



September 29, 2015

Ben Nelson
U.S. Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814-2536

Sent via U.S. Mail and via email to bcnelson@usbr.gov

RE: Comments on Draft Environmental Impact Statement for Coordinated Long-Term Operation of the Central Valley Project and State Water Project

Dear Mr. Nelson:

On behalf of the Golden Gate Salmon Association and the Pacific Coast Federation of Fishermen's Associations, we provide these comments on the Bureau of Reclamation's Draft Environmental Impact Statement for Coordinated Long-Term Operation of the Central Valley Project and State Water Project ("DEIS"). Unfortunately, the DEIS fails to comply with the requirements of the National Environmental Policy Act ("NEPA"), because it fails to include a reasonable range of alternatives, fails to accurately inform the public and decision makers of potential significant environmental impacts and necessary mitigation measures, and fails to adequately analyze cumulative impacts. Because Reclamation has failed to use sound scientific information and instead used flawed and biased methods to assess potential environmental impacts, the DEIS fails to accurately assess likely impacts on fish and wildlife populations and fails to identify and propose reasonable mitigation measures for potentially significant impacts.

1. The DEIS Fails to Accurately Assess Environmental Impacts to Fish and Wildlife

The DEIS largely ignores that over the past several years, the combination of the drought and CVP/SWP operations (including waivers of D-1641 water quality standards and other environmental protections) has driven delta smelt, winter run Chinook salmon, and other species to the brink of extinction. The DEIS never mentions that minimum Delta water quality standards under D-1641 were waived, and that RPA actions required under the biological opinions were not implemented during the drought, and the DEIS wholly fails to analyze the impact of the reasonably foreseeable waiver of water quality standards in future droughts. Yet the DEIS only acknowledges under the No Action Alternative that abundance levels for delta smelt and other fisheries “are difficult to predict” and that “Currently low levels of relative abundance do not bode well for the Delta Smelt or other fish species in the Delta.” DEIS at 9-139.¹ Under the Second Basis of Comparison, the DEIS concludes that,

As described above for the No Action Alternative, abundance levels for Delta Smelt, Longfin Smelt, Striped Bass, Threadfin Shad, and American Shad are currently very low, and abundance and habitat conditions for fish in the Delta in future years are difficult to predict. It is not likely that operations of the CVP and SWP under the Second Basis of Comparison would result in improvement of habitat conditions in the Delta or increases in populations for these fish by 2030, and the recent trajectory of loss would likely continue.

DEIS at 9-150. Despite these acknowledgements that current operations may very well lead to extinction of the species, the DEIS proposes no mitigation measures and does not even conclude that the alternatives result in significant impacts to delta smelt. Similarly, for longfin smelt, the DEIS ignores that current operations have resulted in the U.S. Fish and Wildlife Service concluding that listing longfin smelt under the Endangered Species Act is warranted, and continuation of existing spring outflow conditions is likely to result in adverse effects on the species. As a result, the DEIS fails to accurately assess environmental impacts of CVP/SWP operations on delta smelt and longfin smelt. All of this bodes poorly for the salmon that the commercial and recreational salmon fishing industry needs to survive. We strongly urge Reclamation to work with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and U.S. Environmental Protection Agency to address these scientific and analytic flaws.

The DEIS fails to consider an alternative that includes increased investments in local and regional water supplies. It fails to accurately assess the likely socioeconomic impacts of

¹ In part, this conclusion is based on inaccurate assessment of entrainment impacts of the Alternatives on Delta Smelt, as discussed below.

² In contrast, Reclamation’s revised draft environmental impact statement for the California

increased restrictions on ocean salmon fishing in Alternatives 3 and 4. It also fails to include any operational measures to adapt to climate change and mitigate its effects upstream.

With respect to salmon, the DEIS acknowledges that climate change will make it more difficult to achieve water temperature requirements with current upstream reservoir operations, resulting in impacts to salmon and steelhead. *See, e.g.*, DEIS at 9-126 to 9-127. Yet the DEIS fails to conclude that these temperature exceedances constitute a significant environmental impacts and fails to consider any mitigation measures.² During the current drought, the failure to meet minimum upstream water temperatures resulted in greater than 95 percent mortality of the 2014 brood year winter run Chinook salmon and probably as much, or more, of the fall run salmon our industry relies on. Failure to adequately forecast and manage upstream reservoirs may result in similar mortality for the 2015 brood year. Increased frequency, duration and intensity of upstream temperature exceedances as a result of climate change in combination with CVP/SWP operations are likely to cause significant environmental impacts. The DEIS also fails to demonstrate whether operations of Shasta Dam under the No Action Alternative are consistent with requirements of the 2009 NOAA biological opinion, which includes performance measures and other requirements to maintain adequate cold water pool for winter run Chinook salmon below the dam. As a result, the DEIS must be revised to analyze compliance with the biological opinion and to consider changes in reservoir operations to mitigate upstream temperature impacts.

Despite these short and long term impacts, the DEIS asserts that with respect to several salmon and steelhead runs, the effects of CVP/SWP operations under Alternative 1 are similar to those under the No Action Alternative and Alternative 2. *See, e.g.*, DEIS at ES-30 to ES-31, 9-397 to 9-398.³ However, the federal courts have twice held that operations under Alternative 1 would jeopardize the continued existence and recovery of listed salmonids and steelhead, in violation of the Endangered Species Act. The DEIS therefore suggests that operations under the No Action Alternative and under Alternative 2 would also jeopardize these listed salmon species (primarily because of upstream water temperature impacts). Yet the DEIS does not identify a significant environmental impact from these effects, and it proposes no clearly defined mitigation measures to address these impacts (except for programs for upstream fish passage at major dams, which are already required under the No Action Alternative).

² In contrast, Reclamation's revised draft environmental impact statement for the California WaterFix concludes that under the No Action Alternative, upstream reservoir operations will result in significant adverse environmental impacts to winter run Chinook salmon and green sturgeon spawning and egg incubation. *See, e.g.*, USBR, CA WaterFix RDEIS/SDEIR at ES-48.

³ This is at least in part because of Reclamation's flawed methodology for assessing impacts, particularly with respect to operations in the Delta..

The DEIS is fundamentally flawed, and Reclamation must revise the DEIS to analyze a broader range of alternatives using a credible methodology for assessing environmental impacts, including cumulative impacts.⁴

Adding insult to injury, the DEIS assumes up to full contract delivery for CVP contractors. This is contrary to existing legal obligations to protect fish and wildlife, as well as provisions of the San Luis Act and compliance with the feasibility report accompanying that act.⁵ Assumptions must not only comply with the law but comport with reality. Assuming up to full contract deliveries is not realistic.

In general, Chapter 9 fails to utilize recent scientific information and utilizes outdated and inaccurate models to assess potential impacts to fish and wildlife populations. As a result, the DEIS fails to accurately assess the likely environmental impacts of the alternatives on fish and wildlife and significantly understates the environmental impacts of some alternatives.

As with the pelagic species discussed above, the DEIS omits numerous recent scientific studies and analyses, particularly studies that indicate significant impacts of water project operations on salmonid survival and abundance. For instance, recent life cycle models for fall run Chinook salmon and spring run Chinook salmon have been developed and submitted to the Delta Science Program, which conclude that CVP/SWP delta exports significantly reduce spring and fall run salmon survival and abundance. See Cunningham *et al* 2015. In addition, Michel *et al* 2015 was recently published in the Canadian Journal of Fisheries and Aquatic Sciences, which reviews five years of acoustic tag data and demonstrates that increased flows dramatically increase survival of migrating salmon through the Sacramento River and Delta. These studies contradict many of the methods and models utilized by Reclamation in the DEIS to assess impacts, such as the Delta Passage model (which predicts very minimal changes in survival and abundance despite significant changes in exports and Old and Middle River reverse flows) and SALMOD.1

For example, Cunningham *et al* 2015 estimates that increasing exports by 30% above the 1967-2010 average would result in a 16-28% lower median survival rate from egg to adulthood for wild fall run chinook salmon and a 39-59% reduction in median survival for spring run Chinook salmon, concluding that, “[a] 30% increase in exports decreased spring and fall stock survival to the point where they would all decline regardless of the climate scenario.” In contrast, the Delta

⁴ In addition, Reclamation and DWR have not complied with CEQA, and compliance with CEQA is required before the Department of Water Resources could propose any changes to State Water Project operations. Numerous additional permits and approvals would be required before authorizing any changes to operations, including requirements under the federal Endangered Species Act, California Endangered Species Act, and other state and federal laws.

⁵ The 1960 San Luis Act authorized irrigating only 500,000 acres in Merced, Fresno and Kings Counties and providing fish and wildlife benefits and compliance with the Fish and Wildlife Coordination Act continuing jurisdiction. See PL 86-488 and <http://cdm15911.contentdm.oclc.org/cdm/ref/collection/p15911coll10/id/2106>

Passage Model predicts “very similar estimates of survival” for spring and fall run Chinook salmon under the No Action Alternative compared to the Second Basis of Comparison, despite the substantial increase in exports under the Second Basis of Comparison. *See* DEIS at 9-169, 9-178.

In addition, the Delta Passage Model only attempts to estimate survival of salmon smolts, *see* DEIS Appendix 9J at 9J-1, and cannot assess impacts to salmon fry or parr. Yet fry and parr life stages are often the majority of salmon migrating through the Delta, and the DEIS wholly ignores the impacts of CVP/SWP operations on these salmonid life histories.

Similarly, the DEIS fails to explain the contradictory information from use of the OBAN life cycle model and the Delta Passage Model on salmon survival through the Delta. On page 9-162, the DEIS states that the Delta Passage Model results in similar winter run Chinook salmon survival through the Delta under the No Action Alternative and the Second Basis of Comparison, and on the same page it states that the OBAN life cycle model predicts that median survival through the Delta would be 12 percent higher under the No Action Alternative compared to the Second Basis of Comparison. The DEIS provides no justification for its statement that the OBAN model’s survival estimates “suggest a high probability of no difference between these two bases of comparison.” DEIS at 9-162. In fact, the model demonstrates a very substantial difference in survival between the two alternatives, and Reclamation’s conclusory statement is arbitrary and capricious.

As a result, the DEIS fails to accurately assess environmental impacts of CVP/SWP operations in the Delta on migrating salmonids, and the conclusions drawn in the DEIS are arbitrary and capricious.

2. The DEIS Fails to Accurately Assess Upstream Water Temperature Impacts to Salmon

The DEIS’ analysis of upstream temperature impacts on salmon is flawed and understates the adverse impacts of CVP/SWP operations on salmon (particularly in combination with climate change), and the DEIS fails to explicitly acknowledge that CVP/SWP operations cause significant adverse impacts and to propose mitigation measures to address these impacts in the short term. Reclamation’s conclusions in the DEIS are arbitrary and capricious.

Even using flawed methodology, the DEIS demonstrates that there will be significant adverse effects on salmon from high water temperatures as a result of climate change and CVP/SWP operations, including under the No Action Alternative:

Under the No Action Alternative, the ability to control water temperatures depends on a number of factors and management flexibility usually ends in October when the cold water pool in Shasta Lake is depleted. With climate

change, cold water storage at the end of May in Shasta Lake is expected to be reduced under the No Action Alternative for all water year types. This would further reduce the already limited cold water pool in late summer. **With the anticipated increase in demands for water by 2030 and less water being diverted from the Trinity River, it is expected that it would become increasingly difficult to meet water temperature targets at the various temperature compliance points. It is likely that severe temperature-related effects will be unavoidable in some years under the No Action Alternative.** Due to these unavoidable adverse effects, RPA Action Suite I.2 also specifies other actions that Reclamation must take, within its existing authority and discretion, to compensate for these periods of unavoidably high temperatures. These actions include restoration of habitat at Battle Creek (see below) which may support a second population of winter-run Chinook Salmon, and a fish passage program at Keswick and Shasta dams to partially restore winter-run Chinook Salmon to their historical cold water habitat.

DEIS at 9-127 to 9-128 (emphasis added).⁶ The DEIS also uses Reclamation's salmon mortality model to estimate temperature impacts on salmon production and mortality, concluding that the impacts from the No Action Alternative and the Second Basis of Comparison are similar, *see* DEIS at 9-160, that winter run Chinook salmon mortality is 31.4% in critically dry years under the No Action Alternative, *see* DEIS at Appendix 9C-8, and that Sacramento River spring run Chinook salmon mortality is 21.9% on average, and 84.8% in critically dry years under the No Action Alternative, *see* DEIS at Appendix 9C-7. Similarly, the SALMOD model results in the DEIS estimate that in approximately 10% of years, there would be zero production of spring run Chinook salmon below Shasta Dam. *See* DEIS at Figure B-3-1. And the DEIS estimates that under both the No Action Alternative and the Second Basis of Comparison, Reclamation will frequently violate temperature standards at Shasta Dam, *see* DEIS at 9-159 to 9-160, and at other reservoirs, *see* DEIS at 9-166 to 9-168. Yet the DEIS fails to explicitly identify upstream temperature mortality as a significant adverse impact, and the only mitigation measure identified in the DEIS (fish passage program) is a long term potential measure that is already required under the No Action Alternative and is therefore part of the baseline. That mitigation measure does not address the ongoing significant adverse impact in the near term, nor does it propose anything that is not already required.

⁶ However, as noted above, the DEIS also fails to demonstrate whether operations of Shasta Dam under the No Action Alternative are consistent with requirements of the 2009 NOAA biological opinion, which includes performance measures and other requirements to maintain adequate cold water pool for winter run Chinook salmon below the dam. *See* DEIS at 9-125 (describing RPA requirements). To the extent that the modeled operations under the No Action Alternative fail to meet the RPA requirements, Reclamation must revise operations to be consistent with those RPA requirements.

Moreover, the DEIS relies on flawed methodologies to assess temperature impacts on salmonids, many of which provide contradictory results, which mislead the public as to the effects of CVP/SWP operations on salmonids. For instance, the DEIS uses the SALMOD model to calculate juvenile production and the extent of temperature related upstream mortality to eggs and fry. The document concludes that the No Action Alternative results in similar impacts to the Second Basis of Comparison. DEIS at 9-162. Yet SALMOD's estimates of mortality and production are wildly inaccurate compared to recent data. For instance, Figure B-4-1 estimates that winter run Chinook salmon production would never drop below 500,000, yet in 2014 there was a total year class failure with over 95% mortality due to water temperatures. Figure B-4-1 also shows that according to the SALMOD model, in approximately 95% of years winter run Chinook salmon production does not vary by more than a few hundred thousand fish. Yet empirical data shows that winter run Chinook salmon egg to fry survival at Red Bluff Diversion Dam from 2002 to 2012 varied substantially, from a low of 15.4% to a high of 48.6%, with a mean of 26.4%. *See* U.S. Fish and Wildlife Service 2015 at Table 6c. Estimates for other salmon runs are similarly inaccurate compared to recent Sacramento River data from the U.S. Fish and Wildlife Service. And this recent data also contradicts the information presented in Reclamation's salmon mortality model, which significantly underestimates mortality compared to the recent data.

In addition, the analysis of water temperature impacts looks only at monthly average temperatures. DEIS at 9-109. As the DEIS notes briefly, "the effects of daily (or hourly) temperature swings are likely masked by the averaging process." DEIS at 9-110. This is clearly correct, and may help explain why the modeled results do not show the level of mortality seen from recent empirical data. Yet the DEIS fails to carry forward this caveat elsewhere in the discussion, when it presents the results of modeling. Similarly, the DEIS restricts its use of the IOS model to median escapement estimates and only uses a subset of the years from CALSIM, DEIS at 116, which excludes the highest mortality years in the driest years and therefore does not accurately assess impacts.

Finally, the DEIS' analysis of weighted usable area for rearing habitat fail to account for more recent scientific research demonstrating the strong effect of increased flow on downstream salmonid survival in the Sacramento River. *See* DEIS at 9-107 to 9-109. The methodology used in the DEIS does not account for the significant reduction in survival of migrating salmon under lower flow conditions in the Sacramento River. *See* Michel et al 2015. As a result, the DEIS fails to accurately assess the impact of reduced flow on salmon survival in the Sacramento River using this methodology.

The DEIS demonstrates that current CVP/SWP operations, including water deliveries to Sacramento River Settlement Contractors and other senior water rights holders, in combination

with climate change, will result in significant adverse effects on salmon caused by violations of water temperature requirements. The DEIS predicts that these impacts will become more severe as a result of climate change and increased demands for water. As a result, the DEIS must consider alternatives and/or mitigation measures that reduce upstream water deliveries, including deliveries to Sacramento River Settlement Contractors and other water rights holders.

3. The DEIS Fails to Accurately Assess Impacts to Salmonids in the San Joaquin Basin

The DEIS fails to accurately assess environmental impacts to salmonids in the San Joaquin Basin because it fails to assess impacts to spring run Chinook salmon and because it fails to assess the impacts from changes in river flows.

First, the DEIS fails to acknowledge that small populations of spring run Chinook salmon have been established in recent years in the Stanislaus and other rivers. NMFS has acknowledged these populations exist, but the DEIS only analyzes impacts to fall run Chinook salmon and mistakenly concludes that spring run have been extirpated. DEIS at 9-87, 9-92. The DEIS wholly fails to analyze impacts to spring run Chinook salmon in the Stanislaus River and other San Joaquin River tributaries.

Second, the DEIS acknowledges some of the studies documenting that salmon survival in the Stanislaus River and other San Joaquin tributaries is driven by river flow conditions. For instance, the DEIS cites Zeug et al 2014 to show that higher flow generally results in higher salmon survival and subsequent abundance. DEIS at 9-92. Yet the DEIS ignores other scientific studies which conclude that flows drive salmonid survival and abundance, including Sturrock et al 2015, Buchanan et al 2015, State Water Resources Control Board 2010, 2012.⁷ The DEIS also fails to emphasize that inadequate flow is the dominant factor limiting salmon survival and abundance, instead relying on outdated research from 1982 to assert that survival through the Stockton Deepwater Ship Channel is one of the most limiting factors. DEIS at 9-92.⁸

The DEIS fails to utilize this recent scientific information on the importance of river flow in assessing environmental impacts. Although the DEIS analyzes impacts from changes in operations on water temperatures, it wholly fails to assess the impacts from changes in flows on the Stanislaus River. *See, e.g.*, DEIS at 2-202 to 2-209 (analyzing impacts to fall run Chinook

⁷ The DEIS also cites to 2001 research by Mesick on the effect of fall flows and exports on straying, but ignores Marston et al 2012, which concluded that fall pulse flows and export rates are correlated with higher rates of straying.

⁸ The DEIS also incorrectly asserts that flows must exceed 5,000 cfs to mobilize gravel in the Stanislaus River. DEIS at 9-95. That is incorrect; Kondolf 2001 concluded that flows below 5,000 cfs could mobilize the riverbed, particularly in certain reaches of the river.

salmon and Steelhead).⁹ The available scientific evidence demonstrates that a reduction in flows below the minimum requirements of the biological opinion would result in very significant adverse effects on steelhead, fall run Chinook salmon, spring run Chinook salmon. *See, e.g.,* Sturrock et al 2015; Zeug et al 2014; Buchanan et al 2015; State Water Resources Control Board 2010, 2012. And the State Water Resources Control Board, National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and many others have demonstrated that current flow levels on the Stanislaus River and other San Joaquin River tributaries are causing significant impacts to salmon and steelhead, demonstrating a need to substantially increase flows to sustain salmon.

This is particularly problematic for Alternative 3, which proposes to substantially reduce Stanislaus River flows. The DEIS wholly fails to analyze the impact of reduced flows and, based solely on temperature modeling, concludes that that Alternative 3 would have slightly beneficial effects on fall run Chinook salmon. DEIS at 9-316. Because the DEIS fails to assess the environmental impacts of reduced flows, which is the dominant factor affecting salmon and steelhead on the Stanislaus, Lower San Joaquin River, and other tributaries, the DEIS fails to accurately assess the environmental impacts of CVP/SWP operations on salmonids in the San Joaquin Basin. Reclamation's conclusions in the DEIS are arbitrary and capricious.

In addition, the DEIS fails to credibly analyze the impacts of the proposed trapping and barging of San Joaquin basin salmonids through the Delta under Alternative 3 and 4. The document makes unsubstantiated conclusions that this action would benefit salmonids without providing any analysis in the document. DEIS at 9-315 to 9-316. As a result, Reclamation's conclusion in the DEIS is arbitrary and capricious. There are substantial uncertainties regarding the effectiveness of capture operations (the stated goal is capturing 10-20% of the population) and potential adverse impacts. Moreover, coded wire tag data from the California Department of Fish and Wildlife show that salmon from the Merced Hatchery have successfully migrated through the Delta in recent years. *See* Kormos et al 2012; Palmer-Zwahlen and Kormos 2013. And in their comments on the ADEIS, NMFS raised substantial concerns that a trap and haul program would cause substantial adverse impacts on salmonids.

The DEIS also fails to assess whether such a program is consistent with Reclamation's obligation to double natural production of salmon populations under the Central Valley Project

⁹ Elsewhere, the DEIS asserts that under the No Action Alternative, Reclamation will not fully implement the biological opinion requirements regarding Stanislaus River and Lower San Joaquin River flows, in order to make water available to contractors, yet asserts with no justification that the impacts would be "similar or reduced relative to recent conditions." DEIS at 9-133. The DEIS reaches a similarly flawed conclusion with respect to the Second Basis of Comparison, concluding that the failure to implement the biological opinion requirements on the Stanislaus River would not improve in the future. DEIS at 9-149.

Improvement Act.¹⁰ Reclamation must substantially revise this section of the DEIS to provide a basis for its conclusions and to respond to the concerns raised by NMFS and others.

4. The DEIS Concludes that the Effects of Predator Control Program are Highly Uncertain and Could Cause Significant Adverse Environmental Impacts

As compared to the administrative draft, the DEIS' analysis of the impacts of predator control programs is substantially improved. For instance, the DEIS cites repeatedly to the Delta Science Program's independent peer review report (Grossman et al 2013) regarding the effects of predation on salmonids and the caveats statements that predator control programs will work as intended. *See* DEIS at 9-274 to 9-275. It also cites work by Peter Moyle suggesting that predator control programs could harm delta smelt, and acknowledges that predator control programs at the Columbia River have not demonstrated population level effects. DEIS at 9-274 to 9-276. As a result, the DEIS concludes that,

the program may be difficult to implement, may not be effective, and may cause unintended harm to other native Delta fish species. Consequently, the outcome of the predator management program is highly uncertain. Compared to the No Action Alternative, which does not include a predator reduction program, Alternative 3 may or may not provide a benefit to salmonids and may result in an adverse effect on Delta smelt.

DEIS at 9-276.

However, the DEIS fails to acknowledge that USBR's own studies regarding the Head of Old River Barrier on the San Joaquin River have shown that increased flows reduce predation on salmonids, and reduced flows increase predation and reduce survival. *See* Bowen et al 2009 and 2010 (USBR Technical Memorandum 86-68290-10-07 and 86-68290-11). And the DEIS also inconsistently addresses the impact of CVP/SWP operations in contributing to predation by nonnative species, particularly by causing habitat conditions in the Delta and other rivers that favor non-native species. For instance, on page 9-354, the DEIS concludes that Alternative 5 may adversely affect striped bass, but the DEIS does not analyze whether or how that impact to striped bass may subsequently affect salmonids or other species.

5. The DEIS Fails to Accurately Assess Impacts of Fishing Mortality and Greater Restrictions on Salmon Fishing Proposed in Some Alternatives

¹⁰ More broadly, the DEIS fails to assess whether any of the alternatives meet Reclamation's obligations under section 3406(b).

The DEIS incorrectly assesses the impact of greater restrictions on salmon fishing under Alternatives 3 and 4. For instance, the DEIS downplays the effectiveness of the recent restrictions on salmon fishing as a result of the 2012 winter run Chinook salmon biological opinion, and it does not mention that NMFS' recovery plan for winter run Chinook salmon lists the ocean fishery as a low stressor on the population. *See* DEIS at 9-118, 9-277 to 9-278. The DEIS must be revised to account for this information in assessing impacts. Moreover, mark select fisheries are likely to substantially reduce fishing opportunities and may not improve conditions for wild salmon. The DEIS fails to analyze these potential adverse impacts of mark select fisheries.¹¹ In addition, as NMFS noted in its comments on the ADEIS, the harvest rule specified in Alternatives 3 and 4 may be less protective of winter run Chinook salmon than the existing biological opinion, given the restrictions on fishing at low levels of abundance. As noted in our prior comments, we strongly recommend that Reclamation work with the Pacific Fishery Management Council regarding these conclusions.

6. The DEIS Fails to Accurately Assess Impacts of Climate Change on Salmon and Propose Mitigation Measures to Address those Impacts

We appreciate that the DEIS includes the potential effects of climate change on precipitation and temperature, in order to assess how climate change may affect CVP/SWP operations. The DEIS assumes that climate change will reduce reservoir storage and cause increased temperature impacts on salmonids. *See, e.g.*, DEIS at 9-120, 9-123, 9-126 to 9-127, 9-130, 9-132 to 9-133, 9-146. However, the document wholly fails to propose any short term measures to mitigate the effects of CVP/SWP operations in combination with climate change in order to avoid violations of downstream water temperature standards that imperil salmon. As a result, the DEIS predicts more significant impacts on salmonids from increased upstream temperature, without proposing any changes or modifications to operations in order for Reclamation to meet its existing obligations under state and federal law to avoid violating water temperature requirements. The DEIS must be revised to analyze mitigation measures and alternatives that reduce or avoid water temperature violations below dams, consistent with Reclamation's legal obligations to protect and restore salmonids, including reduced upstream diversions and deliveries to senior water contractors.

7. Conclusion

As discussed above, the DEIS fails to accurately assess environmental impacts of CVP/SWP operations, fails to consider a reasonable range of alternatives, and includes alternatives that

¹¹ In addition, the DEIS fails to analyze the socioeconomic effects of reducing salmon fishing as proposed under Alternatives 3 and 4. *See, e.g.*, DEIS at 19-77.

*Comments on USBR Long Term Operations Draft Environmental Impact Statement
September 29, 2015*

violate Reclamation's water rights and the purpose and need statement of the DEIS.
Reclamation must substantially revise the DEIS to comply with NEPA.

Thank you for consideration of our views.

Sincerely,



John McManus
Executive Director
Golden Gate Salmon Association



Tim Sloane
Executive Director
Pacific Coast Federation of Fishermen's
Associations