in September and October. (*Id*. at p. 85.) Some spawning also occurs in the mainstem Sacramento River (*id*. at p. 89), although the numbers of

[8] Where the court references a record document's internal pagination, it refers to the page as "p. __." Otherwise, page references are to the .pdf page reference provided by the court's CM/ECF system.

[9] According to the 2019 NMFS BiOp: "Sacramento River winter-run Chinook salmon are particularly important among California's salmon runs because they exhibit a life-history strategy found nowhere else in the world. These Chinook salmon are unique because they spawn during the summer months when air temperatures usually approach their warmest. As a result, winter-run Chinook salmon require stream reaches with cold-water sources to protect their incubating eggs from the warm ambient conditions." (2019 NMFS BiOp at p. 65.)

fish spawning there have generally been limited in recent years. (*Id*. at p. 91.) Juvenile spring-run exhibit varied rearing behavior and outmigration timing. Some juveniles may reside in upstream areas for 12 to 16 months (these individuals are characterized as "yearlings"), while some may migrate to the ocean shortly after hatching as "young-of-the-year." (*Id*. at p. 85.)

CV Steelhead are also listed as threatened under the ESA. 71 Fed. Reg. 834 (Jan. 5, 2006). Steelhead are a type of rainbow trout that migrate to the ocean like salmon. (Herbold First Decl., ¶ 17.) Unlike salmon, however, adult Steelhead do not always die after spawning and may return to the ocean and return to spawn again. (*Id*.) Some of their progeny may never go to the sea but remain as resident trout in freshwater where they may live many years and spawn repeatedly. Notable for purposes of the pending motions, NMFS divides CV steelhead into three "diversity groups" for management purposes: the basalt and porous lava diversity group, the northern Sierra Nevada diversity group, and the southern Sierra Nevada diversity group. (2019 NMFS BiOp at p. 769.) The recovery plan for Central Valley Steelhead concludes that survival of members of the southern Sierra Nevada diversity group, often referred to as San Joaquin River ("SJR") steelhead (*see id* at p. 508), are critical to the species' recovery overall. (Herbold First Decl., ¶ 18.) Because of the hydrology of the San Joaquin River basin, spring flows come slightly later than for other watersheds, which causes SJR Steelhead to migrate later in the season, in April and May, about a month after other populations of CV steelhead from the Sacramento River and its tributaries. (*Id*.)

C. Overview of the Water Projects and Impacts on Listed Species

The CVP and the SWP, "operated respectively by [Reclamation] and the State of California, are perhaps the two largest and most important water projects in the United States." *San Luis v. Jewell*, 747 F.3d at 592. "These combined projects supply water originating in northern California to more than 20,000,000 agricultural and domestic consumers in central and southern California." *Id*. As one part of CVP operations, Reclamation releases water stored in CVP reservoirs in northern California, which water then flows down the Sacramento River to the Delta. *See id*. at 594. Pumping plants in the southern region of the Delta (South Delta) then divert the water to various users south of the Delta. *See id*. at 594–95.

"Although the [Water] Projects provide substantial benefits to people and to state agriculture, they arguably harm species native to the Delta by modifying those species' natural habitats." *San Luis v. Locke*, 776 F.3d at 986. The Water Projects do so in several ways. First, the dams that make the CVP and SWP possible have blocked access to the colder water upstream spawning and rearing habitat of migratory fish species. *Nat. Res. Def. Council v. Norton*, 236 F. Supp. 3d 1198, 1204 (E.D. Cal. 2017) ("*NRDC v. Norton*"). This has limited (and in some cases all but eliminated) spawning and rearing habitat for these species and confined certain populations to spawning areas where flows and temperatures are largely controlled by releases from upstream dams. *See id*. For example, as mentioned, the only population of winter-run now spawns exclusively in the reaches of the Upper Sacramento River below Keswick Dam and this single, remaining population of this run is dependent on cold water management operations at Shasta Dam. (2019 NMFS BiOp at p. 70.)

In addition, the Water Projects pump fresh water out of the "Old and Middle River" ("OMR") branches of the San Joaquin River in volumes sufficient to reverse the flow in the OMR. *Id*. at 996. "Absent pumping, [these] rivers would flow north into the Delta. Under pumping operations, the rivers flow south to the [CVP's] Jones and [SWP's] Banks pumping plants." *San Luis v. Locke*, 776 F.3d at 986. Listed species—particularly juveniles—can be caught in the negative current and drawn towards the pumping facilities. *Id*. Some of these fish are "salvaged" at the pumps, "meaning they are diverted from the fatal pumping plants to fish salvage facilities and into tanks where they are counted, measured, loaded into trucks, driven north, and dumped back into the Delta." *Id*. But even if salvaged, fish that are drawn towards the pumps by the "negative OMR" flow have a lower likelihood of surviving outmigration than their counterpoints that avoid "entrainment"[10] by Water Project operations. *Id*. "The collection of fish of concern at the export facilities is a clear indicator that fish have been diverted from their migratory paths into the channels of the south Delta." (*CNRA* Doc. No. 224, Second Declaration

[10] According to State Plaintiff's expert witness, Dr. Bruce Herbold: "Entrainment consists of two parts; the capture of fish at the export facilities' fish screens and the much larger, but uncounted, loss of fish diverted off their migratory paths and into channels of the south Delta where predation is high." (Herbold Second Decl. ¶ 39.)

of Bruce Herbold ("Herbold Second Decl."), ¶ 39.) For example, when the Delta smelt was listed as endangered, "Delta water diversions," including those resulting from operations of the CVP and SWP, were deemed a significant "synergistic cause[ ]" of the decline in the population. 58 Fed. Reg. at 12,859.

D. Previous Biological Opinions

The Water Projects have undergone numerous rounds of review under the ESA and NEPA. In brief, in 2004 and 2005 FWS and NMFS issued "no jeopardy" BiOps for species within their respective jurisdictions. Those BiOps were challenged, ultimately found to be arbitrary and capricious, and remanded to the agencies with directions to complete new BiOps. After an extensive, post-judgment remedy hearing in one of those cases, the district court also issued an interim remedial order that directed Reclamation to implement various interim measures to protect delta smelt; and related interim measures were later entered in the parallel salmonid case. *See Nat. Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322 (E.D. Cal. 2007) ("*NRDC v. Kempthorne*") (merits ruling); *NRDC v. Kempthorne*, No. 1:05-CV-1207 OWW GSA, 2007 WL 4462391 (E.D. Cal. Dec. 14, 2007) (interim remedial order); *Pac. Coast Fed'n of Fishermen's Ass'n v. Gutierrez*, 606 F. Supp. 2d 1122 (E.D. Cal. 2008) ("*PCFFA v. Gutierrez*") (merits ruling); *PCFFA v. Gutierrez*, No. 1:06-CV-00245-OWW-GSA, 2008 WL 4657785 (E.D. Cal. Oct. 21, 2008) (interim remedial order).

After that remand, FWS and NMFS issued revised "jeopardy" BiOps in 2008 and 2009, respectively. *See San Luis v. Jewell*, 747 F.3d at 597. Among other things, the 2008 FWS BiOp concluded that "CVP/SWP operations have entrained smelt, including adults, larvae, and juveniles, at the Banks and Jones facilities; reduced smelt habitat; and reduced the Delta outflows, altering the location of the [Low Salinity Zone][11]." *Id*. at 598. The 2008 FWS BiOp recommended a suite of "reasonable and prudent alternatives" ("RPAs") designed to protect

[11] "Two related standards are used to describe the salinity of the Bay–Delta. The first is the Low Salinity Zone or LSZ. The LSZ is the transition point between the freshwater of the inland rivers and brackish water flowing eastward from San Francisco Bay and the Pacific Ocean, and includes water ranging in salinity from 0.5 parts per thousand to six parts per thousand. The second is referred to as X2. X2 represents the point in the Bay–Delta at which the salinity is less than two parts per thousand." *San Luis v. Jewell*, 747 F.3d at 595 (internal record citations omitted).

against the harm the water projects would otherwise cause to delta smelt. (*See* Doc. No. 85-17 (2008 FWS BiOp) at pp. 279–85.) Similarly, NMFS's 2009 BiOp concluded that "the long-term operations of the CVP and SWP are likely to jeopardize the continued existence" of and "destroy or adversely modify" critical habitat for winter-run, spring-run, and CV steelhead. (*See* 2009 NMFS BiOp at p. 575.) That BiOp also included an RPA designed to allow the projects to continue operating without causing jeopardy to the species or adverse modification to its critical habitat. (*Id*. at pp. 575–671.) The RPA was "composed of numerous elements for each of the various project divisions and associated stressors" which, according to the BiOp, "must be implemented in its entirety to avoid jeopardy and adverse modification." (*Id*. at p. 578.) The 2009 NMFS BiOp provided a succinct overview of that 2009 RPA, pertinent parts of which provide helpful background here:

> Water operations result in elevated water temperatures that have lethal and sub-lethal effects on egg incubation and juvenile rearing in the upper Sacramento River. The immediate operational cause is lack of sufficient cold water in storage to allow for cold demands. This elevated temperature effect is particularly pronounced in the Upper Sacramento for winter-run and mainstem spring-run, and in the American River for steelhead. The RPA includes a new year-round storage and temperature management program for Shasta Reservoir and the Upper Sacramento River . . . .
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> [W]ater pumping causes reverse flows, leading to loss of juveniles migrating out from the Sacramento River system in the interior Delta and more juveniles being exposed to the State and Federal pumps, where they are salvaged at the facilities. The RPA prescribes Old and Middle River flow levels to reduce the number of juveniles exposed to the export facilities and prescribes additional measures at the facilities themselves to increase survival of fish.
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> [J]uvenile steelhead migrating out from the San Joaquin River Basin have a particularly high rate of loss due to both project and non-project related stressors. The RPA mandates additional measures to improve survival of San Joaquin steelhead smolts, including both increased San Joaquin River flows and export curtailments. Given the uncertainty of the relationship between flow and exports, the RPA also prescribes a significant new study of acoustic tagged fish in the San Joaquin Basin to evaluate the effectiveness of the RPA and refine it over the lifetime of the project.

(*Id*. at pp. 576–77.)

The 2008 FWS and 2009 NMFS BiOps were also the subject of numerous lawsuits but were ultimately upheld by the Ninth Circuit. *See San Luis v. Jewell*, 747 F.3d 581; *San Luis v. Locke*, 776 F.3d 971.

E. Loss of Temperature Control in 2014 and 2015

In 2014 California was in the third year of a drought. (2019 NMFS BiOp at p. 69.) According to PCFFA's expert, Dr. Jonathan Rosenfield, early in 2014, Reclamation moved the temperature compliance point "far upstream above Clear Creek's confluence with the Sacramento River," predicting it could provide required water temperatures to that point. (First Declaration of Jonathan Rosenfield ("Rosenfeld First Decl."), Doc. No. 85, ¶ 171.) However, despite initial modeling that indicated compliance was possible and despite Reclamation obtaining various waivers from state Delta outflow requirements it asserted were necessary to maintain appropriate water temperatures, river temperatures at the revised temperature control point exceeded 56°F. (*Id.*) This resulted in temperature dependent egg mortality in 2014 of 77% (*id*.) and extremely poor egg-to-fry survival (measured as the percentage of eggs that survived to produce fry capable of passing the Red Bluff Diversion Dam on the lower Sacramento River) of approximately 4%. (2019 NMFS BiOp at p. 69).

The bleak story was much the same in 2015. (*See* Rosenfield First Decl., ¶ 172.) Indeed, egg-to-fry survival that year was the lowest on record (approximately three%), "due to the inability to release cold water from Shasta Dam in the fourth year of the drought." (*Id*.) As a result, and as the 2019 NMFS BiOp explains, "[w]inter-run [] returns in 2016 to 2018 were low, as expected, due at least in part to poor in-river conditions for juveniles from brood year 2013 to 2015 during drought years." (*Id*.) Although "[t]he 2018 adult winter-run return (2,639) improved from 2017 (977)," it was "dominated by hatchery-origin fish." (*Id*.)

In 2016, after the years of drought and concerns over extremely low population numbers of winter-run and delta smelt, FWS and NMFS reinitiated consultation under the ESA. (*See* Doc. Nos. 85-4, 85-5.) Reclamation specifically acknowledged the precarious situation of the winter-run and delta smelt in its requests for re-initiation of consultation. (*Id*.)

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F. Issuance of 2019 Biological Opinions

In January 2019, Reclamation issued a biological assessment ("BA")[12] for the Proposed Action. (*See* 2019 NMFS BiOp at p. 12.) Pursuant to the ESA, Reclamation again consulted with FWS and NMFS. (*See id*.)

In July 2019, NMFS prepared a draft BiOp in which the agency concluded that, absent constraints, the Reclamation's proposed plan as set forth in the January 2019 BA was likely to jeopardize the continued existence of, and destroy or adversely modify the critical habitat of, the listed salmonid species. (Doc. No. 85-13 (NMFS July 2019 Draft BiOp).) Thereafter, Reclamation and DWR incorporated changes to the proposed plan, including additional commitments to address impacts to listed species. (*See* 2019 NMFS BiOp at pp. 12–14.)

A few months later, on October 21, 2019, Reclamation issued a revised, Final BA describing a revised operating plan for the Water Projects (Doc. No. 85-12 (BA)), which constituted the final Proposed Action. On the same day, NMFS issued a BiOp that concluded Reclamation's revised proposed plan was not likely to jeopardize the existence of winter-run and spring-run salmon and Central Valley steelhead beyond that permitted under its 2009 opinion. (*See* generally 2019 NMFS BiOp.) Following a very similar consultation pathway, FWS issued an opinion that Reclamation's proposed plan was not likely to jeopardize the continued existence of the Delta smelt or modify its habitat. (Doc. No. 85-1 (2019 FWS BiOp).) Having found no jeopardy, the BiOps imposed no additional protective conditions on the Proposed Action, which was allowed to proceed as described in Reclamation's Final BA.

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[12] Under the ESA, an agency proposing to take an action (often referred to as the "action agency") must first inquire of FWS and/or NMFS whether any threatened or endangered species "may be present" in the area of the proposed action. *See* 16 U.S.C. § 1536(c)(1). If endangered species may be present, the action agency may prepare a BA to determine whether such species "is likely to be affected" by the action. *Id*.; 50 C.F.R. § 402.12(b). "An agency may avoid the consultation requirement only if it determines that its action will have 'no effect' on a listed species or critical habitat." *Karuk Tribe of Cal. v. U.S. Forest Serv*., 681 F.3d 1006, 1027 (9th Cir. 2012) (*en banc*) (internal citation omitted). If the BA determines that a threatened or endangered species is "likely to be affected," the agency must formally consult with FWS and/or NMFS. *See* 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14.

Overlapping the above process, Reclamation conducted a review of its Proposed Action under NEPA. In July 2019, Reclamation made available for public comment a Draft Environmental Impact Statement ("Draft EIS") addressing the Proposed Action as originally framed in January 2019. (*CNRA* Doc. No. 56-4 (Draft EIS).) On December 19, 2019, Reclamation issued a Final Environmental Impact Statement ("Final EIS"), which designated as the agency's "preferred alternative" the Proposed Action in its final form. (*See* CNRA Doc. No. 57-1 at 1-13; App. AB.) On February 18, 2020, Reclamation issued its Record of Decision on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project (ROD), thereby approving the Proposed Action. (Doc. No. 85-14 (ROD)). These lawsuits followed.

G. Recent Procedural Events

While these lawsuits were pending before this court, on March 31, 2020, the State of California issued its Incidental Take Permit ("State ITP") covering the operations of the SWP and addressing the impacts of the SWP on species listed under CESA. (Doc. No. 314-1.)[13] Among other things, the State ITP required that the SWP's operations abide by protective measures *in addition to those set forth in the 2019 biological opinions*. (*See generally* Doc. No. 314-1.)

Beginning in early 2021, the parties agreed to several limited stays to allow for review of these cases by the new Administration, in part due to President Biden's Executive Order 13990 (issued January 20, 2021), which specifically called for the reconsideration of decisions considered to be inconsistent" with the new Administration's environmental policies. (*See* Doc. Nos. 278 at 8–9 (detailing extensions); 272 at 2; *see also* Grober Decl., ¶¶ 4–5.) In the summer of 2021, state and federal water and fisheries agencies began discussing ways to reconcile the operations of the CVP and SWP given the conflicts between the 2019 BiOps and the State ITP. On August 20, 2021, this court issued an order staying the litigation through September 30, 2021. (Doc. No. 285.)

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[13] As Defendant Intervenors point out, the State ITP was subjected to analysis under the California Environmental Quality Act ("CEQA"); that analysis is the subject of numerous ongoing lawsuits in state court. (Doc. No. 328 at 20–21.) This court is aware of no information to suggest, however, that the State ITP has been enjoined or otherwise rendered unenforceable.

On September 30, 2021, Federal Defendants formally reinitiated consultation on the challenged biological opinions. (Declaration of Ernest A. Conant, ("Conant Decl."), Doc. No. 314-2, ¶ 9.) Federal Defendants anticipate that it will take more than one year to complete the re-initiated consultation. (*Id*.)

Concerned about how the projects were to be operated while the re-initiated consultation was ongoing, the court encouraged the parties to engage in the "serious task of determining how the projects will be operated during any interim period if ESA-consultation is re-initiated." (Doc. No. 285 at 4.) It now appears that at least some of the parties met regularly in the months leading up to the filing of the pending motions to develop a proposal regarding interim project operations. Those efforts resulted in an agreement between Federal Defendants and State Plaintiffs in the CNRA case that took the form of a multi-page stipulated interim injunction that those parties have deemed the Interim Operations Plan ("IOP"). (*See* Doc. No. 313-1; *CNRA* Doc. No. 221.)[14]

In mid-October 2021, in a Joint Status Report, Federal Defendants revealed a draft of the IOP. (Doc. No. 296.) After receiving at least some input from the other parties, California and the Federal Defendants revised the proposed plan, (*see* Conant Decl., ¶¶ 10–11; Doc. No. 313), which is the subject of Federal Defendants' and State Plaintiffs' pending motions.

H. Overview of Pending Motions

On November 23, 2021, in light of the reinitiated consultation, Federal Defendants moved in *CNRA* and *PCFFA* for the voluntary remand without vacatur of the 2019 BiOps and a stay through September 30, 2022 of both cases. (Doc. Nos. 313–14; *CNRA* Doc. Nos. 217, 221.) Federal Defendants also moved for an order adopting the IOP as an interim remedy for the remainder of the 2022 water year (i.e., through September 30, 2021). (*See generally* IOP; IOP ¶ 18.)

In *CNRA*, the State Plaintiffs filed their own motion, agreeing that voluntary remand without vacatur is appropriate and separately requesting that the IOP be ordered by the court as preliminary injunctive relief in that case. (*CNRA* Doc. Nos 218, 220–225.)

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[14] Hereinafter the court will reference the IOP by its internal paragraph numbers.

All the Defendant Intervenors[15] in *CNRA* and *PCFFA* agree that voluntary remand without vacatur is appropriate; some of the Defendant Intervenors even concede that imposition of the IOP is appropriate, while others oppose imposition of the IOP. (*See* Doc. Nos. 328–341; 342; *CNRA* Doc. Nos. 233, 235, 250, 249.)

PCFFA opposes the Federal Defendants' motion in its entirety.[16] (Doc. Nos. 320, 323–25.) Specifically, PCFFA argues that voluntary remand is inappropriate; even if remand is appropriate, the biological opinions should be vacated; and that the IOP is insufficient to avoid jeopardy. In what is effectively a cross-motion for injunctive relief, PCFFA proposes its own set of interim injunctive relief measures, some of which are drawn from the 2008/09 biological opinions, while others are entirely new. (Doc. Nos. 321–25.)

Federal Defendants oppose all aspects of PCFFA's motion (Doc. No. 326), as do all of the Defendant Intervenors (Doc. Nos. 344–59). State agencies have also filed an amicus brief opposing *PCFFA*'s motion on the ground that it's adoption would impermissibly and/or inappropriately constrain the discretion of the state agencies. (Doc. No. 343.)[17]

The court held a day-long hearing on the pending motions on February 11, 2021. In advance of that hearing, the court provided the parties with a list of questions for their consideration. (Doc. No. 374; *CNRA* Doc. No. 256.) At the hearing, in response to the court's expressed concerns that PCFFA's proposed injunction appeared to call for the court to become deeply involved in the day-to-day operations of the Water Projects, PCFFA requested, and the court allowed, an opportunity to submit amendments to its proposal. (*See* Doc. No. 378.) The

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[15] The numerous Defendant Intervenors in these cases do not always speak with one voice. Purely for purposes of expedience, the court does not always identify in this order with specificity the Defendant Intervenors that have signed onto each brief (or sometimes certain sections of briefs), and instead relies on the parties' self-identification in the cited record documents.

[16] PCFFA is not a party to the *CNRA* case, so did not directly oppose the State Plaintiffs' motion, but their opposition to Federal Defendants' motion has the same operative effect given that Federal Defendants and State Plaintiffs are advancing imposition of the same package of injunctive relief measures.

[17] All moving parties also filed replies and some reply declarations, all of which have been considered by the court.

other parties were afforded an opportunity to respond. (*See* Doc. Nos. 379–80; *CNRA* Doc. No. 265.) Those materials have also been reviewed and considered by the court.

On February 18, 2022, the court entered a minute order calling for additional supplemental briefing addressing the standard (discussed in a somewhat passing manner in the initial papers and at the hearing) arguably applicable to the court's review of the IOP. Responses to that minute order were received on February 23 and March 4, 2022, and have also been considered by the court. (*See* Doc. Nos 384–87, 392–93; *CNRA* Doc. Nos. 268, 275.)

Before proceeding, the court pauses to provide some commentary on these proceedings. The parties have taken full advantage of the fact that there are two ongoing cases before this court and multiple motions in each case so as to effectively expand the number of pages of briefing available to them under this court's standing order. As just one example of this, Federal Defendants' motion, filed in both cases, focuses on some of the legal aspects of voluntary remand without vacatur, while State Plaintiffs' brief, filed in the *CNRA* case, focuses on other legal issues and on the scientific and operational aspects of the IOP. This in turn engendered equally creative groupings of parties to produce multiple responses and objections from all sides to each motion. While understandable given the complexity of these cases, the result of this pattern is that there are several *thousand* pages of briefs and supporting documents now before the court in connection with these motions – motions which the moving parties contend require urgent resolution. Put simply, the dozens of lawyers involved in this case have drowned the court in paper. It cannot be understated that it would be *impossible* for the court to address every argument raised in the papers or at the hearing on the motions in a remotely timely fashion. Therefore, although the court has read and considered all the material, even if not cited herein, this lengthy order addresses only the most salient, material, and dispositive issues.

III. MOTION FOR VOLUNTARY REMAND WITHOUT VACATUR

Federal Defendants have moved for voluntary remand without vacatur of both 2019 BiOps in both the *PCFFA* and *CNRA* cases. (Doc. No. 314; *CNRA* Doc. No. 217.) PCFFA is the only party to object to voluntary remand or to the request that remand be without vacatur. In sum, PCFFA objects to remand but argues that if remand is ordered, the 2019 BiOps should be

vacated and that the pre-existing regulatory regimes set forth in the 2008 FWS and 2009 NMFS BiOps should be reinstated by the court. (*See generally* Doc. No. 320 at 11–19.)

A. Remand

Courts in the Ninth Circuit generally look to the Federal Circuit's decision in *SFK USA Inc. v. United States*, 254 F.3d 1022, 1027–28 (Fed. Cir. 2001), for guidance when reviewing requests for voluntary remand. *See, e.g.*, *Cal. Cmtys. Against Toxics v. EPA*, 688 F.3d 989, 992 (9th Cir. 2021). There are five recognized circumstances in which an agency that has decided not to defend its action may be entitled to voluntary remand:

> *First*, it may choose to defend the agency's decision on the grounds previously articulated by the agency. *Second*, it may seek to defend the agency's decision on grounds not previously articulated by the agency. *Third*, the agency may seek a remand to reconsider its decision because of intervening events outside of the agency's control. *Fourth*, even in the absence of intervening events, the agency may request a remand, without confessing error, to reconsider its previous position. *Finally* . . . the agency may request a remand because it believes that its original decision was incorrect on the merits and it wishes to change the result.

SFK, 254 F.3 at 1027–28 (emphasis added). Here, Federal Defendants invoke both the **third** (intervening events) and **fourth** (desire to reconsider its previous position) rationales. (*See* Doc. No. 314 at 13–15.)

1. Intervening Events

Under the third scenario, an agency may seek remand because of intervening events outside its control (e.g., a new legal decision or passage of new legislation). *SFK*, 254 F.3d at 1028. In such a situation, remand is generally *required* "if the intervening event may affect the validity of the agency action." *Id.* Here, Federal Defendants contend that the issuance of the State's 2020 ITP constitutes an important intervening event. PCFFA argues that remand is not justified under this scenario under the circumstances presented here. It argues that the State's issuance of the ITP over a year and a half ago is not an "intervening event" that warrants remand because the issuance of the ITP is not an event that "may affect the validity of the agency action." (Doc. No. 320 at 12.)

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In the court's view, PCFFA's position on this issue puts form over substance. While the State's ITP on its face only constrains the operations of state agencies (i.e. the California Department of Water Resources), the state and federal projects are operated in concert with one another. Federal Defendants and State Plaintiffs persuasively assert that a disconnect of this nature can cause inefficiencies in the use and management of water resources. For example, John Leahigh, DWR's Water Operations Executive Manager, has declared that—at the very least—this mis-alignment can lead to "diversion of valuable engineering resources toward inefficient accounting, negotiations, and reconciliation." (Declaration of John Leahigh ("Leahigh Decl."), Doc. 222, ¶ 52.) "From a project operator perspective, misalignment between CVP and SWP operations creates significant challenges for management of the two projects. There is no clear guidance on how the differing export constraints would fit within the current [Coordinated Operating Agreement] framework between the two Projects." (*Id.*) Reclamation's Regional Director likewise states that "[a]lignment in years where there is not enough water to meet all project needs, such as occurred in water year 2021, improves the efficient use of scarce water supplies. Reclamation has concerns that implementing inconsistent CVP and SWP operations would be inefficient and could result in both projects' being unable to maximize available water, especially in dry hydrology." (Conant Decl., ¶¶ 7–8.) These practical impacts of the State's ITP are significant and warrant remand of the biological opinions even if there is no other reason to do so.

2. Reconsideration of Prior Position

Under the fourth *SFK* scenario, even in the absence of an intervening event, an agency may request a remand (without confessing error) to reconsider its prior position. The agency "might simply state that it had doubts about the correctness of its decision or that decision's relationship to the agency's other policies." *SFK*, 254 F.3d at 1029. In such circumstances, the court "has discretion over whether to remand" and may decline to do so if "the agency's request is frivolous or in bad faith," such as where the request for remand was made at the last minute and was not based on a confession of error but rather on a non-binding statement of policy. *Id.* "[I]f the agency's concern is substantial and legitimate, remand is usually appropriate." *Id.* In

exercising this discretion, a court should consider whether voluntary remand would conserve judicial and party resources, *FBME Bank Ltd. v. Lew*, 142 F. Supp. 3d 70, 73 (D.D.C. 2015) (citing *Ethyl Corp. v. Browner*, 989 F.2d 522, 524 (D.C. Cir. 1992)), without unduly prejudicing the plaintiff, *FBME*, 142 F. Supp. 3d at 73. *See also ASSE Int'l, Inc. v. Kerry*, 182 F. Supp. 3d 1059, 1063 (C.D. Cal. 2016) (finding voluntary remand appropriate in part because it would foster judicial economy by giving the relevant agency the opportunity to reconsider and rectify an erroneous decision without further expenditure of judicial resources).

a. *Bad Faith/Good Faith*

"One way an agency may demonstrate good faith is by admitting that the reasoning adopted in its original action was flawed." *See Cal. Cmtys.*, 688 F.3d 992 (approving of a voluntary remand where the agency "recognized" that its original reasoning was flawed and sought to explain its decision in an alternative manner). On the flipside, courts have refused to grant remand where the agency's position does not demonstrate a commitment to a changed approach. *See Lutheran Church–Missouri Synod v. FCC*, 141 F.3d 344, 348–49 (D.C. Cir. 1998) (denying a "last second" motion to remand based on a new "policy statement" that was nonbinding, where the agency could not promise any particular decision on remand, and where the Court determined that the agency was merely employing "novel" tactics to avoid judicial review). Here, Federal Defendants have not overtly admitted that the 2019 BiOps are flawed, but that is not dispositive. *N. Coast Rivers All. v. U.S. Dep't of the Interior*, No. 1:16-CV-00307-LJO-MJS, 2016 WL 11372492, at *2 (E.D. Cal. Sept. 23, 2016) ("refusal to admit wrongdoing is not dispositive" of the good faith inquiry). The court will therefore proceed to evaluate whether the request for voluntary remand in this case is being made for a substantial and legitimate reason.

b. *Substantial and Legitimate Reason*

In attempting to determine what constitutes a "substantial and legitimate concern," courts have found reconsideration appropriate where the record demonstrated that the reason for the request to remand for reconsideration was a "legitimate concern that the [ ] determination[ ] had serious procedural and substantive deficiencies." *Id*. (quoting *Belville Mining Co. v. United States*, 999 F.2d 989, 998 (6th Cir. 1993)). But that is not the only scenario that may give rise to

a finding of "substantial and legitimate concern." For example, in *Neighbors Against Bison Slaughter v. Nat'l Park Serv*., No. CV 19-128-BLG-SPW, 2021 WL 717094, at *2 (D. Mont. Feb. 5, 2021), the agency requested remand because it intended to analyze new information and changed circumstances. These reasons were found to have "represented substantial and legitimate concerns." *Id*.

Here, Federal Defendants argue that they have several "substantial and legitimate reasons" for requesting remand. First, they point to Executive Order 13990, issued January 25, 2021, shortly after President Biden took office, which directed Federal Defendants to revisit numerous environmental decisions made by the previous administration, including the biological opinions at issue in this case. Following that review, Federal Defendants determined that revisions to the BiOps were necessary. (Declaration of Howard Brown ("Brown Decl."), Doc. No. 314-3, ¶ 10.)

Second, as already mentioned, Federal Defendants point out that there are numerous differences between the State ITP and the biological opinion that must be reconciled. Federal Defendants' declarants emphasize various ways in which implementing inconsistent plans could cause problems and inefficiencies. (Conant Decl., ¶ 8; Second Declaration of Paul Souza ("Souza Decl."), Doc. No. 314-4, ¶ 7.) No party appears to dispute this contention, although those opposing the IOP, including some Defendant Intervenors, point out that these inconsistencies have not been shown to be a source of harm to the species. There does not appear to be any requirement, however, that the substantial reason for remand be a source of harm to the species.

Finally, and perhaps most importantly, Federal Defendants recognize that drought frequency and severity are increasing. Specifically, the Senior Policy Advisor for NMFS, Harold Brown, declares:

> [W]e find further support for remand by recognizing that drought frequency and severity is increasing. This has implications on species conditions that were *not fully considered* in the proposed action that we analyzed in the 2019 NMFS biological opinion. Remand and reinitiation of ESA consultation would likely present an opportunity to revisit and revise approaches to drought response and drought management and these changes will need to be analyzed in a new biological opinion.

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(Brown Decl., ¶ 11 (emphasis added).)[18]

The court finds these reasons, particularly when viewed together, to represent substantial and legitimate concerns supporting remand in this case.

3. Prejudice to PCFFA

"[I]n deciding a motion to remand, [courts] consider whether remand would unduly prejudice the non-moving party." *Util. Solid Waste Activities Grp. v. EPA*, 901 F.3d 414, 436 (D. C. Cir. 2018). PCFFA contends that it will be prejudiced if remand is permitted before a decision on the merits of its challenge because Federal Defendants will be permitted to leave the BiOps largely in effect, despite their asserted flaws. (Doc. No. 320 at 16 (arguing that allowing remand without vacatur would "effectively insulate the 2019 BiOps from review while allowing federal defendants to continue violating the substantive provisions of the ESA").) To the extent PCFFA contends that it will be prejudiced because it will not be able to challenge the BiOps on their merits, their argument is not persuasive. As one court put it, if granting a motion for remand without vacatur was deemed to have "unfairly prevent[ed]" the opposing party from challenging the underlying rule, "then opposed motions for voluntary remand without vacatur would almost never be granted[,] [y]et such motions are commonly granted even when they are opposed." *Am. Forest Res. Council v. Ashe*, 946 F. Supp. 2d 1, 44 (D.D.C. 2013), judgment entered, 301 F.R.D. 14 (D.D.C. 2014), and aff'd, 601 F. App'x 1 (D.C. Cir. 2015).

PCFFA appears, however, to be arguing unique prejudice here because the BiOps will remain in place during remand. PCFFA points to the decision in *NRDC v. Norton*, No. 1:05-CV-01207 OWW LJO, 2007 WL 14283, at *12 (E.D. Cal. Jan. 3, 2007), in which a judge of this court refused to permit voluntary remand without vacatur of FWS's 2005 BiOp. The district court reasoned there that the agency was trying to "have it both ways" by being permitted to operate under the challenged BiOps while maintaining that all litigation under those BiOps should cease.

[18] At the hearing on the pending motions, the court inquired why this was not an admission that the BiOps are legally defective insofar as they failed to meaningfully evaluate this obviously important issue. Relatedly, PCFFA argues that increasing drought frequency and severity were foreseeable at the time the 2019 BiOps issued. (Doc. No. 320 at 8.) Regardless, the issue is clearly a significant one.

Id. Nonetheless, the court concludes that the present circumstances are distinguishable because Federal Defendants are not proposing to operate in the interim under the 2019 BiOps. Rather, they are proposing material modifications to those operations (many of which are similar to modifications requested by PCFFA) as set forth in the IOP.

4. Judicial Economy

Voluntary remand can "promote[] judicial economy by allowing the relevant agency to reconsider and rectify an erroneous decision without further expenditure of judicial resources." *Nat. Res. Def. Council v. U.S. Dep't of Interior*, 275 F. Supp. 2d 1136, 1141 (C.D. Cal. 2002) (citing *Ethyl Corp.*, 989 F.2d at 524). PCFFA cites the decision in *American Waterways Operators v. Wheeler*, 507 F. Supp. 3d 47, 57–58 (D.D.C. 2020), for the proposition that a court may deny voluntary remand if remand would result in "piecemeal litigation . . . for years to come." In *American Waterways*, the EPA conceded error on one legal ground, but the court already had "hundreds of pages" of cross-motions for summary judgment before it that squarely raised numerous other issues. *Id*. at 58. Under those circumstances, the court concluded that remand for the EPA to resolve the one issue it conceded required additional analysis would mean that the EPA would lack the court's guidance on the validity of numerous other challenges raised in the briefs that were ripe for resolution, meaning that the "parties potentially could be mired in piecemeal litigation over EPA's determination for years to come." *Id*.

American Waterways is distinguishable. Here, the merits issues have not been briefed. Given the complexity of these cases, the court anticipates it would take more than a year to brief and rule upon the merits issues, by which time remand will be long underway. Moreover, the scope of Federal Defendants' promised reconsideration of the issues is not narrow. For example, Federal Defendants have agreed that numerous issues will need to be revisited given the State's ITP and that the increasing frequency of droughts must be further addressed. In addition, it is becoming more and more obvious that the biological opinions governing the Water Projects will be mired in constant litigation for the foreseeable future. As a result, it would be naïve for the court to consider that *apparently inescapable reality* to be a factor that weighs heavily against remand. Finally, concerns related to judicial efficiency are substantial here. The court estimates,

very conservatively, that at least 600 hours of court staff time has been consumed by the pending motions addressed by this order alone.[19] This is simply to say that the matters raised in these cases are extraordinarily complex and their resolution time-intensive. This makes the court particularly hesitant to expend significant amounts of time resolving merits issues that may be mooted by a subsequently-revised agency decision.

5. Conclusion Re Remand

Federal Defendants have pointed to a changed circumstance and to substantial and legitimate reasons for remand. While remand produces some risk that the issues presented in these cases will need to be revived against revised BiOps, it seems beyond wasteful to proceed to the merits of this case when the challenged ESA documents—some of the most complex and intricate that this court has reviewed—are going to be re-visited by the Federal Defendants on numerous, potentially significant grounds.

Accordingly, Federal Defendants' motion for voluntary remand will be granted.

B. Vacatur

Federal Defendants argue that the remand should be "without vacatur." (Doc. No. 314 at 17–21.) "Vacatur is a species of equitable relief and courts are not mechanically obligated to vacate agency decisions that they find invalid." *Pac. Rivers Council v. U.S. Forest Serv.*, 942 F. Supp. 2d 1014, 1017 (E.D. Cal. 2013). As the Ninth Circuit has explained:

> Although the district court has power to do so, it is not required to set aside every unlawful agency action. The court's decision to grant or deny injunctive or declaratory relief under the APA is controlled by principles of equity. The district court must weigh the competing claims of injury and the effect on each party of the granting or withholding of the requested relief.

Nat'l Wildlife Fed'n v. Espy, 45 F.3d 1337, 1343 (9th Cir. 1995) (internal citations and quotations omitted).

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[19] Should the parties require the court to resolve matters of this level of factual complexity on an emergency basis in the future, they should prepare well in advance for the possibility that the court will feel compelled to appoint a special master, likely at the parties' expense.

Emphasizing that a "flawed rule need not be vacated," the Ninth Circuit recently clarified that the question of whether agency action should be vacated is governed by the rule set forth in *Allied–Signal, Inc. v. U.S. Nuclear Regulatory Commission*, 988 F.2d 146, 150–51 (D.C. Cir. 1993), which instructs that "[w]hether agency action should be vacated depends on [1] how serious the agency's errors are 'and [2] the disruptive consequences of an interim change that may itself be changed.'" *Cal. Cmtys.*, 688 F.3d at 992. A reviewing court must "also consider the extent to which either vacating or leaving the decision in place would risk environmental harm." *Nat'l Family Farm Coal. v. U.S. Env't Prot. Agency*, 960 F.3d 1120, 1144–45 (9th Cir. 2020) (citing *Pollinator Stewardship Council v. U.S. E.P.A.*, 806 F.3d 520, 532 (9th Cir. 2015)).

1. NRDC v. Norton

In relation to the issue of vacatur, PCFFA again relies on the decision in *NRDC v. Norton*, 2007 WL 14283. There, the district court refused to allow voluntary remand of a challenged biological opinion, even though ESA consultation on that biological opinion had already been reinitiated. *Id*. at *9–13. Federal Defendants had reinitiated consultation in that case because of new information about climate change, invasive species, and the population decline of the Delta smelt, and indicated they would need to update the analysis in the biological opinions to account for that new information. *See id*. at *3–4. However, Federal Defendants indicated their intent to continue to rely on the challenged biological opinions in operating the water projects while that consultation was ongoing. *Id*. at *8. After considering a long list of factors,[20] *id*. at *13, the court determined it was more appropriate under the circumstances to proceed to a merits ruling because

[20] These included: (1) the purposes of the substantive statute under which the agency was acting; (2) the magnitude of the administrative error and how extensive, substantive and serious it was; (3) the possibility the agency will be able to substantiate its decision given an opportunity to do so; (4) the likelihood that the errors can be mended and that such changes can be made without altering the order; (5) equity and public interest considerations; (6) the potential prejudice to those who will be affected by maintaining the status quo; and (7) the disruptive consequences of an interim change, which could include invalidating or enjoining the agency action. *NRDC v. Norton,* 2007 WL 14283 at *13. Courts have acknowledged that these detailed factors have been "generally subsumed" within the two-part *Allied-Signal* test adopted by the Ninth Circuit in *Cal. Cmtys.*, with the exception of the factor that takes into account the purposes of the substantive statute, which "remains a relevant consideration." *GOV. C.L. "Butch" Otter v. Salazar*, No. 1:11-CV-00358-CWD, 2012 WL 12517198, at *3 (D. Idaho Dec. 4, 2012).

"[n]o evidence or argument was presented regarding the nature of the prejudice that might result from invalidating the BiOp, and numerous factual and legal disputes exist regarding the seriousness of the order's deficiencies." *NRDC v. Kempthorne*, 506 F. Supp. 2d at 342 (subsequent ruling in the same case reviewing the 2007 Ruling). In addition, the district court was "left to speculate what consequences to the species would result if injunctive relief were ordered against continued implementation of the disputed BiOp." *Id*. Of particular concern then was the fact that the biological opinion in dispute largely relied on non-binding "adaptive management" measures that did not require any concrete actions by Reclamation if listed fish were harmed. *See id*. at 351–52.

PCFFA points to that 2007 denial of remand without vacatur in *NRDC v. Norton* to suggest that the court should take the same path here. (Doc. No. 320 at 14.) But the present situation is much different. Today, approximately 15 years and two rounds of biological opinions later, the protective measures imposed by the applicable BiOps are much more developed and complex. Perhaps most importantly, and as emphasized above, Federal Defendants do not propose to leave the challenged biological opinion in full force but instead request imposition of the IOP which includes many of the changes PCFFA supports. With all this in mind, the court turns to the *Allied-Signal* analysis.

2. Seriousness of Agency Error

In deciding whether vacatur is appropriate a court "look[s] at whether the agency would likely be able to offer better reasoning or whether by complying with procedural rules, it could adopt the same rule on remand, or whether such fundamental flaws in the agency's decision make it unlikely that the same rule would be adopted on remand." *Pollinator*, 806 F.3d at 532. The more serious the agency error, the more consideration of this factor weighs in favor of vacatur. *See id*.

Federal Defendants indicate the revised biological opinions will be based upon new and more complete information and will address some, if not all, of the concerns plaintiffs have raised. (Doc. No. 314 at 19–20.) More specifically, as mentioned above, Federal Defendants indicate that the increasing frequency of droughts was not sufficiently considered in the 2019

BiOps. In addition, regulators will need to formally grapple with the inconsistencies between the 2019 BiOps and the State ITP.

Given the above, it seems likely that the biological opinions will be altered in at least some material ways. Accordingly, this factor weighs at least somewhat in favor of vacatur. On the other hand, there are many parts of the 2019 BiOps that are not being challenged in this lawsuit. This arguably tempers the weight that should be given to this factor.

3. Disruptive Consequences of Vacatur

All parties except PCFFA agree that vacatur would be seriously disruptive. Federal Defendants favor remand without vacatur because that arrangement would allow strategic adjustments to drought-related needs in the Delta and at Shasta Reservoir while preserving operating rules in other locations such as Clear Creek and on the American and Stanislaus Rivers. It would also leave in place the various technical management teams that are important to real-time operations. (Brown Decl., ¶ 13.) NMFS's senior policy analyst Howard Brown has opined that vacatur would "likely nullify existing guidance documents and processes that govern how these technical teams function"; would "undermine the collaborative nature of [the]technical teams"; and would disrupt their ability to convene and "make recommendations to avoid and minimize species risks." (*Id*.) In addition, the action reviewed in the 2019 biological opinion incorporated at least some improvements over the prior regime, including some proactive management measures in the Delta, actions designed to improve fish passage and reduce predation, and $1.5 billion in conservation spending. (*See* Conant Decl., ¶ 22; Doc. No. 328 at 14.) At the hearing on the pending motions, Reclamation's Regional Director, Ernest Conant, testified that, in his judgment, it would not even be possible at this point in the water year to reinstate the earlier biological opinions in full. He further testified that even if it were possible to do so, "it would not be prudent," because "we would then end up with another situation where we have a biological opinion that's incompatible with the state incidental take permit." (Reporter's Transcript of Feb. 11, 2022 Hearing ("Tr.") 135.) As Federal Defendants point out (Doc. No. 364 at 9), given the unique challenges posed by vacatur of biological opinions addressing complex, ongoing water projects, courts have found remand without vacatur to be appropriate. *Nat'l*

Wildlife Fed'n v. NMFS, 184 F. Supp. 3d 861, 949 (D. Or. 2016) ("*NWF v. NMFS*").

PCFFA disagrees, suggesting instead that vacatur would result in the re-instatement of the last lawful biological opinions (the 2008/2009 "jeopardy" biological opinions that contain many of the protective measures they now call for to be ordered as injunctive relief). PCFFA indicates, rather generically, that this "need not be disruptive." (Doc. No. 320 at 19.) But even PCFFA concedes that the question of vacatur is "thorny" and suggests that the appropriate ultimate solution would be to "not remand the case." (Tr. 25.)

The court finds that consideration of disruption to be the dispositive factor here. Vacating the highly complex regulatory regime that has been in place for the past few years would be enormously disruptive, including to the numerous aspects of project operations that are not placed at issue by these lawsuits.

4. Environmental Harm of Vacatur

A reviewing court must "also consider the extent to which either vacating or leaving the decision in place would risk environmental harm." *Nat'l Family Farm Coal*, 960 F.3d at 1144–45. This issue is not well explored in the briefs in the context of vacatur, perhaps because the issues can be subsumed within the analysis of the need for preliminary injunctive relief. To the extent there will be environmental harm during the period of remand under the 2019 NMFS BiOps, the court believes interim injunctive relief as set forth below is more appropriate than vacatur.

For these reasons, Federal Defendants' motion for remand will be granted without vacatur.

IV. SUMMARY OF COMPETING INJUNCTIVE RELIEF PROPOSALS

As mentioned, the IOP consists of a set of measures Federal Defendants and State Plaintiffs have agreed to present to the court for consideration as interim injunctive relief while the BiOps are re-written. (Doc. No. 313; *CNRA* Doc. No. 217.) The IOP builds upon, and in many cases modifies, the regulatory regime imposed by the 2019 BiOps. PCFFA's proposed injunction seeks to reinstate certain aspects of the regulatory regime that controlled prior to issuance of the 2019 BiOps, set forth in BiOps issued in 2008 and 2009 by FWS and NFMS

respectively. PCFFA also proposes that certain new protective measures be imposed. The competing proposals contain components that roughly correspond to two major areas of Water Project operations: operations at Shasta Dam on the Sacramento River; and operations in the Delta, primarily at the SWP and CVP export pumps located in the Southern Delta.[21] Below, where relevant, the court briefly outlines the management constraints imposed by the 2008/2009 BiOps; the existing management regime under the 2019 BiOps; and the major changes proposed under the IOP and PCFFA proposals.

A. Shasta Operations

1. General Background Re Temperature Management

Generally, temperature management below Shasta/Keswick Dams involves the release of cold water[22] to meet target temperatures at various temperature compliance points ("TCPs") along the Sacramento River. Keswick Dam is located at River Mile 302. (BA at 2-13.) The furthest upstream TCP is Clear Creek (about 10 river miles below Keswick), then Airport Road Bridge (15 river miles below Keswick), Balls Ferry (25 river miles below Keswick), and Bend Bridge (44 river miles below Keswick). (*Id*.) The general purpose of these TCPs is to keep water temperatures cool enough to avoid damaging salmon eggs, a phenomenon known as "temperature-dependent mortality." (*See* BA 4-29; Rosenfield First Decl., ¶ 138.)

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[21] At the court's request, the parties produced a 30+ page chart that compares the operational parameters of the IOP, PCFFA's proposed injunction, and the 2019 BiOps. (Doc. No. 363.) As noted, PCFFA thereafter slightly revised their proposal following the hearing on the pending motions. (Doc. No. 378.) The court summarizes here what it considers to be the most important (and most contentious) aspects of the competing proposals while also explaining the measures in place under the 2019 BiOps where relevant. Nonetheless, the court has read and considered the entirety of both proposals, as revised, along with all proposed injunctive relief measures incorporated from other documents, such as the State ITP and 2009 NMFS BiOp.

[22] Shasta Dam is equipped with a temperature control device ("TCD") that allows Reclamation to control the temperature of water released from the Dam. (BA at 4-26.) "The TCD has four levels of gates from which water can be drawn." (*Id*.) During mid-winter and early spring, Reclamation uses the highest possible elevation gates to draw from the upper levels of the lake and conserve the deeper, colder water. (*Id*. at 4-27.) During late spring and summer, as Shasta Reservoir elevation decreases, Reclamation progresses to open deeper gates to release the colder water. (*Id*.)

2. 2009 NMFS BiOp

NMFS's 2009 BiOp included measures (the "2009 NMFS RPA") designed to allow the projects to continue operating without causing jeopardy to the species or adverse modification to their critical habitats. (2009 NMFS BiOp at pp. 575–671.) Most relevant here, for the summer, as part of "Action Suite I.2" of the 2009 NMFS RPA, Reclamation was required to develop a temperature management plan ("TMP") by May 15 of each year and to implement Shasta Dam operations so as to achieve daily average water temperatures not in excess of 56°[F] between Balls Ferry and Bend Bridge from May 15 through September 30 for the protection of winter-run, and not in excess of 56°[F] between Balls Ferry and Bend Bridge from October 1 through October 31 for the protection of spring-run in the mainstem Sacramento River "whenever possible." (*Id*. at 601.) The 2009 NMFS RPA acknowledged that "extending the range of suitable habitat by moving the compliance point downstream from Balls Ferry" must be balanced against the need to conserve storage in order to accumulate a sufficient cold water pool for use during the subsequent temperature management season. (*Id*. at 602.)

The 2009 NMFS BiOp also address carryover storage. It first explained the pre-existing approach to carryover storage:

> Before the TCD was built, NMFS required that a 1.9 [million acre feet ("MAF")][23] end-of-September (EOS) minimum storage level be maintained to protect the cold water pool in Shasta Reservoir, in case the following year was critically dry[24] (drought year insurance). This was because a relationship exists between EOS storage and the cold water pool. The greater the EOS storage level, typically the greater the cold water pool. The requirement for 1.9 MAF EOS was a reasonable and prudent alternative (RPA) in NMFS' winter-run opinion (NMFS 1992). Since 1997, Reclamation has been able to control water temperatures in the upper Sacramento River through use of the TCD. Therefore, NMFS changed the RPA to a target, and not a requirement, in the 2004 CVP/SWP operations Opinion.

[23] An acre foot of water is the volume of water required to cover one acre of surface area to the depth of one foot, or approximately 43,560 cubic feet. *United States v. Westlands Water Dist*., 134 F. Supp. 2d 1111, 1139 n. 61 (E.D. Cal. 2001).

[24] Water Project managers use a number of scales to describe hydrologic conditions. For purposes of this case, the most relevant is the water year type designation determined by a formula set forth in California State Water Resources Control Board Decision 1641 on page 188. As State Plaintiffs' expert witness Les Grober has explained: "There are five year types: critically dry, dry, below normal, above normal, and wet." (Grober Decl., 10 n. 8.)

(*Id*. at p. 250.) The 2009 NMFS BiOp continued this approach, setting forth EOS carryover storage targets in the RPA, with the lowest target being 1.9 MAF in the driest category of years, and delineating steps Reclamation must take if the various targets cannot be reached. (*See generally id*. at pp. 590–603.) The 2009 NMFS BiOp estimated that—at least as of that date—the 1.9 MAF target would not be met in 10% of years. (*Id*. at p. 250.) The 2009 RPA also provided drought exception procedures and contingency plans if these temperatures and carryover storage targets could not be achieved. (*Id*. at p. 600.)

Relatedly, the 2009 NMFS RPA set "performance targets" for storage as follows: EOS storage of 2.2 MAF shall be met in 87% of years; EOS storage of 2.2 MAF *and* end-of-April ("EOA") storage of 3.8 MAF in following year (to maintain potential to meet Balls Ferry compliance point) shall be met in 82% of years; EOS storage 3.2 MAF (to maintain potential to meet Jelly's Ferry compliance point in following year) shall be met in 40% of years. (*Id*. at pp. 592.) "If there is significant deviation from these performance measures over a 10-year period, measured as a running average, which is not explained by hydrological cycle factors (e.g., extended drought)," then Reclamation was required by the 2009 NMFS RPA to reinitiate consultation with NMFS. (*Id.*)

3. 2019 NMFS BiOp[25]

The 2019 BiOps implement a "tiered" Shasta temperature management strategy designed, at least facially, to account for the real-time spatial and temporal distribution of redds (egg clusters) to attempt to conserve cold water for use when it is most needed. The operation manager of Reclamation's Central Valley Office, Kristin White, described this tiered approach generally as follows.

> The tiered strategy recognizes that cold water is a scarce resource and that additional measures may be required when hydrology and meteorology do not provide sufficient cold water to avoid temperature dependent mortality throughout the entire temperature management period. The tiered strategy is intended to optimize use

[25] The court recognizes that the 2019 BiOps evaluated, and approved, Water Project operations and protective measures as proposed by Reclamation and described in Reclamation's Proposed Action. Purely for ease of reference, however, the court will frequently refer to the applicable regulatory constraints as stemming from the 2019 BiOps themselves.

> of cold water at Shasta for Winter-Run Chinook Salmon eggs based on life-stage-specific requirements during the temperature management season.

(Doc. No. 119-1, Declaration of Kristin White ("White Decl."), ¶ 23 (citing BA at 4-31 to 4-32).)

The 2019 BiOps concluded that the Clear Creek TCP serves as a reliable surrogate for controlling temperatures at the farthest downstream redd location. (*See* 2019 NMFS BiOp at pp. 173, 237.) Although historically spawning was expected to begin in April, in recent years, the onset of spawning has been later—into May and June. (2019 NMFS BiOp at pp. 243–4.) The tiered strategy adopts the view that using cold water too early (i.e., before redds are deposited) and/or to meet a TCP too far downstream of the actual location of redds, wastes cold water that is actually needed later in the season during the critical incubation season. Thus, the tiered strategy hypothetically "allows for strategically selected temperature objectives," based on projected total storage, the available "cold water pool," meteorology, and downstream conditions (which can influence how much water Reclamation must release for other reasons), among other things. (2019 BA at 4-28.)

The temperature targets for each "Tier" under the 2019 BiOps are as follows:

- In Tier 1 years, Reclamation will operate so as to maintain daily average temperatures of 53.5°F at Clear Creek throughout the entire temperature management season (May 15 through Oct 30). (2019 NMFS BiOp at pp. 241–2.)
- In Tier 2, Reclamation will target 53.5°F at Clear Creek during the "critical egg incubation period." (*Id*. at p. 242.)
- Tier 3 is the proposed operation when the cold water pool in Shasta Reservoir on May 1 is less than 2.3 million acre-feet or when modeling suggests that maintaining 53.5°F at the Clear Creek TCP would have higher mortality than a warmer temperature. (*Id*.) In a Tier 3 year, Reclamation would target 53.5°–56° degrees at Clear Creek during the critical egg incubation period and would consider "intervention measures."[26] (*Id*.)

[26] "Intervention measures" include "consulting with []FWS and NMFS, increasing hatchery intake, adult rescue, and juvenile trap and haul." (*Id*. at p. 249.) NMFS notes in the 2019 NMFS BiOp that "any benefits from implementation of these measures is not included in results presented [therein] due to their inability to be characterized by the modeling." (*Id*. at p. 243.)

Reclamation would not allow temperatures to exceed 56° but would decrease temperatures to below that during the periods of greatest temperature stress on the species. (*Id*.)

- Tier 4 conditions are "defined by mid-March storage and operations forecasts of Shasta Reservoir total storage less than 2.5 million acre-feet at the beginning of May, or if Reclamation cannot meet 56°F at Clear Creek gauge." (*Id*. at p. 243.) In Tier 4 years, Reclamation will "initiate discussions with FWS and NMFS on potential intervention measures to address low storage conditions that continue into April and May." (*Id*. at p. 243.)

NMFS reviewed the tiered management strategy in some detail in the 2019 NMFS BiOp and summarized its own evaluation of the impacts that it anticipated would result from operations under each of these Tiers.

- In Tier 1 years, NMFS expects an average modeled temperature dependent egg survival of 94–95%. (*Id*. at p. 241–2.) Reclamation is expected to operate under Tier 1 in 68% of years. (*Id*.)
- In Tier 2 years, average modeled temperature dependent egg survival is anticipated to be 85–88, which is expected to occur in 17% of years. (*Id*. at p. 750.)
- Modeling suggests Tier 3 would be in place for 7–15% of years. (*Id*. at pp. 243, 248.) The 2019 NMFS BiOp indicates that temperature conditions in a Tier 3 year would result in an estimated temperature-dependent mortality of between 28% and 34% according to the two dominant modeling approaches, respectively. (*Id*.)
- NMFS expects Tier 4 conditions to exist in five to seven% of years. (*Id*. at p. 252.) Modeling indicates that during Tier 4 years, 53.5°F is exceeded on 86% of days that fall within the temperature management period. (*Id*.) "*This exposure corresponds to an estimated temperature-dependent mortality in Tier 4 years of between 79% and 81%."* (*Id*. (emphasis added).)

Under the 2019 NMFS BiOp, temperature management planning begins in early February, when Reclamation prepares forecasts of water year runoff using precipitation to date, snow water

content accumulations, and runoff. If, for example, May 1 storage is projected to be less than 2.5 MAF, Reclamation would initiate discussions on intervention measures for a Tier 4 year. Reclamation would then perform initial temperature modeling in early April, which is timed to coincide with the release of certain critical forecasts. This April temperature model scenario is then used to develop an initial TMP. After Reclamation determines the actual May 1 cold water pool volume, it presents a draft TMP to stakeholders the first week of May, with the final TMP being submitted to NMFS and SWRCB on or before May 20. During the temperature management "season" (i.e., the time of year when temperature is managed under the TMP), the 2019 NMFS BiOp calls for Reclamation to convene the Sacramento River Temperature Task Group at least monthly during the season and to provide real time reports on temperature performance. (*See generally* Doc. No. 363 at 25–26 (citing BA 4-15, 4-32 to 4-33 & Shasta Cold Water Pool Management Guidance Document cited therein).) NMFS provides technical assistance, review, and comment on the draft and final temperature management plans through the Sacramento River Temperature Task Group. (2019 NMFS BiOp pp. 256–57; BA 4-35.) If forecasted Shasta storage is projected to be below 2.5 MAF at the beginning of May, and dry conditions continue into April and May, Reclamation must confer with FWS and NMFS on potential intervention measures. (2019 NMFS BiOp 235; BA 4-33 to 4-34.)

The 2019 NMFS BiOp plans for certain other measures designed with an intent to benefit winter-run. Among other things, the Proposed Action notes a Resolution adopted by the Sacramento River Settlement Contractors ("SRS Contractors")[27], pursuant to which, during drier water years (Tier 3 and Tier 4), the SRS Contractors will meet and confer with Reclamation,

[27] The SRS Contractors are "individuals and entities . . . that individually hold settlement agreements (the SRS Contracts) with [ ] Reclamation." (2019 NMFS BiOp at p. 8.) The SRS Contractors hold "senior" rights that pre-date the CVP and SWP, and thus Reclamation's "without action" scenarios assume these senior rights holders would continue to divert water under their pre-CVP/SWP rights, because that is what they previously did in absence of the operation of the CVP and SWP. (BA 3-17.) Accordingly, Reclamation considers at least certain aspects of these diversions to be part of the "environmental baseline" for various environmental analyses. (*See id*.) The parties and prior court orders variously refer to certain deliveries to the SRS Contractors, and those to other, related senior water rights holders with similar settlement contracts, as "mandatory" or "non-discretionary" delivery obligations of the CVP.

NMFS, and other agencies as appropriate to determine if there is any role for the SRS Contractors in connection with Reclamation's operational decision-making for Shasta Reservoir annual operations. (2019 BA at 4-89.) While a pre-determined reduction (25%) in deliveries to the SRS Contractors is automatically triggered in certain dry years under their "settlement" contracts, other actions may be considered, including: (1) modifying the scheduling of spring diversions by the SRS Contractors; (2) voluntary, compensated water transfers by the SRS Contractors subject to Reclamation approval; and (3) delayed SRS Contractor diversion for rice straw decomposition during the fall months. (*Id*.) The Proposed Action also includes non-flow measures such as spawning and rearing habitat restoration, construction of lower intakes in critical areas, and other fish passage projects. (*Id*. at 4-40 to 4-42.)

Despite the above-mentioned measures, NMFS conceded in its 2019 BiOp that

> The proposed action will result in ongoing adverse effects to Sacramento River winter-run Chinook salmon. The most significant adverse effects . . . are temperature dependent egg mortality that will occur in all of the Summer Cold Water Pool Management tier types, but most significantly in tier 3 and 4 years.

(2019 NMFS BiOp at p. 753.)

4. IOP Shasta Measures

The proposed IOP recognizes that California is in an ongoing drought and that in the past two consecutive years (2020 and 2021) winter-run Chinook salmon have experienced very poor "egg-to-fry" survival rates. (*See* IOP, ¶ 12.i.) To "protect the third year class" from high mortality, given the species' three year life cycle (*id*. ¶ 14), the parties to the IOP agree to the following interim injunctive relief measures:

- Reclamation will meet daily average water temperatures at the Clear Creek gauge of 55°F (in critical years) and 54°F (for dry and below normal years) from May 1 – October 31. (*Id*. ¶ 15.) (This compares to the 56°F upper limit in Tier 3 years and no upper limit in Tier 4 years under the 2019 NMFS BiOp.)
- Reclamation will "determine" an end-of-September carryover storage "goal" for Shasta Reservoir that would vary according to water year type and availability of

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water.[28] (*Id.* ¶ 16.) (No carryover storage goals were included in the 2019 NMFS BiOp or BA which only called for carryover storage to be "considered" when making operational decisions. (*See* BA 4-16.))

- Reclamation will not schedule or make deliveries of "stored water"[29] for any reason other than for "public health and safety"[30] until Reclamation approves a temperature management plan that will meet the winter-run habitat criteria (in the form of the temperature targets identified above) and end-of-September storage goals. (*Id.*, ¶ 12.i.b.) This component of the IOP is not present under the 2019 NMFS BiOp, which, as mentioned, does not call for the completion of a TMP until late May of each year.
- The creation of a new Shasta Planning Group to coordinate decisionmaking related to temperature control issues. (*Id.*, ¶ 13.) The Shasta Planning Group is designed to "enhance communications between agency directors and the existing Shasta technical teams for temperature and flow." (Brown Decl., ¶ 33.) The Group will develop and implement a monitoring and tracking system; will meet with Reclamation to discuss technical input from other relevant technical teams; and will confer and seek consensus on Shasta operations. (*Id.*) If the Group is not able to reach a consensus on operational priorities or actions, it can elevate decisions to the agency directors. (*Id.*) The Regional Administrator for NMFS, after conferring with the Director of CDFW, will make an operational decision for protecting listed species that Reclamation agrees

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[28] Preliminary modeling at the time the IOP was initially filed indicated potential carryover storage range volumes of 1.2 MAF to 1.8 MAF if 2022 is a critical year and 1.8 MAF to 2.5 MAF if 2022 is a dry year. (*Id.* ¶ 16.ii.)

[29] This term appears to be a reference to the general California state law concept of "stored water" as set forth in California State Water Resources Control Board Regulations. *See* 23 Cal. Code Regs. § 658 ("Storage of water means the collection of water in a tank or reservoir during a time of higher stream flow which is held for use during a time of deficient stream flow. For licensing purposes all initial collections within the collection season plus refill, in whole or in part, held in a tank or reservoir for more than 30 days shall be considered water diverted for storage" with some exceptions not relevant here.).

[30] In the IOP, this is defined as meeting "Municipal and Industrial Delta salinity requirements and minimum Municipal and Industrial deliveries for Public Health and Safety." (*Id.* ¶ 12.i.a.)

to implement, consistent with applicable law. (*Id.*) This too is distinct from the 2019 NMFS BiOp, which leaves Reclamation in control of the ultimate form of the final TMP issued in late May.

- In critical, dry, or below normal years, if Reclamation is unable to meet habitat criteria for the entire period of May 1 – October 31, then the agencies will use the decisionmaking process outlined in the IOP to provide "sufficient habitat for the longest period possible." (IOP ¶ 12.i.a.) In such a situation, the agencies will also coordinate with the "Meet and Confer Group"[31] described in the 2019 NMFS BiOp and brief PCFFA and Defendant Intervenors in these cases. (*Id.*)

5. PCFFA's Proposed Shasta Measures

PCFFA's alternative injunctive relief, as amended after the hearing on the pending motions, would impose more stringent and more expansive temperature requirements and carryover storage requirements as follows:

- To protect incubating winter-run eggs, Reclamation may not exceed a maximum daily average water temperature of 54.5°F (if 2022 is critically dry) or 53.5°F (if 2022 is dry) at Clear Creek from date that initiation of spawning of winter-run is observed or May 15, whichever is earlier, until October 31. (Doc. No. 378-1 ("PCFFA PI"), ¶ 4.a–b.)
- In any critically dry year, temperature-dependent mortality of winter-run Chinook salmon shall be no greater than 30%. (*Id.*, ¶ 4.a.iii.)
- To protect pre-spawning winter-run adults, Reclamation may not exceed maximum daily average water temperature of 61°F at Jelly's Ferry from March 1 to the date that initiation of spawning of winter-run is observed or May 15, whichever is earlier. (*Id.*, ¶ 4.c.)
- Reclamation must ensure end-of-September water storage volumes in Shasta Reservoir of 1.9 MAF in a critically dry year or 2.2 MAF in a dry year. (*Id.*, ¶ 4.a–b.)

[31] The 2019 NMFS BiOp explains that this group includes FWS, NMFS, DWR, California's Department of Fish and Wildlife, and the SRS Contractors. (2019 NMFS BiOp at p. 19.)

- Reclamation must comply with all provisions of the California State Water Resources Control Board's Water Rights Decision 1641 ("D-1641"),[32] (*id.*, ¶ 4.c), even if Reclamation and DWR applied for and received permission from the State Water Resources Control Board to deviate from D-1641.
- Reclamation, and those acting in concert with Reclamation, must prioritize the above requirements including by curtailing, "to the extent permitted by law, all water deliveries to, water supply allocations for, and water diversions by" all CVP and SWP contractors, "including settlement and exchange contractors" except for: (1) water deliveries necessary for human health and safety, as defined in 23 California Code of Regulations § 878.1[33]; and (2) "Level 2" water deliveries to wildlife refuges as required by section 3406(d) of the Central Valley Project Improvement Act, Pub. L. No. 102-575, 106 Stat. 460. (PCFFA PI at 5.)
- If, "having exercised best efforts" to prioritize compliance with the temperature and carryover requirements and the requirements of D-1641, Reclamation is still unable to meet those requirements, Reclamation shall promptly meet and confer with PCFFA and other parties to provide modeling and information demonstrating why it is impossible to meet the requirements and shall instead prioritize compliance to the "maximum extent possible." (*Id.*)

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[32] Generally, D-1641 imposes upon Reclamation and DWR certain requirements under California law to protect long term fishery "beneficial uses." *See generally San Luis & Delta-Mendota Water Auth. v. United States*, 672 F.3d 676, 692 (9th Cir. 2012). These include flow requirements on the lower San Joaquin River and elsewhere in the Delta. (*See generally* D-1641, https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641_1999dec29.pdf (*last visited* Feb. 22, 2022).)

[33] Among other things, this provision defines the amount of water "necessary for minimum human health and safety" as 55 gallons per person per day. 23 Cal. Code Regs. § 878.1(b)(1)(A).

B. Delta Operations[34]

1. Loss/Salvage Thresholds to Protect Salmonids.

a. *2019 NMFs BiOp*

To address loss of migrating salmonids at the export pumping facilities in the southern Delta, the 2019 NMFS BiOp sets forth single-year loss thresholds for winter-run and CV steelhead. If actual loss at the export facilities exceeds 50% of any of those thresholds, the projects will reduce export pumping to a 14-day average of no more negative than -3,500 cubic feet per second ("cfs") for the remainder of the season unless a risk assessment determines the risk is no longer present; if 75% of the threshold is reached, export pumping will be reduced to no more negative than -2,500 cfs unless a risk assessment determines the risk is no longer present. (BA 4-69–4-70.)

The 2019 NMFS BiOp also includes "cumulative" loss thresholds based on historical loss of winter-run salmon and CV Steelhead from 2010 through 2018. If the projects exceed 50% of those limits cumulatively prior to 2024, an independent panel will be convened to make recommendations; if the limits are exceeded, NMFS and FWS will be consulted to provide technical assistance. (BA 4-68–4-69.)

The 2019 NMFS BiOp does not include any specific loss thresholds protections in the Delta for spring-run salmon. Instead, the 2019 NMFS BiOp merely assumes that spring-run are, generally, protected by the other loss thresholds. (Brown Decl., ¶ 24.) The 2019 NMFS BiOp does contain a take limit for spring-run based upon late fall-run Chinook salmon surrogates released from a hatchery. (2019 NMFS BiOp at p. 810.)

b. *IOP*

The IOP adopts provisions from the State ITP that provide for similar single-year winter-run loss thresholds as those in the 2019 NMFS BiOp, but the IOP requires that the pumping reductions, if triggered, would remain in place for at least 14 days before exports can be

[34] The court recognizes that even if the IOP is not imposed by the court, DWR already is required by state law to operate the SWP to conform to the State ITP, which forms the backbone of many of the IOP's provisions regarding Delta operations.

increased, even if a risk assessment determines the risk is no longer present. (IOP ¶ 6; State ITP § 8.6.1.) This length of pumping reductions is designed to "ensure[] regulatory certainty because OMR restrictions are in place for a fixed period of time (14 days)." (Brown Decl., ¶ 18.)

The IOP also adopts provisions from the State ITP that layer on top of the single-year threshold two separate measures designed to protect early-migrating winter-run salmon and to specifically protect mid- and late-season natural (as opposed to hatchery) winter-run salmon. (IOP ¶ 6; State ITP §§ 8.6.2 & 8.6.3; Brown Decl., ¶¶ 19–21.)

Finally, the IOP adopts a separate provision from the State ITP that adds another loss threshold to protect spring-run salmon based upon tagged hatchery surrogates. (IOP ¶ 6; State ITP § 8.6.4; Brown Decl., ¶¶ 19–22.)

c. *PCFFA's Proposal*

PCFFA's proposed injunction calls for the re-imposition of certain thresholds utilized in the 2009 NMFS BiOp. In rough summary, these are as follows

- To protect winter-run, from January 1 to June 15, prohibiting OMR flows more negative than -3,500 cfs for a minimum of 5 days if daily SWP/CVP older "juvenile loss density"[35] is greater than 2% of the "Juvenile Production Estimate" ("JPE")[36] divided by 2000 (minimum value of 2.5 fish per thousand AF). Allowing for resumption of -5,000 cfs flows when average daily fish density is less than trigger density for 3 consecutive days following the 5 consecutive days of export reduction. (2009 NMFS BiOp at 648–51.)
- To protect spring-run, from January 1 to June 15, prohibiting OMR flows more negative than -3,500 cfs for a minimum of 5 days if cumulative loss of late fall run surrogate releases from an upstream hatchery is greater than 0.5% of the released population. Allowing for resumption of -5,000 cfs flows when average daily fish density is less than trigger density for 3 consecutive days following the 5 consecutive days of export

[35] This is a measure of fish salvaged per acre foot of water pumped. (*See* 2009 NMFS BiOp at p. 648.)

[36] As detailed below, the JPE is an estimate of the number of juvenile fish who survive to exit the Delta.

reduction. (*Id*.)

- To protect CV Steelhead, from January 1 to June 15, prohibiting OMR flows more negative than -3,500 cfs for a minimum of 5 days if daily loss of wild steelhead at SWP/CVP is greater than daily measured fish density divided by 12,000 AF. Allowing resumption of (minus) -5,000 cfs flows when average daily fish density is less than trigger density for 3 consecutive days following the 5 consecutive days of export reduction. (*Id*.)

2. OMR Restrictions to Protect Delta Smelt.

The 2019 NMFS BiOp calls for Reclamation and DWR, in coordination with FWS, to "operationalize" the results of a delta smelt life cycle model by performing "real-time monitoring for the spatial distribution" of delta smelt. (BA 4-68.)[37]

In addition to the above, the IOP adopts State ITP measure 8.5.2, which restricts exports to protect larval and juvenile delta smelt so that OMR flows are no more negative than -5,000 cfs if "the five-day cumulative salvage of juvenile [delta smelt] at the CVP and SWP facilities is greater than or equal to one plus the average prior three years' [Fall Midwater Trawl] index (rounded down)." (IOP ¶ 6.) In addition, if the trigger is exceeded, the Smelt Monitoring Team will be convened, which may result in recommendations based upon life cycle modeling and other information, to reduce negative OMR flows even further, depending on the level of risk. (*See* State ITP § 8.5.2; *see also* ITP § 8.1.5.2.)

To protect delta smelt, PCFFA's proposed injunction, as modified post-hearing, would require "to the extent possible," daily OMR flows to be "zero or positive for seven consecutive days following the salvage of one or more delta smelt by the CVP or SWP." (PCFFA PI, ¶ 3.)

3. Inflow:Export Ratio

The 2009 NMFS BiOp contained a requirement in its "Action IV.2.1" that San Joaquin River inflow be balanced against exports according to pre-determined ratios (I:E Ratio) set according to the category of water year. (*See id*. at p. 643.) For a critically dry year, the 2009

[37] PCFFA has indicated that its proposed injunction calls for the implementation of measures contained within the 2019 FWS BiOp unless specifically modified within the PCFFA PI. (Doc. No. 363 at 8.) PCFFA does not seek to modify this provision of the 2019 FWS BiOp.

NMFS BiOp imposed a ratio of San Joaquin River inflow to combined exports of 1:1, while in a dry year, the ratio was 2:1, with increasingly large (3:1, 4:1) ratios being imposed as conditions become wetter. (*Id*.) The Ninth Circuit previously reviewed one specific aspect of this I:E Ratio—the imposition of a 4:1 ratio in wet years—and found this "conservative threshold" to be "traceable to the record" and therefore within NMFS's discretion to implement. *San Luis v. Locke*, 776 F.3d at 1004.[38]

Both the IOP and PCFFA's proposals seek to once again impose the I:E Ratio in essentially the same manner as the I:E Ratio provision was structured pursuant to the 2009 NMFS BiOp under Action IV.2.1. (*See* State ITP § 8.17, as incorporated into IOP ¶ 11; Doc. No. 378-1, ¶ 1 (PCFFA Proposal).) Although there has been some confusion surrounding this subject, Federal Defendants and State Plaintiffs maintain that the competing provisions are indistinguishable (Tr. 71) and PCFFA has failed to cogently demonstrate otherwise.

4. Storm Flexibility Provisions

The 2009 NMFS BiOp prohibited OMR flows from being more negative than -5,000 cfs (on a 14-day running average) from January 1 through June 15. (2009 NMFS BiOp at 648–51.)

The 2019 BiOps contain a new "storm-related flexibility" ("Storm Flex") provision under which operators may attempt to capture flows during storm-related events. The provision allows increases in exports (theoretically up to a state law maximum of -14,900 cfs) unless turbidity is very high in a region of the Delta that might cause delta smelt to be drawn into the vicinity of the export pumps. (BA 4-17; 2019 FWS BiOp at 141.) No duration is specified in this provision, nor is the concept of a "storm event" defined therein.

The IOP would limit Storm Flex[39] to some degree by providing that that Delta pumps cannot exceed OMR of -6,250, or -5,000 in the spring spawning period for Delta smelt. (IOP at ¶¶ 6.vi, 7; State ITP § 8.7.) Also, DWR agrees that it will only implement Storm Flex with the

[38] This provision was omitted from the 2019 NMFS BiOp and ostensibly replaced by the loss triggers described above. (2019 NMFS BiOp at p. 777.)

[39] The IOP appears to define a storm-related event in a somewhat circular fashion by requiring that "[a] measurable precipitation event has occurred in the Central Valley" before Storm Flex can be implemented. (*See* ITP § 8.7.)

approval of the Regional Director of FWS and Regional Administrator of NMFS.

PCFFA's proposal would prohibit Storm Flex entirely, returning to the constraints set forth in the 2009 NMFS BiOp that prohibited flows more negative than -5,000 cfs. (PCFFA PI ¶ 2.)

5. IOP's Summer Fall Action Plan for Delta Smelt

Under the 2019 FWS BiOp, in below normal, above normal, and wet years, Reclamation will maintain low salinity habitat for delta smelt in Suisun Marsh and Grizzly Bay (maintaining 0-6 parts per thousand ("ppt") salinity at Belden's Landing), manage the low salinity zone to overlap with turbid water and available food supplies, and establish contiguous low salinity habitat from Cache Slough Complex to the Suisun Marsh, among other things. (2019 FWS BiOp 51–54.)

Under the IOP in below normal years, Reclamation will "share the water costs" for DWR to operate the Suisun Marsh Salinity Control Gates for a maximum of 60 days to maximize the number of days that Belden's Landing three-day average salinity is equal to or less than 4 ppt salinity. (IOP ¶ 10; State ITP § 9.1.3.1.)

V. EVIDENTIARY DISPUTES

The parties have raised numerous objections to the evidence presented in connection with the pending motions. The court finds it unnecessary to address these objections in detail and instead provides the following general rulings.

A. Objections Related to Expert Evidence

Defendant Intervenors raise numerous objections to expert declarations filed in these actions by the moving parties. A central theme to these objections is the assertion that the experts are opining on matters outside their areas of expertise. (*See, e.g.*, Doc. Nos. 327; *CNRA* Doc. 324.) On this "scope of expertise" issue, under Rule 702, "an expert may be qualified either by 'knowledge, skill, experience, training, or education,'" and the rule "is broadly phrased and intended to embrace more than a narrow definition of qualified expert." *Thomas v. Newton Int'l Enterprises*, 42 F.3d 1266, 1269 (9th Cir. 1994); *see also Pooshs v. Phillip Morris USA, Inc.*, 287 F.R.D. 543, 553 (N.D. Cal. 2012) (finding that "despite not having a marketing degree," a public

health expert was "qualified, by education, experience, and training, to opine regarding advertising and marketing in the area of public health"; a witness may be "designated as an expert in this limited area without also being an expert in the total universe of commercial marketing and advertising."). Moreover, "[w]hether an expert is the 'best' qualified or has sufficient specialized knowledge is generally a matter of weight, not admissibility." *LaCava v. Merced Irr. Dist., No*. 1:10-CV-00853 LJO, 2012 WL 913697, at *5 (E.D. Cal. Mar. 16, 2012).

Generally, these objections advanced by Defendant Intervenors are unfounded as applied here. All of the experts in question have well-rounded, extensive experience in the *interdisciplinary* matters at issue in this case. To the extent those experts stray from their "core" area(s) of expertise (e.g., in the case of those experts whose training is primarily in biology), it is into areas where they have significant practical experience (e.g., where that biology expert has decades of experience applying biological knowledge to issues related to water project management). The same observation pertains to those witnesses who have core expertise in hydrology or "policy-making." No witness is wholly lacking in appropriate technical or practical experience in the areas about which they have opined.[40] Therefore, the exact nature of their degrees and primary emphasis of their training goes to the weight of their opinions, not the admissibility of those opinions. While some witnesses have admitted to arguable weaknesses (primarily vis-à-vis other experts) in their expertise at deposition, if anything,[41] these admissions likewise go to the weight, not the admissibility, of their opinions.

Defendant Intervenors also object to the fact that Federal Defendants' expert witness, Howard Brown, opines in his declaration that the IOP is "expected" to provide improved species protection over the 2019 biological opinion and that it "may" avoid certain harms. (Doc. No. 327 at 3–4.) Given his choice of words (i.e., "expected" and "may"), Defendant Intervenors assert

[40] The one possible exception to this is Les Grober's opinions regarding agricultural practices, given that his training as a hydrologist and extensive practical experience in water project management do not necessarily extend to the subject(s) of agricultural practices discussed in his declaration. (*CNRA* Doc. 324 at 5.) Because the court does not rely on those opinions in this order, it is unnecessary for the court to formally rule on any objections to that opinion evidence.

[41] Such honest admissions can (and in the court's opinion *do* here) demonstrate forthrightness and integrity.

that Brown's opinions are largely speculative and should be excluded under Federal Rule of Evidence 702(a) because they will not "help the trier of fact to understand the evidence or to determine a fact at issue." (*Id*.) The court does not agree. Mr. Brown's opinions are qualified in large part because of the uncertainty involved in managing the projects – uncertainty that Defendant Intervenors actually rely on elsewhere to argue that the IOP should not be adopted. If anything, Mr. Brown's choice of words in his declaration goes to the weight of that evidence, not to its admissibility.

Finally, Defendant Intervenors also object that PCFFA witness Dr. Rosenfield has impermissibly relied on NMFS's 2017 Draft RPA Amendment to advance opinions as to the performance of Reclamation's river temperature model. (Doc. No. 366 at 4.) Defendant Intervenors object that Dr. Rosenfield should not be entitled to rely on this draft document, as it has not been peer reviewed and numerous parties have objected to its reasoning when it was issued. This objection is without merit.[42] Although peer-review can demonstrate that an expert's reasoning or methodology is scientifically valid, *Daubert v. Merrell Dow Pharms., Inc*., 509 U.S. 579, 593–95 (1993), there is no requirement that an expert rely on only published, peer-reviewed science. Moreover, the gatekeeping concerns expressed by the Supreme Court in *Daubert* are relaxed in the context of a decision made by the court, rather than by a jury. *See United States v. Flores*, 901 F.3d 1150, 1165 (9th Cir. 2018) (quoting *Deal v. Hamilton Cty. Bd. of Educ*., 392 F.3d 840, 852 (6th Cir. 2004) ("The 'gatekeeper' doctrine was designed to protect juries and is largely irrelevant in the context of a bench trial.")). The court is nonetheless mindful of the fact that the NMFS 2017 Draft RPA Amendments are just that—a draft.

State Plaintiffs advance similar objections to the opinions offered by Defendant Intervenors' biology expert, Mr. Cavallo, in the following respects. First, Mr. Cavallo relies on data he personally collected on the Sacramento River to critique conclusions contained within peer-reviewed literature. State Plaintiffs complain that because "[n]o data have been distributed,

[42] This objection is also ironic and somewhat perplexing, given that one of Defendant Intervenors' primary declarants, Bradley Cavallo, also relies on his own, non-peer-reviewed analyses of others' work. (Tr. 219–20.)

and none of this analysis has been peer-reviewed[,] Mr. Cavallo fails to establish that his survey and related conclusions are based on sufficient facts and data and are the product of reliable principles and methods that were appropriately applied." (*CNRA* Doc. No. 252-4 at 8.) State Plaintiffs also complain about Mr. Cavallo's reliance on "old data" from the Feather and American Rivers to support his opinion regarding dissolved oxygen content in the Sacramento River. (*Id*. at 9.) State Plaintiffs object that Mr. Cavallo does not provide a basis for applying this data to winter-run Chinook salmon in the Sacramento River and, in fact, admits that conditions in the Feather and American Rivers are not the same as in the Sacramento River. (*Id*.) State Plaintiffs further object to the manner in which Mr. Cavallo describes and utilizes numeric sets of data: "By using percentages as data and using single numbers rather than two sets of data, Mr. Cavallo violates standard guidance on how to use his statistics." (*Id*.) Finally, State Plaintiffs complain that Mr. Cavallo offers inconsistent opinions on the issue of how much of an impact thiamine deficiency has had on winter-run survival. (*Id*. at 9–10.)

The court finds these objections also go to the weight, not the admissibility, of the expert declarations and testimony. The Federal Rules of Evidence permit reliance on data an expert personally collected. In addition, there is nothing inherently objectionable about Mr. Cavallo's use of data collected from other watersheds. The fact that some data dates to 2014 and 2018 goes to the weight of the evidence offered, if anything. Finally, the details of Mr. Cavallo's declaration and testimony reveals he was not wholly inconsistent about his opinions regarding thiamine deficiency impacts and that there is at least some data that arguably supports his opinions.

Finally, in a document filed a few days before the hearing on the pending motions, Defendant Intervenors advanced another round of objections to declarations offered by State Plaintiffs with their reply briefs. (*CNRA* Doc. No. 257.) Those reply declarations submitted by the State Plaintiffs offer detailed critiques of Defendant Intervenors' scientific declarations. In this regard, Defendant Intervenors take issue with the cherry picking of quotations from their experts' declarations and depositions. These objections do not present grounds for exclusion of evidence; rather, they question the weight the reply evidence should be given. To the extent the

court relies on any of the critiques contained in the State Plaintiffs' reply declarations, it has considered the context of any statement critiqued.

B. Motion to Strike Declarations Addressing Economic Harm.

PCFFA moves to strike numerous fact-witness declarations submitted by Defendant Intervenors, either in whole or in part, on the ground that they impermissibly advance economic harm evidence. (*See* Doc. No. 367.) PCFFA correctly points out that the Supreme Court and the Ninth Circuit have repeatedly held that, because "Congress has determined that under the ESA the balance of hardships always tips sharply in favor of endangered or threatened species," courts considering and issuing injunctive relief under Section 7(a) of the ESA do not have the discretion to consider countervailing allegations of economic costs. *Nat'l Wildlife Fed'n v. Nat'l Marine Fish. Serv.*, 422 F.3d 782, 794 (9th Cir. 2005) (quoting *Marbled Murrelet v. Babbitt*, 83 F.3d 1068, 1073 (9th Cir. 1996))("*NWF I*"); *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184–89 (1978). Evidence regarding purely economic consequences of an injunction proposed to address an ESA violation is therefore arguably not relevant to the court's evaluation of that proposed injunctive relief. That is because preserving an endangered species has "incalculable" value, *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1204 (quoting *TVA*, 437 U.S. at 187–88), "regardless of the expense or burden it[] might impose," *Nat'l Ass'n of Home Builders v. Defs. Of Wildlife*, 551 U.S. 644, 671 (2007).

To the extent these declarations submitted by Defendant Intervenors assert purely economic harm, the court will sustain PCFFA's objection and will not consider that evidence. *See also PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1213-14 (recognizing courts have sustained "objections … to evidence of 'pure economic harm'"). Nonetheless, a court may consider evidence of risks to human health and safety, including evidence regarding the health and safety effects of adverse impacts such as land subsidence, land fallowing leading to air quality impacts, and community dislocations arising from job losses. *Id*. A court may also consider evidence of the "water costs" of injunctive relief insofar as those costs have related impacts on the environment, other endangered species, community safety, and infrastructure integrity. *Id*.; *see also NRDC v. Kempthorne*, No. 1:05-CV-1207 OWW GSA, 2007 WL 4462395, at *12–13 (E.D.

Cal. Dec. 14, 2007) (considering the "deleterious[] affect [to] public health, safety, and the human environment" when deciding proper injunctive relief). Many of these challenged declarations contain information that falls into that latter category, which may be considered.

Despite this court's history of finding otherwise, Defendant Intervenors appear to insist once again that even pure economic harm may be considered in the context of an ESA injunction. They cite *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv*., 2017 WL 1829588, at *6, 9–10 (D. Or. Apr. 3, 2017), *aff'd in part, appeal dismissed in part*, 886 F.3d 803 (9th Cir. 2018), which recognized the need to consider "unintended negative consequences" to appropriately tailor injunctive relief. (*See* Doc. No. 376 at 9.) But the "unintended negative consequences" discussed in that case touched on safety-related concerns regarding erosion at a dam, not purely economic harms. The decision in *Nat'l Wildlife Fed'n* therefore does not undermine the general rule that precludes economic harm from the balance in ESA cases.

Defendant Intervenors also cite the decision in *Klamath Tribes v. United States Bureau of Reclamation*, No. 18-cv-03078-WHO, 2018 WL 3570865 (N.D. Cal. July 25, 2018). There, after being presented with evidence that the requested remedies would result in water shutoffs that would "financially ruin farmer families" the court nonetheless acknowledged that "typically the interests of the protected species outweigh those of farmers and ranchers." *Id*. at *16. The court then correctly emphasized that it did have an obligation to be certain that the remedy requested would likely be effective. *Id*. In the context of that effectiveness analysis, the court indicated it had "consider[ed] the intervenors' [collateral harm] concerns and . . . recognize[d] the complex interests that would be affected by preliminary relief." *Id*. Yet, it is unclear how (or even if) the intervenor's financial harm evidence was relevant to the district court's ultimate ruling, which found that plaintiff had not met its burden to demonstrate that its proposed protective measure should be adopted because there was a genuine dispute among competing expert opinions regarding effectiveness of the proposed measures. *Id*. at *17. The decision in *Klamath* does not justify a departure from the general rule that economic harm evidence may not be considered in this context. Likewise, while the district court in *Center for Biological Diversity v. U.S. Bureau of Reclamation*, No. 6:15-cv-02358 and 6:16-cv-00035-JR, 2016 WL 9226390, at *5 (D. Or. Apr.

6, 2016), noted that the requested injunction would "create certain hardship for farmers and ranchers, increase the flood risk for [a city], eliminate the use of stored water for at least one irrigation district, and potentially conflict with state water law," it did so only after concluding the injunction was not warranted for other reasons. In short, Defendant Intervenors' position on this issue is simply not well-founded.

C. Other Evidentiary Issues

Defendant Intervenors also argue that the court should not consider large portions of the Second Declaration of Dr. Bruce Herbold concerning entrainment impacts upon listed fish in the Delta. (*CNRA* Doc. No. 233 at 24.) They argue that the material should not be considered because the State Plaintiffs brief "fails to raise such impacts as part of its argument on irreparable harm." (*Id*.) The court does not view the record as Defendant Intervenors do. State Plaintiffs' opening brief certainly does discuss entrainment. (*See CNRA* Doc. No. 220 at 15.) Although none of the briefs submitted by the parties in this case may be characterized as a model of organizational clarity, the court has been able to follow the arguments and finds, as discussed below, that the record as a whole, including Dr. Herbold's declarations, supports imposition of the IOP.

VI. FINDINGS OF FACT

In resolving the pending motions, the court finds it expedient to first issue threshold findings regarding the following key factual matters. The court does not intend, however, for this to be the exclusive source of factual material for the analyses set forth below. Additional factual matters are brought to bear as needed and appropriate below.

A. Current Status of Winter Run/Temperature-Related Impacts

The experts in these cases use a variety of measures to monitor the health of the winter-run population, including: the abundance of returning adults to the spawning grounds (or "escapement"), a sampling-based estimate of juveniles arriving at the Red Bluff Diversion Dam downstream of Shasta, known as the juvenile production index ("JPI"); the egg-to-fry survival ("ETF") estimate calculated using an estimate of the number of eggs produced and comparing that to the JPI; and yet another estimate, the juvenile production estimate ("JPE"), which

estimates the number of juveniles entering the Delta by reducing the JPI to account for mortality below the Red Bluff Diversion Dam. (Supplemental Declaration of Bruce Herbold ("Herbold Supp. Decl."), *CNRA* Doc. No. 252-3, ¶¶ 3–8; Declaration of Bradley Cavallo ("Cavallo Decl."), Doc. No. 333, ¶ 23.) The egg-to-fry estimate offers "clear insight into the impacts on winter-run of weather and dam operations each year." (Herbold Supp. Decl., ¶ 8.) The JPE is in turn used to inform the various "loss thresholds" used to regulate export operations as discussed in greater detail elsewhere in this order. (*Id*., ¶ 7.)

Winter-run experienced relatively poor survival in 2020 and 2021. (Herbold Second Decl., ¶ 29.) The average egg-to-fry survival rate over the past sixteen years is 23%. (Second Declaration of Jonathan Rosenfield ("Rosenfield Second Decl."), Doc. No. 325, ¶ 13 & reference cited therein.) Egg-to-fry survival in 2020 was 11%. This figure was slightly better than during the 2014–15 drought discussed above, but *was lower than in any other years on record*. (*Id*., ¶ 30.) Contributing to this 11% egg-to-fry survival rate was the fact that incubating winter-run eggs experienced approximately 9% "temperature dependent mortality" in 2020.[43] (*Id.*, ¶ 13.) Thiamine deficiency (a factor unrelated to Water Project operations) is also thought to have played some role in the low egg-to-fry survival rate in 2020. (Cavallo Decl., ¶ 32.) Nonetheless, the JPI was approximately 2,000,000 fry in 2020, the third highest on record. (*Id*., ¶6, ¶ 29 & Fig. 2.)

Egg-to-fry survival in 2021 was 2.6%, the lowest since 2003. (Herbold Supp. Decl., ¶ 16.) Temperature dependent mortality in 2021 is estimated via hindcast (*see supra* footnote 43) to have been 75%. (Rosenfeld Second Decl., ¶ 14.) Again, thiamine deficiency is thought to have contributed to poor egg-to-fry survival. (Cavallo Decl., ¶ 32.) In addition, in 2021 approximately 5.5% of pre-spawning winter-run adults died before they had an opportunity to

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[43] At different stages of the temperature management planning process, managers use models to "forecast" what they believe temperature dependent mortality will be, given anticipated conditions. Later, managers perform a "hindcast" that incorporates "actual data observed." (*See* Doc. No. 369-2 at p. 35.)

spawn, whereas average pre-spawning mortality is 2%. (Cavallo Decl., ¶ 52.)[44] The JPI in 2021 was below 800,000 fry. (Cavallo Decl., ¶ 29 & Fig. 2.) Mr. Cavallo points out that this figure was nonetheless higher than JPI values observed in 2014, 2015, 2016, and 2017. (*Id*.)

There is some debate over the import of the above statistics in terms of winter-run extinction risk and recovery prospects. Extinction risk of salmonid populations is measured by evaluating four factors: (1) population size (size of the spawning population combined over the previous three years); (2) population decline (change in population growth rate); (3) catastrophic decline (catastrophic abundance declines occurring within the past 10 years); and (4) hatchery influence (determined by hatchery practices and abundance of hatchery produced fish on the spawning grounds). (*Id*., ¶ 38.) Despite having experienced extremely poor egg-to-fry survival in 2014 and 2015 of 5.6% and 4.2% respectively (*see* 2019 NMFS BiOp at p. 70), according to Mr. Cavallo, the winter-run population has "recovered fully" from that event. (Cavallo Decl., ¶ 6). He further opines that, incorporating all of the available information through 2021, winter-run remain at "moderate" risk of extinction due primarily to the "population decline" and "hatchery influence" factors (which present moderate risks) while the "population size" and "catastrophic decline" factors remain at low risk levels. (*Id*., ¶ 40.) In Mr. Cavallo's opinion:

> Winter-run Chinook were at considerably greater risk of extinction in the early 1990s. Abundance was lower in the 1990s than it was in 2016-2017 (following the previous drought). Furthermore, the LSNFH winter-run Chinook conservation hatchery did not begin releasing smolts until 1998. As detailed previously, declines in adult abundance associated with the 2020-2021 brood years are likely to be comparable or less severe than observed in 2010-2011 and 2016-2017 time periods.

(*Id*., ¶ 47.) According to Mr. Cavallo, uncertainties related to some models used in predicting temperature-related impacts and the emergency of thiamine deficiency in 2020-2021, "strongly suggest that flexibility in the management of Sacramento River water temperatures is needed."

[44] Mr. Cavallo opines that while this pre-spawning mortality was higher than average, he does not consider this to be "unusually high" and does not believe these losses appreciably contributed to reduced juvenile productivity. (Cavallo Decl., ¶ 52.) He also points out that this mortality was relatively low as compared to spring-run pre-spawning mortality in 2021, which exceeded 92% due primarily to factors outside the control of Shasta Operations. (*See id.* at ¶¶ 52–53.)

(*Id*., ¶ 81.) This is because water supplies are limited and "[s]trategies that include allowing some warming before winter-run spawning begins and/or allowing temperatures at or even slightly above 56°F early in the incubation period (when metabolic demands are low), but cooling later when metabolic demands are highest, may be effective and should be considered." (*Id*.)

Other experts view the evidence and appropriate management trajectory very differently. According to Dr. Herbold, overall abundance trends show that winter-run have not fully recovered from the prior drought, and data from 2020 and 2021 predict a further downward trend. (Herbold Supp. Decl., ¶ 19.) According to Dr. Herbold, given that winter-run live for only three years and had poor survival in 2020 and 2021, it is critical to avoid a third year of poor survival, else "the species would likely suffer irrecoverable decline toward extinction." (Herbold Second Decl., ¶ 33.) Dr. Rosenfield further explains:

> Because maintaining populations in an imperiled state tends to increase the risk of extinction, bad environmental conditions and poor biological outcomes over the past two years make it even more urgent to restore environmental conditions that support and improve species' viability, rather than foster conditions that undermine or simply maintain the long-term status quo. Furthermore, it is my professional opinion that *all freshwater life stages* of these severely imperiled species must be protected from impacts of the Projects in order to prevent irrevocable damage to, and foreclosure of opportunities to recover, these species. For example, protecting adult fish while allowing their eggs to be destroyed, or protecting the eggs of endangered fish but not the juveniles that emerge from them, is inconsistent with preventing extinction of these species.

(Rosenfield Second Decl., ¶ 11 (emphasis in original).)

The 2019 NMFS BiOp also recognized that the winter-run "is at high risk of extinction in the long term" in part because there is only one population remaining. (2019 NMFS BiOp at p. 75). The 2019 NMFS BiOp summarized the species' long-term challenges in light of climate change in a manner that can best be described as ominous:

> Winter-run Chinook salmon embryonic and larval life stages that are most vulnerable to warmer water temperatures occur during the summer, so this run is particularly at risk from climate warming. The only remaining population of winter-run Chinook salmon relies on the cold water pool in Shasta Reservoir, which buffers the effects of warm temperatures in most years. The exception occurs during drought years, which are predicted to occur more often with climate change (Yates et al. 2008). The long-term projection of how the CVP and SWP will operate incorporates the effects of potential climate

> change in three possible forms: less total precipitation; a shift to more precipitation in the form of rain rather than snow; or earlier spring snow melt (U.S. Bureau of Reclamation 2008). Additionally, air temperature appears to be increasing at a greater rate than what was previously analyzed (Beechie et al. 2012; Dimacali 2013; Lindley 2008). These factors will compromise the quantity and/or quality of winter-run Chinook salmon habitat available downstream of Keswick Dam. The NMFS recovery plan identifies establishing redundant populations of winter-run Chinook salmon into historical habitat in Battle Creek and above Shasta Dam for long-term viability of the ESU (National Marine Fisheries Service 2014b).

(*Id.*) Overall, the record before the court supports Dr. Rosenfield's and Dr. Herbold's significant concern for winter-run viability in both the short- and long-term horizons.

B. Winter Run Egg Incubation Temperature Issues

The exact temperature that should be prescribed to protect winter-run incubating eggs remains a matter of debate among the experts, at least in the papers filed with the court in connection with the pending motions. There are two primary components to this debate: (1) determining the temperature that will best promote survival of winter-run eggs; and, relatedly, (2) determining the temperature(s) that should be used to guide management decisions for winter-run in light of the limited availability of cold water in dry years.

This court's prior orders noted that there is scientific dispute over the exact relationship between temperatures and egg mortality:

> For example, Defendant Intervenors' expert, Mr. Cavallo, opines that egg mortality at temperatures over 56°F depends on the magnitude and duration of that exposure. (Doc. No. 189-1, Declaration of Bradley Cavallo (Cavallo Decl.) at 2.) Yet, the 2019 NMFS BiOp itself acknowledges "lethal and sublethal effects" to eggs at temperatures at or even below 56°F. (See, e.g., 2019 NFMS BiOp at 238 ("Martin et al. (2017), suggests that in natural redds where dissolved oxygen (DO) is variable, the target temperature of 56°F may be too high in some cases since salmon egg mortality can occur at lower temperatures in hypoxia.").)

(Doc. No. 203 at 21.) The present record continues to reflect this debate, but the court believes some conclusions can be drawn from the evidence. First, there is widespread agreement that there is little or no temperature related egg mortality at temperatures below 53.5°F. (Tr. 159 (Rosenfield Direct).) There is also widespread, although not universal, agreement that temperatures above 56°F are "too warm." (Herbold Second Decl., ¶ 34; Tr. 155 (Rosenfield

Direct); Cavallo Decl., ¶ 16 ("temperature-related mortality begins to accrue at water temperatures warmer than 56°F.)[45] The court can conclude from this evidence that eggs experiencing temperatures of no higher than 53.5° throughout their incubation period are likely to experience no temperature related mortality and that some temperature related mortality is likely to occur at temperatures above 53.5°F.

But this does not necessarily mean 53.5°F is the correct temperature to set as a management target (or mandate) in order to manage the risks to winter-run in dry years. As this court has discussed previously, and the witnesses have repeatedly reiterated, there are tradeoffs if one aims to keep river temperatures that low for extended periods of time. Specifically, the temperature target can influence the length of time managers may be able to keep temperatures from rising to very dangerous levels. (*See* Cavallo Decl., ¶ 26; Declaration of Michael Deas ("Deas Decl."), Doc. No. 322, ¶ 11.) The temperature management planning process that took place in 2020 and which was the subject of motions before this court provides a cogent example of this. Given the available cold water pool as of May 1, 2020, Reclamation indicated that it could not meet 53.5°F at the temperature compliance point above Clear Creek for the entire temperature management season (May 15 through October 31), but that it could maintain temperatures between 53.5°F and 56°F for shorter periods of time. (*See* Doc. No. 182-2 at 1.)

This then begs the question of how much mortality is too much and over what time scale? Dr. Rosenfield "doubts that winter-run Salmon can remain viable if [temperature dependent mortality] repeatedly approaches or exceeds 30%." (Rosenfield Second Decl., ¶ 33 n. 12.) Dr. Rosenfield bases this opinion in part on the fact that NFMS, in a 2017 draft document, proposed to require that Reclamation limit temperature dependent mortality to 30%. (*Id*.) But that draft proposal was never adopted or implemented by NMFS.

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[45] The court recognizes that Mr. Cavallo does not agree with this assessment and has indicated that mortality is low at 56°F and that eggs may remain viable above 56°F depending on the magnitude and duration of that exposure. (Cavallo Decl. ¶¶ 7–17.) The court understands this position, but finds that on the present record Mr. Carvallo's opinion on this point is outmatched by the contrary evidence.

C. Temperature Related Impacts to Spring-Run

According to Dr. Rosenfield, habitat conditions in 2021 led to "abnormally high [spring run] adult and juvenile mortality rates, respectively." (*Id.*, ¶ 19.) He further opines that spring-run Chinook Salmon (spring-run) experienced "catastrophically low" productivity in 2021 due to high pre-spawning mortality and reduced fertility of adults exposed to high river temperatures in the Sacramento River and its tributaries. (*Id.*, ¶ 20.) Specifically, some adults died before spawning and showed signs of illness due to warm temperatures in the Sacramento River. (*Id.*) Most (indeed, more than 90%) adult spawners on Butte Creek—the Central Valley's largest remaining spring-run population—died. (*Id.*, ¶ 21.) In addition, low river flows in the spring resulted in low survival of juveniles. (*Id.* ¶ 22). It also appears to be undisputed, however, that most of the mortality experienced by spring-run in 2021 was largely unrelated to Water Project operations. (Cavallo Decl., ¶ 48.)

D. Factors Influencing Temperature Management at Shasta Dam

Numerous factors contribute to the ability of project managers to regulate temperatures below Shasta Dam, with the primary factors being the following: (1) the amount of water carried over as storage in Shasta Reservoir from the prior season ("carryover storage"), frequently expressed as the volume of the reservoir at the end of September ("EOS" or "EOS carryover storage"); (2) the inflow into the Reservoir from natural sources, less releases[46] made from the Reservoir, from the end of September until the time it is needed for temperature management operations, which usually begin in May, frequently expressed as the volume of the Reservoir at the end of April ("EOA" or "EOA storage"); and (3) the temperature of the water in storage, sometimes referenced as the "cold water pool." (*See* Grober Decl., ¶¶ 32–34.)

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[46] Releases may be required by operation of law; may be required to make "mandatory" deliveries because Reclamation has executed contracts with water users who possess water rights senior to those held by Reclamation; or may be "discretionary" insofar as Reclamation can withhold such deliveries without legal consequence if required to do so to protect ESA-listed fish. *See NRDC v. Kempthorne*, No. 1:05-CV-1207 OWW SMS, 2009 WL 2424569, at *3 (E.D. Cal. Aug. 6, 2009).

1. Carryover Storage

In general, higher storage in Shasta Reservoir in the spring (i.e., EOA storage), before the start of the temperature control season, "makes it more likely that temperature control and in-stream habitat can be maintained during the times needed to support winter-run Chinook salmon (and later, spring-run and fall-run Chinook salmon)." (*Id*., ¶ 33.)

> This is because the mass of water in Shasta provides both a volume of water that can be released over the coming months, and sufficient thermal mass to maintain cold temperatures until it is released. This thermal mass of cold water, known as the cold-water pool, can been released over time to maintain desired temperatures downstream . . . . Maintaining the cold-water pool that is associated with higher reservoir storage therefore provides both higher volumes for water releases later in the year, and more importantly, more cold water later in the year.

(*Id*.)

Relatedly, higher end-of-September storage "makes it more likely that temperature control and in-stream habitat can be maintained during the times needed to support winter-run Chinook salmon (and later, spring-run and fall-run Chinook salmon), because if Shasta Reservoir storage starts at a higher level in the fall, it increases the likelihood that adequate cold-water pool storage can be achieved in the subsequent spring and summer." (*Id*., ¶ 34.) Put another way, "[h]igher storage in September that is carried over (carryover storage) to the following year makes the attainment of any specified storage level, and associated volumes of cold water, in the spring, less dependent on winter and spring reservoir inflow." (*Id*.)

The past two water years (2020 and 2021) have been unusually hot and dry. (*See* Herbold Second Decl., ¶ 8.) Operations at Shasta Dam in 2020 and 2021 under the 2019 BiOps led to unusually low levels of carryover storage, even relative to prior drought years with similar *or even lesser* inflow volumes. (*Id*., ¶¶ 28–29.) This situation made temperature management "almost impossible," particularly in 2021. (*Id.* ¶ 56.)

Going forward, there are legitimate concerns over how managers can maintain sufficiently cold temperatures throughout the winter-run egg incubation season while also ensuring that the Water Projects meet carryover storage requirements for the following year. (*See* Deas Decl., ¶ 36.) The more stringent and demanding the temperature requirements and/or carryover storage

goals, the more difficult striking this balance becomes. (*See id*.)

According to Dr. Rosenfield, end of April storage would have to be 3.5 MAF in order for managers to be able to attain the temperature and temperature related mortality injunction provisions advanced by PCFFA. (Rosenfield Second Decl., ¶¶ 37–39.)[47] Relatedly, Dr. Rosenfield provides his opinions regarding how much water Reclamation must have in storage at the end of September 2022 in order to maintain the temperatures targeted by PCFFA's proposed injunction. Specifically, he opines that if WY 2022 is critically dry, Reclamation must be required to plan for and maintain EOS Shasta Reservoir storage levels of no less than 1.9 MAF and that if WY 2022 is dry, Reclamation must plan for and maintain September carryover storage of no less than 2.2 MAF. (*Id.*, ¶ 43 (citing NMFS 2019 BiOp at p. 206 and Figure 40 at p. 207).) These recommendations are embodied within the final version of PCFFA's proposed injunction. (PCFFA PI ¶ 4.)

As discussed above, the IOP has identified slightly different temperature targets for winter-run incubating eggs than those advanced by PCFFA and does not provide a temperature target to protect pre-spawning winter-run adults. The IOP does not identify an end of April storage goal either. The IOP does identify EOS carryover storage goals that are not as high as those set forth in PCFFA's proposed injunction. Specifically, Reclamation's current modeling identifies 1.2 million AF to 1.8 million AF as the "storage range volume" if 2022 is a critical year; 1.8 million AF to 2.5 million AF if 2022 is a dry year; and 2.5 million AF to 3.2 million AF if 2022 is a below normal year. (IOP ¶ 16.ii.) While below the targets outlined by Dr. Rosenfield, these targeted ranges recognize the stark reality of the present water situation, namely that managers "cannot make water." (Herbold Second Decl., ¶ 56.)

2. Early-Season Releases

The 2019 NMFS BiOp puts off the finalization of temperature planning until May 20. According to State Plaintiff's expert witness Mr. Grober, this allows early season deliveries that

[47] Dr. Rosenfeld further opines that the temperature targets set forth in the IOP (54.5°F) have only been maintained in one year when end-of-April storage was less than 3.5 MAF. (Rosenfeld Second Decl., ¶ 38.)

otherwise could have been held back to help manage river temperatures. (Grober Decl.,¶ 45.) In a very general sense, delivery curtailments do not necessarily result in improved temperature management prospects. As the court has recognized previously, a single volume of water released from a reservoir can serve multiple purposes downstream: temperature, flow, public health, and deliveries. (*See* Doc. No. 203.) As the court's June 24, 2020 Order addressing Shasta Operations indicated:

> [I]t is speculative to assume that withholding [contractor] deliveries would result in any particular volume of water being retained behind Shasta Dam [or] that retaining that additional volume of water would materially improve temperature management options.

(Id. at 27.) But, in his declaration Mr. Grober does more than speculate. He provides specific examples, such as the following:

> Between April 10 and May 31, 2021, 403 [thousand AF] of stored water was released. This is 17% of the storage on April 10, 2021 that could alternatively been used to provide more cold water during the temperature control season through use of the TCD. Spread out over four months, 403 taf could have provided an additional 1,664 cfs each day of the peak temperature control season from June 1 through September 30. This would have substantially augmented Shasta releases by a range of 22 to 42 percent, on a daily basis, over those four months, and the average increase would have been 28 percent, increasing flows from an average of 5,988 cfs to 7,652 cfs. Again, as it pertains to protection of winter run Chinook salmon, the specific release schedule would depend on many factors, including the desired downstream temperature and the specific volumes of cold water available through operation of the TCD. [¶] *The cold water, if stored and later released using the TCD during the hottest months of the temperature control season in each of these years, had the potential to significantly improve (lower) temperatures over a larger area in the Sacramento River downstream of Keswick Dam, and with it, salmon survival*.

(Grober Decl., ¶¶ 45–46 (emphasis added).)

Defendant Intervenors critique Mr. Grober's conclusions in various ways, some of which are persuasive to a degree. For example, Mr. Deas notes that Mr. Grober does not account for certain variables, such as the fact that having a fixed volume of water in storage in the spring may not necessarily ensure that the water remains cold enough to make a difference later in the season. (*See* Deas Decl., ¶ 20.) Yet, Mr. Grober recognizes that Shasta temperature management operations have "many moving parts." (Grober Suppl. Decl., ¶ 46.) The court finds that none of

the critiques offered undermine the central premise of Mr. Grober's evidence, which establishes that: "A principal problem with operations under the BiOp is the incorrect presumption that one can wait to determine how this complex system can be successfully operated to achieve many goals until after some decisions are made that reduce the availability of options to achieve temperature management goals." (*Id.*)

One critique of Mr. Grober's opinions in this regard merits some additional discussion. Mr. Grober's conclusion—that withholding early-season water deliveries to contractors has the potential to significantly improve temperature management in the Sacramento River—does not attempt to distinguish between deliveries that Reclamation has discretion to withhold and other types of deliveries, such as deliveries to satisfy contracts held by water users possessing water rights senior to those held by Reclamation itself. (*See* Grober Decl., ¶ 77 (acknowledging that limiting spring releases may preclude deliveries to North of Delta contractors "when it is needed" and suggesting the use of water transfers and groundwater to make up this deficit)). One of Defendant Intervenors' experts, Lee Bergfeld, a hydrologist, explains that the IOP's prohibition against deliveries to any contractors until a temperature management plan is approved sets up the potential for a conflict between the IOP's requirements and Reclamation's obligations to the SRS Contractors. (*See* Declaration of Lee G. Bergfeld ("Bergfeld Decl."), ¶¶ 30–38.) This is in part because some deliveries may begin under the SRS Contracts as early as April 1, but temperature management plans have historically never been finalized before May. (*See id.*) Yet, the potential for a conflict is not the same as an actual conflict. As Mr. Grober points out, even Mr. Bergfeld "makes several references to the [SRS] Contractors voluntarily delaying diversions." (Grober Supp. Decl., ¶ 42.) For example, an expert report prepared by Mr. Bergfeld for a different matter but which was attached to his declaration in this case indicates that in 2014 and 2015, the SRS Contractors voluntarily delayed diversions in the spring at the request of Reclamation. (Bergfeld Decl., Ex. B at p. 4.) Reclamation's witness represented at the hearing on the pending motions that the agency remains actively involved in discussions with the SRS Contractors regarding such voluntary actions. (Tr. 139.)

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3. Current Hydrology

Although early storms in December 2021 showed some promise that WY 2022 might be wetter than 2020 or 2021, precipitation has been very scarce in January and February 2022. (Tr. 123 (Conant direct).) Also, the December storms were generally more intense south of the Shasta watershed. (Tr. 124.) So, while some watersheds that feed other parts of the Water Projects registered snowpack at above normal levels as of February 1, the Shasta watershed was only at 78% of normal. (*Id*.) End of September storage going into the WY 2022 was 1.1 MAF, which is less than was available at the end of September in 2015 (the second critically dry year of the last major drought). (Grober Decl., ¶ 28; Tr. 142 (Conant Cross by PCFFA).) As of February 11, 2022, the date of the hearing on these motions, using information regarding projected inflow to Shasta Reservoir, Reclamation's Regional director estimated that end of April storage would be approximately 2.1 MAF. (Tr. 125.)

E. Current Status of CV Steelhead Population

The current size of the CV steelhead population is not well known. This is in part because there is very little data about their population dynamics. As Dr. Rosenfeld explained during his hearing testimony, CV steelhead are rare and difficult to monitor. (Tr. 170.) Defendant Intervenor's witness Dr. Hanson agreed, adding that they are difficult to monitor in part because they tend to enter the Delta at a relatively older age than other migrating fish, so they are better at evading detection devices. (Tr. 237.) Nonetheless, according to Dr. Rosenfeld, over the past three years sampling regularly conducted for steelhead in the lower San Joaquin River has detected one migrating steelhead, as compared to 60 for the period from 2013 through 2015. (Tr. 170.) Dr. Hanson agreed that CV steelhead populations are low relative to historic trends. (Tr. 237–38.)

F. Current Status of Delta Smelt

The delta smelt is perilously close to extinction. As Dr. Herbold has explained:

> There is considerable concern that Delta Smelt face imminent extinction in the wild. None have been caught in the standard sampling for the last four years. The standard sampling addresses a very small fraction of the waters of the estuary so we could be missing some that are still there. A newer year-round sampling

> program targets areas and water conditions where Delta Smelt are expected to occur and two Delta Smelt were found in 2021, so they appear to be exceptionally rare rather than extinct. For the last 25 years, high spring outflows have usually foretold upswings in the autumn abundance of Delta Smelt. This pattern continued in the wet year of 2011. But despite the high outflows in spring 2017 and above-average outflows in 2018 and 2019, Delta Smelt have almost disappeared

(Herbold Second Decl., ¶ 25.)

G. Current Status of Longfin Smelt

Longfin smelt appear to be in a precarious situation as well. Although, longfin smelt populations have been in severe decline since the drought of the mid 1980s, the population normally recovers somewhat during years with high spring outflows. (*Id.*, ¶ 27.) Yet, despite good spring outflow in 2019, abundance was still less than a third of what it had been in 2017. (*Id.*)

VII. MOTIONS FOR INJUNCTIVE RELIEF

A. Standards of Decision

The parties do not agree on the legal standards against which their competing proposals are to be measured. Defendant Intervenors and PCFFA maintain that both proposals (the IOP and the PCFFA PI) should be evaluated under the traditional four-part *Winter* standard, although Defendant Intervenors insist a heightened "mandatory injunction" version of that standard should be applied by the court. (*See, e.g.*, Doc. Nos. 322 at 15, 328 at 15, 344 at 12; *CNRA* Doc. No. 233 at 19.) Federal Defendants, in contrast, suggest that the court may utilize its "equitable powers" to impose the IOP during the remand period without engaging in a full *Winter* analysis. (Doc. 314 at 12.) Finally, State Plaintiffs straddle the gap between Federal Defendants' position and those parties that contend the traditional *Winter* standard applies. On the one hand, State Plaintiffs argue that the court can apply a "reasonableness" standard to its review of the IOP by treating it as a "temporary settlement" that is subject to standards applicable to the approval of consent decrees; on the other hand, State Plaintiffs also present the IOP as a motion for preliminary injunctive relief along with argument and evidence ostensibly designed to satisfy each *Winter* factor. (*CNRA* Doc. No. 220 at 20–22.) A key threshold question, therefore, is what

legal standard(s) should be applied to the injunctive relief proposals under review as presented in the motions pending before the court.

1. Traditional Winter Standard

The "traditional" standard for the imposition of preliminary injunctive relief "requires a party to demonstrate 'that he is likely to succeed on the merits, that he is likely to suffer irreparable harm in the absence of preliminary relief, that the balance of equities tips in his favor, and that an injunction is in the public interest.'" *Stormans, Inc. v. Selecky*, 586 F.3d 1109, 1127 (9th Cir. 2009) (quoting *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 20 (2008)); *see also Ctr. for Food Safety v. Vilsack*, 636 F.3d 1166, 1172 (9th Cir. 2011) ("After *Winter*, 'plaintiffs must establish that irreparable harm is likely, not just possible, in order to obtain a preliminary injunction."); *Am. Trucking Ass'n, Inc. v. City of Los Angeles*, 559 F.3d 1046, 1052 (9th Cir. 2009).[48] The Ninth Circuit has also held that an "injunction is appropriate when a plaintiff demonstrates . . . that serious questions going to the merits were raised and the balance of hardships tips sharply in the plaintiff's favor." *All. for Wild Rockies v. Cottrell*, 632 F.3d 1127, 1134–35 (9th Cir. 2011) (internal quotation and citation omitted).[49] For the purposes of injunctive relief,

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[48] While the court's analysis of likelihood of success in the context of an injunctive relief request is governed by the deferential APA's arbitrary and capricious standard, *see The Lands Council v. McNair*, 537 F.3d 981, 987 (9th Cir. 2008); *Ranchers Cattlemen Action Legal Fund United Stockgrowers of Am. v. U.S. Dep't of Agric.*, 415 F.3d 1078, 1093 (9th Cir. 2005), *as amended* (Aug. 17, 2005), Ninth Circuit authority suggests that the court does not necessarily owe deference to federal agencies' positions concerning irreparable harm, balance of hardships, or the public interest. *Sierra Forest Legacy v. Sherman*, 646 F.3d 1161, 1186 (9th Cir. 2011) (concluding that the district court "abused its discretion by deferring to agency views concerning the equitable prerequisites of an injunction" because "[e]cology is not a field within the unique expertise of the federal government"; if government experts "were always entitled to deference concerning the equities of an injunction, substantive relief against federal government policies would be nearly unattainable").

[49] The Ninth Circuit has found that this "serious question" version of the circuit's sliding scale approach survives "when applied as part of the four-element *Winter* test." *All. for the Wild Rockies*, 632 F.3d at 1134. "That is, 'serious questions going to the merits' and a balance of hardships that tips sharply towards the plaintiff can support issuance of a preliminary injunction, so long as the plaintiff also shows that there is a likelihood of irreparable injury and that the injunction is in the public interest." *Id.* at 1135.

> "serious questions" refers to questions which cannot be resolved one way or the other at the hearing on the injunction and as to which the court perceives a need to preserve the *status quo* lest one side prevent resolution of the questions or execution of any judgment by altering the *status quo*. Serious questions are substantial, difficult and doubtful, as to make them a fair ground for litigation and thus for more deliberative investigation.

Republic of the Philippines v. Marcos, 862 F.2d 1355, 1362 (9th Cir. 1988) (quotations marks and citation omitted).[50]

The party seeking an injunction bears the burden of proving these elements. *Klein v. City of San Clemente*, 584 F.3d 1196, 1201 (9th Cir. 2009); *see also Caribbean Marine Servs. Co. v. Baldrige*, 844 F.2d 668, 674 (9th Cir. 1988) (citation omitted) ("A plaintiff must do more than merely allege imminent harm sufficient to establish standing; a plaintiff must demonstrate immediate threatened injury as a prerequisite to preliminary injunctive relief."). Finally, an injunction is "an extraordinary remedy that may only be awarded upon a clear showing that the plaintiff is entitled to such relief." *Winter*, 555 U.S. at 22.

A preliminary injunction "can take two forms," either a "prohibitory injunction" or a "mandatory injunction." *Marlyn Nutraceuticals, Inc. v. Mucos Pharma GmbH & Co.*, 571 F.3d 873, 878–79 (9th Cir. 2009). A "Prohibitory injunction" simply "preserve[s] the *status quo* pending a determination of the action on the merits," while a "mandatory injunction" "orders a responsible party to take action." *Id.* (quotation omitted). In the context of injunctive relief, "[t]he *status quo* means the last, uncontested status which preceded the pending controversy." *Garcia v. Google, Inc.*, 786 F.3d 733, 740 n.4 (9th Cir. 2015) (internal quotation omitted). Mandatory injunctions are "particularly disfavored," and a plaintiff's burden is "doubly demanding" when seeking one. *Id.* "In general, mandatory injunctions are not granted unless extreme or very serious damage will result and are not issued in doubtful cases." *Marlyn Nutraceuticals*, 571 F.3d at 879 (internal quotation marks and citation omitted). Consequently, in

[50] Federal Defendants argue that because they "do not intend to defend" the merits of the biological opinions, the court need not consider "likelihood of success on the merits" in the context of the injunctive relief being requested in the *PCFFA* case. (Doc. No. 326 at 7.) While this argument has some practical appeal, the court is aware of no authority that directly supports such an approach. Because the court declines to adopt the PCFFA PI on other grounds, the court need not resolve this dispute at this time.

seeking a mandatory injunction plaintiffs must "establish that the law and facts *clearly favor*" their position. *Garcia*, 786 F.3d at 740 (emphasis in original).

Under somewhat similar circumstances, other courts have found that the mandatory injunction standard applies. *See Ctr. for Biological Diversity v. U.S. Bureau of Reclamation*, No. 6:15-CV-02358-JR, 2016 WL 9226390, at *1, *4 (D. Or. Apr. 6, 2016) (applying heightened scrutiny to a request for a preliminary injunction requiring Reclamation and water users to "open the controls of the dams to allow for natural water flows," or, alternatively, to alter reservoir operations to achieve a particular level of water flow); *see also Coastkeeper v. Santa Maria Valley Water Conservation Dist*., No. CV 19-08696 AB (JPRx), 2020 WL 3247371, at *1 (C.D. Cal. Apr. 17, 2020) (classifying as a mandatory injunction a request to order the defendant water agency to modify the release regime at a dam to avoid the take of endangered fish).

That said, "[e]nvironmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, *i.e.*, irreparable." *Amoco Prod. Co. v. Vill. of Gambell*, 480 U.S. 531, 545 (1987). In the context of the ESA, "Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities . . .." *TVA v. Hill*, 437 U.S. at 194. To show irreparable harm in the context of the ESA, plaintiffs do not need to demonstrate an "extinction level" threat. *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv*., 886 F.3d 803, 818–19 (9th Cir. 2018) ("*NWF III"*) (indicating without specifying that some "lesser magnitude" of harm will suffice); *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv*., 524 F.3d 917, 930 (9th Cir. 2008) ("*NWF II*") (finding that an agency "may not take action that deepens [pre-existing/baseline] jeopardy by causing additional harm"). Thus, for example, impeding a listed species' progress toward recovery may suffice to satisfy the irreparable harm requirement. *Wishtoyo Found. v. United Water Conservation Dist*., No. CV 16-3869-DOC (PLAx), 2018 WL 6265099, at *65 (C.D. Cal. Sept. 23, 2018), *aff'd*, 795 F. App'x 541 (9th Cir. 2020); *see also PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1207–10, 1249.

Whether or not a heightened standard applies, any injunction must be narrowly tailored to avoid the irreparable harm identified. *NWF III*, 886 F.3d at 823. "There must be a sufficient

causal connection between the alleged irreparable harm and the activity to be enjoined, but a plaintiff need not further show that the action sought to be enjoined is the exclusive cause of the injury." *Id.* (internal quotation and citation omitted). Moreover, "[i]t is not an abuse of discretion for a court to issue an injunction that does not completely prevent the irreparable harm that it identifies." *Id.* Finally, a court may decline to impose injunctive relief that is infeasible. *See NWF v. NMFS*, No. CV 01-640-RE, 2005 WL 3576843, at *7 (D. Or. Dec. 29, 2005) (declining to order requested ESA relief where the proposed measures were not feasible).

In this court's experience, there are significant challenges related to application of the traditional equitable relief standard in the present case, apart from the obvious practical challenges of evaluating the dozens of injunctive relief components that would impact one of the most complex water projects in the world. First, uncertainty is an inescapable fixture in these cases. For example, it is generally impossible, particularly in times of drought, to know with any degree of precision the management options that will be available to protect incubating winter-run eggs below Shasta Dam until late in the spring or early summer, at which time more is normally known about the available cold-water supply in any given year. (*See* Bergfeld Decl., ¶ 33 (Table 4) (providing the dates on which temperature management plans were presented in draft and final form in Water Years 2015–2021).) This uncertainty is further complicated by the fact that, even though Reclamation operates Shasta Dam, Reclamation does not have management discretion over all water that is released from Shasta Reservoir. Reclamation is, for example, contractually obligated to deliver water to certain entities that hold water rights that are senior to (i.e., higher priority than) the rights Reclamation relies upon in operating the CVP. (*See* BA 4-10.) Reclamation's obligations to some of those senior rights holders are spelled out in "Settlement Contracts," such as those held by the SRS Contractors.[51] (*See id.*; *see also NRDC v. Kempthorne*, No. 1:05-cv-01207-LJO-GSA, 2015 WL 3750305 (E.D. Cal. June 15, 2015) (reviewing in detail the nature of the SRS Contracts).) While the SRS Contracts do permit Reclamation to reduce deliveries by 25% during times of drought, Reclamation has taken the position that it lacks discretion to reduce deliveries to the SRS Contractors beyond that 25% without the consent of

[51] *See supra* note 27.

those SRS Contractors. (*See* Third Declaration of Kristin White ("White Third Decl."), Doc. No. 183-1, ¶ 18(k).)[52] It can be very difficult, if not impossible, to discern in advance: (1) the extent to which Reclamation may have at its disposal additional "discretionary" water that it can utilize to attempt to improve conditions for fish; (2) whether any such additional water can actually translate into on-the-ground improvements in those conditions; and (3), in part as a result of the first two uncertainties, how any particular management regime will influence either of the above. (*See generally* Doc. No. 203 at 18–32 (June 24, 2020 Order discussing these and related issues)). Yet, as the evidence currently before the court and reviewed above indicates, waiting until the late spring to act may eliminate crucial opportunities to conserve water behind Shasta Dam that might well improve the chances of maintaining appropriate temperatures conditions for winter-run eggs.

In 2020, when addressing PCFFA's earlier motion for injunctive relief regarding Shasta Operations, the court attempted to focus the inquiry on the "complicated and practical" question of whether "replacing the 2019 NMFS BiOp's temperature management regime" with the one then being proposed by PCFFA would "produce a material benefit for the winter run and, relatedly, how would those changes likely impact spring run?" (Doc. No. 179 at 17.) In addition, the court at that time expressed "concern[] that what PCFFA [was] really asking for is an injunction that would require Reclamation to perform temperature management feats that are neither practically or legally feasible, either because there simply is not enough cold water to accomplish a revised plan or because Reclamation cannot (due to legal or contractual restrictions) make adjustments to the allocations or deliveries sufficient to result in a practical difference in how that cold water is utilized." (*Id.*) To get at these questions, given that a final temperature management plan was imminent, the court ordered Federal Defendants to file supplemental information regarding the final temperature management plan. (*Id*. at 19–20.) The court also directed PCFFA to explain "how, under present conditions (i.e., not based solely upon rough projections set forth in the 2019 NMFS BiOp), the requested injunction would benefit the species of concern; identify and assess the possible tradeoffs in terms of impacts (i.e. to spring run or

[52] Even PCFFA has indicated that it does not wish to litigate here whether Reclamation's assertion on this point are correct. (Tr. 253.)

other species) that would likely have to be made if the requested injunction were imposed; and [make] at least a basic showing, understanding that PCFFA may not have access to all of the relevant information, that Reclamation has the ability and sufficient discretionary authority (i.e., is not constrained by other legal or contractual requirements) to implement the requested relief." (*Id.* at 20.) Eventually, after considering that supplemental briefing, the court declined to issue an injunction, finding that PCFFA had not established that their proposal would make a material difference. (*See* Doc. No. 203 at 32.)

Similar uncertainties complicate decision-making related to Delta operations. For example, it is not always possible to tell in advance whether the challenged BiOps will even govern Delta operations. (*See* Tr. 127.) Moreover, the 2019 NMFS and FWS BiOps already contain various measures designed to protect fish from entrainment in the Delta. For example, the 2019 NMFS BiOp contains "loss thresholds" that, if approached or exceeded, can trigger reductions in exports to lessen the magnitude of negative OMR flows. Both the IOP and PCFFA PI present alternatives to the 2019 NMFS BiOp's loss thresholds. But, what if real-time conditions on the ground at the time of the court's ruling show that actual loss is nowhere close to the "loss thresholds" in the 2019 NMFS BiOps? Should the court nonetheless consider replacing the challenged thresholds as a protective measure if there is evidence suggesting that the existing loss thresholds *could be* insufficiently protective? What if actual losses increase over time? Should the court remain "on call" for renewed motions should conditions on the ground change?

To be clear, such uncertainty is not an absolute bar to injunctive relief. *See NWF III*, 886 F.3d at 823 (affirming an injunction imposed over the objection of water project managers even though the district court described the relief as involving "some experimentation" because "[s]ome uncertainty about the efficacy of an injunction does not render the factual findings underlying the injunction clearly erroneous"). Nonetheless, given the complexity of CVP and SWP operations and the interconnectedness of the various parts of the Water Projects, the undersigned is hesitant to order operational changes without relatively clear information indicating that those changes are actually likely to improve conditions for the threatened species. This is particularly so in the absence of buy-in from Water Project managers, who are in the best

position to understand all of the moving parts and tradeoffs involved. For this and other reasons, the court considers the IOP a significant turning point because it demonstrates a concerted effort by Water Project managers to arrive at an interim operations plan that not only addresses the immediate risks to the threatened species but is also workable.

Before turning to the legal standard that, at least in the undersigned's view, best fits for review of the IOP, the court will briefly address some of the additional arguments raised by the parties regarding the applicable standard of review.

2. PCFFA's Argument that Any Interim Injunction Must "Avoid Jeopardy"

PCFFA takes the position that the IOP should not be adopted because it does not "avoid jeopardy." (*See* Doc. No. 387 at 2; *see also* Doc. No. 320 at 7, 20 n. 8 (arguing that interim measures must not jeopardize listed species, adversely modify critical habitat, or "irreversibly or irretrievably commit resources during the pendency of the reconsultation on and issuance of the BiOp").) The ESA imposes upon the CVP and SWP operators a *substantive* obligation to avoid jeopardy to listed species and adverse modification to those species' critical habitats. *See* 16 U.S.C. § 1536(a)(2). Exactly how this substantive requirement relates to a court's equitable powers is less clear. To the extent PCFFA is suggesting that *every* injunction entered in an ESA case *must* demonstrably "avoid jeopardy,"[53] the court is not persuaded by such an argument.

PCFFA cites to the interim remedial order in *NRDC v. Kempthorne*, where the district court indicated:

[53] "Jeopardy" is a term of art drawn from the ESA's consultation requirement, which requires that "[e]ach Federal agency shall, in consultation with and with the assistance of [FWS or NMFS], insure that any action authorized, funded, or carried out by such agency . . . *is not likely to jeopardize the continued existence* of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species." 16 U.S.C. § 1536(a)(2). The consultation process set forth in that section of the ESA is what led to the long line of BiOps, culminating in those challenged in this case. The 2019 BiOps contain approximately 1300 pages of analysis aimed at evaluating whether the Water Projects will cause "jeopardy" or "adverse modification." From a purely practical perspective, given the complexity of the jeopardy/adverse modification analyses performed in the equally complex biological opinions, it is unclear how a court could possibly evaluate whether a proposed injunction "avoids jeopardy" within a reasonable timeframe. In its role in equity, a court can, at best, hope to incorporate into its harm/reasonableness analyses relevant evidence presented to it regarding the impacts upon the viability and recovery of species. Nonetheless, any such effort would never come close to the full "jeopardy" analysis required in a biological opinion.

> Any interim remedial prescriptions must (1) not cause jeopardy, i.e., not take action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. 50 C.F.R. § 402.02; to the Delta smelt; (2) adversely modify its critical habitat; or (3) irreversibly or irretrievably commit resources during the pendency of the reconsultation on and issuance of the BiOp.

NRDC v. Kempthorne, 2007 WL 4462395, at *21. This general pronouncement, made at the very end of the district court's findings of fact in *Kempthorne*, conflates the substantive ESA standard with standards pertaining to the issuance of interim injunctive relief without any reasoning or support. While certainly reflective of the ESA's merits requirements, the court does not believe that this language cabins the court's equitable discretion in the way now suggested by PCFFA.

To the extent PCFFA is simply pointing out that jeopardy is relevant to the court's evaluation of injunctive relief, the court certainly agrees. In one of the many appellate rulings related to the long-running dispute over impacts to ESA-listed fish caused by the Federal Columbia River Power System, the Ninth Circuit indicated, unsurprisingly, that it may be "appropriate" to issue an injunction where the "continuation of the *status quo* could result in *irreparable harm* to a threatened species." *NWF I*, 422 F.3d at 796 (emphasis added). Relatedly, "the irreparable harm that the court is obligated to prevent is jeopardy to the very survival of the species," a task which often warrants erring on the side of "a more protective injunction." *See S. Yuba River Citizens League v. Nat'l Marine Fisheries Serv*., 804 F. Supp. 2d 1045, 1055 (E.D. Cal. 2011); *see also PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1213 ("Irreparable harm to justify injunctive relief is shown when the agency action causes appreciable (i.e., considerable or substantial) harm to the species or its critical habitat, as measured by the combined effects of the action and underlying baseline conditions.").

But even reading the holdings from *NWF I*, *Yuba River*, and *PCFFA v. Gutierrez* together does not lead to a rule that requires every ESA injunction to "avoid jeopardy." Such a rule would run headlong into general principles governing a court's exercise of its equitable authority. The Ninth Circuit has made it abundantly clear that "[i]t is *not* an abuse of discretion for a court to issue an injunction that *does not completely prevent the irreparable harm that it identifies*." *NWF*

III, 886 F.3d at 823 (emphasis added). A similar principle applies in the context of the approval of a consent decree. For example, in *Turtle Island*, intervenors argued that the injunctive relief contained within the proposed consent decree was unreasonable because Federal Defendants did not comply with the ESA's best available science requirement, 16 U.S.C. § 1536(a)(2), before entering into the agreement. *Turtle Island*, 834 F. Supp. at 1015–16. But, as the district court in that case observed, "[p]rovided that the proposed consent decree is fair, reasonable, and equitable, and does not violate the law or public policy, it need not utilize the best scientific evidence. Such a requirement would transform evaluation of a proposed consent decree into a decision on the merits in contravention of controlling authority." *Id.* at 1019 (citing *Oregon*, 913 F.2d at 582). More generally, the court has considerable discretion to fashion injunctive relief "to the necessities of the particular case" because "[e]quitable remedies are a special blend of what is necessary, what is fair, and what is workable." *Hernandez v. AFSCME Cal.*, 386 F. Supp. 3d 1300, 1305 (E.D. Cal. 2019) (emphasis added) (quoting *Hecht Co. v. Bowles*, 321 U.S. 321, 329 (1944) and *Lemon v. Kurtzman*, 411 U.S. 192, 200 (1973)). Moreover, as noted above, a court may decline to impose injunctive relief that is infeasible. *NWF v. NMFS*, 2005 WL 3576843, at *7.

In sum, while jeopardy is certainly relevant, the court is not convinced that every injunction imposed in an ESA must demonstrably "avoid jeopardy." Or, conversely, that a court cannot adopt an injunction unless it demonstrably "avoids jeopardy." While a court "must act within the bounds of the [applicable] statute[s] and without intruding upon the administrative province," it "may adjust its relief to the exigencies of the case in accordance with the equitable principles governing judicial action." *NWF III*, 886 F.3d at 823.

3. General Equitable Authority

Federal Defendants argue that the court can approve the IOP using its "equitable authority" on remand without engaging in an evaluation of the *Winter* injunctive relief requirements. (Doc. No. 314 at 22–23 (arguing that "the Court . . . possesses the equitable authority to enter the IOP that the two sovereign operators of the CVP and SWP systems—Federal Defendants and State Plaintiffs—have jointly proposed").)

Federal Defendants are correct that a federal court's equitable authority is highly flexible. *See Hernandez*, 386 F. Supp. 3d at 1305 ("The essence of equity jurisdiction is that federal courts have the flexibility to mold each decree to the necessities of the particular case."). But the cases Federal Defendants cite fail to provide concrete guidance relevant to the present situation. For example, Federal Defendants cite the decision in *Center for Biological Diversity v. U.S. Forest Serv*ice, No. 2:17-cv-372, 2021 WL 855938, at *4 (S.D. Ohio Mar. 8, 2021), which concerned a NEPA analysis performed in connection with a program designed to lease federal lands for oil and gas extraction. *See id.* at *1. The defendant agency in that case moved for voluntary remand, which was granted. *Id.* at *4. At the same time, the district court also enjoined certain lease activities during the period of remand. *Id.* at *4–*5. The district court reasoned that "there is a spectrum between complete vacatur and mere remand, and the Court has discretion to work within those parameters to craft an equitable remedy under the circumstances." *Id.* First, even assuming the court could find sufficient practical guidance in the standard applied by the court in in *Center for Biological Diversity*, it is not clear that this court could find that the IOP falls within a "spectrum between complete vacatur and mere remand." While some parts of the IOP were present in substantially identical form in the 2008/2009 BiOps, other aspects are clearly newly-crafted remedies. For example, the IOP proposes to preclude Reclamation from scheduling or making deliveries from Shasta Reservoir for any reason other than health and safety until a temperature management plan is approved (IOP ¶ 12(i)(b)). This appears to be a notable departure from past practice under any prior biological opinion.

Federal Defendants' also rely on an unpublished district court decision from the Columbia River litigation: *NWF v. NMFS*, No. 3:01-cv-00640-SI, ECF 1752-6 (Mar. 31, 2010) (attached as Doc. No. 314-5). In 2005, the district court in that case partially granted a motion for preliminary injunctive relief and entered an injunction governing the timing of spring and summer spill operations for the Federal Columbia River Power System. (*Id.* at 2.) Each year thereafter, pursuant to the agreement of the parties, a similar order was entered. (*Id.* at 2–3.) Then, in 2010, the federal defendants requested voluntary remand of the applicable biological opinion, which request the court granted. (*Id.* at 3.) Simultaneously, and with little if any discussion, the court

entered federal defendants' proposed spill operation plan for 2010. (*Id.* at 4.)[54] Again, the lack of discussion regarding the order entering the 2010 spill operation plan in that case renders it of little practical assistance here because it is totally unclear what standard the court applied and/or how it determined the proposed spill operation was reasonable, etc. It is possible that the proposed spill operations were so well established as a result of the court's prior orders in the case that further analysis was unnecessary, but that is not the circumstance presented here.

This court has been presented with a complex interim injunctive relief package that, while agreed to by the primary parties in the *CNRA* case, is objected to by numerous defendant intervenors and the plaintiffs in *PCFFA*. How is the court to evaluate reasonableness under these circumstances? Unfortunately, the cases cited by Federal Defendants do not provide any guideposts or helpful structure for the answering of that question.

4. Consent Decree Jurisprudence Applied to a Stipulated Injunction

For the reasons set forth in greater detail below, after thoroughly reviewing the relevant authorities, the court finds that the best—and possibly the *only* practical way—to approach the interim injunctive relief proposals in this case is to view the IOP as a stipulation among the parties to the *CNRA* case regarding the form of injunctive relief those parties believe should be imposed through September 30, 2022. Where a stipulation results in the termination of claims, it is often termed a "consent decree." *See Gates v. Shinn*, 98 F.3d 463, 468 (9th Cir. 1996). Courts draw upon relatively well-developed standards when determining whether it is appropriate to adopt a consent decree. Approval of a proposed consent decree lies within the discretion of a district court. *See United States v. Oregon*, 913 F.2d 576, 580 (9th Cir. 1990). A district court

[54] Regarding the 2010 district court order in the Columbia River case, Defendant Intervenors argue here that, while the biological opinion had been voluntarily remanded at the time the 2010 interim measures were ordered, those interim measures were merely a continuation of spill operations required as part of an earlier preliminary injunction order. (*See* Doc. No. 328 at 17.) This, according to Defendant Intervenors, demonstrates that the relief ordered was "not equitable relief related to the voluntary remand." (*Id.*) The court finds this argument to be a stretch and ultimately unpersuasive. The fact that the same remedies may have been deemed appropriate in more than one procedural situation does not diminish the fact that the district judge approved spill operations during the period of voluntary remand. Nonetheless, this court does not find *NWF* particularly helpful here, since it provides little analysis and therefore little guidance for resolution of the pending motions here.

may approve a consent decree when the decree is "fair, reasonable and equitable and does not violate the law or public policy." *Turtle Island Restoration Network v. U.S. Dep't of Com*., 672 F.3d 1160, 1165 (9th Cir. 2012). If the consent decree "comes within the general scope of the case made by the pleadings, furthers the objectives upon which the law is based, and does not violate the statute upon which the complaint was based, the agreement should be entered by the court." *Hawaii's Thousand Friends, Life of Land, Inc. v. Honolulu*, 149 F.R.D. 614, 616 (D. Haw. 1993) (quoting *Sierra Club, Inc. v. Elec. Controls Design Inc*., 909 F.2d 1350, 1355 (9th Cir. 1990)). Additionally, the court must "be satisfied that the decree represents a reasonable factual and legal determination.'" *Oregon*, 913 F.2d at 581 (internal quotation omitted). A court's discretion should be exercised in favor of the strong policy favoring voluntary settlement of litigation because settlements "conserve judicial time and limit expensive litigation," *Ahern v. Cent. Pac. Freight Lines*, 846 F.2d 47, 48 (9th Cir. 1988), but a court must nonetheless independently scrutinize its terms and avoid "rubber stamp approval," *United States v. Montrose Chem. Corp. of Cal*., 50 F.3d 741, 747 (9th Cir. 1995); *see also Local No. 93, Int'l Ass'n of Firefighters v. City of Cleveland*, 478 U.S. 501, 525 ("[A] federal court is more than a recorder of contracts from whom parties can purchase injunctions; it is an organ of government constituted to make judicial decisions.").

It is argued by some parties here that these standards do not apply to the court's review of the IOP because the IOP does not result in the termination of claims. This leaves the court to query – how then *should* such an agreement be reviewed? It is an agreement between two sovereign adversaries in a case resolving one aspect of their dispute: how they believe one of the most complicated water projects in the world should be regulated for the next seven months. Why should such an agreement aimed at avoiding conflict over the form of interim injunctive relief not be subject to the same standard applicable to review and approval of a consent decree? Both forms of agreement foster the "strong policy favoring voluntary settlement of litigation," and applying the consent decree jurisprudence ensures appropriate judicial review of the terms of those agreements.

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The caselaw does not provide a crystal-clear answer to this question, but it does point in the direction of an affirmative answer. The Ninth Circuit recognized in *Federal Trade Commission v. Enforma Natural Products, Inc*., that standards applicable to the review of consent decrees are relevant to stipulated injunctions as well, because a stipulated injunction is effectively a "temporary settlement" of a lawsuit. 362 F.3d 1204, 1218 (9th Cir. 2004). The court recognizes that *Enforma* is not a direct parallel to the instant case, but nonetheless finds that the decision in that case provides important guidance. In *Enforma*, the Federal Trade Commission ("FTC") brought an action addressing what it alleged were misleading claims defendant had made in the marketing of its products. 362 F.3d at 1208. The underlying lawsuit was resolved by way of a stipulated final order entered in May 2000, whereby the defendant admitted no liability, but agreed to pay a large fine and promised not to continue making unsupported, misleading claims. *Id.* Several years later, the FTC applied to the court for the issuance of orders to show cause why the defendant should not be held in civil contempt for violating the May 2000 order. *Id.* at 1209. The FTC sought preliminary injunctions in connection with its contempt requests. *See id.* at 1210. Eventually the parties stipulated to entry of preliminary injunctions. *Id.* at 2011. The district court entered the proposed injunctions, but only after making two significant changes to the stipulated terms. *Id.* These changes, the Ninth Circuit held, were improper for two reasons. The first error was procedural. Before making such changes, a court should inform parties of its concerns regarding a stipulated injunction thereby allowing them an "opportunity to reach a reasonable accommodation" addressing the court's concerns. *See id.* at 2018. The Ninth Circuit drew this rule from "the context of consent decrees," a body of precedent that "reflects the prevalence of contractual principles in determining the enforceability of consent decrees." *Id.* Given that "a consent decree is no more than a settlement that contains an injunction" the Ninth Circuit held that "the same rule should apply to a stipulated preliminary injunction, which is essentially a proposed injunction that reflects a temporary settlement." *Id.* Second, the Ninth Circuit held that the district court had failed to make sufficient findings of fact to support its departures from the parties' stipulated injunction. *Id.* at 1218–19 ("If the district court elects to enter a preliminary injunction that varies from the injunction the parties proposed, it should be

supported by findings of fact and conclusions of law entered on the record and upon notice to the parties."). The Ninth Circuit did not directly address the nature of the findings that would be required if the district court had not departed from the terms proposed by the parties. Critically, by applying at least some principles from consent decree review to the stipulated injunction in that case, the Ninth Circuit's ruling in *Enforma* gives strong support for the proposition that it is appropriate to draw from consent decree jurisprudence to evaluate stipulated injunctions.

B. Analysis of the IOP

The court structures the remainder of its analysis around the general rule that a district court may enter a proposed consent judgment, or in this case approve a stipulated injunction, "if the court decides that it is fair, reasonable, and equitable and does not violate the law or public policy." *Sierra Club*, 909 F.2d at 1355.

1. Compliance with the APA, ESA, NEPA and the WIIN Act

A threshold question is raised by certain Defendant Intervenors. (*See* Doc. No. 328 at 27-33.) It appears to be undisputed that the IOP has not undergone NEPA or ESA review and that certain procedures related to ESA review contained within the WIIN Act have not been followed in relation to the IOP. These Defendant Intervenors specifically argue that "[u]nless the Court determines that the IOP is justified as a mandatory injunction, the IOP is nothing more than an agreement that Federal Defendants could not legally enter into, and the Court cannot approve, because it conflicts with and violates applicable statutes." (Doc. No. 328 at 27.)[55] This argument goes directly to the requirement that a court ensure a consent decree/temporary settlement "does not violate the law." *See Sierra Club*, 909 F.2d at 1355; *see also Oregon*, 913 F.2d at 580

[55] This argument is a reframed version of one Defendant Intervenors raised in the context of an earlier motion to amend their answer, which the court recently denied without prejudice. (*See* Doc. No. 319.) In that order, the court denied without prejudice certain Defendant Intervenors' attempt to amend their answer to assert cross claims that would have asserted that the Federal Defendants violated the APA, NEPA, ESA, and WIIN Act by "approving the IOP." (*Id.*) The court found at that time that any APA, NEPA or ESA claims premised on the IOP were "futile" because the IOP was a proposal to the court that did not constitute an actionable "final agency action" under the APA. (*Id.* at 7.) The court also concluded that any potential claim by Defendant Intervenors premised on the WIIN Act to be futile because the cited language of the WIIN act was facially inapplicable to the present circumstances. (*Id.* at 10.)

(explaining that "a consent decree must conform to applicable laws"). Two cases frame consideration of this issue.

The first is *Turtle Island*, which involved a challenge to NMFS's 2009 decision to remove certain pre-existing limits on longline fishing off the coast of Hawaii and, relatedly, to increase the annual number of allowable harmful interactions between fishermen and loggerhead sea turtles. 834 F. Supp. 2d at 1009. In that case the plaintiffs, a coalition of environmental organizations, challenged the 2009 decision on numerous grounds, including under the Magnuson-Stevens Fisheries Act ("MSA"), the ESA, and the APA. *Id.* at 1007. A fishing industry group joined the litigation as a defendant intervenor. *See id.* at 1006. In 2010, the primary parties to the case (federal defendants and environmental plaintiffs) filed a joint motion to enter a stipulated injunction to dismiss all of plaintiffs' claims; remand portions of the challenged agency decisions that pertained to sea turtle impacts; and reinstate the take limits that were in place before the 2009 changes were issued. *Id.* at 1010. The fishing interest intervenors argued that the proposed consent decree was "contrary to law" because it would allow the federal defendants to circumvent the reach of the APA, MSA, ESA, and NEPA. *Id.* at 1011. The district court rejected this argument, finding that "[b]ecause a consent decree is a 'judicial act' rather than an agency act, Federal Defendants are not required to ensure that their stipulation to the proposed consent decree complies with these statutes." *Id.* The district court also evaluated each of the statutes in question (the APA, MSA, ESA, And NEPA), and concluded "the plain language of the statutes themselves also demonstrates that they are inapplicable to consent decrees." *Id.* at 1013.

The Ninth Circuit affirmed the district court's decision in *Turtle Island Restoration Network v. U.S. Department of Commerce*, 672 F.3d 1160 (9th Cir. 2012) ("*Turtle Island II*"). The Ninth Circuit held that the trial court was free to approve the consent decree even though the settling agencies did not comply with rulemaking procedures. *Id.* at 1167. Crucial to the Ninth Circuit's analysis was the fact that the consent decree left the agency "free on remand to fashion a new rule based on the new biological opinion without imposing any substantive requirements on its terms." *Id.* at 1168. The Ninth Circuit reasoned that nothing in the Magnuson Act limited the district court's authority to manage the litigation or provided any reason to limit the parties

"ability to determine the course and trajectory of the litigation." *Id.* at 1167. The Ninth Circuit explained that absent statutory constraints to the contrary "[s]ettlement is to be encouraged," and agencies should not be forced to "return to the same rulemaking process by which the regulation was created" whenever they attempt to settle a lawsuit. *Id.*

Defendant Intervenors here rely on a more recent decision, *Conservation Northwest v. Sherman*, in which the Ninth Circuit held that a court cannot "approve a consent decree that 'conflicts with or violates' an applicable statute." 715 F.3d 1181, 1185 (9th Cir. 2013) (quoting *Local No. 93*, 478 U.S. at 519). In *Sherman*, environmental plaintiffs challenged a plan to manage logging in the Pacific Northwest. *Id.* at 1183. After the district court found NEPA violations had occurred, but before it imposed a remedy, the parties entered into a consent decree that imposed permanent changes to the multi-agency plan. *Id.* at 1184–85. As distinct from the consent decree before the court in *Turtle Island*, the consent decree in *Sherman* "sets the rules" that govern how the agency would assess the impacts of logging on ecologically important species "*unless and until* the Agencies decide to conduct further analysis and decision making." *Id.* at 1187 (emphasis added). This meant that "[i]f the Agencies are satisfied with the version of the Standard as amended by the consent decree, they could simply let it stand indefinitely." *Id.* This difference was found sufficient to distinguish the *Sherman* consent decree from the decree approved by the court in *Turtle Island*. *Id.* at 1186–87. The Ninth Circuit found that the consent decree in *Sherman* could not be approved because it "allowed the Agencies effectively to promulgate a *substantial and permanent* amendment" to the logging plan without having followed statutorily required procedures in doing so. *Id.* at 1188 (emphasis added).

This court pauses here to address a potentially dispositive linguistic dispute regarding the actual holding in *Sherman*. The holding itself was articulated in the conjunctive: a consent decree that amounts to a "substantial **and** permanent amendment" cannot be approved absent compliance with statutory procedures. *Id.* at 1188. Defendant Intervenors point to the reasoning that immediately preceded the announcement of that holding, where the Ninth Circuit stated:

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> Our recent decision in *Turtle Island* lends further support to the conclusion that procedural requirements remain relevant in the context of consent decrees. In that case, the National Marine Fisheries Service had amended a Fishery Management Plan to remove certain set limits and increase the annual incidental take limit on loggerhead sea turtles. 672 F.3d at 1163. Environmental plaintiffs challenged the changes to the rule, and eventually entered an agreement with the defendants to vacate those portions of the amendment that raised the take limit on loggerhead turtles while the agency undertook further action regarding that limit. *Id.* at 1163–64. The Hawaii Longline Association, which had intervened as a defendant, challenged the consent decree on the ground that it violated "federal law by allowing the National Marine Fisheries Service to change duly promulgated rules without following [applicable] procedural rulemaking requirements." *Id.* at 1162. We observed that the challenged consent decree "merely vacated a portion of a regulation and temporarily reinstated the relevant prior portion." *Id*. at 1166.
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> That the decree "merely temporarily restore[d] the *status quo ante* pending new agency action and [did] not promulgate a new substantive rule" was central to our decision to resolve that case on the "narrower" ground that the relevant statute did not preclude the use of consent decrees in the agencies' resolution of litigation. *Id.* at 1167. We did recognize, however, the existence of a "broader issue regarding applicability of statutory rulemaking procedures to judicial acts in general" that we found unnecessary to address directly in that case. *Id.* It follows that where a consent decree does promulgate a new substantive rule, ***or*** where the changes wrought by the decree are permanent rather than temporary, the decree ***may*** run afoul of statutory rulemaking procedures even though it is in form a "judicial act." *Id.* We therefore hold that a district court abuses its discretion when it enters a consent decree that permanently ***and*** substantially amends an agency rule that would have otherwise been subject to statutory rulemaking procedures.

715 F.3d at 1187 (emphasis added). Defendant Intervenors suggest that this language in *Sherman* stands for the proposition that a consent decree that "either effectuates a substantive change (even if not permanent), or effectuates a permanent change may run afoul of statutory procedures even though it is in form a 'judicial act.'" (Doc. No. 386 at 6.) This reading of the decision, of course, disregards the Ninth Circuit's use of the word "may" in the second to last sentence as well as its use of the word "and" in the final sentence of the quoted passage. Perhaps even more importantly, Defendant Intervenors' reading of the decision also disregards the factual situation before the court in *Sherman*. As mentioned, the consent decree at issue in that case materially changed how the agency would assess the impacts of logging on species and also permitted the agency to let those changes stand indefinitely. Even if the language upon which Defendant

Intervenors rely did not equivocate by the use of the word "may," that language is *dicta*.

Defendant Intervenors likewise advance the argument that adopting anything other than their reading of the decision in *Sherman* would "set a precedent allowing federal agencies to circumvent NEPA and the [ESA] by substantively changing agency actions under the guise of judicial act." (*Id.*) This slippery slope argument has very little glide to it because the slope clearly stops at *Sherman* under the decision in that very case. Under *Sherman*, if an agency makes a substantial and permanent change to a regulatory regime, it must comply with relevant statutory requirements.

Relevant here is a case Defendant Intervenors cite, albeit for a different purpose. Defendant Intervenors point to the decision in *American Forest Resource Council v. Ashe*, in which the district court held: "If every lawsuit challenging agency action ended in a consent decree giving a private interest group plaintiff the relief it was seeking, the procedural safeguards of the APA would be eviscerated." 946 F. Supp. 2d 1, 27 (D.D.C. 2013), *judgment entered,* 301 F.R.D. 14 (D.D.C. 2014), *and aff'd,* 601 F. App'x 1 (D.C. Cir. 2015). That case concerned a proposed consent decree that would have vacated a critical habitat designation that had been objected to by the plaintiffs. *Id.* at 4–5. Intervenors argued that the consent decree could not be approved because it had not been subjected to notice and comment rulemaking. *Id.* at 26. Notably, the district court rejected this argument, finding that "the cases cited by the parties indicate that the Court may approve the consent decree proposed here, even though it would vacate critical habitat without formal notice and comment." *Id.* at 26–27. Instead, the court considered the absence of notice and comment rulemaking as just one aspect of its overall "fairness" analysis. *Id.* at 27–33. Notably, the district court in *Ashe* was most troubled by the duration of the proposed remand. For various reasons, it was anticipated that a new critical habitat designation could not be crafted for approximately six years. *See id.* at 31. The court suggested that a shorter period of remand might be acceptable. *Id.* at 33. *Ashe* does not support the proposition that a non-permanent stipulated injunction like the IOP proposed here is *per se* unacceptable. Rather, it suggests that the duration of the stipulation should be considered in the overall fairness analysis and that interim agreements of shorter duration —even ones that have

not complied with rulemaking procedures—may well be accepted and approved by the court. Here, in addition to the numerous other ways that the instant case is distinguishable from *Ashe*, this court is not troubled by the duration of the proposed stipulated injunction embodied by the IOP, which will be in place only through September 30, 2022.[56]

Having determined how the Ninth Circuit's decision in *Sherman* is to be interpreted, the court must then turn to evaluating where on the *Sherman-Turtle Island* spectrum the IOP falls. To do so, the court must evaluate the specific nature of the terms involved in the IOP. *See Idaho State Snowmobile Ass'n v. U.S. Forest Serv.*, No. 3:12-CV-447-BLW, 2015 WL 807104 (D. Idaho Feb. 26, 2015) (approving in part a consent decree to remand and vacate a rule governing the use of motorized vehicles on certain federal lands, with the rule being remanded but not vacated while the agency determined whether the plan was flawed enough to require changes). Here, Defendant Intervenors argue that the IOP effects "substantial" changes to the CVP-SWP operations. But it is equally true that the IOP will not be permanent, and "imposes no substantive constraints on the agency's reconsideration" of the 2019 BiOps. The Ninth Circuit's holding in *Sherman* indicates that a court would abuse its discretion only by approving a consent decree that "permanently ***and*** substantially" amends an agency's prior rule. The IOP does not do both and is therefore governed by the Ninth Circuit's decision in *Turtle Island*, which does not require strict compliance with statutory procedural requirements in order to be approved by the court.

Turtle Island and *Sherman* both acknowledge that a court must nonetheless examine the "narrower issue" of whether relevant statutes preclude the use of consent decrees to resolve disputes. *Sherman*, 715 F.3d at 1187 (quoting *Turtle Island*, 672 F.3d at 1167). To the extent Defendant Intervenors' suggest that any of the statutes relevant here do so, the district court ruling in *Turtle Island* persuasively explains why they do not. 834 F. Supp. 2d 1013–16. For the reasons explained in detail by that court, the APA, NEPA, and ESA contain no language that undermines the general preference to encourage settlements and are therefore "inapplicable to

[56] The court recognizes that it may be called upon to review an IOP-like package again for WY 2023. The court sincerely hopes the level of dispute between the parties seen in this round of motions can be avoided if that becomes the case.

consent decrees" because they are "judicial acts," *id.* at 1013–24, so long as they are not both "substantial and permanent" so as to run afoul of the holding in *Sherman*.

Likewise, the court can identify nothing in the WIIN Act, Pub. L. No. 114-322, § 4004 (2016), providing "statutory instruction" that would undermine the general preference for courts to encourage settlements. As this court noted in its order denying Defendant Intervenor's motion to amend their answer, the plain language of the provision relied upon, WIIN Act § 4004, does not apply to the present circumstances. The procedural requirements set forth in § 4004(a)(1)–(6) apply only to "any consultation or reconsultation on the coordinated operations of the Central Valley Project and the State Water Project." (Doc. No. 319 at 9.) As this court's prior order concluded: "While Federal Defendants have reinitiated consultation on the challenged biological opinions, that re-consultation process is just beginning. The presentation of the IOP to this court is a separate (but related) litigation procedure meant to bridge the gap between the 2019 biological opinions and any revised biological opinions that may result from re-consultation." (*Id.* at 10.)

In sum, *Sherman* does not support Defendant-Intervenors' arguments here because the IOP is not a substantial and permanent change to the regulatory regime. Nor do the specific statutes in question bar the parties' use of consent decrees to resolve disputes. Accordingly, this court concludes that the IOP does not "violate the law" as Defendant-Intervenors contend.

2. Fairness

"Fairness should be evaluated from the standpoint of signatories and nonparties to the decree." *Turtle Island*, 834 F. Supp. 2d at 1016 (internal citations and quotations omitted). "In determining whether a proposed consent decree is fair, courts examine both procedural and substantive fairness." *Id.*; *see also United States v. Pac. Gas & Elec.*, 776 F. Supp. 2d 1007, 1024 (N.D. Cal. 2011) ("*PG&E*").

a. *Procedural Fairness*

To evaluate procedural fairness, the court must determine whether the negotiation process was "fair and full of adversarial vigor." *United States v. Chevron*, 380 F. Supp. 2d 1104, 1110–11 (N.D. Cal. 2005). If the decree is the product of "good faith, arms-length negotiations," it is

"presumptively valid." *Id.* (quoting *Oregon,* 913 F.2d at 581). At the same time, "the district court must ensure that the agreement is not . . . a product of collusion . . . ." *PG&E,* 776 F. Supp. 2d 1025.

The evidence in this case reflects that the IOP was produced from negotiations that ensued in the fall of 2021. Over the course of at least two months, representatives of Federal Defendants and State Plaintiffs met regularly—sometimes multiple times per week—to develop the IOP. (Conant Decl., ¶ 11.) These negotiations are described by those involved as "intensive." (*Id.*)

In contrast, Defendant Intervenors view the negotiations between the Federal Defendants and State Plaintiffs as "politically-motivated" (Doc. No. 386 at 7), and suggest that "Federal Defendants' about face in their litigation position was a direct result of the change in administration." (Doc. No. 393 at 5.) Defendant Intervenors argue, therefore, that the IOP is not the kind of agreement that can be considered by the court to be procedurally fair. They cite the decision in *United States v. Telluride Co.*, 849 F. Supp. 1400, 1406 (D. Colo. 1994), in which the district court criticized a consent decree for not being "the product of good-faith negotiations through which the parties fully and carefully considered all possible alternatives." But in that case, the court's concern was based upon the fact that the case had been filed "merely as the vehicle by which the parties' settlement agreement could receive judicial approval and, if necessary, enforcement when breached," a situation in which "the adversary system has yet to function." *Id.* at 1403. That is not at all the situation before the court at this time. Moreover, in their advancing of this argument it appears to the court that Defendant Intervenors are attempting to have their cake and eat it too. On the one hand, they point out repeatedly that the IOP is "not a consent decree" because it "does not resolve any claims," yet at the same time they appear to imply that Federal Defendants have "folded" for political reasons. Both cannot simultaneously be true. In fact, Federal Defendants have maintained throughout these proceedings that they have not violated the law, despite State Plaintiffs' consistently maintained position to the contrary. Given these respective positions that the parties have taken on the merits in this case, the IOP negotiations cannot fairly be characterized as being tainted by collusion.

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Defendant Intervenors complain that these negotiations between Federal Defendants and State Plaintiffs were "closed door"—at least at first—and that they were not presented with any proposed IOP until late September 2021. (Declaration of Chandra Chilmakuri ("Chilmakuri Decl."), *CNRA* Doc. No. 215-3, ¶ 3.) Defendant Intervenors argue that the final version of the IOP does not reflect meaningful input from them. (*CNRA* Doc. No. 233 at 13 n. 6.) According to Reclamation's Regional Director, two drafts of the IOP were provided to PCFFA and the Defendant Intervenors to solicit their comments. *Id.* Mr. Conant further indicates that "[a]ll of the comments were considered in developing the proposed IOP, and revisions were made to specifically address comments from state and federal water contractors." *Id.* Those on the other end of those communications see things very differently. For example, representatives of the Cities of Folsom and Roseville, indicate that they were invited to meetings at which the terms of the IOP were presented and discussed, but were not truly included in any negotiations regarding the terms of the IOP. (*See* Declaration of Jennifer Buckman, Doc. No. 393-1.)[57]

Defendant Intervenors again rely on *Telluride Co.*, 849 F. Supp. at 1406, suggesting that in that case the district court denied a consent decree in part because it was the product of an agency's negotiation with a defendant without input from impacted parties. Again in this regard the court does not find *Telluride* to be particularly analogous to the present circumstances. There, the district court considered a consent decree negotiated by the EPA with a single defendant alleged to have violated the Clean Water Act. *Id.* at 1401–402. The district court strongly criticized and ultimately declined to approve the consent decree in that case for numerous reasons, including the fact that the EPA "dismissed as unfounded" numerous substantive comments submitted by members of the public. *Id.* at 1405–406. Crucial to the district court's reasoning was that it examined the substance of those public comments and found them to be worthy of additional consideration. *Id.* at 1406. Among other things, the district court found the consent decree to be "less stringent in several respects than the EPA's own policy advises" and

[57] To the extent such objections have some merit, it may be possible that a more inclusive IOP negotiation process might conceivably have avoided some of the disputes presently before the court for resolution.

noted the agreed to "civil penalties are the minimum the EPA stated it would accept in settlement of the litigation." *Id*.

Ultimately, inclusiveness is simply not required. As the district court in *Turtle Island* explained: "The Government need not allow third parties to participate in settlement negotiations." 834 F. Supp. 2d at 1020–21. The court in *Turtle Island* also found it notable that the court's consent decree approval process provided these third parties an opportunity to air their objections and grievances. Just as the court considered those objections and grievances in *Turtle Island*, this court has considered Defendant Intervenors objections on their merits in this order.

Relatedly, it is not dispositive that some of the Defendant Intervenors in *CNRA* do not consent to the imposition of the IOP. As the Supreme Court explained in *Local No. 93*, consent decrees are "primarily a means by which parties settle their disputes," and, as such, "[i]t has never been supposed that one party . . . could preclude other parties from settling their own disputes and thereby withdrawing from litigation." 478 U.S. at 528–29. Obviously, as discussed above, while the IOP is not a true consent decree, there is also no logical reason why the same principle would not apply to it. So long as a party is given the opportunity to "air its objections" and the district court has determined that the settlement is fair and reasonable, a party's lack of consent will not block the entry of the consent decree/temporary settlement. *Id.*

b. *Substantive Fairness/Reasonableness*

In evaluating the substantive fairness, it is "important for the district court to be fully informed regarding the costs and benefits of the decree." *Chevron*, 380 F. Supp. 2d at 1113 (citing *Montrose Chem. Corp*., 50 F.3d at 746). "[I]t is not the duty of the court to determine whether 'the settlement is one which the court itself might have fashioned, or considers ideal.'" *Chevron*, 380 F. Supp. 2d at 1111 (quoting *United States v. Cannons Eng'g Corp*., 899 F.2d 79, 84 (1st Cir. 1990).). Rather, substantive fairness "mirrors the requirement that the decree be equitable." *Telluride*, 849 F. Supp. at 1402. "[T]he court's approval is nothing more than an amalgam of delicate balancing, gross approximations and rough justice." *Oregon*, 913 F.2d at 581 (internal quotations omitted). The court "need only be satisfied that the decree represents a 'reasonable factual and legal determination.'" *Id.*

The IOP is a complex package of measures that is layered on top of one of the most complex regulatory schemes in all of environmental law. Nonetheless, the court has been able to satisfy itself that the IOP embodies a "reasonable factual and legal determination." In a broad sense, the IOP addresses real disputes between Federal Defendants and State Plaintiffs in meaningful and reasonably practical ways. Drawing upon the factual findings and background material articulated above, the court will identify below the central issues the IOP aims to address in order to determine whether the IOP "comes within the general scope of the case made by the pleadings." *See Hawaii's Thousand Friends*, 149 F.R.D. at 616. The court will then evaluate whether the IOP meaningfully and reasonably addresses each of those issues. One of the court's goals in conducting this analysis is to determine whether the IOP "furthers the objectives upon which the law is based." *Id.* Finally, the court will address the various objections to the IOP. For organizational purposes, the court will also divide its discussion between Shasta operations and Delta operations.

i. Shasta Operations

First and foremost, the IOP aims to provide much-needed protection for winter-run eggs in the Upper Sacramento River in the coming water year. The court will not repeat the factual material reviewed above, but instead summarizes its findings as follows: Winter-run experienced high levels of temperature-related egg mortality in 2020 and 2021. Current water storage conditions and ongoing drought risk a third year of significant temperature related egg mortality. This presents a serious concern for the species as a whole in terms of its ability to persist and to recover because of: (a) its three-year life cycle and (b) the fact that it is geographically vulnerable since the only population spawns in the reaches below Shasta Dam. This situation warrants the taking of measures to protect all freshwater life stages of winter run to minimize that risk. As a threshold matter, this issue falls well within the scope of the claims State Plaintiffs have brought against Federal Defendants in this case. The operative complaint in *CNRA* specifically alleges that the Proposed Action as approved by the 2019 NMFS BiOp degrades conditions for listed species impacted by Shasta Dam operations and fails to require appropriate cold water pool operations, including by eliminating carryover storage requirements. (*See CNRA* FAC, ¶¶ 80–81,

93, 104.)

Substantively, the IOP takes balanced and reasonable steps toward addressing the risks identified above in several interrelated ways. First, the IOP sets forth temperature targets for winter run incubating eggs that are (if they can be maintained) more protective and more biologically justifiable than those that would govern under the dry year (Tier 3 and Tier 4) scenarios of the 2019 NMFS BiOp. Even assuming there is a scientific foundation for the idea that winter-run incubating eggs can withstand temperatures at or above 56°F (with 56°F being allowed in Tier 3 years and no upper limit applied in Tier 4 years under the 2019 NMFS BiOp) for certain periods of time, nothing in the law requires managers to operate right up to that line, which would leave the fish and project operators no room for error. *Cf. San Luis. v. Jewell*, 747 F.3d at 624 (finding it was error for the district court to require the agency to explain why it picked one protective measure over another one that would have had less impact on water supply; "FWS need only have adopted a final RPA which complied with the jeopardy standard and which could be implemented by the agency").

Second, the IOP tackles the related problem of attempting to balance the need for suitable instream temperatures this year against the need to ensure sufficient water is carried over as storage into WY 2023. It does so by setting reasonable carryover storage goals that must be prioritized vis-à-vis consumptive uses of water (other than for health and safety purposes). As Dr. Herbold cogently explained, the IOP's targeted ranges recognize the reality of the present situation, namely that managers "cannot make water." (Herbold Second Decl., ¶ 56.) The court views the IOP's approach to carryover storage as a reasonable step in the right direction that, while not guaranteeing any particular carryover storage outcome, re-prioritizes carryover storage from a mere "consideration" under the 2019 NMFS BiOp to a more formalized component of the temperature planning process.

Third, the IOP directly addresses the concern shared by all moving parties that authorizing deliveries of stored water from Shasta early in the year may foreclose the most advantageous temperature management options by delaying deliveries of stored water until a temperature management plan is in place. As noted above, the court finds persuasive the central premise

underpinning this requirement: "A principal problem with operations under the [2019 NMFS] BiOp is the incorrect presumption that one can wait to determine how this complex system can be successfully operated to achieve many goals until after some decisions are made that reduce the availability of options to achieve temperature management goals." (Grober Suppl. Decl., ¶ 46.) Put simply, in a situation where very difficult choices need to be made, Reclamation's commitment in the IOP to release no stored water beyond that needed for health and safety purposes until a water management plan is adopted "ensures that the maximum amount of flexibility will be retained to use water wisely." (Herbold Second Decl., ¶ 37.)

Relatedly, the IOP modifies the decision-making guidelines and structure in ways that reinforce the IOP's prioritization of winter run habitat needs. The guidelines come in the form of a prioritization system that gives first priority to public health and safety.[58] Second priority is given to the habitat needs of winter-run, which are embodied in (a) the temperature targets discussed above that are designed to prevent catastrophic temperature dependent mortality in dryer years and (b) the carryover targets that acknowledge the demonstrated need to plan ahead for subsequent years. Only once a water management plan is in place that addresses the second priority for the longest period possible can the third and fourth priorities be satisfied: deliveries to senior water contractors and to "Level 2"[59] wildlife refuges; and other deliveries. The IOP also

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[58] The IOP defines human health and safety as meeting "Municipal and Industrial Delta salinity requirements and minimum Municipal and Industrial deliveries for Public Health and Safety." (*Id.* ¶ 12.i.a.) PCFFA's proposal would instead prioritize deliveries necessary for human health and safety, as defined in 23 California Code of Regulations § 878.1, above winter-run habitat needs. (PCFFA PI at 3.) That provision defines the amount of water "necessary for minimum human health and safety" as 55 gallons per person per day. 23 Cal. Code Regs. § 878.1(b)(1)(A). The court does not believe this dispute merits significant discussion here because, as Defendant Intervenors point out, PCFFA's proposal ignores well-established federal policy for determining public health and safety needs of municipal and industrial contractors. (*See generally* Doc. No. 344.)

[59] Under the Central Valley Project Improvement Act ("CVPIA"), Pub. L. No. 102–575, 106 Stat. 4600, certain volumes of water are delivered to wildlife refuges as permanent "mitigation for fish and wildlife losses incurred as a result of construction, operation, or maintenance of the Central Valley Project." CVPIA § 3406(a). "Level 2" represents two thirds of the water needed to sustain the refuges. *Friant Water Auth. v. Jewell*, 23 F. Supp. 3d 1130, 1139 (E.D. Cal. 2014). "Incremental Level 4" represents the remaining one third and the full amount is called "Level 4." *Id.*

modifies the decision-making structure to ensure appropriate weight is given to the second priority by giving the assigned wildlife agency (NMFS) final say in the temperature management planning process through the six-agency Shasta Planning Group. Defendant Intervenor's witness Lee Bergfeld critiques the Group's role as "duplicative" and because it excluded the SRS Contractors. (Bergfeld Decl., ¶¶ 47–48.) But the record before the court indicates that the Shasta Planning Group structure will coordinate with other parties, including the SRS Contractors, through other means. In fact, Reclamation, a member of the Shasta Planning Group, is actively doing so now.

It is the interrelatedness of all of these elements that undermines many of its detractors' arguments. As all parties appear to acknowledge, no one can predict today exactly how day-to-day operations under the IOP will differ from management that would have taken place under the 2019 NMFS BiOps. Defendant Intervenors use this as an avenue for attacking the IOP, arguing that its proponents have "not shown the IOP's temperature targets *will* avoid harm." (*CNRA* Doc. No. 233 at 26 (emphasis added).) But requiring in advance a definitive demonstration of how the IOP will function in practice throughout the coming water year would effectively preclude the very thing that makes the most (and perhaps only) sense here, namely, conserving as much water as possible (without endangering human health and safety) until sufficient information is available to generate a temperature management plan. Ultimately, by calling for early season delivery delays, the IOP provides managers flexibility in meeting the habitat needs while also increasing the likelihood that they will succeed in doing so by delaying deliveries until a temperature management plan is in place.

The court next turns to some of the objections aimed directly at the IOP's Shasta operations provisions. PCFFA contends that the IOP's provisions related to Shasta do not go far enough in several respects. First, PCFFA argues that the IOP adopts targets that are biologically unjustifiable. (*See generally* Doc. No. 638.) With regard to the temperature targets to protect winter-run incubating eggs, as the court has already acknowledged, the targets advanced by PCFFA are biologically justified and would help ensure (if met) very low temperature dependent mortality. Even the IOP's advocates acknowledge that some (possibly quite significant)

temperature related mortality may occur at the temperature targets adopted in the IOP. (*See* Brown Decl., ¶ 32; Tr. 42.) But, it is well-established that there are tradeoffs in dry years between (a) targeting temperatures to a particular level and (b) the length of time that temperature target can be maintained, as well as preserving water storage to ensure effective temperature management in the following year. (*See* Doc. No. 203 at 28 (June 24, 2020 Order discussing these tradeoffs apparent from the record then before the court); 2019 NMFS BiOp at p. 259 (explaining "operational tradeoffs between maintaining high flows for the fall temperature management versus reducing flows to conserve storage for the following year's temperature management").)

Because of these tradeoffs, the IOP takes a middle-of-the road approach, setting targets that are likely to be more protective than those under the 2019 NMFS BiOp, *see* Brown Decl., ¶¶ 32 (explaining that models indicate mortality would be 88-100% if temperatures are held at or above 56°F [under the 2019 NMFS BiOp], whereas mortality may be lower 34–74% under the IOP), but which are somewhat more likely to be achievable than those in the PCFFA PI. Crucially, while it is not yet clear for how long managers can achieve the IOP's temperature targets this year, Reclamation is at least "committing" to meeting the targets in the IOP. (Tr. 144.) This contrasts with the evidence in the record before the court indicating that PCFFA's more stringent proposed temperature requirements are unlikely to be achievable. As Mr. Conant testified, current estimates indicate that end of April storage in Shasta will be somewhere on the order of 2.1 MAF, (Tr. 125), well shy of the 3.5 MAF PCFFA estimates is needed to meet their proposed temperature targets. (Rosenfeld Second Decl., ¶ 37.) The court acknowledges that PCFFA's witness, Dr. Rosenfield, has also pointed out that the temperature targets called for *in the IOP* have only been met once before where there has been less than 3.5 MAF in storage at the end of April. (*Id.*, ¶ 38.) This does not bode well for temperature management efforts in the coming year. But that projection certainly does not mean the court should choose to implement an even *more onerous* standard. *NWF III*, 886 F.3d at 823 ("It is not an abuse of discretion for a court to issue an injunction that does not completely prevent the irreparable harm that it identifies."); *Turtle Island*, 834 F. Supp. at 1019 ("Provided that the proposed consent decree is

fair, reasonable, and equitable, and does not violate the law or public policy, it need not utilize the best scientific evidence. Such a requirement would transform evaluation of a proposed consent decree into a decision on the merits in contravention of controlling authority.").

PCFFA also criticizes the IOP because it does not establish any temperature requirements to prevent pre-spawn mortality and sub-lethal effects to pre-spawning adults. (Doc. No. 320 at 27.) PCFFA's proposed injunction includes a provision requiring that daily maximum temperatures be maintained below 61°F at Jelly's Ferry from March 1 to May 15. NFMS's witness, Howard Brown, addresses this provision in detail as follows:

> 26. PCFFA's Proposed Order to require a seven-day average of daily maximum temperatures to be less than 61° Fahrenheit (F) in the Sacramento River at the Jelly's Ferry gauge from March 1, 2022 to May 15, 2022, or the date that initiation of spawning winter-run Chinook salmon is observed, whichever is earlier. There is no comparable action in the State/Federal IOP. This proposed measure appears to be made in response to the relatively higher levels of pre-spawning mortality that occurred as a result of Reclamation's bypass operation in the spring of 2021.
>
> 27. As described in Kristin White's July 2021, Declaration at paragraph 15, the power bypass operation was a deliberately planned action that was proposed by Reclamation and intended to support cold water pool for the purpose of protecting winter-run spawning conditions. The March 2021, operational outlook identified the potential for a Tier 3 or a Tier 4 year. Hydrologic conditions in the Central Valley were critically dry following a previously dry year. Shasta Reservoir storage was low (43% of average) and the available cold-water pool to protect winter-run Chinook salmon in the summer appeared extremely limited. Accordingly, Meet and Confer discussions with the Sacramento River Settlement Contractors, Reclamation, the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board were ongoing and a warm water bypass of power generation at Shasta Reservoir was proposed and evaluated. The proposal was discussed frequently through the Meet and Confer and also with the Sacramento River Temperature Task Group. Preliminary modeling from Reclamation, showed this action would extend the window of acceptable temperatures by an additional ~2-4 weeks and increase temperature dependent survival of winter-run Chinook salmon eggs by ~5-10% depending on the shaping of the final temperature management plan. On April 18, 2021 Reclamation adjusted operations to bypass Shasta Dam's powerplant and temperature control device (TCD) due to the low water elevation in Shasta Reservoir. Reclamation released water from the warmer, upper layers of Shasta Reservoir directly through the dam's river outlets into the Sacramento River. The purpose of this warm water release was to maintain Sacramento River flows through the spring while preserving the limited supply of colder water for use later in

> the summer when most critical for endangered winter-run Chinook salmon. The bypass operation was executed while daily fisheries monitoring was occurring in the field. When fisheries conditions indicated possible adverse effects from the warmer release, Reclamation requested and received updated guidance from the fishery agencies and began to manage the river temperatures to a daily average of 57 F at the SAC gage (Sacramento River upstream from Highway 44 bridge) beginning on May 15 by adjusting the release blend from the bypass with the powerplant and TCD. The bypass was further reduced as water temperatures in Shasta Lake increased in order to maintain downstream river temperatures and the bypass operation ended on May 24, 2021. Reclamation estimates this action conserved over 300 TAF of cold water.
>
> 28. The final level of observed pre-spawn mortality for females is estimated to be 5.5% in the CDFW December 31, 2021, Draft Winter-run Juvenile Production Estimate (JPE) for Brood Year 2021. Based on a review of pre-spawning mortality rates reported in JPE letters from 2001-2021, pre-spawning mortality of winter-run adults averaged 1.3% with a range of 0-5.5%. The previous high was 2.96% in 2020.
>
> 29. Considering the concern regarding the potential for continued adverse effects of drought, managing to 61°F at Jelly's Ferry for two and a half months between March and May is probably not the most prudent way to manage a potentially limited supply of cold water during current drought conditions. I do not believe that the PCFFA Proposed Order for a Jelly's adult temperature requirement is necessary to prevent a repeat of the 2021 pre-spawning mortality event. Instead, it is my professional opinion that temperature management planning and actions for WY 2022 should focus on spawning and incubation conditions.
>
> 30. Although the pre-spawning mortality rates from 2021 are higher than average, from my perspective, the situation does not seem to warrant the need to establish temporary spring temperature criteria at Jelly's Ferry to protect pre-spawning adults WY 2022 in order to avoid a repeat occurrence or further reduce the harm from what is already considered in the State/Federal IOP.

(Brown Decl., ¶¶ 26–30 (emphasis added).) The court finds this reasoning compelling and agrees that on this record PCFFA's proposed Jelly's Ferry temperature target is likely not the best way to manage potentially limited cold water under drought conditions.

Initially, PCFFA's proposed injunction also called for a very different decision-making structure than the one set forth in the IOP. As originally drafted, the PCFFA PI imposed temperature requirements and would have allowed Reclamation to escape those requirements only by petitioning the court for exemptions from its terms. (Doc. No. 378-2 at 5.) This approach was obviously borne of PCFFAs mistrust of project managers due to historical experience. (Tr.

252.) The court expressed significant reservations about this aspect of the PCFFA proposal, for what should be obvious reasons in light of the Eastern District of California's scarce judicial resources. (Tr. 27; *see also* Doc. No. 374.) In response, PCFFA withdrew this aspect of their proposal, instead calling for Reclamation to exercise "best efforts" to prioritize the habitat needs of winter-run. Under PCFFA's modified proposal, if, despite "best efforts," Reclamation is still unable to satisfy the injunction's habitat terms, Reclamation is instructed to "meet and confer with [PCFFA] and other parties as soon after determining its inability as possible and providing modeling and information regarding operations and water deliveries, allocations, and releases demonstrating that it is impossible to meet these requirements despite curtailing water deliveries and releases for diversion . . .." (Doc. No. 378-1 at 5.) In the court's view these revisions render PCFFA's exemption provision much more practical, but also less distinct from that of the IOP.[60] The distinction between the two exemption procedures is further muted by the fact that a government agency is entitled to a "presumption of regularity, " *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415 (1971), *abrogated on other grounds by Califano v. Sanders*, 430 U.S. 99, 105 (1977), meaning that the court must presume Federal Defendants will act in good faith when implementing the terms of the IOP, *see Pac. Rivers Council v. U.S. Forest Serv*., 942 F. Supp. 2d 1014, 1022–23 (E.D. Cal. 2013).

Defendant Intervenors complain more generally that the record is devoid of evidence that the IOP is feasible. (*See* Doc. No. 328 at 33.) Defendant Intervenor's point out that Reclamation modeled the feasibility of NMFS's 2017 Draft RPA amendment and concluded that the spring and fall storage requirements are infeasible. Their expert also expresses concern about the IOP and PCFFA storage and temperature goals on the ground that comprehensive modeling has not been performed to support their feasibility. (*See* Deas Decl., ¶ 15.) Les Grober offers a compelling response to this objection:

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[60] As mentioned, the IOP calls for managers to first follow a priority system that places winter-run habitat requirements above all deliveries other than those for health and safety. Then, if Reclamation is still unable to meet habitat criteria for the entire period, the agencies will "agree on an operation to provide suitable habitat for the longest period possible." (IOP ¶ 12.i.b.)

> Mr. Deas states: "In my opinion, neither the IOP nor the PCFFA proposed order are supported by sufficient analysis, and I have significant concerns as to whether Reclamation can feasibly meet their storage and temperature requirements with respect to Shasta Lake operations." Mr. Deas suggests that comprehensive modeling of all possible outcomes under a range of hypothetical future conditions must be performed to support the process and goals enumerated in the IOP. *This is flawed logic. The IOP requires no modeling now to demonstrate the superiority of the IOP over the BiOp in its potential to afford far greater protection to winter run Chinook salmon. The IOP prescribes both goals and process to achieve better outcomes than the BiOp.*
>
> Modeling to confirm, or not, that better outcomes are possible, need only be performed when sufficient data is available to do so. Mr. Deas' and Intervenors' mischaracterization of what the IOP does is an unfortunate error that continues to obfuscate both the intent of the IOP process and how and when intelligent modeling is best undertaken to understand this complex physical and biological system. One could, of course, with sufficient time and resources, perform comprehensive modeling that explores the potential outcomes of a wide range of possible future conditions as they relate to the management of Shasta Reservoir. But as both Mr. Deas and Mr. Bergfeld correctly state, Shasta temperature management combined with overall SWP and CVP operations management has many moving parts. The time to do modeling is when there is adequate information to model, in March, April, and May. *A principal problem with operations under the BiOp is the incorrect presumption that one can wait to determine how this complex system can be successfully operated to achieve many goals until after some decisions are made that reduce the availability of options to achieve temperature management goals.*

(Grober Supp. Decl., ¶ 45–46 (emphasis added).)

Defendant Intervenors also raise concerns that the IOP sets up a potential conflict between the IOP's requirements and Reclamation's obligations to certain senior contractors. It has been mentioned in related cases that the senior contracts are the "800-pound gorilla" in the room. *NRDC v. Kempthorne*, No. 1:05-cv-01207-LJO-GSA, 2015 WL 3750305, at *10 (E.D. Cal. June 15, 2015). "This is because the Settlement Contractors hold water rights that pre-existed the creation of the CVP." *Id.* "While the exact priority of these rights vis-à-vis the Bureau's rights to divert water for the CVP has never been conclusively determined, Congress has expressed intent that the Bureau avoid the monstrous lawsuit that would embroil the CVP in litigation for decades, should the matter ever be adjudicated." *Id.* (internal citations and quotations omitted.) It is becoming increasingly obvious, however, that the BiOps governing the CVP and the SWP will

eventually be forced to confront, or at the very least fully appraise, the 800-pound gorilla. At least one of the wildlife agencies involved in this lawsuit (FWS) has expressed concern that the SRS Contracts in particular may not allow Reclamation to make operational adjustments necessary to protect smelt and that "if increased outflows are needed and cannot be met under the SRS contracts, *those contracts may need to be revisited to ensure consistency with the Act*." (*Id.* (internal record citations omitted).) The record developed through the past and present motions for injunctive relief in these cases strongly suggests that NMFS will face a similar conundrum when revising the 2019 NMFS BiOp. This fact is underscored by the SRS Contractors' constant refrain that Reclamation has little or no discretion to act to aid winter-run. For several reasons, the court does not believe the present motions in these cases provide the proper stage upon which to adjudicate this matter. For one thing, the court does not read the IOP as giving Reclamation permission to breach its contractual obligations.[61] Viewed in this light, Defendant Intervenor's concern that the IOP will somehow cause Reclamation to breach the SRS Contracts is purely hypothetical and speculative. It is notable that Reclamation—the agency that is a party to the contracts in question—has signed onto the IOP. Reclamation's witness represented at the hearing on the pending motions that the agency remains actively involved in discussions with the SRS Contractors regarding the undertaking of voluntary actions. (Tr. 139.) The court is in no position to micromanage exactly how Reclamation intends to make good on its commitments under the IOP while also abiding by its contractual obligations. While the can cannot be kicked down the road indefinitely, the IOP presents a reasonable interim approach to the serious challenge presented, namely, that the SRS Contracts make it exceedingly and increasingly difficult for Reclamation to operate Shasta Dam in a manner that is sufficiently protective of winter-run.

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[61] PCFFA's original proposed injunction would arguably have done just this, by requiring reclamation to "curtail all water deliveries" to "all contractors." (*See* Doc. No. 378-2 at 5.) This provision was omitted from the final version of their proposal to instead call for Reclamation to "prioritize" winter-run habitat requirements "including by curtailing, to the extent permitted by law, all water deliveries to all contractors." (*Id.*)

ii. Delta Loss Thresholds to Protect Salmonids.

As discussed above, given the status of winter-run, there is cause to protect all freshwater life stages of winter-run in the coming year. In addition, spring-run experienced "catastrophically low" survival in 2021. (Rosenfield Second Decl., ¶ 20.) Likewise, CV steelhead populations are very low relative to historic trends. (Tr. 237–38.)

According to State Plaintiffs' claims in *CNRA*, the loss thresholds utilized in the 2019 NMFS BiOp are insufficiently protective, because among other things, the thresholds are premised upon cumulative historical loss and do not require action when triggered. (*See CNRA* FAC, Ex. A (ESA Notice to Sue Letter) at p. 22.) State Plaintiffs' complaint also alleged generally that the 2019 BiOp is not sufficiently protective of spring-run passing through the Delta. (*See generally id.* at pp. 15–16.)

Dr. Herbold has concisely explained the failures of the 2019 BiOps and how the IOP aims to address those failures, which the court quotes here at length for the sake of expedience:

> The 2019 NMFS BiOp addresses entrainment almost solely by how many individuals of listed fish are collected at the export facilities. The triggers for actions to reduce entrainment in the 2019 NMFS BiOp are almost entirely based on the numbers that had been salvaged historically. Given the very depressed populations of the listed salmonids, the historically based cumulative and single-year triggers in the 2019 BiOps are unlikely to be met. If they were triggered, the responses called for in the 2019 BiOps are both too little and too late to avert entrainment.
>
> ***
>
> Drier years put salmon at greater risk of entrainment at the export facilities in the south Delta. When river flows are lower, water demand is higher and a higher fraction of river water is taken if available from storage, with consequent greater entrainment of fish. In addition, drier years can reduce egg and juvenile survival and thereby reduce the number of outmigrants, so entrainment can have a larger effect on a smaller population, putting the survival of the species at risk.
>
> The 2019 BiOps address entrainment in two ways: single-year and cumulative loss thresholds. The 2019 NMFS BiOp calls for restriction of OMR to -5000 cfs if [0.5% of any] hatchery fish [release group], released as surrogates for Spring-run Chinook salmon, [ ] are salvaged NMFS Admin. Record # A00004, NMFS BiOp at 60. Also, in the BiOps "Reclamation committed to a cumulative loss threshold based on cumulative historic loss from 2010-2018, and a single-year loss threshold that is no greater than 90

> percent of the highest annual loss that occurred from 2010-2018." USFWS Admin Record # FWS053720, USFWS BiOp at 150-151. This is a target that is unlikely to be met in years of low salmon abundance, when the species are most at risk. The avoidance of entrainment of Delta Smelt is based largely on real-time monitoring of the distribution of the population and turbidity monitoring during the adult migration period. Entrainment avoidance measures based on the distribution of adult and larval Delta Smelt are unlikely to ever be used, given our inability to monitor Delta Smelt at their present levels of abundance.
>
> The IOP, incorporating elements of the [State ITP], addresses entrainment risk in several ways, including reactions to salvage and monitoring data. The ITP/IOP use hatchery origin surrogates for gaging wild Spring-run Chinook salmon entrainment risk as the 2019 BiOp does. However, their trigger is .25% and their OMR protection is -3250 cfs, so the trigger is twice as sensitive, and the response is substantially more protective. In addition, the ITP/IOP add export reductions in November and December for early outmigrants if set numbers of likely Winter-run sized fish are salvaged. Salvage triggers in months of higher outmigrant densities are set relative to the juvenile production estimate so that more fish can be taken when more fish are available and vice-versa. Early migrants reflect genetic diversity in the genetically limited population of Winter-run salmon so there is considerable value toward long-term survival and species restoration in protecting them. Entrainment during the juvenile salmon outmigration period and the smelt spawning season is a major point of concern for the survivability of all these listed species, especially in drier years. The IOP offers an obviously more workable, carefully conceived, and cautious approach to minimizing entrainment effects.

(Herbold Second Decl., ¶¶ 42, 45–47.) The court finds this reasoning to be compelling and essentially uncontradicted on the present record.[62]

Defendant Intervenors argue that none of the IOP's loss thresholds are necessary in the coming year. First, they point out that the early-season natural winter-run Chinook salmon discrete daily loss threshold only applies in November and December (*see* IOP ¶ 6.iii; State ITP § 8.6.2), which is beyond the scope of the IOP, as that only extends through September 30 (IOP ¶ 18). In addition, at the hearing on these motions, Dr. Charles Hanson discussed the levels of salvage that have been observed at the CVP and SWP's export facilities so far in 2022. This information indicates that salvage at the export facilities has been relatively low (less than 10% of the threshold value) thus far in 2022. (Tr. 234; Defendant Intervenors' ("DI") Exhs. 1 & 2.) The

[62] PCFFA does specifically critique the fact that the IOP does not provide a separate loss threshold for adult Delta smelt. (Doc No. 320 at 23.) PCFFA advances their own provision to address adult Delta smelt salvage, which is addressed by the court below.

information in the cited exhibits does suggest, however, that historically salvage continues to accumulate for winter-run throughout February and into early April and for CV steelhead from February through May. (*See* DI Ex. 2, at p. 11.) That said, overall, Dr. Hanson also testified that the estimates of percentage loss in 2020 and 2021 were less than loss that occurred historically back to 2009. (Tr. 235.)

The court does not believe either of these arguments advanced by the Defendant Intervenors undermine the reasonableness of the IOP's loss thresholds. First, the court is untroubled by the fact that one of the loss thresholds agreed to is now outside the temporal scope of the IOP, since the IOP was negotiated at a time when those thresholds were still relevant. Moreover, the IOP may become a template for future injunctive relief proposals. It is not unreasonable, therefore, for the agreement to encompass the entire years' worth of operations. The fact that the IOP will expire on September 30, 2022, before those thresholds again come into play also means that they cannot in any way harm Defendant Intervenors' interests, at least not without further judicial approval.

Second, the fact that the existing loss thresholds are not yet close to being triggered this year is not dispositive of the IOP's reasonableness. First, as set forth above in the evidence presented by Dr. Herbold, there is reason to believe that the loss thresholds contained in the 2019 NMFS BiOps are not sufficiently sensitive given the species' low population numbers and the current dry hydrology. The IOP's loss thresholds represent a reasonable attempt to address these shortcomings. If Defendant Intervenors are correct in suggesting that losses may remain so low that even IOP's loss thresholds will not be triggered, this only serves to underscore that Defendant Intervenors are unlikely to be harmed by implementation of the IOP.[63] If, conversely, the IOP's thresholds end up being exceeded in the coming weeks and months, then Defendant Intervenors' predictions will have been proven inaccurate. The court is unlikely to be able to

[63] For the same reason, the court is underwhelmed by the suggestion that, should the current drought conditions persist, export restrictions imposed by State Water Resources Control Board Decision 1641 are likely to govern operations during the relevant period such that the loss thresholds set forth in the 2019 BiOps or the IOP are unlikely to even come into play. (*See* Doc. No. 233 at 30; Leahigh Decl., ¶ 59.) If that turns out to be the case, again, Defendant Intervenors' interests simply will not be harmed by the IOP's loss thresholds.

move quickly enough to address these various scenarios by adjusting interim remedies on the fly; this is yet another reason why the adoption of the IOP makes resounding sense. Under the IOP, appropriate mechanisms will be in place if needed.

iii. I:E Ratio

The court views the I:E Ratio provision of the IOP in much the same light. Federal Defendants, State Plaintiffs, and PCFFA advocate for the adoption of essentially the same I:E Ratio provision.

The operative complaint in *CNRA* alleges that the 2019 NMFS BiOp "permits changes in South Delta exports and Old and Middle River (OMR) flows that will indisputably result in more entrainment and other harm to listed salmon." (*CNRA* FAC ¶ 92; *see also id.* ¶ 102 ("[T]he Proposed Action will result in OMR flows that are significantly more negative than observed under the Current Operating Scenario, which poses a significant risk to the survival and recovery of the listed species. The Biological Opinion does not include measures, or otherwise provide evidence, to explain how allowing substantially more negative flows would not lead to jeopardy.").)

The IOP's I:E Ratio addresses this complaint. As mentioned, the 2009 NMFS BiOp contained a requirement in its "Action IV.2.1" that San Joaquin River inflow be balanced against exports according to pre-determined ratios set according to the category of water year (designated as critically dry, dry, above normal, or wet). (*See CNRA* Doc. No. 106 at 14.) For a critically dry year, the 2009 NMFS BiOp imposed a ratio of San Joaquin River inflow to combined exports of 1:1, while in a dry year, the ratio was 2:1, with increasingly large (3:1, 4:1) ratios being imposed as conditions become wetter. (*Id*. at 15.) This so called "I:E Ratio" provision was omitted from the 2019 NMFS BiOp and ostensibly replaced by the loss triggers described above. (2019 NMFS BiOp at p. 777.) Both the IOP and PCFFA's proposals seek to impose the I:E Ratio once again in essentially the same manner as the I:E Ratio provision was structured in the 2009 NMFS BiOp under Action IV.2.1. (*See* State ITP § 8.17, as incorporated into IOP ¶ 11; Doc. No. 378-1, ¶ 1 (PCFFA PI).)

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This court evaluated the scientific basis for the I:E Ratio in 2020 and found it was scientifically justified by the record then before the court, stating:

> Through Dr. Rosenf[i]eld, plaintiffs have presented evidence that recent research demonstrates the imposition of an I:E Ratio improves survival of salmonids migrating through the Delta. (Rosenf[i]eld Decl. at ¶ 120–21 (discussing 2018 research and concluding that it "found that survival of [CV] steelhead juveniles emigrating from the San Joaquin Valley was better predicted by a measure that considers Project exports in the context of San Joaquin River flows into the Delta (San Joaquin I:E) than it was by either export rates or river inflows alone – this finding strongly supports the use of the San Joaquin I:E ratio to protect migrating juvenile Central Valley Steelhead").)

(*CNRA* Doc. No. 106 at 31.)

In connection with the pending motions, the parties have discussed at length a May 2021 peer reviewed paper by Buchanan that looked at the survival of tagged CV Steelhead released into the San Joaquin River basin under various inflow and export scenarios. Dr. Hanson interprets this paper to mean that there is "no relationship between water project exports and steelhead survival." (Tr. 239.) Both Dr. Rosenfield and Dr. Herbold view the paper more contextually, by emphasizing something that even the paper's authors acknowledged: real-world parameters in place during the course of the tagging experiments did not permit scientists to effectively separate the impacts of flows versus exports. (Tr. 163–65, 193.) The court agrees with Dr. Herbold's suggestion that, ultimately, this dispute is immaterial because there is "little argument that some part of the San Joaquin river should be flowing out to the bay if you want to get salmon and steelhead out into the bay and the I:E ratio does that." (Tr. 193.)

iv. "Storm Flex"

The Proposed Action reviewed in the 2019 BiOps authorizes a new type of export pumping termed "storm-related flexibility" ("Storm Flex") under which operators may attempt to capture flows during storm-related events. Storm Flex allows increases in exports (theoretically up to a state law maximum of -14,900 cfs) unless turbidity at Bacon Island is very high (an event that can draw delta smelt into the area near the export pumps). (*See 2*019 FWS BiOp at p. 141; 2019 NMFS BiOp at pp 530–31.) The action itself is poorly defined. No duration is specified, nor is the concept of a "storm event" defined.

In *CNRA*, State Plaintiffs allege that the 2019 FWS BiOp is unlawful because it permits "essentially unlimited pumping" during undefined "storm-related" events. (*CNRA* FAC ¶ 93.) The Notice Letter attached to the CNRA FAC points out that modeling performed in the 2019 FWS BiOp assumed OMR flows would be no more negative than -6,000 cfs during these events and further assumed that the events would occur very infrequently. (*Id*., Ex. A at p. 23.) State Plaintiffs' expert opines that permitting "essentially unlimited" pumping in the south Delta during storm events has the potential to harm young, listed fish. (*See* Herbold Second Decl., ¶ 61) ("Timing unrestricted operations to the same increases in river flow that tend to move young smelt or direct young salmonids means greatly increased impacts of the export facilities on both listed smelts and listed salmonids, most of which are already at dangerously low population abundances as a result of the extraordinarily hot and dry conditions of spring and summer 2021"). As PCFFA's expert Dr. Rosenfield points out, the 2019 NMFS BiOp acknowledges the dangers associated with unlimited pumping:

> since listed salmonids tend to start migrating downstream in response to elevated flows in the Sacramento River basin and San Joaquin River basin waterways, there is a high probability that more fish will be present in the Delta exactly when the CVP and SWP increase their exports. Besides the fish entering the Delta on the elevated storm flows, listed salmonids (especially winter-run Chinook salmon) may already be present in the Delta due to migration earlier in the year. This overlap in fish presence and the potential for combined exports to reach 14,900 cfs can result in increased entrainment risk as a result of the potentially very negative Old and Middle River flows.

(2019 NMFS BiOp at p. 531.)

The IOP would limit Storm Flex by providing that reverse OMR flows cannot exceed -6,250 cfs (or -5,000 during the spring spawning period for Delta smelt). (IOP, ¶¶ 6.vi, 7; State ITP § 8.7.) Also, the IOP would only permit this limited version of Storm Flex with the approval of the Regional Director of FWS and Regional Administrator of NMFS. (IOP, ¶ 7.iv.) The court cannot locate <u>any</u> cogent objection in the record to the imposition of these limitations, other than PCFFA's objection that these limitations are insufficient.

In maintaining that the IOP's Storm Flex provision does not limit Storm Flex enough, PCFFA argues that there is no biological basis to conclude that flows up to -6,250 are safe for

migrating fish and that the constraints placed on Storm Flex by the IOP are insufficient. PCFFA's proposal would not allow any Storm Flex at all under any circumstances. (PCFFA PI ¶ 2.) Dr. Rosenfield opines that the negative flows permitted under the IOP (up to -6,250) are "extremely high" and because they are calculated as a five-day moving average, they can persist for several days. (Rosenfield Second Decl., ¶ 50.) He explains that "Mass entrainment of endangered fishes is usually episodic, thus, a large proportion of any of the endangered species' populations may be entrained/salvaged in just a few days. [ ] Damage to endangered fish species arising from negative OMR flows averaging -6,250 cfs could quickly become catastrophic, irreparable, and significantly threaten their survival and recovery in the wild." (*Id.* (internal citations omitted).)

Notably, Storm Flex has thus far never been used. (*See* Herbold Second Decl., ¶ 63.) Moreover, due to current hydrology and forecasts, it is unlikely to be used this year. (Tr. 129.) At the same time, Water Project managers indicate that Storm Flex may help capture much-needed water in a dry year. Reclamation's Mr. Conant testified:

> Particularly in a year like this, a critical year like this . . . if we have a March miracle or at some point have excess flows in the Delta, it's essential that we pick up whatever water is available in order to . . . provide water for cities and farms and refuges that we're obligated to supply.

(Tr. 128.)

Overall, the court believes Dr. Rosenfield expresses legitimate concerns that, by allowing exports above -6,250 cfs, even the more limited variation of Storm Flex permitted in the IOP may risk large entrainment events. Even Dr. Herbold admits that the IOP retains the possibility of increased exports "at times of potentially significant risk to listed species." (Herbold Second Decl., ¶ 63.) But, as Dr. Herbold also indicates, the IOP imposes somewhat "clearer parameters and with oversight by the regulatory agencies." Crucially, the circumstances on the ground suggest it is very unlikely that Storm Flex will be employed in the current Water Year. Given that, the court believes the IOP's constraints on Storm Flex are sufficient for now. In reaching this conclusion, the court notes the general rule that "[i]t is *not* an abuse of discretion for a court to issue an injunction that *does not completely prevent the irreparable harm that it identifies*."

NWF III, 886 F.3d at 823 (emphasis added). There is no reason why that rule is not equally applicable to the court's review under the consent decree jurisprudence.

In any renewed proposal for injunctive relief, the parties should consider further clarifying the constraints that will be imposed upon Storm Flex. It remains unclear, for example, exactly what the Regional Director of FWS and Regional Administrator of NMFS will take into consideration in approving or declining to approve the use of Storm Flex going forward.

v. OMR Restrictions to Protect Larval Delta Smelt.

As the court found above, the delta smelt is perilously close to extinction. Dr. Herbold's summary is worth repeating:

> There is considerable concern that Delta Smelt face imminent extinction in the wild. None have been caught in the standard sampling for the last four years. The standard sampling addresses a very small fraction of the waters of the estuary so we could be missing some that are still there. A newer year-round sampling program targets areas and water conditions where Delta Smelt are expected to occur and two Delta Smelt were found in 2021, so they appear to be exceptionally rare rather than extinct. For the last 25 years, high spring outflows have usually foretold upswings in the autumn abundance of Delta Smelt. This pattern continued in the wet year of 2011. But despite the high outflows in spring 2017 and above-average outflows in 2018 and 2019, Delta Smelt have almost disappeared

(Herbold Second Decl., ¶ 25.)

The Proposed Action approved by the 2019 FWS BiOp calls for Reclamation and DWR, in coordination with FWS, to "operationalize" the results of a delta smelt life cycle model by performing "real-time monitoring for the spatial distribution" of delta smelt. (BA 4-68.) The 2019 FWS BiOp also calls for early season actions designed to "dissuade movement of adult delta smelt into the south Delta," (*see* Nobriga Third Decl., ¶ 6), as well as various provisions designed to improve habitat conditions, one of which is discussed in the next section of this order.

Among other things State Plaintiffs allege in *CNRA* that protections in the 2019 NMFS BiOp for larval and juvenile delta smelt are insufficient. (*CNRA* FAC, Ex. A at p. 17, 25.) As Dr. Herbold suggested in his first declaration filed in 2020, the presence of larval delta smelt in the South Delta (i.e., near the export pumps) may indicate that the early season actions designed to "dissuade" delta smelt from entering the Delta did not work and that delta smelt did spawn in that

area. (Herbold First Decl., ¶ 55.)

As mentioned, IOP adopts State ITP measure 8.5.2. That measure would be triggered if the five-day cumulative salvage of juvenile delta smelt at the CVP and SWP facilities is "greater than or equal to one plus the average prior three years' [Fall Midwater Trawl Index] (rounded down)."[64] (IOP ¶ 6; State ITP § 8.5.2.) If triggered, this provision would restrict exports so that OMR flows are no more negative than -5,000 cfs. (*Id.*) In addition, if the trigger is exceeded, the Smelt Monitoring Team will be convened, which may result in recommendations based upon life cycle modeling and other information, to reduce negative OMR flows even further, depending on the level of risk. (*See* State ITP § 8.5.2; *see also* State ITP § 8.1.5.2.)

PCFFA again objects that this measure is insufficient for several reasons. Dr. Rosenfield opines that it is "unlikely that this ITP provision will be implemented to protect larval Delta Smelt because, according to USFWS researchers, delta smelt below 20 mm fork length are not enumerated by the fish facilities monitoring South Delta entrainment because they are difficult to accurately identify." (Rosenfield Second Decl., ¶¶ 52 (internal citations and quotation omitted); *see also* Herbold Second Decl., ¶ 48 (opining that entrainment avoidance measures based on the distribution of adult and larval Delta Smelt "are unlikely to ever be used, given our inability to monitor Delta Smelt at their present levels of abundance").) PCFFA does not offer an alternative larval-specific delta smelt protection provision that overcomes this particular noted difficulty. The State ITP (in a provision that is not incorporated into the IOP) appears to acknowledge that the sampling methods for larval and juvenile delta smelt need to improve and sets forth a process for doing so.[65] Moreover, juvenile delta smelt have been found in salvage in recent years.

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[64] Fall Midwater Trawl Program ("FMWT"), "samples 122 stations in the upper San Francisco Bay estuary every month between September and December." (Rosenfield Second Decl. ¶ 23.) Because the FMWT index has been zero for three years, this provision of the IOP would be triggered if any juvenile or larval Delta Smelt were salvaged in 2022. (*Id.* at ¶ 52 n. 20.)

[65] The State ITP contains a provision aimed at funding and implementing new ways to monitor delta smelt larvae entrainment, for possible eventual use by the Smelt Monitoring Team. (*See* State ITP § 7.6.2.) Although this is not formally a part of the IOP, the Smelt Monitoring Team plays a role in implementing State ITP § 8.5.2, which forms the substantive basis of the IOP's larval protection provision.

(Herbold First Decl., ¶ 20). Thus, the chances of this provision being triggered are not zero.

Dr. Rosenfield opines that "OMR flows of -5,000 do not eliminate or even minimize the threat of salvage/entrainment for Delta Smelt." (*Id.*) He points out that the 2008 FWS BiOp RPA restricted use of the -5,000 cfs limit to a "low-entrainment risk" scenario; under a "high-entrainment risk scenario," OMR flow was limited to fourteen-day moving averages no more negative than - 3,500 cfs or -2,000 cfs. (*See id.* (citing 2008 FWS BiOp at pp. 353–54).) But, the IOP's larval and juvenile delta smelt provision also calls for a risk assessment based on life cycle modeling and other information that may result in recommendations for OMR limits lower than -5,000 cfs, limits that seem similar to those set forth in the 2008 FWS BiOp. (State ITP § 8.1.5.2.)

Dr. Rosenfield opines that in order to adequately protect Delta Smelt from elevated risk of extinction associated with entrainment-related mortality: (1) OMR flows must be less negative than -5,000 cfs from January 1 through June, and (2) average OMR flows must be positive (i.e., greater than 0 cfs) for at least seven days following detection of any life stage of Delta Smelt at the Projects' salvage facilities." (Rosenfield Second Decl., ¶ 53.) With regard to the first point, PCFFA's proposal differs from the 2019 BiOps only with regard to the months of January and February, which have already passed this year. This is because the 2019 BiOps already restrict negative OMR from March through June to no more negative than -5,000 cfs (2019 FWS BiOp at p. 395) unless the provisions of Storm Flex come into play. Storm Flex (and PCFFA's objections to it) have been discussed above and the court has found the IOP's restrictions to be reasonable under the anticipated circumstances in WY 2022. With regard to the second point, PCFFA has proposed its own protective measure to meet Dr. Rosenfield's recommendation. That proposal is discussed below.[66]

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[66] Dr. Rosenfield also suggest that the IOP's larval smelt protection provision is "redundant" of another provision in the IOP. (Rosenfield Second Decl. ¶ 52.) IOP ¶ 7 does limit OMR to no more negative than -5,000 on a 14-day moving average from March through June. The IOP's larval delta smelt protection provision instead limits OMR to no more negative than -5,000 on a 7-day moving average. (*See* IOP ¶ 6; State ITP § 8.5.2.) The parties' related dispute over whether the IOP's version of the I:E ratio did or did not commit to measuring impacts over a 14-day moving average (Tr. 71, 88, 137) suggests that this kind of distinction can amount to a material difference. Absent a clear explanation to the contrary, the court finds that the IOP's provisions are not duplicative in the manner suggested by Dr. Rosenfield.

Overall, Dr. Rosenfield raises questions about whether the IOP's measure to protect larval delta smelt will be effective given that it may be very difficult to trigger. The fact that this approach is imperfect, however, does not make this provision of the IOP unreasonable. PCFFA has not raised any specific objections that cause the court to pause before approving of its implementation.

Defendant Intervenors separately complain that the effects of this part of the IOP were not modeled. (Chilmakuri Decl., ¶ 12 ("The effects analysis underlying the SWP ITP and the associated EIR did not include modeling of Conditions 8.5.2, 8.6.2, 8.6.3, and 8.6.4."). But the court can nowhere identify any information in the record indicating how modeling information would change its determination as to the reasonableness of this measure. Delta smelt are almost extinct. This provision is a reasonable measure designed to address that dire situation which, according to some evidence in the record, may never be triggered because delta smelt larvae are so difficult to find.

vi. Delta Smelt Summer-Fall Action

The IOP also provides for an action designed to improve delta smelt habitat, dubbed the "Summer-Fall Action." This action is based upon one already contained in the 2019 FWS BiOp. Under the 2019 FWS BiOp, in below normal, above normal, and wet years, Reclamation will maintain low salinity habitat for delta smelt in Suisun Marsh and Grizzly Bay (maintaining 0-6 ppt salinity at Belden's Landing), among other things. (2019 FWS BiOp at pp. 51–54.) The State ITP already requires DWR to operate the Suisun Marsh Salinity Control Gates for no more than 60 days in order to maximize the number of days that Belden's Landing three-day average salinity is equal to or less than 4 ppt salinity (a salinity within the range set forth in the 2019 FWS BiOp). (State ITP § 9.1.3.1.) The IOP indicates that Reclamation agrees to "share the water costs" for this action by DWR. (IOP ¶ 10; State ITP § 9.1.3.1.)

Again, Defendant Intervenors complain that the effects of this provision have not been modeled. (Doc. No. 233 at 13.) Here, the provision itself suggests that there will be water costs associated with its implementation, given that Reclamation is called upon to "share" those costs. But this provision is better described not as adding new water costs, but simply requiring

Reclamation to share those costs. This is because DWR is already required by the State ITP to make this salinity adjustment happen. The kind of cost sharing required by the IOP is generally addressed by the pre-existing Coordinated Operating Agreement between Reclamation and DWR. (*See* Leahigh Decl., ¶ 17.) As described above, the application of the COA has been complicated by the fact that the two projects are not "aligned" in terms of regulatory responsibilities in light of the State's imposition of its ITP on DWR in 2020. (*See id.* ¶ 49.) The IOP's provision regarding the Summer-Fall Action Plan restores Reclamations cost-sharing obligation and helps to correct the mis-alignment of the projects. Although correction of mis-alignment is not something that necessarily relates to the goals of the ESA, in this case it appears to do so by supporting efforts to improve habitat conditions for smelt.

No party appears to question the biological purpose of this action. Improving habitat in Suisun Marsh is a central focus of the 2019 FWS BiOp and one of the reasons why it concluded that Project Operations will not jeopardize delta smelt despite other increased impacts to the species anticipated under the 2019 BA. The beneficial effects of this action are expected to be particularly noticeable in drier years. (*See* 2019 FWS BiOp at 162–71, 181–83, 188, 214–19, 221, 398.)

For these reasons, the court finds that this provision is reasonable in light of the entire record before it.

3. Other Considerations

a. *Public Interest*

Whether a consent decree is within the public interest in part depends on whether it is "consistent with the statute that the judgment was meant to enforce." *Turtle Island*, 834 F. Supp. 2d at 1019 (quoting *Citizens for a Better Env't v. Gorsuch*, 718 F.2d 1117, 1128 (D.C. Cir. 1983)). The primary statute at issue here is the ESA, although CESA is also arguably relevant.[67]

[67] CESA is also arguably relevant because State Plaintiffs assert claims against Federal Defendants under it. Those claims are the subject of a complex motion to dismiss in this action that has been held in abeyance for many months. (*See* Doc. Nos. 117, 119, 121, 122, 182.) Regardless, the goals of CESA are substantially identical to those of the ESA. CESA's provisions embody the policy of California "to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat." Cal. Fish & Game Code § 2052. A

The ESA's stated purposes are "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved . . . ." 16 U.S.C. § 1531(b); *see also Hill*, 437 U.S. at 174 ("[E]xamination of the language, history, and structure of the [ESA] indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities."). While a consent decree (or a stipulated injunction by analogy) must be "consistent with" the relevant statutes, it need not provide all of the relief a party might otherwise be entitled to under those laws. *See Ctr. for Biological Diversity v. Bureau of Land Mgmt.*, No. C 00-00927 WHA, 2001 WL 777088, at *6 (N.D. Cal. Mar. 20, 2001) (acknowledging that while the plaintiff might have been entitled to "significant injunctive relief" had they proven all alleged ESA violations at trial, the consent decree's terms represented "compromise and ongoing negotiation" to, for example, allow "limited expansion of mining"). For all of the reasons set forth above, the court concludes that the terms of the IOP are consistent with the ESA.

b. *Objections Regarding Costs*

As recognized above, in the consent decree jurisprudence, applied here by analogy to an agreement in the form of a stipulated injunction, it is "important for the district court to be fully informed regarding the costs and benefits of the decree." *Chevron*, 380 F. Supp. 2d at 1113 (citing *Montrose Chem. Corp.*, 50 F.3d at 746). Yet "it is not the duty of the court to determine whether the settlement is one which the court itself might have fashioned, or considers ideal." *Chevron*, 380 F. Supp. 2d at 1111. Rather, substantive fairness "mirrors the requirement that the

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"native species of bird, mammal, fish, amphibian, reptile, or plant" is considered "endangered" under CESA when it "is in serious danger of becoming extinct throughout all, or a significant portion, of its range," *id.* § 2062, or "threatened" when it "is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts" required under CESA, *id.* § 2067. Similar to the ESA, CESA makes it unlawful for any "person or public agency" to "take" any species listed under CESA as threatened or endangered. *Id.* § 2080. Notwithstanding this take prohibition, CESA allows the California Department of Fish and Wildlife ("CDFW") to directly authorize "take" that is "incidental to an otherwise lawful activity" if certain conditions are met. *Id.* § 2081(b); *see also* 14 Cal. Code Regs. §§ 783 *et seq*. CDFW has promulgated procedures by which an applicant can request an "incidental take permit" under CESA. *See* 14 Cal. Code. Regs. § 783.2. Substantively, CESA imposes an obligation to mitigate takes of CESA-listed species. *See* Cal. Fish & Game Code § 2081(b)(2). In addition, some of the claims in these cases arise under NEPA, but apart from some arguments regarding the likelihood of success on the merits prong of the traditional equitable relief test, NEPA has not been the focus of any briefing in connection with the pending motions for equitable relief.

decree be equitable." *Telluride*, 849 F. Supp. at 1402. "[T]he court's approval is nothing more than an amalgam of delicate balancing, gross approximations and rough justice." *Oregon*, 913 F.2d at 581 (internal quotations omitted). The court "need only be satisfied that the decree represents a 'reasonable factual and legal determination.'" *Id.*

Defendant Intervenors raise various objections concerning the "costs" associated with the IOP. The court addresses these objections in turn with all of the above legal standards in mind.

i. Lack of Modeling

First, Defendant Intervenors generally argue that the proponents of the IOP have not met their burden because they have not fully outlined those costs for the court. Central to this argument is the fact that the various provisions of the IOP have not yet been "modeled," either individually or as a complete package. (Doc. No. 233 at 13.)

In its reply brief, Federal Defendants point out that some modeling has been undertaken by State Plaintiffs as part of their environmental review of the State ITP. (*CNRA* Doc. No. 251 at 8 & n. 7; *see also* Supplemental Declaration of Ernest Conant ("Conant Supp. Decl."), *CNRA* Doc. No. 251-1, ¶ 2.) Federal Defendants also indicate that preliminary modeling of the IOP was performed by Reclamation and distributed to the parties and the broader "modeling community" in mid-January 2022. (Conant Supp. Decl., ¶ 4.) At that time, Reclamation estimated it would take up to eight weeks to complete additional review of the data that "is still in preliminary and draft form . . . before using the results to draw conclusions regarding the impact of the State/Federal IOP." (*Id.*) That time estimate would mean that results could possibly be received in the next few weeks.

Nonetheless, the court does not believe it is handcuffed in the meantime. As the court reviewed above, Les Grober offers a compelling response to this "Where is the modeling?" refrain. He opines that it is simply "flawed logic" to demand "comprehensive modeling of all possible outcomes under a range of hypothetical future conditions" before acting. (Grober Supp. Decl., ¶ 45.) This is because "[t]he IOP requires no modeling now to demonstrate the superiority of the IOP over the BiOp in its potential to afford far greater protection to winter run Chinook salmon. The IOP prescribes both goals and process to achieve better outcomes than the BiOp."

(*Id.*) "Modeling to confirm, or not, that better outcomes are possible, need only be performed when sufficient data is available to do so." (*Id.* at ¶ 46.) The court recognizes, of course, that in addition to modeling whether the IOP will achieve benefits, modeling can also elucidate (and quantify) the nature of the costs and tradeoffs involved. To the extent these costs and tradeoffs are even cognizable in the context of an injunction designed to protect endangered species, the court addresses the existing record regarding those issues below. The court believes that record sufficiently outlines the kinds of costs and tradeoffs involved, even though modeling does not yet exist to help estimate the likely range of magnitudes of those impacts.

ii. Economic Impacts

As the court has already explained in the context of the parties' evidentiary disputes, in cases involving the traditional injunctive relief standard, "Congress removed from the courts their traditional equitable discretion in injunction proceedings of balancing the parties' competing interests." *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1204; *see also NWF I*, 422 F.3d at 793–94 ("Congress has determined that under the ESA the balance of hardships always tips sharply in favor of endangered or threatened species."). In practice, this results in a prohibition of the balancing of economic harms against the Congressionally determined public interest in preserving endangered species. *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1204. A similar concept has been applied in the context of consent decree approval. *Turtle Island*, 834 F. Supp. 2d at 1018 (noting that if intervenor fishing interests ultimately had access to their fishery limited by the terms of the consent decree "this result would be consistent with the goals of the ESA and in the public's interest," because under *Hill*, 437 U.S. at 184, "[t]he plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost").

Numerous declarations have been filed in this action containing evidence of what the court classifies as "pure economic harm."[68] As discussed above, that evidence cannot be considered in the equitable balance here. Some declarations also detail related issues that are not

[68] As the Ninth Circuit has noted, ESA restrictions have the potential to harm "millions of acres of land and tens of millions of people," *San Luis & Delta-Mendota Water Auth.*, 747 F.3d at 605, who rely on water from the CVP-SWP. This is well established and understood.

purely economic, such as alleged harm to the food supply and harm to underprivileged communities, schools and businesses that may result from water delivery restrictions. The court is permitted to consider these the societal harms. *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1213–14 (suggesting court may consider evidence regarding the health and safety effects of secondary adverse impacts such as land subsidence, land fallowing leading to air quality impacts, and community dislocations arising from job losses). The court has read and considered all of the declarations addressing these subjects. However, given the statutory priority given to endangered species, these concerns can only underscore the court's obligation to ensure that the measures it imposes are narrowly tailored to address anticipated harms. The court has taken this into consideration in reaching its decision here and it is one reason why the court finds the IOP's relatively modest constraints on Storm Flex to be reasonable despite the noted concerns raised by PCFFA about its potential impact on listed species. As for the other provisions in the IOP, the court believes they are reasonable and tailored to address the specific needs of the imperiled species in question without unnecessarily restricting water supply.

c. *Objections Regarding Other Tradeoffs*

It is also appropriate to consider whether equitable relief would undermine one species for the benefit of another. *See Idaho Rivers United v. U.S. Army Corps of Eng'rs*, 156 F. Supp. 3d 1252, 1266–67 (W.D. Wash. 2015) ("It makes little sense to issue a preliminary injunction to protect against alleged harm to Pacific lamprey when the result will undermine . . . parameters recommended by NMFS that are designed to benefit other listed and endangered species.").

Certain Defendant Intervenors throw out generic objections that "[n]o party has evaluated impact of the IOP on other species, including green sturgeon, Least Bell's Vireo, and Giant Garter Snake." (*CNRA* Doc. No. 233 at 32.) These Defendant Intervenors argue, for example that "[i]f releases from Shasta are delayed until the approval of a [temperature management plan], as required under the IOP, many farmers will fallow their lands, which would also cause a substantial loss of habitat for many species, including the federally and state listed Giant Garter Snake and millions of migratory birds." (*Id.* at 33 (citing record declarations).) These Defendant Intervenors point out that a group of environmental plaintiffs recently obtained summary

judgment from another judge of this court based upon their argument that Reclamation had not sufficiently evaluated the impacts to the Giant Garter Snake of a plan to transfer water from the Sacramento Valley to other regions of California. *See generally AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969 (E.D. Cal. 2018). The ruling in *AquAlliance* does indeed suggest there may be long-term impacts from rice field fallowing upon Giant Garter Snake that have not yet been sufficiently evaluated. But, such a suggestion does not in any way overwhelm the immediate need for action, well established in the present record, to ensure sufficiently cold temperatures to protect winter-run incubating eggs in the Upper Sacramento River. The court also agrees with State Plaintiffs that Defendant Intervenors have completely failed to explain how or why the balance of the equities weighs against protecting endangered fish species to avoid impacts on unlisted migrating birds.

Defendant Intervenors also argue that there may be other tradeoffs that result from limiting deliveries from Shasta reservoir. For example, temperature is carefully managed at Folsom Reservoir to protect CV Steelhead below the dam there. (Doc. No. 328 at 22.) In 2021, temperature conditions were so poor there that the temperature requirements of the 2019 NMFS BiOp, which are used as a surrogate for take of CV Steelhead in that ecosystem, were exceeded. (*Id.* at 22–23.) Defendant Intervenors complain that "[t]he IOP ignores the existing take exceedance at Folsom and focuses its reservoir management measures exclusively on limiting releases from Shasta, purportedly to avoid a potential take there." (*Id.*) If the water year is dry or critical, the IOP will limit releases from Shasta, resulting in an increased demand for releases from Folsom, which will likely deplete Folsom's cold-water pool and further raise the temperatures in the lower American River, all to the detriment of the listed steelhead. (*Id.* (citing record declarations).) Given this, Defendant Intervenors argue, the proponents of the IOP cannot demonstrate that its adoption would be equitable. (*Id.*)

Although there are many layers of hypothetical subsumed within this argument, the court understands why Defendant Intervenors are concerned. However, conditions on the ground this year appear likely to minimize the chances that this potential tradeoff will turn into an actual problem. Specifically, while storage levels at Shasta and Trinity reservoirs remain low, Folsom

storage has improved relative to 2021. (*See* Conant Suppl. Decl., Attach. 1.)[69] The court will expect more nuanced consideration of these issues in any renewed injunctive relief proposal.

d. *Objections to IOP Provisions That Apply in "All Years."*

Defendant Intervenors also generally object to any provisions in the IOP that would apply in all years. They argue that the IOP is "premised on dry conditions" and therefore is not narrowly tailored because it does not only apply in dry years. (Doc. No. 233 at 25.) The court declines to address this objection because it appears likely to be practically irrelevant for the relevant time period (i.e., the planned duration of the IOP) because it appears highly likely that WY 2022 will be dominated by dry conditions. To the extent there are provisions of the IOP that only apply in wetter years, they are very unlikely to come into play in 2022.

e. *Agency Discretion*

"When a government agency is the target of a consent decree, the Court must ensure that the proposed consent decree does not unduly constrain the agency's discretion." *Turtle Island*, 834 F. Supp. 2d at 1020 (citing *Gorsuch*, 718 F.2d at 1129). "Because federal agencies are charged by Congress to carry out statutory missions, consent decrees that restrict their discretion, especially over long periods of time, could undermine the ability of agencies to exercise the judgment and expertise as envisioned by Congress." *Ctr. for Biological Diversity*, 2001 WL 777088, at *4 (approving consent decrees that extend only during period of reconsultation).

Here, the terms of the proposed stipulated injunction—the IOP—will remain in place only through the end of September 2022. Thus, there is no legitimate concern that it will constrain agency discretion.

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[69] The papers submitted to the court mention some other possible tradeoffs, almost in passing, that appear to be primarily directed at PCFFA's proposed injunction. For example, one group of Defendant Intervenors expresses concern that PCFFA's proposed relief could jeopardize reintroduction of San Joaquin River spring-run Chinook salmon, by requiring deliveries to the Exchange Contractors from Friant rather than the Delta. (Doc. No. 344 at 28.) Because these objections appear to be only relevant to the first draft of PCFFA's PI, which would have restricted deliveries even to senior contractors, the court declines to address them in this order.

4. Conclusion Regarding IOP

The court believes very strongly that adoption of the IOP, even though it is perhaps not a "true" consent decree, furthers "the policy of the law to encourage settlement." *Coal. for a Sustainable Delta v. McCamman*, No. 1:08-CV-00397 OWW, 2011 WL 1332196, at *4 (E.D. Cal. Apr. 6, 2011) (citing *Cannons*, 899 F.2d at 84).

> That policy has particular force where, as here, a government actor committed to the protection of the public interest has pulled the laboring oar in constructing the proposed settlement. While the true measure of the deference due depends on the persuasive power of the agency's proposal and rationale, given whatever practical considerations may impinge and the full panoply of the attendant circumstances, [citation] the district court must refrain from second-guessing the Executive Branch.

Id.

For the reasons articulated above, the court will approve the entirety of the IOP. It represents a reasonable, fair, and equitable *temporary* interim injunctive relief plan for the CVP and SWP through September 30, 2022. In particular, the record before the court establishes that winter run chinook salmon experienced extremely high mortality in the past two years. If dry conditions persist through WY 2022, there is a very real risk that they will experience significant mortality for a third year. Although no one can guarantee that the provisions of the IOP will improve conditions for incubating winter-run eggs, the provisions contained therein aimed at Shasta Operations represent a quite reasonable attempt to reduce risks by, among other things, prohibiting most water deliveries from Shasta Reservoir until a temperature management plan is finalized. Although the IOP does not go as far as PCFFA's proposed plans (both in scope and in magnitude), it sets goals that are more likely to be met in the coming water year and therefore represents a more practical solution to this very serious and difficult problem.

The IOP's operational provisions with respect to the Delta likewise are reasonably designed to reduce risks posed to a number of species that have experienced high mortality or population declines in recent years, including winter-run, spring-run, CV Steelhead, and delta smelt. Although information about how these measures may perform in the coming year is not complete, the court believes the record is sufficient to justify adoption of these provisions of the

IOP as well.

The court has considered all of the objections to the IOP, which pull in multiple directions, and concludes that they do not justify a contrary finding.

C. Analysis of PCFFA's Injunctive Relief Proposal

Because the court approves the IOP in its entirety as a stipulated injunction applicable in the *CNRA* case, this has the operative effect of changing the frame of reference for evaluation of PCFFA's motion for injunctive relief and proposed injunction. Several parts of the IOP directly overlap with measures PCFFA has requested in their injunctive relief proposal. Among other things, this allows the court to focus more directly on the differences between PCFFA's proposal and the IOP. Because PCFFA's proposal is not agreed to by any other party to this litigation, it must be evaluated under the traditional standards applicable to motions for injunctive relief. As PCFFA correctly points out, the court is free to adopt—if it deems doing so to be appropriate—elements of its proposed injunctive relief package in addition to the IOP.[70]

As noted above, "[e]quitable remedies are a special blend of what is necessary, what is fair, and *what is workable*." *Hernandez*, 386 F. Supp. 3d at 1305 (emphasis added). Along these lines, courts may decline to order requested injunctive relief that is infeasible. *See NWF v. NMFS*, 2005 WL 3576843, at *7. In its discussion of the IOP above, the court has already explained why it believes certain of the additional protections proposed by PCFFA are infeasible, unwise, or unnecessary, in light of the drought conditions anticipated in this water year. In review, the court has already concluded above as follows:

- The record strongly suggests the egg-incubation temperature targets and carryover storage targets set forth in the PCFFA PI are unreachable and therefore are not feasible.[71]

[70] PCFFA is correct that *Enforma*'s prohibition against a court unilaterally amending a stipulated injunction, *see* 362 F.3d at 1218, does not suggest otherwise, as PCFFA's proposed injunction has been fully and separately briefed.

[71] To the extent conditions might change on the ground to render PCFFA's targets more readily achievable, that situation would likely coincide with WY 22 moving into a normal or wet category, in which case PCFFA's Shasta temperature and carryover storage targets would not be triggered. (*See* PCFFA PI ¶ 4.)

- The proposed Jelly's Ferry temperature target would not be a wise use of limited cold water supply under the circumstances.
- The revised exception procedure proposed by PCFFA is not meaningfully different from the IOP's procedural structure.
- Storm Flex is quite unlikely to be employed in the coming Water Year and, in any event, that the IOP's restrictions on Storm Flex are more appropriate (i.e., more narrowly tailored to address any likely harm).[72]

For the same reasons, the court declines to impose those provisions as independent forms of injunctive relief. The court also finds that PCFFA has offered no cogent argument to suggest why its proposed delta loss thresholds for salmonids are preferable to those adopted in the IOP.[73]

What remains in the courts view are only three issues where PCFFA's proposed injunction materially departs from the IOP. These are PCFFA's request to: (1) impose a limit on maximum temperature dependent mortality for winter-run eggs; (2) require Reclamation to comply with the terms of D-1641, even if Reclamation and/or DWR later apply for and receive permission from the State Water Resources Control Board to depart from those terms; and (3) require "to the extent possible," daily OMR flows to be "zero or positive for seven consecutive days following the salvage of one or more delta smelt by the CVP or SWP."

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[72] The court also agrees with Federal Defendants (*see* Doc. No. 326 at 13) that PCFFA's actual proposed injunction with regard to Storm Flex is also overbroad, because PCFFA's PI calls for the wholesale return to the 2009 NMFS BiOp's RPA Action IV.2.3, which imposes the 2009 BiOp's salmonid loss triggers in addition to an overall limit on negative OMR to no more negative than -5,000 cfs. (2009 NMFS BiOp at pp. 648–50.)

[73] Dr. Rosenfield addresses this question in a paragraph of his declaration. (Rosenfield Second Decl., ¶ 57.) PCFFA's opposition brief provides only a brief explanation and focuses on the absence of a loss threshold for delta smelt. (Doc. No. 320 at 23.) In their reply brief, PCFFA suggests that Federal Defendants have "admitted" their loss triggers would be more protective under certain circumstances. (Doc. No. 368 at 14.) But none of this, in the court's view, supports returning to the loss trigger system of the 2008/2009 BiOps, which would appear to be outdated in some respects.

1. Proposed Limit on Maximum Temperature Dependent Mortality

PCFFA's proposed injunction would limit temperature dependent mortality of winter-run to no more than 30%. This limit is drawn from NMFS's 2017 proposed amendment to the 2009 NMFS BiOp RPA.[74] Federal Defendants' respond to this proposal by first pointing out that the requirement is vague. Does PCFFA mean to limit forecasted temperature dependent mortality? Or is this intended to limit "hindcasted" temperature dependent mortality? (Doc. No. 326 at 18; *see also supra* footnote 43.) The court cannot locate any clarification on this point in the record before it. (*See* Doc. No. 368 at 10 (PCFFA in reply discussing both forms of temperature dependent mortality).)

Even if PCFFA's proposal in this regard were clarified, the court believes it has no basis upon which to order that 30% mortality should be an upper limit for the coming season. The record demonstrates that low (probably approaching zero) mortality was normal for winter-run before the construction of Shasta Dam. But given the extraordinarily low levels of carryover storage in Shasta and the low likelihood that the Reservoir will reach levels this spring that would permit Reclamation to meet the targets PCFFA proposes, setting a 30% limit on mortality would appear to be clearly and entirely unworkable. Moreover, the evidence before the court supporting this particular target is extremely thin. In this vein, Dr. Rosenfield has expressed his "doubts that winter-run Salmon can remain viable if [temperature dependent mortality] repeatedly approaches or exceeds 30%." (Rosenfield Second Decl., ¶ 33 n. 12.) As mentioned, he bases this opinion in part on the fact that NFMS, in a 2017 draft document, proposed to require that Reclamation limit temperature dependent mortality to 30%. (*Id.*) But, the court notes once again, that this draft proposal was never adopted or implemented by NMFS or any other agency. While the adoption of some set of mortality limits might be appropriate, and the court certainly considers the IOP to be a pledge to minimize mortality within the constraints of the IOP's terms, more evidence would

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[74] PCFFA's repeated reference to the NMFS's 2017 proposed amendment to the 2009 RPA is helpful only insofar as it represents a best-case goal NMFS outlined in that proposal. As noted above, the proposal was not adopted.

be needed to justify the setting of a particular limit under the present circumstances.[75]

2. PCFFA's Proposed Requirement Re D-1641 Water Quality Controls

PCFFA's proposed injunction also contains a provision that would require Reclamation to comply with "the provisions of the State Water Resources Control Board's Water Rights Decision 1641 [(D-1641)] applicable to the State Water Project and Central Valley Project, including requirements relating to Delta inflows, Delta outflow, X2, and closures of the Delta Cross Channel Gates." (PCFFA PI ¶ 5.)

D-1641, which is binding on Reclamation, is designed to control salinity in the Bay Delta to ensure water quality. (*See supra* footnote 32.) Compliance with D-1641 was a "baseline" condition built into the 2019 BiOps. (*See* Doc. No. 322 at 10–11 (providing record citations).) In other words, harms to fish were evaluated in those BiOps based upon the assumption that the prescriptions contained within D-1641 would be implemented.

In recent years, due to drought conditions, Reclamation and DWR have applied to the State Board for permission to deviate from D-1641. (*See, e.g.*, Doc. No. 272-4.) These applications are called "Temporary Urgency Change Petitions" ("TUCP"). One of the primary reasons given for applying for (and approving) the TUCPs is to preserve cold water behind the dams in the system designed to protect fish later in the year. (*See generally id.*) This has tradeoffs for water quality and flow downstream, and the State Board has acknowledged this reality in approving past TUCPs. In particular, in approving TUCPs, the State Board has specifically acknowledged the potential harm posed to Delta smelt as a result. (*Id.* at 19.)

PCFFA's proposed injunction would have Reclamation comply with D-1641 even if it receives a waiver of D-1641's requirements from the State Water Resources Control Board. (PCFFA PI ¶ 5.) Under PCFFA's revised proposal, even this provision appears to be subject to the new "best efforts" exception language. As noted previously, under that language, if

[75] The court has examined the 2019 NMFS BiOp's take limits in some detail in the context of the parties' arguments addressing consideration of the likelihood of success on the merits. Although the court does not formally address those issues here, the court will observe that one troubling aspect of the 2019 NMFS BiOp is that it appears to not rationally consider the question of what amount of temperature dependent mortality is sustainable for winter-run over the long run.

Reclamation is unable to meet PCFFA's Shasta targets or D-1641's requirements despite "best efforts" to do so, and despite "curtailing water deliveries and releases for diversion" to the "extent permitted by law," Reclamation could deviate from the injunctions' requirements, provided Reclamation meets and confers with the parties as soon as possible. (PCFFA PI at 3.)

When the initial briefs were filed regarding these injunctive relief motions, Reclamation and DWR had a TUCP pending before the State Board that would apply this spring. (*CNRA* Doc. No. 252-1, Ex. 5.) They have since withdrawn that petition. (*Id.*) As a result, there is now no immediate danger of a TUCP this year. Nonetheless, PCFFA has still expressed its concern because nothing prevents Reclamation and DWR from filing another TUCP. (*See* Doc. No. 368 at 11.)

The court understands PCFFA's point in this regard. The BiOps assume that the actions required by D-1641 will be implemented. Because those actions are protective of fish, that is a material aspect of the baseline that the BiOps use to evaluate whether or not the Water Projects will cause jeopardy/adverse modification under the ESA. No party before the court suggests that the BiOps meaningfully considered how fish would be impacted by any TUCPs, let alone by the increasingly frequent use of TUCPs. But, PCFFA's proposal—that the court prohibit Reclamation from applying for TUCPs unless it jumps through certain identified hoops—is not a reasonable or particularly helpful response to this asserted failure. PCFFA's proposal appears to be designed to require Reclamation to do absolutely everything else in its power to meet temperature requirements for winter-run before applying for a TUCP. The court has already explained why it believes the IOP's process provides a reasonable mechanism for ensuring just this, by requiring Reclamation to prioritize the needs of winter-run habitat over water deliveries to the extent it can do so consistent with the law and its contractual obligations. PCFFA's proposal would appear to presume that Reclamation will try to evade or perform some sort of slight-of-hand with regard to these self-imposed priorities through the mechanism of applying for TUCPs. In the court's view, however, it seems far more likely that a TUCP may be the only way Reclamation can provide suitable temperatures for winter-run this coming season.

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Moreover, the TUCP approval process already requires the State Water Resources Control Board to consider the various species-versus-species tradeoffs in question here. (Doc. No. 343-1 at 11–12 (*amicus curiae* brief explaining TUCP process).) The State Board is also required to consider a number of other interests in the balance when evaluating TUCPs. (*Id.*) No matter how PCFFA attempts to describe this aspect of its proposed injunction, adopting it would be an invasion by this court into the State Board's process. The court will not do so on the present record, which does not justify the undertaking of such an extraordinary measure.

3. Zero Net OMR Flow When Any Adult Delta Smelt is Salvaged

Finally, PCFFA also calls for the imposition of a restriction that would require "to the extent possible,"[76] daily OMR flows to be "zero or positive for seven consecutive days following the salvage of one or more delta smelt by the CVP or SWP." (PCFFA PI, ¶ 3.)

This provision is a new one and was not a part of any prior biological opinion. It is born of Dr. Rosenfield's expressed opinion that "given the increasing difficulty that agency sampling programs have even detecting Delta Smelt, the negative effect of entrainment-related mortality on the conservation status of Delta smelt cannot be overemphasized." (Rosenfield Second Decl., ¶ 53.) In Dr. Rosenfield's opinion, detection of any adult Delta smelt should trigger "immediate restoration" of positive OMR flows, which he expects should "reduce the overlap between Delta Smelt physical habitat" and the "hydrodynamic footprint" of the export pumps. *Id.*

Defendant Intervenors strenuously oppose this measure. One of their experts, Dr. Hanson, opines that he is "not aware of any analysis that concludes that seven consecutive days of positive OMR would be needed in the event that one delta smelt is detected at the export facilities." (Hanson Decl., ¶ 31.) Dr. Hanson also points out that Dr. Rosenfield relies on a study that concludes "no additional mortality" can be sustained; which is not the same as "no mortality" and where the study itself recognizes that entrainment mortality "cannot be completely eliminated." (*Id.*, ¶ 30 (citing Smith 2021 at 1021).)

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[76] The "to the extent possible" language was added to PCFFA's proposed injunction after the hearing on the pending motions. (Doc. No. 378-2 ¶ 3.)

Federal Defendants also oppose this provision of the PCFFA proposed injunction, arguing that PCFFA has not demonstrated it is necessary. Moreover, Federal Defendants' expert opines that by the time delta smelt are in that part of the Delta they are already considered "lost." (*See* Nobriga Decl., ¶¶ 6, 7.) They argue this is why the 2019 FWS BiOp focuses its more significant export reduction measures on actions designed to keep the delta smelt population away from that area of the Delta. (*See* 2019 FWS BiOp at p. 219.) For example, the Integrated Early Winter Pulse Protection action, which occurs early in the year, calls for negative OMR to be significantly reduced to "dissuade movement of adult delta smelt into the south Delta." (*See* Nobriga Decl., ¶ 6.)

Perhaps most importantly, this provision as proposed by PCFFA appears to be infeasible. Mr. Conant testified at the hearing on the pending motions that it is "not practically possible to maintain a zero or positive OMR even if diversions were totally stopped because of the influence of the tides." (Tr. 127.) In addition, "there are many other diversions in the delta" not under the control of the CVP or SWP that can affect flows. (*See id*.) Finally, both the CVP and SWP "have various demands downstream" that require constant export "in order to provide [Municipal and Industrial] water" particularly for urban areas. (*Id*.) There is no reason or basis upon which to believe that the addition of the term "to the extent possible" to PCFFA's original proposal transforms this provision into one that is feasible.

In combination, the questionable scientific justification for the proposed provision along with the absence of evidence that even this questionable goal can be achieved justifies denying this aspect of PCFFA's proposed injunction.

In conclusion, for all of the reasons discussed above, the court declines to adopt PCFFA's proposed injunctive relief measures either because they do not materially depart from those included in the IOP or because they are infeasible or otherwise inadvisable.

D. Conformation of the Take Permit

PCFFA's PI also contains a request that the court vacate the Incidental Take Statements contained in the 2019 NMFS and 2019 FWS BiOps to the extent that Water Project operations are inconsistent with the terms of their proposed injunction. (Doc. No. 321-1 at 4); *see also Oregon Nat.*

Res. Council v. Allen, 476 F.3d 1031, 1037 (9th Cir. 2007) (finding that an incidental take statement that is "broader than the project" is arbitrary and capricious). It is somewhat unclear whether PCFFA asserts that this relief is necessary under the present circumstances, where the court has indicated its intent to adopt the IOP without the addition of any of PCFFA's additional proposed measures.

Federal Defendants argue that it is not necessary to "conform" the take permit to the injunction because, "once the Court orders injunctive relief, modification of the incidental take statements as they pertain to those aspects of CVP operations governed by the Court's anticipated injunction" will not be necessary because "Reclamation [will] no longer ha[ve] discretionary control over the aspects of the project for which the Court has ordered operations." (Doc. No. 326 at ¶ 29.) Federal Defendants correctly point out that "a federal agency that is legally required to take an action pursuant to federal law . . . cannot be the proximate cause of [ESA] Section 9 take by undertaking that non-discretionary action." *Nat. Res. Def. Council v. Norton*, 236 F. Supp. 3d 1198, 1239 (E.D. Cal. 2017) (applying *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752 (2004)). Thus, so long as Reclamation operates the CVP consistent with the terms of the IOP, the agency is no longer required to rely on the ITS with respect to those portions of operations to shield it from liability.

PCFFA pointed out at the hearing on the pending motions that this logic does not apply to the actions of water contractors, whose own diversions may be subject to ESA take liability if those actions are inconsistent with the incidental take statement. (Tr. 87.) Again, it is not clear whether this argument has practical application to the adoption of the IOP or only to PCFFA's proposed injunction. PCFFA's proposed injunction applied by its terms to Reclamation and "those in active concert with Reclamation," and called for curtailments not only of water allocations but also "to the extent permitted by law" curtailments of "water diversions by all contractors of the Central Valley Project and State Water Project, including settlement and exchange contractors." (PCFFA PI at 3.) The IOP instead directly binds only Reclamation and DWR by modifying how those agencies operate the CVP and SWP. As applied to the IOP's language, PCFFA's argument makes much less sense. In this regard, it is unclear to the court how third parties could cause take that might be permitted under the 2019 BiOps' incidental take permits but would be prohibited if those incidental take permits were conformed to the IOP's terms. Therefore, PCFFA's request to conform the take statement to the

terms of the IOP will be DENIED.

E. Bond Requirement

Federal Rule of Civil Procedure 65(c) provides

> Security. The court may issue a preliminary injunction or a temporary restraining order only if the movant gives security in an amount that the court considers proper to pay the costs and damages sustained by any party found to have been wrongfully enjoined or restrained. The United States, its officers, and its agencies are not required to give security.

Here, the only injunctive relief being imposed is at the request of the entities subject to the injunction, namely the federal and state agencies that operate the CVP and SWP, respectively. Under these circumstances, no bond will be required

F. Request for a Stay

The final question involves Federal Defendants' request to stay all proceedings in these actions through September 30, 2022, (Doc. No. 314 at 28), a request that is joined by the State Plaintiffs in the CNRA case (*CNRA* Doc. No. 220 at 2). "[T[he power to stay proceedings is incidental to the power inherent in every court to control the disposition of the cases on its docket with economy of time and effort for itself, for counsel, and for litigants." *Landis v. N. Am. Co.*, 299 U.S. 248, 254 (1936). A district court has broad discretion in granting a stay, "particularly in this time of scarce judicial resources and crowded dockets." *Lockyer v. Mirant Corp*., 398 F.3d 1098, 1112 (9th Cir. 2005). A court weighs three factors in determining whether to grant such a stay: (1) "the possible damage which may result from the granting of a stay," (2) "the hardship or inequity which a party may suffer in being required to go forward," and (3) "the orderly course of justice measured in terms of the simplifying or complicating of issues, proof, and questions of law which could be expected to result from a stay." *CMAX, Inc. v. Hall*, 300 F.2d 265, 268 (9th Cir. 1962). In applying the third factor, courts find "considerations of judicial economy are highly relevant." *Gustavson v. Mars*, Inc., No. 13-cv-04537-LHK, 2014 WL 6986421, at *3 (N.D. Cal. Dec. 10, 2014).

Here, some of the same facts that favor remand also favor of the granting of a stay through September 30, 2022. As mentioned, given the complexity of these cases, the court anticipates it

would take more than a year for the parties to brief and the court to decide the issues presented on the merits, by which time remand will be long underway. Moreover, the re-consultation process appears likely to change the administrative landscape of this case. Federal Defendants have agreed that numerous issues need to be revisited given the State's ITP and that the increasing frequency of droughts must also be further addressed. Moreover, the granting of a stay will only be through September 30, 2022, at which point all parties will have the opportunity to address the status of the case. Accordingly, the request for a stay will be granted.

VIII. CONCLUSION

For the reasons explained above:

(1) Federal Defendants motion for a voluntary remand without vacatur in both *CNRA* and *PCFFA* is GRANTED.

(2) Federal Defendants' and State Plaintiffs' motions for an order imposing the IOP as interim injunctive relief through the end of WY 2022 (September 30, 2022) are GRANTED[77];

(3) PCFFA's request for separate injunctive relief is DENIED;

(4) These cases are hereby STAYED through September 30, 2022.

The parties are directed to communicate with one another regularly throughout the remainder of WY 2022 and to file a joint status report with the court *at least* 30 days in advance of the expiration of the stay, earlier if the parties conclude it is necessary to do so, informing the court of the need for further proceedings in these actions.

IT IS SO ORDERED.

Dated: **March 11, 2022**

Dale A. Drozd
UNITED STATES DISTRICT JUDGE

[77] Federal Defendants are directed to forthwith submit a word processing version of the proposed order adopting the IOP to the court for signature.