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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF ARIZONA**

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10 Grand Canyon Trust,)	No. CV-07-8164-PHX-DGC
11 Plaintiff,)	ORDER
12 vs.)	
13 U.S. Bureau of Reclamation, et al.,)	
14 Defendants.)	

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Plaintiff Grand Canyon Trust (the “Trust”) claims that the current operation of Glen Canyon Dam on the Colorado River violates the Endangered Species Act by jeopardizing and taking the endangered humpback chub and by destroying or adversely modifying its critical habitat. The Trust further claims that the Bureau of Reclamation (“Reclamation”) and the Fish and Wildlife Service (“FWS”) – two federal agencies with environmental responsibilities for the Dam – have failed to comply with relevant statutes. For the reasons that follow, the Court will grant summary judgment in favor of the Trust on Claim 7, grant summary judgment in favor of Reclamation on Claims 6 and 8, and take Claims 1, 2, and 3 under advisement. The Court will remand a portion of FWS’s 2008 biological opinion for further consideration by October 30, 2009, and will establish a schedule for additional activities in this lawsuit once FWS has reconsidered its opinion.

1 **I. Background.**

2 **A. The Parties.**

3 The Trust is an organization created to “protect and restore the canyon country of the
4 Colorado Plateau,” including its “diversity of plants and animals.” Dkt. #59 ¶ 8. The Trust
5 has filed suit against Reclamation and its Commissioner (collectively, “Reclamation”) and
6 against FWS.¹ The Trust claims that Reclamation’s current operation of Glen Canyon Dam,
7 particularly the Dam’s fluctuating releases of water into the Colorado River, jeopardizes and
8 takes the humpback chub and destroys its critical habitat. The Trust also claims that
9 Reclamation and FWS have failed to comply with procedural requirements of the
10 Endangered Species Act, the National Environmental Protection Act, and the Grand Canyon
11 Protection Act. The Court allowed several parties to intervene as defendants, including
12 Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, the Colorado River
13 Commission of Nevada, the Southern Nevada Water Authority, the Colorado River Energy
14 Distributors Association, the Central Arizona Water Conservation District, the Imperial
15 Irrigation District, and the Metropolitan Water District of Southern California. Dkt. #98.

16 **B. The Colorado River and Glen Canyon Dam.**

17 The Colorado River is the most important water resource in the American West,
18 providing drinking water for more than 25 million people. USGS Circular 1282, State of the
19 Colorado River Ecosystem in Grand Canyon (“2005 SCORE Report”), Dkt. #136, Ex. 18 at
20 2. The river has formed the Grand Canyon – one of the natural wonders of the world – and
21 serves as an important point of access to the Canyon and as host for a wide variety of unique
22 resources and species. The river also produces electrical power, with Glen Canyon Dam
23 generating more than 3 million megawatt hours of electricity annually. *Id.* Given these and
24 other demands, the river is one of the most heavily regulated in the world. Statutes,
25 regulations, compacts, court decisions, treaties, and agreements all combine to form a “Law
26 of the River” that extends back more than 100 years.

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28 ¹ Reclamation and FWS will be referred to collectively as the “Federal Defendants.”

1 Glen Canyon Dam is located on the Colorado River just south of the Utah-Arizona
2 border. The Dam forms Lake Powell, a body water that is 186 miles long and the second
3 largest reservoir in the United States. Congress authorized construction of the Dam in 1956
4 for the purposes of “regulating the flow of the Colorado River, storing water for beneficial
5 consumptive use, [and] making it possible for the States of the Upper Basin to utilize . . . the
6 apportionments made to and among them.” 43 U.S.C. § 620. The Colorado River Basin
7 Project Act of 1968 required the Secretary of the Interior to adopt criteria for the long-range
8 operation of Glen Canyon Dam. 43 U.S.C. § 1552(b). Long Range Operating Criteria for
9 the Dam were adopted by the Secretary on June 4, 1970, and remain largely unchanged
10 today. *See* 35 Fed. Reg. 8951-02 (June 10, 1970); 70 Fed. Reg. 15873, 15874 (Mar. 29,
11 2005). They establish a minimum annual water release from Lake Powell of 8.23 million
12 acre feet. *Id.* at 15875.²

13 The humpback chub is a “big-river fish” that developed three to five million years
14 ago. The species lives in the relatively inaccessible canyons of the Colorado River. Six
15 humpback chub populations have been identified, five upstream of the Dam and one
16 downstream. Only the downstream population is at issue in this case. The humpback chub
17 was listed as endangered under the statutory predecessor to the Endangered Species Act. 32
18 Fed. Reg. 4001 (Mar. 11, 1967). In 1973, the chub was formally listed as endangered under
19 the Act. 38 Fed. Reg. 106 (June 4, 1973). In 1994, some 379 miles of the Colorado River
20 were designated by FWS as “critical habitat” for the chub. Dkt. #136, Ex. 11 at 12. “Critical
21 habitat” is habitat essential for the endangered species’ survival and therefore in need of
22 special management. 59 Fed. Reg. 13374 (Mar. 21, 1994).

23 The adult population of humpback chub in the Grand Canyon is estimated to have
24 been 10,000 to 11,000 in 1989, dropping to 4,500 or fewer in 2001. Dkt. #136, Ex. 11 at 13,
25 20. Of some significance for this case are recent studies showing that the chub population

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27 ²An “acre foot” of water is the amount of water needed to cover one acre of land to
28 a depth of one foot. It amounts to 43,560 cubic feet of water, or about 325,851 gallons.
A million acre feet is, of course, one million times this amount.

1 has increased in recent years to a total of between 5,300 and 6,700 in 2006. *Id.* Recent data
2 also show a greater number of young chub in the mainstem of the Colorado River. *Id.* at 20.
3 The reasons for these increases are not presently known, but, as will be seen below, they
4 have influenced agency decisions in this case.

5 **C. Historical River Conditions and Dam Operations.**

6 The Colorado River historically was sediment-rich, with high flows in the spring and
7 lower, steadier, warmer flows in the summer and fall. Glen Canyon Dam changed these
8 characteristics in several important respects. The Dam now captures approximately 84% of
9 the sediment that formerly flowed down the river. The river below the Dam no longer varies
10 on the basis of seasonal run-off. The average water temperature in the river has dropped
11 significantly because the Dam releases water from the deeper reaches of Lake Powell.
12 Dkt. #136, Ex. 11 at 21; 2005 SCORE Report at 4.

13 From 1963 to 1991, the Dam was managed primarily to maximize power generation,
14 an approach that resulted in significant fluctuations of the river level. As power demand
15 increased during the daytime, more water would be released from the Dam to generate more
16 electricity, producing higher river levels. As power demand dropped at night, less water
17 would be released and the river level would also drop. Daily flows from the Dam could
18 fluctuate between 5,000 cubic feet per second (“cfs”) and 30,000 cfs under this approach,
19 resulting in single-day changes of up to 13 feet in the river’s water level. 2005 SCORE
20 Report at 4. Fluctuations were also seasonal, with more water being released during the high
21 power demand months of the summer and winter, and less during the spring and fall.

22 Environmental concerns about these Dam operations and a mandate from Congress
23 in the Grand Canyon Protection Act led Reclamation to issue a final environmental impact
24 statement for Glen Canyon Dam in 1995 (the “1995 FEIS”). Dkt. #122-2 at 3. The 1995
25 FEIS evaluated several alternative approaches to operating the Dam and ultimately
26 recommended a system described as “modified low fluctuating flow” or “MLFF.” As
27 explained in the FEIS, “this alternative would have the same annual and essentially the same
28 monthly operating plan” as the approach used from 1963 to 1991, but would limit the

1 magnitude of daily and hourly fluctuations in water releases from the Dam. MLFF also
2 included habitat maintenance flows intended “to re-form backwaters and maintain sandbars,
3 which are important for camping beaches and wildlife habitat.” *Id.* at 16.

4 The 1995 FEIS rejected an alternative known as “seasonally adjusted steady flow” or
5 “SASF.” SASF did not vary water releases on the basis of electrical power demands, but
6 instead “was developed to enhance the aquatic ecosystem by releasing water at a constant
7 rate within defined seasons and by using habitat maintenance flows. Seasonal variations in
8 minimum flows and habitat maintenance flows were designed with the goal of protecting and
9 enhancing native fish.” *Id.* at 20. Water releases under the SASF alternative would be
10 steady throughout any given month, but total monthly releases would be higher in the spring
11 and lower in the summer and fall, more closely tracking the pre-Dam fluctuations of the
12 river. *Id.* at 21.

13 Secretary of the Interior Bruce Babbitt accepted the recommendation of the 1995 FEIS
14 and, on October 8, 1996, signed a Record of Decision that selected MLFF as the operating
15 system for the Dam (the “1996 ROD”). Dkt. #27, Ex. 3. With the exception of some brief
16 experimental variations that will be mentioned below, MLFF has remained the Dam’s
17 method of operation to the present day.

18 **D. The Law – ESA Consultation and the Effect of a Biological Opinion.**

19 The Endangered Species Act (“ESA”) was enacted some 10 years after Glen Canyon
20 Dam was completed. To help ensure that endangered species are not jeopardized, the ESA
21 establishes a three-step procedure. First, an agency proposing to take an “agency action” –
22 in this case, Reclamation’s operation of the Dam – must inquire of the Secretary of the
23 Interior whether any threatened or endangered species may be present in the area of the
24 proposed action. 16 U.S.C. § 1536(c)(1). Second, if the answer is yes, the action agency
25 must prepare a “biological assessment” to determine whether such species “is likely to be
26 affected” by the proposed agency action. *Id.* Third, if the action agency determines in the
27 biological assessment that its proposed action may affect a threatened or endangered species,
28 the agency must engage in formal consultations with another federal agency designated to

1 protect the species, in this case FWS. 50 C.F.R. § 402.14(a). FWS must then issue a
2 “biological opinion” stating its view on whether the proposed agency action will affect the
3 endangered species or its habitat. 16 U.S.C. § 1536(b)(3)(A). If the opinion concludes that
4 the agency action is likely to jeopardize the protected species, FWS must outline “reasonable
5 and prudent alternatives” or “RPA” that will avoid the jeopardy. *Id.* If the biological opinion
6 concludes that the agency action will not result in jeopardy, or if it offers an RPA to avoid
7 jeopardy, FWS provides the action agency with an “Incidental Take Statement” specifying
8 the “impact of such incidental taking on the species,” any RPA that FWS “considers
9 necessary or appropriate to minimize such impact,” and setting forth “the terms and
10 conditions . . . that must be complied with by the Federal agency . . . to implement [those
11 measures].” 16 U.S.C. § 1536(b)(4).³

12 A biological opinion’s “Incidental Take Statement constitutes a permit authorizing the
13 action agency to ‘take’ the endangered or threatened species so long as it respects the [FWS]
14 ‘terms and conditions.’” *Bennett v. Spear*, 520 U.S. 154, 170 (1997). Thus, if the action
15 agency reasonably abides by the biological opinion and its RPA, the agency will not be found
16 in violation of the ESA. An action agency may elect not to comply with FWS’s biological
17 opinion, but it must state “in its administrative record its reasons for disagreeing with the
18 conclusions” of the opinion. *Id.* at 169 (citations omitted). As the Supreme Court has
19 explained, “[t]he action agency is technically free to disregard the Biological Opinion and
20 proceed with its proposed action, but it does so at its own peril[.]” *Id.* at 170. That “peril”
21 is possible violation of the ESA and accompanying judicial remedies.

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25 ³ Going back to step three, if the biological assessment of the action agency concludes
26 that the action is “not likely to adversely affect” an endangered or threatened species, the
27 action agency may seek informal consultation with FWS. 50 C.F.R. § 402.13(a). FWS may
28 issue a written concurrence in the determination or may suggest modifications to avoid the
likelihood of harm to the endangered species. 50 C.F.R. § 402.13(b). If FWS does not agree
that the agency action is not likely to adversely affect the protected species, formal
consultation must occur. 50 C.F.R. § 402.14.

1 **E. The 1994 FWS Opinion, the RPA, and Reclamation’s Compliance.**

2 At the heart of this case is a biological opinion issued by FWS in 1994 (the “1994
3 Opinion”).⁴ The opinion concerned Reclamation’s selection of MLFF as the operating
4 system for the Dam. FWS concluded that MLFF would jeopardize the humpback chub and
5 adversely modify its habitat. Dkt. #136, Ex. 17 at 3. This conclusion was based on the
6 declining chub population and the effect of MLFF on critical chub habitat, particularly the
7 nearshore sandbars and sun-warmed backwaters that were essential for the growth, feeding,
8 and protection of young chub. *Id.* at 20, 23-28. The 1994 Opinion noted that the fluctuating
9 flows of MLFF reduce the temperatures of backwaters by inundating them with colder water
10 as river levels rise, and reduce food sources in the backwaters. *Id.* at 23-24. The opinion
11 also noted that fluctuating water levels could force young chub into the more hazardous
12 mainstream of the river. *Id.* at 24.

13 As required by the ESA, FWS set forth an RPA that would minimize or avoid the
14 adverse effects of MLFF identified in the 1994 Opinion. *Id.* at 35. The RPA included
15 several elements. Although the parties have focused primarily on the steady-flow element,
16 all of the RPA elements are relevant to understanding the actions of the parties in this case.

17 **1. RPA Element 1.**

18 RPA element 1 called for Reclamation to develop an “adaptive management program”
19 for the operation of Glen Canyon Dam. The program, referred to as “AMP,” was intended
20 to create a forum for all agencies, states, tribes, organizations, and persons with interests in
21 the Dam, the Colorado River, and the Grand Canyon to have a voice in Dam operations. As
22 envisioned by the RPA, the AMP would be used to design studies to determine the effect of
23 river flows on endangered species and to implement actions to increase the likelihood of their
24 survival and recovery. *Id.* at 35. To institute AMP, Reclamation formed the Adaptive
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26 ⁴ The 1994 Opinion was signed on December 21, 1994, but was not transmitted to
27 Reclamation until January 7, 1995. The Trust refers to the opinion as the 1994 Opinion,
28 while Reclamation refers to it as the 1995 Opinion. The Court will refer to it as the 1994
Opinion.

1 Management Working Group (“AMWG”), a 25-member body with representatives from
2 Reclamation, FWS, the National Park Service, other federal and state agencies, the seven
3 Colorado River basin states, environmental groups (including the Trust), electrical power
4 groups, Indian Tribes, and recreation groups. 2005 SCORE Report at 10. The AMWG
5 makes recommendations to the Secretary of the Interior concerning Dam operations, and has
6 been responsible for many of the studies addressed in this order and actions designed to
7 benefit the chub that will be discussed below. FWS concluded in 1999 that Reclamation had
8 successfully completed this element of the RPA. Dkt. #22, Ex. 7 at 2.

9 **2. RPA Element 1A.**

10 Element 1A required Reclamation to institute a program of experimental releases from
11 the Dam that included high steady flows in the spring and low steady flows in the summer
12 and fall, and to quantify the effects of such flows on endangered and native fish. The RPA
13 required that the design of such flows be completed by October 1996, with the flows to start
14 in April of 1997. “If sufficient progress and good faith effort is occurring toward initiating
15 experimental flows,” the RPA stated, then implementation of the steady flows could occur
16 later in 1997. Dkt. #136, Ex. 17 at 35. FWS warned, however, that if “there is not sufficient
17 progress, Glen Canyon Dam would be operated as SASF flows during spring through fall
18 (April to October) beginning in 1998.” *Id.*

19 Reclamation used the AMP process to institute high flow tests in 1996 and 2004 and
20 a steady flow test from March to September of 2000 (Dkt. #27-3, Ex. 5 at 14-15), but has not
21 implemented the specific steady flows required by RPA element 1A – high steady flows in
22 the spring and low steady flows in the summer and fall. Nor has Reclamation implemented
23 SASF, the alternative steady-flow regime required by the RPA. As a result, FWS has on
24 several occasions notified Reclamation that element 1A of the RPA “has not seen sufficient
25 progress.” Dkt. #22, Ex. 7 at 3 & Ex. 8 at 3.

1 **3. RPA Elements 1B, 1C, 2, and 4.**⁵

2 Element 1B called for Reclamation to investigate a system for the “selective
3 withdrawal” of water from Lake Powell. The purpose would be to withdraw warmer water
4 from the lake and thereby increase river temperatures. Dkt. #136, Ex. 17 at 36. FWS stated
5 in 2002 that Reclamation had made progress on this element. Dkt. #22, Ex. 8 at 4.
6 Reclamation has created preliminary plans for a multi-level water intake structure that could
7 be used to draw warmer water from the lake. 2005 SCORE Report at 47.

8 RPA element 1C called for Reclamation to determine the effects of water temperatures
9 on various native fishes, including the humpback chub. Dkt. #136, Ex. 17 at 37.
10 Reclamation has commissioned a number of studies on this issue, and in 2002 FWS advised
11 Reclamation that work on this element was “progressing well.” Dkt. #22, Ex. 8 at 6. Several
12 studies included in the administrative record concern the effects of temperature on the chub.

13 RPA element 2 called for Reclamation to protect humpback chub in the Little
14 Colorado River by developing a management plan for the Little Colorado River. Dkt. #136,
15 Ex. 17 at 38. FWS reported in 2002 that Reclamation had made little progress on this
16 element, but was working with a watershed group for the Little Colorado River and would
17 produce a report in June of 2003. Dkt. #22, Ex. 8 at 6. The parties have not otherwise
18 apprised the Court of progress on this element.

19 RPA element 4 called for Reclamation to establish a second spawning population of
20 humpback chub downstream of the Dam. Dkt. #136, Ex. 17 at 39. The primary spawning
21 colony is located in the lower reaches of the Little Colorado River, near its confluence with
22 the Colorado River. To establish a second spawning population, Reclamation and other
23 agencies, in 2003, relocated 300 young humpback chub to a spot above Chute Falls, a natural
24 barrier on the Little Colorado River. Another 300 chub were moved there in July 2004,
25 followed by another 565 in July 2005. Chub survival and growth rates at this new location
26 have been high. The population above Chute Falls is now reproducing and moving
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28 ⁵ RPA element 3 concerned the razorback sucker, a native fish not at issue in this case.

1 downstream in the Little Colorado, and appears to be a new source for humpback chub in the
2 lower portions of the Little Colorado River and in the mainstem of the Colorado River.
3 Dkt. #27, Ex. 5 at 68-69.

4 **4. RPA Summary.**

5 Reclamation has completed elements 1 and 4 of the RPA and appears to have made
6 meaningful progress on elements 1B and 1C. The Trust's primary focus in this case is on
7 element 1A and Reclamation's failure to implement experimental high steady flows in the
8 spring and low steady flows in the summer and fall, or alternatively to implement SASF.

9 **5. Other Conservation Measures.**

10 In addition to the steps discussed above, the AMP process has produced other
11 conservation measures for the chub. Rainbow trout, a species of fish not native to the
12 Colorado River below the Dam, has thrived in the cold waters created by the Dam. The trout
13 prey on young humpback chub. To address this obstacle to chub survival, the AMP process
14 designed and implemented a program to remove rainbow trout from the key stretch of the
15 Colorado River near the confluence with the Little Colorado. In 2003 and 2004, 16,045
16 rainbow trout and many other non-native fish were mechanically removed from the river,
17 reducing the population of trout in this stretch by more than 60%. 2005 SCORE Report at
18 46-47. Rainbow and brown trout were also removed from other tributaries such as Bright
19 Angel Creek in anticipation of establishing chub populations in these locations. Additional
20 conservation measures will be discussed below.

21 **F. The 2008 FWS Opinion.**

22 As part of the AMP process, Reclamation created a 2008 Experimental Plan that
23 called for two modifications to MLFF that were designed to benefit the chub – a high water
24 release in March of 2008 to build beach and backwater habitat, and steady flows in
25 September and October of each year from 2008 to 2012 (the “2008 Experimental Plan”). As
26 required by the ESA, Reclamation performed an Environmental Assessment for this plan and
27 concluded that the environmental impact would not be significant.

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1 Reclamation consulted with FWS concerning the 2008 Experimental Plan and, on
2 February 27, 2008, FWS issued a biological opinion (the “2008 Opinion”). The 2008
3 Opinion noted recent studies that have shown increases in the humpback chub population,
4 with at least one study concluding that the increases must have started between 1996 and
5 1999, before Reclamation began conducting experimental flows and removing non-native
6 fish from the river. The 2008 Opinion concluded that “some combination of conditions
7 under MLFF has benefitted the humpback chub, and that more recent conservation actions
8 [such as the removal of rainbow trout] likely have as well[.]” Dkt. #136, Ex. 11 at 52. With
9 respect to the two elements of the 2008 Experimental Plan, FWS opined that
10 “implementation of the March 2008 high flow test and the five-year implementation of
11 MLFF with steady releases in September and October, as proposed, is not likely to jeopardize
12 the continued existence of the humpback chub . . . and is not likely to destroy or adversely
13 modify designated critical habitat for the humpback chub.” *Id.* at 51.

14 The 2008 Opinion also noted that Reclamation intended to undertake eight
15 conservation measures to benefit the chub: (1) Reclamation and FWS will reinitiate
16 consultation concerning the chub if the population drops in any single year below 3,500 adult
17 chub; (2) Reclamation, through AMP, will develop a comprehensive plan for the
18 management and conservation of chub in the Grand Canyon; (3) Reclamation will work with
19 the National Park Service to establish spawning populations of the chub in tributaries of the
20 Colorado River such as Havasu, Shinumo, and Bright Angel Creeks; (4) Reclamation,
21 through AMP, will continue to control non-native fish that prey on the chub; (5) Reclamation
22 will takes steps to minimize variations in flow between months – variations that can
23 adversely affect backwater habitat; (6) Reclamation will undertake a nearshore ecology study
24 to examine the effects of flow variations on nearshore habitat; (7) Reclamation and FWS will
25 create a humpback chub refuge in a fish hatchery to protect against catastrophic loss of the
26 chub in the Colorado River; and (8) Reclamation will continue to help other stakeholders in
27 the Little Colorado River watershed develop a plan that protects watershed levels for the
28 chub. *Id.* at 9-11, 52-55. FWS found that these conservation measures increase its

1 confidence “that all adverse effects of the proposed action are reduced to the point that the
2 [2008 Experimental Plan] will not jeopardize the species or result in adverse modification
3 of critical habitat.” *Id.* at 52.

4 Significantly for this lawsuit, the 2008 Opinion also stated, in a single sentence and
5 with little explanation, that it “replaces” the 1994 Opinion – the opinion that found MLFF
6 violates the ESA. By replacing the 1994 Opinion, the 2008 Opinion also had the effect of
7 replacing the RPA, including the element 1A requirement that Reclamation implement its
8 own program of steady flows or SASF. Needless to say, the parties have very different views
9 concerning the 2008 Opinion. Reclamation cites the 2008 Opinion as conclusive evidence
10 that it is not violating the ESA by current Dam operations. The Trust argues that the 2008
11 Opinion is invalid, that it was created as a defense to this lawsuit, that the 1994 Opinion still
12 controls, and that the Dam operations therefore continue to violate the ESA.

13 **G. This Suit and the Parties’ Motions.**

14 The Trust filed suit on December 7, 2007, asserting five claims: (1) Reclamation is
15 violating the ESA by jeopardizing the humpback chub, (2) Reclamation is violating the ESA
16 by destroying or adversely modifying the chub’s critical habitat, (3) Reclamation is violating
17 the ESA by “taking” the chub, (4) Reclamation is violating the ESA by failing to consult with
18 FWS on the development of annual operating plans for the Dam, and (5) Reclamation is
19 violating the National Environmental Policy Act (“NEPA”) by failing to prepare
20 environmental assessments or environmental impact statements for each of the Dam’s annual
21 operating plans. Dkt. #1. After Reclamation issued the 2008 Experimental Plan and FWS
22 issued the 2008 Opinion, the Trust filed a supplemental complaint asserting three more
23 claims: (6) Reclamation’s Environmental Assessment for the 2008 Experimental Plan fails
24 to comply with NEPA, (7) FWS’s 2008 Opinion violates the ESA, and (8) the 2008
25 Experimental Plan violates the Grand Canyon Protection Act (“GCPA”). Dkt. #23.

26 On February 15, 2008, the Trust moved for summary judgment on the first five
27 claims. Dkt. #15. Reclamation responded with a motion to dismiss or, in the alternative,
28 cross-motion for summary judgment. Dkt. #25. After extensive briefing and argument, the

1 Court granted summary judgment for Reclamation on Claims 4 and 5, but denied the
2 remaining motions. *See* Dkt. #123. Because the outcome of Claims 1, 2, and 3 depends
3 heavily on the validity of the 2008 Opinion, the Court deferred ruling on these claims until
4 Claims 6, 7, and 8 were fully briefed. *Id.* The briefing has now been completed and oral
5 argument was held on April 9, 2009. The remainder of this order will address the legal
6 standards that govern this case, the validity of the 2008 Environmental Assessment (Claim
7 6), the validity of the 2008 Opinion (Claim 7), the validity of the 2008 Experimental Plan
8 under the GCPA (Claim 8), the merits of Claims 1, 2, and 3, and appropriate remedies.

9 **II. Legal Standard.**

10 **A. Standard of Review.**

11 Because the ESA, NEPA, and GCPA contain no standards for judicial review of
12 agency actions, the Court must evaluate the administrative decisions of Reclamation and
13 FWS using the Administrative Procedures Act (“APA”). *See Or. Natural Res. Council v.*
14 *Allen*, 476 F.3d 1031, 1036 (9th Cir. 2007) (“As the ESA does not itself specify a standard
15 of review of its implementation, we apply the general standard of review of agency action
16 established by the [APA.]”); *Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 450
17 F.3d 930, 934 n.4 (9th Cir. 2006) (“When reviewing administrative decisions involving the
18 ESA, we are guided by section 706 of the Administrative Procedure Act.”); *Akiak Native*
19 *Cmty. v. U.S. Postal Serv.*, 213 F.3d 1140, 1146 (9th Cir. 2000) (APA standard used in
20 reviewing NEPA claim). The Court may set aside an agency’s decision under the APA only
21 if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with
22 law.” 5 U.S.C. § 706(2)(A); *Pac. Coast Fed’n of Fishermen’s Ass’n v. Nat’l Marine*
23 *Fisheries Serv.*, 265 F.3d 1028, 1034 (9th Cir. 2001). “Agency action should be overturned
24 only when the agency has ‘relied on factors which Congress has not intended it to consider,
25 entirely failed to consider an important aspect of the problem, offered an explanation for its
26 decision that runs counter to the evidence before the agency, or is so implausible that it could
27 not be ascribed to a difference in view or the product of agency expertise.’” *Id.* (quoting
28 *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43

1 (1983)). “This standard of review is highly deferential, presuming the agency action to be
2 valid and affirming the agency action if a reasonable basis exists for its decision.” *Nw.*
3 *Ecosystem Alliance v. U.S. Fish & Wildlife Serv.*, 475 F.3d 1136, 1140 (9th Cir. 2007)
4 (internal quotes and citation omitted).

5 **B. Scope of Review.**

6 Review under the APA usually is restricted to the administrative record. *See, e.g.,*
7 *Ariz. Cattle Growers’ Ass’n v. U.S. Fish & Wildlife Serv.*, 273 F.3d 1229, 1236 (9th Cir.
8 2001) (“[t]he reviewing court may not substitute reasons for agency action that are not in the
9 record”); 5 U.S.C. 706(2) (“the court shall review the whole record or those parts of it cited
10 by a party”). The Court may consider materials outside of the administrative record “(1) if
11 necessary to determine whether the agency has considered all relevant factors and has
12 explained its decision, (2) when the agency has relied on documents not in the record, . . .
13 (3) when supplementing the record is necessary to explain technical terms or complex subject
14 matter, [or] . . . (4) when plaintiffs make a showing of agency bad faith.” *Ctr. for Biological*
15 *Diversity*, 450 F.3d at 943. With the exception of the remedies discussion at the end of this
16 order and a few documents addressed in the Court’s order of April 6, 2009 (Dkt. #157), the
17 Court’s decision is limited to the administrative record supplied by the parties. Citations are
18 to exhibits provided with the parties’ briefing and found in the Court’s electronic docket.

19 **III. Claim 6 – Is Reclamation’s 2008 Environmental Assessment Valid?**

20 The Trust alleges that Reclamation’s Environmental Assessment of the 2008
21 Experimental Plan violates NEPA’s procedural requirements.

22 **A. NEPA Requirements.**

23 “NEPA is a procedural statute that does not mandate particular results, but simply
24 provides the necessary process to ensure that federal agencies take a hard look at the
25 environmental consequences of their actions.” *Sierra Club v. Bosworth*, 510 F.3d 1016,
26 1018 (9th Cir. 2007) (quotations and citation omitted). NEPA directs federal agencies to
27 prepare a detailed environmental impact statement or “EIS” for every “major Federal action
28 significantly affecting the quality of the human environment[.]” 42 U.S.C. § 4332(c). NEPA

1 permits an agency to prepare a lesser “environmental assessment” to determine whether the
2 environmental impact of a proposed action is sufficiently significant to warrant an EIS. *See*
3 40 C.F.R. § 1508.9. If the environmental assessment indicates that the agency’s action “may
4 have a significant effect upon the . . . environment, an [EIS] must be prepared.” *Sierra Club*,
5 510 F.3d at 1018 (citation and italics omitted). “If the proposed action is found to have no
6 significant effect, the agency must issue a finding to that effect,” known as a finding of “no
7 significant impact” or “FONSI,” “accompanied by a convincing statement of reasons to
8 explain why a project’s impacts are insignificant.” *Id.* (internal quotes and citation omitted).
9 In this case, Reclamation prepared an Environmental Assessment and FONSI with respect
10 to the 2008 Experimental Plan. *See* Dkt. 136, Exs. 1 & 5.

11 An environmental assessment need not be extensive. Relevant regulations require the
12 assessment to “[b]riefly provide sufficient evidence and analysis for determining whether to
13 prepare an environmental impact statement or a finding of no significant impact,” and to
14 include “brief discussions of the need for the proposal, of alternatives . . . , of the
15 environmental impacts of the proposed action and alternatives, and a listing of agencies and
16 persons consulted.” 40 C.F.R. § 1508.9. The Ninth Circuit has provided the following
17 guidance for reviewing an environmental assessment:

18 We note, first, that the scope of our review for such a claim is quite narrow.
19 We ordinarily must defer to the informed discretion of the responsible federal
20 agencies . . . [D]eference is accorded agency environmental determinations not
21 because the agency possesses substantive expertise, but because the agency's
22 decision-making process is accorded a presumption of regularity. Although
not immune from judicial scrutiny, agency decisions are subjected to the
narrow “arbitrary and capricious” standard. Accordingly, we consider only
whether the [agency’s] decision was based on a consideration of the relevant
factors and whether there has been a clear error of judgment.

23 *Akiak Native Cmty*, 213 F.3d at 1146 (quotation marks, citation, and footnote omitted).

24 **B. Did the Environmental Assessment Consider Sufficient Alternatives?**

25 The Trust contends that Reclamation considered too few alternatives in the 2008
26 Environmental Assessment. Specifically, the Trust argues that because MLFF constitutes
27 a significant portion of the 2008 Experimental Plan, Reclamation should have considered
28 alternatives to MLFF such as SASF.

1 Review of this argument begins with the purpose of the 2008 Experimental Plan.
2 “The stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives[.]”
3 *City of Carmel-By-The-Sea v. U.S. Dep’t. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997);
4 *see also Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991) (“We
5 uphold an agency’s definition of objectives so long as the objectives the agency chooses are
6 reasonable, and we uphold its discussion of alternatives so long as the alternatives are
7 reasonable and the agency discusses them in reasonable detail.”). “The statutory and
8 regulatory requirement that an agency must consider ‘appropriate’ and ‘reasonable’
9 alternatives does not dictate the minimum number of alternatives that an agency must
10 consider.” *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1245-46 (9th Cir.
11 2005) (consideration of only preferred alternative and no-action alternative acceptable);
12 *Akiak Native Cmty.*, 213 F.3d at 1148 (agency’s consideration of two alternatives sufficient
13 under NEPA).

14 **1. The Purpose of the 2008 Experimental Plan.**

15 The stated purpose of the 2008 Experimental Plan was to engage in Dam releases
16 designed to benefit the humpback chub while complying with federal law and meeting the
17 project purposes of the Dam, including power generation. Dkt. #136, Ex. 1 at 5.⁶ The
18 releases were to include a spring high flow event during a period of enriched sediment
19 conditions to rebuild sandbars, beaches, and chub habitat, followed by five years of fall
20 steady flows to benefit the chub. Reclamation explained that it sought to preserve recent
21 increases in the humpback chub population while attempting to take further actions to benefit
22 the chub, and therefore proposed a plan that was deliberately conservative. *Id.* at 5, 11. The
23 plan included only two incremental steps – a single spring high flow and five years of fall
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26 ⁶ This is not unlike the purpose that Secretary Babbitt identified for the 1996 ROD:
27 the goal “was not to maximize benefits for the most resources, but rather to find an
28 alternative dam operating plan that would permit recovery and long-term sustainability of
downstream resources while limiting hydropower capacity and flexibility only to the extent
necessary to achieve recovery and long-term sustainability.” Dkt. #27, Ex. 3 at G-11.

1 steady flows – and the only alternative addressed in the Environmental Assessment was a “no
2 action” alternative which would continue operations under MLFF.

3 The Environmental Assessment evaluated the two steps proposed in the Experimental
4 Plan and found that they would not adversely affect the chub or its habitat. The March 2008
5 high flow of 41,500 cfs for 60 hours, which was timed to take advantage of increased
6 sediment recently discharged into the Colorado River by the Paria River (a tributary 15 river
7 miles downstream from the Dam), would be an “essential step” in conserving the sediment
8 necessary for chub spawning and in determining the long-term sustainability of sediment
9 resources in the river. *Id.* at 10. The five years of September-October steady flows would
10 be timed to coincide with the emergence of young chub from the Little Colorado River into
11 the mainstem of the Colorado. The steady flows would likely increase the warmth and
12 productivity of backwaters used by young chub to feed and grow. *Id.* at 11. As the
13 Environmental Assessment summarized:

14 Creation and improvement of backwater rearing habitat expected from the high
15 flow test could expand the spatial extent of backwater habitat. Steady flows
16 could result in more hydraulically stable nearshore rearing habitats, slightly
17 warmer temperatures and increased abundance of invertebrate prey items.
Collectively, these effects should result in improved growth and survival of
young-of-year humpback chub and other native fish prior to the onset of
winter.

18 *Id.* at 29 (citation omitted). Reclamation accordingly concluded that the 2008 Experimental
19 Plan “is a logical next step in the implementation of adaptive management and for the
20 conservation of the humpback chub.” *Id.* at 12.

21 **2. The Trust’s Arguments.**

22 The Trust argues that the Environmental Assessment’s consideration of only two
23 alternatives – the 2008 Experimental Plan and a “no action” alternative – fails to satisfy
24 NEPA’s requirement that all reasonable and appropriate alternatives be evaluated. The Trust
25 first argues that the “no action” alternative was not viable because it did not satisfy the
26 purposes of the Plan and is a violation of the ESA. Dkt. #132 at 12-13. But NEPA
27 regulations mandate consideration of a “no action” alternative in an EIS, *see* 40 C.F.R.
28

1 § 1502.14, strongly suggesting that such an alternative should also be considered in an
2 environmental assessment.

3 The Trust next argues that the Environmental Assessment failed to consider four
4 alternatives developed under the AMP program as a long term experimental plan (“LTEP”).
5 The LTEP alternatives include (1) continuing MLFF with periodic beach and habitat building
6 flows and some winter power enhancement flows; (2) a beach and habitat building flow
7 followed by steady flows in September and October (essentially the approach adopted in the
8 2008 Experimental Plan); (3) continuing MLFF but decreasing downramp rates and daily
9 minimum flows; and (4) implementing SASF. Dkt. #91, Ex. 21 at 1-2. The Trust does not
10 complain that alternatives 1 and 3 were not considered in the Environmental Assessment.
11 The first alternative is similar to the “no action” alternative that was considered – it would
12 continue MLFF with occasional high flows – and the third alternative was developed by
13 electric power interests and would implement none of the changes the Trust views as
14 important. The second alternative is essentially the 2008 Experimental Plan. Thus, of the
15 four LTEP alternatives developed by Reclamation, the Trust argues primarily that only one
16 of the alternatives – SASF – should have been addressed in the Environmental Assessment.
17 *See* Dkt. #132 at 13-14.⁷

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21 ⁷ In its reply brief, the Trust argues that the Environmental Assessment failed to
22 explain why a two-month steady flow period was adopted instead of a longer period. The
23 Court finds, however, that the Environmental Assessment provides a sufficient explanation.
24 The Assessment notes that longer periods of steady flow might cause an increase in the non-
25 native, warm-water fish that prey on the chub and compete for food and habitat. Dkt. #136,
26 Ex. 1 at 11. The Assessment did not close the door on longer periods, noting that they would
27 be considered if the chub population decreased under the Experimental Plan. *Id.* at 12. The
28 Court finds this explanation to be sufficient. NEPA requires that a more extensive EIS
“briefly discuss the reasons” for the elimination of an alternative. 40 C.F.R. § 1502.14(a).
The less extensive environmental assessment is to be “a concise public document” that
“briefly” explains its analysis. 40 C.F.R. § 1508.9(a). The Environmental Assessment’s
discussion of the steady flows satisfies this requirement of a brief explanation.

1 Given the narrowly circumscribed purpose of the 2008 Experimental Plan, the Court
2 concludes that Reclamation’s omission of SASF was not unreasonable. In light of recent
3 gains in chub population, the purpose of the project was deliberately conservative: to
4 implement a high flow event during a sediment-rich period in the spring to rebuild beaches
5 and chub habitat, and to implement fall steady flows to aid young chub, all without violating
6 Reclamation’s other obligations under the Law of the River or the purposes of the Dam such
7 as power generation. SASF did not fit this narrow objective; it would have worked a much
8 more dramatic change in Dam operations and river conditions. Because SASF was not
9 consistent with the measured approach adopted by Reclamation, NEPA does not require that
10 it be considered. As the Ninth Circuit has explained, “[a]lternatives that do not advance the
11 purpose of the . . . Project will not be considered reasonable or appropriate.” *Native*
12 *Ecosystems Council*, 428 F.3d at 1247; *see also City of Angoon v. Hodel*, 803 F.2d 1016,
13 1021 (9th Cir. 1986) (per curiam) (“When the purpose is to accomplish one thing, it makes
14 no sense to consider the alternative ways by which another thing might be achieved.”); *Trout*
15 *Unlimited v. Morton*, 509 F.2d 1276, 1286 (9th Cir. 1974) (“The range of alternatives . . .
16 need not extend beyond those reasonably related to the purposes of the project.”).

17 The Trust argues that Reclamation cannot define the purpose of a project so narrowly
18 as to unreasonably restrict the alternatives considered. *See City of Carmel-By-The-Sea*, 123
19 F.3d at 1155. This is a correct statement of the law, but the Court does not find the approach
20 taken by Reclamation in the 2008 Experimental Plan to be unreasonable. Not wanting to
21 jeopardize the chub’s recent population gains by too dramatic a change, Reclamation opted
22 for a conservative approach. In addition to the unknown effects of dramatic change,
23 Reclamation noted that longer periods of steady flow might cause an increase in warm-water
24 predators and competitors of the chub. Dkt. #136, Ex. 1 at 11-12.⁸ Given the deference due
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26 ⁸ The warm-water predators about which Reclamation and FWS were concerned
27 should be distinguished from the cold-water predators – primarily rainbow trout – that have
28 been mechanically removed from key stretches of the river. As Reclamation notes in the
Environmental Assessment, “[t]o date, efforts to control warm water nonnative fish predators

1 the administrative agency charged with managing the Dam, the Court cannot conclude that
2 the purpose of the Experimental Plan was unreasonably narrow.

3 The Trust might wish for a broader purpose, but NEPA is a procedural statute. *See*
4 *Sierra Club*, 510 F.3d at 1018. It does not mandate a broader purpose. As the Trust itself
5 notes, NEPA “is not predicated on whether the Experimental Plan is a ‘wise decision.’ The
6 only relevant issue is whether Reclamation satisfied NEPA’s mandate to analyze a range of
7 reasonable alternatives.” Dkt. #144 at 3; *see also The Lands Council v. McNair*, 537 F.3d
8 981, 1000 (9th Cir. 2008) (NEPA exists to ensure a process as opposed to imposing
9 substantive requirements on federal agencies). Given the narrow purpose of the Plan, the
10 Court concludes that it did.

11 What is more, by arguing that the Environmental Assessment should have put MLFF
12 in question and considered alternatives such as SASF, the Trust really is arguing that
13 Reclamation should redo the 1995 FEIS. The 1995 FEIS was a NEPA document and was
14 considerably more detailed than the 2008 Environmental Assessment. The 1995 FEIS
15 evaluated MLFF, SASF, and several other alternatives for Dam operations. *See* Dkt. #123
16 at 17-20. The FEIS process spanned five years and included wide publication, numerous
17 public meetings, and Reclamation’s receipt of more than 17,000 comments. Dkt. #27, Ex. 3
18 at G-5. The 1996 ROD, which selected MLFF, committed that “any operational changes will
19 be carried out in compliance with NEPA.” Dkt. #27, Ex. 3 at G-10. The two components
20 of the 2008 Experimental Plan are operational changes from MLFF and were evaluated under
21 NEPA in the Environmental Assessment.⁹

22 NEPA is designed “to ensure that federal agencies take a hard look at the
23 environmental consequences of their actions.” *Sierra Club*, 510 F.3d at 1018. Reclamation
24

25 _____
26 [have] not been shown to be effective.” Dkt. #136, Ex. 1 at 11.

27 ⁹ The Trust acknowledges that “[s]imilar experimental actions in prior years did not
28 conduct a re-evaluation of MLFF impacts under NEPA.” Dkt. #144 at 6. The Trust does not
suggest, however, that it ever objected to this incremental approach.

1 took a hard look at MLFF and SASF in the 1995 FEIS and the Trust has provided no basis
2 for the Court to conclude that NEPA mandates a second hard look.¹⁰

3 **C. Additional Trust Arguments.**

4 The Trust makes four additional arguments about the 2008 Environmental
5 Assessment. The Court will address each briefly.

6 First, the Trust asserts that the Environmental Assessment should have considered the
7 effects of MLFF on the chub and its habitat because MLFF was the system that would be
8 used ten months of the year under the 2008 Experimental Plan. Alternatively, the Trust
9 argues that MLFF was the “no action” alternative and should have been evaluated for that
10 reason. Reclamation responds that the Trust waived these arguments by failing to raise them
11 in the Trust’s comments on the draft Environmental Assessment. The Court agrees. The
12 Trust’s comment did not assert that the assessment was flawed because it failed to evaluate
13 MLFF. *See* Dkt. #136, Ex. 4. Failure to raise an objection in response to a draft NEPA
14 document forfeits that objection for purposes of later litigation. *Dep’t of Transp. v. Public*
15 *Citizen*, 541 U.S. 752, 764-65 (2004).

16 Second, the Environmental Assessment states that it is “tiered” to the 1995 FEIS.
17 Dkt. #136, Ex. 1 at 3. The Trust contends that tiering, although permitted by the regulations,

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19 ¹⁰ The Trust argues that the analysis of MLFF in the 1995 FEIS was inadequate, but
20 this argument comes several years too late. There is a six-year limitation period for NEPA
21 claims. *Sierra Club v. Penfold*, 857 F.2d 1307, 1315 (9th Cir. 1988). If the Trust wanted to
22 obtain judicial review of the 1995 FEIS and its recommendation of MLFF, it should have
23 sought such review within the period of limitations. (The Trust was involved in the NEPA
24 process that led to the 1995 FEIS. *See, e.g.*, Dkt. #27, Ex. 3 at G-7.) The Trust also argues
25 that the Environmental Assessment should have considered the effects of MLFF when
26 analyzing the “cumulative” effects of the 2008 Experimental Plan. But this really is just
27 another attack on MLFF. The Trust does not suggest that either of the two experiments
28 outlined in the Plan would adversely affect the chub and add to any cumulative negative
effects. *See* Dkt. #132 at 16. Finally, the Trust argues that much scientific data on MLFF
has developed since the 1995 FEIS. This is true, but the existence of such data does not
broaden the narrow purpose of the 2008 Experimental Plan. And the Trust does not claim
in this lawsuit that Reclamation should prepare a supplemental FEIS based on new data. *See*
40 C.F.R. § 1502.9(c)(1)(ii); *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371-73
(1989); *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 557-58 (9th. Cir. 2000).

1 is improper in this case for several reasons, including Reclamation's failure to identify
2 specific portions of the 1995 FEIS to which the Assessment is tiered. The Trust failed to
3 raise this issue in its comment on the draft Environmental Assessment. *See* Dkt. #136, Ex. 4.
4 The argument therefore is waived. *Dep't of Transp.*, 541 U.S. at 764-65.

5 Third, the Trust argues that the Environmental Assessment's FONSI ignores impacts
6 on Grand Canyon National Park. This argument, again, focuses primarily on MLFF. As
7 already noted, the 2008 Experimental Plan did not introduce MLFF; that system was
8 introduced and evaluated in the 1995 FEIS. The Environmental Assessment did specifically
9 consider the effect of the Experimental Plan's two components on Park values. Dkt. #136,
10 Ex. 1 at 1, 5 & Ex. 5 at 7. The Trust does not demonstrate that these two components – the
11 March 2008 high flow and the fall steady flows for five years – will adversely impact Park
12 values. The Trust cites suggestions by the National Park Service that MLFF flows erode
13 beaches and habitat and that SASF flows should be implemented. Dkt. #91, Ex. 23. These
14 comments also focus primarily on MLFF. Given the narrow purpose of the Plan, the Court
15 cannot conclude that the Environmental Assessment and its FONSI are legally flawed under
16 NEPA by failing to consider the effects of MLFF. Moreover, the Ninth Circuit has held that
17 disagreements by other government agencies do not render an environmental assessment
18 invalid under NEPA. *See Akiak Native Cmty.*, 213 F.3d at 1146-47.

19 Finally, the Trust argues that Reclamation should have prepared a full EIS in light of
20 the "highly controversial" nature of the 2008 Experimental Plan. Again, however, the
21 controversy on which the Trust relies is the use of MLFF. The 2008 Experimental Plan
22 proposed two modest additions designed to capitalize on current sediment conditions in the
23 river and recent gains in chub population. The Trust has not shown that those two proposals
24 are highly controversial. Moreover, mere disagreement with a project or the existence of
25 information supporting an opponent's view do not render a project "highly controversial" for
26 purposes of NEPA. *Native Ecosystems*, 428 F.3d at 1240. "Simply because a challenger can
27 cherry pick information and data out of the administrative record to support its position does
28

1 not mean that a project is highly controversial or highly uncertain.” *Id.* The Court does not
2 find that an EIS is required for the 2008 Experimental Plan on the basis of high controversy.

3 **D. Claim 6 Conclusion.**

4 Given the deference owed to agencies under the APA, the limited purpose of the 2008
5 Experimental Plan, and the procedural nature of NEPA, the Court concludes that the
6 Environmental Assessment considered appropriate and reasonable alternatives and does not
7 amount to a clear error of judgment. The Trust has not overcome the “presumption of
8 regularity” afforded the Environmental Assessment. *See Akiak Native Cmty.*, 213 F.3d at
9 1146. The Court will enter summary judgment in favor of Reclamation on Claim 6.

10 **IV. Claim 7 – Does the 2008 FWS Opinion Violate the ESA?**

11 The 2008 Opinion issued by FWS constitutes a final agency action subject to judicial
12 review. *See Bennett*, 520 U.S. at 177-78; *Or. Natural Res. Council v. Allen*, 476 F.3d 1031,
13 1035-36 (9th Cir. 2007). The Trust contends that it is legally insufficient under the ESA.

14 The 2008 Opinion contains a detailed discussion of the Experimental Plan’s high flow
15 experiment and concludes that although it might initially have an adverse impact on young
16 chub caught in the high water, it likely will construct more sandbars and backwaters than
17 previous high flow experiments because of the substantial amount of sediment in the river
18 in early 2008. Dkt. #136, Ex. 11 at 44-45. FWS concludes that these formations will be
19 favorable to chub spawning and survival. *Id.*

20 The 2008 Opinion also contains a detailed discussion of the Experimental Plan’s two-
21 month steady flows in September and October of each year. *Id.* at 44-47. FWS opines that
22 the effect of these flows “on habitat persistence is most likely to be positive” and that water
23 temperatures are likely to be warmer, benefitting the chub. *Id.* at 46-47. FWS also
24 determines that the steady flows should increase food sources available for chub in the
25 backwaters. *Id.* at 48. The Trust generally does not challenge these conclusions.¹¹

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27 ¹¹ The Trust does argue that the 2008 Opinion fails to address the effects of MLFF on
28 chub nearshore habitat. This is not correct. The 2008 Opinion notes that the 1996 high flow
experiment deposited more sandbars at a faster rate than predicted, but that “many sandbars

1 The key portion of the 2008 Opinion for purposes of this case is the statement that it
2 “replaces” the 1994 Opinion that found MLFF to be a violation of the ESA. *Id.* at 2. As
3 counsel for the Federal Defendants conceded at oral argument, the 2008 Opinion thereby
4 represents FWS’s new opinion that MLFF does not violate the ESA. This is a sharp
5 departure from FWS’s longstanding opinion.

6 The 1994 Opinion was clear: “the proposed operation of Glen Canyon Dam according
7 to operating and other criteria of the MLFF . . . is likely to jeopardize the continued existence
8 of the humpback chub . . . and is likely to destroy or adversely modify designated critical
9 habitat.” Dkt. #136, Ex. 17 at 3. In 1999, FWS stated that Reclamation had not taken
10 sufficient steps to implement the steady flows required by RPA element 1A. Dkt. #22, Ex.
11 7 at 3. Reclamation took the same position in 2002, stating that RPA element 1A “has not
12 seen sufficient progress.” Dkt. #22, Ex. 8 at 3. FWS reiterated this position in 2006 and
13 noted that “daily fluctuations are detrimental to native fish populations.” Dkt. #91, Ex. 21
14 at 3.

15 In 2007, just one year before it issued the 2008 Opinion, FWS issued a report that
16 confirmed the adverse effects of MLFF on chub habitat. Dkt. #91, Ex. 22. The report
17 observed that “[t]he much hoped for outcome of modest improvement in sandbar resources,
18 as originally proposed and predicted in the [1995 FEIS], has not been realized. . . . Loss of
19 sand habitats in the ecosystem was documented under the No-Action Era (1964-1990), but
20 has continued since dam operations have been altered to mitigate sandbar erosion [through
21 MLFF].” *Id.* at 213. “Although MLFF limitations on the daily allowable peak discharges

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23 built during the 1996 high flow test eroded in as little as several days following the
24 experiment.” Dkt. #136, Ex. 11 at 23. FWS attributes this erosion to MLFF. *Id.* at 24, 45.
25 The 2008 Opinion also considers the effect of MLFF on the March 2008 high flow designed
26 to build nearshore habitat: “MLFF flows in the months following the March 2008 test flow
27 will consist of moderately low fluctuating flows . . . , with maximum flow and range
28 fluctuations of 9,300-17,300 cfs occurring in July and August of 2008. Thus if the high flow
test is successful in creating backwaters they should persist over a longer period than
previous tests.” *Id.* at 45. The Court cannot accept the Trust’s claim that FWS failed to
consider the possible effects of MLFF on the March 2008 high flow event.

1 were intended to reduce sand export and bar erosion, it appears that the annual pattern of
2 monthly volumes released from the dam (with peak daily flows at their highest during the
3 summer sediment input months of July and August) is the greatest factor preventing
4 accumulation of new sand inputs from tributaries over multi-year time scales.” *Id.* at 214.
5 Thus, “[t]he [1995 FEIS] assumption that sand would accumulate on the bed of the river over
6 multiple years is now known to be flawed.” *Id.*

7 The 2008 Opinion changed all of this, but without directly addressing the effect of
8 MLFF on the chub or its habitat. The opinion never explains why FWS’s long-held position
9 is incorrect. It never discusses the many studies that seem to confirm that MLFF destroys
10 chub habitat. But in fairness, the 2008 Opinion does contain at least a limited explanation
11 of its departure from the 1994 Opinion. That explanation is set forth here in full:

12 In 1995, in a consultation on the operations of Glen Canyon Dam, specifically
13 on the MLFF, we anticipated that operation of Glen Canyon Dam (the
14 monthly, daily, and hourly operations as defined in the MLFF and the 1996
15 ROD) would jeopardize the continued existence of the species. Populations
16 in the upper Colorado River basin have declined as of January 2008. The
17 Grand Canyon population, which was the population analyzed in the 1995
18 biological opinion, appears to have recently improved to around 6,000 adult
19 fish. This is less than the number of adult fish thought to be present in the
20 Grand Canyon in 1995, and indeed the status of the species is reduced overall
21 from what it was in 1995. Much of the scope of dam operations for the next
22 five years under the [2008 Experimental Plan] will contain elements of the
23 1996 (MLFF) and 2007 (Shortage Guidelines) RODs, such as the range of
24 daily flow fluctuation and seasonal variations in monthly volume. However,
25 the most recent and best available estimates of humpback chub population
26 trend (Coggins 2007) indicate that there has been increased recruitment into
27 the population from some year classes starting in the mid- to late-1990s, during
28 the period of MLFF operations, causing the decline in humpback chub to
stabilize and begin to reverse. This improvement in the population trend has
been attributed in part to the results of nonnative fish mechanical removal,
increases in temperature due to lower reservoir elevations and inflow events,
the 2000 low steady summer flow experiment, and other experimental flows
and actions (USGS 2006a). Considering though that the most recent
population modeling indicates the increase was due to increased recruitment
as early as 1996 but no later than 1999 (Coggins 2007), the increase in
recruitment began at least four and as many as nine years prior to
implementation of nonnative fish control, incidents of warmer water
temperatures, the 2000 low steady summer flow experiment, and the 2004 high
flow test. The exact causes of the increase in recruitment, and whether it is
attributable to conditions in the mainstem or in the Little Colorado River are
unclear. Nevertheless, removal of nonnative fish, increased temperature due
to drought, and habitat conditions resulting from natural and experimental
actions will likely be beneficial to humpback chub, and further increases in
recruitment are likely based on recent catch rates of sub-adult humpback chub

1 (Coggins 2007). These results indicate that some combination of conditions
2 under MLFF has benefitted humpback chub, and that more recent conservation
actions likely have as well, and are likely to continue to.

3 Dkt. #136, Ex. 11 at 51-52.

4 FWS's rationale seems to progress as follows: (1) the 1994 Opinion predicted the
5 chub would decline under MLFF; (2) although there has been a general decline since 1995,
6 the chub population has stabilized and increased in the last few years; (3) modeling suggests
7 that the increase started under MLFF in the late 1990s, before other helpful conditions and
8 measures had occurred; (4) although the exact cause of the population increase is not known,
9 it appears the increase will continue and even accelerate under MLFF, particularly with the
10 helpful conditions and measures taken to date and the two components of the 2008
11 Experimental Plan; and (5) therefore, FWS can no longer conclude that MLFF is detrimental
12 to the chub or will cause further declines. For several reasons, the Court finds this logic to
13 be insufficient, even under deferential APA review.

14 First, even if it is conceded that recent science shows a stabilization and increase of
15 the chub population, the 2008 Opinion does not explain why MLFF no longer destroys or
16 adversely modifies the chub's critical habitat, particularly the mainstem sandbars and
17 backwaters considered necessary for the growth and feeding of young chub. The opinion
18 acknowledges that the fluctuating water levels of MLFF erode backwater sandbars and beach
19 habitat, reduce food production, and decrease water temperatures. Dkt. #136, Ex. 11 at 16,
20 21-25, 45. After conceding these points, the opinion devotes only one paragraph to critical
21 habitat, stating that "[c]ritical habitat . . . along the Colorado River will be affected in the
22 ways described above." *Id.* at 48-49. This statement would seem to suggest that the critical
23 habitat will continue to be adversely modified by MLFF, and yet the paragraph goes on to
24 assert – without citing any study – that the number of backwaters are likely to increase and
25 that the “quality of nearshore habitats, especially during September and October should also
26 improve, becoming warmer and more productive *relative to current conditions.*” *Id.* at 49
27 (emphasis added); *see also id.* at 55. The opinion seems to be saying that the two
28 components of the Experimental Plan will make things better than they would be without the

1 Plan. This might support an opinion that the two components of the Plan will not themselves
2 destroy or adversely modify critical habitat, but it provides no basis for concluding that
3 MLFF does not do so. All of the studies cited in the 2008 Opinion seem to suggest
4 otherwise. As noted above, an agency cannot entirely fail to consider an important aspect
5 of a problem, nor can it offer an explanation for its decision that runs counter to the evidence
6 before it. *Motor Vehicle Mfrs. Ass'n of U.S.*, 463 U.S. at 43; *Pac. Coast Fed'n of*
7 *Fishermen's Ass'n*, 265 F.3d at 1034. The 2008 Opinion fails adequately to address the
8 effect of MLFF on chub habitat.¹²

9 Second, the 2008 Opinion constitutes a significant change of course by FWS. Only
10 one year earlier, FWS told Reclamation that MLFF erodes sandbars and destroys chub
11 habitat. Dkt. #91, Ex. 22 at 213-14. Federal agencies certainly have the discretion to change
12 positions, “[b]ut an agency changing its course must supply a reasoned analysis.” *Motor*
13 *Vehicle Mfrs. Ass'n*, 463 U.S. at 57 (quotation omitted). As the Ninth Circuit has explained,
14 “an agency changing its course must supply a reasoned analysis indicating that prior policies
15 and standards are being deliberately changed, not casually ignored, and if an agency glosses
16 over or swerves from prior precedents without discussion it may cross the line from the
17 tolerably terse to the intolerably mute.” *Nw. Envtl. Def. Ctr. v. Bonneville Power Admin.*,
18 477 F.3d 668, 687-88 (9th Cir. 2007) (internal quotation omitted). Other than the insufficient
19 paragraph quoted above, FWS provides no explanation for its departure from the 1994
20 Opinion.

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22
23 ¹² During oral argument, counsel for the Federal Defendants was unable to identify
24 any study showing that MLFF does not harm critical habitat. After the argument, counsel
25 submitted a supplemental brief (Dkt. #161) citing a 2004 modeling study by Korman and
26 others. *See* Dkt. #151, Ex. 31. The 2008 Opinion relied on the Korman study to conclude
27 that the September-October steady flows would be more beneficial to chub habitat than
28 MLFF flows during the same period (Dkt. #136, Ex. 11 at 45-46), but not in support of the
conclusion that MLFF does not destroy or adversely modify critical chub habitat (*id.* at 48-
49). If FWS relied on this modeling study for its new opinion – to the exclusion of other
studies that have found MLFF detrimental to nearshore habitat (*see id.* at 21-25, 45) – it must
explain why.

1 Third, the ESA requires FWS to consider not only whether a proposed action will
2 jeopardize the survival of a species, but also whether it will jeopardize the species' recovery
3 to non-threatened levels. *Nat'l Wildlife Fed' v. NMFS*, 524 F.3d 917, 931 (9th Cir. 2008);
4 *Gifford Pinochet Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1069 (9th Cir.
5 2004). Reclamation argues that "recovery" essentially equates with "conservation" (*see* 16
6 U.S.C. § 1532(3)) and that the 2008 Opinion does discuss chub conservation. *See* Dkt. #136,
7 Ex. 11 at 9-12. FWS also argues that the two components of the 2008 Experimental Plan are
8 expected to have positive long-term effects on the chub. *Id.* at 49. But FWS never addresses
9 whether *MLFF* will advance or impede chub recovery. If FWS is announcing a new opinion
10 that *MLFF* does not violate the ESA, then FWS must address the effect of *MLFF* on chub
11 recovery. 50 C.F.R. § 402.02.

12 Fourth, the ESA requires that FWS use "the best scientific and commercial data
13 available." 16 U.S.C. § 1536(a)(2). "The best available data requirement 'merely prohibits
14 [an agency] from disregarding available scientific evidence that is in some way better than
15 the evidence [it] relies on.'" *Kern County Farm Bureau v. Allen*, 450 F.3d 1072, 1080 (9th
16 Cir. 2006) (quoting *Sw. Ctr. for Biological Diversity v. Babbitt*, 215 F.3d 58, 60
17 (D.C.Cir.2000)). In failing directly to address the effects of *MLFF* on chub critical habitat,
18 the 2008 Opinion fails to address much of the science that has developed in the last ten years.
19 The opinion relies heavily on recent studies showing increases in chub population, but those
20 studies do not themselves directly address the effects of *MLFF* on critical habitat. If FWS
21 believes that the chub population studies provide a superior basis for assessing the effects of
22 *MLFF* on habitat than the habitat studies, it must explain this belief.

23 In summary, the 2008 Opinion sufficiently discusses the two elements of the 2008
24 Experimental Plan – the spring high flow experiment and the five years of fall steady flows
25 – but the opinion lacks a reasoned basis for its new conclusion that *MLFF* does not destroy
26 or adversely modify critical habitat. The 2008 Opinion also lacks an explanation for FWS's
27 change of position and a discussion of the effects of *MLFF* on chub recovery, and fails to
28

1 address these issues using the best science. The Court will grant summary judgment in favor
2 of the Trust on Claim 7.

3 **V. Claim 8 – Does the 2008 Environmental Assessment Violate the GCPA?**

4 Claim 8 alleges that the 2008 Experimental Plan violates the GCPA. This claim
5 focuses on MLFF, alleging that it destroys beaches and backwater habitat and impedes
6 recovery of the humpback chub. Dkt. #23 ¶ 87. The Trust claims that these effects of MLFF
7 violate Reclamation’s broad obligation under the GCPA “to protect, mitigate adverse impacts
8 to, and improve the values for which Grand Canyon National Park and Glen Canyon National
9 Recreation Area were established, including but not limited to natural and cultural resources
10 and visitor use.” Pub. L. No. 102-575, § 1802(a), 106 Stat. 4600.¹³

11 As explained above, the 2008 Experimental Plan does not implement MLFF. The
12 decision to adopt MLFF was made in the 1995 FEIS and the 1996 ROD. The Trust does not
13 attempt to show that the two new components of the Experimental Plan are detrimental to
14 values protected by the GCPA. And, as noted earlier, any judicial challenge to the FEIS and
15 ROD is untimely. *See* 28 U.S.C. § 2401(a); *Sierra Club*, 857 F.2d at 1315.

16 The Trust has also failed to show that the 2008 Experimental Plan runs afoul of the
17 complex balancing responsibility imposed on the Secretary of the Interior by the GCPA.
18 Section 1802(a) of the GCPA provides that “[t]he Secretary shall operate Glen Canyon Dam
19 in accordance with [the 1995 FEIS developed under] section 1804 and exercise other
20 authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and
21 improve the values for which Grand Canyon National Park and Glen Canyon National
22 Recreation Area were established, including but not limited to natural and cultural resources
23 and visitor use.” Pub. L. No. 102-575, § 1802(a), 106 Stat. 4600. Section 1802(b) directs
24 the Secretary to “implement [section 1802] in a manner fully consistent with and subject to
25

26 ¹³ The Trust’s briefs characterize Claim 8 as alleging that Reclamation failed *to*
27 *consider* the GCPA when creating the 2008 Experimental Plan. Dkt. ##132, 144. But the
28 Supplemental Complaint does not plead a procedural claim. It alleges that the 2008
Experimental Plan – specifically, MLFF – violates the GCPA. *See* Dkt, #23, ¶ 87.

1 . . . the Colorado River Storage Project Act” and other statutes “that govern allocation,
2 appropriation, development, and exportation of the water of the Colorado River basin.” *Id.*
3 at § 1802(b). The Colorado River Storage Project Act, in turn, requires that the Dam “be
4 operated . . . so as to produce the greatest practicable amount of power and energy that can
5 be sold at firm power and energy rates.” 43 U.S.C. § 620f.

6 These broadly-worded provisions impose on the Secretary of the Interior an obligation
7 to balance many different interests in the operation of Glen Canyon Dam. Reclamation’s
8 Environmental Assessment noted that the 2008 Experimental Plan was designed to do just
9 that – “to determine if prescribed releases can benefit resources located downstream of the
10 dam in Glen, Marble, and Grand Canyons, Glen Canyon National Recreation Area and Grand
11 Canyon National Park, respectively, in accordance with applicable federal law, including the
12 GCPA, while meeting the project purposes of the dam.” Dkt. #136, Ex. 1 at 5. Reclamation
13 evaluated not only the two components of the Plan, concluding that they would benefit the
14 chub, but also the effect of the Plan on other interests and obligations such as power
15 generation.¹⁴ *Id.* at 35-37. The Trust has not shown that Reclamation’s balancing of these
16 interests violates the broad directives of the GCPA, particularly in light of the “highly
17 deferential” approach the Court must take under the APA. *Nw. Ecosystem Alliance*, 475 F.3d
18 at 1140.

19 Moreover, to the extent the Trust asks the Court to enforce the broad, programmatic
20 directives of the GCPA, it asks the Court to undertake a task entrusted by Congress to the
21 Secretary of the Interior. The Supreme Court has cautioned against such judicial actions:

22 If courts were empowered to enter general orders compelling compliance with
23 broad statutory mandates, they would necessarily be empowered, as well, to
24 determine whether compliance was achieved – which would mean that it

25 ¹⁴ The Environmental Assessment found that the electric-power-related cost of the
26 2008 high flow experiment would be \$4.1 million, and that the cost of replacing power lost
27 during the annual September-October steady flows would be \$815,000 annually. Dkt. #136,
28 Ex. 1 at 37. The assessment further found that replacement power most likely would be
generated by coal-fired power plants, resulting in approximately 45,800 tons of additional
carbon emissions into the atmosphere. *Id.*

1 would ultimately become the task of the supervising court, rather than the
2 agency, to work out compliance with the broad statutory mandate, injecting the
3 judge into day-to-day agency management. . . . The prospect of pervasive
oversight by federal courts over the manner and pace of agency compliance
with such congressional directives is not contemplated by the APA.

4 *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 66-67 (2004).

5 The Trust has not established a violation of the GCPA. The Court will enter summary
6 judgment in favor of Reclamation on Claim 8.

7 **VI. Claim 1 – Does the Operation of the Dam Jeopardize the Chub?**

8 Section 7(a)(2) of the ESA requires each federal agency to “insure that any action
9 authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued
10 existence of any endangered species or threatened species[.]” 16 U.S.C. § 1536(a)(2).
11 Claim 1 alleges that Reclamation’s operation of the Dam under MLFF is jeopardizing the
12 humpback chub in violation of this provision. To jeopardize “means to engage in an action
13 that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood
14 of both the survival and recovery of a listed species in the wild by reducing the reproduction,
15 numbers, or distribution of that species.” 50 C.F.R. § 402.02.

16 Reclamation’s primary defense to Claim 1 is the 2008 Opinion. Reclamation asserts
17 that it reasonably relied on the FWS opinion and therefore cannot be found to have violated
18 the ESA. Applicable federal regulations make clear, however, that Reclamation has an
19 independent duty to determine the lawfulness of its actions: “Following the issuance of a
20 biological opinion, the Federal agency shall determine whether and in what manner to
21 proceed with the action in light of its section 7 obligations and the . . . biological opinion.”
22 50 C.F.R. § 402.15(a). The Ninth Circuit has explained that “[c]onsulting with FWS alone
23 does not satisfy an agency’s duty under the Endangered Species Act. An agency cannot
24 ‘abrogate its responsibility to ensure that its actions will not jeopardize a listed species; its
25 decision to rely on a FWS biological opinion must not have been arbitrary or capricious.’”
26 *Res. Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1304 (9th Cir.1994) (quoting *Pyramid Lake*
27 *Paiute Tribe of Indians v. U.S. Dep’t of the Navy*, 898 F.2d 1410, 1414 (9th Cir. 1990)); *see*
28

1 *also Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1156-57 (D. Ariz.
2 2002).

3 In addition to the Environmental Assessment addressed above, Reclamation produced
4 a substantial Biological Assessment of the 2008 Experimental Plan. *See* Dkt. #27, Ex. 5.
5 This Biological Assessment was issued in December of 2007 as part of Reclamation's
6 consultation with FWS. Information from the Biological Assessment is relevant to the
7 Court's evaluation of Claim 1, and will be summarized in the following paragraphs. To
8 illustrate the science relied on in the Biological Assessment, the Court will include
9 Reclamation's abbreviated citations to various studies. More complete citations can be found
10 in section 7 of the Biological Assessment. *See* Dkt. #27, Ex. 5 at 97-134.

11 In 2001, the humpback chub population below the Dam reached a low of 2,400 to
12 4,400 fish (Gloss and Coggins 2005; Coggins, et al. 2006). The population subsequently
13 increased by 20 to 25%, reaching approximately 6,000 by 2006 (Coggins 2007). Population
14 modeling indicates that the increase actually began as early as 1996, but no later than 1999
15 (Coggins 2007). The increase thus started several years before Reclamation's elimination
16 of rainbow trout, higher water temperatures due to drought, the 2000 steady flow experiment,
17 or the 2004 high flow test, all of which should benefit the chub. Dkt. #27, Ex. 5 at 67-68.

18 Recent data also show greater numbers of young humpback chub in the mainstem of
19 the Colorado River than in previous years. During 2002-2006, a total of 442 humpback chub
20 were captured in the mainstem as far as 30 miles upstream from the confluence with the
21 Little Colorado River (Ackerman 2007). Of the 442 fish, 225 were caught between 11 and
22 30 miles upstream of the Little Colorado. It is unlikely that young humpback chub could
23 swim upstream for that distance in cold river temperatures.¹⁵ The distribution of these fish,
24 as well as the fact that they were smaller in size than chub located below the Little Colorado
25

26
27
28 ¹⁵ Studies have established that chub tire more quickly in cold temperatures than in
pre-Dam river temperatures. *See* Dkt. #136, Ex. 11 at 22.

1 River, suggest that the spawning source for the fish is at least 11 miles upstream of the Little
2 Colorado confluence. Dkt. #27, Ex. 5 at 67-68.

3 Young-of-year and juvenile chub observed outside the Little Colorado River were
4 most abundant 50 to 70 river miles below the Little Colorado during 2000 and 2004, and 100
5 to 140 river miles below the Little Colorado during 2000 (Ackerman 2007; AGFD 1996;
6 Johnstone and Loretta 2004, 2007; Trammell, et al. 2002). Seine catches of all young-of-
7 year humpback chub outside the nine main groups in the Grand Canyon were, in 2004, at
8 their highest level in 21 years (Johnstone and Loretta 2007). The Middle Granite Gorge
9 group of humpback chub (which is more than 50 river miles downstream from the Little
10 Colorado) has been stable or increasing in size since 1993 (Trammell, et al. 2002) and may
11 be sustained by migration from the Little Colorado group as well as local reproduction.
12 Some scientists (Valdez, et al. 2000a) have identified this group as the most likely location
13 for a second spawning population in the main channel. Dkt. #27, Ex. 5 at 68. Four juvenile
14 humpback chub were caught 170 river miles below the Little Colorado River in 2005
15 (Ackerman, et al. 2006). The small size of these fish and the low probability that they could
16 survive the extreme rapids of the inner gorge of the Grand Canyon strongly suggest that their
17 origin is natural reproduction outside the Little Colorado River. *Id.* at 24.

18 As noted above, in addition to these positive trends, Reclamation has established a
19 second spawning population of chub above Chute Falls on the Little Colorado River
20 (Sponholtz, et al. 2005; Stone 2006). Chub survival and growth rates at this new location
21 have been high. The population above Chute Falls has been reproducing and moving
22 downstream in the Little Colorado (Sponholtz, et al. 2005; Stone 2006), and now appears to
23 be a new source for humpback chub in the lower portions of the Little Colorado River and
24 in the mainstem (Stone 2007). Dkt. #27, Ex. 5 at 67-69.

25 Reclamation has also engaged in several rounds of mechanical removal of rainbow
26 trout. Because the chub population was increasing before these predators were removed, the
27 removal likely will result in further increases in the chub population. Warming of the river
28 due to drought conditions in Lake Powell is also likely to have beneficial effects. *Id.* at 74.

1 The Trust does not dispute the accuracy of these numbers, but it does assert that chub
2 reproduction outside of the Little Colorado River has not been clearly established. The Trust
3 primarily argues that the best science continues to show that MLFF destroys or adversely
4 modifies critical chub habitat in the mainstem. That, of course, is the issue raised by Claim
5 2. For purposes of Claim 1, the Court must determine whether the operation of MLFF under
6 the current 2008 Experimental Plan “reasonably would be expected, directly or indirectly,
7 to reduce appreciably the likelihood of both the survival and recovery” of the humpback
8 chub. 50 C.F.R. § 402.02.¹⁶

9 Although the Trust has cited some studies suggesting as a general matter that MLFF
10 is detrimental to the chub population, the more specific population studies show that the chub
11 is rebounding. The population increased 20 to 25% from 2001 to 2006. A new and separate
12 spawning population has been established in the Little Colorado River. There is reason to
13 believe that chub are reproducing in mainstem areas away from the Little Colorado. And the
14 non-native fish removal undertaken by Reclamation is likely to result in further population
15 gains.

16 Given this information, the Court is strongly inclined to conclude that Reclamation’s
17 operation of the Dam under MLFF, with the two experimental components and eight
18 additional conservation measures of the 2008 Experimental Plan, is not arbitrary, capricious,
19 an abuse of discretion, or otherwise not in accordance with law. 5 U.S.C. § 706(2)(A).
20 Reclamation has considered the relevant science on chub survival, and the Court “must defer
21 to the informed discretion of the responsible federal agencies.” *Marsh*, 490 U.S. at 377.
22 Moreover, when experts express conflicting views, “an agency must have discretion to rely
23 on the reasonable opinions of its own qualified experts even if, as an original matter, a court
24 might find contrary views more persuasive.” *Id.* at 378.

25
26 ¹⁶ There currently exist no recovery goals for the chub against which recovery can be
27 measured. Reclamation issued such goals, but they were set aside in a lawsuit filed by the
28 Trust. *See Grand Canyon Trust v. Norton*, No. 04-CV-636 PHX FJM, 2006 WL 167560 (D.
Ariz., Jan. 18, 2006). New recovery goals apparently have not yet been established – the
parties have cited none in their briefs.

1 One aspect of Claim 1, however, persuades the Court to withhold judgment until after
2 FWS has reconsidered the 2008 Opinion. As noted above, jeopardy under the ESA includes
3 “both the survival and recovery” of the endangered species. 50 C.F.R. § 402.02. Although
4 recent studies show that chub are surviving below the Dam and appear to be recovering,
5 FWS will specifically address the question of recovery when it reviews the 2008 Opinion.
6 Because recovery is part of ESA’s no-jeopardy requirement, the Court concludes that it
7 should await FWS’s analysis before ruling on Claim 1.

8 **VII. Claim 2 – Does the Operation of the Dam Destroy Critical Chub Habitat?**

9 Section 7(a)(2) of the ESA requires each federal agency to insure that its action is not
10 likely to “result in the destruction or adverse modification of the habitat of [any endangered]
11 species[.]” 16 U.S.C. § 1536(a)(2). Claim 2 alleges that Reclamation is violating this
12 provision by destroying and adversely modifying the chub’s critical habitat. Destruction or
13 adverse modification “means a direct or indirect alteration that appreciably diminishes the
14 value of critical habitat for both the survival and recovery of a listed species. Such
15 alterations include, but are not limited to, alterations adversely modifying any of those
16 physical or biological features that were the basis for determining the habitat to be critical.”
17 50 C.F.R. § 402.02. In determining the Colorado River to be critical habitat for the chub,
18 FWS identified “areas of the Colorado River system that are inhabited or potentially
19 habitable by fish for use in spawning, nursery, feeding, and rearing, or corridors between
20 these areas.” 59 Fed. Reg. 13374 (Mar. 21, 1994). Numerous studies cited by both parties
21 identify such areas as sandbars, backwaters, and other nearshore habitat.

22 Virtually all of the science contained in the administrative record concludes that
23 MLFF releases from the Dam destroy or adversely modify nearshore habitat. As already
24 noted, FWS’s 1994 Opinion concluded that MLFF flows were “likely to destroy or adversely
25 modify designated critical habitat.” Dkt. #136, Ex. 17 at 3. This was not only because of
26 nearshore erosion, but also because fluctuating flows limited solar warming and food
27 production in backwaters. *Id.* at 23, 27. FWS reiterated these concerns in several documents
28 delivered to Reclamation, as described earlier in this order. FWS’s 2007 report noted that

1 “large scale fluctuations in daily discharge . . . result in stage changes that are thought to
2 reduce the availability and quality of nearshore habitats” for the chub. Dkt. #22, Ex. 13 at
3 21. This report further noted that fluctuating flows cause “remaining sediment to be lost
4 continually.” *Id.* at 20.

5 In a 2002 study, the United States Geological Survey (“USGS”) and other scientists
6 found that “releases from Glen Canyon Dam are continuing to erode sandbars and beaches
7 in the Colorado River in Grand Canyon National Park.” Dkt. #132, Ex. 47 at 1. The 2005
8 SCORE Report issued by USGS noted “that dam operations during the last 10 years under
9 the preferred alternative of the MLFF have not restored fine-sediment resources of native fish
10 populations in Grand Canyon.” Dkt. #22, Ex. 11 at 208. The report further observed that
11 “restoration of sand-based, nearshore habitats, termed ‘backwaters,’ has also not been
12 realized under the strategy of MLFF and hydrologically triggered experimental high flows.”
13 *Id.* at 214.

14 A 2007 USGS report concluded that “[t]he much hoped for outcome of modest
15 improvement in sandbar resources, as originally proposed and predicted in the [1995 FEIS]
16 has not been realized. Dkt. #91, Ex. 22 at 213. A 2008 USGS peer-reviewed publication
17 concluded that “[D]am releases that vary seasonally and daily to meet electricity demand,
18 such as approved by the ROD, are not optimal for retaining sand on the riverbed prior to
19 redistribution to higher elevations by high flow events.” Dkt. #113, Ex. A at 6.

20 Reclamation’s Biological Assessment does not disagree. It notes that the 1996 high
21 flow experiment created 26% more backwaters, but “most of these newly created habitats
22 disappeared within two weeks due to reattachment bar erosion (Bruder, et al. 1999; Hazel,
23 et al. 1999; Parnell, et al. 1997; Schmidt, et al. 2004).” Dkt. #27, Ex. 5 at 84. It further notes
24 that “[n]early half of the total sediment aggradation in recirculation zones had eroded away
25 during the 10 months following the experiment and was associated in part with relatively
26 high fluctuating flows of 15,000-20,000 cfs (Hazel, et al. 1999).” *Id.* The Biological
27 Assessment concluded that “[p]ost-test flow regimes to minimize erosion have yet to be
28 developed and tested.” *Id.*

1 As already mentioned, during oral argument counsel for Reclamation was unable to
2 identify any study showing that MLFF does not harm critical habitat. After the argument,
3 and presumably after searching the administrative record, counsel submitted a supplemental
4 brief (Dkt. #161) that cited one 2004 modeling study by Korman and others. *See* Dkt. #151,
5 Ex. 31. The study used a two-dimensional mathematical model to predict the effects of
6 various flow patterns on nearshore habitat at seven discrete locations downstream of the
7 Little Colorado River. It did not involve any actual tests of the river itself. The model
8 suggested that “the effect of dam operations on suitable fish habitat is extremely variable
9 across seasons and reaches, and the effect is not always negative,” and found that “[d]am
10 operations have increased suitable shoreline habitat availability in the spring but have
11 reduced it in most reaches from August to February.” *Id.* at 395. This single modeling study
12 does not appear to provide a sufficient basis for reasonably concluding that MLFF operations
13 do not destroy or adversely modify critical habitat. The overwhelming weight of the science
14 suggests otherwise.

15 Given this evidence, the Court is strongly inclined to conclude that MLFF Dam
16 operations destroy and adversely modify chub critical habitat in violation of the ESA. In
17 light of the deference to be accorded federal agencies under the APA and because FWS will
18 be required to address this very issue on remand, however, the Court concludes that it should
19 withhold judgment on Claim 2 until FWS has completed its review.

20 **VIII. Claim 3 – Does the Operation of the Dam “Take” the Chub?**

21 Section 9 of the ESA makes it unlawful for any person to “take” any endangered
22 species. 16 U.S.C. § 1538(a)(1)(B). “The term ‘take’ means to harass, *harm*, pursue, hunt,
23 shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16
24 U.S.C. § 1532(19) (emphasis added). The term “harm” includes “significant habitat
25 modification or degradation where it actually kills or injures wildlife by significantly
26 impairing essential behavioral patterns, including breeding, feeding or sheltering.” 50 C.F.R.
27 § 17.3. The Ninth Circuit has held, therefore, that “a habitat modification which significantly
28 impairs the breeding and sheltering of a protected species amounts to ‘harm’ under the ESA”

1 and therefore constitutes taking under 16 U.S.C. § 1538(19). *Marbled Murrelet v. Babbitt*,
2 83 F.3d 1060, 1067 (9th Cir. 1996).

3 As noted above, the evidence produced to date strongly suggests that MLFF Dam
4 operations destroy and adversely modify critical chub habitat. The effect on chub breeding
5 and sheltering is less clear in light of recent chub population data. Because the Court has
6 elected to withhold ruling on habitat modification until after reviewing FWS's revised
7 biological opinion, it likewise will defer ruling on Claim 3 until that time.

8 **IX. Issues for Additional Briefing on Remedy.**

9 In the order set forth below, the Court directs the parties to file additional briefing
10 after FWS reconsiders the MLFF portion of the 2008 Opinion. That briefing is to include
11 the question of appropriate remedies in the event the Court rules in favor of the Trust on
12 Claims 1, 2, or 3. To ensure that the parties address issues of concern to the Court on the
13 question of remedies, the Court will set forth additional thoughts here.

14 District courts have “broad latitude in fashioning equitable relief when necessary to
15 remedy an established wrong.” *Nat’l Wildlife Fed’n*, 524 F.3d at 936 (quoting *Alaska Ctr.*
16 *for the Env’t v. Browner*, 20 F.3d 981, 986 (9th Cir. 1994)). A court may require specific
17 actions from an agency on remand, but must leave the substance and manner of achieving
18 compliance to the agency. *Id.* at 937. Other than cases recognizing the district court’s broad
19 equitable powers, the Court has found no Ninth Circuit cases discussing the nature of
20 appropriate remedies in APA and ESA cases. The United States Court of Appeals for the
21 District of Columbia Circuit, which hears many federal agency matters, has provided helpful
22 guidance. It holds that the decision whether to remand a matter for further agency
23 consideration or simply to order the agency to follow a different course “depends on (1) the
24 seriousness of the [agency’s] deficiencies (and thus the extent of doubt whether the agency
25 chose correctly) and (2) the disruptive consequences of an interim change that may itself be
26 changed.” *Milk Train v. Veneman*, 310 F.3d 747, 755-56 (D.C. Cir. 2002) (quoting
27 *Allied-Signal Inc. v. U.S. Nuclear Regulatory Comm’n*, 988 F.2d 146, 150-51 (D.C. Cir.
28 1993)).

1 The deficiencies in agency actions in this case are serious failures of administrative
2 analyses, but it is not clear they have harmed the humpback chub. As noted above, chub
3 population is increasing below the Dam, and recent events such as Reclamation's removal
4 of rainbow trout and the warming of river temperatures due to drought suggest that the
5 increases will continue. Indeed, data released in the last few weeks by the USGS confirm
6 the favorable trend, showing that the population of adult chub downstream of the Dam
7 increased again in 2008, reaching an estimated 7,650 – a 50% increase since 2001. Dkt.
8 #165, Ex. 2 at 2.¹⁷

9 Enjoining Reclamation from using MLFF and requiring it to implement SASF (or
10 even RPA element 1A), as the Trust requests, would have disruptive consequences for the
11 many interests that rely on Dam operations, particularly electrical power interests. This is
12 not a reason to decline the injunction, however, for “[t]he plain intent of Congress in enacting
13 [the ESA] was to halt and reverse the trend toward species extinction, *whatever the cost.*”
14 *TVA v. Hill*, 437 U.S. 153, 184 (1978) (emphasis added). But mandating the use of SASF
15 or a similar seasonally adjusted steady flow regime could be disruptive to the humpback
16 chub. In light of recent gains in chub population and the introduction of other measures
17 likely to continue those gains, FWS and Reclamation concluded that a go-slow approach was
18 advisable. FWS expressed concern that longer periods of steady flow could strengthen non-
19 native warm-water fish that prey on the chub and compete for food and habitat. Dkt. #136,
20 Ex. 11 at 49; *see also* Ex. 1 at 11. It is not clear, therefore, that SASF would be an
21 unqualified success for the chub.

22
23
24 ¹⁷This new information was not contained in the administrative record that was before
25 FWS or Reclamation at the time of the actions challenged in this lawsuit, but may be
26 considered by the Court in evaluating appropriate remedies. *See Friends of the Clearwater*
27 *v. Dombeck*, 222 F.3d 552, 560 (9th Cir. 2000). For this reason, the Court will grant the
28 Federal Defendants' motion for leave to file notice of the recent study results. Dkt. #165.
In fairness to the Trust, the Court has also reviewed the time-lapse videos submitted by the
Trust but previously excluded by the Court because they were not part of the administrative
record. *See* Dkt. #157.

1 Moreover, more than a decade of studies appears to have raised questions about
2 whether SASF is the best method for conserving nearshore habitat. The USGS's 2005
3 SCORE Report expressed uncertainty on this issue:

4 Other dam operations may be more effective at retaining tributary inputs [of
5 sand into the Colorado River], such as [MLFF] operations modified such that
6 equal volumes of water are released from the dam each month. Alternatively,
7 a scenario of seasonally adjusted steady flows, which was an alternative in the
8 [1995 FEIS], may be effective. Because of the severely reduced sand supply,
9 however, even during periods of minimum release requirements of 8.23
10 million acre-feet (10,148 million m³) per year *the possibility exists that no
operational scenario will result in management objectives being achieved for
restoring sandbars, simply because of the volume of water that must be
released on an annual basis. If so, other, more effective alternatives for
restoring and maintaining sandbars and related habitats may need to be
evaluated.*

11 Dkt. #136, Ex. 18 at 27 (emphasis added). Thus, the SCORE report, which the Trust
12 characterizes as the most comprehensive evaluation of river conditions to date, expresses
13 uncertainty as to whether SASF is the best approach for conserving chub habitat.

14 The Court is very aware that it is not an expert on these matters. The continuing
15 favorable trend in chub population and uncertainties about the effect of SASF – both on the
16 chub and backwater habitat – cause the Court concern about whether the remedy for an ESA
17 violation should be an injunction requiring the implementation of SASF. The Court asks the
18 parties to address this concern, and other thoughts they have on the appropriate remedy if an
19 ESA violation is established, in the briefing required below.¹⁸

20 **IT IS ORDERED:**

- 21 1. The 2008 Opinion's conclusion that MLFF does not violate the ESA is
22 remanded to FWS for reconsideration consistent with this order. If, after
23 reconsideration, FWS again concludes that MLFF does not violate the ESA,
24

25 ¹⁸ Federal Defendants should not assume from these comments that the Court is
26 unwilling to order the implementation of a steady-flow regime. The Court believes that
27 additional FWS input is required in the form of a revised opinion, and will read with interest
28 the parties thoughts on an appropriate remedy, but ultimately will seek to fashion an
appropriate remedy if it concludes that current Dam operations violate the ESA.

1 FWS should provide a reasoned basis for that opinion, explain its reasons for
2 the change from its previous pronouncements, address the issue of chub
3 recovery, and use the best available science. FWS shall have until
4 **October 30, 2009**, to revise the opinion. A copy of the new opinion shall be
5 provided to counsel for the Trust on or before the close of business on
6 **November 2, 2009**.

7 2. The portion of the 2008 Opinion finding that the two components of the 2008
8 Experimental Plan do not violate the ESA shall remain in effect. Reclamation
9 may continue operating the Dam in accordance with the 2008 Experimental
10 Plan.

11 3. If FWS's revised opinion concludes that MLFF operations do not violate the
12 ESA, the parties simultaneously shall file memoranda, not to exceed 25 pages,
13 addressing their respective positions on (a) the validity of the revised
14 biological opinion, (b) the merits of Claims 1, 2, and 3 in light of the revised
15 opinion, and (c) any remedies the Court should impose if it grants summary
16 judgment in favor of the Trust on Claims 1, 2, or 3. The memoranda shall be
17 filed by **December 4, 2009**. The parties simultaneously shall file reply
18 memoranda, not to exceed 15 pages, by **December 18, 2009**.

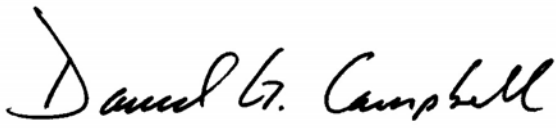
19 4. If FWS's revised opinion withdraws FWS's conclusion that MLFF operations
20 do not violate the ESA, or otherwise concludes that MLFF violates the ESA,
21 the parties shall file a status report by **November 6, 2009**, advising the Court
22 of the new conclusion. The Court will then schedule a status conference with
23 the parties to learn Reclamation's intentions in light of the new opinion and to
24 consider what additional steps the Court should take in this litigation,
25 including the possibility of further briefing and remedies.

26 5. The Trust's motions for summary judgment (Dkt. ##15, 131) are **granted** with
27 respect to Claim 7 and **denied** with respect to Claims 6 and 8.
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- 6. The Federal Defendants’ motions for summary judgment (Dkt. ##25, 135) are **granted** with respect to Claims 6 and 8 and **denied** with respect to Claim 7.
- 7. The parties’ respective motions with respect to Claims 1, 2, and 3 are taken under advisement.
- 8. Federal Defendants’ Motion for Leave to File Notice of Recent Information (Dkt. #165) is **granted**.

DATED this 26th day of May, 2009.



David G. Campbell
United States District Judge