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July 29, 2014

Mr. Ryan Wulff
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
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BDCP.Comments@noaa.gov

Re: Supplemental comments of Friends of the River to the BDCP DEIRS

Dear Mr. Wulff:

These are the supplemental comments of Friends of the River to the BDCP DEIRS with a particular focus on the need to consider a reduced export alternative in light of climate change and BDCP operational impacts on existing surface storage and in regard to the likely development of new surface storage to feed additional water to the BDCP.

1. Climate Change Impacts On Surface Storage Reservoirs Documented In The DEIRS Support The Need To Develop And Adopt A Reduced Exports Plan.

Friends of the River's existing comments already discuss at length the failure of the BDCP DEIRS to seriously consider as a BDCP alternative the Environmental Water Caucus' Responsible Exports Plan or any alternative that significantly reduces Delta water exports. In fact, information in the DEIRS supports the need for serious consideration of the Responsible Exports Plan or a reduced exports alternative.

A remarkable finding buried in the BDCP is the fact that climate change under all alternatives considered in the DEIRS will result in major federal and state surface storage reservoirs upstream of the Delta being drawn down to dead pool storage by the end of the irrigation season. The BDCP claims that this is mostly due to climate change. However, several BDCP alternatives also contribute to this annual catastrophic drawn-down. According to the DEIRS:

In comparison to Existing Conditions, there would be a decrease in carryover storage at the end of September for Lake Oroville, Trinity Lake, Shasta Lake, and Folsom Lake in all years. Lake Oroville storage would decrease by 646 TAF (31%) in September average end of month storage. Trinity, Shasta, and Folsom lakes September carryover would decrease by 230 TAF (17%), 481 TAF (18%), and 146 TAF (28%), respectively under No Action Alternative as compared to Existing Conditions. The frequency of Trinity, Shasta, and Folsom Lakes dropping to dead pool storage would increase by about 10% under the No Action Alternative as compared to Existing Conditions. These changes in storage would reduce the ability of the CVP and SWP to meet system water demands and environmental water needs. Adaption measures would need to be implemented on upstream operations to manage coldwater pool storage levels under future sea level rise and climate change conditions. As described in the methods section, model results when storages are at or near dead pool may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions. (BDCP DEIRS pg. 5-61)

What is truly astounding about this statement is that it doesn't apparently result in the federal and state agencies involved in the BDCP to recognize that the BDCP goals as currently stated are inadequate to deal with the very real impacts of climate change documented in the DEIRS.

The state and federal water projects in California, and their use of the Delta to export large quantities of fresh water south of the Delta, can no longer be operated as they have been. A serious change in operations is needed to prevent the severe impacts that annual reductions to dead pool storage in major reservoirs would entail (including significant water supply shortages for senior water rights holders and the environment). The only operational change that would likely avoid these catastrophic storage reductions is an alternative that significantly reduces Delta exports. Therefore the BDCP must fully consider, adopt, and implement a plan that reduces the statewide reliance on Delta exports, but it fails to do so.

The DEIRS' simple characterization of the dead storage issue as "model results [that] may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions" brings into question whether any result or impact documented in the BDCP will represent actual conditions. Since virtually every result and impact in the DEIRS are based on computer models, perhaps they can all be individually tweaked to produce different and perhaps more desirable results. Are we to assume based on this statement that nothing in the DEIRS is definitive?

The DEIRS clearly shows that business as usual, which includes all the alternatives considered in the DEIRS, will no longer be acceptable. California must come to grips with climate change and how it will affect our water supply and management. The best place to start should be with the BDCP and that entails serious consideration and adoption of the Responsible Exports Plan or other alternatives that significantly reduce Delta exports.

2. New Surface Storage Is A Reasonably Foreseeable Impact Of The BDCP But The Likely Impacts Of New Storage Are Not Considered.

The DEIRS chapters about Water Storage and Surface Water (Chapter 5 and 6) fail to mention any projects currently under active study and environmental review to increase surface storage upstream of the Delta. These projects include a proposed raise of Shasta Dam and expansion of its reservoir on the Sacramento River, the Sites Offstream Storage Reservoir in the Sacramento Valley (which would be fed by major diversions from the Sacramento River), an additional proposed expansion of the Los Vaqueros Reservoir near the Delta, and the proposed Temperance Flat Dam on the San Joaquin River Gorge. Dam proponents have also been promoting expansion of the existing San Luis Reservoir in the San Joaquin Valley.

New surface storage projects are only mentioned and briefly examined in DEIRS Appendix 1B – Water Storage. But the Appendix is quick to disavow any connection between new surface storage projects and the BDCP:

While water storage is a critically important tool for managing California's water resources, it is not a topic that must be addressed in the EIR/EIS for the BDCP. This is because the BDCP, as a proposed habitat conservation plan and natural community conservation plan, does not, and need not propose storage as a project component. Although the physical facilities contemplated by the BDCP, once up and running, would be part of an overall statewide water system of which new storage could someday also be a part, the BDCP is a stand-alone project for purposes of CEQA and NEPA, just as future storage projects would be. (Appendix pg. 1b-1)

This carefully worded statement fails the validity test in a number of ways. The state legislation that created the BDCP process had two "coequal" goals: to restore the ecological functions of the Delta and to improve water supply reliability in the state of California. Legislators who established the coequal goals, state and federal water agencies, and water pundits alike (many of whom work for or represent water agencies and contractors) extoll the virtues of building additional surface storage as a crucial component of California's water management.

In truth, the HCP/NCCP aspects of the BDCP are needed to implement the water supply reliability goal. The Delta could (and many believe it should) be restored without "improving" water supply reliability by continuing or even increasing Delta exports. Federal and state law prohibits the government from continuing or increasing fresh water exports from the Delta without authorizing take of endangered and fully protected species. And take permits would not be allowed without the restoration component.

Another fact that directly connects the BDCP and upstream surface storage projects is that most of these projects – particularly those located north of the Delta – would contribute water to the Delta for export. For example, the proposed raise of Shasta

Dam and enlargement of its reservoir would increase firm water supplies from 47,000 to up to 113,000 acre feet per year, depending on the dam raise alternative chosen. From 44% up to 90% of this firm yield would be exported south of the Delta.¹

Similarly, the proposed Sites Offstream Storage Reservoir could increase water supplies from 213,000 to 246,000 acre feet per year depending on the alternative. Of this amount, about 54-55% would be exported south of the Delta. Sites could also provide dedicated water releases to improve Delta water quality and provide a downstream shift in X2, as well as provide an emergency pulse of water in response to catastrophic Delta levee collapse.² In fact, most of the potential benefits of the Sites project appear to be Delta oriented and would fit quite well into the BDCP operations and purposes.

It's important to understand that the Shasta Dam raise and North of Delta Offstream Storage (including Sites) were under active study when voters rejected the Peripheral Canal in 1982. The studies were subsequently shelved and were only revived in the CALFED process and reinvigorated with the advent of the BDCP. In addition, the state water bond on the November 2014 general ballot earmarks \$3 billion for these projects, along with millions for Delta restoration, which increases both their connection and certainty.

The proposed Temperance Flat Dam on the San Joaquin River Gorge is located south of the Delta. But it too would provide direct benefits to the BDCP, including an emergency water supply ranging from 194,000-203,000 acre feet of water available during a "Delta Export Disruption" (a Delta levee break). In addition, the draft feasibility study for this dam project examines the potential to operate Temperance Flat in conjunction with Delta exports and San Luis Reservoir operations.³

There is an undeniable connection between these proposed surface storage projects and the BDCP. And the failure of the DEIRS to admit this connection and disclose the reasonably foreseeable impacts of these surface storage projects on the environment is a major violation of both CEQA and NEPA.

Attached with these supplemental comments are comments prepared by Friends of the River in response to the Shasta Dam raise DEIS and the Temperance Flat Dam Draft Feasibility Study. The comments raise serious concerns about the impacts of these projects on biologically sensitive river segments, fish and wildlife habitat, aquatic and riparian ecosystems, and protected areas such as the Sacramento River

¹ Shasta Lake Water Resources Investigation DEIS Table S-2, U.S. Bureau of Reclamation, June 2013.

² North of Delta Offstream Storage Preliminary Administrative DEIR, Table ES-5, California Dept. of Water Resources, May 2014

³ Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report, Table ES-1, U.S. Bureau of Reclamation, January 2014.

National Wildlife Refuge, the BLM proposed San Joaquin River Gorge Wild & Scenic River, the proposed Sacramento River National Recreation Area, and various river segments determined eligible by federal agencies for Wild & Scenic River protection. All of these potential impacts should be considered in the BDCP DEIRS since the surface storage projects have a direct and undeniable connection to the BDCP.

3. Conclusion

The BDCP DEIRS must be revised to include a reduced exports plan in response to the climate change impacts on upstream storage. The DEIRS must also be revised to disclose the true connection between upstream storage projects and the BDCP and the potential impacts of these storage projects on the environment.

Sincerely,



Steven L. Evans
Wild Rivers Consultant

Attachments:

Comments of Friends of the River and the California Wilderness Coalition on the Shasta Lake Water Resources Investigation DEIS, Oct. 1, 2013.

Comments of Friends of the River on the Upper San Joaquin River Basin Storage Investigation Draft Feasibility Report, April 21, 2014.



Comments of
 Friends of the River
 California Wilderness Coalition
 Shasta Lake Water Resources
 Investigation Draft Environmental Impact
 Statement



September 30, 2013

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Dear Ms. Chow:

Thank you for soliciting public comments in response to the Shasta Lake Water Resources Investigation (SLWRI) Draft Environmental Impact Report (DEIS). Below are the joint comments of Friends of the River and the California Wilderness Coalition. Friends of the River's Executive Director, Bob Center, will be submitting separate comments before the deadline. In addition, Friends of the River contributed to and hereby incorporate by reference the joint comments to be submitted by the California Environmental Water Caucus. We also hereby incorporate by reference the joint comments of Friends of the River and the California Wilderness Coalition to the SLWRI Draft Feasibility Study and Preliminary DEIS, dated January 28, 2013. We also hereby incorporate by reference verbal comments made for Friends of the River by Steven Evans at the public hearings held in Redding and Sacramento on September 10 and 11, 2013.

1. Unavailability Of Hard Copies Of The DEIS Made Public Review Of This Massive And Complicated Document Difficult.

Friends of the River must protest the failure of the Bureau of Reclamation to provide hard copies of the SLWRI DEIS to the interested public. It is almost impossible to thoroughly review such a massive document online or via disc. Failing to provide printed copies of this document to those interested in conducting a thorough public review is a "penny wise, but pound foolish" approach to NEPA. We believe that a revised DEIS will be necessary and hereby request a hard copy of any future SLWRI documents.

2. The DEIS Fails To Admit The Connection Between The SLWRI And The Bay Delta Conservation Plan.

The SLWRI draft Feasibility Report clearly documents that every additional drop of water stored by a raised dam and expanded reservoir will be sold to federal water contractors. This not only refutes the Bureau's claim that the primary benefit of the dam raise is improved fisheries, it also underscores a direct connection to the SLWRI with the Bay-Delta Conservation Plan (BDCP). The current version of the BDCP proposes construction of two giant tunnels beneath the Delta to facilitate export of Sacramento River water south. The DEIS's and Feasibility Study's summary of benefits from the dam raise clearly show that 77% of the water stored behind a raised Shasta Dam will be sold to water contractors south of the Delta (the remainder will be sold to north of Delta contractors). The DEIS fails to document this important connection and is violation of the public disclosure mandate of the National Environmental Policy Act.

A revised DEIS must clearly document the connection between the SLWRI and BDCP and fully disclose the role this connection plays in the cost-benefits of the SLWRI.

3. Raising Shasta Dam Will Not Significantly Increase Anadromous Fish Survival As Claimed In The DEIS.

The DEIS predicts that the dam raise alternatives will increase juvenile anadromous fish survival by 61,000 to 813,000 fish annually. (DEIS Table S-2, pg. ES-26) This is a misleading way to present the alleged benefits of the proposed dam raise. Although increasing juvenile salmon survival by up to 813,000 fish sounds significant, the less than 1% return rate of juveniles as adults three years later means that this billion dollar or more project may produce fewer than 813 additional adult salmon in any one year, and in most years, considerably less than that number.

It is questionable as to whether the Bureau will operate the raised dam and expanded reservoir in a way that guarantees that the cold water pool will be available during the dry and critically dry years when water temperatures are a major factor in juvenile salmon survival. Sadly, there are no hard or firm standards that the Bureau is apparently required to follow. When the Bureau finds it inconvenient to meet temperature standards for juvenile salmon survival, it simply "coordinates" (a polite way of saying it pressures) state and federal regulatory agencies to agree to move the temperature control point on the Sacramento River to a spot more convenient for the Bureau's dam and reservoir operations. The Sacramento Basin Water Quality Control Plan unequivocally sets the salmon temperature control point at Red Bluff. Over the years, the Bureau has found it convenient to move this control point further upstream to Bend, Balls Ferry, and in 2013, even further upstream to a point near Anderson.

In its draft Fish and Wildlife Coordination Report (June 2013), the U.S. Fish and Wildlife Service (USFWS) found the dam raise/expanded reservoir benefits of the

dam raise to be “negligible”. According to the USFWS, in 90% of the years, the dam raise/expanded reservoir will provide no benefits for juvenile salmon. In addition, the USFWS found that most of the fish benefits identified in the SLWRI are from spawning gravel augmentation and side channel rearing habitat restoration – mitigation measures that are not dependent on the dam raise/reservoir expansion and that can be implemented regardless whether the dam is raised.

It is important to recognize that the existing dam and reservoir can be operated to maintain an abundant population of endangered winter-run Chinook salmon. The completion of Shasta Dam in 1945 should have doomed this fish to quick extinction since access to its primary spawning grounds on the McCloud and upper Sacramento Rivers were permanently blocked by the dam. But once the reservoir was filled, operations of the dam in its first two decades “provided in-river conditions that sustained the winter-run Chinook population. Abundance estimates for winter-run Chinook in the 1960s ranged from a high of 125,000 in 1962 to a low of 49,000 in 1965.” (National Marine Fisheries Service 1997 Proposed Winter-Run Recovery Plan, pg. II-12) Essentially, the winter-run became dependent on cold water releases from Shasta Dam for its survival. But since 1970 to the present, dam operations have consistently failed to provide cold water to the river in order to meet federal water contract commitments in the Sacramento-San Joaquin Delta.

The question is: If the existing dam and reservoir can be operated in a manner that can provide the needed cold water for improved juvenile salmon survival, why is this not an alternative under serious consideration in the SLWRI? The answer is found on DEIS page 2-49, where the Bureau states:

The adaptive management plan (for the proposed cold water pool created by the raised dam/enlarged reservoir) *may* include operational changes to the timing and magnitude of releases from Shasta Dam to benefit anadromous fish, *as long as there are no conflicts with operational guidelines or adverse impacts on water supply reliability.* (Emphasis ours)

This simple statement clearly demonstrates the Bureau’s lack of commitment to operate Shasta Dam and Reservoir to benefit endangered salmon regardless of whether the SLWRI is implemented or not. It reveals that the true purpose of the SLWRI is to increase the water supply for water contractors.

4. Key Recovery Actions In The 2009 Central Valley Salmon and Steelhead Recovery Plan Are Not Considered In the SLWRI DEIS.

The National Marine Fisheries Service’s (NMFS) 2009 Central Valley Salmon and Steelhead Recovery Plan proposed a number of actions to protect and restore all runs of salmon and steelhead in the Sacramento River and its tributaries. Just a few of these actions include regulating pollution discharges from agricultural and urban sources, setting back and maintaining riparian vegetation on flood control levees,

restoring 185 miles of continuous riparian habitat between Red Bluff and Sacramento, screening water diversions that have substantial fishery impacts, curtailing development in flood plains, negotiating additional instream flows or purchasing water rights, remediating acid mine pollution, and restoring the former footprint of Lake Red Bluff to riparian habitat.

The DEIS ignores most of these actions and only obliquely refers to others. For example, it is unclear that adaptive management flows mentioned in the DEIS are the same thing as this specific recovery action proposed by the NMFS:

Implement a river flow management plan that balances carryover storage needs with instream flow needs for winter-run Chinook salmon based on runoff and storage conditions, including flow fluctuation and ramping criteria (USFWS 2001).

A revised SLWRI DEIS should include sufficient detail and information to make it clear whether adaptive management flows proposed in the DEIS meet the intent of the recovery action proposed in the Recovery Plan.

The Recovery Plan also calls for the restoration of 185 miles of continuous riparian habitat along the Sacramento River between Red Bluff and Sacramento. It is important to note that the USFWS clearly believes that “the reduction in winter flows with the raising of Shasta Dam would result in adverse effects to riparian habitat along the Sacramento River...” (USFWS Coordination Report pg. 176) The SLWRI proposes as a specific restoration measure to restore riparian habitat in the upper and lower Sacramento Rivers (upstream and downstream of Red Bluff respectively) the development and implementation of a Riverine Ecosystem Mitigation and Adaptive Management Plan (REMAMP). The plan will supposedly avoid and compensate for the impact of altered flow regimes on the river’s riparian and wetland communities. But little information is provided in regard to the REMAMP, which apparently does not exist even in draft or outline form, nor does it seem to apply to the Delta (as recommended in the Recovery Plan). There is no assurance that the REMAMP will actually meet the riparian habitat restoration objective found in the Recovery Plan.

In addition, some impacts identified in the DEIS imply that conditions for fish populations targeted for recovery may worsen. For example, remediation efforts at Iron Mountain Mine now controls 95% of the mine pollution that formerly flowed into the river. But the USFWS in its coordination report notes that the SLWRI reservoir expansion may exacerbate acid mine pollution by inundating additional abandoned mines and mine tailings that could leach additional metals into the river. The DEIS notes that “In addition to runoff from the historic workings (i.e., adits and portals), a number of large mine tailing deposits are currently leaching various metals into tributaries of Shasta Lake.” (DEIS pg. 7-15) The Bureau apparently eliminated reducing acid mine and metal pollution as a recovery objective from the SLWRI “due to numerous implementation issues.” It proposes to prepare and implement a site-specific Remediation Plan for historic mine features subject to

inundation but its not clear if this will be completed in time to allow for the completion of the dam raise and filling of the enlarged reservoir, nor is it clear whether this mitigation meets the intent of the Recovery Plan.

The Recovery Plan recommends minimum instream flows and ramping rates to benefit salmon. The DEIS notes that the 1993 NMFS Biological Opinion (BO) set minimum flows in the river, but it is unclear whether these are the same minimum flows recommended in the Recovery Plan, nor does the BO address ramping rates. Interestingly, the primary fish recovery goal of SLWRI alternative CP4 is to provide a more “fish-friendly” environment with “reservoir storage dedicated to fish, *to either improve flows or water temperatures.*” (DEIS pg. 11-54, *emphasis ours*) This is hardly the firm recovery objective outlined in the Recovery Plan. Apparently, the Bureau believes it can either improve flows or temperatures but not both. The primary constraint is the reservation of much of the existing storage, as well as the additional water provided by the raise, to meet water contract commitments.

Another recovery action virtually ignored in the DEIS is the reduction of agricultural and urban pollution into the Sacramento River and Delta. Although there are a number of mitigation measures in the DEIS to reduce pollution from construction and other upland activities into Shasta Reservoir, there is little assessment of the need to reduce agricultural, municipal, and industrial pollution into the Sacramento River downstream of the Dam, in order to reduce adverse impacts on salmon. For example, one of the specific recovery actions outlined by NMFS in its original 1997 winter run recovery plan is to control contaminant input from the Colusa Basin Drain, which visibly degrades the water quality of the Sacramento River. The Drain is the largest source of agricultural pollution to the river and is a major source of pesticides, turbidity, sediments, nutrients, dissolved solids, trace metals, and warm water into the river. Exposure of juvenile salmon to this kind of pollution is suspected to be detrimental. And yet, there is no effort in the SLWRI to consider pollution remediation in the river downstream of Shasta Dam as yet another action that could be taken to improve juvenile salmon survival.

In addition, the Recovery Plan proposes to restore key populations to former habitat that has become inaccessible due to dams, including Shasta Dam. The DEIS pays short shrift to this proposal, which is particularly inexcusable given the alleged focus of the SLWRI.

If the Bureau is truly serious about improving salmon survival, a revised SLWRI should incorporate more of the Recovery Actions outlined in the NMFS Recovery Plan. In addition, the SLWRI should seriously consider an alternative that re-operates the existing dam/reservoir in order to fully meet downstream temperature needs and flow requirements (for salmon as well as riparian habitat). A revised DEIS must connect the key objectives and recovery actions in the 2009 Recovery Plan to the mitigation measures proposed in the SLWRI DEIS. Further, the revised DEIS should evaluate and determine the feasibility and role of the Bureau in

implementing all recovery actions, particularly in restoring populations upstream of Shasta Dam.

A revised SLWRI should include an alternative that focuses on the salmon improvement measures recommended in the USFWS Coordination Report, including restoration of spawning and rearing habitat, improving fish passage, increasing minimum flows, and screening water diversions. (USFWS Coordination Report pg. v), as well as other specific management measures initially considered in the SLWRI but removed from further analysis (as outlined in the USFWS Report pg. vi).

5. The Project's Impacts On Sensitive, Threatened, And Endangered Species Are Underestimated In The DEIS.

The DEIS admits that there will be significant and unavoidable impacts on a number of sensitive, threatened, and endangered wildlife species and their habitat, including the Shasta salamander, foothill yellow-legged frog, tailed frog, northwestern pond turtle, bald eagle, northern spotted owl, purple martin, willow flycatcher, Vaux's swift, yellow warbler, yellow-breasted chat, long-eared owl, northern goshawk, Cooper's hawk, great blue heron, osprey, red-tailed hawk, red-shouldered hawk, American robin, Anna's hummingbird, Pacific fisher, American marten, ringtails, eight special status bat species, and four special status mollusks.

The DEIS also admits to significant and unavoidable permanent loss of general wildlife habitat and critical deer winter and fawning range. According to the DEIS, impacts associated with the take and loss of the endangered California red-tailed frog are still to be determined. And also according to the DEIS, impacts on riparian associated special status wildlife species may be potentially significant but are supposedly reduced to less than significant by the development and implementation of the previously mentioned but amorphous Riverine Ecosystem Mitigation and Adaptive Management Plan.

Despite the fact these significant and unavoidable impacts on these many sensitive and special status wildlife species are documented in the DEIS, the document fails to adequately reveal the serious nature of these impacts, particularly on the seven rare but not federally listed species endemic (found nowhere else) to the Shasta Reservoir vicinity, including the Shasta salamander, two rare plant species, and three rare snails (mollusks).

Some species are particularly susceptible to inundation by the expanded reservoir. For example, tree snags in the Pit River Arm of Shasta Reservoir appear to support a stable population of 18 breeding pairs of purple martin, a migratory bird that is generally uncommon in California and is considered by the California Department of Fish and Wildlife to be a species of special concern. The Pacific Coast population of purple martin has substantially declined in the last 50 years. Raising Shasta Dam will completely submerge the martin's existing nesting habitat and it would take decades for new nesting snags to become available to replace the lost habitat.

