UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA

Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, et al., Plaintiffs, v. Carlos M. Gutierrez, in his official capacity as Secretary of Commerce, et al., Defendants, San Luis & Delta-Mendota Water Authority, et al., Defendant-Intervenors.	1:06-cv-00245-OWW-GSA MEMORANDUM DECISION AND ORDER GRANTING IN PART AND DENYING IN PART PLAINTIFFS' MOTIONS FOR SUMMARY JUDGMENT (Doc. 145) AND GRANTING IN PART AND DENYING IN PART FEDERAL DEFENDANTS' CROSS-MOTIONS FOR SUMMARY JUDGMENT (Doc. 160)

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I. Introduction.

Before the Court are the parties' cross-motions for summary judgment arising from an October 22, 2004, Biological Opinion ("BiOp") issued by the United States National Marine Fisheries Service ("NMFS" also referred to as "NOAA Fisheries," used interchangeably), in response to the United States Bureau of Reclamation's ("Bureau") initiation of formal and early consultation with NMFS. This is one of a series of cases that address through this and other Biological Opinions, the potential adverse impacts of ongoing Central Valley Project ("CVP") and California State Water Project ("SWP") operations on fish, here, salmonid species, caused by the Long-Term Central Valley Project and State Water Project Operations Criteria and Plan ("2004 OCAP") completed June 30, 2004.

A. The Water Projects.

The CVP is an "extensive system of dams, tunnels, canals and reservoirs that stores and regulates water for California's Central Valley and southward." *Westlands Water District v. Department of Interior*, 376 F.3d 853, 861 (9th Cir. 2004). The CVP supplies 200 water districts, providing water for about 30 million people, irrigating California's most productive agricultural region and generating electricity at nine power plants." The Projects move water through their Delta pumping facilities to provide flood protection, power generation, and water service to otherwise barren areas of Central California for agricultural, municipal, and environmental uses. The CVP was taken over by the United States in 1935, has since been a Federal

enterprise, and is the largest Federal water management project in the United States. *Cent. Delta Water Agency v. United States*, 306 F.3d 939, 943 (9th Cir. 2002). The Federal government has administered the CVP since 1935. *Westlands Water Dist. v. United States*, 337 F.3d 1092, 1095 (9th Cir. 2003). The Bureau administers the CVP. *Orff v. United States*, 545 U.S. 596, 598 (2005).

The SWP is the "largest State-built water project in the country, (and) is managed by the California Department of Water Resources ("DWR"). *Natural Res. Def. Council v. Norton*, No. 05-01207-OWW 2006 WL 39094, *1 (E.D. Cal. Jan. 5, 2006). "The CVP and SWP share certain facilities and coordinate operations with one another pursuant to a Coordinated Operating Agreement ("COA"). The COA which originated in 1986, has evolved over time to reflect, among other things, changing facilities, delivery requirements and regulatory restrictions." *Id.* at *2.

For over thirty years, the projects have been operated pursuant to a series of cooperation agreements. In addition, the projects are subject to ever-evolving statutory, regulatory, contractual, and judicially-imposed requirements. The 2004 OCAP is a baseline description of the Projects' operating facilities and operating environment.

The Bureau and DWR requested the initiation of formal ESA § 7 consultation for Project operations and proposed operations on March 15, 2004 and March 12, 2004, respectively. Among proposed changes in operations are the expansion of the Projects' capacity and increased pumping out of the Delta. The BiOp was intended to address the potential adverse impacts of ongoing (for

the next twenty-five years) CVP and SWP operations on the salmonid species.[1]

The original BiOp concludes that the effects of proposed Project operations under the 2004 OCAP are not likely to jeopardize the continued existence of the Sacramento River winter-run Chinook ("winter-run Chinook"), and are not likely to adversely modify the critical habitat for the winter-run Chinook listed as endangered January 4, 1994. The BiOp further concludes that proposed operations under the 2004 OCAP are not likely to jeopardize the continued existence of the Central Valley spring-run Chinook ("spring-run Chinook"), listed as threatened on September 16, 1999, or Central Valley steelhead ("CV steelhead") listed as threatened on March 19, 1998.

Following the issuance of the BiOp, NOAA Fisheries listed as threatened, a population segment of the North American Green Sturgeon located in the Delta Region. 71 Fed.Reg. 17,757 (April 7, 2006). NOAA designated critical habitat in the Delta region affected by the CVP for two Evolutionarily Significant Units ("ESUs") of Chinook salmon and five ESUs of steelhead. NOAA, Final Rule Re: Designation of Critical Habitat for Seven ESUs of Pacific Salmon and Steelhead in California. 70 Fed.Reg. 52,488

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[1] Two additional fish species, the threatened Southern Oregon/Northern California Coast coho salmon and the threatened Central California Coast steelhead, are also at issue in this case. Although Plaintiffs believe that the NMFS's analysis of Project impacts on these two fish is inadequate, Plaintiffs' arguments are limited in this summary judgment proceeding to the winter-run Chinook, spring-run Chinook, and the CV steelhead species. Only the BiOp's affect on winter-run and spring-run Chinook and CV steelhead are discussed.

(September 2, 2005). As a result, the Bureau, on April 26, 2006, requested reinitiation of ESA § 7 consultation on the 2004 NMFS BiOp.

Project operations affect a variety of salmonid species including the endangered Sacramento River winter-run Chinook salmon ("winter-run Chinook"), the threatened Central Valley spring-run Chinook salmon ("spring-run Chinook"), threatened Central Valley steelhead ("CV steelhead"), threatened Southern Oregon/Northern California Coast Coho salmon; and threatened Central California Coast steelhead.

After reinitiation of consultation, Federal Defendants sought to dismiss, remand or stay this case. That motion was denied on all grounds. A Fed. R. Civ. Proc. 12(b)(1) motion to dismiss Plaintiffs' Seventh Claim under the National Environmental Protection Act ("NEPA") for lack of jurisdiction was granted June 15, 2007. Plaintiffs' challenge the Bureau's "early consultation" with NMFS under 16 U.S.C. § 1536(a)(3) and the adoption of the 2004 BiOp.

B. The Lawsuit: Parties and Contentions.

1. The Parties.

a. Plaintiffs.

Plaintiffs, the Pacific Coast Federation of Fishermen's Association/Institute for Fishery Resources; the Bay Institute; Baykeeper and its Deltakeeper Chapter; California Trout; Friends of the River; Natural Resources Defense Council; Northern California Council of the Federation of Fly Fishers; Sacramento Preservation Trust; and the Winnemem Wintu Tribe, a coalition of

environmental and fishing organizations (collectively "Plaintiffs"), challenge the 2004 BiOp's no jeopardy and no adverse modification findings as arbitrary, capricious, and contrary to law under the Administrative Procedure Act, 5 U.S.C. § 702, *et seq.* ("APA"). Plaintiffs allege, among other things: (1) that the conclusions of the BiOp are unsupported and contradicted by the Administrative Record ("AR"); (2) that the BiOp relies on uncertain mitigation measures as a basis for the no jeopardy opinions, (3) that the BiOp fails to consider the best available science; (4) the Bureau is failing to ensure that its actions are not likely to jeopardize the continued existence of the listed species or to adversely modify their critical habitat; (5) that the Bureau is taking actions that may adversely affect the listed species and their critical habitat without a valid biological opinion, and (6) that the Bureau is making irretrievable and irreversible commitments of resources that foreclose the formulation or implementation of any reasonable and prudent alternatives.

b. Federal Defendants.

Federal Defendants, Carlos M. Gutierrez, in his official capacity as Secretary of Commerce; William T. Hogarth, in his official capacity as Assistant Administrator for Fisheries, National Marine Fisheries Service, National Ocean & Atmospheric Administration; Dirk Kempthorne, in his official capacity as Secretary of the Interior; and William E. Rinne, in his official capacity as Acting Commissioner, United States Bureau of Reclamation (collectively "Federal Defendants"), filed opposition

briefs and their own cross-motion for summary judgment.

c. Defendant-Intervenors.

The Defendant-Intervenors are San Luis & Delta-Mendota Water Authority; Westlands Water District, California Farm Bureau Federation, Glen-Colusa Irrigation District, State Water Contractors, and California Department of Water Resources (collectively "DI"); they filed joint oppositions to Plaintiffs' summary judgment motions.

2. Federal Defendants and DIs' Concessions.

Federal Defendants and DI do not contest and admit the validity of some of the claims raised against the 2004 NMFS BiOp in light of the reinitiation of consultation: (1) the BiOp fails to consider and analyze global climate changes and its impacts; (2) the BiOp fails to consider and analyze adverse impacts to CV steelhead and fails to define and consider critical habitat for CV steelhead and its survival and recovery; (3) NMFS also acknowledges the need for further explanation of its "no jeopardy" analysis, particularly to address recovery implications for the three salmonid species; (4) NMFS acknowledges the need for further explanation of its critical habitat analysis for winter-run Chinook salmon, particularly to address the impacts to the primary constituent elements and whether an adverse modification of critical habitat occurred," and in relation to the "no jeopardy" conclusion.

The DIs' combined brief on behalf of San Luis & Delta

Mendota Water Authority, Westlands Water District, State Water Contractors, and California Farm Bureau Federation, based on reinitiation of consultation and the smelt decision, suggest accepting the collective admissions of the BiOp's shortcomings (uncontested issues) and proceeding directly to an interim remedy phase. The DI accept as uncontested issues raised by Plaintiff's motion for summary judgment: (1) insufficient explanation of no jeopardy to threatened steelhead species; and (2) failure to analyze effects of global climate change on the species. The DIs accept that the BiOp is subject to the same defects involving those claims identified as inadequate by the Delta smelt BiOp. This includes FWS's and NMFS's failure to explain on the record how their no jeopardy conclusions were reached.

As to all other NMFS claims DI contend NMFS acted consistently with ESA, the smelt Biop order, and as to all claims against the Bureau:

1. Analyzing the effect of Project operations on threatened spring-run Chinook and its critical habitat;

2. Analyzing the effect of Project operations on endangered winter-run Chinook and its critical habitat;

3. Operating the Project is not a per se or patent violation of the ESA;

4. Sufficiently considering baseline conditions;

5. Applying adaptive management mitigation measures for salmonid species;

6. Meeting its ESA § 7(d) obligations in consulting and relying on the BiOp.

Federal Defendants and DI seek remand of the BiOp without

vacatur or modification.

In the companion case, ***NRDC v. Kempthorne***, 506 F.Supp.2d 322 (E.D. Cal. 2007) the Court determined the legal invalidity of the 2005 Delta smelt BiOp addressing the 2004 OCAP for its failure to discuss and evaluate the impacts of global climate change in relation to the BiOp's no jeopardy conclusion. Federal Defendants and DI deny that the segment of the ***NRDC v. Kempthorne*** ruling, which found unlawful and inadequate adaptive management mitigation measures adopted in the smelt case, has any applicability to the salmon species based on the substantive difference in the adaptive management measures for salmonids, including temperature control and compliance and Shasta Dam carryover storage (cold water resource protection).

Federal Defendants and DI contend the Bureau has met its ESA obligations in consulting and relying on the BiOp and has not violated ESA § 7(d) as to the BiOp, when it reinitiated consultation.

II. Procedural Background.

A. Case History.

The complaint was filed August 9, 2005, and amended September 11, 2006. A motion to dismiss the seventh cause of action for violation of NEPA was granted June 15, 2007.[2] A June

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[2] Plaintiffs' seventh claim for relief alleged violation of NEPA and the APA by failing to prepare an environmental impact statement for the 2004 OCAP. This claim for relief was dismissed and is not at issue in this summary judgment proceeding. By stipulation and order (Doc. 169), Plaintiffs have until thirty days after the date this Decision is filed to file any amendment

15, 2007, order limited the use of post-record documents to scientific purposes and to show bad faith, if any, on the part of the Bureau.

B. Summary of Plaintiffs' Claims in the First Amended Complaint.

The FAC advances seven claims for relief. Claims one through three are directed at NMFS and the BiOp, while claims four through six are directed at the Bureau's actions since NMFS issued the BiOp.

The first claim for relief, violation of the APA and ESA, alleges the no jeopardy conclusions in the BiOp are unsupported and contradicted by the administrative record, and are therefore arbitrary and capricious, an abuse of discretion, and contrary to law under APA § 706(2). According to Plaintiffs, the BiOp fails to establish the necessary link between the facts found and conclusions reached, and it also contains factual findings that contradict its "no jeopardy" conclusions.

The second claim for relief, violation of the APA and ESA, asserts the BiOp improperly relies on a promise of adaptive management without identifying concrete actions to ensure protection of the winter-run Chinook, the spring-run Chinook, and the CV steelhead species, and fails to protect the critical habitat of the winter-run Chinook. According to Plaintiffs, the BiOp's reliance on the uncertain "adaptive management" regime

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to the First Amended Complaint ("FAC") addressing any further NEPA claim.

violates ESA § 7(a)(2) and is arbitrary, capricious, an abuse of discretion, and not in accordance with the law, contrary to APA § 706(2).

The third claim for relief, violation of the APA and ESA, alleges NMFS failed to consider the best available science to reach the no jeopardy conclusions in the BiOp. Among other deficiencies, NMFS disregarded the best available science documenting that the 2004 OCAP will jeopardize the continued existence of the spring-run Chinook and CV steelhead, and that it will adversely modify and destroy the winter-run Chinook's critical habitat. NMFS also allegedly failed to consider the best available scientific data concerning the effects of global climate change which violated ESA § 7(a)(2), and was arbitrary, capricious, an abuse of discretion, and not in accordance with the law, contrary to APA § 706(2).

The fourth claim is for the Bureau's violation of the ESA and APA by failing to ensure that its actions are not likely to jeopardize the continued existence of several species or to adversely modify their critical habitat. Implementation of the 2004 OCAP has short-term and long-term adverse impacts on the winter-run Chinook, spring-run Chinook, and CV steelhead that jeopardize their continued existence. According to Plaintiffs, the Bureau has an independent duty to ensure that its actions avoid jeopardy to listed species, and the Bureau has failed to comply with this duty by implementing the 2004 OCAP.

The implementation of the 2004 OCAP will adversely impact several features of the winter-run Chinook's critical habitat including water quality and quantity, water temperature, water

velocity, and fish safe passage conditions. The Bureau's failure to ensure that its actions will not jeopardize the continued existence of the winter-run Chinook, spring-run Chinook, and CV steelhead, or adversely modify their critical habitat, is arbitrary, capricious, an abuse of discretion, and not in accordance with the law, contrary to APA § 706(2).

The fifth claim charges the Bureau has violated the ESA and APA by taking actions that "may affect" listed species and their critical habitat without a valid biological opinion. According to Plaintiffs, the Bureau's implementation of the 2004 OCAP in the absence of a "valid" biological opinion violates ESA § 7(a)(2), and is arbitrary, capricious, an abuse of discretion, and not in accordance with the law, contrary to APA § 706(2).

The sixth claim asserts the Bureau has violated the ESA and APA by making irretrievable and irreversible commitments of resources that foreclose reasonable and prudent alternatives in violation of ESA § 7(d). According to Plaintiffs, the Bureau has taken and is taking actions that foreclose implementation of reasonable and prudent alternatives to avoid jeopardy to the species by moving forward with plans to construct physical alterations as part of the South Delta Improvement Project and by signing and implementing new long-term water service contracts committing delivery of substantially increased quantities of CVP water. The Bureau's actions are claimed to be arbitrary, capricious, an abuse of discretion, and not in accordance with law, contrary to APA § 706(2).

Plaintiffs' FAC seeks the following relief:

(1) A declaration that the BiOp is arbitrary and

capricious, an abuse of discretion, and not in accordance with the law, all in violation of APA § 706(2);

(2) An order holding unlawful and setting the BiOp aside;

(3) An Order requiring reinitiation of consultation with respect to the impacts of the 2004 OCAP, including changes to project operations;

(4) A finding and declaration that Reclamation, in implementing the 2004 OCAP, has failed and is failing to ensure that its actions will not jeopardize the continued existence of the winter-run Chinook, the spring-run Chinook, and CV steelhead, or to adversely modify their critical habitats.

(5) A finding and declaration that Reclamation, in implementing the 2004 OCAP, is irretrievably and irreversibly committing resources that foreclose the formulation or implementation of reasonable and prudent alternatives.

III. Factual Background.

A. Overview of the 2004 OCAP.

The OCAP's introductory "Purpose of Document" section states:

> This document has been prepared to serve as a baseline description of the facilities and operating environment of the Central Valley Project (CVP) and State Water Project (SWP). The Central Valley Project - Operations and Criteria Plan (CVP-OCAP) identifies the many factors influencing the physical and institutional conditions and decision-making process under which the project currently operates. Regulatory and legal instruments are explained, alternative operating models and strategies described.
>
> The immediate objective is to provide operations information for the Endangered Species Act, Section 7, consultation. The long range objective is to integrate CVP-OCAP into the proposed Central Valley document. It is envisioned that CVP-OCAP will be used as a reference by technical specialists and policymakers in and outside the Bureau of Reclamation (Reclamation) in understanding how the CVP is operated. The CVP-OCAP includes numeric and nonnumeric criteria and operating strategies. Emphasis is given to explaining the analyses used to develop typical operating plans for

> simulated hydrologic conditions.
>
> All divisions of CVP are covered by this document, including the Trinity River Division, Shasta and Sacramento Divisions, American River Division and Friant Division.

USBR AR 4466.

The introductory chapter provides an overview of all of the physical components of the CVP and SWP, as well as all of the relevant legal authorities affecting CVP operations. USBR AR 4467-80.

Chapter 2, explains, among other things, that water needs assessments have been performed for each CVP water contractor, to confirm each contractor's past beneficial use in order to anticipate future demands. USBR AR 4481. Chapter 2 also reviews the 1986 COA and how it is implemented on a daily basis by the Bureau and DWR. USBR AR 4483-90. A detailed overview of the "changes in [the] operations coordination environment since 1986," includes:

- Changes due to temperature control operations on the Sacramento River;
- Increases in the minimum flow release requirements on the Trinity River;
- Implementation of CVPIA 3406(b)(2) and Refuge Water Supply contracts;
- Commitments made by the CVP and SWP pursuant to the Bay-Delta Accord and the subsequent implementation of State Water Resources Control Board ("SWRCB") Decision-1641;
- The Monterey Agreement;

- The Operation of the North Bay Aqueduct (which was not included in the 1986 COA).
- The SWP's commitment to make up for 195,000 acre-feet of pumping lost to the CVP due to SWRCB Decision 1485;
- Implementation of the Environmental Water Account; and
- Constraints imposed by various Endangered Species Act listings, including that of the Sacramento River Winter-Run Chinook Salmon, the Sacramento River Spring-Run Chinook Salmon, the Steelhead Trout, and the Delta Smelt (which resulted in the issuance of biological opinions in 1993, 1994, and 1995 concerning CVP/SWP operations and the South Delta Temporary Barriers Biological Opinion in 2001)

USBR AR 4485-88.

The OCAP reviews the regulatory standards imposed by SWRCB D-1641, which include water quality standards based on the geographic position of the 2-parts-per-thousand isohale (otherwise known as "X2"); a Delta export restriction standard known as the export/inflow (E/I) ratio; minimum Delta outflow requirements; and Sacramento River and San Joaquin River flow standards. USBR AR 4486-87. In addition to imposing requirements, D-1641 granted the Bureau and DWR permission to use each project's capabilities in a coordinated manner. USBR AR 4490-91. Numerous additional regulatory and operational changes have taken place in Project operations in recent years. As the OCAP's "Purpose of Document" section explains, the immediate objective of the OCAP is to lay out all such regulatory and other operational information so that an ESA § 7 consultation can

proceed to evaluate how project operations will effect the salmonid species under various projected future conditions.

B. Description of Proposed Action in the BiOp.

The purpose of the proposed action is to continue to operate the CVP and SWP in a coordinated manner to divert, store, and convey Project water. NMFS AR 5743. In addition to current day operations, several future facilities and actions are included in the consultation.[3] *Id.* These include (1) increased flows in the Trinity River, (2) an intertie between the California Aqueduct and the Delta-Mendota Canal, (3) the Freeport Regional Water Project, (4) water transfers, and (5) renewal of long term CVP water service contracts and future deliveries. *Id.* The proposed actions will come online at various times in the future, except for increased flows in the Trinity River, which are presently being implemented in accordance with the Trinity River Record of Decision. *Id.* The proposed action is: (a) continued operation of the CVP and SWP without these actions, and (b) implementing these operations as they come online.[4] *Id.*

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[3] Early consultation in the BiOp addressed (1) increased pumping at the SWP Banks Pumping Plant, (2) permanent barriers operated in the South Delta, (3) a long-term EWA, and (4) various operational changes identified as CVP/SWP project integration. NMFS AR 5743.

[4] Only the water operations associated with the proposed activities were addressed in the consultation leading up to the issuance of the BiOp. NMFS AR 5743. Project activities do not include construction of any facilities to implement the actions. *Id.* All site-specific or localized activities of the actions such as construction or screening, and any other site-specific events, will be addressed in future separate action-specific ESA

C. Mitigation Measures.

The BiOp includes mitigation measures principally related to: (1) movement of the 56°F Sacramento River Temperature Compliance Point from Bend Bridge upstream to Balls Ferry; (2) maintaining the carryover storage for Shasta Reservoir at 1.9 million acre-feet ("MAF") as a target; (3) the operation of Red Bluff Diversion Dam ("RBDD") to provide unimpeded fish passage upstream and downstream at RBDD.

Plaintiffs complain about mitigation measures that are to be implemented in the future including, but not limited to, (1) Environmental Water Account assets; (2) increased exports resulting from the South Delta Improvement Program; (3) utilization of the Environmental Water Account to augment water flows.

D. Species Life History and Population Dynamics.

1. Chinook Salmon.

a. General Life History of Chinook Salmon.

Chinook salmon exhibit two generalized fresh water life histories known as "stream-type" and "ocean-type." NMFS AR 5787. Stream-type Chinook salmon enter fresh water months before spawning and reside in fresh water for a year or more following emergence. *Id.* Ocean-type Chinook salmon spawn soon after entering fresh water and migrate to the ocean as fry or parr within their first year. *Id.* Spring-run Chinook exhibit a stream-type life form where adults enter fresh water in the

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§ 7 consultations. *Id.*

spring and spawn in the fall. *Id.* Spring-run Chinook juveniles typically spend a year or more in fresh water before emigrating towards the sea. *Id.* Winter-run Chinook exhibit characteristics of both stream-type and ocean-type life histories. *Id.* Adult winter-run Chinook enter freshwater in winter or early spring and delay spawning until spring or early summer (stream-type). *Id.* Juvenile winter-run Chinook migrate to the sea after only four to seven months of river life (ocean-type). *Id.* Adequate instream flows and cool water temperatures are more critical for the survival of Chinook salmon exhibiting a stream-type life history due to over-summering by adults and/or juveniles. *Id.*

Chinook salmon mature between two and six plus years of age. NMFS AR 5787. Freshwater entry and spawning timing generally are thought to be related to local water temperature and flow regimes. *Id.* Chinook salmon runs are designated on the basis of adult migration timing. *Id.* Both spring-run and winter-run Chinook tend to enter freshwater as immature fish, migrate far upriver, and delay spawning for weeks or months. *Id.*

During their upstream migration, adult Chinook salmon require stream flows sufficient to provide olfactory and other orientation cues to locate their natal streams. NMFS AR 5787. Adequate stream flows are necessary to allow adult passage to upstream holding habitat. *Id.* The preferred temperature is 38°F to 56°F. Adult winter-run Chinook enter San Francisco Bay from November through June and migrate past RBDD from mid-December through early August. *Id.* The majority of the winter-run Chinook pass RBDD from January through May, and passage peaks in mid-March. *Id.* The timing of migration may vary due to river

flows, dam operations, and water year type. Adult spring-run Chinook enter the Delta from the Pacific Ocean beginning in January and enter natal streams from March to July. *Id.* Spring-run Chinook utilize mid to high elevation streams that provide appropriate temperatures and sufficient flow, cover, and pool depth to allow over-summering while conserving energy and allowing their gonadal tissue to mature. *Id.* at 5787-88.

Spawning Chinook salmon require clean, loose gravel in swift, relatively shallow riffles or along the margins of deeper runs, and suitable water temperatures, depths, and velocities. NMFS AR 5788. Spawning typically occurs in gravel beds that are located at the tails of holding pools. *Id.* The upper preferred water temperature for spawning Chinook salmon is 55˚F to 57˚F. *Id.* Winter-run Chinook spawning occurs primarily from mid-April to mid-August, with peak activity occurring in May and June in the Sacramento River between Keswick dam and RBDD. *Id.* The majority of spawning winter-run Chinook are three years old (between 56% and 87%). *Id.* Spring-run Chinook spawning occurs between September and October depending on water temperatures. *Id.*

The optimal water temperature for egg incubation is 44˚F to 54˚F. NMFS AR 5788. Incubating eggs are vulnerable to adverse effects from floods, siltation, desiccation, disease, predation, poor gravel percolation, and poor water quality. *Id.* The length of time required for eggs to develop and hatch is variable and depends on water temperature. *Id.* The lower and upper temperatures resulting in 50% pre-hatch mortality were 37˚F and 61˚F, respectively, when the incubation temperature was constant.

Id. Winter-run Chinook fry begin to emerge from the gravel in late June to early July and continue through October, generally at night. *Id.* at 5789. Spring-run Chinook fry emerge from the gravel from November to March and spend about three to fifteen months in freshwater habitats before emigrating to the ocean. *Id.*

When juvenile Chinook salmon reach a length of 50 to 75 millimeters, they move into deeper water with higher current velocities. NMFS AR 5789. Emigration of juvenile winter-run Chinook past RBDD may begin as early as mid-July, typically peaks in September, and can continue through March in dry years. *Id.* From 1995 to 1999, all winter-run Chinook outmigrating as fry passed RBDD by October, and all outmigrating pre-smolts and smolts passed RBDD by March. *Id.* Spring-run Chinook emigration is highly variable. *Id.* Some may begin outmigrating soon after emergence, while others over-summer and emigrate as yearlings with the onset of intense fall storms. *Id.* The emigration period for spring-run Chinook extends from November to early May, with up to sixty-nine percent young-of-the-year outmigrants passing through the lower Sacramento River and Sacramento-San Joaquin Delta during this period. *Id.*

b. Winter-run Chinook.

(1) Habitat.

The distribution of winter-run Chinook spawning and rearing historically was limited to the upper Sacramento River and tributaries, where spring-fed streams allowed for spawning, egg incubation, and rearing in cold water. NMFS AR 5790.

Construction of Shasta Dam in 1943 and Keswick Dam in 1950 blocked access to these historical waters, except Battle Creek, which is blocked by a weir at the Coleman National Fish Hatchery and other small hydroelectric facilities. *Id.* at 5790-91. Approximately 299 miles of tributary spawning habitat in the upper Sacramento River is now blocked. *Id.* at 5791. Most components of the winter-run Chinook's life history have been compromised by the habitat blockage in the upper Sacramento River. *Id.*

The winter-run's critical habitat is delineated as the Sacramento River from Keswick Dam to Chipps Island at the westward margin of the Sacramento-San Joaquin Delta, including Kimball Island, Winter Island, and Brown's Island; all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and the Carquinez Strait; all waters of San Pablo Bay westward of Carquinez Bridge and all waters of the Sam Francisco Bay north of the San Francisco-Oakland Bay Bridge. NMFS AR 5785.

NMFS concluded proposed Project operations will affect 19 miles of this critical habitat. NMFS 5846. The primary measure adjustment of the Temperature Compliance Point upward from Bend Bridge for temperatures of 56°F upstream to Balls Ferry on the Sacramento River will "not" jeopardize winter-run salmon or adversely modify its critical habitat. NMFS 6068.

The majority of winter-run have spawned upstream of Balls Ferry for the last decade. NMFS 5845. During ten years prior to issuance of the BiOp, aerial surveys show that 96.4% of the redds created by spawning winter-run were located above Balls Ferry.

Id. The same survey showed that in three years prior to the BiOp, 99% of the redds were located upstream of Balls Ferry. *Id.*

(2) Population Trend.

Following construction of Shasta Dam, the number of winter-run Chinook initially declined but recovered during the 1960s. NMFS AR 5791. The initial recovery was followed by a steady decline from 1969 through the late 1980s, after construction of RBDD. *Id.* Since 1967, the estimated adult winter-run Chinook population ranged from 117,808 in 1969, to a low of 186 in 1994. *Id.* The winter-run Chinook population declined from an average of 86,000 adults from 1967 through 1969 to only 1,900 from 1987 through 1989, and continued to remain low with an annual average of 2,500 fish for the period from 1998 through 2000. *Id.* Between the time Shasta Dam was built and the listing of winter-run Chinook as endangered. Major impacts to the population occurred from warm water releases from Shasta Dam, juvenile and adult passage restraints at RBDD, water exports in the southern Sacramento-San Joaquin Delta, acid mine drainage, and entrainment at a large number of unscreened or poorly screened water diversions. *Id.*

Population estimates for winter-run Chinook increased in the years 2001 through 2003 and in the preceding seven years. NMFS AR 5791. The 2003 run was the highest since the winter-run Chinook was listed. *Id.* The following table describes winter-run Chinook population estimates from RBDD counts and corresponding cohort replacement rates for the years 1986 through 2003. *Id.*

Year	Population Estimate (Red Bluff DD)	Five Year Moving Average of Population Estimate	Cohort Replacement Rate	Five Year Moving Average of Cohort Replacement Rate
1986	2596	-	-	-
1987	2186	-	-	-
1988	2886	-	-	-
1989	697	-	.27	-
1990	431	1759	.2	-
1991	211	1282	.1	-
1992	1241	1093	2.0	-
1993	387	593	.6	.63
1994	186	491	.3	.64
1995	1287	662	1.1	.82
1996	1337	888	2.8	1.36
1997	880	815	8.5	2.66
1998	3005	1339	1.6	2.86
1999	3288	1959	1.2	3.04
2000	1352	1972	1.1	3.04
2001	5523	2809	.8	2.64
2002	7337	4101	9.3	2.8
2003	9757	5451	11.0	4.68

DI point to increases in winter-run Chinook at RBDD and in the Five Year Moving Average of Population to contend the species is in ascendency and the no jeopardy analysis fully justified. NMFS AR 5791-93, 5933.

(3) Status of Winter-Run.

Numerous factors contributed to the earlier decline of winter-run Chinook through degradation of spawning, rearing, and

migration habitats. NMFS AR 5792. The primary impacts include blockage of historical habitat by Shasta and Keswick Dams, warm water releases from Shasta Dam, juvenile and adult passage constraints at RBDD, water exports in the southern Sacramento-San Joaquin Delta, heavy metal contamination from Iron Mountain Mine, high ocean harvest rates, and entrainment in large numbers of unscreened or poorly screened water diversions. *Id.* Secondary factors include smaller water manipulation facilities and dams; loss of rearing habitat in the lower Sacramento River and Sacramento-San Joaquin Delta from levee construction; marshland reclamation; and interaction with and predation by introduced species. *Id.*

Since the January 4, 1994, listing of the winter-run Chinook as endangered, several habitat problems that led to the species' decline have been addressed and improved through restoration and conservation actions. NMFS AR 5792. These actions include: (1) ESA § 7 consultation reasonable and prudent alternatives for temperature, flow, and modified operation of the CVP and SWP; (2) State Water Resources Control Board decisions requiring compliance with Sacramento River water temperature objectives, which resulted in the installation of the Shasta Temperature Control Device in 1998; (3) a 1992 amendment to the authority of the CVP through the CVP, the CVPIA, which gave fish and wildlife equal priority with other CVP objectives; and dedicates a finite annual supply of 800,000 AF of CVP yield for fish and related environmental protections; (4) fiscal support of habitat improvement projects from the CALFED Bay-Delta Program ("CALFED"); (5) establishment of the CALFED Environmental Water

Account; (6) EPA actions to control acid mine runoff from Iron Mountain Mine; and (7) ocean harvest restrictions implemented in 1995. *Id.*

The temperature compliance location for winter-run remained at Bend Bridge in only one year out of ten years prior to the 2004 BiOp. NMFS AR 5843. The susceptibility of winter-run Chinook to extinction remains linked to the elimination of access to most of their historical spawning grounds and the reduction of their population structure to a small population size. NMFS AR 5792. "Recent trends in winter-run Chinook salmon abundance and cohort replacement are positive and may indicate some recovery since the [1994] listing." *Id.* NOAA Fisheries has proposed upgrading the species from endangered to threatened. NMFS AR 5792, USBR AR 1819. The population, however, remains below the recovery goals established for the winter-run Chinook. *Id.* The recovery criteria for winter-run Chinook includes a mean annual spawning abundance over any thirteen consecutive years to be 10,000 females. *Id.* This has not been met.

c. Spring-run Chinook.

(1) Habitat.

The spring-run was listed as threatened on September 16, 1999. NMFS AR 5785. The Central Valley ESU includes the Sacramento River Basin and its tributaries. NMFS AR 5785, 5934. The majority of the spring-run population is, as of the 2004 BiOp, located in Deer Mill, and Butte Creeks, with population expansions into Clear Creek. NMFS AR 5935. No spring-run critical habitat had been designated as of the 2004 BiOp. No

explanation is provided why spring-run critical habitat designation was not made until September 2, 2005.

Historically, spring-run Chinook were predominant throughout the Central Valley occupying the upper and middle reaches of the San Joaquin, American, Yuba, Feather, Sacramento, McCloud, and Pit Rivers, with smaller populations in most tributaries with sufficient habitat for over-summering adults. NMFS AR 5793. The Central Valley drainage as a whole is estimated to have supported spring-run Chinook runs as large as 600,000 fish between the late 1880s and 1940s. Before construction of Friant Dam, nearly 50,000 adults were counted in the San Joaquin River. *Id.* Following completion of the Friant Dam, the native population from the San Joaquin River and its tributaries was extirpated. *Id.* Spring-run Chinook no longer exist in the American River due to the operation of the Folsom Dam. *Id.* Naturally-spawning populations of spring-run Chinook are currently restricted to accessible reaches of the upper Sacramento River, Antelope Creek, Battle Creek, Beegum Creek, Big Chico Creek, Butte Creek, Clear Creek, Deer Creek, Feather River, Mill Creek, and Yuba River. *Id.* This species is mainly comprised of three self-sustaining wild populations, located at Mill, Deer, and Butte Creeks. NMFS AR 5785.

(2) Population.

Since 1969, the spring-run Chinook ESU (excluding Feather

River fish)[5] has displayed broad fluctuations in abundance ranging from 25,890 in 1982 to 1,403 in 1993. NMFS AR 5793. Though the abundance of fish may increase from one year to the next, the overall average population trend of the spring-run has a negative slope during this time period. *Id.* The average abundance for the spring-run is set forth in the following table. *Id.* NMFS AR 5793.

Time Period	Average Abundance for Multiple Years or Total Run Size for Single Years
1969 - 1979	12,499
1980 - 1990	12,981
1991 - 2001	6,542
2002	13,218
2003	8,775

Evaluating the spring-run ESU as a whole, however, masks significant changes that are occurring among metapopulations. NMFS AR 5794. While the Sacramento River population has undergone a significant decline to a nominal to nonexistent population, the tributary populations have demonstrated a

[5] Because Chinook salmon are not temporally separated in the Feather River Hatchery, spring-run Chinook and fall-run Chinook are spawned together. This compromises the genetic integrity of the spring-run Chinook. NMFS AR 5793. The genetic integrity of this population is at question because there is significant temporal and spatial overlap (superimposition) between spawning spring-run Chinook and fall-run hatchery salmon, causing spring-run to become genetically similar to fall-run. NMFS AR 5935. *Id.* The number of naturally spawning spring-run Chinook in the Feather River has been estimated only periodically since the 1960s, with estimates ranging from 2,908 in 1964 to 2 in 1978. *Id.*

substantial increase. *Id.* Average abundance of Sacramento River mainstream spring-run Chinook has recently declined from a high of 12,107 for the period 1980 through 1990, to a low of 609 for the period 1991 through 2001, while the average abundance for tributary populations increased from a low of 1,227 to a high of 5,925 over the same time period. *Id.*

Although tributaries such as Mill and Deer Creeks have shown positive escapement trends since 1991, recent escapements to Butte Creek, including 20,259 in 1998, 9,605 in 2001, and 8,785 in 2002, are responsible for the overall increase in tributary abundance. NMFS AR 5794. The Butte Creek estimates, which account for the majority of the spring-run Chinook ESU do not include prespawning mortality. *Id.* As the Butte Creek population has increased over the last several years, mortality of adult spawners has increased from 21% in 2002 to 60% in 2003 due to over-crowding and disease associated with higher water temperatures. *Id.* This trend may indicate that the population in Butte Creek may have reached its carrying capacity or are near historical population levels. *Id.*

The extent of spring-run Chinook spawning in the mainstream of the upper Sacramento River is unclear. NMFS AR 5794. Few spring-run Chinook salmon redds (less than 15 per year) were observed from 1989 through 1993, and none in 1994, during aerial redd counts. *Id.* Recently, the number of redds in September has varied from 29 to 1005 during 2001 through 2003 depending on the number of survey flights. *Id.* In 2002, based on RBDD ladder counts, 485 spring-run Chinook adults may have spawned in the mainstream Sacramento River or entered upstream tributaries such

as Clear or Battle Creeks. NMFS AR 5934. In 2003, no adult spring-run Chinook were estimated to spawn in the mainstream river. *Id.* Due to geographic overlap of ESUs and resultant hybridization since the construction of Shasta Dam, Chinook salmon that spawn in the mainstream Sacramento River during September are more likely to be identified as early fall-run Chinook rather than spring-run Chinook. *Id.*

NMFS opined proposed OCAP operations will not impact the majority of the juvenile spring-run population because they are in tributaries outside the Project area. NMFS AR 5934.

(3) Status.

The initial factors that led to the decline of spring-run Chinook were related to the loss of upstream habitat behind impassable dams. NMFS AR 5794. Since this initial loss of habitat, other factors have contributed to the instability of the spring-run Chinook population and affected its ability to recover. *Id.* These factors include a combination of physical, biological, and management factors such as climatic variation, water management activities, hybridization with fall-run Chinook, predation, and harvest. *Id.* Spring-run Chinook adults are much more susceptible to the effects of high water temperatures because they must hold over for months in small tributaries before spawning. *Id.*

The RBDD affects spring-run migration. Operational changes are not expected in the future. NMFS 5851. RBDD delays some 7.2% of the spring-run. NMFS 5921. Only 1% of this population is considered vulnerable to predation. NMFS 5852. Migration is

impacted by direct salvage at the pumps; future operations will allegedly only slightly increase spring-run salvage. NMFS 5882-83. Migration can be affected by operation of the pumps, indirectly causing straying into the Central Delta. NMFS 5883. The indirect effect of the pumps is estimated to cause 33% mortality of spring-run juveniles under future operations. NMFS claims some indirect mortality would occur without the Project. NMFS 5931.

At present, the Sacramento River mainstream supports 8% of the Central Valley spring-run ESU. NMFS 5846. Project operations will increase losses on the Sacramento River by 4% increasing the maximum total mainstream loss to 25%. NMFS 5935. In normal, dry and critically dry years, mortality increases as follows:

Mortality Increases		
Water Year Type		
Normal	Dry	Critically Dry
20%	22%	82%

NMFS 5921.

Several actions have been taken to improve habitat conditions for spring-run Chinook including improved management of Central Valley water through the use of the CALFED Environmental Water Account ("EWA") and CVPIA (b)(2) water; implementing new and improved screen and ladder designs at major water diversions along the mainstream Sacramento River and tributaries; and changes in ocean and inland fishing regulations to minimize harvest. NMFS AR 5795. Although protective measures

have likely contributed to recent increases in spring-run abundance, the ESU is still below levels observed from the 1960s through 1990. *Id.* Threats persist from hatchery production (including competition for food, run hybridization, and homogenization), climatic variation, high temperatures, predation, and water diversions. *Id.* Because the spring-run population is confined to relatively few remaining streams and continues to display broad fluctuations in abundance, the population is at a moderate risk of extinction. NMFS AR 5795. This contradictory finding is not explained.

2. CV Steelhead.

a. General Life History.

CV steelhead were listed as threatened March 19, 1998. 50 C.F.R. § 223.102 (2006); 63 F.R. 13347. CV Steelhead can be divided into two life history types based on the state of their sexual maturity at the time of river entry and the duration of their spawning migration, stream-maturing and ocean-maturing. NMFS AR 5799. Stream-maturing steelhead enter freshwater in a sexually immature condition and require several months to mature and spawn. *Id.* Ocean-maturing steelhead enter freshwater with well-developed gonads and spawn shortly after river entry. *Id.* The two life history forms are commonly referred to by their season of freshwater entry. *Id.* Stream-maturing steelhead are known as summer steelhead, and ocean-maturing steelhead are known as winter steelhead. *Id.* Currently, only winter steelhead are found in Central Valley rivers, although summer steelhead were present in the Sacramento River system prior to the commencement

of large-scale dam construction in the 1940s. *Id.* Presently, summer steelhead are only found in North Coast drainages, mostly in tributaries of the Eel, Klammath, and Trinity River systems. *Id.*

Steelhead are iteroparus, which means they are capable of spawning more than once before death. NMFS AR 5799. It is rare for steelhead, however, to spawn more than twice before dying; most that do are females. *Id.* Although a great majority of steelhead spawn once, research indicates that repeat spawners are relatively numerous (approximately 17.2%) in California streams. *Id.*

Steelhead spawn in cool, clear streams featuring suitable gravel size, depth, and current velocity, and may also spawn in intermittent streams. NMFS AR 5799. Most steelhead spawning takes place from late December through April, with peaks from January through March. *Id.* Winter steelhead generally leave the ocean from August through April and spawn between December and May. *Id.* Timing of upstream migration is correlated with higher flow events, such as freshets or sand bar breaches, and associated lower water temperatures. *Id.* The preferred water temperature for adult steelhead migration is 46˚F to 52˚F. *Id.* Thermal stress may occur at temperatures beginning at 66˚F, and mortality is demonstrated at 70˚F. *Id.* The preferred water temperature for steelhead spawning is 39˚F to 52˚F. *Id.* The preferred water temperature for steelhead egg incubation is 48˚F to 52˚F. *Id.* The minimum stream depth necessary for successful upstream migration is 13 cm. The preferred water velocity for upstream migration is in the range of 40 to 90 cm/s, with a

maximum velocity, beyond which upstream migration is not likely to occur, of 240 cm/s. *Id.*

The length of the incubation period for steelhead eggs is dependent on water temperature, dissolved oxygen concentration, and substrate composition. NMFS AR 5800. In late spring and following sac absorption, fry emerge from the gravel and actively begin feeding in shallow water along stream banks. *Id.* Steelhead rearing during the summer takes place primarily in higher velocity area pools, although some are also abundant in glides and riffles. *Id.* Winter rearing occurs more uniformly at lower densities across a wide range of fast and slow habitat types. *Id.* Some older juveniles move downstream to rear in large tributaries and mainstream rivers. *Id.*

Steelhead generally spend two years in freshwater before emigrating downstream. NMFS AR 5800. Rearing juveniles prefer water temperatures of 45˚F to 58˚F, and have an upper lethal limit of 75˚F. *Id.* Juveniles can survive up to 81˚F with saturated dissolved oxygen conditions and a plentiful food supply. *Id.* It is recommended that dissolved oxygen concentrations remain at or near saturation levels with temporary reductions of no lower than 5.0 mg/l for successful juvenile rearing. *Id.*

Juvenile steelhead emigrate episodically from natal streams during fall, winter, and high spring flows. NMFS AR 5800. Emigrating CV steelhead use the lower reaches of the Sacramento River and the Delta for rearing and as a migration corridor to the ocean. *Id.* Juvenile steelhead in the Sacramento Basin migrate downstream during most months of the year, but the peak

period of emigration occurred in the spring, with a much smaller peak in the fall. *Id.*

b. Habitat.

NMFS had not defined habitat or critical habitat for the CV steelhead as of October 22, 2004. Critical habitat was designated for CV steelhead in September 2, 2005.

c. Population.

Historically, steelhead were well-distributed throughout the Sacramento and San Joaquin Rivers. NMFS AR 5800. They were found from the upper Sacramento and Pit River systems, which are now inaccessible due to Shasta and Keswick Dams, south to the Kings and possibly the Kern River systems, also now inaccessible due to extensive alteration from water diversion projects. *Id.* The present distribution of steelhead has been greatly reduced. *Id.* The California Advisory Committee on Salmon and Steelhead reported a reduction of steelhead habitat from 6,000 miles to 300 miles. *Id.* at 5800-01. Historically, steelhead probably ascended Clear Creek past the French Gulch area, but access was blocked by Whiskeytown Dam in 1964. *Id.* at 5801.

The historic CV steelhead run size is difficult to estimate given the scarcity of data, but it may have approached one to two million adults annually. NMFS AR 5801. By the early 1960s, the steelhead run size had declined to approximately 40,000 adults. *Id.* Over the past thirty years, the naturally-spawned steelhead populations in the upper Sacramento River have declined substantially. *Id.* The estimated average adult steelhead

population through the 1960s was 20,540 in the Sacramento River upstream of Feather River. *Id.* Steelhead counts at RBDD declined from an average of 11,187 for the period spanning 1967 through 1977, to an average of approximately 2,000 through the early 1990s, with an estimated annual run size for the entire Sacramento-San Joaquin system, based on RBDD counts, to be no more than 10,000 adults. *Id.* Steelhead escapement surveys at RBDD ended in 1993 due to changes in dam operations. *Id.*

Around 2003 a comparison was made between tagged and untagged steelhead smolt catch ratios at Chipps Island trawl from 1998 through 2001, which produced an estimate that about 100,000 to 300,000 steelhead juveniles are produced naturally each year in the Central Valley. NMFS AR 5801. The Biological Review Team reached the following conclusion based on the Chipps Island data:

> If we make the fairly generous assumptions (in the sense of generating large estimates of spawners) that average fecundity is 5,000 eggs per female, 1 percent of eggs survive to reach Chipps Island, and 181,000 smolts are produced (the 1998-2000), about 3,628 female steelhead spawn naturally in the entire Central Valley. This can be compared with McEwan's (2001) estimate of 1 million to 2 million spawners before 1850, and 40,000 spawners in the 1960s.

Id. In the San Joaquin River basin, data from the California Department of Fish and Game trawl surveys indicate a decline in steelhead numbers in the early 1990s, with a total of twelve steelhead smolts collected at Mossdale in 2003. *Id.*

Existing wild steelhead stocks in the Central Valley are mostly confined to the upper Sacramento River and its tributaries, including Antelope, Deer, and Mill Creeks and the Yuba River. NMFS AR 5801. Populations may exist in Big Chico and Butte Creeks, and a few wild steelhead are produced in the

American and Feather Rivers. *Id.* Recent snorkel surveys (1999 through 2002) indicate steelhead are present in Clear Creek. *Id.* Because of the large resident *O. mykiss* population in Clear Creek, steelhead spawner abundance has not been estimated. *Id.* at 5801-02.

Until recently, steelhead were thought to be extirpated from the San Joaquin River system. NMFS AR 5802. Recent monitoring has detected small self-sustaining populations of steelhead in the Stanislaus, Mokelumne, Calaveras, and other streams previously thought to be void of steelhead. *Id.* It is possible that naturally spawning populations exist in many other streams but are undetected due to lack of monitoring programs. *Id.*

d. Status.

Both the Biological Review Team and the Artificial Propagation Workshop concluded that the CV steelhead ESU is presently in danger of extinction. NMFS AR 5802. In the proposed status review, however, NOAA Fisheries concluded that the ESU in-total is not in danger of extinction, but is likely to become endangered within the foreseeable future, citing unknown benefits of restoration efforts and a yet to be funded monitoring program. *Id.* Steelhead already have been extirpated from most of their historical range in this region. *Id.* Habitat concerns for the CV steelhead ESU focus on the widespread degradation, destruction, blockage of freshwater habitat, and water allocation problems. *Id.* Widespread hatchery steelhead production within the ESU also raises concerns about the potential ecological interactions between introduced stocks and native stocks. *Id.*

Because the CV steelhead population has been fragmented into smaller isolated tributaries without any large source population and the remaining habitat continues to be degraded by water diversions, the population is at high risk of extinction. *Id.* This evidence is materially inconsistent with the no jeopardy finding.

IV. Legal Standards Of Review.

A. Summary Judgment Generally.

Summary judgment is appropriate where there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). A genuine issue of fact exists when the non-moving party produces evidence on which a reasonable trier of fact could find in its favor viewing the record as a whole in light of the evidentiary burden the law places on that party. *See Triton Energy Corp. v. Square D Co.*, 68 F.3d 1216, 1221 (9th Cir. 1995). Facts are "material" if they "might affect the outcome of the suit under the governing law." *California v. Campbell*, 138 F.3d 772, 782 (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)). A court's role on summary judgment is not to weigh the evidence or resolve disputed issues of fact; rather, it is to determine whether there are any genuine issues of material fact for trial. *Abdul-Jabbar v. General Motors Corp.*, 85 F.3d 407, 410 (9th Cir. 1996).

B. Summary Judgment Under The Administrative Procedure Act.

Courts reviewing agency decisions are limited to the administrative record. *Florida Power & Light Co. v. Lorion*, 470 U.S. 729, 743-44 (1985). "Judicial review of an agency decision typically focuses on the administrative record in existence at the time of the decision and does not encompass any part of the record that is made initially in the reviewing court." *Southwest Ctr. for Biological Diversity v. United States Forest Serv.*, 100 F.3d 1443, 1450 (9th Cir. 1996). Since judicial review under the APA is generally limited to the administrative record, summary judgment is an appropriate procedure. *See, e.g., Friends of Endangered Species v. Jantzen*, 589 F. Supp. 113, 118 (N.D. Cal. 1984), *aff'd*, 760 F.2d 976 (9th Cir. 1985).

This is a challenge to the lawfulness of a biological opinion brought under the ESA and the APA. Agency decisions made under the ESA are governed by the APA, which requires that the agency action be upheld unless it is found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," or "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (D); *Pacific Coast Fed'n of Fishermen's Ass'ns v. NMFS*, 265 F.3d 1028, 1034 (9th Cir. 2001). "This deferential standard is designed to ensure that the agency considered all of the relevant factors and that its decision contained no clear error of judgment." *PCFFA*, 265 F.3d at 1034. (quoting *Arizona v. Thomas*, 824 F.2d 745, 748 (9th Cir. 1987)). Agency action should only be overturned if the agency has "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs

counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *National Ass'n of Home Builders v. Defenders of Wildlife*, 127 S.Ct. 2518, 2529 (2007) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). Essentially, a court must ask "whether the agency considered the relevant factors and articulated a rational connection between the facts found and the choice made." *PCFFA*, 265 F.3d at 1034 (quoting *Natural Res. Def. Council v. United States Dep't of the Interior*, 113 F.3d 1121, 1124 (9th Cir. 1997)). "A biological opinion is arbitrary and capricious and will be set aside when it has failed to articulate a satisfactory explanation for its conclusions or when it has entirely failed to consider an important aspect of the problem." *Greenpeace v. NMFS*, 80 F. Supp. 2d 1137, 1147 (W.D. Wash. 2000). Alternatively, a biological opinion may also be invalid if it fails to use the best available scientific information as required by 16 U.S.C. § 1536(a)(2). *Id.* at 1150.

As a general rule, a court must defer to the agency on matters within its expertise. See *National Wildlife Federation v. National Marine Fisheries Service*, 422 F.3d 782, 798 (9th Cir. 2005). "Deference to the informed discretion of the responsible federal agencies is especially important, where, as here, the agency's decision involves a high level of technical expertise." *Id.* However, "[t]he deference accorded an agency's scientific or technical expertise is not unlimited." *Id.* "Deference is not owed when the agency has completely failed to address some factor consideration of which was essential to

[making an] informed decision." *Id.* (internal citations and quotations omitted). Nevertheless, a court should "uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." *Home Builders*, 127 S. Ct. at 2530.

A biological opinion is a final agency action for judicial review purposes under the APA. *See PCFFA*, 265 F.3d at 1033-34 (holding that a no jeopardy biological opinion is an agency's final decision).

V. Summary of Parties' Cross-Motions for Summary Judgment.

A. Plaintiffs' Motion for Summary Judgment.

Plaintiffs assert four major grounds in their motion for summary judgment:

First, the BiOp is arbitrary and capricious under the ESA because NMFS failed to establish any reasonable connection between the identified (adverse) impacts to the species and its "no jeopardy" to species and "no adverse modification" of critical habitat conclusions. Within this argument, Plaintiffs maintain NMFS's factual findings in the BiOp directly contradict its "no jeopardy" and "no adverse modification" conclusions because NMFS failed to: (1) conduct an analysis of Project impacts in context of the listed species life cycles and population dynamics; (2) focus on incremental project impacts while arbitrarily ignoring significant adverse effects associated with baseline conditions, which is unsupported by the BiOp's findings; and (3) conduct a comprehensive analysis of impacts associated with the entire federal action during formal consultation.

Second, NMFS failed to use the best available science, which demonstrated that global climate change would significantly change the hydrology of Northern California's river systems over foreseeable future OCAP operations.

Third, NMFS impermissibly relied on an unenforceable and uncertain adaptive management process, which assumes that unspecified adaptive management measures will reduce Project impacts to the listed salmon and steelhead species despite the BiOp's determination that such measures have shown little benefit for the species.

Fourth, the Bureau's reliance on the purportedly flawed BiOp violates its independent and ongoing duty under the ESA to ensure that its actions do not harm listed species or their critical habitat. Plaintiffs advance two sub-arguments: First, the Bureau has failed and is failing to ensure that its actions do not harm listed species or their critical habitats. More specifically, the Bureau is acting arbitrarily and capriciously in relying on the NMFS BiOp, which was fatally flawed upon issuance. Additionally, the Bureau's reliance on the BiOp is arbitrary and capricious in light of new information that emerged after its issuance, which demonstrated that the BiOp's conclusions were seriously flawed from the outset. Second, the Bureau is making irreversible and irretrievable commitments of resources in violation of ESA § 7(d) without lawfully completing consultation under ESA § 7(a)(2).

B. Federal Defendants' Motion for Summary Judgment.

Federal Defendants' cross-motion for summary judgment has

two parts: The first addresses claims against NMFS; the second addresses claims against the Bureau.

As to NMFS, and consistent with recent judicial decisions in *National Wildlife Fed'n v. National Marine Fisheries Serv.*, 481 F.3d 1224 (9th Cir. 2007), and *NRDC v. Kempthorne*, 506 F.2d 322 (E.D. Cal. 2007), Federal Defendants acknowledge the need for further explanation of its "no jeopardy" analysis, particularly to address recovery implications for the winter-run Chinook, spring-run Chinook, and CV steelhead. Second, NMFS admits the need for further explanation of its critical habitat analysis for winter-run Chinook, particularly to address the impacts of primary constituent elements and whether an adverse modification of the winter-run Chinook's critical habitat occurred.

There is no critical habitat designated for spring-run and CV steelhead and no adverse modification of habitat analysis for these species because such designations occurred post-record. NMFS acknowledges that the analysis of salmonid life cycles and baseline conditions in the BiOp needs further explanation, particularly with respect to any effect of CVP operations on critical habitat and the "no jeopardy" conclusion. NMFS acknowledges that an explanation of its conclusions on global climate change should be included in the forthcoming biological opinion. Despite these admissions, NMFS maintains that the listed species are not jeopardized, and their critical habitats have not been adversely modified and that summary adjudication should be granted in its favor on the remaining issues presented by the NMFS BiOp. NMFS also insists operation of the CVP or SWP is not a "per se" or "patent" violation of the ESA.

Federal Defendants maintain Plaintiffs's claims against the Bureau should be denied in their entirety and summary adjudication granted for the Bureau for three reasons. First, the Bureau properly and substantively considered all evidence cited by Plaintiffs during the ESA § 7(a)(2) consultation process. Second, the Bureau properly considered information that emerged after the ESA § 7 consultation process concluded. Third, the Bureau has made no irreversible or irretrievable commitment of resources in contravention of ESA § 7(d) and has implemented additional protective measures.

DIs' opposition to Plaintiffs' summary judgment motion as to the NMFS BiOp opposed is on all grounds, except the absence of Global Climate Change analysis and the failure to define critical habitat for CV steelhead and Project effects on such habitat. DIs oppose Plaintiffs' motion for summary judgment as to the Bureau on all grounds.

VI. Law And Analysis.

A. Standing.

The parties' briefs do not discuss standing. Plaintiffs' counsel requested at the motions hearing that the court expressly find all Plaintiffs have standing to bring this lawsuit, which Federal Defendants and DI have not challenged. It is incumbent upon the court to determine on its own if Plaintiffs have standing. *See United States v. Hays*, 515 U.S. 737, 742 (1995) (stating "[t]he question of standing is not subject to waiver . . . [w]e are required to address the issue even if . . . the parties fail to raise the issue before us. The federal courts

are under an independent obligation to examine their own jurisdiction . . . .").

Standing is a threshold inquiry. "The rules of standing, whether as aspects of the Art. III case-or-controversy requirement or as reflections of prudential considerations defining and limiting the role of the courts, are threshold determinants of the propriety of judicial intervention." *Warth v. Seldin*, 422 U.S. 490, 517-518 (1975). The question of standing typically involves two inquiries "both constitutional limitations on federal-court jurisdiction and prudential limitations on its exercise." *Id.* at 498. The Article III case or controversy doctrine sets limits on the federal court to adjudicate only actual cases and controversies. U.S. Const. art. III, § 2, cl. 1.

"To satisfy the 'case' or 'controversy' requirement of Article III, which is the 'irreducible constitutional minimum' of standing, a plaintiff must, generally speaking, demonstrate that [1] he has suffered 'injury in fact,' [2] that the injury is 'fairly traceable' to the actions of the defendant, and [3] that the injury will likely be redressed by a favorable decision." *Bennett v. Spear*, 520 U.S. 154, 162 (1997) (quoting *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992)). To have standing, a litigant is required to have a concrete particularized injury, as opposed to a generalized grievance. *United States v. Hays*, 515 U.S. 737, 742-743 (1995).

Plaintiffs in this case are the Pacific Coast Federation of Fishermen's Associations/Institute for Fisheries Resources ("PCFFA"); The Bay Institute ("BI"); Baykeeper and its

Deltakeeper Chapter (collectively "Baykeeper"); California Trout; Friends of the River ("FOR"); Natural Resources Defense Council ("NRDC"); Northern California Council of the Federation of Fly Fishers ("the Council"); Sacramento Preservation Trust ("the Trust"); and the Winnemem Wintu Tribe ("the Tribe").

1. PCFFA.

PCFFA's members represent approximately 2,000 commercial fishing families in California, Oregon and Washington, most of whom are small and mid-sized commercial fishing boat owners and operators. Most of PCFFA's members derive all or part of their income from the harvesting of Pacific salmon, a valuable business enterprise for the West Coast and particularly for California economies. The decline of California's salmon species in recent years has severely impacted PCFFA members in California by limiting commercial salmon harvest opportunities, both through lost production of impaired stocks and because of additional restrictions imposed on the fishing fleet to protect impaired salmon populations. PCFFA and its sister organization, the Institute for Fisheries Resources ("IFR"), have been vocal advocates for sustainable aquatic resource use and the protection and recovery of salmon throughout Northern California and the Pacific Northwest. Much of PCFFA's and IFR's advocacy work is in the area of protecting the fisheries PCFFA members depend on for their livelihoods.

Salmon spawning and rearing habitat losses have cost the west coast salmon fishing industry approximately 72,000 salmon-produced family wage jobs over the past thirty years. These

losses are directly related to widespread inland salmon habitat destruction, including that resulting from the construction of dams and diversions of water as part of the CVP and SWP. As a fishing industry trade association PCFFA has been active for nearly thirty years in efforts to rebuild salmon populations in California's Central Valley streams and rivers. These facts sufficiently demonstrate IFR and PCFFA and its members may be actually injured by alleged damages to the species resulting from the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. PCFFA and IFR have standing to bring this lawsuit.

2. Bay Institute.

The Bay Institute is a non-profit conservation organization incorporated under the laws of California and dedicated to the preservation, protection and restoration of the Sacramento-San Joaquin River Delta and its fish and wildlife resources. The Bay Institute and its over 2,500 members have a direct interest in the survival and perpetuation of fish species and other aquatic resources, including the salmon and steelhead species at issue in this case, that are affected by the CVP and SWP. Most of The Bay Institute's members live on or near the water resources affected by the CVP and SWP, and many rely on this region for their livelihood in the commercial and sports fishing and boating industries. In addition, many of The Bay Institute's members regularly visit and use the water bodies affected by the CVP and SWP for recreational experiences and aesthetic enjoyment. The Bay Institute regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance

and restore declining populations of native California fishes, including the five salmon and steelhead ESUs, throughout the area affected by Project operations. Since its founding in 1981, The Bay Institute has applied a science, education, and advocacy approach to Sacramento-San Joaquin River Delta issues. This approach naturally encompasses the Delta, but also considers the entire region, from the headwaters of the Sacramento and San Joaquin River systems in the Sierra Nevada to the Golden Gate, as a single, interdependent watershed.

The Bay Institute works collaboratively with government agencies, independent experts, water users and land owners to design and implement large-scale ecological restoration programs through the CALFED Bay-Delta Program, the CVPIA, the Anadromous Fish Restoration Program, and other initiatives. The Bay Institute commented on the original environmental impact statement and environmental impact report for the 1986 CVP/SWP Coordinated Operating Agreement. In July 2003, The Bay Institute submitted formal comments and scientific information to the Bureau regarding the impacts of its then-proposed OCAP on the five salmon and steelhead ESUs. These uncontested alleged facts sufficiently demonstrate The Bay Institute and its members may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. The Bay Institute has standing.

3. Baykeeper.

Baykeeper and its Deltakeeper Chapter ("Baykeeper") is a regional non-profit public benefit corporation organized under

the laws of the State of California, with its principal place of business in San Francisco, California. Baykeeper's mission is to protect and enhance the water quality of the San Francisco Bay-Delta estuary and its watershed for the benefit of its ecosystems and human communities. Through its three chapters, Baykeeper patrols thousands of miles of waterways throughout San Francisco Bay, the Sacramento-San Joaquin River Delta and the Petaluma River, investigating pollution problems and bringing enforcement actions directly against polluters when necessary. Founded in 1989, Baykeeper is a legal and policy advocate for the San Francisco Bay and Delta and their vast watershed, from the high Sierra to the Golden Gate. Using targeted administrative and legal advocacy before federal, state and regional regulators, Baykeeper plays a lead role in developing sound legal standards, permits, and regulations. A key area of Baykeeper's focus is ensuring that state and federal environmental laws are properly implemented and enforced. Where necessary, Baykeeper initiates enforcement actions on behalf of the organization and its members.

The Deltakeeper Chapter of Baykeeper, located in Stockton, California, carries out the Baykeeper mission on the Delta and its tributaries in California's Central Valley. Baykeeper has approximately 1,200 members who reside in the San Francisco Bay-Delta watershed, of whom approximately 150 belong to the Deltakeeper Chapter. Deltakeeper Chapter staff regularly comment on measures required to protect salmonids, including the five salmon and steelhead ESUs, under a variety of permits and regulatory programs. For example, the Deltakeeper Chapter

commented on: the Port of Stockton Clean Water Act dredging and wastewater permits; the development of various Total Maximum Daily Load limits on the San Joaquin and Sacramento Rivers and Cache Creek; and the proposed South Delta Improvement Project.

The Deltakeeper Chapter staff and members maintain frequent contact with staff from the California Department of Fish and Game, NMFS and FWS regarding various OCAP issues and the BiOp, and have attended numerous public meetings held by the Bureau and other agencies regarding the 2004 OCAP. Deltakeeper Chapter staff and members also participate regularly in technical forums and workgroups concerning salmonids and implementation of the 2004 OCAP, including for example, the Bureau's Tracy Technical Action Team; CALFED's South Delta Fish Facility Forum, North Delta Fish Facilities and Predation Symposium meetings; the Central Valley Fish Facilities Review Team; and the Collection Handling Transportation and Release Team meetings. Deltakeeper Chapter staff serve on the Calaveras River Fish Group Technical Advisory Committee, which is endeavoring to restore the salmon and steelhead fisheries of the Calaveras River. These undisputed facts sufficiently demonstrate Baykeeper and its members may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. Baykeeper has standing.

4. California Trout.

California Trout ("CalTrout") is a non-profit conservation corporation organized in 1971 under the laws of the State of California with its principal place of business in San Francisco, California. CalTrout's mission is to protect and restore wild

trout, steelhead, and other native fish species such as the five salmon and steelhead ESUs, to protect the waters that nurture these fish species throughout the State of California, including specifically the Sacramento River and San Joaquin River and the Bay-Delta, and to create high quality angling opportunities for the public to enjoy. CalTrout fulfills its mission by working to protect wild trout and steelhead habitat throughout California, and the native biodiversity associated with this riparian habitat, including related salmonid species.

In pursuing its mission to protect freshwater habitat for native fish, CalTrout has participated in stream restoration efforts that include (1) establishing the Wild Trout Program, which today protects 1,000 miles of wild trout streams and represents the state's most successful wildlife management program; (2) ensuring that habitat protections were included in the Pit River Relicensing process by negotiating, through the California Hydropower Reform Coalition, a new hydropower dam license agreement for important reaches of the Pit River that establishes springtime flushing flows that better mimic the natural cycle of free-flowing rivers and provides for increased base flows throughout the summer months; and (3) protecting the golden trout, California's state fish and a state-listed sensitive species, by gathering essential data to complete genetics studies, habitat assessments and restoration work. CalTrout represents 4,000 recreational anglers, of whom more than 1,000 live near and within areas affected by Project operations and regularly use these areas for fishing, photography, and hiking and to seek aesthetic relief from the urban environments

of the Bay Area.

CalTrout members support the conservation of entire watersheds and all of their associated biodiversity, as well as the effective implementation and enforcement by government regulatory agencies of planning and conservation laws, like the ESA, that relate to the protection of these watersheds and their native biodiversity. CalTrout commented on the original EIS/EIR for the CVP/SWP Coordinated Operating Agreement in 1986. In September of 2004, CalTrout provided comments to the Governor, urging him to sign California Assembly Bill 2121, which would require the state to produce guidelines for maintaining instream flows for fish in coastal streams from the Mattole River south to San Francisco Bay and in streams entering northern San Pablo Bay.

CalTrout takes an active role in protecting the five salmon and steelhead ESUs through its membership in the Coho Recovery Team, a stakeholder advisory group that provided input to the California Department of Fish and Game that led to the listing of SONCC coho salmon under the California Endangered Species Act, and in the California Advisory Committee on Salmon and Steelhead Trout, a stakeholder group that provides recommendations to the Director of the DFG on appropriating funding for proposals to restore salmon and steelhead habitat across the state. These undisputed facts sufficiently demonstrate CalTrout and its members may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. CalTrout has standing.

5. FOR.

Friends of the River was founded in 1973 to preserve, protect, and restore free flowing streams and watersheds throughout California. FOR accomplishes these goals through public education and the promotion of sound environmental policy. Most of FOR's 5,400 members live in the greater Bay-Delta region and rely upon the delta for recreational purposes. FOR members take more than 2,000 people on rafting trips on rivers that flow into the delta. FOR also conducts public rafting trips on the Sacramento River to view spawning salmon and other wildlife. FOR also advocates for policies to protect the Sacramento River's salmon and steelhead populations. FOR members and staff supported the federal and state endangered species listings of the spring-run Chinook, winter-run Chinook, and CV steelhead. FOR also submitted extensive comments in support of the Red Bluff Diversion Dam Fish Improvement Project to raise the gates of the dam to facilitate year-round fish passage. According to FOR, this proposal was nullified by the 2004 OCAP.

Representatives of FOR attended public meetings held by the Bureau concerning the 2004 OCAP and submitted comments on the 2004 OCAP's potential impact on listed salmon and steelhead species, including the continued operation of the RBDD, the elimination of cold water storage behind Shasta Dam, and the reduction of the temperature standard for salmon in the Sacramento River. These undisputed facts sufficiently demonstrate FOR and its members may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. FOR has standing.

6. NRDC.

NRDC is a non-profit environmental organization with more than 550,000 members nationwide, including more than 100,000 members in California and thousands of members in Alameda, Contra Costa, Del Norte, Humboldt, Lake, Mendocino and Napa Counties. NRDC maintains an office in San Francisco, California. NRDC's purpose is to safeguard the Earth: its people, its plants and animals and the natural systems on which all life depends. The organization works to restore the integrity of the elements that sustain life—air, land and water—and to defend imperiled natural places. NRDC seeks to establish sustainability and good stewardship of the Earth as central ethical imperatives of human society and strives to protect nature in ways that advance the long-term welfare of present and future generations. For more than two decades, NRDC has advocated extensively for the protection of the nation's waterways and wildlife, including the salmon and steelhead species at issue here.

For example, in July 2003, NRDC submitted formal comments and scientific information to the Bureau raising concerns about the impacts of the Bureau's then-proposed 2004 OCAP on salmon and steelhead ESUs, and in August 2004, NRDC submitted formal comments and scientific information to NMFS regarding the impacts of the 2004 OCAP on the five salmon and steelhead ESUs, during the ESA consultation that resulted in the Biological Opinion challenged here. In addition, NRDC has long worked to protect the water resources affected by the CVP and SWP, including the five salmon and steelhead ESUs and their habitat, in non-litigation settings. For example, NRDC was involved in the

development of, and actively supported the enactment of, the CVPIA; participated actively in the negotiation of the record of decision for the CALFED Bay-Delta Program, the mission of which is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta estuary; and currently sits on the CALFED public advisory committee. NRDC commented on the original EIS/EIR for the CVP/SWP Coordinated Operating Agreement in 1986. These undisputed facts sufficiently demonstrate NRDC and its members may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. NRDC has standing.

7. The Council.

The Council is part of the Federation of Fly Fishers, an international non-profit conservation organization dedicated to the promotion of fly fishing through education and conservation. The Council works on behalf of both fish and fly fishers in Northern California. The Council has approximately 3,000 members who live in Northen California and enjoy recreational fishing throughout the Sacramento River and San Joaquin River watersheds. The general purposes of the Council include the protection and restoration of aquatic habitat for anadromous fish, including the five ESA listed salmon and steelhead species affected by this lawsuit.

The Council has consistently advocated the protection of the five salmon and steelhead species with respect to CVP operation, CVP contracts, and the 2004 OCAP. The Council commented on the

BiOp pointing out that FWS had used inappropriate modeling inputs. The Council has continuously opposed the South Delta Improvement Project, a future component of the 2004 OCAP, and the increased export of water from the state pumps. These undisputed facts sufficiently demonstrate the Council and its members may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. The Council has standing.

8. The Tribe.

The Tribe are a historical California Native Tribe recognized by the California Native American Heritage Commission. The Winnemem's historical territory included the east side of the Sacramento River watershed, the McCloud River watershed from origination to termination, the Squaw Creek watershed from origination to termination, and approximately twenty miles of the Pit River from the confluence of the McCloud River, Squaw Creek and Pit River up to Big Bend. The Winnemem has tribal members living and tribal concerns in many parts of the area impacted by operations of the CVP and SWP, including Clear Creek from Whiskeytown Dam to the Sacramento River, the Sacramento River from Shasta Dam to the Delta, and Spring Creek from the Debris Dam to Keswick Dam.

For centuries, the Winnemem have had a deep cultural and spiritual relationship with the salmon that use these rivers. The Winnemem sing to the salmon and the waters that sustain them. The Winnemem's history, traditions, ceremonies, and culture are filled with respect, reverence, appreciation, and dependence on the salmon and these waters. Salmon are also the staple of the

Winnemem. Salmon is also the food necessary to complete and fulfill many of the Winnemem's special and sacred ceremonies. The Winnemem are also involved in advocacy work in the area of protecting the natural resources upon which the Winnemem depend for their cultural and religious existence. As far back as 1872, the Winnemem opposed the United States Fish Commission's (now the United States Fish and Wildlife Service) building of a salmon fish hatchery on the McCloud River due to the threat it would pose to the existing wild salmon. In 1937, the Winnemem opposed the Bureau's construction of Shasta Dam because it blocked salmon migration. The Winnemem have also testified at numerous hearings before the Bureau, the United States Senate, and the CALFED Bay Delta Authority, in attempts to achieve protection for the Sacramento River salmon and steelhead. These undisputed facts sufficiently demonstrate that the Winnemem may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP, all of which have allegedly had adverse impacts on the salmon. The Winnemem have standing.

9. The Trust.

The Trust, based in Chico, California, is a non-profit corporation organized under the laws of the State of California. Formed in 1984, the Trust's purpose is to protect, preserve, and restore the natural values of the Sacramento River ecosystem from its headwaters to the San Francisco Bay/Sacramento-San Joaquin River Delta ("Bay-Delta") and the wildlife it supports, including the five salmon and steelhead ESUs. Many of the Trust's more than 1,000 members regularly use the Sacramento River and Bay-

Delta for recreational and educational purposes including fishing, swimming, boating, aesthetic appreciation, and nature study. These members intend to continue doing so on an on-going basis in the future. Additionally, many of the Trust's members live and work in the counties that surround the Sacramento River and Bay-Delta.

The Trust has worked continuously, through all legal means, to protect native salmon and steelhead species in the Sacramento River watershed and to restore the Sacramento River to its former richness. For years, the Trust has actively sought legislative reform of the CVP and SWP to make those projects more responsive to the needs of fish and wildlife species in the Sacramento River and Bay-Delta, especially the Sacramento River winter-run salmon. As a member of the "Share The Water" coalition, the Trust and its members lobbied and sent letters to Congress advocating the passage of the CVPIA. Particularly important to the Trust was the CVPIA's revision of the CVP's purpose to include protection of fish and wildlife as a co-equal CVP goal. Water set aside for fish protection purposes under the CVPIA is now an important baseline of the CALFED Bay-Delta Program.

The Trust has a long history of actions on behalf of Sacramento River winter-run Chinook salmon. In 2002, for example, the Trust intervened in a lawsuit on behalf of the federal government to defend water management practices aimed at protecting winter-run Chinook salmon and delta smelt. The Trust has opposed efforts to weaken the CALFED Bay-Delta Program's habitat and ecosystem restoration provisions, and most recently has asked CALFED to investigate the effects of rollbacks of

environmental protections included in the CALFED Record of Decision on Delta fisheries. The Trust has long participated in matters specifically related to the CVP, SWP and OCAP. The Trust commented on the original CVP/SWP Coordinated Operating Agreement EIS/EIR in 1986 and, in October 2004, submitted comments on the 2004 OCAP. These undisputed facts sufficiently demonstrate the Trust may be actually injured by the 2004 OCAP, the BiOp, and the Federal Defendants' operation of the CVP. The Trust has standing.

B. Plaintiffs' Request for Judicial Notice.

Plaintiffs request that the court take judicial notice of the following three documents: (1) the Declaration of Ronald Milligan, the Manager of the Central Valley Operations Office of the Bureau, (2) the Declaration of Bruce Oppenheim, a Fishery Biologist in the Sacramento office of NMFS, and (3) the Declaration of Cay Collette Goude, an Assistant Field Supervisor in the Sacramento office of the United States Fish and Wildlife Service. (Doc. 170) These documents are declarations from representatives of the Federal Defendants that were submitted in the related Delta smelt case, *NRDC v. Kempthorne*, 1:05-cv-01207-OWW-GSA. The Federal Defendants submitted the Declarations of Ronald Milligan and Bruce Oppenheim with their opposition to the plaintiff's motion for a temporary restraining order and preliminary injunction in June 2007. The Federal Defendants submitted the Declaration of Cay Collette Goude with their notice regarding a status conference on June 1, 2007.

Plaintiffs offer these declarations to demonstrate the

authorized publically stated views of the federal agency representatives regarding implementation and operation of the 2004 OCAP and challenged biological opinions, not for the truth of the matters asserted therein. Plaintiffs assert that these declarations will assist the court in assessing the Bureau's compliance with its ongoing duties under the ESA to ensure that its actions do not jeopardize listed species or adversely modify critical habitat.

The Federal Defendants do not object to Plaintiffs' request for judicial notice because these were declarations filed by the Bureau in the companion case which directly involves the OCAP. DI San Luis & Delta Mendota Water Authority objects to any consideration of these declarations because they are post-decisional documents.

"A judicially noticed fact must be one not subject to reasonable dispute in that it is either (1) generally known within the territorial jurisdiction of the trial court or (2) capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned." Fed. R. Evid. 201(b). "A court shall take judicial notice if requested by a party and supplied with the necessary information." Fed. R. Evid. 201(d). Judicially noticed facts often consist of matters of public record, such as prior court proceedings, *see, e.g.*, *Emrich v. Touche Ross & Co.*, 846 F.2d 1190, 1198 (9th Cir. 1988). A court may take judicial notice of court records in another case. *United States v. Howard*, 381 F.3d 873, 876 fn. 1 (9th Cir. 2004) (citing *United States v. Wilson*, 631 F.2d 118, 119 (9th Cir. 1980)).

To the extent the declarations refer to a different case and species, they are not directly relevant. Unless the declarations contain relevant admissions, they were prepared for use in litigation, and are hearsay. The DI object to the contents of these declarations as disputed both as to content and purpose. Under Federal Rule of Evidence 201(b), a court may take judicial notice of facts "not subject to reasonable dispute. . . ." Rule 201(b) is not satisfied here by reason of the dispute over the contents of the declarations. Plaintiffs' request for judicial notice is DENIED WITHOUT PREJUDICE. Judicial notice is taken of the fact that each of the three declarations was filed on behalf of the Federal Defendants to express views in related ESA litigation over the 2004 OCAP and the Delta smelt. The documents are post-record, offered to show Agency bad faith and may be considered for that limited purpose.

C. The Endangered Species Act.

The Ninth Circuit has succinctly summarized relevant provisions of the ESA:

> The ESA requires federal agencies to "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 [designated critical] habitat . . . ." 15 U.S.C. § 1536(a)(2). The ESA imposes a procedural consultation duty whenever a federal action may affect an ESA-listed species. *Thomas v. Peterson*, 753 F.2d 754, 763 (9th Cir. 1985). To that end, the agency planning the action, usually known as the "action agency," must consult with the consulting agency. This process is known as a "Section 7" consultation. The process is usually initiated by a formal written request by the action agency to the consulting agency. After consultation, investigation, and analysis, the consulting agency then prepares a biological opinion.

> ***See generally Ariz. Cattle Growers' Ass'n v. U.S. Fish & Wildlife Serv.***, 273 F.3d 1229, 1239 (9th Cir. 2001).
>
> The consulting agency evaluates the effects of the proposed action on the survival of species and any potential destruction or adverse modification of critical habitat in a biological opinion, 16 U.S.C. § 1536(b), based on "the best scientific and commercial data available." *Id.* § 1536(a)(2). The biological opinion includes a summary of the information upon which the opinion is based, a discussion of the effects of the action on listed species or critical habitat, and the consulting agency's opinion on "whether the action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. . . ." 50 C.F.R. § 402.14(h)(3). In making its jeopardy determination, the consulting agency evaluates "the current status of the listed species or critical habitat," the "effects of the action," and "cumulative effects." *Id.* § 402.14(g)(2)-(3). "Effects of the action" include both direct and indirect effects of an action "that will be added to the environmental baseline." *Id.* § 402.02. The environmental baseline includes "the past and present impacts of all Federal, State or private actions and other human activities in the action area" and "the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation." *Id.* If the biological opinion concludes that jeopardy is not likely and that there will not be adverse modification of critical habitat, or that there is a "reasonable and prudent alternative[ ]" to the agency action that avoids jeopardy and adverse modification and that the incidental taking of endangered or threatened species will not violate section 7(a)(2), the consulting agency can issue an "Incidental Take Statement" which, if followed, exempts the action agency from the prohibition on takings found in Section 9 of the ESA. 16 U.S.C. § 1536(b)(4); ***ALCOA v. BPA***, 175 F.3d 1156, 1159 (9th Cir. 1999).
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> . . . .
>
> The issuance of a biological opinion is considered a final agency action, and therefore subject to judicial review. ***Bennett v. Spear***, 520 U.S. 154, 178, 117 S.Ct. 1154, 137 L.Ed.2d 281 (1997); ***Ariz. Cattle Growers' Ass'n***, 273 F.3d at 1235.

National Wildlife Federation v. National Marine Fisheries Service, 481 F.3d 1224 (9th Cir. 2007) (***NWF v. NMFS***).

The questions presented here are whether the NMFS BiOp:

1. relies on factors not intended by Congress to be considered;

2. entirely failed to consider an important aspect of the problem;

3. offered an explanation for the BiOp that runs counter to the evidence before NMFS;

4. is so implausible that it cannot be ascribed to a difference in view or the product of agency expertise;

5. makes a clear error of judgment.

National Ass'n of Homebuilders v. Defenders of Wildlife, 129 S.Ct. 2518, 2529 (2007) ***PCFFA v. NMFS***, 265 F.3d at 1034.

D. NMFS Claims.

1. Whether NMFS Failed to Establish Any Reasonable Connection Between the Impacts It Identified and the BiOp's "No Jeopardy" and "No Adverse Modification" Conclusions.

Plaintiffs contend the BiOp falls short of meeting any of the requirements of ESA § 7(a)(2) and its implementing regulations, which require, among other things, that: (1) NMFS use the best scientific and commercial data available to evaluate the current status of the listed species and its critical habitat; (2) that NMFS evaluate the effects of the action and cumulative effects on the listed species and critical habitat; and (3) that NMFS formulate its biological opinion as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

Specifically, Plaintiffs argue NMFS failed to establish a

reasonable connection between the impacts it identified in the BiOp and its no jeopardy and no adverse modification of critical habitat conclusions. Plaintiffs maintain: (1) the BiOp establishes no link between the significant adverse Project effects it identifies and its "no jeopardy" and "no adverse modification" conclusions, and that the BiOp's findings contradict its conclusions; (2) NMFS failed to conduct an analysis of the Projects' impacts in the context of the species' life cycles and population dynamics; (3) NMFS's focus on incremental impacts arbitrarily ignored significant adverse effects associated with baseline conditions and is unsupported by the BiOp's factual findings; and (4) NMFS failed to conduct a comprehensive analysis of impacts associated with the entire federal action during formal consultation with the Bureau.

In light of rulings made in ***NRDC v. Kempthorne***, and the Ninth Circuit's recent decision in ***NWF v. NMFS***, Federal Defendants acknowledge the following of Plaintiffs' claims are valid:

(1) The need for further explanation of its "no jeopardy" analysis to address recovery implications for winter-run Chinook, spring-run Chinook, and CV steelhead.

(2) The need for further explanation of its critical habitat analysis for winter-run Chinook to address the impacts to the primary constituent elements and whether an adverse modification of critical habitat occurred.

(3) The need for further explanation of the analysis of salmonid life cycles and baseline conditions with respect to effects of CVP operations on critical

habitat and no jeopardy conclusion.

Despite these admissions, Federal Defendants do not concede the validity of Plaintiffs' ultimate contentions that any of the species is "jeopardized;" that critical habitat is "adversely modified;" or that combined operations of the Projects under the 2004 OCAP effect a *per se* or patent violation of the ESA. In the Federal Defendants' view, these issues should not be resolved on the presently "incomplete" AR, and the Court should find there is insufficient information in the AR to explain the "no jeopardy" and "no adverse modification" conclusions in the BiOp. The Federal Defendants argue that the BiOp should be remanded so NMFS can issue a new biological opinion which explains in further detail, whether continued Project operations will, or will not, jeopardize the continued existence of salmonid species or adversely modify designated critical habitat.

The DI contend NMFS articulated a rational connection between its factual findings and no jeopardy and no adverse modification conclusions except as to the CV steelhead. As a practical matter, this position is untenable in view of the Federal Defendants' above-identified admissions that those specified BiOp findings are incomplete or unsupported.

NMFS and the United States Fish and Wildlife Service ("FWS") have issued joint regulations interpreting the ESA. Under the regulations, NMFS and FWS have defined the terms "jeopardize the continued existence of," "destruction or adverse modification," and "critical habitat." "Jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of

both 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. "Destruction or adverse modification" means:

> a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.

Id. "Critical habitat refers to an area designated as critical habitat listed in 50 CFR parts 17 or 226." *Id.*

No critical habitat was designated for spring-run or CV steelhead as of the time the BiOp issued. As a matter of law, NMFS could not have made a no adverse modification of an undesignated critical habitat, because it is undeniable both species then had critical habitats, despite that NMFS chose not to designate it. The post-record September 2, 2005, designation of critical habitat for these two species raises substantial question whether the NMFS and the Bureau nonetheless knew of such critical habitat in 2004 in spite of its non-designation. This abdication on the issue of critical habitat for two of the species is an entire failure to consider an important aspect of the problem and/or so implausible that it cannot be ascribed to a difference in view or the product of agency expertise.

a. Whether NMFS's Factual Findings Directly Contradict the No Jeopardy and No Adverse Modification Conclusions in the BiOp.

Review under the arbitrary and capricious standard is deferential to the agency. *National Ass'n of Homebuilders v.*

Defenders of Wildlife, 127 S.Ct. at 2529. A reviewing court should not vacate an agency's decision unless the agency:

> has relied on factors which Congress had not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Id. (citing *Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). A court should "uphold a decision of less than ideal clarity if the agency's path may be reasonably discerned." *Id.* at 2530. Essentially, a court "must ask whether the agency considered the relevant factors and articulated a rational connection between the facts found and the choice made." *Pacific Coast Fed'n of Fishermen's Ass'ns, Inc. v. National Marine Fisheries Service*, 265 F.3d 1028, 1034 (9th Cir. 2001).

Plaintiffs maintain the BiOp does not establish the required path from the adverse project impacts NMFS identified in the record and the no jeopardy and no adverse modification conclusions. Plaintiffs painstakingly argue that the BiOp's factual findings are irreconcilable with and contradict its conclusions. Each species is addressed separately, as the findings regarding each species differ.

(1) Winter-run Chinook.

The BiOp reached the following conclusion regarding the winter-run Chinook:

> After reviewing the best scientific and commercial information available, the current status of the species, the environmental baseline for the action

> area, the effects of the proposed action, and cumulative effects, it is NOAA Fisheries biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of Sacramento River winter-run Chinook Salmon. In addition, NOAA Fisheries has determined that the action, as proposed, is not likely to adversely modify critical habitat for Sacramento River winter-run Chinook salmon.

NMFS AR 5940.

Plaintiffs argue the BiOp's "no jeopardy" and "no adverse modification" conclusions starkly contrast with NMFS's concerns about the species raised in the actual text of the BiOp; in NMFS's draft biological opinion[6] issued a few weeks prior to the BiOp; and in the administrative record. According to Plaintiffs, NMFS identified adverse impacts to the winter-run Chinook and its habitat from the Projects' in-Delta operations and upstream river operations. In addition to other impacts to the winter-run Chinook, two particular Project operations that evoked the greatest concern were the Bureau's proposal to move the Sacramento River temperature compliance point ("TCP") nineteen (19) miles upstream from Bend Bridge to Balls Ferry, and to modify the 1.9 million acre-foot ("MAF") end-of-water-year

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[6] NMFS's draft biological opinion is not binding or determinative whether the final BiOp is arbitrary and capricious. *See National Ass'n of Homebuilders*, 127 S. Ct. at 2530 (stating "federal courts ordinarily are empowered to review only an agency's *final* action, see 5 U.S.C. § 704, and the fact that a preliminary determination by a local agency representative is later overruled at a higher level within the agency does not render the decisionmaking [sic] process arbitrary and capricious.") (emphasis in original). Federal agencies are entitled to change their minds, so long as the proper procedures were followed. *Id.* The draft may raise questions the Agency needs to address, however, a draft is not the definitive opinion by which the BiOp is judged.

carryover storage requirement ("COS") at Shasta Reservoir from a requirement to a target.

(a) Impacts Relating to the Movement of the TCP and Elimination of the COS Requirement.

i) Background of the TCP and COS Requirement.

The Shasta Division[7] of the CVP includes facilities that conserve water on the Sacramento River for flood control, navigation maintenance, conservation of fish in the Sacramento River, protection of the Delta from intrusion of saline ocean water, agricultural water supplies, municipal and industrial water supplies, and hydroelectric generation. NMFS AR 5754. The Shasta Division includes Shasta Dam, Lake, and Powerplant; Keswick Dam, Reservoir, and Powerplant; and the Toyon Pipeline. NMFS AR 5754.

Shasta Dam and Lake is the largest storage reservoir on the Sacramento River with a 4.55 MAF capacity. NMFS AR 5754. Completed in 1945, Shasta Dam controls flood water and stores winter runoff for various uses in the Sacramento and San Joaquin valleys. NMFS AR 5754. Keswick Dam, located approximately 9 miles downstream from Shasta Dam, creates an afterbay with a 23 thousand acre-foot ("TAF") capacity for Shasta Lake and Trinity River diversions. NMFS 5754.

Water temperature in the upper Sacramento River has been

[7] The Bureau uses the term "Unit" interchangeably with CVP "Divisions."

recognized as a key factor for the habitat needs for Chinook salmon stocks inhabiting the river. USBR AR 4937. The 56°F temperature control point is the benchmark above which the winter-runs' survival is put in jeopardy. Water temperature on the Sacramento River system is influenced by several factors, including the relative water temperatures and ratios of releases from Shasta Dam and from the Spring Creek Powerplant. USBR AR 4937. The temperature of water released from Shasta Dam and the Spring Creek Powerplant is a function of: (1) the reservoir temperature profiles at the discharge points at Shasta and Whiskeytown; (2) the reservoir depths from which releases are made; (3) the seasonal management of the deep cold water reserves; (4) ambient seasonal air temperatures and other climatic conditions; (5) tributary accretions and water temperatures; and (6) residence time in Keswick, Whiskeytown and Lewiston Reservoirs, and in the Sacramento River. USBR AR 4937.

The Bureau operates the Shasta, Sacramento River, and Trinity River Divisions of the CVP to meet, to the extent possible, the provisions of SWRCB Order 90-05 and the 1993 winter-run Chinook biological opinion ("1993 BiOp"). NMFS AR 5754, USBR AR 4935. In 1990 and 1991, the SWRCB issued Water Rights Orders 90-05 and 91-01 modifying Reclamation's water rights for the Sacramento River. NMFS AR 5754. These SWRCB orders include temperature objectives for the Sacramento River including a daily average water temperature of 56°F at RBDD during periods when higher temperatures would be harmful to fisheries. NMFS AR 5754. Under the Orders, the compliance point may be changed when the objective cannot be met at RBDD. NMFS AR

5754, USBR AR 4937. DI assert the temperature objective has never been met at RBDD.

The SWRCB orders also required the Bureau to establish the Sacramento River Temperature Task Group ("SRTTG") to formulate, monitor, and coordinate temperature control plans for the upper Sacramento and Trinity Rivers. USBR AR 4937-38. This group consists of representatives from the Bureau, SWRCB, NOAA Fisheries, FWS, California Department of Fish and Game, Western, California Department of Water Resources, and the Hoopa Valley Indian Tribe. USBR AR 4938. Each year, with finite cold water resources and competing demands usually an issue, the SRTTG has devised operation plans with the flexibility to provide the best protection consistent with the CVP's temperature control capabilities and considering the annual needs and seasonal spawning distribution monitoring information for winter-run and fall-run Chinook salmon. USBR AR 4938. In every year that the SRTTG has operated, its temperature plans have included modifying the RBDD compliance point to make best use of the cold water resources based on the location of spawning Chinook salmon. USBR AR 4938.

The SWRCB water rights orders also recommended the construction of the Shasta Temperature Control Device ("Shasta TCD") to improve the management of limited cold water resources. USBR AR 4937. Construction of the Shasta TCD at Shasta Dam was completed in 1997. USBR AR 4938. This device is designed for greater flexibility in managing the cold water reserves in Shasta Lake while enabling hydroelectric power generation to occur and to improve salmon habitat conditions in the upper Sacramento

River. USBR AR 4938. The Shasta TCD is also designed to enable selective release of water from varying lake levels through the power plant in order to manage and maintain adequate water temperatures in the Sacramento River downstream of Keswick Dam. USBR AR 4938.

Prior to construction of the Shasta TCD, the Bureau released water from Shasta Dam's low-level river outlets to alleviate high water temperatures during critical periods of the spawning and incubation life stages of the winter-run Chinook stock. USBR AR 4938. Releases through the low-level outlets bypass the power plant and result in a loss of hydroelectric generation at the Shasta Powerplant. USBR AR 4938. The release of water through the low-level river outlets was a major facet of Reclamation's efforts to control upper Sacramento River temperatures from 1987 through 1996. USBR AR 4938.

The seasonal operation of the Shasta TCD is generally as follows: during mid-winter and early spring the highest elevation gates possible are utilized to draw from the upper portions of the lake to conserve deeper colder water resources. USBR AR 4938. During late spring and summer, the operators begin the seasonal progression of opening deeper gates as Shasta Lake elevation decreases and cold water resources are utilized. USBR AR 4938. In late summer and fall, the Shasta TCD side gates are opened to utilize the remaining cold water resource below the Shasta Powerplant elevation in Shasta Lake. USBR AR 4938.

The Shasta TCD gives the Bureau flexibility in managing cold water resources, but not without some problems. The seasonal progression of the Shasta TCD operation is designed to maximize

the conservation of cold water resources deep in Shasta Lake, until the time the resource is of greatest management value for fishery management purposes. USBR AR 4939. Recent operational experience with the Shasta TCD has demonstrated significant operational flexibility improvement for cold water conservation and upper Sacramento River water temperature and fishery habitat management purposes. USBR AR 4939. This operational experience has also demonstrated the Shasta TCD has significant leaks that are inherent in its design. USBR AR 4939. Also, operational uncertainties cumulatively impair the seasonal performance of the Shasta TCD to a greater degree than was anticipated in previous analysis and modeling used to describe long-term Shasta TCD benefits. USBR AR 4939.

NOAA Fisheries issued the 1993 BiOp in February 1993. USBR AR 4939. The 1993 BiOp includes a reasonable and prudent alternative ("RPA") addressing CVP operations criteria for temperature control objectives. USBR AR 4939. Under this RPA, the Bureau must make its February 15 forecast of deliverable water based on an estimate of precipitation and runoff at least as conservatively as 90 percent probability of exceedance.[8] USBR AR 4939. The use of this conservatively based forecasting approach reduces the risk of over committing potential annual cold water reserves by limiting the Central Valley water supply estimates to a one in ten chance of the remaining annual hydrologic conditions being drier than the estimate. USBR AR 4939. This forecasting strategy places an allocation emphasis on

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[8] This requirement continues in effect. NMFS AR 5955-56.

reserving sufficient cold water resources during the winter-run Chinook salmon incubation and spawning seasons. USBR AR 4939.

In seven of ten years preceding the BiOp, NMFS moved the temperature compliance point upstream from Bend Bridge to Jelly's Ferry, and sometimes as the year progressed, to Balls Ferry. USBR 3142, 3162-63, 3200, 3271, 3310-11, 3319-24, 3394, 3435-36, 3438-39. Two of these years were dry, and the compliance point was at Jellys Ferry. USBR 3354, 3397. In those two years, Project operations were modified to optimize limited cold water resources for all salmon runs. Moving the compliance point upstream from Bend Bridge also conserved cold water resources. NMFS 5920-21, USBR 3353-54, 3380-81, 3392. This was required because cold water resources must be shared between winter-run and spring-run that spawn later in the year. USBR 3351; NMFS 5956.

Releasing large quantities of comparatively warmer water from higher elevations on Shasta Dam causes other impacts to the fishery:

a. Hastened depletion of the cold water pool in Shasta Lake;

b. Lower the Lake to a point where there was potential to totally lose control over release temperatures, a disastrous scenario for later spawning spring and fall-run. USBR 3351.

c. If spawning distribution is in downstream locations, temperature protection could not be provided in a dry year. NMFS predicted additional early life stage mortality to be a nominal increase, 0.54%. NMFS 5920.

d. NMFS also realized an adaptive management process to reduce potential temperature related losses by moving temperature compliance location downstream to protect redds. NMFS 5845-56.

a) Shasta COS Requirement.

The 1993 BiOp contains an RPA requiring the Bureau to maintain a minimum end-of-water-year (September 30) carryover storage in Shasta Reservoir of 1.9 MAF. USBR AR 4939. This is the COS requirement. The 1.9 MAF COS Requirement is intended to increase the probability of sufficient cold water resources to maintain suitable water temperature conditions for the subsequent water year winter-run incubation and spawning season needs. USBR AR 4939. The 2004 BiOp changes the 1.9 MAF COS to a target, NMFS AR 5956, which does not ensure that adequate cold water reserves (and therefore, winter-run incubation and spawning habitat water temperature) are available during the year the 1.9 MAF COS requirement is required. USBR AR 4939.

The 1993 BiOp recognized that it may not be possible to maintain the minimum carryover of 1.9 MAF in the driest ten percent of hydrologic circumstances. USBR AR 4939. Under the 1993 BiOp, if the Bureau forecasts end-of-water-year storage levels in Shasta will drop below 1.9 MAF, re-initiation of consultation was required prior to the first water allocation announcement for that year. USBR AR 4939. NMFS offers a reasonable explanation that new mitigation measures and water management actions justify this flexibility in managing COS.

b) Sacramento River TCP.

Another RPA in the 1993 BiOp sets water temperature compliance location(s) (TCP) from April 15 through October 31 for winter-run needs based on a systematic set of Shasta carryover and annual hydrologic conditions. USBR AR 4939. The 1993 BiOp segregates annual Shasta Reservoir carryover and hydrologic conditions in order to assess the potential cold water resources available from Trinity and Shasta Reservoirs and to determine a strategy for the water TCP. USBR AR 4940. Generally, the 1993 BiOp sets the TCP at Bend Bridge on the Sacramento River in conditions of high carryover storage or above normal hydrologic conditions. USBR AR 4940. For lower carryover storage conditions and dry or critical hydrologic conditions, the 1993 BiOp sets the TCP farther upstream at Jelly's Ferry on the Sacramento River. USBR AR 4940. For low carryover storage and critical or very critical hydrologic conditions (generally associated with extended drought conditions) the 1993 BiOp requires re-initiation of consultation to determine the TCP. USBR AR 4940.

In almost every year since 1993, the Bureau has reconsulted with NOAA Fisheries and modified the TCP or allowed short-term fluctuation above the 56°F objective because of insufficient cold water resources, extreme ambient air temperature events, or high downstream tributary flows of warm water. USBR AR 4940. The reconsultation actions have been coordinated through the SRTTG to the extent possible. USBR AR 4940.

c) Management of the Upper

Sacramento River Temperature Objectives Since the Issuance of the 1993 BiOp.

Since the issuance of the temperature objectives contained in the 1993 BiOp, the long-term cold water management operation of the Trinity-Shasta reservoir system has been changed and influenced by several significant water management actions that have occurred during the intervening period. USBR AR 4940. These water management actions include:

- Implementation of CVPIA Section 3406 (b)(2)
- Implementation of SWRCB Delta D-1641
- Continuing implementation of the Trinity River ROD as ordered by the District Court
- Installation and actual performance characteristics of the Shasta TCP.

USBR AR 4940. Each of these water management actions has changed the availability and the management of cold water resources for the Upper Sacramento River. USBR AR 4940.

ii) Proposed Actions and Effects Under the 2004 BiOp.

One of the proposed actions in the BiOp moves the TCP nineteen miles upstream to Balls Ferry from Bend Bridge (the TCP location established in the 1993 BiOp). As discussed, the 1.9 MAF COS requirement is now a "target" that the Bureau will attempt to meet at the end of each water year.

With respect to moving the TCP from Bend Bridge to Balls Ferry, the EFFECTS OF THE ACTION section of the BiOp (section V)

states:

> Higher water temperatures and an increase in frequency of very low storage conditions during dry and critically dry years in the mainstream spawning area are expected to reduce spawning success in certain areas through egg and larval mortality. Based on the proposed temperature compliance point of Balls Ferry, approximately 20 miles (42 percent) of the available mainstream spawning habitat of Chinook salmon is expected to be rendered less suitable for egg and larval survival during these years for those fish that spawn in these lower areas. On average, predicted temperatures over the 72 year modeled period at Balls Ferry will exceed 56°F, and exceed baseline predicted temperatures . . . in April (5 of 72 years), May (7 years), July (8 years), August (15 years), September (26 years), and October (12 years over 60°F). In general the number of exceedances increases by 1 year over baseline conditions, although August, September, and October exceedances occur in 6, 7, and 2 more years, respectively. Temperatures downstream of this point will also exceed baseline conditions, affecting the spawning success of any adults spawning below Balls Ferry.

NMFS AR 5844.

Since 1993, NMFS has recommended moving the TCP upstream to conserve cold water in the Shasta Reservoir for August and September when juveniles are most vulnerable to temperature effects. NMFS AR 5844. The Bureau assumed moving the TCP from Bend Bridge to Balls Ferry would be insignificant because the majority of winter-run Chinook (99%) have spawned above Balls Ferry based on aerial redd surveys in the years 2001 through 2003. NMFS AR 5844-45. NMFS made the following finding in the EFFECTS OF THE ACTION section of the BiOp regarding the upstream movement of the TCP:

> A review of the historical spawning distribution over the last ten years (*i.e.*, 1993 to 2003) shows that on average 3.6 percent of the run spawned below Balls Ferry since RBDD gate operations were modified . . . . NOAA Fisheries expects that as the population increases the spawning distribution may vary and a small

> proportion of the run may be exposed to unsuitable water temperatures below Balls Ferry. This effect is expected to be less than significant, unless large numbers of adults spawn below Balls Ferry. In the last five years this has occurred only once during a wet year (*i.e.*, in 2000, when 16 percent of the run spawned below Balls Ferry). Even in years when a portion of the run spawns downstream of the compliance point not all eggs would be killed, but a small amount of increased mortality would be expected ranging from 8 to 15 percent based on a relationship between water temperature and mortality of Chinook salmon eggs . . . .

NMFS AR 5845.

NMFS also addressed "Habitat Availability and Suitability" in the EFFECTS OF THE ACTION SECTION OF THE BIOP. Regarding moving the TCP from Bend Bride to Balls Ferry, NMFS made the following findings:

> Winter-run Chinook salmon spawning habitat is made less suitable by approximately 19 miles (*i.e.*, 42 percent of available spawning habitat currently available to Bend Bridge) by defaulting to the more upstream temperature compliance point at Balls Ferry compared to Bend Bride under both operations today and in the future. Even though most of the current population is not anticipated to be affected, since generally winter-run Chinook salmon spawn upstream of Balls Ferry, planning for future temperature control operations at the higher compliance point could limit potential spawning distribution. NOAA Fisheries anticipates that the spawning distribution routinely will be more contracted (*i.e.*, reduced by 19 miles), therefore population abundance could be capped as these fish seek out areas of more suitable, cooler water for spawning and move farther upstream than they otherwise would do in some years.

NMFS AR 5846, 5939.

DI argue that increasing winter-run Chinook populations from 1993 to 2003 show that this strategy has not jeopardized, but has benefitted the species.

On the change of the 1.9 MAF COS requirement to a "target,"

NMFS made the following findings in the EFFECTS OF THE ACTION section of the BiOp:

> The [1993 BiOp] established a minimum end-of-September carryover storage criteria for Shasta Reservoir of 1.9 MAF, which in combination with storage reserves in Trinity Reservoir, minimum instream flows during the winter, and D-1485 Delta standards produced a following year May Shasta Reservoir storage in the 3.0 to 3.5 MAF range, with a reasonable amount of cold water available in the second year. Average end-of-September carryover storage in Shasta Reservoir is reduced by 130 TAF under future conditions compared to today's . . . . Under a 50 percent probability of exceedance, future operations reduce end-of-September carryover storage by about 230 TAF from operations today. . . . Reductions in September carryover storage are due to releases for SWP in-basin requirements, compliance with Trinity River requirements, and extra pumping capacity for Joint Point of Diversion. The result will be a reduced ability to control water temperatures in the upper Sacramento River and an increase in frequency of very low storage conditions (as indicated by end-of-September storage below 1.9 MAF). For example, low storage conditions occur in 11 out of 72 years (15 percent of the modeled period) under baseline conditions. Under proposed formal consultation actions, low storage conditions increase to 14 out of 72 years (19 percent of the modeled period), a 26 percent increase in frequency over baseline conditions. Further, one year is added to low storage conditions during two of the three periods of significant drought in the 72 year modeled period. Decreased water availability also leads to decreases in deliveries. During critically dry periods, water deliveries to agricultural users south of the Delta decrease significantly: under baseline conditions the Project might deliver 10 percent of the allocation to these users; under expected future conditions, these levels drop to 7 to 8 percent.

NMFS AR 5844.

Plaintiffs criticize this baseline analysis and observe that the "target" scenario results in an almost 20% lower storage condition which will reduce ability to control temperatures in the upper Sacramento River, directly jeopardizing the winter-run.

In the INTEGRATION AND SYNTHESIS OF THE EFFECTS section of

the BiOp (section VII), NMFS made the following findings regarding the effects of moving the TCP upstream to Balls Ferry and eliminating the Shasta COS Requirement on the winter-run Chinook:

> Reclamation's Salmon Mortality Model estimates that the proposed operations will increase temperature-related losses of the early life stages of winter-run Chinook salmon on average 1-2 percent under both conditions today and in the future (*i.e.*, assuming 99 percent of adults spawn above Balls Ferry). Average mortality is less than 5 percent in most years except critically dry, as discussed below. Through the SRTTG, protective actions are anticipated to reduce this loss. Therefore, for most water years the increase in average egg and fry loss is not expected to be significant.
>
> Based on the spawning distribution since operations of the gate at [RBDD] changed in 1993, an average of 3.6 percent of the adult winter-run Chinook salmon population has spawned below Balls Ferry . . . . The impact of proposed temperature operations for those fish that spawn below Ball's Ferry equates to a 0.54 percent loss of the total juvenile production on average, based on 8-15 percent of the eggs being lost due to a 1-2 degree difference in water temperatures. Under future conditions, if the population increases or higher winter flows shift spawning downstream, adults would be expected to utilize habitat below Balls Ferry to a greater extent than today, thus the loss in the juvenile production would be expected to increase. In wet years there is likely to be sufficient cold water available to provide suitable water temperatures below Balls Ferry and to accommodate shifts in spawning distribution.
>
> Increases in water temperatures during critically dry years in the winter-run Chinook salmon spawning area are expected to result in high levels of egg and larval mortality. Under baseline conditions, the winter-run Chinook salmon population experienced an estimated 41 percent mortality in 15 percent of the modeled 72 year period. The proposed formal consultation actions are expected to increase both the amount and frequency of these high mortality levels to 44 percent and 19 percent, respectively.
>
> Through flexibility in real time operations and the adaptive management process (*i.e.*, SRTTG and B2IT) protective actions (*i.e.*, increased flows, warm water bypasses, use of the TCD, and low level outlets) would be taken early on to avoid temperature effects to early

life stages of winter-run Chinook salmon.

NMFS AR 5920.

This analysis is consistent with Defendants' projected increases of 3% to 4% annual mortality for written-run when the new regime is used.

In the "Population Impacts and Potential for Recovery" subsection of the INTEGRATION AND SYNTHESIS OF THE EFFECTS section of the BiOp, NMFS made the following findings. "Current operations result in the loss of 42 percent of the winter-run Chinook salmon juvenile population . . . ." NMFS AR 5931. At the same time, the effects of the BiOp's proposed actions are that "[o]verall project effects are expected to result in the loss of an additional 3 to 20 percent of the winter-run Chinook salmon juvenile population . . . ." NMFS AR 5930. "Analysis of population estimates taken at RBDD since 1986, indicates that the population growth rate . . . for winter-run Chinook salmon is 0.97 (95 percent confidence intervals: 0.87 and 1.09), indicating a population that may be declining at 3 percent per year," although the confidence intervals at 95 percent allow for a population decreasing at a rate of 13 percent per year or increasing at 9 percent per year. NMFS AR 5933.

The "[e]stimated mean log growth rate indicates a population that is generally declining, although confidence interval values also indicate that the population may be generally increasing." NMFS AR 5933. Short-term productivity has been increasing. NMFS AR 5933. "In the last three years, the population has been increasing due to hatchery supplementation, restrictions on ocean

harvest, use of the TCD on Shasta Dam, and changes in Project operations due to the 1993 BiOp." NMFS AR 5933.

While the pre-BiOp short-term population numbers for the winter-run Chinook population are positive, NMFS made the following findings:

> Despite short-term increases in the population over the last three years, winter-run Chinook salmon remain susceptible to extinction due to the elimination of access to most of their historical spawning grounds and the reduction of their population structure to a single population dependent for its survival on cold water releases from Shasta Dam. Population abundance is low, with the average number of adults (males and females) over the past five years at 50 percent of the recovery goal (*i.e.*, 10,000 females for 13 years) as identified in the draft recovery plan . . . .
>
> Combined Project impacts are likely to reduce the juvenile population by 3 to 20 percent over baseline conditions in most years . . . . Early life-stage mortality in the upstream spawning areas will increase by 3 percent over Today's condition to 44 percent in years with very low carryover storage (below 1.9 MAF). Due to proposed operations, these conditions will occur more frequently, occurring 19 percent of the time in the modeled period versus 15 percent under baseline conditions. The likelihood that an individual year class will be significantly reduced by drought conditions increases in two out of the three drought year sequences modeled by CALSIM, adding one more year of sustained high mortality to the year class. Proposed changes in temperature management could render approximately 42 percent of spawning habitat less suitable, reducing adult spawning distribution and success. Adaptive management based on actual spawning distributions and operation conditions is expected to decrease effects, although we cannot quantify to what extent. Loss of juveniles at non-Project unscreened diversions will also continue to occur at various locations along the mainstream Sacramento River and in the Delta. Under baseline conditions, this annual impact results in the loss of 33 percent of the winter-run Chinook salmon juvenile population. Proposed Project operations are expected to increase this loss between 34 and 49 percent.
>
> Given the positive indicators in the population observed over the last 8 years, it would appear that the winter-run Chinook salmon population is recovering. While it is concerning that future Project operations

> are likely to result in the loss of more juveniles from each year class, NOAA Fisheries expects that adaptive management processes will reduce these increased impacts to low levels. For example, the estimated 22 percent loss includes both a 2.4 percent loss due to decreased production for individuals spawning below Ball's Ferry and a 16 percent increase in indirect mortality from increased pumping, based on mark-recapture data presented in salmon workshops . . . . As these losses may not occur in every year, due to both ecological and operational conditions and protective actions, Project effects in many years may be less than 5 percent. NOAA Fisheries reasons that these losses are not sufficient to reduce the likelihood of survival and recovery of the winter-run Chinook salmon based on the observed and estimated recovery rates in the ESU. Recent cohort replacement rates in the population have been high enough that minor reductions due to a 5 percent loss of juveniles would not cause the population to decline, however some reduction in the rate of ESU recovery may occur.

NMFS AR 5933-34.

The winter-run population will decline from 3% up to 20% in juveniles and 3% up to 44% in early life stages from Project operations and adverse climate and carryover storage conditions. This will be offset by future adaptive management. Non-Project losses from diversion coupled with Project operations are 1% to 16%. NMFS concludes the mortality risks will be offset by adaptive management to prevent population loss, i.e., survival. No other analysis is performed for recovery.

(b) Adverse Impacts Not Relating to the Movement of the TCP and Elimination of the COS Requirement.

Plaintiffs maintain NMFS failed to explain how its "no jeopardy" and "no adverse modification" conclusions were consistent with identified Project impacts to the winter-run Chinook not related to the upstream movement of the TCP or elimination of the COS requirement. For example, in the

INTEGRATION AND SYNTHESIS OF THE EFFECTS section of the BiOp (BiOp section VII) NMFS states, "[b]ased on the most current population estimates . . . and our analysis, current operations of the RBDD gates will block or delay approximately . . . 15 percent of the winter-run Chinook population (approximately 1,220 adults) . . . ." NMFS AR 5921. NMFS expects an increase in passage delays in the future due to more frequent early gate closures caused by increased demands for water in the upper Sacramento River Basin. NMFS AR 5921. "Chinook salmon delayed at [RBDD] can consume a greater amount of their energy stores than if there been [sic] no obstacle in their path which may subject them to: a greater chance of disease, . . . increased adult pre-spawning mortality[,] . . . and decreased egg viability[,] . . . all of which may result in the reduction in annual recruitment." NMFS AR 5921.

In describing "Interior Delta Mortality" in the INTEGRATION AND SYNTHESIS OF THE EFFECTS section NMFS states:

> Those fish that are not lost to predation are susceptible to loss due to irrigation diversions in the central and south Delta. In addition, NOAA Fisheries anticipates that fish drawn into the central and south Delta will be subjected to adverse water quality, pollution, pathogens, and delayed migration which may lead to physiological stress, disease, disorientation, and overall decreased likelihood of successful outmigration and survival. The available data suggest that the increased mortality associated with the indirect effects of moving water and fish across the interior of the Delta can range from 4 to 40 percent in the baseline for the juvenile population entering the Delta (*i.e.*, using winter-run Chinook salmon juveniles). [A] forty percent loss would occur when cross-Delta survival is very low (*e.g.*, at a 95 percent mortality level) and the export salvage reaches 2 percent of the winter-run Chinook JPE. This would be a worst case condition. In the best case scenario, four percent of the winter-run Chinook JPE is lost crossing the Delta (*e.g.*, at a 33 percent mortality level).

NMFS AR 5927.

This analysis concludes that minimum net mortality for fish diverted by pumps and flows into the Delta is 4% to 40%.

In the EFFECTS OF THE ACTION section of the BiOp (BiOp section V), NMFS analyzed the effects of "Delta Pumping Rates:"

> To satisfy the increased demand for water, additional volumes of water will have to be diverted from the Delta by the SWP and CVP facilities in the South Delta. This additional volume of water will be predominately obtained by periodically increasing the pumping rates at the facilities. The increases in the pumping rates are anticipated to increase the level of entrainment of listed salmonids at the fish collection facilities in the south Delta.

NMFS AR 5877.

The most that NMFS concludes is that survival is possible. Recovery is not addressed. This analysis is incomplete. It cannot be ascertained if recovery will be achieved.

Plaintiffs contend the BiOp's no jeopardy and no adverse modification of critical habitat findings contradict the text of the BiOp, a draft copy of the BiOp, and the administrative record. In light of the Ninth Circuit's decision in ***NWF v. NMFS***, NMFS concedes it needs to further explain its no jeopardy analysis to address recovery implications of the winter-run Chinook arising from the BiOp's proposed actions. NMFS also acknowledges the need for further explanation of its critical habitat analysis to address the impacts on the winter-run Chinook and whether an adverse modification of critical habitat occurred.

It is impossible to ascertain from the BiOp what the impact on habitat will be as critical habitat, the Sacramento River above Balls Ferry is only superficially mentioned as the area

where spawning will occur. No other critical habitat analysis is provided. The DI maintain the BiOp provides a complete and well-reasoned explanation of why the combined future effects of Project operations will not jeopardize the survival or recovery of the winter-run Chinook species, however, all record references describe adverse effects from movement of the species by Project operations.

NWF v. NMFS held that a jeopardy regulation issued jointly by NMFS and FWS requires the agencies to consider both recovery and survival impacts on listed species. ***NWF v. NMFS***, 481 F.3d at 1237. The jeopardy regulation provides, "*Jeopardize the continued existence of* means to engage in an 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. NMFS had interpreted this regulation in a manner that only considered the effects of a species survival. *Id.* at 1236-37. The court found that NMFS's interpretation of its own regulation was unreasonable in light of NMFS's prior interpretation and application of the jeopardy regulation. *Id.* at 1237. The court also observed that NMFS had consistently interpreted the jeopardy regulation (50 C.F.R. § 402.02) as requiring a joint analysis of both survival and recovery impacts until the issuance of the 2004 biological opinion in that case. *Id.*

Here, like the biological opinion at issue in ***NWF v. NMFS***, NMFS only considered the survival impacts on the winter-run Chinook due to proposed Project operations and failed to analyze

recovery implications. NMFS's failure to consider recovery implications as required under its own regulations and NWF necessarily renders the BiOp incomplete. NMFS's failure to follow its own regulation to address recovery implications to the winter-run Chinook renders the BiOp arbitrary and capricious as to this species. *See National Ass'n of Homebuilders*, 127 S. Ct. at 2529 (stating a reviewing court should not vacate an agency's decision unless, among other things, the agency "entirely failed to consider an important aspect of the problem . . . .").

Plaintiffs correctly point out that NMFS's findings about the likely reduction in the species population resulting from proposed Project operations set forth in the text of the BiOp contradict its no jeopardy and no adverse modification conclusions. For example, in the EFFECTS OF THE ACTION section of the BiOp, NMFS states spawning success will be reduced and 42 percent of spawning habitat is expected to be rendered less suitable by moving the TCP upstream to Balls Ferry. NMFS 5844-46. NMFS also found that on average 3.6 percent of the winter-run Chinook spawn below Balls Ferry, and that a change in the TCP at Balls Ferry will be less than significant unless large numbers spawn below Balls Ferry (which occurred once in a wet year). NMFS AR 5845. Yet, NMFS found that current operations result in the loss of 42 percent of the juvenile winter-run Chinook population, and proposed project effects are expected to result in an additional 3 to 20 percent loss of the juvenile population. NMFS AR 5930-31.

NMFS also found that despite short-term increases in the population over the last three years, winter-run Chinook remain

susceptible to extinction due to the elimination of most of their historical spawning grounds and reduction of their population structure. NMFS AR 5933-34. NMFS went on to find: "[g]iven the positive indicators in the population observed over the last 8 years, it would appear that the winter-run Chinook salmon population is recovering[,]" yet in the same discussion NMFS stated the population may be declining at 3 percent per year and the log growth rate indicates a population that is generally declining. NMFS AR 5933-34.

A reviewing court should "uphold a decision of less than ideal clarity if the agency's path may be reasonably discerned." *National Ass'n of Homebuilders v. Defenders of Wildlife*, 127 S. Ct. at 2530. Here, not only do NMFS's factual findings partly contradict its no jeopardy and no adverse modification conclusions, the factual findings are themselves internally contradictory. When an agency's factual findings and analyses are contradictory, or when such findings and analyses contradict the BiOp's conclusion, the agency's path cannot reasonably be discerned. See, *Homebuilders*, 127 S.Ct. at 2530.

In their briefs supporting their motion for summary judgment (and opposing Plaintiffs' motion for summary judgment) and at the hearing on the parties' motions, the Federal Defendants painstakingly explained the rationale for changing the 1.9 MAF Shasta COS Requirement from a hard-wired requirement to a "target," and moving the TCP upstream from Bend Bridge to Balls Ferry. The primary reason offered for these proposed changes is that the 1993 BiOp was outdated, because new methods of conserving and managing cold water resources came into play,

including, construction of the TCD, implementation of CVPIA (b)(2) water, SWRCB D-1641, and implementation of the Trinity River ROD, as well as the listing of new species. In the BiOp's present incomplete state, since none of these new actions have been analyzed, it cannot be ascertained whether they will or will not jeopardize the winter-run Chinook salmon or adversely modify its critical habitat.

The Bureau is charged with operating this overwhelmingly complex Project, and NMFS must ensure the Bureau's actions comply with the ESA. The Bureau remains free to implement its proposed actions of changing the 1.9 MAF Shasta COS Requirement from a requirement to a target, and moving the TCP from Bend Bridge to Balls Ferry. However, the forthcoming biological opinion must accurately and completely analyze whether these proposed actions will or will not jeopardize the continued existence and recovery of the winter-run Chinook and adversely modify its critical habitat.

For all these reasons, NMFS's findings and analysis regarding the winter-run Chinook are incomplete, arbitrary and capricious because (1) NMFS failed to consider recovery of the species as required by the regulations and ***NWF v. NMFS***; and (2) NMFS's factual findings and analyses are themselves contradictory as to the survival of the species, and these findings and analyses contradict its no jeopardy conclusions. There is no analysis of adverse effect on critical habitat. On this issue, Plaintiffs' motion for summary judgment is GRANTED. Federal Defendants' motion for summary judgment is DENIED.

(2) Spring-run Chinook.

After formal consultation, NMFS reached the following conclusion regarding the spring-run Chinook in the BiOp:

> After reviewing the best scientific and commercial information available, the current status of the listed species, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is NOAA Fisheries biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of Central Valley spring-run Chinook salmon. Critical habitat for Central Valley spring-run Chinook salmon has not been designated, therefore, none will be affected.

NMFS AR 5941.

Plaintiffs assert that the BiOp's no jeopardy conclusion for the spring-run is contradicted by NMFS's BiOp's factual findings. Plaintiffs assert the following project operations threaten the mainstream population of the spring-run Chinook. First, changing the 1.9 MAF Shasta dam COS requirement to a target and the upstream shift of the 56°F Sacramento River temperature compliance point. Second, the RBDD blocks or delays adult spring-run from reestablishing their population in the only available habitat for recovery, notwithstanding the tributaries population.

Spring-run Chinook migrate above RBDD towards Keswick dam from April to July as they seek cooler water (less than 56°F) for spawning. NMFS AR 5843. Spawning occurs in September and October, and fry begin to emerge in December and January. NMFS AR 5843. However, very few spring-run Chinook spawn in the mainstream Sacramento River because of the effects of Shasta Dam and past Project operations. NMFS AR 5843.

In the INTEGRATION AND SYNTHESIS OF THE EFFECTS section of

the BiOp (BiOp section VII), NMFS made the following factual findings: the overall abundance of the spring-run Chinook ESU is low, but has increased since 1992 due to a large population increase in the Deer, Mill, and Butte Creek stream tributaries. NMFS AR 5934. However, the increase in population abundance in these tributaries masks the significant decline in the portions of the population residing in the mainstream Sacramento River and the Feather River. NMFS AR 5934. These two rivers were home to significant portions of the spring-run Chinook ESU. NMFS AR 5934. Additionally, the Butte Creek population may be at or near carrying capacity levels, which supports the inference that further recovery cannot occur in that area. NMFS AR 5934.

The mainstream Sacramento River and Feather River spring-run Chinook populations probably represent 20 to 30 percent of the current total population. NMFS AR 5934. This finding is directly contradicted by the California Department of Fish and Game biologists' belief that the spring-run Chinook population has nearly disappeared from the mainstream Sacramento River. NMFS AR 5935. The spatial structure of the spring-run Chinook ESU is very limited. NMFS AR 5935. In the upper Sacramento River, RBDD blocks or delays adults' passage and prevents them from re-establishing populations in the only available habitat for recovery. NMFS AR 5935.

In its analysis of Project impacts on the spring-run Chinook, NMFS states "proposed Project operation impacts in the upstream areas of the Sacramento River are likely to reduce the mainstream Sacramento River juvenile spring-run Chinook salmon population by 4 percent over current conditions in most years,

increasing total loss to 25 percent of the mainstream juvenile population . . . ." NMFS AR 5935. Project related losses are expected to continue into the future under formal and early consultation and prevent the species from expanding its distribution unless new areas can be restored. NMFS AR 5935 NMFS then goes on to state "[w]e expect that proposed operations will continue the decline of the mainstream (Sacramento River) population and *likely lead to its extirpation*." NMFS AR 5935 (emphasis added). This morbid projection is inconsistent, if not irreconcilable, with "no jeopardy," which is expected to result from reduction of mainstream juvenile population by 25%. Recovery is not addressed. In practical terms this forecasts elimination of spring run salmon from the Sacramento River, a total loss of habitat, despite the NMFS conclusion there will be no adverse impact or jeopardy to the species or its nonexistent "critical" habitat, as to which NMFS nonetheless concluded "none will be affected." It is unexplained why NMFS concludes in October 2004, the spring-run have no critical habitat, but designate critical habitat in September, 2005. This omission to address critical habitat for spring-run under the ESA is equally applicable to CV steelhead.

(a) Critical Habitat.

"Critical habitat" consists of those areas which have "physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection." 16 U.S.C. § 1532(5)(A).

The failure to designate critical habitat for the spring-run, must be evaluated under 16 U.S.C. § 1536(a)(2) which requires that the adverse modification inquiry examine a given Project's effect on critical habitat, that is, the land specifically designated by the Secretary of Interior for that purpose. *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Service*, 378 F.3d 1059, 1075 (9th Cir. 2004).

The purpose of designating "critical habitat" is to set aside certain areas as "essential" for the survival and recovery of the threatened species. 16 U.S.C. § 1532(5). Critical habitat is designated after extensive study, detailed analysis, and, ultimately, notice and comment rule-making that designates critical habitat. Once designated, critical habitat receives its legal protection because it is subject to the § 7 consultations and analysis required by law. Section 1533(a)(3)(a) requires the Secretary of the Interior, by promulgated regulation, concurrently with the listing of an endangered or threatened species, to designate any habitat of such species which is then considered to be critical habitat. Section 1533(b)(B)(2) requires the Secretary to designate critical habitat on the basis of the best scientific data available and after taking into consideration the economic impact, impact on national security, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if it is determined that the benefits of such an exclusion outweigh the benefits of designation, specifying such areas as part of the critical habitat, unless it is determined, based on the best scientific and commercial data available, that

the failure to designate such area as critical habitat will result in the extinction of the species concerned.

Center for Biological Diversity v. U.S. Fish & Wildlife Service, **450 F.3d 930, 935 (9th Cir. 2006) characterizes critical habitat designations as mandatory except where not prudent or not determinable. 16 U.S.C. § 1533(a)(3); Title 50 C.F.R. § 424.12(a)(2) defines "not determinable," as an excuse from completing a designation of critical habitat when information sufficient to perform requirements and analyses of the impacts of designation is lacking or the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. It is "not prudent" to complete a designation of critical habitat where it would be detrimental to the species. 50 C.F.R. § 424.12(a)(1). Arguably, these provisions apply once the decision to designate critical habitat has been made. Here, NMFS has succeeded in avoiding any critical habitat analysis required by the ESA for two species by simply concluding, without explanation or findings that it is not determinable or prudent to designate critical habitat, that there is no critical habitat for two of the species. Under ESA § 1533(b)(2) the Secretary may only exclude portions of habitat from critical habitat designation "if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat." It cannot reasonably be suggested that the spring-run does not have critical habitat. No evidence is provided why NMFS could not designate or analyze critical habitat, particularly in view of the changing spawning and migration patterns of the spring-run. See also *Natural***

Resources Defense Council v. U.S. Dept. of the Interior, 113 F.3d 1121, 1125 (9th Cir. 1997).

(b) Feather River.

As to the Feather River, NMFS states that "project operations are expected to provide generally adequate flows and temperatures for spring-run Chinook salmon spawning, incubation, and rearing." NMFS AR 5935. Additionally, "Project operations in the Feather River are not expected to increase the primary threat to spring-run Chinook salmon in that river: redd super-imposition by fall-run Chinook salmon and hybridization with hatchery fish." NMFS AR 5935. "Nor are project operations expected to reduce these threats." NMFS AR 5935. These conclusions that Project operations will have no adverse effect on the Feather River population are directly contradicted by NMFS's next conclusion which states, "[o]verall, Feather River operations are expected to result in an increase of the population's vulnerability to extinction due to chronic losses of juveniles due to flow fluctuations." NMFS AR 5936. The BiOp goes on to state, "[h]arm to the Feather River population and loss of the mainstream Sacramento River population due to the direct and indirect effects of Project operations, are expected to reduce the ESU's numbers, reproduction, and distribution." NMFS AR 5936. "Continuation of and, in some cases, increases in the adverse direct and indirect effects of Project operations are expected to increase the probability of extinction of the Feather River and Sacramento River populations with little chance of recovery or re-establishment without implementation of other

recovery measures." NMFS AR 5936.

NMFS has not explained or reconciled this contradictory record evidence with the no jeopardy finding for spring run in the Feather River. NMFS's conclusion is that these two rivers (non-habitat) containing up to 30% of the spring run population, will lose 30% of the species directly to OCAP operations.

NMFS conclusory mentions but does not analyze the effects of Project actions on the recovery of the spring-run Chinook species. *See NWF v. NMFS*, 481 F.3d at 1237 (holding that "the jeopardy regulation requires NMFS to consider both recovery and survival impacts.").

The text of the BiOp speaks not of jeopardy as defined by regulation 50 C.F.R. § 402.02, but of extinction of the spring-run Chinook in the Sacramento and Feather Rivers. How extirpation of approaching one-third of the species affected by Project operations does not constitute jeopardy is not explained. NMFS's no jeopardy conclusion for the Project operations' effects on the spring-run Chinook is expressly contradicted by underlying data and opinions of the BiOp.

NMFS's inability to specifically define the spring-run's critical habitat, yet reach the conclusion that Project operations will have no adverse effect on such undefined habitat "because there is none" is a non-sequitur. The BiOp as to spring-run is incomplete, contradictory, and violates the ESA and APA because it has: (1) failed to define and consider effects on spring-run critical habitat, an important aspect of a no jeopardy § 7 BiOp; (2) failed to explain why the no jeopardy findings are contradicted by record evidence developed by the agency; and (3)

failed to adequately analyze recovery of the spring-run.

Plaintiffs' motion for summary judgment on this issue is GRANTED. Federal Defendants' cross-motion for summary judgment is DENIED.

(3) CV Steelhead.

After formal consultation, NMFS's BiOp reached the following conclusion regarding the CV steelhead:

> After reviewing the best scientific and commercial information available, the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is NOAA Fisheries biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of Central Valley steelhead. Critical habitat for Central Valley steelhead has not been designated, therefore, none will be affected.

NMFS AR 5941.

Plaintiffs correctly assert that the text of the BiOp offers a "bleak prognosis" for the CV steelhead, yet it arrives at a contradictory "no jeopardy" conclusion. For example, the BiOp's summary of the environmental baseline states: "For steelhead, the limited habitat below project dams has declined to a point where it can only support low population levels." NMFS AR 5826. In the same paragraph the BiOp states "the availability of habitat is so reduced for steelhead within the action area that remaining habitat likely cannot support a recoverable population." NMFS AR 5826. The BiOp further states:

> Abundance estimates for steelhead in three of the five project rivers in the action area (*i.e.*, the Stanislaus, Feather, and American Rivers) presently are so low that continued viability of the populations is questionable (McElhany *et al.* 2000). The resilience of these populations to any further adverse impacts to

individuals or habitat is likely to be impaired.

NMFS AR 5826.

When describing the effects of the Projects on the population impacts and potential for recovery of the CV steelhead the BiOp states:

> Overall Project impacts are likely to reduce the juvenile population by 12 to 27 percent over current conditions . . . in most years, resulting in an average total of 51 to 66 percent juvenile mortality when added to the effects of current operations. Mortality in the upstream spawning areas is likely to increase on the American and Feather Rivers due to flow fluctuations, higher temperatures, and low flows.

NMFS AR 5938.

The BiOp goes on to state that the CV steelhead ESU "has been reduced to small, remnant populations both inside and outside the Project action area, and the most recent available data indicate that the natural population is continuing to decline . . . ." NMFS AR 5936. Additionally, the limited habitat below Project dams has declined in quality to a point where it can only support low population levels. NMFS AR 5936. The "[s]patial structure for [CV] steelhead is fragmented and reduced by elimination or significant reduction of the major core populations . . . that provided a source for the numerous smaller tributary and intermittent stream populations . . . ." NMFS AR 5937. "Tributary populations can likely never achieve the size and variability of the core populations in the long-term, generally due to the size and available resources of the tributaries." NMFS AR 5937.

The final paragraph discussing the population impacts and potential for recovery states:

> Given the trends observed in the [CV] steelhead populations throughout the action area, continuation of past project impacts and expected increases in losses of juveniles due to both future demands and early consultation actions, NOAA Fisheries expects that the proposed project operations under both formal and early consultation will increase the likelihood of steelhead population extinction in most Project Rivers. As a result, the ESU would be rendered more vulnerable to demographic and other stochastic extinction processes by reductions in the number of populations, population abundances, ESU diversity, and spatial distribution. Based on recent status and trends, the current ESU is comprised of several populations all with high probabilities of extinction. Minor increases in the likelihood of extinction of one or more populations within such a species could have measurable impacts on the regional probability of extinction, based on the proportional relationship between local and regional probabilities of persistence in species.

NMFS AR 5938-39.

This BiOp analysis paints a dark picture and anticipates regional extinction of CV steelhead populations resulting from project operations and cumulative effects in most Project rivers. Contrary to this materially negative evidence, NMFS's conclusion that no jeopardy to the species will occur and there will be no adverse effect on critical habitat because there is none, is the diametric opposite of the AR evidence.

The BiOp is also legally incomplete as it does not address the impacts to recovery of the CV steelhead species. ***NWF v. NMFS***, 481 F.3d at 1236-38 ("the jeopardy regulation requires NMFS to consider both recovery and survival impacts."). The Federal Defendants and DI concede that "further explanation" is needed regarding NMFS's no jeopardy conclusion for the CV steelhead species.

As to critical habitat, Federal Defendants and DI admit the BiOp fails to define or analyze the CV steelhead habitat, an

abdication of this ESA responsibility. Where, as here, critical habitat is unidentified and unanalyzed because there is "none," NMFS has no basis to opine on the Projects' effects on such non-existent "habitat." It is telling that critical habitat was designated for the CV steelhead by September, 2005. For these reasons, the BiOp's conclusion that Project operations under the 2004 OCAP will not jeopardize the CV steelhead survival and recovery is arbitrary, capricious, and not in accordance with the law, because it is irreconcilably inconsistent with the AR evidence and not explained. The complete failure to perform critical habitat analysis is a further violation of the ESA.

Plaintiffs' motion for summary judgment is GRANTED. Federal Defendants' cross-motion is DENIED.

b. Whether NMFS Failed to Conduct Any Analysis of Project Impacts in the Context of the Species' Life Cycles and Population Dynamics.

Plaintiffs contend that NMFS failed to analyze the Projects' impacts on winter-run Chinook, spring-run Chinook, and CV steelhead life cycles. NMFS admits that the analysis of salmonid life cycles requires additional explanation. Specifically, NMFS asserts it thoroughly discussed the species lifecycles, but additional explanation is appropriate to ensure conformity with the Ninth Circuit's decision in ***NWF v. NMFS***, 481 F.3d at 1236 and ***NRDC v. Kempthorne***, 506 F. Supp. 2d 322. The DI contend NMFS properly considered Project impacts on the species life cycles and concluded that Project operations would not jeopardize the species.

In ***NWF v. NMFS***, the court affirmed the district court's

rejection of a biological opinion that failed to "consider near-term habitat loss to populations with short life cycles." ***NWF v. NMFS***, 481 F.3d at 1224. "NMFS must consider near-term habitat loss to [species] with short life cycles." In that case, the biological opinion found that the proposed operations would have significant negative impacts on each of the species' (sockeye salmon) critical habitat in the short term, despite planned mitigation efforts. *Id.* at 1240. The court found that NMFS "did not adequately demonstrate that these impacts would not affect the fishes' survival and recovery, in light of their short life-cycles and current extremely poor habitat conditions." *Id.* The NWF Project resulted in degraded habitat conditions for five years before improvement in the sixth year. No sufficient provision was made for the sockeye species that had a two year life cycle.

Here, Plaintiffs argue NMFS failed to analyze Project impacts on the species prospect for survival and recovery. The AR finds that winter-run Chinook spawn after three years. In most cases, this defines the life cycle of spawning winter-run, estimated between 56% and 87% of the species. NMFS AR 5789. NMFS admits as much by its undertaking to provide analysis in light of the recent case law. The BiOP does discuss in great detail species life history and population dynamics of chinook salmon, *see*, NMFS AR at 5787-95, and steelhead, *see*, NMFS AR at 5799-5803. However, the BiOp does not analyze proposed project impacts on these species in relation to their actual life expectancy. For example, the BiOp found that proposed operations will increase temperature-related losses to eggs and fry of

winter-run Chinook by moving the TCP to Balls Ferry and estimated early life stage mortality will increase from 41 percent to 44 percent in critically dry years. NMFS AR 5845.

The BiOp does not make estimates of temperature-related mortality or sublethal effects on adult salmon from relocation upriver of the temperature control point, nor flow diversions to the Central Delta, or predation, although, it does acknowledge these effects will occur. NMFS AR 5834-52, 5834, 5876-5901, 5923-34. The BiOp provides estimates of juvenile mortality due to entrainment at the pumps and indirect effects such as poor water quality and predation without relating and analyzing these effects to the decreased number of fish that make it to the juvenile stage as a result of egg and larval mortality or decreased number of spawning adults. NMFS AR 5896-97, 5923-28, and 5930-31. DI rejoin that each life stage is discussed in terms of temperature management as a whole. With respect to the winter-run Chinook, the BiOp also recognizes an increased likelihood that an individual class year may be significantly reduced by drought conditions.

While NMFS identified impacts on the species due to proposed changes in Project operations, it did not fully explain and analyze the impacts on most life stages of the salmon and steelhead species' in view of chances for survival and recovery, except to conclude that one to two years of critically dry conditions would not be problematic," although winter-run spawners have a three year life cycle. NMFS AR 5933-34. DI ignore the Ninth Circuit's command that NMFS "must consider near-term habitat loss to populations with short life cycles," as it

specifically applies to this case. ***NWF v. NMFS***, 481 F.3d 1224. It is recognized that the law is evolving however, where, as here, non-spawning survivors in the species have five to six year life-expectancies, it is unnecessary to hold the BiOp unlawful or arbitrary and capricious, on this issue, on which it is incomplete on the condition NMFS complete the agreed additional analysis and explanation it has committed to provide.

Plaintiffs' motion for summary judgment is DENIED upon the condition that NMFS complete the required ESA analysis on the three species' life cycles and population dynamics as informed by continuing changes in the law. Federal Defendants' cross-motion is DENIED.

c. Whether NMFS's Focus on Incremental Project Impacts Arbitrarily Ignored Significant Adverse Effects Associated With Baseline Conditions and is Unsupported by the BiOp's Findings.

Plaintiffs contend NMFS impermissibly based its no jeopardy and no adverse modification conclusions on the incremental effects of Project operations rather than analyzing Project impacts "within the context of other existing human activities that impact the listed species;" i.e., the entire agency action. NMFS concedes that its analysis of baseline conditions needs further explanation to ensure that this BiOp conforms with ***NWF v. NMFS***, 481 F.3d 1236, and ***NRDC v. Kempthorne***, 506 F. Supp. 2d 322. The DI again seek to overcome the Agency's admission by contending NMFS properly considered baseline conditions and analyzed the combined direct and indirect impacts of baseline Project operations in combination with the additional impacts

caused by proposed future operations. This contention requires no further discussion in view of Federal Defendants' concession.

The Interagency Cooperation regulations promulgated under the ESA assign NMFS the following responsibilities during formal consultation:

> (1) Review all relevant information provided by the Federal agency or otherwise available. Such review may include an on-site inspection of the action area with representatives of the Federal agency and the applicant.
>
> (2) Evaluate the current status of the listed species or critical habitat.
>
> (3) Evaluate the effects of the action and cumulative effects on the listed species or critical habitat.
>
> (4) Formulate its biological opinion as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

50 C.F.R. § 402.14(g)(1)-(4).

In *NWF v. NMFS*, the Ninth Circuit affirmed a district court's conclusion that the disputed biological opinion in that case impermissibly failed to incorporate degraded baseline conditions into its jeopardy analysis. *NWF v. NMFS*, 481 F.3d at 1235. The NWF biological opinion "evaluated the effects of the proposed action as compared to the reference operation, rather than focusing its analysis on whether the action effects, when added to the underlying baseline conditions, would tip the species into jeopardy." *Id.* The court rejected NMFS's interpretation of the jeopardy regulation that NMFS may satisfy the ESA by comparing the effects of proposed operations on listed species to the risk posed by baseline conditions, and only if

those effects are "appreciably" worse than baseline conditions must a full jeopardy analysis be made. *Id.* Under this approach, the court noted, a listed species could be gradually destroyed, so long as each step on the path to destruction was sufficiently modest. *Id.* The court concluded "[t]his type of slow slide into oblivion is one of the very ills the ESA seeks to prevent."

"[W]here baseline conditions already jeopardize a species, an agency may not take action that deepens the jeopardy by causing additional harm." *Id.* at 1236. The approach enunciated by the court in ***NWF v. NMFS*** "does not require NMFS to include the entire environmental baseline in the 'agency action' subject to review." *Id.* "It simply requires that NMFS appropriately consider the effects of its actions 'within the context of other existing human activities that impact the listed species." *Id.* "[T]he proper baseline analysis is not the proportional share of responsibility the federal agency bears for the decline in the species, but what jeopardy might result from the agency's proposed actions *in the present and future human and natural contexts*." *Id.* (emphasis in original).

NMFS included in the BiOp a 10-page description and summary of the environmental baseline for the winter-run Chinook, spring-run Chinook, and CV steelhead species. NMFS AR 5817-5826. The ENVIRONMENTAL BASELINE section of the BiOp (section IV) begins with a description of the status of each species. NMFS AR 5817-18. Next, the BiOp lists and describes factors affecting the species in the action area. NMFS AR 5819-5824. These factors include habitat blockage, which include Project dams, NMFS AR 5819-20; water development activities, which include constraints

such as the CVPIA, SWRCB water quality control plans, the 1993 BiOp, the 1995 Delta Smelt Opinion, the Coordinated Operating Agreement, and other agreements, NMFS AR 5820-21; invasive species that impact the growth and survival of juvenile salmonids including striped bass, largemouth bass, sunfish, Asian clams, and the water hyacinth plant species, NMFS AR 5821; sportfishing, NMFS AR 5821-22; ecosystem restoration, NMFS AR 5822-24; and ESA § 10 permits covering research, NMFS AR 5824. The ENVIRONMENTAL BASELINE sections conclude with a summary of the environmental baseline, although no mortality numbers are included. NMFS AR 5824-26.

In the INTEGRATION AND SYNTHESIS OF THE EFFECTS section of the BiOp (section VII), NMFS used the following methodology to measure and analyze the effects of proposed Projects on the listed species:

> [This section of the BiOP] summarizes the physical, chemical, and biotic effects of the proposed operation of the Central Valley Project and State Water Project and their interrelated and interdependent actions to determine (a) if those effects can be expected to reduce the reproduction, numbers, or distribution of threatened or endangered species in the action area, (b) determine if any reductions in reproduction, numbers, or distribution would be expected to appreciably reduce the affected population's likelihood of surviving and recovering in the wild, and (c) if appreciable reductions in the population's likelihood of surviving and recovering in the wild would cause appreciable reductions in the ESU's likelihood of surviving and recovering in the wild.

NMFS AR 5917-18.

The BiOp compares CV steelhead fry and egg mortality caused by the Projects with baseline mortality, compares average loss at the pumps with baseline loss to determine impacts, and discusses incremental differences in fish mortality due to project

operations in the Delta. NMFS AR 5921-31. The "Population Impacts and Potential for Recovery" subsection of the INTEGRATION AND SYNTHESIS OF THE EFFECTS section contains two tables summarizing (1) the expected effects of the proposed actions, and (2) the expected effects of current operations on the winter-run Chinook, spring-run Chinook, and CV steelhead species. NMFS AR 5930-31 (Tables 9 and 10).

Table 9 includes a summary of the direct and indirect impacts of the proposed actions and interrelated and interdependent actions, where quantification was possible. NMFS concluded "[o]verall Project effects are expected to result in the loss of an additional 3 to 20 percent of the winter-run Chinook salmon juvenile population, 5 to 20 percent of the spring-run Chinook salmon juvenile population, and 12.5 to 27.5 percent of the steelhead juvenile population over baseline conditions." NMFS AR 5930-31.

Table 10 includes a summary of the expected effects of current operations on the winter-run Chinook, spring-run Chinook, and CV steelhead species in terms of the percentage loss to juvenile and adult life stages. NMFS concluded "[c]urrent operations result in the loss of 42 percent of the winter-run Chinook salmon juvenile population, 37 percent of the spring-run Chinook salmon juvenile population, and 39 percent of the steelhead juvenile population assuming that 33% of the population dies in the delta due to indirect effects of the project." NMFS did acknowledge some of this mortality may occur with or without the Projects, but without quantification.

Extrapolating the numbers provided by NMFS in tables 9 and

10, yields the following overall effects of proposed Project operations when added to the baseline conditions.

EFFECTS	WINTER-RUN CHINOOK	SPRING-RUN CHINOOK	STEELHEAD
Baseline juvenile mortality due to current Project operations	42%	37%	39%
Additional juvenile mortality due to proposed Project operations	3% – 20%	5% – 20%	12.5% – 27.5%
TOTAL JUVENILE MORTALITY	45% – 62%	42% – 57%	51.5% – 66.5%

NMFS AR 5930-32. The extrapolated totals, when proposed effects from Project operations are added to baseline conditions, results in total increases in juvenile mortality for winter-run Chinook from 42% to a minimum of 45% and as high as 62%. Juvenile mortality increases from 37% to a minimum of 42% and as high as 57% for spring-run Chinook salmon. Juvenile mortality increases from 39% to a minimum of 51.5% and as high as 66.5% for CV steelhead.

NMFS reached its no jeopardy conclusion based on whether incremental impacts, *i.e.*, impacts resulting from proposed operations, limiting the analysis to only proposed Projects that have come or are coming on-line, would jeopardize the listed species; rather than basing its conclusion on an analysis of the overall effects of proposed Project operations added to baseline

conditions. The ESA requires NMFS's focus and analysis to address all the combined effects on the listed species of losing between 45% to 62% of winter-run Chinook juveniles, 42% to 57% of spring-run Chinook juveniles, and 51.5% to 66.5% of steelhead juveniles, rather than limiting the "effects" to incremental losses due to proposed operations of 3% to 20% (winter-run Chinook), 5% to 20% (spring-run Chinook), and 12.5% to 27.5% (steelhead). NMFS has undertaken to remedy any shortcoming or ambiguity in this area of concern.[9] Such compliance should bring the BiOp into conformity with the evolving law. A finding of illegality is not required absent NMFS's failure to do so.

Plaintiffs' motion for summary judgment is DENIED, conditioned upon NMFS completing its incremental Project impacts in relation to baseline conditions. Federal Defendants' cross-motion is DENIED based on their acknowledgment remand for compliance is necessary.

d. Whether NMFS Failed to Conduct a Comprehensive Analysis of Impacts Associated With the Entire Federal Action During Formal Consultation.

Citing *Conner v. Burford*, 848 F.2d 1441, 1457-58 (9th Cir. 1988), Plaintiffs contend NMFS has not prepared a biological opinion assessing the effects of the "entire agency action" (in

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[9] This BiOp suffers from the same defects as the biological opinion at issue in ***NWF v. NMFS***, although ***NWF v. NMFS*** was decided approximately two and one-half years after issuance of the BiOp and approximately one year before the Bureau reinitiated consultation on the BiOp. On remand, NMFS must ensure its forthcoming biological opinion is consistent with ***NWF v. NMFS***.

this case the actions contained in the 2004 OCAP) rather than bifurcating or phasing discrete parts of the entire agency action into formal and early consultation. Plaintiffs also contend NMFS cannot avoid considering the impacts of certain "interrelated or interdependent project components" by deferring such consideration to future, site-specific consultations.

Plaintiffs contend NMFS improperly bifurcated its analysis of project impacts resulting in an incomplete analysis under formal consultation, the BiOp ignored impacts associated with construction of the facilities necessary to carry out long-term CVP and SWP operations, and the BiOp only considered a fraction of the total amount of water service contract deliveries it authorizes. The Federal Defendants and DI contend this court rejected the same arguments in *NRDC v. Kempthorne*, 506 F. Supp. 2d at 382-87, and should do the same here.

The ESA requires NMFS to address impacts associated with the entire agency action. *See Conner*, 848 F.2d at 1453-54 (holding that agency violated the ESA by choosing not to analyze the effects of all stages of oil and gas activity on federal lands). According to ESA regulations, the effects of an agency action include "direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." 50 C.F.R. § 402.02. "[T]he meaning of 'agency action' is determined as a matter of law by the Court, not by the agency." *Greenpeace v. NMFS*, 80 F. Supp. 2d 1137, 1146 (W.D. Wash. 2000) (citing *Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1054 (9th Cir.

1994)).

NMFS describes its approach and scope to consultation on future actions as follows:

> The purpose of the proposed action is to continue to operate the CVP and SWP in a coordinated manner to divert, store, and convey Project water consistent with applicable law. In addition to current day operations, several future facilities and actions are to be included in this consultation. These actions are: (1) increased flows in the Trinity River, (2) an intertie between the California Aqueduct (CA) and the Delta-Mendota Canal (DMC), (3) the Freeport Regional Water Project (FRWP), (4) water transfers, and (5) renewal of long term CVP water service contracts. *Early consultation* will address: (1) increased pumping at the SWP Banks Pumping Plant (referred to as 8500 Banks), (2) permanent barriers operated in the South Delta (*i.e.*, proposed as part of the SDIP) and water transfers, (3) a long-term EWA, and (4) various operational changes identified as CVP/SWP project integration. The purpose of the SDIP is to increase water supply south of the Delta, ensure water quality and quantity to agricultural diverters within the south Delta, and to reduce straying of Central Valley fall-run Chinook salmon (*O. tshawytscha*) in the south Delta (SDIP 2003). These proposed actions will come online at various times in the future. Thus, the proposed action is a) continued operation of the CVP/SWP without these actions, and b) operations as they come online.
>
> The future actions listed in the preceding paragraph are not being implemented at present (except for increased flows in the Trinity River); however, they are part of the future proposed action on which [the Bureau] requested *early consultation*. Only the water operations associated with the proposed activities are addressed in this consultation (*i.e.*, Project activities do not include construction of any facilities to implement the actions). All site-specific/localized activities of the actions such as construction/screening and any other site-specific effects will be addressed in separate action-specific section 7 consultations.

NMFS AR 5743.

NMFS offered the following explanation for dividing consultation into formal consultation and early consultation:

> After much discussion between [the Bureau] and DWR

> regarding which facilities and actions to be included in the consultation, such as operation and schedule of the permanent barriers (which are a part of the South Delta Improvement Program [SDIP]), it was agreed upon by all agencies involved in the OCAP consultation to divide the project description into two components consisting of *formal consultation* on the effects of on-going operations and facilities mentioned above[10], combined with an *early consultation*[11] on the effects of future operations in the south Delta region.

NMFS AR 5739.

Only the aspects of the 2004 OCAP that will actually be implemented without further approval were the subject of formal consultation. Other changes that may occur in the future were the subject of early consultation, but the BiOp defers future site-specific and localized activities, including construction, to be addressed in new separate § 7 consultations.

Plaintiffs contend NMFS bifurcated its analysis of Project

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[10] These operations and facilities with respect to the Bureau's facilities and actions to be addressed in the consultation, include: "ongoing operations at all CVP divisions including the Tracy Pumping Plant and Fish Collection Facility (TFCF), the CVP/SWP Intertie, implementation of the Trinity River Record of Decision (ROD) flows, and operations of the proposed Freeport Regional Water Project." NMFS AR 5739. DWR's facilities and operations addressed in the consultation "include ongoing operations of the following: the Oroville-Thermalito Complex, Harvey O. Banks Delta Pumping Plant (Banks), Clifton Court Forebay (CCF), Skinner Fish Protective Facility (SFPF), Northbay Aqueduct, and the Suisun Marsh Salinity Control Gates (SMSCG)." NMFS AR 5739.

[11] "The purpose of early consultation is to reduce the potential for conflicts between listed species or critical habitat and proposed actions which usually occur before an applicant files an application for a Federal permit or license, in this case a permit to increase pumping at Banks." NMFS AR 5739.

impacts resulting in an incomplete analysis under the BiOp's formal consultation. Plaintiffs assert the BiOp defines the proposed actions as including existing CVP and SWP operations and future operations "as they come online." Plaintiffs' main complaint is that NMFS only analyzed a subset of Project impacts under formal consultation and deferred for early consultation, impacts associated with SDIP and integration activities. Plaintiffs maintain Project components relegated to early consultation are part of a long-term management plan, and NMFS had sufficient information before it to include all proposed actions in its formal consultation analysis. According to Plaintiffs, NMFS analyzed early consultation actions at a level of detail similar to those performed under formal consultation.

Plaintiffs also contend the BiOp failed to consider interrelated and interdependent Project impacts associated with construction of new CVP and SWP facilities. Plaintiffs contend the construction of CVP and SWP facilities necessary to carry out the operations set forth in the 2004 OCAP are interrelated or interdependent with long-term CVP and SWP operations, and that construction of these facilities has no function apart from the implementation of changes to CVP and SWP operations. These actions include: (1) construction of permanent barriers associated with SDIP; (2) construction of the Intertie; (3) construction activities associated with increased diversion of water from the Sacramento River to the Freeport Regional Water Authority; and (4) increasing the effective storage capacity in the San Luis Reservoir.

All of what Plaintiffs argue may be assumed to be true,

***arguendo*, but such future Project enhancements are not now being implemented nor is any finite date set for future implementation of any of them. Without formal action pursuant to authorization and funding, all the future measures are conditional and not certain. The Plaintiffs in *NRDC v. Kempthorne* made the same arguments regarding construction of the Intertie, SDIP, and the Freeport Diversion, asserting these projects are interrelated and interdependent with the 2004 OCAP. Plaintiffs present nothing new to change that analysis that these future actions will not occur "but for" the approved actions, because they are independent actions that may or may not be implemented in the future. *NRDC v. Kempthorne* applied the "but for" test derived from the Endangered Species Consultation Handbook to determine whether these proposed actions are interrelated or interdependent so as to be considered part of the action. Using the "but for" test, "[t]he biologist should ask whether another activity in question would occur "but for" the proposed action under consultation. 506 F. Supp. 2d at 384. "If the answer is no, that the activity in question would not occur but for the proposed action, then the activity is interrelated or interdependent and need should be analyzed with the effects of the action." *Id.* "If the answer is 'yes,' that the activity in question would occur regardless of the proposed action under consultation, then the activity is not interrelated or interdependent and would not be analyzed with the effects of the action under consultation." *Id.* The question in *NRDC v. Kempthorne* is the same as it is here: whether construction and operation of SDIP, Freeport, and the Intertie are interrelated**

and interdependent with the proposed action subject to formal consultation?

As DI correctly note, that the South Delta Improvement Project and the Intertie would "comprise substantial changes in the facilities and long-term operations" does not make the proposed actions "interrelated or independent." There continues to be no evidence in the record that construction of the Freeport Diversion or the Intertie is dependent in any way upon the pre-approval of delivery of water to the Project or the Project's current operations. Future construction and operation of the South Delta Improvement Project are independent of the OCAP Project operations. The SDIP may or may not ever be constructed. Project operations under the 2004 OCAP do not depend upon the SDIP.

The formal consultation at issue here, covers delivery of CVP water to the proposed Freeport Regional Water Project and operation of the Intertie. However, the BiOp expressly excludes impacts of construction associated with these projects. With respect to future actions, only "water operations" as opposed to "construction activities" are addressed in the consultation that produced the BiOp.

> The future actions listed in the preceding paragraph [increased flows in the Trinity, the Intertie, the Freeport Regional Water Project, water transfers, renewal of long-term CVP water service contracts, increased pumping at Banks, SDIP, and the long-term Environmental Water Account] are not being implemented at present (except for increased flows in the Trinity River); however, they are part of the future proposed action on which [the Bureau] requested *early consultation*. Only the water operations associated with the proposed activities are addressed in this consultation (*i.e.*, Project activities do not include construction of any facilities to implement the

> actions). All site-specific/localized activities of the actions such as construction/screening and any other site-specific effects will be addressed in separate action-specific section 7 consultations.

NMFS AR 5743.

The Freeport Regional Water Project and the Intertie are designed to more effectively distribute CVP and SWP water. There is no record evidence that construction of either project is tied in any way to the preapproval of delivery of water to the Project. Flow operations could be approved after or simultaneously with the approval of new construction. Under the Handbook test, the future construction projects are not interrelated or interdependent with the proposed actions subject to formal consultation (Project water operations). With respect to the SDIP, the BiOp excludes its construction and operation under the 2004 formal consultation. NMFS AR 5743. Applying the Handbook analysis, the construction and operation of SDIP will not occur "but for" the approval of CVP and SWP operations in the 2004 OCAP; each action is independent of the OCAP. The SDIP is a separate addition that may or may not be constructed, and in no way do current Project operations depend on or relate to the SDIP. There is no ESA prohibition to addressing future operation and construction of these facilities in a separate § 7 consultation at the time these projects or operations are authorized, funded and actually "come online."

With respect to water contract deliveries, the BiOp explains that "renewal of long term CVP water service contracts" is one of five future actions specifically included in the 2004 OCAP consultation. Citing *NRDC v. Rodgers*, 381 F. Supp. 2d 1212,

1237-40 (E.D. Cal. 2005), Plaintiffs argue ESA § 7's mandate to consult on the entire agency action means that NMFS was required to analyze the biological effects of delivering the full amount (100%) of water that the Bureau intended to authorize for delivery under the long-term water service contracts. Instead, Plaintiffs assert that NMFS only analyzed the effects of delivering between 10% to 89% of the full amounts authorized under the long-term CVP contracts and as a result NMFS significantly underestimated the impacts of CVP deliveries.

"A biological opinion must consider the effects of the entire agency action, meaning 'all activities or programs of any kind authorized, funded or carried out,' including 'the granting of . . . contracts.'" *NRDC v. Kempthorne*, 506 F. Supp. 2d at 386 (citing 50 C.F.R. § 402.02). The Bureau delivers water to numerous contractors through long-term CVP contracts. NMFS AR 5747. The long-term CVP contracts are interrelated and are considered part of the proposed project. NMFS AR 5747.

The CALSIM II studies that incorporated water deliveries into its flow scenarios did not analyze 100% CVP contract deliveries. Rather, the analysis is based on the effects of delivering between 11% and 89% of the full CVP contract allocations. *NRDC v. Kempthorne* determined *Rodgers* was distinguishable on the grounds that it addressed the government authorization of CVP water users' long-term water service contracts, not Project operations under the 2004 OCAP. *NRDC v. Kempthorne*, 506 F. Supp. 2d at 387. Here, however, the agency action subject to consultation is not the authorization or merits of new water service contracts, rather, it is the operation of

the CVP and SWP under the 2004 OCAP and whether those operations will cause jeopardy to the survival or recovery of the winter-run Chinook, spring-run Chinook, and CV steelhead. "The government is entitled to make reasonable assumptions about the operational volume of water flows, water levels, temperature, and quality based on the historical and projected data contained in the administrative record." *Id.* NMFS was not required to analyze the effects of full contract deliveries as Plaintiffs contend.

> The agency model for the worst case scenario is indispensable. Analysis of a "best of the best" case in a wet water year is not indispensable, as such "wet" water year conditions do not present any reasonable likelihood of jeopardy, absent an additional showing. However, because such a scenario could eventuate, it is not unlawful for the agency to analyze the effects on the smelt of 100% water contract deliveries. However, the 100% delivery analysis is not required. This is a matter committed to the agency's expertise and discretion.

Id.

No analysis of the effects of 100% Project water to be delivered under future water contracts can now be made, as the form and substance of such renewed water contracts is totally in flux. Existing renewal and any new water service contracts have already been challenged in this litigation. In separate litigation, other water service agreements have been challenged. Plaintiffs have objected to any new water service contracts and the Bureau has agreed to a moratorium for existing, renewal, and new water service contracts pending the outcome of this litigation. Interim water service contract renewals are limited to two years with the possibility of extension for no more than five years.

The analysis in the *NRDC v. Kempthorne* decision that 100%

contract deliveries representing a "best of the best" case for wet water year conditions, which present no reasonable likelihood of jeopardy to the species or their critical habitat, applies to obviate the need to treat 100% of water deliveries in the BiOp.

Plaintiffs' motion for summary adjudication on the failure to address "Entire Agency Action" is DENIED. Federal Defendants' motion on this issue is GRANTED.

2. Global Climate Change and the Effects on the Hydrology of Northern California Rivers.

Plaintiffs' contend at the time the BiOp was being formulated, the best available science demonstrated that global climate change would significantly change the hydrology of Northern California's river systems. According to Plaintiffs, the BiOp's analysis relies on temperature and hydrology models that assume the same monthly temperature, hydrologic, and climatic conditions experienced in the Project area from 1922 through 1994 will continue for the future twenty-five year duration of the 2004 OCAP operations.

NMFS admits that an explanation of its conclusions on the effects of global climate change should have been included in the BiOp. NMFS states it will address global climate change in its ongoing, reinitiated ESA § 7 consultation consistent with *NRDC v. Kempthorne*. The DI also concede further explanation of the effects of global climate change is needed.

The § 7 formal consultation process is designed to "insure" that any agency action "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 which is determined . . . to be critical . . . ." 16 U.S.C. § 1536(a)(2). "In fulfilling the requirements of [§ 1536(a)(2)] each agency shall use the best scientific and commercial data available." *Id.*

An agency has wide discretion to determine what is "the best scientific and commercial data available." *San Luis & Delta-Mendota Water Auth. v. Badgley*, 136 F. Supp. 2d 1136, 1151 (E.D. Cal. 2000) (citing *Southwest Ctr. for Biological Diversity v. United States Bureau of Reclamation*, 143 F.3d 515, 523 n.5 (9th Cir. 1998). "The ESA does not explicitly limit the Secretary's analysis to apolitical considerations." *Southwest*, 143 F.3d at 523 n.5. An agency must make its decision about jeopardy based on the best science available at the time of the decision, and may not defer that jeopardy analysis by promising future studies to assess whether jeopardy is occurring. *Center for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1156 (D. Ariz. 2002). While uncertainty is not necessarily fatal to an agency decision, *e.g. Greenpeace Action v. Franklin*, 14 F.3d 1324, 1337 (9th Cir. 1992) (upholding agency decision even though there was uncertainty about the effectiveness of management measures because agency premised its decision on a reasonable evaluation of all data), an agency may not entirely fail to develop appropriate projections where data "was available but [was] simply not analyzed." *Greenpeace v. National Marine Fisheries Service*, 80 F. Supp. 2d 1137, 1149-50 (W.D. Wash. 2000).

NRDC v. Kempthorne addressed 2004 OCAP and Project impacts on the Delta smelt and determined that the FWS acted arbitrarily

and capriciously by failing to address the issue of global climate change in that Biological Opinion, finding, "the absence of any discussion in the BiOp of how to deal with any climate change is a failure to analyze a potentially important aspect of the problem." *Kempthorne*, 506 F. Supp 2d. at 370.

During the time period when NMFS was formulating this BiOp, readily available scientific data existed regarding the potential effects of global climate change on the hydrology of the Project area river systems including:

(1) Studies showing that radiative forcing (warming) had begun to increase steeply around 1970 and is expected to continue into the foreseeable future. USBR SAR 79697-99. Scientists predicted this warming would produce less snowfall, more rainfall, and earlier snowmelt, leading to major reductions in the Sierra snowpack and decreases in summer stream flow. USBR SAR 79701-02, 79704-05.

(2) Plaintiffs NRDC and The Bay Institute expressed their concern to the Bureau in July 2003 that the Draft OCAP and Draft OCAP Biological Assessment failed to consider climate change effects and provided references for several studies and reports on climate change effects on water availability in the Western United States. NMFS AR 1662-64. These concerns were ignored.

The BiOp does not discuss this global climate change data or mention that NMFS, at a minimum, considered this data. Instead, the BiOp relies on past hydrology and temperature models that assume the historical monthly temperature, hydrologic, and

climatic conditions experienced from 1922 through 1994 will continue for 25 years through the duration of the 2004 OCAP operations. These assumptions were challenged as without basis in then-available science. NMFS AR 5828-31.

Plaintiff's motion for summary adjudication is GRANTED as to the climate change claim issue based on NMFS's total failure to address, adequately explain, and analyze the effects of global climate change on the species. Federal Defendants' cross-motion is DENIED.

3. Sufficiency of Adaptive Management Plan and Mitigation Measures.

Plaintiffs dispute that the adaptive management plan and all formulated action and mitigation measures are sufficient, certain, or enforceable.

The principal action measures are: (1) movement of the Sacramento River temperature compliance point (TCP) upstream from Bend Bridge to Balls Ferry; (2) changing the 1.9 MAF COS requirement for Shasta Reservoir to a target; and (3) the operation of the RBDD. Plaintiffs further complain about future use of Environmental Water Account assets to reduce Project effects and the potential for increased exports resulting from the South Delta Improvement Project.

As Federal Defendants and DI correctly observe, the action-mitigation measures described in the Population Impacts section of the BiOp (NMFS 5930-40), are made part of the "Terms and Conditions" of the BiOp, each of which is a specific part of the Incidental Take Statement ("ITS"), enforceable under civil and

criminal law, the ITS provides take coverage for Project operations. NMFS AR 5953-68. The ITS characterizes the "Terms and Conditions" as "non-discretionary" and that Reclamation and DWR must comply or ensure compliance by their contractor(s) "with the following terms and conditions, which implement the reasonable and prudent measures described above." NMFS 5953.

Each of the operational concerns Plaintiffs advance, Sacramento River temperature controls, Shasta Reservoir COS and RBDD passage and operations are specifically prescribed by the BiOp's Terms and Conditions and are subject to enforceable definite and certain requirements as specifically analyzed below. It is well established that any biological opinion's ITS constitutes a permit authorizing the agency action to "take" the endangered or threatened species so long as the agency respects those terms and conditions. *Bennett v. Spear*, 520 U.S. 154 at 169-70 (1997).

By contrast, the Delta Smelt BiOp in the *NRDC v. Kempthorne* case, prescribed mitigation measures in a Delta Smelt Risk Assessment Matrix that had no finite standards which were enforceable through the ITS. Adaptive management of mitigation measures delineated by the ITS Terms and Conditions has been employed for a number of years and DI argue, these measures are working to increase winter-run population and returning adults from a low of 186 in 1994 to nearly 10,000 in 2003. NMFS AR 5791-92. DI refer to returning adult spring-run from 1,403 fish in 1993 to more than 8,500 in 2000 and 2003. The efficacy of this analysis has been discussed above.

a. Temperature Control.

Project operations affect salmon which travel from their spawning grounds to and from the ocean. The BiOp contains the following reasonable and prudent measure:

> Reclamation shall manage the cold water supply within Shasta Reservoir and make cold water releases from Shasta Reservoir to provide suitable habitat for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley Steelhead in the Sacramento River between Keswick Dam and Bend Bridge.

NMFS AR 5950. The Supreme Court has defined the word "shall" used in a BiOp to generally indicate a command that admits of no discretion on the part of the person instructed to carry out the directive. *National Ass'n of Home Builders, supra*, 127 S.Ct. at 2531.

The following temperature control obligation is non-discretionary in the BiOp:

> Reclamation shall target daily average water temperatures in the Sacramento River between Keswick Dam and Bend Bridge as follows:
>
> > I. Not in excess of 56°F at compliance locations between Balls Ferry and Bend Bridge from April 15 through September 30 and not in excess of 60°F at the same compliance locations between Balls Ferry and Bend Bridge from October 1 through October 31, provided operations and temperature forecast demonstrate the capability to achieve and sustain compliance.

NMFS AR 5956.

This 56°F requirement was established by State Water Resources Control Board Order 90-5, issued May 2, 1990. Consultation is required with the SWRCB if the Bureau seeks to designate a temperature compliance point upstream of RBDD. USBR AR 06741. Because hydrologic conditions can limit

controllability of upstream operations to an inopportune period of time or upstream of Bend Bridge, the Bureau must maintain daily average water temperature at 56°F at Bend Bridge or other locations upstream, depending upon actual hydrology. USBR AR 07859. This is necessary because mortality of eggs and pre-emergent fry commences at 57°F and reaches 100% at 62°F. (Boles 1988) 1993 NMFS BiOp, USBR AR 7832.

In dry and critical years the Bureau must initiate consultation with concerned agencies regarding temperature control. USBR AR 07860. In fact, in all but two "wet" years since 1993, the Bureau and NMFS have re-consulted to adjust the temperature compliance point upstream of Bend Bridge toward Balls Ferry in accordance with the fact that most salmon redds and incubating eggs are located above Balls Ferry. NMFS AR 5843. Unlike the Delta Smelt Remedial Action Matrix, here, a finite 56°F enforceable temperature requirement is set between Balls Ferry and Bend Bridge, with adaptive management only used where compliance cannot be achieved, and actual reinitiation of consultation with NMFS is required before the Bureau announces annual CVP water delivery allocations. NMFS AR 5956.

Recognizing that in lower storage years at Shasta, the temperature compliance point has been adjusted using finite criteria:

May 1 Shasta Cold Water Volume Below 52°F	Compliance Target
<3.3 MAF	Balls Ferry
>3.3 MAF but < 3.6 MAF	Jellys Ferry

>3.6 MAF	Bend Bridge

NMFS AR 5957. This temperature control protocol requires maintenance of the 56°F ceiling. In the event of noncompliance, consultation and alternative compliance is required and has actually occurred and water allocation measures have been implemented in 8 of 10 years prior to the 2004 BiOp. No more is required.

b. Shasta Carryover Storage.

For Shasta COS, the ITS non-discretionary Terms and Conditions specify:

> Reclamation shall target a minimum end-of-year (September 30) carryover storage in Shasta Reservoir of 1.9 MAF for improvement of cold water resources in the following water year.

NMFS AR 5956.

Plaintiffs maintain that the use of the term "target" eliminates a definite and enforceable requirement for Shasta Reservoir COS that was mandated by the 1993 BiOp. DI rejoin that the record shows there was never a mandatory requirement for carryover at Shasta that applied in all years. Although the 1.9 MAF is a target, the Bureau must consult with NMFS before it announces water delivery allocations for any year that annual water conditions do not support temperature control compliance at Balls Ferry. NMFS AR 5956. NMFS may object to delivery allocations that reduce the ability to meet temperature control at the location which exists to protect spawning adults and incubating eggs. The Bureau must still reinitiate consultation

with NMFS before the first water allocation announcement in February if the Bureau's forecast projects carryover storage levels drop below 1.9 MAF at the end-of-water-year. SWRCB Order 90-5.

c. SWRCB Order 90-5.

As a practical matter this criteria is enforceable, as more than two consecutive dry water years with rising temperatures at TCP require reinitiation of consultation. USBR AR 07857-58; NMFS AR 5956. Term and Condition No. 5 requires the Bureau to explain to NMFS in an annual forecast, how the Bureau will comply with the Order 90-5 temperature mandates. NMFS AR 5955 (requiring forecast of deliverable water).

d. Red Bluff Diversion Dam.

To provide upstream and downstream passage at RBDD the BiOp includes the following requirements:

> Reclamation shall implement all measures practicable to provide unimpeded passage upstream and downstream at the Red Bluff Diversion Dam during the period of September 1 through June 30 each year.
>
> A. As a minimum, Reclamation shall provide unimpeded upstream and downstream passage at the Red Bluff Diversion Dam from September 15 through May 14 each year.
>
> B. NOAA Fisheries will review proposals for early gate closures (prior to May 15) of up to ten days, one time per year, only in emergency situations where the alternative water supplies (i.e., new 4th Pump at Red Bluff Pumping Plant and Stony Creek) are unable to meet TCCA demands. Reclamation will reopen the gates for a minimum of five consecutive days, prior to June 15 of the same year in a manner that will be least likely to adversely affect water deliveries.
>
> C. Reclamation shall further investigate and implement

> all practicable opportunities, including improvement to fish ladders, to improve or provide unimpeded upstream and downstream passage at Red Bluff Diversion Dam from May 15 through June 30 and September 1 through September 15 each year.
>
> D. Reclamation in coordination with FWS and DFG, shall further investigate the results of blockage or delays in the migration of adult Sacramento winter-run Chinook salmon and Central Valley spring-run Chinook salmon at the RBDD as a result of gate closures between May 15 and June 30 and from September 1 through September 15. Written reports shall be provided by to NOAA Fisheries as investigations are completed.

NMFS AR 5959.

These enforceable Terms and Conditions are imposed with the mandatory "shall" and impose a non-discretionary obligation during specified time periods. If early closure of the RBDD gates is necessary, adaptive management may be implemented by NMFS.

e. The Environmental Water Account.

Plaintiffs raise again the argument that mitigation measures cannot rely upon "environmental water" because there is no finite certainty the environmental water account will be adequately funded in the future. The Court has previously ruled that:

> The EWA is simply a means by which the SWP and the CVP can obtain water by purchasing it from willing sellers. EWA water may be used either to protect fish or to compensate Project water users for reduced exports at the Project pumps. If money is unavailable to fund the EWA, Defendants are nonetheless required to prevent smelt take from exceeding permissible take limits.
>
> There is a difference between the DSRAM's failure to require mitigation actions in response to trigger events, designed to assure the commitment of necessary resources to smelt protection, and the duty to have available or acquire those necessary resources. A court must leave to the agency the application of its expertise and authority to manage the complex hydrological, legal, financial, physical and logistical

aspects of protecting the Delta smelt.

NRDC v. Kempthorne, 506 F.Supp.2d at 358-59. There is no reason to disturb this ruling.

f. South Delta Improvement Program.

This issue has also been decided in the Smelt BiOp Order:

> The SDIP is a separate addition that may or may not be constructed. Project operations under the 2004 OCAP in no way depend upon the SDIP. There is no prohibition to addressing future operations, if and when the construction of the SDIP will occur, in a separate consultation.

506 F.Supp.2d at 386. In this case the SDIP was treated in the BiOp as a matter for early consultation. NMFS AR 5739. Early consultation regarding salmonids does not result in incidental take protection. NMFS AR 5968. The reasoning of the *Kempthorne* decision has equal applicability. There is no legal impediment to address future operations of the SDIP, if and when it will be constructed, a separate ESA § 7 consultation must then be performed.

In this case, the BiOp's mitigation measures are included in the Terms and Conditions of the Incidental Take Statement, are declared to be "non-discretionary" by the BiOp, and are enforceable. For all the reasons described above, the mitigation measures are definite, and sufficiently certain to be enforceable. Their prescription and implementation are within the agency's reasonable discretion to which deference is owed. These measures strike the appropriate balance between the needs of certainty and flexibility prescribed by law.

Plaintiffs' motion for summary adjudication regarding mitigation measures and adaptive management is DENIED. Federal Defendants' cross-motion for summary judgment is GRANTED.

E. Bureau Claims.

1. The Bureau's § 7(a)(2) Obligations.

Plaintiffs' claim that the Bureau, as the action agency unjustifiably relied on and accepted the NMFS BiOp, which NMFS produced as the expert consulting agency. The action agency decides "whether and in what manner to proceed with the action in light of its § 7 obligations and the Service's Biological Opinion." 50 C.F.R. § 402.15(a). The relevant inquiry is not whether the BiOp itself is flawed, but rather whether the action agency's reliance on the BiOp was arbitrary and capricious. *City of Tacoma, Washington v. FERC*, 460 F.3d 53, 75-76 (D.C. Cir. 2006).

City of Tacoma interprets Ninth Circuit cases which recognize that reliance on a facially flawed BiOp would "likely be arbitrary and capricious," but held the action agency "need not undertake a separate, independent analysis" of the issues addressed in the BiOp. *City of Tacoma*, 460 F.3d at 75-76, citing *Aluminum Co. of Am. v. Adm'r Bonneville Power Admin.*, (*ALCOA v. BPA*) 175 F.3d 1156, 1160 (9th Cir. 1999). One test to determine if the Bureau could lawfully rely on the BiOp, is whether "new information" was available to the Bureau when it conducted its biological assessment and consultation, that NMFS did not take into account during formal consultation, was contradictory to NMFS's conclusions. Plaintiffs here do not assert that the

Bureau was presented with nor do they identify new information before October 22, 2004, unavailable to NMFS, that gave the Bureau a basis for doubting the expert conclusions in the NMFS BiOp. See *City of Tacoma*, 460 F.3d at 76. Here, when the Bureau received new information, § 7 consultation was reinitiated.

The government correctly cites *Pyramid Lake Paiute Tribe of Indians v. U.S. Dept. of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990) for the proposition that an action agency's reliance on the consulting expert agency's BiOp is reviewable under the APA. The government questions the continued viability of Pyramid Lake in view of later U.S. Supreme Court authority, *Bennett v. Spear*, 520 U.S. 154 (1997). The government overstates the prerogative of the agency not to perform its own analysis, by citing *ALCOA v. BPA*, 175 F.3d at 1162. Although the action agency is not required to rewrite the consulting expert agency's BiOp even where the agencies disagree, the action agency nonetheless must perform its own analysis in adopting a BiOp. *City of Tacoma*, 460 F.3d at 75-76.

While an action agency cannot rely on a "facially flawed" BiOp, Federal Defendants appropriately argue the Bureau's civil engineers and biologists, as operators and managers of the CVP, had no duty to second guess or rewrite the 2004 NMFS BiOp, but erroneously conclude the Bureau had no obligation to recognize whether that BiOp was fatally flawed. Federal Defendants argue that the Bureau considered and provided to NMFS all information the Bureau had that bore on the issues Plaintiffs raised and supplied NMFS with new information as it became available after considering such information, which caused it to reinitiate

consultation, and implement additional protective measures in view of the ongoing consultation. This contention requires scrutiny.

a. Consideration of Evidence and Consultation Under § 7.

Plaintiffs argue that NMFS scientists reached jeopardy opinions based on available evidence and data, but were "ultimately overridden." This is a political bad faith contention. In response to a letter by members of Congress questioning an investigation of the Bureau's "political" role in the 2004 BiOp consultation focused on a bad faith inquiry, the Department of the Interior's Office of the Inspector General report of investigation found: "No BOR employees or contractors tried to influence the consultation process," and that all changes to the 2004 NMFS BiOp could "accurately be described as the result of 'commonplace' collaboration." USBR CD #4a AR 80263-80269. The government specifically points to the Bureau's 776 page biological assessment (OCAP BA) USBR CD #3 AR 04840-05615 as evidence that the Bureau consulted, analyzed, and provided substantial input on the issues raised by Plaintiff, demonstrating the Bureau's independent efforts to insure § 7 compliance through an active and collaborative, ESA § 7 consultation process.

The Federal Defendants and DI emphasize the incremental annual increases and ignore the balance of substantial record evidence showing continuing adverse conditions discussed above for each species and its critical habitat or "non-habitat." The

Bureau did not recognize or address such inconsistencies and contradictions for each species.

b. The Mitigation Standards.

Plaintiffs' "uncertain and unenforceable mitigation standards" claim has been resolved above. The Bureau's OCAP BA, Chapter 15, describes how mitigation measures implemented by the agencies will "mitigate losses of salmon, Delta smelt, and steelhead that cannot reasonably be avoided," USBR AR 05550-05561, through measures including CVPIA (b)(2) water, Delta Pumping Plant Fish Protection Agreement (Four Pumps Agreement), the Tracy Fish Collection Facility Direct Loss Mitigation Agreement, and the California Bay-Delta Authority. The Bureau discussed and analyzed mitigation measures, including (1) temperature management to minimize salmon mortality; (2) implementation of CVPIA § 3406(b)(2) providing 800,000 AF of CVP yield for environmental and fish recovery purposes; (3) the EWA Program; (4) Trinity River releases at Lewiston Dam; (5) regulation of flows and protection of salmonid migration; (6) spawning and incubation in Clear Creek, Sacramento River and American River; and (7) drought management measures. USBR AR 05152-05153, 05218-05225. The Bureau thereby employed its own expertise and performed its own independent analysis of how mitigation and minimization efforts would ensure compliance with ESA § 7. Plaintiffs' criticisms of the temperature compliance point management regime; CVPIA (b)(2) water implementation; and related flow measures were rejected in the *NRDC v. Kempthorne* smelt decision. This analysis has not changed. Reasonable

experts differ on these issues. Deference is owed to the Agency. The Bureau performed its § 7 responsibilities as to the BiOp for mitigation measures.

Plaintiffs' motion for summary adjudication of this issue is DENIED. Federal Defendants' cross-motion on this issue is GRANTED.

c. Internal Contradictions.

The Bureau's OCAP BA explained the agency expected the impacts that would occur would not "wipe out" critical habitat or entire populations as argued by Plaintiffs. Federal Defendants argue that the OCAP BA repeatedly and adequately focused on protection of salmonids and their habitat including Trinity River Chinook salmon essential fish habitat that increased flows in the spring for the restoration program to aid out-migrating Chinook so smolt survival should increase with mitigation measures, centered around temperature control and Shasta COS. As discussed above, the Bureau did not address contradictory evidence in the record. Three aspects that were facially apparent and not discussed were Global Climate Change, recovery of the species and the failure to designate and analyze critical habitat for spring-run and CV steelhead. This is a complete failure to analyze and address an important ESA statutory protection for two of the species.

As earlier analyzed, two of the species, spring-run, at moderate risk of extinction and CV steelhead, experiencing an ever-diminishing habitat range, with the ESU reduced to small, remnant populations both inside and outside the Project action

areas, and the most recent available data indicates the natural population is continuing to decline, NMFS AR 5936, and likely extirpation from the Sacramento River are at risk, even in light of increases in tributary populations. Substantial question exists whether the Bureau's biologists justifiably accepted this contradictory evidence.

Plaintiffs' motion for summary judgment on this issue is GRANTED. Federal Defendants' cross-motion on the issue of BiOp inconsistencies is DENIED.

d. Global Climate Change.

The Bureau's OCAP BA did not discuss global climate change, although the BA refers to three scientific articles: (1) Beamish et al., (1993) Pacific Salmon Production Trend in Relation to Climate; (2) Beamish, et al., (1998) Large Scale Climate Related Changes in the Carrying Capacity of Salmon in the Strait of Georgia and Northern North Pacific Ecosystem; and (3) McGowan et al., (1998) Climate-Ocean Variability and Ecosystem Response in the Northeast Pacific. USBR AR 5564, 5591. This continues to be an area completely untreated by the Agencies.

The Bureau discussed salinity changes, which affect Delta smelt. USBR AR 05135. DIs' contention that X2 is "affected by climate" is not an analysis of continuing climate change as related to salmonids.

The true fact is that the word "climate" only appears four times in the Bureau's OCAP BA, once in the text of the BA, three of these cites are found in the reference section that cites the article's titles. It is disingenuous to suggest based on the BA

that the Bureau considered global climate change. Neither the BA or the NMFS BiOp did so.

Federal Defendants, including the Bureau, have acknowledged that the BiOp must be remanded to remedy this failure. This facial inadequacy, even if known to the Bureau, USBR AR 489 (Plaintiffs' letter re climate change); NMFS AR 1653, was arguably not then required by established law.

Plaintiffs' motion for summary adjudication on this ground is DENIED conditioned upon REMAND and completion by the Bureau of a legally sufficient BA that considers Global Climate Change. Federal Defendants' cross-motion is DENIED.

e. Temperature Control Point.

The TCP was a subject of substantial debate between NMFS and the Bureau. There was disagreement, the matter was extensively considered. The Bureau relied on SWRCB Order 90-05 and Water Rights Order 91-01 authorizing modification of the water temperature compliance point when temperature objectives cannot be met at RBDD. USBR AR 04937-04938.

The Bureau, in two separate sections of the OCAP BA, discussed its approval of a flexible TCP. The OCAP BA at 0941 states:

> Locating the target temperature compliance at Balls Ferry (1) reduces the need to compensate for the warming affects of Cottonwood Creek and Battle Creek during the spring runoff months with deeper cold water releases and (2) improves the reliability of cold water resources through the fall months. Reclamation proposes this change in Sacramento River temperature control objective to be consistent with the capability of the CVP to manage cold water resources and to use the process of annual planning and coordination with the Sacramento River Temperature Task Group to arrive

at the best use of that capability.

Second, OCAP BA Chapter 9, Table 9-8 and related text confirms the Bureau reconsulted on winter-run and has recommended moving the TCP nearly every year in the ten years following the 1993 NMFS BiOp. *Id.* at 05227-8.

Although TCP as a target is a less definite and certain standard, it is enforceable, and in practice has resulted in action in every year a temperature issue arises. The Bureau's exercise of its expertise and discretion is reasonable and adoption of the BiOp's TCP target methodology was not arbitrary and capricious.

Plaintiffs' motions for summary adjudication on the TCP is DENIED. Federal Defendants' cross-motion for summary judgment is GRANTED.

f. Failure to Consider 100% of Water Deliveries.

Plaintiffs' allegation the Bureau failed to consider "the full extent of water deliveries" was rejected in *NRDC v. Kempthorne*, May 25, 2007, Order at pp. 115-118 and above. The same analysis applies to the Bureau's BA. Use of a CALSIM Model to evaluate arranged water deliveries without the potential impacts of 100% water deliveries, utilized by the FWS in its Delta smelt BiOp, was found to be an application of reasonable science by the expert agency. Such reliance was justified when NMFS utilized CALSIM modeling. For the same reasons, not repeated here, set forth in *NRDC v. Kempthorne*, the Bureau did not have to analyze a 100% water delivery scenario for the

salmonid species in the OCAP BA and NMFS BiOp. This alleged failure is not arbitrary or capricious.

Plaintiffs' motion for summary adjudication on considering 100% of water deliveries is DENIED. Summary adjudication is GRANTED for the Bureau on this issue.

g. Information Identified After The ESA Consultation Process was Completed.

Federal Defendants argue references to the administrative record disprove Plaintiffs' allegations that the Bureau ignored documents and other new information that became available after issuance of the 2004 NMFS BiOp. These references include: (1) conclusions of the Department of Commerce Inspector General; and (2) scientific peer-review studies performed by the California Bay Delta Authority (Cal. Fed.) Science Program and by the Center for Independent Experts, all of which the Bureau considered.[12]

Federal Defendants point to a January 10, 2006, meeting between the Bureau and NMFS in the Bureau Director's office to reinitiate consultation on the 2004 NMFS BiOp. The meeting agenda shows new, emerging information was explicitly considered by both agencies including: (1) global climate change; (2) variability in ocean productivity; (3) uncertainty not explained or incorporated into the analysis; (4) flawed models and analyses related to temperature mortality; (5) new species listings and critical habitat designations. The Bureau acknowledged the need

[12] This extra-record evidence available after issuance of the 2004 NMFS BiOp is considered for the limited purpose of evaluating whether the Bureau acted in bad faith.

to consider such new information covering all these subjects. USBR AR 05915-16. These post-decisional peer review reports and related documents are offered and are received to disprove that the Bureau acted in bad faith.

The Bureau further considered the fact that critical habitat was designated for three newly-listed species. The agencies reinitiated consultation when the new information concerning those three species emerged. 50 C.F.R. § 402.16(d) (requiring reinitiation of consultation "if a new species is listed or critical habitat designated that may be affected by the identified action"). The Bureau, in the letter requesting reinitiated consultation included the following analysis:

> Reclamation has preliminarily determined that ongoing CVP and SWP operations through October 6, 2006, will not destroy or adversely modify the critical habitats and thereby complies with our § 7(a)(2) responsibilities under the Act. We base this preliminary determination on the fact that both our ongoing CVP and SWP operations in accordance with your October 22, 2004, biological opinion, and the wet water year type will ensure that all the primary constituent elements of the critical habitats are preserved.

Ronald Milligan letter February 14, 2007, USBR AR Supp. 05989-05999 (offered to negate bad faith).

This record establishes that the Bureau considered new information as it became available and reinitiated consultation as a result. That process is ongoing. The law requires no more.

Plaintiff' motion for summary adjudication is DENIED on this issue. Federal Defendants' cross-motion is GRANTED.

2. Violation of ESA § 7(d)

Plaintiffs argue that the Bureau violated ESA § 7(d) based

on the NMFS's invalid BiOp, which prevented the Bureau from "completing consultation." In support of this contention, Plaintiffs cite cases which are distinguishable or inapplicable. *NRDC v. Rodgers*, 381 F.Supp.2d 1246 held the Bureau violated § 7(d) by executing renewed long term CVP water service contracts for two units that were omitted from the consultation, Project operations were not in issue. There was no dispute the FWS did not consider or address the renewed contracts in its BiOp which prevented the Bureau from relying on the expert's agency failure. In *Connor v. Buford*, 848 F.2d 1141, 1454 (9th Cir. 1988), the agency failed to consider the entire action, using the best, but incomplete, data for post-leasing oil and gas activities. The court found the 7(d) claim irrelevant. *Greenpeace v. National Marine Fisheries Service*, 80 F.Supp.2d 1137 (W.D. Wash. 2000) found NMFS failed to consult on the entire action violating 7(a)(2) by confining its analysis to a single year of fishery management, again § 7(d) was not an issue. In *Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1056-57 (9th Cir. 1994), § 7(d) did not apply because the U.S. Forest Service had not reinitiated consultation.

NMFS has reinitiated consultation making ESA § 7(d) applicable, requiring NMFS to maintain the status quo during the reinitiated consultation process to prevent an irreversible or irretrievable commitment of resources that would foreclose formulation or implementation of reasonable and prudent alternatives.

3. No Jeopardy BiOp.

As previously addressed in *NRDC v. Kempthorne*, the Bureau's § 7(d) obligation ended upon issuance of the no jeopardy 2004 BiOp on October 22, 2004, and reattached upon the date of reinitiation of consultation in April, 2006.

DI acknowledge that if the Bureau disagreed with the "no jeopardy" finding by NMFS the consulting agency, the Bureau, risks noncompliance with the ESA. 51 Fed.Reg. 19940. The required inquiry is whether the Bureau's actions permanently commit resources in a way that ties its hands for future actions. The Bureau has committed to further ESA review and ESA § 7 compliance for water enhancement measures, including, the South Delta Improvement Program; Delta-Mendota Canal-California Aqueduct Intertie Project; Yuba Accord, Sacramento Valley Water Management Program, the Lower American River Flow Standards; and the Long Term Environmental Water Account Program.

The Federal Defendants argue that NMFS's no jeopardy finding will be revisited during reconsultation and if NMFS reaches a jeopardy determination and needs to issue an RPA in the future, Plaintiffs have not demonstrated jeopardy from allowing ongoing Project operations, subject to limitations on renewal of CVP water service contracts and implementing conservation measures, including (1) the EWA program; (2) receipt of CVPIA(b)(2) water; (3) not increasing flow operations above historic levels; (4) continuing to comply with SWRCB's Water Rights Decision 1641; (5) continuing to implement the Vernalis Adaptive Management Plan; (6) continuing to address salmonid passage issues at RBDD; all of which will prevent irreversible or irretrievable commitments of resources in the interim. The law requires that the Court "leave

to the agency the application of its expertise and authority to manage the complex hydrological, legal, financial, physical and logistical aspects of protecting the Delta smelt." Under a parity of reasoning the same protective conservation measures can be reasonably applied to protect the salmonid species at dispute during reconsultation.

To the extent that Plaintiffs seek a cessation of Project operations, the 7(d) proscription is for the agency not to make any irreversible or irretrievable commitment of resources which forecloses the formulation or implementation of any reasonable and prudent alternative measures. 16 U.S.C. § 1536(d). An inoperative Project would not maintain the status quo, rather it would produce catastrophic results to the public and all parties in interest. *Washington Toxics Coalition v. EPA*, 413 F.3d 1024, 1035 (9th Cir. 2005). To address the consequences and potential effects during the reconsultation period, all parties recognize the need for the adoption of interim remedies. Non-jeopardy agency actions may take place during the ongoing § 7 consultation process. *Southwest Ctr. for Biological Diversity v. U.S. Forest Serv.*, 307 F.3d 964, 973 (9th Cir. 2002), opinion withdrawn as moot *Southwest Ctr. for Biological Diversity v. U.S. Forest Serv.*, 355 F.3d 1203 (9th Cir. 2004).

Based on the findings of arbitrary and capricious action and unlawful failure to consider any aspects of critical habitat for two of the species, the Bureau's cross-motion for summary judgment concerning its 7(a)(2) responsibilities, cannot be granted, on the record before the court. The Bureau's motion for summary adjudication as to its alleged violation of § 7(d) is

GRANTED on the condition that Federal Defendants continue to take no actions during reconsultation that make any irreversible or irretrievable commitment of resources which forecloses the formulation or implementation of reasonable and prudent alternative measures. It is necessary that further proceedings be held to determine whether the 2004 BiOp should be vacated. The 2004 BiOp must be REMANDED to NMFS and the Bureau for further consultation in accordance with the requirements of law.

VII. Conclusion.

It is not the Court's prerogative nor within its competence to usurp the executive function to perform the Agency's work to determine whether Project operations will or will not jeopardize the winter-run Chinook, fall-run Chinook, or CV steelhead species or adversely modify their critical habitat. These responsibilities are by law committed to the discretion and expertise of the expert agency, NMFS, and action agency, the Bureau. The Court's authority is limited to determining the lawfulness of the Agencies' actions or inactions.

The 2004 BiOp did not analyze the recovery of the three species and any effect global climate change will have over the next 25 years, the relevant duration of Project operations. The BiOp is incomplete and in the respects specifically identified, inexplicably inconsistent as to the species' survival and recovery. The BiOp is unlawfully silent on critical habitat effects.

An entire failure to consider an important aspect of the problem and a failure to explain contradictory record evidence

makes the BiOp arbitrary and capricious under ***National Ass'n of Home Builders***, 127 S.Ct. at 2529. Under the APA, a reviewing court must then remand the BiOp to the consulting agency. The court is without authority to proceed to decide the merits of the dispute until the Agencies have had the opportunity to discharge their statutory duties under the ESA. NMFS must provide rational and fact-based grounds for its new biological opinion based on the best science available.

The following rulings are issued on the pending motions:

1. On the NMFS BiOp, Plaintiffs' motion for summary judgment is:

a. GRANTED as to NMFS's record findings and analyses which fail to explain contradictory evidence as to the survival and recovery of all three species. Federal Defendants' cross-motion for summary judgment on this issue is DENIED;

b. GRANTED as to the failure to analyze the adverse effect and modification on the critical habitat of the three species. Federal Defendants' cross-motion for summary judgment on this issue is DENIED;

c. GRANTED as to ESA analysis on the three species' life cycles and population dynamics. Federal Defendants' cross-motion for summary judgment on this issue is DENIED;

d. GRANTED on the condition that NMFS complete its incremental Project impact analysis in relation to baseline conditions. Federal Defendants' cross-motion on this issue is DENIED;

e. DENIED as to the failure to address "Entire Agency Action." Federal Defendants' cross-motions for summary judgment

motion on this issue is GRANTED;

f. GRANTED as to the issue of Global Climate Change and effects of the Hydrology of Northern California Rivers. Federal Defendants' cross-motion for summary judgment on this issue is DENIED;

g. DENIED on the issue of the sufficiency of Adaptive Management Plan and Mitigation Measures. Federal Defendants' cross-motion on this issue is GRANTED;

2. Plaintiffs' motion for summary judgment as to the Bureau's ESA § 7(a)(2) Obligations and § 7(d) Obligations is:

a. DENIED as to the issue that the Bureau could not rely on the 2004 NMFS BiOp. Federal Defendants' cross-motion on this issue is DENIED;

b. GRANTED as to unexplained internal contradictions about survival and recovery of the species. Federal Defendants' cross-motion on this issue on is DENIED;

c. GRANTED on the issue of Global Climate Change. Federal Defendants' cross-motion on this issue is DENIED;

d. DENIED as to the issue of the Temperature Control Point location. Federal Defendants' cross-motion for summary judgment on this issue is GRANTED;

e. DENIED as to alleged Failure to Consider 100% of Water Deliveries. Federal Defendants' motion on this issue is GRANTED;

f. DENIED on the issue of failure to explain Information Identified After the ESA Consultation Process was completed. Federal Defendants' cross-motion for summary judgment on this issue is GRANTED;

3. DENIED as to violation of ESA § 7(d). The Federal Defendants' cross-motion on this issue is GRANTED, upon the condition that Federal Defendants continue to take no actions during reconsultation that make any irreversible or irretrievable commitment of resources which forecloses the formulation or implementation of any reasonable and prudent alternative measures.

Plaintiffs shall, within five (5) days) following service of this decision by the Clerk, submit a form of Order consistent with this decision. A scheduling conference is set for April 25, 2008, at 12:15 p.m. in Courtroom 3 to address a schedule for addressing interim remedies and whether the 2004 BiOp should be remanded without vacatur.

SO ORDERED.

DATED: April 16, 2008.

/s/ Oliver W. Wanger
Oliver W. Wanger
United States District Judge