

TABLE OF CONTENTS

1

2 I. INTRODUCTION.....1

3 II. LEGAL STANDARDS FOR INJUNCTIONS UNDER ESA SECTION 7.....5

4 III. ARGUMENT.....7

5 A. The Listed Species Will Suffer Irreparable Harm Absent An Injunction.....7

6 1. The Listed Species are in a Severely Degraded Condition and Are Not Presently

7 Viable.....7

8 a. Spring Chinook Numbers are Low and Declining and the Species is

9 Facing Imminent Loss of Genetic Diversity and Destruction from

10 Catastrophic Events.....7

11 b. Steelhead Have Been Reduced to A Fraction of Historic Abundance....10

12 c. Green Sturgeon Have Been Reduced to One Small Population Which

13 Could Be Eliminated By A Single Disaster.....10

14 2. In Light of the Degraded Status of the Listed Species, the Project Will Cause

15 Irreparable Harm During the Interim Period.....11

16 B. The Requested Injunction Is Necessary To Avoid Irreparable Harm.....15

17 1. Measures 1-6 Are Needed To Correct the Delays in Upstream Migration

18 Caused by the Project.....15

19 a. Measure 1.....15

20 b. Measure 2.....15

21 c. Measures 3 & 4.....17

22 d. Measure 5.....18

23 e. Measure 6.....19

24 2. Measures 7-9 Are Needed To Correct the Loss of Genetic Diversity,

25 Reproductive Success, and Suitable Habitat Caused By the Project.....19

26 a. Measure 7.....20

27 b. Measure 8.....21

28 c. Measure 9.....25

3. Measures 7-9 Are Needed to Counter Harm Caused by Daguerre and the Brophy

Diversion Independent of the Impacts of Englebright.....26

4. The Interim Measures Are An Extension of the Terms and Conditions of

Previous Biological Opinions, Which NMFS Has Concluded Are Needed to

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Correct the Harms Caused By the Project.....28

C. The Court Should Order NMFS To Issue a New Biological Opinion and the Federal Defendants To File Status Reports.....29

IV. CONCLUSION.....30

TABLE OF AUTHORITIES

Cases

1

2

3 *Am. Rivers v. NOAA Fisheries*, CV–04-00061-RE,
2006 U.S. Dist. LEXIS 69442 (D. Or. Sept. 26, 2006).....14,30

4 *Am. Rivers v. U.S. Army Corps of Engineers*, 271 F. Supp. 2d 230 (D.D.C. 2003).....7

5 *Consol. Salmonid Cases*, 713 F. Supp. 2d 1116 (E.D. Cal. 2010).....6

6 *Defenders of Wildlife v. Martin*, 454 F. Supp. 2d 1085 (E.D. Wash. 2006).....14

7 *Forest Conservation Council v. Rosboro Lumber Co.*, 50 F.3d 781 (9th Cir. 1995).....14

8 *Fund for Animals v. Turner*,
9 C.A. No. 91-2201 (MB), 1991 U.S. Dist. LEXIS 13426 (D.D.C. Sept. 27, 1991).....14

10 *Gilman v. Davis*, 690 F. Supp. 2d 1105 (E.D. Cal. 2010).....6

11 *Greenpeace v. Nat’l Marine Fisheries Serv.*, 106 F. Supp. 2d 1066 (W.D. Wash. 2000).....6,14

12 *Humane Soc’y of the U.S. v. Kempthorne*, 481 F. Supp. 2d 53 (D. D.C. 2006).....15

13 *Marbled Murrelet v. Babbitt*, 83 F.3d 1068 (9th Cir. 1996).....6

14 *Monsanto v. Geertson Seed Farms*, 2010 U.S. LEXIS 4980 (2010)6

15 *Nat’l Ass’n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644 (2007).....6

16 *Nat’l Org. of Veterans’ Advocates v. Sec’y of Veterans Affairs*, 260 F.3d 1365 (D.C. Cir. 2001).....30

17 *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 422 F.3d 782 (9th Cir. 2005).....5,14

18 *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917 (9th Cir. 2007).....14,29

19 *Pac. Coast Fed’n of Fishermen’s Ass’ns v. Bureau of Reclamation*, No. Civ. C02-2006 SBA,
2006 WL 798920 (N.D. Cal. Mar. 27, 2006).....14

20 *PCFFA v. Gutierrez*, 606 F. Supp. 2d 1195 (E.D. Cal. 2008).....7,11,12,14

21 *PCFFA v. U.S. Bureau of Reclamation*, 138 F. Supp. 2d 1228 (N.D. Cal. 2001).....6

22 *Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987).....6,15

23 *Thomas v. Peterson*, 753 F.2d 754 (9th Cir. 1985)6

24 *TVA v. Hill*, 437 U.S. 153 (1978).....2,6,14

25 *Wash. Toxics Coal. v. Envtl. Protection Agency*, 413 F.3d 1024 (9th Cir. 2005).....6,7,14

26 *Winter v. Natural Res. Def. Council, Inc.*, 129 S. Ct. 365 (2008).....6

Statutes

28

1 5 U.S.C. § 504.....30
2 16 U.S.C. § 1540(g)(4).....30
3 28 U.S.C. § 2412(d)(1)(A).....30
4 **Other Authorities**
5 E.D. Cal. Local Rule 292.....30
6 E.D. Cal. Local Rule 293(a).....30

7
8
9
10
11
12
13
14
15
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1 **I. INTRODUCTION**

2 The Court's Summary Judgment Order issued July 8, 2010 held that the biological opinion
3 issued in November 2007 ("BiOp") from the National Marine Fisheries Service ("NMFS") to the U.S.
4 Army Corps of Engineers ("Corps") for the operation of two dams and several water diversions on the
5 Yuba River ("the Project") failed in numerous ways to comply with the requirements of Endangered
6 Species Act ("ESA") Section 7 and regulations promulgated thereunder. Docket Doc. 316 ("SJ
7 Order"). Pursuant to the Stipulation and Order on Final Remedies Phase issued November 23, 2010
8 (Dkt. Doc. 348), Plaintiffs are now seeking the final remedy to address the Federal Defendants' ESA
9 violation. Plaintiffs request the Court to issue an injunction requiring NMFS to issue a new biological
10 opinion by June 6, 2011 and the Corps to implement measures to prevent the Project from jeopardizing
11 the survival or recovery of the Listed Species in the interim. These interim measures are essentially the
12 same as those requested in Plaintiffs' Post-Summary Judgment Supplemental Brief (Docket Doc. 317)
13 (July 23, 2010) ("Plaintiffs' Supplemental Brief").

14 NMFS's succession of three biological opinions for the Project have repeatedly documented
15 the Project's substantial adverse impacts on the Listed Species. These biological opinions and
16 accompanying administrative records establish that Daguerre harms the Listed Species by impeding
17 passage of the Listed Species up and down the Yuba River and by increasing predation on the Listed
18 Species' juveniles. Englebright harms the Listed Species by totally blocking their access to prime
19 Yuba habitat above Englebright and by impeding the beneficial transport of gravel and woody debris to
20 reaches of the river below Englebright. The Brophy Diversion harms the Listed Species by entraining
21 juveniles and promoting predation. *See* Summary Judgment Order ("SJ Order") (Dkt. Doc. 316) at 19,
22 23-24, 28-29; Plaintiffs' Preliminary Injunction Motion ("PI Motion") (Dkt. Doc. 316) at 7-11. Though
23 in a fashion too vaguely and inadequately framed to be meaningfully enforceable, these biological
24 opinions have variously, at least in general fashion, called for Corps implementation of some of the
25 steps needed to reduce the Project's impacts: (1) securing fish passage past Daguerre, (2), fully
26 screening the Brophy Diversion, (3), augmenting gravel in the Yuba River below Englebright, (4),
27 replenishing large woody debris in the Yuba River below Englebright and (5), implementing interim
28 measures to clear sediment and debris from the Daguerre fish ladders and channels leading to and from

1 the ladders. Of these five measures, the Corps has, at best, only partially implemented the third and the
2 last. Years into the urgent ESA section 7 consultation process mandated by Congress, the Corps has
3 done nothing to meaningfully improve fish passage past Daguerre, the Brophy Diversion remains
4 unscreened, and the Corps has placed far less than the volume of gravel into the Yuba River called for
5 by its own consultant and not even a twig of beneficial woody debris, despite these measures being
6 required by past biological opinions. Moreover, NMFS has yet to require the Corps to address the
7 biggest impact of the Project, Englebright's total blockage of fish passage to prime upstream Yuba
8 habitat, and the Corps has done effectively nothing to secure fish passage past Englebright.

9 Against this sorry backdrop of inaction, the Federal Defendants last filing with the Court urged
10 to grant them 22 months to issue a new biological opinion addressing the litany of errors in the BiOp.
11 Federal Defendants' Supplemental Brief Re: Plaintiffs' Renewed Motion for Preliminary Injunction
12 (Docket Doc. 321) ("Federal Defendants' Supplemental Brief"); Declaration of Randy Olsen (Docket
13 Doc. 321-3); Declaration of Howard Brown (Docket Doc. 321-1) (Aug. 6, 2010)¹. Even though
14 NMFS's own expert declarant acknowledged that the interim measures requested by Plaintiffs would
15 help the Listed Species, the Federal Defendants urged that they be denied because the Incidental Take
16 Statement ("ITS") included in the BiOp will protect the Listed Species during this time. Yet, the
17 Federal Defendants also have argued that most of these terms and conditions are framed so as to not
18 impose deadlines that the Corps could have violated, essentially conceding that, as framed, many of
19 them are functionally meaningless. In sum, the Federal Defendants urge the Court to allow the Federal
20 Defendants to do nothing more to protect the Listed Species than adopt a new biological opinion in 22
21 months.

22 This approach mocks Congress' intent. Congress intended that the ESA would ensure that the
23 urgent actions needed to prevent the risks of extinction of endangered and threatened species are taken
24 no matter the cost or inconvenience. *TVA v. Hill*, 437 U.S. 153 (1978). The Court should decline the
25 Federal Defendants' request for immunity to continue delaying the measures needed to protect the

26
27 ¹ The Corps' declarant Randy Olsen indicated that the Corps would need 301 days to prepare a new
28 biological assessment for the Project. Olsen Decl. ¶ 5. The NFMS' declarant Howard Brown indicated
that NMFS would need 345 to 360 days from receiving the new biological assessment to prepare NMFS'
new biological opinion. Brown Decl. ¶ 4-5.

1 Listed Species. Having decided liability on Plaintiffs' Claim 3, the Court should now grant Plaintiffs'
2 long-sought injunctive relief that will provide meaningful interim protections for the Listed Species.
3 The Court has ample authority to issue the requested injunction as a post-judgment injunction
4 following from a finding of liability on Claim 3.² Action to protect the Listed Species is urgently
5 needed. As demonstrated below, the status of the Listed Species has continued to decline since the
6 BiOp was issued and has even worsened in the last few months. The species are in serious peril of
7 extinction if inaction on the measures needed for their survival and recovery is allowed to continue.

8 Ensuring that the Project does not jeopardize the Listed Species' survival will ultimately
9 require implementation of all the measures that the BiOp vaguely calls for, including securing effective
10 fish passage past Englebright and Daguerre either by removing those dams or constructing new
11 channels or other structures that will allow fish to bypass them. There are numerous measures,
12 however, that the Corps should implement in much shorter order with more rapid benefits to the Listed
13 Species: (1) developing and implementing a written operation plan for optimum operation and
14 maintenance of the Daguerre fish ladders, (2) developing and implementing a plan for optimum
15 placement of movable flash boards on the Daguerre dam spillway to try to concentrate flows over the
16 spillway toward the dam's center, away from the fish ladders which are to either side of the dam, (3)
17 installing and operating devices to alert the Corps of debris blockages in the Daguerre fish ladders, (4),
18 promptly clearing debris blockages from the Daguerre fish ladders, (5), adopting a revised plan for
19 managing sediment build-up above Daguerre and a plan for re-engineering the south bank of the Yuba
20 River and the main channel of the Yuba River as needed to improve flows to the Daguerre south fish
21 ladder, (6), installing grates over the Daguerre fish ladders to prevent fish from jumping out of these
22 ladders, (7) installing a temporary, seasonal artificial segregation weir within the Yuba River below
23 Englebright to create a temporary, impassable barrier segregating spring Chinook from fall run
24 Chinook and allowing the former to spawn without competition from the fall-run Chinook, (8)

25
26 ² As discussed below, the interim remedies sought herein are appropriate relief for the violation of ESA
27 Section 7 established by Claim 3. However, in the alternative, the Court should order the requested
28 injunctive relief on a preliminary basis to remedy the Corps's violation of its substantive ESA Section
7 duties. This argument is discussed in Plaintiffs' supplemental briefing. *See* Plaintiffs' Post-Summary
Judgment Supplemental Brief (Dkt. Doc. 317) (July 23, 2010) at 12-17. This remains an alternative basis
for Plaintiffs' requested relief. *See id.* at 11-12.

1 adopting and commencing implementation of an improved, comprehensive final long-term gravel
2 augmentation plan for creating new spawning habitat in the Yuba River below Englebright, and (9),
3 developing and implementing a plan for securing better wood-related structures and native riparian
4 vegetation in the Yuba River reach from Englebright to Daguerre.

5 In addition to these nine measures, the Court should order the Corps to submit quarterly status
6 reports to Plaintiffs describing the progress being made to implement the measures. This is necessary
7 to ensure compliance in light of the Corps's record of failing to comply with previous biological
8 opinions.

9 The Corps may argue that the Court should not order Plaintiffs' requested interim measures
10 because the measures will not yield substantial benefits to the Listed Species before NMFS issues a
11 new biological opinion. The Corps could likely implement several of these measures in time to benefit
12 the species before a new biological opinion is issued: 1) developing and implementing a written
13 operation plan for optimum operation and maintenance of the Daguerre fish ladders, (2) installing and
14 operating pressure transducers in the Daguerre fish ladders, (3), promptly clearing debris blockages
15 from the Daguerre fish ladders, (4), developing and implementing a plan for optimum placement of
16 movable flash boards on the Daguerre dam spillway, and (5), installing grates over the Daguerre fish
17 ladders to prevent fish from jumping out of these ladders, While the Plaintiffs' other measures would
18 not begin to yield benefits until after the Plaintiffs' requested June 2010 date for a new biological
19 opinion, the Court should nonetheless order them now. Most of these measures are more specific
20 versions of the terms and conditions of prior NMFS' biological opinions that date to 2002. A new
21 biological opinion is thus highly likely to include them—or be found arbitrary and capricious if NMFS
22 abruptly abandons eight years of prior policy and omits them. Moreover, the Federal Defendants'
23 Supplemental Brief provided no evidence that the one measure that is new compared to the terms and
24 conditions of NMFS' biological opinions, the segregation weir to keep spring Chinook from
25 interbreeding with fall Chinook, would not be beneficial to the Listed Species and is infeasible. The
26 measure is of a type implemented in other settings with NMFS support and has been proposed to
27 NMFS by other stakeholders besides the Plaintiffs. Under these circumstances, the Court should order
28 the Corps to begin now to implement these measures. While such an approach perhaps creates some

1 risk that the Corps will be ordered to invest resources in implementing measures that the new
2 biological opinion does not require, this risk is outweighed by the countervailing risk that following
3 the Federal Defendants' approach would effectively ensure a long lag time before the Corps
4 implements any meaningful steps to reduce the risks that the Project will hasten the extinction of the
5 Listed Species. Notably, because the most significant available measures to protect the anadromous
6 fish at issue will inevitably be complicated and require substantial advance planning and design, it is
7 imperative to require the Corps to begin planning measures as soon as possible. This is the *only* means
8 to avoid a long lag time before substantial help for the fish is secured that will avoid their risk of
9 extinction.

10 If the Court orders the Plaintiffs' schedule for a new biological opinion, the Corps will only
11 have completed study and design work for these latter measures before a new biological opinion is
12 issued—a minimal investment warranted to ensure that the species are not faced with a long lag time
13 before anything meaningful is done to guard against their extinction. Notably, such work would at least
14 provide useful information for NMFS in fashioning the new biological opinion even if NMFS does not
15 order each of Plaintiffs' measures in the new biological opinion. Moreover, most likely, this will also
16 allow the Corps to begin to implement measures sooner that are almost certain to be in the new
17 biological opinion—thus reducing risks of extinction for the Listed Species.

18 If the Court orders the schedule for the new biological opinion the Federal Defendants are
19 likely to ask for, a new biological opinion would probably not be issued until November 2012 (i.e., 22
20 months from the deadline for the Federal Defendants' final brief). In this scenario, ordering the
21 Plaintiffs' requested interim relief would be all the more warranted. One, many of the measures would
22 have material benefits for the Listed Species by then. Two, the longer lag time before new, valid
23 protective measures are in place would make it all the more important to order the interim protective
24 measures to ensure the Listed Species' survival.

25 **II. LEGAL STANDARDS**

26 “The traditional preliminary injunction analysis does not apply to injunctions issued pursuant to
27 the ESA.” *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 422 F.3d 782, 793 (9th Cir. 1995). In
28 passing the ESA, Congress explicitly foreclosed the traditional balancing of equities in ESA cases,

1 instead deciding that the equities will always favor protecting endangered and threatened species. *TVA*
2 *v. Hill*, 437 U.S. at 194; *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 671
3 (2007); *see also, e.g., Sierra Club v. Marsh*, 816 F.2d 1376, 1383 (9th Cir. 1987).

4 The Supreme Court's recent decision in *Monsanto v. Geertson Seed Farms* does not alter the
5 law governing injunctions under the ESA. The *Monsanto* decision, like the Supreme Court's similar
6 case relied upon in *Monsanto*, *Winter v. Natural Res. Def. Council, Inc.*, 129 S. Ct. 365, 376 (2008),
7 interprets the National Environmental Policy Act ("NEPA"), not the ESA. While *Winter* and
8 *Monsanto* altered the Ninth Circuit's general preliminary injunction standard by making that standard
9 more rigorous, these NEPA case decisions do not alter the law in ESA cases. *Consol. Salmonid Cases*,
10 713 F. Supp. 2d 1116, 1168 (E.D. Cal. 2010) (holding that *Winter* does not alter ESA injunction
11 standard of *TVA v. Hill*). As this Court has explained, because NEPA contains procedural requirements
12 only, showing a likely violation of NEPA has little connection to a showing of specific irreparable
13 harm. *Gilman v. Davis*, 690 F. Supp. 2d 1105, 1125-26 (E.D. Cal. 2010). In contrast, the ESA contains
14 both procedural and substantive provisions. *Thomas v. Peterson*, 753 F.2d 754, 764 (9th Cir. 1985).
15 Thus, in contrast to NEPA, establishing a violation of the ESA's procedural provisions does have a
16 connection to a showing of irreparable harm because the procedural provisions are designed to ensure
17 compliance with the ESA's substantive mandate to avoid jeopardizing the survival or recovery of a
18 listed species or adversely modifying a listed species' critical habitat. *See id.*; *see also Wash. Toxics*
19 *Coal. v. Env'tl. Protection Agency*, 413 F.3d 1024, 1035 (9th Cir. 2005).

20 In the Ninth Circuit, that standard is controlled by two lines of authority. The first line
21 establishes that "[g]iven a substantial procedural violation of the ESA in connection with a federal
22 project, the remedy must be an injunction of the project pending compliance with the ESA," without a
23 showing of irreparable harm. *Thomas*, 753 F.2d at 764; *see also Marsh*, 816 F.2d at 1384 (plaintiffs
24 entitled to an injunction upon a showing of ESA procedural violation); *Marbled Murrelet v. Babbitt*,
25 83 F.3d 1068, 1073 (9th Cir. 1996); *Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of*
26 *Reclamation*, 138 F. Supp. 2d 1228, 1247-48 (N.D. Cal. 2001); *Greenpeace v. Nat'l Marine Fisheries*
27 *Serv.*, 106 F. Supp. 2d 1066, 1074 (W.D. Wash. 2000). Issuing a legally inadequate biological opinion
28 constitutes a substantial procedural violation under *Thomas*. *Greenpeace*, 106 F. Supp. 2d at 1072.

1 The second line of authority holds that a showing of irreparable harm is required, but places the
2 burden on the Federal Defendants to show that no irreparable harm will occur (i.e., that the action will
3 be “non-jeopardizing” during the interim period). *Wash. Toxics Coal.*, 413 F.3d at 1035; *see also Pac.*
4 *Coast Fed’n of Fishermen’s Ass’ns v. Gutierrez*, 606 F. Supp. 2d 1195, 1210-11 (E.D. Cal. 2008)
5 (“*PCFFA v. Gutierrez*”).³ This requires the Federal Defendants to demonstrate that Project operations
6 during the interim period “will not significantly or considerably reduce the species’ chances of survival
7 and recovery and will not significantly or considerably reduce the value of their critical habitat.”
8 *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1211. This showing must be made within the context of the
9 existing environmental baseline. *Id.* at 1212-13. Now that the BiOp has been held to be invalid, the
10 Federal Defendants cannot rely on the no jeopardy determination contained therein to meet this
11 burden. *Am. Rivers v. U.S. Army Corps of Engineers*, 271 F. Supp. 2d 230, 258 (D.D.C. 2003).

12 **III. ARGUMENT**

13 **A. The Listed Species Will Suffer Irreparable Harm Absent An Injunction**

14 The Listed Species are in a severely degraded condition and will suffer irreparable harm unless
15 the Federal Defendants are ordered to take immediate steps to counteract the injuries the Project is
16 causing the Listed Species.

17 **1. The Listed Species are in a Severely Degraded Condition and Are Not Presently Viable**

18 NMFS considers four objective criteria to evaluate the viability or extinction risk of a fish
19 species: abundance (the number of fish); productivity (trends in their abundance); spatial structure
20 (whether fish populations exist in different areas to enable the species to survive a catastrophic event
21 in one area); and genetic or life history diversity (enabling the species to tolerate variations in
22 environmental conditions). BiOp at 32; Declaration of Christina Swanson in Support of Plaintiffs’
23 Motion for Preliminary Injunction (Docket Doc. 199) (Mar. 2, 2009) (“2009 Swanson Decl.”) at ¶¶ 13-
24 18. All four factors are essential to a species’ viability. 2009 Swanson Decl. ¶ 18.

25 **a. Spring Chinook Numbers are Low and Declining and the Species is Facing Imminent Loss of Genetic Diversity and Destruction from**

27
28 ³ The Federal Defendants have conceded that they must carry this burden. *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1211.

Catastrophic Events

1
2 In the late 19th Century, the Central Valley provided spring Chinook over 2,000 miles of
3 habitat and spring Chinook runs exceeded 600,000 annually. AR 3870; AR 11333. The Yuba River
4 above Englebright contained a minimum of 80 miles of habitat which supported 6,000 to 10,000 spring
5 Chinook annually. AR 11334; AR 3871-72 (Table 2); AR 3788. The subsequent development of
6 mining operations, dams, and water diversion facilities throughout the Central Valley profoundly
7 affected spring Chinook, cutting off access to over 80% of spring Chinook habitat. BiOp at 17.
8 Development has blocked spring Chinook upstream migration and forced the fish to oversummer in
9 lower reaches with inadequate habitat. *Id.* As a result, spring Chinook were unable to survive on many
10 rivers, and approximately 15 of the 18 or 19 historical populations of spring Chinook are now extinct.
11 AR 11334; Declaration of Brian Orion in Support of Plaintiffs' Motion for Preliminary Injunction
12 (Docket Doc. 260-4) (May 20, 2009) ("Orion PI Decl."), Ex. 2 at 9 (Lindley 2007 study); 2009
13 Swanson Decl. ¶ 23.

14 Recent abundance data provided by Plaintiffs' expert Dr. Christina Swanson indicates that
15 spring Chinook abundance is low and declining for the four largest spring Chinook populations,
16 located on Butte, Mill and Deer Creeks and the Sacramento River. Declaration of Christina Swanson
17 in Support of Plaintiffs' Final Remedy Brief ("2010 Swanson Decl.") ¶ 13, Ex. C. Spring Chinook has
18 been nearly extirpated from the mainstem Sacramento River, declining from an average of more than
19 11,000 fish in the 1970s and 1980s to just 200 fish in the 2000s. *Id.* ¶ 13. In 2009, a total of less than
20 2,500 fish returned to Mill, Deer, and Butte Creeks, a 78% decline compared to the 1998-2005
21 average. *Id.* Preliminary data for 2010 indicate the decline is continuing, with less than 1,600 fish
22 counted in these creeks. *Id.*

23 Dr. Swanson also concludes that spring Chinook productivity is declining and spatial
24 distribution remains low. *Id.* ¶ 14. Productivity, or production growth or decline, is often measured as
25 the cohort return ratio of the species.⁴ The cohort return ratio for spring Chinook in Mill, Deer and
26

27 ⁴ Dr. Swanson's previous declaration explains this concept: "Productivity is often measured as cohort
28 replacement rate (CRR), which is the ratio of the number of adult fish that return to spawn in a particular
year to the number of adult fish that produced them several years earlier. Species or populations with
persistent negative population growth (i.e., population decline, or a CRR<1.0), as well as populations

1 Butte Creeks has been less than 1 for the past four to six years (depending on the creek). *Id.* This
2 means that three of the four major populations of the species are not replacing themselves. In addition,
3 the spatial distribution of the species, with just three viable populations in Mill, Deer and Butte
4 Creeks, remains poor. *Id.* The prolonged decline in spring Chinook productivity, coupled with the fact
5 that the populations on these creeks have declined to less than 500 spawners, indicates that they are at
6 a strong risk of extinction. *Id.* Moreover, hydrological conditions in the Central Valley remain poor,
7 with many recent years of dry or critically dry conditions. *Id.* ¶ 19.

8 In the post-summary judgment supplemental briefing, the defendants relied on recent data on
9 fish passage at Daguerre to suggest that the Yuba River population of spring Chinook is stable or
10 actually improving. As explained in Plaintiffs' supplemental reply brief, however, this reliance is
11 misplaced. One, the data were distorted because approximately 60% of the fish counted in 2010 were
12 from a hatchery, probably the Feather River Hatchery, in contrast to approximately 30% in 2009.
13 Plaintiffs' Supplemental Brief in Reply to Defendants Supplemental Brief (Docket Doc. 325) (Aug.
14 13, 2010) ("Supp. Reply Brief") at 7. Two, the presence of so many hatchery strays this year is actually
15 cause for greater alarm because fish from the Feather River Hatchery are known to cause a loss of
16 genetic diversity and an increase in stress due to the added competition for spawning space, mates, and
17 rearing habitat on the Yuba River. SJ Order at 47. This compounds the hybridization between spring
18 Chinook and fall-run Chinook already occurring below Englebright. Supp. Reply Brief at 7. Three,
19 data from one year is insufficient to determine trends in abundance. *Id.* Four, there are two other
20 species at issue in this case, and Federal Defendants do not rely on the data for a showing that either
21 steelhead or green sturgeon are improving. *Id.* at 8. And finally, even if the data were reliable and
22 relevant to all the Listed Species, abundance is just one of four indicators of a species' viability. When
23 looking at all four factors, neither spring Chinook nor steelhead is presently viable. *Id.*

24 A group of NMFS scientists charged with evaluating spring Chinook and steelhead's status and
25 recommending measures for their survival and recovery, the Central Valley Technical Recovery Team
26 ("CVTRT"), concluded in a February 2007 study ("Lindley 2007") that while some spring Chinook

27 _____
28 with limited ability to respond to favorable environmental conditions with positive population growth,
are less viable and at higher risk of extinction." 2009 Swanson Decl. ¶ 15.

1 populations have recently increased, the best available evidence indicates that the species as a whole is
2 not viable. Orion PI Decl., Ex. 2 at 1 (Lindley 2007 study); 2009 Swanson Decl. ¶¶ 19-20, 29-30.
3 Current species abundance is way below historic levels, and the loss of so many populations and the
4 important spatial and genetic diversity they provide has rendered spring Chinook “in jeopardy of
5 extinction.” Orion PI Decl., Ex. 2 at 19. The present very limited spatial distribution of the species has
6 made them highly vulnerable to catastrophies such as a drought, wildfire, or toxic spill. *Id.* at 11. As a
7 result, the CVTRT recommended that all extant populations be considered essential for the recovery
8 and the species, and wherever possible, the status of all populations should be improved. *Id.* at 20.

9 **b. Steelhead Have Been Reduced to a Fraction of Historic Abundance**

10 Steelhead have suffered even greater loss of habitat than spring Chinook. AR 3870; *see* 2009
11 Swanson Decl. ¶ 34. Although steelhead abundance is not well monitored, NMFS’s CVTRT scientists
12 and others have repeatedly concluded that the best available evidence indicates that steelhead are
13 already in jeopardy of extinction and moving in a downward trajectory. 2009 Swanson Decl. ¶¶ 35-40;
14 Declaration of Brad Cavallo in Support of Plaintiffs’ Motion for Preliminary Injunction (Docket Doc.
15 xx) (xx date) (“2009 Cavallo Decl.”) ¶ 24. As discussed in Dr. Swanson’s new declaration, there are
16 no new data to suggest that this status or trend has changed. 2010 Swanson Decl. ¶ 15.

17 The BiOp echoes these conclusions. It notes a decline in steelhead abundance from 1 to 2
18 million adults historically, to about 40,000 in the early 1960s, to a spawning population of only about
19 3,600 female steelhead in 2005. BiOp at 12; *see also id.* at 11. For these reasons, the CVTRT
20 concluded that steelhead are “far short of being viable” and that recovering the species requires
21 “secur[ing] all extant populations.” Orion PI Decl., Ex. 2 at 20.

22 **c. Green Sturgeon Have Been Reduced to One Small Population
23 Which Could Be Eliminated By A Single Disaster**

24 The best available evidence indicates that green sturgeon abundance is currently declining,
25 mainly due to loss of historical habitat caused by impassable dams. BiOp at 12; 70 Fed. Reg. 17386,
26 17391 (Apr. 6, 2005). Only a single spawning population of green sturgeon remains in the entire
27 Central Valley, located on the mainstem Sacramento River. BiOp at 13. This lack of spatial diversity
28 also renders the species vulnerable to extinction through catastrophic events. 70 Fed. Reg. at 17396.

1 NMFS scientists have concluded that the Yuba above Daguerre represents the single best
2 source of potential new habitat for green sturgeon in the entire Central Valley. Specifically, the NMFS
3 Critical Habitat Review Team (“CHRT”), charged with identifying green sturgeon critical habitat,
4 found that: (1) current Yuba River habitat above Daguerre would be likely to support green sturgeon
5 spawning if the fish’s access to this area could be secured; (2) establishing a Yuba River population of
6 green sturgeon would provide the spatial diversity needed to avoid the species’ extinction in the event
7 of catastrophic disturbance to the single existing population; and (3) there is potential for removing
8 Daguerre in the near future. Orion PI Decl., Ex. 3 at 39. For these reasons, the CHRT concluded that
9 providing green sturgeon access to the reach above Daguerre may be essential to avoid “the high risk
10 of extirpation due to catastrophic events.” *Id.*

11 **2. In Light of the Degraded Status of the Listed Species, the Project Will**
12 **Cause Irreparable Harm During the Interim Period**

13 As noted above, the Federal Defendants bear the burden of showing that Project operations
14 during the interim period “will not significantly or considerably reduce the species’ chances of survival
15 and recovery and will not significantly or considerably reduce the value of their critical habitat.”
16 *PCFFA v. Gutierrez*, 606 F. Supp. 2d at 1211. This showing must be made within the context of the
17 existing environmental baseline. *Id.* at 1212-13. The Federal Defendants cannot carry this burden
18 because the record amply demonstrates just the opposite – that Project operations, considered in light
19 of the existing degraded condition of the Listed Species and existing environmental baseline, will
20 jeopardize the Listed Species during the interim period.

21 The Court’s SJ Order contains a detailed discussion of the Project’s impacts on the Listed
22 Species. In summary, those impacts include impairments to migration, effects on spawning habitat, and
23 entrainment and impingement at diversions. SJ Order at 19. The SJ Order notes that most of these
24 impacts remain wholly or partially unmitigated. *Id.* at 30-31.

25 Daguerre impedes upstream migration by completely blocking passage for green sturgeon and
26 providing inadequate passage for spring Chinook and steelhead. *Id.* at 20. For spring Chinook and
27 steelhead (“salmonids”), Daguerre presents four major barriers to upstream migration: the fish ladders
28 must be closed at high flows; sheet flow over the face of the dam obscures attraction flows to the

1 ladders; debris blocks the ladders; and sediment blocks passage just upstream. *Id.* at 20-22. Recent
2 efforts to improve passage conditions have not entirely cured these problems. *Id.* at 22-23. Even when
3 the salmonids do successfully navigate the ladders, their delay in passing the dam results in a number
4 of adverse consequences, including lost energy stores, increased predation, decreased egg viability, and
5 changes to spatial distribution. *Id.* at 23. Daguerre causes additional impacts during downstream
6 migration as juveniles plunge over the rough face of the dam into the turbulent waters below where
7 they are killed by predators. *See id.*

8 For green sturgeon, Daguerre blocks access to approximately 4 kilometers of suitable green
9 sturgeon habitat in the Yuba River. Orion PI Decl., Ex. 13 at 12, 15. This habitat loss is likely reducing
10 green sturgeon's abundance, spatial structure, and productivity. BiOp at 26; 2009 Cavallo Decl. ¶ 40.

11 Englebright is an absolute barrier to upstream migration for spring Chinook and steelhead and
12 prevents the species from accessing the majority of their historical habitat in the Upper Yuba River. *Id.*
13 Englebright is literally destroying the spring Chinook species at a genetic level by forcing spring
14 Chinook to use the same spawning area as fall Chinook. *See id.* at 24; *see also* AR 13383 (NOAA
15 Technical Memorandum concluding the continued existence of the spring Chinook phenotype is
16 "doubtful" absent "immediate and direct intervention to preserve the genetic basis of spring run
17 timing."). The forced overlapping spawning below Englebright also results in physical disturbance of
18 spring Chinook redds and a related loss of egg viability, as well as an increased risk that a single
19 disaster could "significantly reduce or completely decimate" the entire Yuba River population of
20 spring Chinook and steelhead. BiOp at 25; SJ Order at 24.

21 Beyond impairments to migration, the Project is also starving the lower Yuba River of suitable
22 spawning gravels and complex woody habitat features and causing impingement and entrainment of
23 juvenile salmonids at water diversions. SJ Order at 28, 29-30.

24 These Project impacts are causing jeopardy to the Listed Species in light of their severely
25 degraded status and the environmental baseline. As discussed above, the historic losses of spring
26 Chinook habitat, losses of so many populations and the important genetic and spatial diversity they
27 provide, currently declining population trends, interbreeding and threats to genetic identity, and threats
28 of extinction from catastrophic events have together reduced the spring Chinook ESU to such a

1 degraded state that the ESU as a whole is not presently viable. As a result, the CVTRT concluded that
2 all extant populations should be considered essential for recovery, and whenever possible, their status
3 should be improved. The Yuba River population is therefore considered essential to the recovery of the
4 entire spring Chinook ESU. By preventing the status of the Yuba River from improving, and in fact
5 severely harming the population, the Project is thereby jeopardizing the survival and recovery of the
6 ESU as a whole. The BiOp itself found that the severe Project impacts summarized above are
7 decreasing all four factors of viability for spring Chinook – abundance, productivity, spatial
8 distribution, and genetic diversity. These Project operations are therefore significantly reducing the
9 likelihood of the survival and recovery of the spring Chinook ESU. *See PCFFA v. Gutierrez*, 606 F.
10 Supp. 2d at 1251-52 (holding Federal Defendants failed to carry burden of showing absence of
11 irreparable harm to spring Chinook).

12 Though less data exists on steelhead status and trends, the best available scientific information
13 demonstrates that steelhead have suffered an even greater loss of habitat than spring Chinook and have
14 been reduced in abundance from 1 to 2 million adults historically to a spawning population of only
15 about 3,600 female steelhead in 2005. No recent data suggests that these trends have changed. For
16 these reasons, the CVTRT concluded that steelhead are far short of being viable and that recovering
17 the species requires securing all extant populations. As with spring Chinook, the Yuba River
18 population is thus considered essential for the recovery of the ESU as a whole. And likewise, the
19 Project is causing severe harm to this population, and thereby decreasing the chances that the species
20 as a whole will survive and recover. *See id.* at 1252-53 (Federal Defendants failed to show absence of
21 irreparable harm to steelhead).

22 Similarly, the best available evidence indicates that green sturgeon abundance is currently
23 declining, the entire species is reduced to only a single spawning population, the species is highly
24 vulnerable to extinction through catastrophic events, and providing green sturgeon access to the reach
25 above Daguerre may be essential to avoid this high risk. Again, the population of green sturgeon on the
26 Yuba River is essential to the survival and recovery of the entire green sturgeon ESU. But the
27 un rebutted evidence demonstrates that Daguerre is preventing green sturgeon from accessing suitable
28 spawning habitat in the Yuba River. This is significantly reducing the species' chances of surviving

1 and recovering by preventing it from gaining access to the habitat necessary to ensure it has the spatial
2 diversity needed to survive and ultimately recover.⁵

3 All told, the Project is causing irreparable harm to the Listed Species in the form of death,
4 physical injury, loss of genetic distinctiveness, decreased productivity, loss of spatial diversity, and
5 significant habitat modification—resulting in significant impairment of essential breeding, feeding,
6 migration, and sheltering behaviors. If left unchanged, the Project will continue jeopardize the Listed
7 Species in the future, warranting the injunctive relief sought herein. *See TVA v. Hill*, 437 U.S. at 194-
8 95; *Wash. Toxics Coal.*, 413 F.3d at 1035 (affirming injunction blocking EPA from authorizing the use
9 of pesticides within specified distances of species habitat pending completion of consultation); *Nat'l*
10 *Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 936-38 (9th Cir. 2007) (affirming
11 injunction requiring “failure report” and coordination with non-federal entities during consultation;
12 *Nat'l Wildlife Fed'n*, 422 F.3d at 787 (affirming preliminary injunction requiring spill over dams
13 pending completion of reinitiated consultation); *Greenpeace*, 106 F. Supp. 2d at 1080 (enjoining all
14 project activities within critical habitat of impacted species); *Pac. Coast Fed'n of Fishermen's Ass'ns*
15 *v. Bureau of Reclamation*, No. Civ. C02-2006 SBA, 2006 WL 798920, at *8 (N.D. Cal. Mar. 27, 2006)
16 (enjoining authorization of less than 100% of the flows found to be necessary to avoid jeopardy on
17 remand); *Am. Rivers v. NOAA Fisheries*, CV-04-00061-RE, 2006 U.S. Dist. LEXIS 69442 (D. Or.
18 Sept. 26, 2006) (ordering time period for issuance of new biological opinion and quarterly status
19 reports); *Forest Conservation Council v. Rosboro Lumber Co.*, 50 F.3d 781, 784 (9th Cir. 1995)
20 (habitat modification that is reasonably certain to significantly impair the essential behavioral patterns
21 of the listed species, such as breeding, feeding, or sheltering, satisfies the showing of harm for issuance
22 of preliminary injunction); *Defenders of Wildlife v. Martin*, 454 F. Supp. 2d 1085, 1098 (E.D. Wash.
23 2006) (impacts warranting injunction include preventing use of historical habitat, displacing species to
24 less preferred habitat, impacting movement, and increasing predation); *Fund for Animals v. Turner*,
25 C.A. No. 91-2201 (MB), 1991 U.S. Dist. LEXIS 13426, at *24-26 (D.D.C. Sept. 27, 1991) (loss of

26
27 ⁵ In the process, the Project is severely degrading the designated critical habitat in the Yuba River for
28 all three of the Listed Species. The showing of irreparable harm to critical habitat is subsumed within
the showing of irreparable harm to the survival and recovery of the Listed Species above. *PCFFA v.*
Gutierrez, 606 F. Supp. 2d at 1250.

1 three to nine bears out of population of 440 to 680 constitutes irreparable harm); *Humane Soc’y of the*
2 *U.S. v. Kempthorne*, 481 F. Supp. 2d 53, 70 (D. D.C. 2006) (loss of 43 wolves constitutes irreparable
3 harm); *cf. Marsh*, 816 F.2d at 1389 (finding substantive ESA violation and ordering injunctive relief
4 where action agency failed to comply with reasonable and prudent alternatives upon which consulting
5 agency predicated its no jeopardy determination).

6 **B. The Requested Injunction Is Necessary To Avoid Irreparable Harm**

7 Achieving lasting and full benefits for the Listed Species will require comprehensive long-term
8 measures such as removal of Daguerre and Englebright or construction of new structures or channels
9 to allow fish passage past Daguerre and Englebright. Nonetheless, the following feasible interim
10 measures are narrowly tailored to substantially lessen the Project’s adverse impacts on the Listed
11 Species while more comprehensive remedies are devised.

12 **1. Measures 1-6 Are Needed To Correct the Delays in Upstream Migration**
13 **Caused by the Project**

14 Plaintiffs' Measures 1-6 are designed to correct several problems Daguerre imposes to upstream
15 salmonid migration.

16 **a. Measure 1**

17 Measure 1 is designed to correct the problems that improper flows in the Daguerre fish ladders
18 cause for salmonid migration. As noted, too little flow through the ladders causes their entrances to be
19 obscured by sheet flow over the dam; too much flow and the ladders create standing waves and other
20 passage problems. Yet the Corps does not even measure flow in the ladders, much less know what
21 flows would best facilitate fish passage.

22 Measure 1 addresses this problem via data gathering and planning to improve flow conditions
23 in the ladders. First, the Corps should install a flow gauge or other device to measure the volume of
24 water passing through the ladders. Next, this data should be correlated with VAKI data on fish passage
25 through the ladders to determine the correlations between flows and fish passage. From this data, the
26 Corps should then develop conclusions concerning the optimum flow velocities in the river and
27 ladders for promoting fish passage and whether upstream water releases from the various Yuba River
28 impoundments could be adjusted to help secure these maximum flow velocities.

1 As a related matter, the slide gates located at the top of the ladders are sometimes closed for
2 unexplained reasons, exacerbating the problem of low flows through the ladders. The Corps' operation
3 and maintenance plan should therefore specify that the gates will only be closed if needed to protect
4 against damage to the gates during extreme high flows or when needed for maintenance purposes, and
5 that the Corps will routinely inspect the gates to ensure that no third parties close them.

6 **b. Measure 2**

7 Measure 2 is designed to correct the problem of sheet flow over the face of Daguerre obscuring
8 flows through the Daguerre ladders, as well as the problem of low flows in the ladders themselves.⁶
9 The Corps (or other third parties) have periodically installed seasonal flash boards at the top of
10 Daguerre to manipulate flows over the dam face and through the fish ladders. These boards can be a
11 useful tool to correct the problem of sheet flow over the dam face and to increase the head behind the
12 dam to direct more flows to the fish ladders during the dry season. However, their usefulness so far has
13 been limited because the Corps has never developed any criteria to govern the use of the flash boards.

14 Therefore, Measure 2 calls for the Corps to develop a systematic plan for the flash board's
15 operation by April 6, 2011. This plan should specify how the flash boards can be used to maximize
16 Daguerre fish passage (i.e., by concentrating flows away from the dam face to avoid interfering with
17 ladder attraction flows or by concentrating flows through the ladders), what Yuba River flow
18 conditions will prompt the placement or removal of the flash boards, where the flash boards will be
19 placed under different river flow scenarios, and any other pertinent criteria.

20 A flash board operating plan is especially important because the previous flash board
21 installations have been implemented without any measures to avoid potential adverse consequences to
22 the Listed Species from improper installation and maintenance of the flash boards. These
23 consequences can include the collection of debris on the boards that traps fish attempting to migrate
24 past the flash boards, the impingement of juvenile salmonids on the flash boards, and the promotion of
25 predation upon juvenile salmonids. Measure 2 therefore calls for the plan to incorporate methods to

26

27 ⁶ Measure 2 was previously numbered Measure 4. Plaintiffs changed this to reflect the relationship
28 between this measure and the plan for optimizing flows through the ladders, as called for by Measure
1. The previous Measures 2 & 3 have now become Measures 3 & 4.

1 avoid these adverse consequences, including a weekly monitoring program as well as an adaptive
2 management approach to ensure the plan is adjusted in the future as new information becomes known.
3 The Corps should seek comments from NMFS, California Department of Fish and Game (“CDFG”),
4 SYRCL and Friends of the River on proposed changes to the plan.

5 **c. Measures 3 & 4**

6 Measures 3 and 4 address the Project’s third major impact on upstream migration: debris
7 blocking the Daguerre fish ladders. Measure 3 addresses this problem by requiring the installation of a
8 pressure transducer in the fish ladders. A sudden decline in water pressure as shown by the pressure
9 transducer would provide immediate notice that flows in the ladders had declined due to a debris
10 blockage. Once a debris blockage is signaled by the pressure transducer, Measure 4 requires the Corps
11 to promptly clear the blockage as soon as conditions permit.

12 Although the Corps conducts fish ladder inspections, those inspections have failed to ensure
13 that debris blockages are timely cleared. Recent Corps inspection logs indicate that debris blockages
14 are a continuing problem that the Corps’s current inspection regime has not adequately addressed.
15 Declaration of Patricia Weisselberg in Support of Plaintiffs' Final Remedy Brief, Ex. 1. One Corps
16 inspector even noted the presence of a beaver dam within the fish ladder but for some reason failed to
17 clear it. *Id.*

18 Even discounting this type of human error, the Corps conducts fish ladder inspections only
19 once every two weeks during low flow conditions and once every week the rest of the year. AR 6689.
20 The testimony provided by NMFS’s expert witness in the supplemental briefing, Brian J. Ellrott,
21 suggests that this is inadequate frequency to maintain unimpeded passage through the fish ladders. *See*
22 Declaration of Brian J. Ellrott (Docket Doc. 321-2) (Aug. 6, 2010) (“Ellrott Decl.”) ¶ I.2 (“*Increasing*
23 *the frequency of ladder inspections and subsequent debris removals would likely decrease the length of*
24 *any blockage, which would benefit spring-run and steelhead during the interim period.*”) (Emphasis
25 added.) Mr. Ellrott suggests that, during routine flows, weekly inspections surface and sub-surface
26 inspections should be undertaken with subsequent debris removal. *Id.* ¶ III.5. Mr. Ellrott suggests that
27 daily inspections should take place during uncontrolled flow events, (what Mr. Ellrott defines as flows
28 of 4,200 cfs or greater as measured at the Smartsville gage), with subsequent debris removal. *Id.* As

1 noted, the Corps does not currently inspect weekly during routine flows or daily after uncontrolled
2 flows.

3 Plaintiffs believe that a manual inspection program will be inherently less frequent and less
4 effective than the continuous monitoring allowed by a pressure transducer. However, if the Court is not
5 inclined to order implementation of a pressure transducer, Plaintiffs request that the Court order the
6 Corps to follow NMFS's own suggestions for weekly surface and sub-surface inspections of the
7 ladders during routine flows and daily inspections during uncontrolled flow events (4,200 cfs or
8 greater) – and remove any found debris.⁷

9 **d. Measure 5**

10 Measure 5 is designed to counter the fourth impediment to fish passage at Daguerre: the
11 existence of a gravel and sediment bar upstream of Daguerre. Although the existing BiOp requires the
12 Corps to implement a sediment management plan upstream of Daguerre, that plan is inadequate. The
13 plan requires the Corps to inspect the channel upstream of Daguerre in June to see if it has adequate
14 depth and width. If not, the Corps then dredges the channel. However, the channel could be too
15 shallow, or even blocked, for considerable time between the Corps' annual inspections. Declaration of
16 Brad Cavallo in Support of Plaintiffs' Supplemental Briefing Concerning Injunctive Relief (Docket
17 Doc. 317-1) (July 23, 2010) ("2010 Cavallo Decl.") ¶ 13. In addition, the plan lacks provisions to
18 ensure that the dredging is conducted to minimize impacts to the Listed Species. *Id.* ¶ 28.

19 More fundamentally, the problem with sediment upstream stems in part from morphological
20 changes on the river. The main channel of the Yuba River has shifted to the north in the vicinity of
21 Daguerre, and the area upstream of Daguerre by the south fish ladder has become perpetually shallow.
22 *Id.* ¶ 30. This has turned what should be a flowing river channel into a shallow backwater eddy at the
23 south ladder exit, hampering flow and rendering the south ladder inadequate for passage.

24 Accordingly, Measure 5 calls for the Corps to create a plan to re-engineer the river channel to
25 improve flows to the south ladder. This would likely involve dredging sediment at the south ladder exit

26 _____
27 ⁷ NMFS required the Corps to install a pressure transducer device as one of the Terms and Conditions
28 of the 2002 BiOp. AR 6258. This measure was subsequently dropped in exchange for the Corps's
agreement to conduct increased ladder inspections. As noted, the frequency of inspections has failed to
ensure unimpeded passage, however.

1 and taking measures to reshape the river bank to promote more robust flows to the south ladder.

2 **e. Measure 6**

3 In addition to the four problems with upstream fish passage at Daguerre, the SJ Order found
4 that poaching of fish at the fish ladders is a significant aspect of the problem that the BiOp should have
5 considered. SJ Order at 55-56. To address this problem, Measure 6 calls for the installation of locked
6 grates over the top of the fish ladders to ensure that poaching cannot occur.

7 Recent evidence of fish jumping out of the fish ladders adds urgency to the need for this
8 measure. During September and October 2010, personnel with CDFG reported that six chinook salmon
9 were found on dry land below the south fish ladder. Declaration of Gary Reedy in Support of Plaintiffs'
10 Final Remedy Brief ("2010 Reedy Decl.") ¶¶ 35-36, Ex. P. At first, inspectors thought the fish were
11 likely dragged from the river by predators. *Id.* But the repeated incidences over the course of a month
12 led inspectors to conclude that the fish were likely jumping out of the ladders, perhaps as a result of
13 recent flow modifications implemented in the ladder. *Id.* Although the time of year of these recent
14 observations indicates that the fish may have been fall Chinook, evidence suggests that they could have
15 been spring Chinook. *Id.* ¶ 37. Either way, both spring Chinook and steelhead are excellent jumpers
16 and there is no reason to doubt that this phenomenon will affect them next season.

17 These recent observations lend weight to previous observations of fish lying dead on dry land
18 below both the north and south fish ladders. *See* Declaration of Jason Rainey in Support of Plaintiffs'
19 Supplemental Brief in Reply to Defendants' Supplemental Brief (Docket Doc. 325-5) (Aug. 13, 2010)
20 ¶¶ 4-7 (describing two separate observations of chinook salmon below the south fish ladder in 2007
21 and 2008); 2009 Cavallo Decl. ¶¶ 30, 93 (describing observations of spring Chinook below the north
22 fish ladder); AR 1628/1624; Declaration of John Nelson in Support of Motion for Preliminary
23 Injunction, ¶ 6 (Docket Doc. 264) (May 20, 2009).⁸

24 **2. Measures 7-9 Are Needed To Correct the Loss of Genetic Diversity,**
25 **Reproductive Success, and Suitable Habitat Caused By the Project.**

26 As noted above, the Project is causing a number additional adverse impacts on the Listed

27 ⁸ In a prior order, in response to an objection from YCWA, the Court excluded the Nelson Declaration
28 from evidence until YCWA had the opportunity to depose Mr. Nelson. Since that order, YCWA has
deposed Mr. Nelson, removing any evidentiary objection to present consideration of this Declaration.

1 Species, including the loss of genetic diversity, reproductive success, and suitable habitat on the Yuba
2 River. SJ Order at 23-24. Measures 7-9 are designed to counter these Project impacts.

3 **a. Measure 7**

4 The interbreeding of spring Chinook with fall Chinook in the forced overlapping spawning
5 area below Englebright, and spring Chinook interbreeding with Feather River hatchery fish, are
6 threatening the survival of spring Chinook as a genetically distinct species in the Yuba River.
7 Declaration of Brad Cavallo in Support of Plaintiffs' Final Remedy Brief ("Cavallo Final Remedy
8 Decl.") ¶ 36. The urgency of this threat has been heightened by the discovery that greater numbers of
9 hatchery fish are present in the Yuba River than previously understood, increasing the risk of spring
10 Chinook interbreeding with hatchery fish. *Id.*

11 To counter this threat, Measure 7 calls for the Corps to study and develop a plan for measures
12 that will promote and secure physical separation of spring Chinook from fall Chinook in the Yuba
13 River. The plan should propose a temporary, seasonal artificial segregation weir within the Yuba River
14 below Englebright. *Id.* ¶¶ 37-39. The precise design, placement, installation, and operation of the
15 segregation weir project should be supported by a diligent analysis. *Id.* And given the pervasive
16 influence of hatchery strays on the Yuba River, the plan should include measures to counter the
17 influence of hatchery fish on the genetic diversity of spring Chinook. *Id.*

18 The necessity and appropriateness of this measure is underscored by a recent study of the
19 possibility of installing a segregation weir below Englebright. The study was conducted by the
20 California Department of Water Resources and Pacific Gas & Electric Company ("PG&E") in
21 connection with the process of re-licensing PG&E's hydroelectric facilities in the Feather River
22 watershed. *See* 2010 Reedy Decl., Ex. H (Habitat Expansion Agreement for Central Valley Spring-Run
23 Chinook Salmon and California Central Valley Steelhead, Final Habitat Expansion Plan) (Nov. 2010),
24 at ES-1. The study was designed to provide suggestions on projects that could be used to expand
25 habitat in nearby rivers, particularly the Yuba River. *Id.*

26 Significantly, the study finds that "[t]he use of weirs to separate species or races of salmon is a
27 well-proven technique and is used or planned for use in other Sacramento River streams, including
28 Battle Creek and Clear Creek, and the Feather River, respectively." *Id.* at 3-25. The study discusses the

1 need for such a measure to counter the genetic threat posed by the forced overlapping of use of
2 spawning area below Englebright. *Id.* at 3-25 to 3-28. The study provides significant detail about the
3 concept of a segregation weir on the Yuba River, including the type of weir that could be used (a
4 resistance board weir), the potential location for the weir, as well as an adaptive management strategy
5 to ensure the continued success of the weir after initial implementation. *Id.* at 3-25 to 3-27. The study
6 makes a preliminary cost estimate of \$300,000 for the entire process of permitting, designing, and
7 constructing the weir, and finds that the project could be accomplished within one year of the decision
8 to proceed. *Id.* at 3-28 to 3-29.

9 The Court should order the Corps to undertake the final study and implementation of the
10 segregation weir concept outlined in this study. Importantly, the study does not expressly recommend
11 implementation of the segregation weir, indicating that the project may not be implemented by PG&E
12 and the other third parties. The Corps should be required to take responsibility for mitigating the
13 impacts of its own Project by implementing the weir measure.

14 **b. Measure 8**

15 Measure 8 is needed to counteract the effects of Englebright Dam in adversely changing the
16 Yuba riverbed in ways that substantially reduce the habitat value of the River for the Listed Species.
17 Englebright traps gravel that would otherwise be carried downstream by high river flows. This is
18 causing the reach of the Yuba stretching a mile and a half downstream from Englebright (“the
19 Englebright Dam Reach”) to be mostly devoid of river-rounded gravel rock. To spawn successfully,
20 the Listed Species need a riverbed substrate that has a high proportion of such gravel. *E.g.*, BiOp at 7.
21 Rather than having a high presence of such gravel rock, the riverbed in the Englebright Dam Reach has
22 a high proportion of “shot rock,” i.e., large, sharply angular rock boulders, and other materials that do
23 not provide the interstitial spaces needed by salmonids for successful placement and hatching of eggs.
24 Reedy Decl. ¶ 6 and Ex. B, Ex. H at 3-5, 3-8 to 3-9; BiOp at 26.

25 Recognizing this problem, Term and Condition 1 of the BiOp’s ITS requires the Corps to
26 “develop and implement a long-term gravel augmentation program to restore quality spawning habitat
27 below Englebright Dam.” BiOp at 40. The BiOp’s ITS required the Corps to conduct a pilot gravel
28 injection project and then to “utilize the information obtained from [its] pilot gravel injection project to

1 develop and commence implementation of a long-term gravel augmentation program within three
2 years of the issuance of this biological opinion [i.e., by November 21, 2010].” *Id.* This gravel
3 augmentation requirement was not new; the 2002 BiOp had required the Corps to implement a gravel
4 augmentation project *by March 2003*. COE 555 (2002 BiOp T&C No. 3-A).

5 Despite this long-standing directive to implement a comprehensive gravel augmentation
6 project, the Corps *still has not done so and remains in on-going violation of the 2007 BiOp’s ITS*.
7 Commencing on November 21, 2010, the very last day for commencement of a gravel program under
8 the 2007 BiOp, the Corps at last placed more than a purely token amount of gravel into the Yuba
9 River. However, this placement was still merely a pilot project—not done pursuant to a duly adopted
10 Corps “long-term gravel augmentation program.” It was done pursuant to a plan called the
11 “Gravel/Cobble Augmentation Implementation Plan” (“GAIP”), which repeatedly identified the 2010
12 gravel project—under which the Corps placed a mere 5,000 short tons of gravel into the Yuba—as a
13 *pilot project*. *E.g.*, Reedy Decl. ¶ 10, Ex. D. The GAIP expressly stated that the long-term gravel
14 augmentation plan would be developed later, after the Corps studied the results of this pilot project:

15 Assuming the gravel-sluicing method of doing gravel/cobble augmentation is judged
16 successful after evaluation of the 2010 pilot project, *then a long-term plan that
continues to use this approach would be recommended.*

17 *Id.*, Ex. D at 73 (emphasis added).

18 The Corps’ placement of gravel into the Yuba is less than the volume of gravel its own
19 consultant has identified 2008 and as likely needed to create and sustain quality salmonid spawning
20 habitat in the Englebright Dam Reach; this consultant and the GAIP indicate that the long-term gravel
21 need for the Englebright Dam Reach is between about 16,000 to 26,000 tons of gravel. Reedy Decl., ¶
22 11, Ex. D at 36; *see also* Ex. C (Corps’ consultant report calling for the *annual* addition of 13,000 to
23 26,000 cubic yards of gravel in the Reach).. xx Furthermore, the Corps should have an adopted firm
24 plan to place additional gravel into the Yuba over the next several years to replace gravel that is
25 washed downstream out of the Englebright Dam Reach. Reedy Decl. ¶¶ 7, 19, 23, Ex. H at 3-16, 3-20
26 So long as Englebright remains in place, it will continue to block the natural flow of gravel into the
27 Englebright Dam Reach, requiring annual replacement of gravels washed downstream during high
28 flows. *Id.*, ¶ 7, Ex. H at 3-8 to 3-9, 3-16, 3-20.

1 The Corps' November 2010 gravel placement pursuant to its GAIP is also inadequate to offset
2 the adverse impacts of Engelbright Dam on the Listed Species' spawning habitat because it only
3 targets creating an improved gravel substrate for a very short 300 to 700 foot stretch of the upper part
4 of the Engelbright Dam Reach. *Id.* ¶ 11. The GAIP mistakenly contends that Engelbright has caused a
5 gravel deficit only in this area. *Id.*, Ex. D. In fact, extensive studies have documented that Engelbright
6 Dam has cut off the supply of gravel to the entire Engelbright Dam Reach, leaving most of this area
7 seriously deficient in suitable spawning substrate. *NMFS itself has expressed this view* and stated that
8 for this reason, the Corps is responsible to implement projects that replenish gravel throughout the
9 Engelbright Dam Reach. *Id.* ¶ 29., Ex. M at G-24 to G-25.

10 Measure 8 addresses these problems and the Corps' continuing recalcitrant failure to
11 implement an adequate long-term gravel augmentation program by requiring the following measures:
12 (1) by April 6, 2011, the Corps will develop a complete long-term gravel augmentation plan, (2), the
13 Corps' long-term gravel augmentation plan will require the Corps to complete the monitoring and
14 evaluation of its November 2010 gravel placement that the GAIP specifies, (3), the plan will specify
15 implementation of at least the two additional Yuba River gravel placement projects called for in a plan
16 recently proposed by the California Department of Water Resources ("DWR") and Pacific Gas &
17 Electric Co. ("PG&E") to NMFS and other relevant stakeholders, commencing in June 2011 and to be
18 completed thereafter as expeditiously as possible given permitting and construction constraints, (4), the
19 plan will specify that the Corps initially place at least 10,000 tons of gravel to construct additional
20 designated Yuba River gravel restoration sites, and (5), the plan will specify that the Corps will
21 monitor targeted gravel rehabilitation areas and replace any gravel lost in these areas to downstream
22 transport to ensure that they continue to have suitable spawning substrate. *See Id.* ¶ 25 ; Plaintiffs'
23 Proposed Order ¶ 8.

24 The Corps can develop a long-term gravel augmentation plan by April 6, 2011 given the
25 extensive documentation on gravel augmentation study that already exists, including extensive study
26 by the Corps' own consultant, and the fact that a more complete gravel augmentation plan has already
27 been written by DWR and PG&E and submitted to NMFS and other stakeholders. *See Reedy Decl.* ¶
28 26, Ex. H.

1 The Corps' plan should incorporate the gravel augmentation components of this DWR and
2 PG&E plan--"Final Habitat Expansion Plan" ("the HEP"). DWR and PG&E wrote the HEP pursuant to
3 a multi-party Habitat Expansion Agreement ("HEA") to which NMFS was also a party.⁹ The HEP
4 specifies two projects that would add gravel to a stretch of the Yuba extending from about one-half of
5 a mile downstream from Englebright Dam to about a mile and a half downstream from the Dam. The
6 HEP proposes preparing the riverbed for optimum gravel placement by removing some existing
7 unsuitable riverbed materials such as shot rock, reshaping the contours of the riverbed, and then
8 placing significant volumes of suitably shaped gravel into the riverbed in these reaches. *Id.*, Ex. H at 3-
9 11 to 3-20. As the HEP discusses, removal of shot rock and other unsuitable substrate and
10 recontouring of the river channel is necessary to ensure that gravel is retained in this reach of the river
11 and that the river has the physical attributes necessary for effective gravel spawning habitat. *Id.* at 3-13
12 to 3-14, 3-18.

13 Relying on calculations done by the Corps' gravel augmentation consultant, the HEP calls for
14 an estimated initial placement of 45,000 cubic meters of gravel for the first gravel project. The HEP
15 indicates that precise estimates are more difficult for the second project, but indicates a conservative
16 estimate would be nearly 16,000 cubic meters. The HEP further specifies a method of gravel delivery:
17 gravel would be purchased and hauled from a local quarry to the project site by truck and distributed
18 by heavy equipment. *Id.* at 3-16.

19 The Corps may contend that it should not be required to implement projects like those in the
20 HEP because DWR and PG&E will be performing the HEP's projects instead--and because the HEP
21 projects involve removal of shot rock and river recontouring, not just gravel augmentation. However,
22 such contentions would contradict NMFS's express views concerning the Corps' BiOp obligations.
23 Notably, in its comments on the Draft HEP, NMFS unequivocally rejected the Draft HEP's view that
24 the HEP projects went beyond the Corps' BiOp obligations:

25 _____
26 ⁹ The HEA was negotiated to provide an alternative to NMFS exercising its authority under the Federal
27 Power Act to require measures to promote anadromous fish passage as a condition of licenses for certain
28 hydroelectric projects operated by DWR and PG&E. Under the HEA, DWR and PG&E are supposed
to expand spring-run Chinook salmon and steelhead habitat as a contribution to the conservation and
recovery of these species. *See* Reedy Decl., Ex. H at ES-1 to ES-2.

1 To the contrary . . . [t]he reasonable and prudent measure and term and condition [of the
 2 2007 BiOp] do not limit the Corps' responsibility simply to gravel injection similar to
 3 the pilot project initiated by the Corps in 2007. The Corps' responsibility is to
 4 "...restore quality spawning habitat below Englebright Dam." Subsequent to the
 5 issuance of the biological opinion, two key sources of information regarding salmonid
 6 spawning habitat in the lower Yuba River were introduced (Pasternack 2008;
 7 Pasternack 2009). One was a comprehensive study of the hydrology, geomorphology,
 8 and ecology in two reaches a short distance downstream of Englebright Dam
 9 (Pasternack 2008), and the other (Pasternack 2009) reported results of the Corps' pilot
 10 gravel injection. Through the two reports, it became known that in order to restore
 11 quality spawning habitat in the Englebright Dam Reach . . . shot-rock removal and
 12 related rehabilitation are likely required prior to a long-term gravel augmentation
 13 program. *Given that the Corps' responsibility is to restore quality spawning habitat
 14 below Englebright Dam, the Corps must take whatever steps necessary to accomplish
 15 this task, including spawning habitat rehabilitation (e.g. shot-rock removal). An
 16 additional factor supporting that the Corps should be responsible for removing the
 17 shot-rock is that one of the primary sources of the shot-rock was rock excavation during
 18 the construction of Englebright Dam, which the Corps owns and operates.*

19 *Id.* ¶ 29, Ex. M at G-24 to G-25 (emphasis added). Thus, NMFS itself has formally stated that the
 20 Corps must implement projects such as those specified in the HEP to comply with the BiOp.¹⁰

21 Accordingly, the Court's order should direct the Corps' gravel plan to specify addition of at
 22 least 10,000 tons of gravel as part of its initial placement of gravel at additional designated Yuba River
 23 locations beyond the one location where the Corps added gravel in November 2010. As noted, the
 24 Corps' own expert consultant called for greater volumes than the GAIP. Moreover, the HEP has
 25 similarly called for extensive additional volumes of gravel placement as part of initial construction of
 26 gravel rehabilitation areas. Additionally, because gravel that is naturally transported out of the
 27 Englebright Dam Reach must be artificially replaced to maintain spawning substrate, the Corps' gravel
 28 augmentation plan should specify that the Corps will monitor the substrate conditions in the areas
 where gravel is restored and will place additional gravel into the Yuba as needed to replace any of the
 initial gravel that is transported downstream.

29 c. Measure 9

30 Englebright has caused a loss of woody debris structures in the Yuba that are needed for
 31 salmonid habitat. Cavallo Final Remedy Decl. ¶ 45. To address this impact, Measure 9 requires the

32 ¹⁰ Moreover, much of the HEP's own discussion contradicts its contention that its gravel projects should
 33 not be seen as within the BiOp's ITS requirements. Notably, the HEP acknowledges that long-term
 34 maintenance activities, including periodic gravel augmentation following flood events, should be
 35 undertaken by the Corps for a time as an obligation of the BiOp. *Id.*, Ex. H at 3-20.

1 Corps to develop a final plan and implement a project to plant native riparian vegetation on a parcel of
2 land on the lower Yuba River. Specifically, the Corps should implement what is identified as Project
3 10 in a recent study of feasible opportunities for the revegetation of the lower Yuba River. *See* 2010
4 Reedy Decl., Ex. R (Rehabilitation Concepts for the Parks Bar to Hammon Bar Reach of the Lower
5 Yuba River) (Nov. 2010).

6 Commissioned by SYRCL with funding from the U.S. Fish and Wildlife Service, the study
7 examined a number of potential actions to rehabilitate and diversify rearing habitats for juvenile
8 salmonids in the Yuba River to counter adverse conditions downstream. *Id.* at i, 41 (Fig. 2-2 (map of
9 study area)). The study finds that the operation of dams in the Yuba River has reduced the quality and
10 quantity of riparian habitat by altering the supply of wood and sediment to downstream areas. *Id.* at 2,
11 10, 21. Large wood and riparian vegetation serve as an important source of spawning and rearing
12 habitat. *Id.* at 12, 21, 40 (Fig. 2-1). To counter the loss of these habitats, the study calls for additional
13 planning and implementation of pilot revegetation projects to improve habitat for spring Chinook and
14 steelhead. *Id.* at i.

15 As described in detail in the study, Project 10 is a low-cost project involving the planting of
16 riparian vegetation and placement of large wood on approximately 20 acres of riverbank at a spot
17 known as Hammon Bar. *Id.* at 30, 67 (Fig. 5-10 (map showing area of revegetation)). This is
18 particularly feasible because Hammon Bar is part of a parcel of land owned by the Bureau of Land
19 Management (“BLM”), presenting no need to coordinate with private landowners. *Id.* at 50, Fig. 2-11
20 (map showing Hammon Bar within BLM land). The study suggests that implementation of this
21 measure would cost around \$100,000 and could be implemented within a year. *Id.* at 30, 32 (Table 2),
22 i. Accordingly, the Corps should complete a draft and final study for the implementation of this project
23 by June 6, 2011 and implement the project by November 7, 2011.

24 **3. Measures 7-9 Are Needed to Counter Harm Caused by Daguerre and the**
25 **Brophy Diversion Independent of the Impacts of Englebright**

26 The Federal Defendants may argue that some of the measures sought herein are inappropriate
27 because Englebright cannot be considered part of the Project. As noted by the Court, this directly
28 conflicts with the position taken by NMFS in the BiOp. SJ Order at 25. Regardless, Measures 7-9

1 would also serve to remedy the adverse impacts of Daguerre and the South-Yuba Brophy Diversion
2 (“Brophy Diversion”), which are undeniably part of the Project here.

3 By blocking or delaying upstream migration, Daguerre reduces critical energy stores, egg
4 viability, and spatial distribution for spring Chinook and steelhead. *Id.* at 23. Likewise, both Daguerre
5 and the Brophy Diversion reduce the abundance and reproductive success of spring Chinook and
6 steelhead by increasing impingement and entrainment of juveniles and increasing predation in the deep
7 pools at each facility. *Id.* at 23, 29.

8 Measure 7 would serve to counter this harm by ensuring that spring Chinook maintain the
9 genetic diversity and fitness needed to withstand the environmental pressures caused by Daguerre and
10 the Brophy Diversion. In particular, Measure 7 would counter the loss of egg viability caused by
11 Daguerre by reducing the disruption of spring Chinook redds by fall Chinook. This in turn would
12 increase the number of successfully hatched spring Chinook, improving overall species abundance,
13 and serving to counter the loss in abundance caused by predation of juveniles at Daguerre and
14 predation, impingement, and entrainment of juveniles at the Brophy Diversion. Measure 7 would also
15 counter the loss of spatial distribution caused by Daguerre by ensuring spring Chinook have adequate
16 spawning space free from competition from fall Chinook.

17 Similarly, Measure 8 would help to counter the loss of abundance and reproductive success of
18 spring Chinook and steelhead caused by Daguerre and the Brophy Diversion. Specifically, Measure 8
19 would counter the decrease in egg viability and other reproductive stressors at Daguerre by expanding
20 the spawning gravels available for successful spring Chinook and steelhead spawning. This will result
21 in an increase in species abundance to counter the losses of juveniles occurring at Daguerre and the
22 Brophy Diversion.

23 Measure 9 will also serve to counter the impacts of Daguerre and the Brophy Diversion. The
24 planting of native vegetation and installation of large wood features on Hammon Bar will provide a
25 source of cover from predators and refuge from flow velocities needed to counter the increased
26 predation and other stressors for juvenile survival caused by Daguerre and the Brophy Diversion.
27 Cavallo Final Remedy Decl. ¶ 48. The installation of large wood on the river will provide a velocity
28 refuge for adult salmonids to counter the loss of energy stores caused by delays in migration at

1 Daguerre. *Id.* It will also help counter the reproductive stress caused by Daguerre by ensuring that
2 riparian vegetation is present to anchor stream banks. *Id.* Fine sediments eroding from stream banks
3 can otherwise serve to impede spring Chinook and steelhead spawning. *Id.*

4 **4. The Interim Measures Are An Extension of the Terms and Conditions of**
5 **Previous Biological Opinions, Which NMFS Has Concluded Are Needed to**
6 **Correct the Harms Caused By the Project**

6 As discussed above, Plaintiffs' interim measures include measures that the Corps should begin
7 to implement right away to begin lessening the impacts to the Listed Species. Plaintiffs are mindful
8 that the Court owes deference to NMFS in the latter's execution of its duties upon remand. However,
9 ordering these interim measures is consistent with any such deference. Indeed, the requested interim
10 measures were inspired by the Terms and Conditions contained in the last three NMFS biological
11 opinions, though critically, were made more specific and concrete than the measures required therein.¹¹

12 Specifically, Measures 8 and 9 correspond to the BiOp's Terms and Conditions 1 and 2, which
13 require the Corps to implement long-term programs to replenish the supply of gravels and large woody
14 debris in the reach below Englebright. Indeed, NMFS's comments on the HEP discussed above
15 indicate that the Corps should be implementing the gravel augmentation projects called for by Measure
16 8 as part of its obligations under the existing BiOp. Similarly, Measures 1-6 correspond to the BiOp's
17 Terms and Conditions 3 and 4, which require the Corps to begin the process of improving fish passage
18 conditions at Daguerre and to implement a sediment management plan above Daguerre. Although
19 studying and implementing a seasonal segregation weir, as required by Measure 7, has not yet been
20 required by NMFS' Terms and Conditions, the un rebutted evidence demonstrates that it is a feasible
21 mitigation measure with substantial benefits to the species, and in fact has already been used on other
22 rivers. The Federal Defendants have had ample opportunity to counter Plaintiffs' showing on this point
23 and have failed to do so.

24 Given that most of Plaintiffs' injunctive relief measures are more specific and concrete

26 ¹¹ Perhaps for this reason, NMFS's own fisheries expert, Brian Ellrott, agrees that, almost across the
27 board, the interim measures will benefit the Listed Species. Specifically, Mr. Ellrott concludes that
28 Measures 1-5 and 7-8 will all benefit the Listed Species. Ellrott Decl. ¶¶ I.1, II.4, III.5, IV.6, V.7, VI.8,
VII.11, VIII.13, IX.14. Thus, the un rebutted evidence before the Court is that the interim measures
requested by the Plaintiffs would be helpful to the Listed Species.

1 versions of the Terms and Conditions of previous biological opinions, it is highly likely, if not
2 inevitable, that the new biological opinion will include very similar, if not identical, measures. If it
3 does not, Plaintiffs will argue that the new ITS is deficient just as the earlier ones were. Notably,
4 NMFS would have a heavy burden of justifying the inconsistent departure from its past biological
5 opinions. *E.g.*, *Nat'l Wildlife Fed'n*, 524 F.3d at 928 (agency decisions inconsistent with prior
6 decisions are entitled to little deference). However, if the new biological opinion does require some as-
7 yet unknown mitigation measures, and those measures would render the current injunctive relief
8 unnecessary, the Court retains discretion to modify the order going forward. Plaintiffs' proposal for
9 supplemental briefing when the new biological opinion is released would provide the opportunity to
10 address this issue if it arises.

11 Implementation of Measures 1-9 is all the more critical given the passage of time since NMFS
12 first imposed Terms and Conditions upon the Project. For example, despite the fact that some of these
13 measures, such as gravel augmentation, have been required since as early as March 2003, the Corps
14 has only just begun implementing this program. Remarkably, the Corps waited until literally the last
15 day allowed under the BiOp – November 21, 2010, exactly three years to the day – to begin any more
16 than purely token placement of gravels. And the Federal Defendants have essentially conceded that it
17 is impossible for the Corps to comply with Term and Condition 3A requiring the Corps to study and
18 implement a long-term fish passage improvement project at Daguerre. *See* Supp. Reply Brief at 9-10
19 (discussing facts provided by Federal Defendants demonstrating impossibility of completion within
20 deadline). The many years since these crucial measures were first required, coupled with the Corps's
21 ongoing record of foot-dragging, requires an order to ensure that they are finally implemented.

22 **C. The Court Should Order NMFS To Issue a New Biological Opinion and the**
23 **Federal Defendants To File Status Reports.**

24 Having found the BiOp arbitrary and capricious, the Court should order NMFS to issue a new
25 BiOp within six months, or June 6, 2011. A remand injunctive order requiring a new biological
26 opinion that addresses and rectifies the deficiencies identified by the SJ Order is an appropriate remedy
27 for ensuring the Federal Defendants rectify their ESA section 7 violation, and a six month deadline for
28 this action is a reasonable time limit. *Nat'l Wildlife Fed'n*, 524 F.3d at 937, *citing Nat'l Org. of*

