

**From:** Michelle Banonis <[mabanonis@usbr.gov](mailto:mabanonis@usbr.gov)>  
**Sent:** Wednesday, October 28, 2015 5:02 PM  
**To:** BDCPcomments  
**Subject:** Fwd: CWF/BDCP EIS/R Comments  
**Attachments:** ATTO0001.htm; NMFScomments\_RDEIR\_SDEIS.docx;  
PublicDraft\_RDEIR\_SDEIS\_Comment\_Form\_GCSW.doc; ATT00002.htm;  
AdminDraftRDEIR\_SDEIS\_Comment\_Form\_NOAA GC review 2.doc; ATT00003.htm;  
Review of SEIS\_Oct 2015.docx; ATT00004.htm

Sent from my iPhone

Begin forwarded message:

**From:** Cathy Marcinkevage - NOAA Federal <[cathy.marcinkevage@noaa.gov](mailto:cathy.marcinkevage@noaa.gov)>  
**Date:** October 28, 2015 at 4:16:34 PM PDT  
**To:** "[mabanonis@usbr.gov](mailto:mabanonis@usbr.gov)" <[mabanonis@usbr.gov](mailto:mabanonis@usbr.gov)>, "Olson, Theresa" <[tolson@usbr.gov](mailto:tolson@usbr.gov)>, "[astine@usbr.gov](mailto:astine@usbr.gov)" <[astine@usbr.gov](mailto:astine@usbr.gov)>  
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**Subject:** CWF/BDCP EIS/R Comments

Michelle, Anne, and Theresa --

Attached are NMFS comments on the recent versions of the BDCP/CWF SDEIS/RDEIR. Though our review began with the Admin Draft SDEIS/RDEIR that we received in April 2015, we extended our review into the public comment period of the Public Draft SDEIS/RDEIR that was released in August 2015. Our later comments are therefore on the Public Draft, but they are not formal comments on the that document.

Four documents are included in this email:

- **NMFScomments\_RDEIR\_SDEIS.docx.** This contains responses to our previous comments on the Admin Draft. We submit these to reiterate comments that were noted as "Response In Development" in this table.
- **AdminDraftRDEIR\_SDEIS\_Comment\_Form\_NOAA GS review 2.doc.** These are new comments on the Admin Draft, as noted and highlighted at the top of the document.
- **PublicDraft\_RDEIR\_SDEIS\_Comment\_Form\_GCSW.doc.** These are new comments on the Public Draft, as noted and highlighted at the top of the document.
- **Review of SEIS\_Oct2015.docx.** As a cooperating agency, rather than lead agency, our role in the development and determinations of this document has shifted to advisory at the most. This document identifies concerns with determinations and potential inconsistencies across alternatives as well as our role in this process.

Please note that our time to review this document was limited, especially given the demands of the ESA Section 7 commitments associated with CWF and that our role has changed since we are no longer a lead agency.

We appreciate the opportunity to provide feedback as a cooperating agency on this effort. Please contact me if you have any questions.

Thanks,  
Cathy

Date Received	No.	Page	Line #	Comment	ICF Response
3/31/2015	6	2-2	24	Based on recent discussions about additional alternatives that will be incorporated, consider whether this analysis should also be included in the other additional alternatives (i.e., 3A, 5A, and 9A). Even if this analysis is not available for the SEIS, consider whether it should be incorporated into the Final EIS and whether to mention that here. Global Edit	Good comment, this paragraph was revised.
4/15/2015	2	1-13	30-31	SLM-Change NOI to NOA	Confirm with Reclamation
4/15/2015	2	1-4	29-30	It is unclear why the phrase, "Modified Project Objectives and Purpose and Need" is included on these lines, because the phrase does not connect with the rest of the sentence there.	See above
4/15/2015	1	1-6	15-24	SLM-Bullet #1 describing the purpose of the proposed action no longer seems to be appropriate since FWS and NMFS are no longer lead agencies. Can BOR or DWR "consider" incidental take authorization? Possible edits- change "consider" to "seek" or delete #1 entirely.	Same comment as comments above.. DWR is revising.
5/15/2015	7	43	17-29	September is a month of great concern for WR alevins, yolk sac fry. Declines in flow during Aug-Sept and continuing small declines in October suggest adverse temp effects on spawning/egg incubation and Table 11.2.d-13 suggest >1300 more days exceeding 56F between July-Sept. This is an adverse effect on spawning.	An increase of 1300 degree-days from July to Sep for 82 years (total of 7544 days) equates to average increase of 0.17 degrees per day. This level of temperature change is likely experienced by a fish on a diel cycle and even when it swims from the bottom to the surface. Therefore, it would be difficult to conclude that this is adverse. Text added to clarify this.
4/15/2015	3	1-6	16-17, 22-24	It is unclear why the text on lines 16-17 refers to incidental take authorization without specific reference to the ESA, but the text on lines 22-24 specifically refers to the ESA. This implies that the text on lines 22-24 is specifically related to the ESA and species that are or may become listed under the ESA, but the text on lines 16-21 is not. Unless there is some reason why the text on lines 22-24 applies only to the ESA but the text on lines 16-17 applies more broadly than the ESA, revise the text on lines 16-17 and/or lines 22-24 to be consistent.	Make bullets consistent in reference to ESA. Covered by DWR's revisions?
4/15/2015	4	2-1		SLM-Consider discussing the change in lead agency status in section 2.	Reassign to Ken?

REC1002483

Date Received	No.	Page	Line #	Comment	ICF Response
5/15/2015	8	48	4-15	Good determination and summary of overall results. Though I didn't see the logic for this conclusion build up in the summaries after each model result was presented. It would be good to try and classify results of each model result (negative due to 3/5 months being ...etc) as you lead toward the overall conclusion	Noted.
4/15/2015	9	70	26-31	I think this could be worded better. Why would improvements to Yolo increase salmon or steelhead or sturgeon numbers in the project area? Why would improvements in Yolo connectivity increase entrainment? I don't follow what the point is here.	Deleted
4/15/2015	2	85		What is meant by N Delta entrainment B PJ?	BPJ (best professional judgement) is defined in the table; no edits
4/15/2015	3	85		Migration conditions should be focused on the Delta and not be given equal weighting with upstream which is mostly accounted for under "rearing" flows/habitat. DPM should not be the only method used to assess changes in migration habitat. This was commented on many times and we have flow-survival relationships that allow a more transparent method to assess impacts to migratory conditions. DPM use alone is not adequate and will lead to misleading results. We need to include a basic flow survival relationship and using monthly timestep should be sufficient enough to detect trends in migration effects between the Alternatives.	Response still in development.
4/15/2015	4	88		Same old story of dismissing the flow changes that we have the most scientific literature on – Delta outflow for sturgeon. This should be integrated into the migratory section for sturgeon.	Response still in development.

REC122483

Date Received	No.	Page	Line #	Comment	ICF Response
5/15/2015	11	175	17-24	<p>This section states there is uncertainty regarding the mechanism between Delta outflow and sturgeon year class production. It also states that the uncertainty will be resolved through targeted studies before the intakes come on line. Pending the outcome of those studies, the outflow under Alt 2A will be "set" to not adversely affect sturgeon. Therefore the current analysis that shows Alt 2A will reduce what may be a significant outflow threshold by more than 50% is not adverse.</p> <p>Is this the proper way to assess proposed operations of Alt 2A? What if no definitive answer is produced before the intakes come online? Do we accept that Alt 2A operations are not adverse or do we "set" outflow to what historical data leads us to believe is an important threshold? The same logic on this assessment is in Alt 4A so would like clarification that this is an appropriate way to proceed and answers to what happens if no definitive answer is produced prior to intakes coming on line. It seems that the applicant would need this kind of information before proceeding to build the "optimal" amount of intakes and the outflow analysis was an attempt to inform this based current available data.</p>	Edit made
4/22/2015	7	190	24	<p>What is the meaning of this statement - "Alternative 4A would be implemented over a shorter period of time"? Is there any info in the document that backs this up and describes why the action would be implemented over a shorter period of time?</p>	This was a clumsy way to say a 50 year permit term is no longer being sought out. We will rephrase this.
4/22/2015	1	6	table	<p>2nd row "Flows will not be more negative than an average of -2,000 cfs during D-1641 San Joaquin River pulse periods" should be replaced with: "no south Delta exports during the D-1641 San Joaquin River 2-week pulse"</p>	Changed to cultural effects.
4/22/2015	2	9	19-37	<p>See red-line/strikeout comments on Ch 3 – Proposed Action. Replace lines 19-37 with the following:  To ensure that these objectives are met, diversions must be restricted at certain times of the year (more severely from December through June) when juvenile covered fish species are present. This is achieved by restricting the diversion to low level pumping when the juvenile fish begin their outmigration, which generally coincides with seasonal high flows triggered by fall/winter rains (called pulse flows); followed by providing adequate flows during the remainder of the outmigration (called post-pulse operations). The protections allowed during these pulses are intended to achieve safe juvenile passage past the intakes to well downstream of lower Delta channels that might otherwise lead them away from their primary migration route. Additional but less restrictive requirements apply for the late spring to late fall period. The north Delta diversion bypass flow criteria comprise three parameters that are applied to the Sacramento River: (1) low-level pumping; (2) initial pulse protection; and (3) three levels of post-pulse operations. These parameters are summarized below.  The initial pulse of juvenile fish migration is a natural occurrence which is generally triggered by the first substantial runoff event of the season. This can occur as early as October or as late as February, but usually happens in December. During the initial pulse, flows will be diminished only by constant low-level pumping to the extent allowed under the rules described below. If the initial pulse occurs prior to Dec 1, then an assessment will be made to decide whether similar pumping restrictions are necessary to protect subsequent pulses. A flow condition will be categorized as an initial pulse based on real-time monitoring of juvenile fish movement. The definition of the initial pulse for the purposes of modeling is provided below.</p>	4A would not apply to CMS 2-21. Updated first sentence in this section to clarify that combined impacts from CMS 2-21 apply to all action alternatives except Alternatives 4A, 2D, and 5A.
4/22/2015	3	10	31	Ned to describe proposed operations in January	Updated.
4/22/2015	4	11	15	Ned to describe proposed operations in January	Updated.
4/22/2015	5	13	Table 4.1-3	"Environmental Commitment 6: Channel Margin Enhancement - Up to 4.6 levee miles". Mitigation ratios have not yet been determined but current common practice is a 3:1 ratio not 1:1.	Updated to match earlier text, not to a significant level.

REC 1822483

Date Received	No.	Page	Line #	Comment	ICF Response
4/22/2015	6	14	4	Mitigation ratios have not yet been determined but current common practice is a 3:1 ratio not 1:1.	Policy - when will this be decided?
4/22/2015	8	232	39-41	"Most juvenile Chinook salmon occur in the Delta from late fall through spring (November through May) although some fall- and spring-run smolts may encounter pile driving noise at the end of the outmigration season in June." Winter-run juveniles can show up in the construction area in October if there is an early flow pulse to trigger their migration. May need to add a measure that ceases pile driving during any October pulses that cause winter-run to show up at Knights Landing	No change. If necessary, additional measure will be included during ESA consultation, but mitigation not necessary for CEQA.
4/22/2015	9	236	Table 11-4A-11	Your estimates of median predation loss at NDD is equal to or greater than your entrainment reductions in south delta so how is this an improvement?	The two methods are not intended to give results that can be compared to each other. The salvage density method, in particular, is best as opposed to giving accurate actual numbers of fish. A footnote has been added to the results to emphasize this point. The bioenergetics modeling illustrates a potential level of predation, which would vary based on assuming different numbers of juvenile salmon entering the Delta. It also does not account for the predation that would occur without the North Delta intakes, a point which has been added to the text.
4/22/2015	10	236		"May through September winter-run spawning period" should be changed to "spawning and incubation period"	Edited.
4/22/2015	11	246		You discount any modeled adverse effects due to reduced WUA for winter-run by saying their population is low so they don't need the space, but then you highlight the modeled increase in WUA as an important benefit that outweighs increases in stranding risk. You can't have it both ways.	Edited.
4/22/2015	12	247	6-7	"Further, these results indicate that the November flow reductions in the Sacramento River identified above would not have a biological effect on winter-run Chinook salmon rearing." Need to detail why you made this determination. It seems likely that these Nov flow reductions are a source of the modeled 63% increase in stranding risk for WR.	Response still in development.
4/22/2015	3	4-36	24	The phrase, "Changes in Delta Groundwater Levels", at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	This is No Action discussion. Therefore, no NEPA conclusion included.
4/22/2015	4	4-36	32	The phrase, "Changes in Delta Groundwater Quality", at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	Change made as suggested
4/22/2015	5	4-36	38	The phrase, "Changes in Delta Agricultural Drainage", at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	Change made as suggested
4/22/2015	6	4-38	11	The phrase, "Other Portions of the Export Service Areas", at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	Can't find text
4/22/2015	7	4-52	2-3	The phrase, "Impact WQ-15: Effects on Nitrate Concentrations Resulting from Facilities Operations and Maintenance", appears to be a heading for subsequent paragraphs. Set this phrase off as a heading.	Change made as suggested
4/22/2015	8	4-56	12	Add "be" before "similar".	Change made as suggested
4/22/2015	9	4-56	20	The sentence that ends on this line compares the impacts of the No Action Alternative (ELT) to the impacts of the No Action Alternative, which makes no sense without reference to where the relevant impacts of the No Action Alternative are described. Based on the discussion in the rest of this paragraph and similar discussions in surrounding subsections, this sentence was apparently intended to refer to the impacts of the No Action Alternative as described in some other specific section of the EIS. If so, revise this sentence accordingly.	The cross-reference is provided in the preceding paragraph and has been updated to refer the reader to Chapter 8 in Appendix A of the RDEIR/SDEIS. Similar updates to cross-references to the appropriate sections/appendices of the RDEIR/SDEIS have been made throughout each alternative's water quality assessment.
4/22/2015	10	4-60	35	Change "VP" to "CVP".	Change made as suggested

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Date Received	No.	Page	Line #	Comment	ICF Response
4/22/2015	11	4-93	32-33	The sentence on these lines concludes, "Delta outflow under Alternative 4A would likely decrease or remain similar compared to the conditions without the project." However, the basis for this conclusion is unclear given the discussion in the preceding paragraphs of this subsection, which discusses how outflow would increase, decrease, or remain similar depending on the season. Explain the basis for the overall conclusion on these lines.	Added clarification.
4/15/2015	6	4-1	5-6	Delete the sentence on these lines, because it provides that Reclamation "would be" the single Lead Agency under NEPA and the Services "would be" cooperating agencies. This text is confusing and appears inconsistent with text on page 1-2, lines 33-35, which provides that DWR and Reclamation remain Lead Agencies, but the Services have assumed roles as cooperating agencies for purposes of NEPA review.	This text has been revised per other comments.
4/15/2015	7	4-1	36-37	Change "proposed activity would jeopardize the species addressed in the consultation" to "proposed action would jeopardize the species or result in the destruction or adverse modification of the critical habitat addressed in the consultation."	Revised as requested.
4/15/2015	9	4-3	32-33	Change "DWR and the federal lead agencies" to "the Lead Agencies".	Revised as requested.
4/15/2015	10	4-11	8	Replace "Conservation Measures" with another term, because the term "Conservation Measures" was used in the BDCP to apply to a certain list of measures, and this sentence is not referring to those measures.	Sentence removed.
4/15/2015	11	4-12	12, 15, 27	The lists of conservation measure numbers and environmental commitment numbers differ from the conservation measures included in the latest version of the description of the proposed action in the draft biological assessment. Ensure that the lists are consistent between the SEIS and the BA.	Clarification needed as to which ones. They seem to be the same.
4/22/2015	1	4-21	13-16	This sentence provides a very short explanation for application of Early Long-Term model results, which relies on the basis that there would not be a 50-year permit. However, this alternative is for an indefinite period. Therefore, the discussion should also explain what model results or qualitative discussions are being used to describe the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term, which is described as approximately 15 years after project approval.	Text added to address a longer time period. Analysis is now looked at at the LLT as well.
4/22/2015	12	4-100	4	This line should apparently refer to Alternative 4A rather than Alternative 4.	Change made
4/22/2015	13	4-104	11	Delete "remain".	Change made as suggested
4/22/2015	15	4-108 to 4-109	Page 4-108, line 35 to page 4-109, line 17	There are a number of sentences that provide, "See Impact . . . under Alternative 4 construction activities under Alternative 4A would be identical to those under Alternative 4." These sentences do not make sense. Revise these sentences in order to make sense.	Sentences were corrected.
4/22/2015	14	4-108 to 4-111	Throughout section 4.3.3	Conclusions throughout section 4.3.3 are based on discussion of impacts in the ELT. However, this alternative is for an indefinite period. Therefore, the discussion should explain the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term.	Discussion referring to the LLT timeframe was added where appropriate.
4/22/2015	16	4-109	22-24, 27-29	Similar to the preceding comment, the sentences on these lines do not make sense. Revise these sentences in order to make sense.	Sentences were corrected.
4/22/2015	17	4-110	7-9	The sentence on these lines does not make sense. Revise this sentence in order to make sense.	Change made.
4/22/2015	18	4-111	32-34	Separate the text from the heading and place periods as appropriate.	Change made.
4/22/2015	19	4-111 to 4-165	Throughout section 4.3.4	Conclusions throughout section 4.3.4 are based on discussion of impacts in the ELT. However, this alternative is for an indefinite period. Therefore, the discussion should explain the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term.	We have added a description of effects at the late long term to the assessment of Alts 4A, 2D, and 5A.
4/15/2015	12	4-13 through 4-15	Page 4-13, Table 4.1-3 through Page 4-15, line 19	The list and discussion of environmental commitment numbers differ from the conservation measures included in the latest version of the description of the proposed action in the draft biological assessment. Ensure that these are consistent between the SEIS and the BA.	We believe them to match up. Can you please clarify which ones don't match up?
4/15/2015	8	4-2 and 4-3	Page 4-2, line 31 to Page 4-3, line 26	Add footnotes with references for quoted text.	Done

REC-19022483

Date Received	No.	Page	Line #	Comment	ICF Response
4/22/2015	2	4-21 through 4-92	Throughout section 4.2	Throughout section 4.2, the No Action Alternative is described as the "No Action ELT", "No Action Alternative ELT", "No Action Alternative early long-term, or "No Action Alternative (ELT)." However, as discussed in the preceding comment, this alternative is for an indefinite period. Therefore, the discussion should explain the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term, which is described as approximately 15 years after project approval.	Yes, this discussion was added to the analysis.
4/15/2015	4	1-8	30-31	Correct the parenthetical phrase, "(though not specifically relevant to the changes is removed)" because this phrase does not make sense.	Change made.
4/15/2015	5	5-1		SLM-I know this is a very complicated document, but at first read the manner in which cumulative impacts are analyzed is confusing-each resource chapter has a cumulative impacts analysis and then there is also additional cumulative impacts analysis in section 5. I recommend having one chapter devoted to cumulative impacts rather than multiple chapters.	Response still in development.
4/15/2015	1	2	2-6	This doesn't seem an accurate way to introduce Alt 4A. It wasn't done with public input since it was a lead agency strategic decision. Not sure why it is stated to reduce environmental effects. Maybe you could state it is intended to reduce the environmental footprint (since land restoration is not planned).	Thank you for your comment. The introduction change is undergoing additional revisions that may partially address this comment. However, the Lead Agencies have indicated that the Alt 4A conveyance facility alignment design would reduce environmental effects compared to other alternatives. No Change made.
4/15/2015	6	5-8-5-32		SLM-I may be missing something, but the cumulative impacts section reads to me more like a summary of the impacts of all of the alternatives combined rather than an analysis of the impacts of the alternatives in conjunction with the impacts of other past, present, and reasonably foreseeable actions in the area. Perhaps the purpose of this section is to summarize the impacts of all of the alternatives? It is unclear to me.	Text was added to Section 5.1.1 to explain this further.
4/15/2015	1	1-2	26-04	Just because Alt 3 has the greatest proportional reduction in outflow to the Bay, that does not set the standard as to what to compare biological impacts to. How fish actually respond to differing hydrology in the Delta is more meaningful than this math equation. Here are some references to studies that show the importance of Delta outflow to anadromous fish; (Hatton 1940, Healey 1991, Williams 2006, Kjelson 1982, Fish 2010, Gingras et al 2013, Kohlhurst 1991, Brandes and McLain (2001); Brandes et al. (2006); Dekar et al. (2013), Miller 2010, Stevens & Miller 1983, Jassby et al. 1995; Sommer et al. 1997; Kimmerer 2002a,b; Newman 2003; Mac Nally et al. 2010; Thompson et al. 2010..etc). Please incorporate the information in these reports liberally into your analysis of the effects of the action related to Delta hydrology and outflow.	Text revised
4/15/2015	2	general		I am not clear on the process as BOR is stated to be the sole Federal lead agency. If for some reason Alt 4A does not become the Proposed Action and an Alternative is chosen that is the HCP - does it revert to the 5 Lead Agencies? Can that be stated in this chapter and likewise instead of saying Lead Agencies could that now be clarified by stating BOR/DWR so as not to confuse what Lead Agencies represented prior to Alt 4A? Some clarification on the change in lead agency status would be helpful.	The current guidance is that DWR is the CEQA Lead Agency and Reclamation is the NEPA Lead Agency for the EIR/EIS. No revisions will be made to the current text.
4/15/2015	1	2	1-9	This language should be changed since there is no longer co-equal goals under Alt 4A as it is not a HCP. The statements are misleading and have not been verified in any prior analysis (except for reduced reliance on So Delta pumps). Simply state DWR/BOR purpose for the Proposed Action. I don't believe the original Purpose and Need for the HCP applies to Alt 4A Sect 7.	Response under development
4/15/2015	2	2	14	Specify less reliance on So Delta pumps would better protect fish in the "South" Delta. Additional impacts on fish would occur in the North Delta.	Response under development

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4/15/2015	3	3	28-35	It would be nice to somehow corroborate that changes to the project were driven by public comment as the multiple paragraphs above this one suggest. What proportion of comments were positive about the new intakes/operations/design vs negative about CM 2-21? Unless there was a clear indication that CM1 was received positively and the other CM's negatively it is misleading to say comments by the public directed this change. Just state it was in the applicant's best interest to continue the process under Sect 7.	Response under development
4/15/2015	4	5	11-16	This is not true. The proposed action had changes to certain parts of SWRCB D1641 criteria. One significant change is calculating Delta inflow as what is left after the ND intakes divert. Please clarify this and what other changes from D1641 are part of the proposed action.	Response under development
4/15/2015	5	16	3-4	For clarity, the Lead Agencies should be spelled out for Alt 4A since it is different then what the Lead Agencies are for the other Alts.	The change in lead agencies is mentioend in Section 1.
4/15/2015	6	21	17-30	I don't understand what is meant by modeling reference point. Why would the 25,000 acres of tidal restoration be assumed to occur under existing BiOps? Only 8,000 acres are required under the existing BiOps. Why only do a sensitivity analysis for the preferred project (Alt 4A)? Don't you need to do a modeling run based on the project components and assumptions rather than trying to tease out what may be different by using a modeling run that doesn't capture Alt 4A components? It seems this project should have the completed model runs needed to capture it as effectively as possible since it is the project being put forth for a permit. Maybe I am misunderstanding this paragraph.	This paragraph was largely revised.
4/15/2015	7	35	38-40	You are using the terms more positive and less negative to differentiate between yearly flows and April-May. Please clarify these lines.	Added clarification.
4/15/2015	8	65	6-8	Not sure I understand this logic. Isn't Delta outflow a driver of Bay salinity so what you really need to assess is changes in outflow as opposed to changes in Delta salinity.	The sentence here does cite Delta outflow and how the change in it will be minimal. Text added to clarify..
4/15/2015	10	93	general	The public draft needs to include the actual modeling of Alt 4A as opposed to this piecemeal comparison to H3 and H4. I don't think releasing these results to the public allows for an adequate understanding of changes and effects expected under Alt 4A. You are trying to quantify changes in project and modeling from LLT to ELT and with a range of the operations of H3 and H4 and with restoration vs no restoration. The results and interpretations of the complex modeling is difficult enough without subjecting the public to so many deviances from how the project (4A) should be modeled.	Typos - fixed
4/15/2015	2	21	17-32	RTO language in this section needs to be updated and consistent with the new Proposed Action text for RTO decision-making.	To the best of my knowledge, there is no such text at this time.
4/15/2015	3	160	Table 3.6-15	This is a valuable addition to the planning document. Please confirm that the key uncertainties and studies needed that apply to CM1 (and by association CM15-16) will be carried forth if Alt 4A is the proposed project. These studies and efforts should still apply without the conservation plan originally proposed.	To the best of my knowledge, this is- a matter for the Section 7 process, and has not yet been resolved.
4/15/2015	1	6,10	35,26	Change maximizing survival rates to something more appropriate like- minimizing survival rate reductions at the new NDD intakes.... The project is not maximizing survival of salmonids, the best it can do is minimize impacts and/or increase survival through enhanced flow/habitat. Change this misleading phrasing wherever it occurs.	This appendix describes revisions to the BDCP that were made in the months following release of the public draft BDCP. That review and revision process has ended. As such, this document quotes historical documentation and the quoted text is not subject to revision.
4/15/2015	1	Throughout the document		The document needs to be revised throughout to incorporate and reflect incorporation of new alternatives in addition to 4A.	This change is being made.
4/22/2015	20	4-190	23-27	The two sentences that occur on lines 23-27 are incorrect, because they are based on the assumption that this alternative is limited to a period similar to the ELT. This alternative is for an indefinite period. Revise these sentences accordingly.	Reassign to J. Pierre

REC12483

Date Received	No.	Page	Line #	Comment	ICF Response
4/22/2015	21	4-191	6-19	The Environmental Commitments listed on these lines do not match the conservation measures listed in the draft Biological Assessment. Revise the list here and/or in the draft Biological Assessment to be consistent.	Ok. These are different documents with different terminology.
4/22/2015	22	4-191	25-28	Given that Alternative 4A is for an indefinite period, explain why it is assumed that the modeling conducted for the various BDCP Effects Analysis scenarios in the ELT time frame (i.e., NAA_ELT, H3_ELT, and H4_ELT) is representative of operations and resulting Delta conditions under Alternative 4A, explain the impacts of this alternative for an indefinite period, or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term.	Response still in development.
5/15/2015	1	3	9-19	It is not accurate to state -- no changes to D1641 Delta E/I standards. The proposed operations measure inflow below the new intakes while D1641 requires it to be measured at a location above the intakes. This should be clearly described and statements like this should be removed from the entire document.	Response still in development.
5/15/2015	2	5	Table 4.1-5	The mitigation ratios described in these env. commitments have not been agreed to by the fisheries agencies and are still under discussion. It is ok to have them in as placeholder but it should be specified they are subject to revision.	Noted.
5/15/2015	3	4	4.1.3.3	This section should discuss mitigation for the operation and maintenance of the facilities as well as for construction.	Texted added.
5/15/2015	4	7	10-28	The potential benefits of these two ec's remain uncertain at best. Is there any new info that can be provided to NMFS on the latest results from the last year of studies on the NPB? Line 12 should be edited to say "This action is <i>intended to reduce densities of predatory fishes...</i> "	Response still in development.
5/15/2015	5	9	30-39	No specific changes in So Delta ops for this Alternative? So the SJ I/E ratio in the NMFS opinion would be followed instead of scenario 6? Seems like a strange change from 4A.	Yes. This alternative utilizes Scenario C.
5/15/2015	6	10-13	General	Same issues apply to this Alt as above	Carried through as applicable.
5/15/2015	10			The green sturgeon analysis for effects under Alt 2D is missing.	This was accidentally omitted. It will be provided on May 29
4/22/2015	23	4-373	29-30	The sentence on these lines provides, "The potential effects of construction of the water conveyance facilities on steelhead would be the same as described for Alternative 4A (Impact AQUA-91)." This sentence does not make sense given that it is within a discussion of Alternative 4A and the potential effects of construction of the water conveyance facilities on steelhead. Revise the sentence accordingly.	Response still in development.
4/15/2015	6	54-64		Would be good to get a chance to corroborate the details added regarding underwater noise. Seems like a useful addition to review.	Noted.
4/15/2015	1	83-84		This is a nice new addition that seems somewhat reasonable. I think it would have been better to get agency input on whether or not 15% change in key months was the appropriate threshold to determine significance but all in all a very good improvement to explain methodology used to assess impacts/benefits.	Noted.
4/15/2015	7	General		The Perry and Newman methodology is listed as a method available but in Table 11-17 it is not listed under Chinook migration. NMFS relies on this methodology and would be a necessary part of any Alternative assessment even if done on monthly time-step for the EIS Alternatives.	Response still in development.
4/15/2015	8	general		Not enough time to review.	Noted.
4/15/2015	9	General		The new methodology is stated on pages 83-84 in this revised document but did it get applied to the previous results? I don't see any changes in impact determinations for any of the Alternatives here.	See section 11.3.5
5/15/2015	9			Due to competing priorities within the 8 work days slotted to review this material NMFS did not have time to review spring and fall/late fall run, steelhead.	Noted.

RE C1022483

**BDCP RDEIR/SDEIS Review Document Comment Form**

Document: Administrative Draft—Chapter/Appendix

Comment Source: NOAA

Submittal Date: April 22, 2015

No.	Page	Line #	Comment	ICF Response
1	4-21	13-16	This sentence provides a very short explanation for application of Early Long-Term model results, which relies on the basis that there would not be a 50-year permit. However, this alternative is for an indefinite period. Therefore, the discussion should also explain what model results or qualitative discussions are being used to describe the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term, which is described as approximately 15 years after project approval.	
2	4-21 through 4-92	Throughout section 4.2	Throughout section 4.2, the No Action Alternative is described as the “No Action ELT”, “No Action Alternative ELT”, “No Action Alternative early long-term, or “No Action Alternative (ELT).” However, as discussed in the preceding comment, this alternative is for an indefinite period. Therefore, the discussion should explain the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term, which is described as approximately 15 years after project approval.	
3	4-36	24	The phrase, “Changes in Delta Groundwater Levels”, at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	
4	4-36	32	The phrase, “Changes in Delta Groundwater Quality”, at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	
5	4-36	38	The phrase, “Changes in Delta Agricultural Drainage”, at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	
6	4-38	11	The phrase, “Other Portions of the Export Service	

			Areas”, at the beginning of the sentence that starts on this line appears to be a heading for the paragraph. If so, set this phrase off as a heading. If not, delete it, because it does not fit with the rest of the sentence.	
7	4-52	2-3	The phrase, “Impact WQ-15: Effects on Nitrate Concentrations Resulting from Facilities Operations and Maintenance”, appears to be a heading for subsequent paragraphs. Set this phrase off as a heading.	
8	4-56	12	Add “be” before “similar”.	
9	4-56	20	The sentence that ends on this line compares the impacts of the No Action Alternative (ELT) to the impacts of the No Action Alternative, which makes no sense without reference to where the relevant impacts of the No Action Alternative are described. Based on the discussion in the rest of this paragraph and similar discussions in surrounding subsections, this sentence was apparently intended to refer to the impacts of the No Action Alternative as described in some other specific section of the EIS. If so, revise this sentence accordingly.	
10	4-60	35	Change “VP” to “CVP”.	
11	4-93	32-33	The sentence on these lines concludes, “Delta outflow under Alternative 4A would likely decrease or remain similar compared to the conditions without the project.” However, the basis for this conclusion is unclear given the discussion in the preceding paragraphs of this subsection, which discusses how outflow would increase, decrease, or remain similar depending on the season. Explain the basis for the overall conclusion on these lines.	
12	4-100	4	This line should apparently refer to Alternative 4A rather than Alternative 4.	
13	4-104	11	Delete “remain”.	
14	4-108 to 4-111	Throughout section 4.3.3	Conclusions throughout section 4.3.3 are based on discussion of impacts in the ELT. However, this alternative is for an indefinite period. Therefore, the discussion should explain the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term.	
15	4-108 to 4-109	Page 4-108, line 35 to page 4-109, line 17	There are a number of sentences that provide, “See Impact . . . under Alternative 4 construction activities under Alternative 4A would be identical to those under Alternative 4.” These sentences do not make sense. Revise these sentences in order to make sense.	
16	4-109	22-24, 27-29	Similar to the preceding comment, the sentences on these lines do not make sense. Revise these	

			sentences in order to make sense.	
17	4-110	7-9	The sentence on these lines does not make sense. Revise this sentence in order to make sense.	
18	4-111	32-34	Separate the text from the heading and place periods as appropriate.	
19	4-111 to 4-165	Throughout section 4.3.4	Conclusions throughout section 4.3.4 are based on discussion of impacts in the ELT. However, this alternative is for an indefinite period. Therefore, the discussion should explain the impacts of this alternative for an indefinite period or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term.	
20	4-190	23-27	The two sentences that occur on lines 23-27 are incorrect, because they are based on the assumption that this alternative is limited to a period similar to the ELT. This alternative is for an indefinite period. Revise these sentences accordingly.	
21	4-191	6-19	The Environmental Commitments listed on these lines do not match the conservation measures listed in the draft Biological Assessment. Revise the list here and/or in the draft Biological Assessment to be consistent.	
22	4-191	25-28	Given that Alternative 4A is for an indefinite period, explain why it is assumed that the modeling conducted for the various <i>BDCP Effects Analysis</i> scenarios in the ELT time frame (i.e., NAA_ELT, H3_ELT, and H4_ELT) is representative of operations and resulting Delta conditions under Alternative 4A, explain the impacts of this alternative for an indefinite period, or refer to any other analysis in the EIS that describes the impacts of this alternative past the Early Long-Term.	
23	4-373	29-30	The sentence on these lines provides, "The potential effects of construction of the water conveyance facilities on steelhead would be the same as described for Alternative 4A (Impact AQUA-91)." This sentence does not make sense given that it is within a discussion of Alternative 4A and the potential effects of construction of the water conveyance facilities on steelhead. Revise the sentence accordingly.	
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## BDCP/CWF RDEIR/SDEIS Review Document Comment Form

Document: Public Review Draft—Chapter /Appendix

Comment Source: NOAA

Submittal Date: October 30, 2015

No.	Page	Line #	Comment	Response
1	1-2	13	Change “application of” to “application for”.	
2	1-3	27	Delete “using a shorter duration”. There is no specific duration identified for the proposed action in the ESA section 7 consultation process.	
3	1-13	32	Add “/California WaterFix” after “BDCP” to accurately reflect the range of alternatives discussed in the RDEIR/SDEIS.	
4	1-13	34	Add “listed” before “species” to accurately reflect the text of ESA Section 7(a)(2)	
5	1-13	35	Add “adverse” before “modification” to accurately reflect the text of ESA Section 7(a)(2)	
6	1-13	36	Change “Section 9 prohibits” to “Section 9 and regulations promulgated under Section 4(d) prohibit”, because ESA Section 9 prohibits the taking of endangered species and regulations promulgated under Section 4(d) prohibit the taking of threatened species. See page 1-14, lines 16-17.	
7	1-14	11	Change “authorizes a specified level of take” to “specifies the impact (i.e., the amount or extent) of incidental taking of the species” to accurately reflect ESA section 7(b)(4)(i) and 50 CFR 402.14(i).	
7	1-14	12	Add “and terms and conditions that must be complied with to implement the reasonable and prudent measures” after “take” in order to accurately reflect 50 CFR 402.14(i)(1)(iv) and 50 CFR 402.14(i)(5), which is cited at the end of this sentence.	
8	1-14	13-14	Change “and that must be implemented as a condition of the take authorization (50 CFR 402.14(i)(5))” to a new sentence that provides, “Any taking which is in compliance with the terms and conditions of the incidental take statement is not a prohibited taking under the ESA, and no other authorization or permit under the ESA is required.” This change is necessary to accurately reflect 50 CFR 402.14(i)(5) and ESA Section 7(o)(2).	
9	1-14	19	Add “pursue” after “harm” in order to accurately reflect the definition of “take” under the ESA (16 USC 1532(19)).	
10	1-14	23	Add “spawning, rearing, migrating” after “breeding” in order to accurately reflect the definition of “harm” in 50 CFR 222.102.	
11	1-14	24	Add “; 50 CFR 222.102” after “50 CFR 17.3” in order	

			to cite NMFS' regulatory definition of "harm" in addition to FWS' regulatory definition.	
12	1-14	24-25	Change "unless take is otherwise specifically authorized or permitted pursuant to the provisions of" to "except as specifically provided under the ESA, including". First, Section 7 does not provide for authorizations or permits, it provides for exemptions and exceptions. See ESA section 7(o). Second, as provided in ESA Section 9, there are some other exceptions, such as 16 U.S.C. § 1535(g)(2) and ESA section 9(b). However, these exceptions are not relevant to the proposed action or alternatives and do not need to be specifically listed.	
13	1-14	35	Change "that meets the following five issuance criteria" to "FWS or NMFS must find with respect to the permit application and HCP that" in order to be consistent with ESA Section 10(a)(2).	
14	1-15	1-2	Delete ", including the requirement to obtain incidental take authorization". As discussed in comments above, this change is necessary to accurately reflect ESA Section 7(b)(4), ESA Section 7(o)(2), and 50 CFR 402.14(i).	
15	1-15	16	Change "authorizing incidental take of federally listed species" to "including an incidental take statement for federally listed species" in order to accurately reflect ESA Section 7(b)(4), ESA Section 7(o)(2), and 50 CFR 402.14(i).	
16	1-15	32	Change "267" to "297" in order to correct the citation for the Sustainable Fisheries Act.	
17	1-15	33	Add "adversely" after "may" in order to accurately reflect the statutory section cited in this sentence.	
18	1-16	2-3	Change "through NMFS' issuance of the BiOp through Section 7 of the ESA" to "integrated with consultation under Section 7 of the ESA" in order to accurately reflect integration of EFH and ESA Section 7 consultation. See NMFS' Essential Fish Habitat Consultation Guidance, Version 1.1, April 2004, available at <a href="http://www.habitat.noaa.gov/pdf/efhconsultationguidancev1_1.pdf">http://www.habitat.noaa.gov/pdf/efhconsultationguidancev1_1.pdf</a>	
19	1-16	36	Add "a" before "permit".	
20	1-25	Table 1-1	In Other Considerations related to the National Marine Fisheries Service, change "Magnuson-Stevens Fisheries Conservation and Management Act" to "Magnuson-Stevens Fishery Conservation and Management Act" in order to accurately reflect the name of the Act. See 16 U.S.C. 1801 notes and page 1-15 of the RDEIR/SDEIS.	
21	2-1	10	Change "nonimpact" to "on impact".	
22	2-2	40	Change "indicted" to "indicated".	
23	4.1-3	20, 22	Delete the quotation marks on these lines, because	

			the phrase within these quotation marks is not a direct quote from 40 CFR 1503.4(a), which is cited in a footnote after the quotation marks.	
24	4.1-3	30, 31	Delete the quotation marks on these lines, because the phrase within these quotation marks is not a direct quote from 40 CFR 1503.4(a), which is cited in a footnote after the quotation marks.	
25	4.1-4	13	Add "be" before "implemented".	
26	4.1-5	Table 4.1-1	This table provides that Alternative 4A operations are evaluated as Scenarios H3-H4 at the early long term (ELT, which is associated with conditions around 2025, but Alternative 4 operations are evaluated to LLT. In addition, this table provides that the NEPA Baseline for Alternative 4A is the No Action Alternative at ELT, but the NEPA Baseline for Alternative 4 is the No Action Alternative at LLT. However, Alternative 4A is for an indefinite period. Therefore, it is unclear why its operations are evaluated at different term or timeframe, and it is unclear why the NEPA Baseline is described as a different term or timeframe.	
27	4.1-6	16-22	Insure that the discussion on these lines is consistent with the final biological assessment for the California WaterFix.	
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## Review of Supplemental EIS: Chapter 11

A methodology section was added (Sect 11.3.2) to help explain effects determinations for the Fish and Aquatic resources section. It was helpful to see the outline of the models and analysis that were used to determine an effect but not always clear on which model or method was given the highest weight and why (Table 11.14, Table 11.15, Table 11.16 and Table 11.17). It does not appear that there was an attempt to crosscheck determinations across all Alternatives with the baseline to ensure consistency in effects determinations. At a minimum it would have been useful to develop a table that highlighted which effect in any of the Alternatives rose to an Adverse or Beneficial determination in all or any of the lifestages/categories affected (ie, migration in Delta or spawning upstream), then clearly list what caused the effect (ie, greater than 15% change in flow upstream in key migratory months(s) of April and June) using criteria specified in the methodology section. It appears many of the determinations in the public draft were not based on the added methodology section and best professional judgement was used liberally.

Table x-x on page 11-591 is a good example of consolidating results in a way that enables the reader to see previous determinations coupled with the new determinations made for those Alternatives. Following this table is description of why the changes were made. This allows the reader to focus in one area for that subset of Alternatives and associated changes which is necessary in such a large document. It could have been improved if the determinations that resulted in the change of status were highlighted in a table as mentioned above (what life stage(s), what key driver (15% change in key migratory months). More of these types of results tables should have been prepared and easily found within the document. Instead, there was text describing results in multiple locations (Mokulumne, Feather etc) for certain species(fall run/late fall run) that there was no real way to clearly assess what was determined. Additionally, there should have been a thorough examination of the Alternatives that resulted in Not Adverse to corroborate they fell within the "methodology" of causing no quantifiable changes above the baseline (NAA).

Below is an example of inconsistent methodology leading to wrong determinations for "Entrainment of winter-run".

Alternatives 1,2,3,6,9 were determined to have Beneficial effects for winter-run entrainment  
Alternatives 4,5,7,8 were determined to be Not Adverse. From viewing the results of all the Alternatives in comparison to baseline it is clear that Alternative 7 and 8 were beneficial and provided more benefit than Alternatives 1,2 and 3. Alternative 3 should have been labelled NA and Alternative 4 Beneficial. There is no logical reasoning evident for why the determinations were what they were (see attached result sheet).

The above example is from one of the easiest categories in which to determine effects through simply reviewing results of the salvage density method for salmonids or sturgeon. There were many inconsistencies in determinations for other life-stages and categories that were more complex and involved multiple analysis or lines of evidence. Having such inconsistent results in the entrainment category left little confidence in the balance and integrity of any of the results determinations which involved much more complex weighting.

It should also be noted that effects analysis of the Alternatives involved no coordination or review process with NMFS, who was a lead agency at the time. NMFS role was relegated to commenting on

effects determinations on certain Alternatives during a very brief live edit session. Therefore the results and determinations made in the public draft EIS were mostly a consultant work product under the guidance of DWR.

Other areas that needed improvement include combining results from multiple rivers to come to one conclusion on effects. Sacramento River should have been given separate weighting from any of the other rivers in making determinations. The Project/Alternatives effects are concentrated in the Sacramento River and Delta which is a large enough area to consider without confounding results and determinations with all the other rivers. If any of the tributary river flow patterns were affected due to being managed directly by CVP/SWP operations under the Project/Alternative, they should have been assessed independently in effects determinations so that all rivers would truly have equal weighting and not be overshadowed by effect (or lack of effects) in a different river. If necessary, after assessing and making a determination on each species/river independently, the results for all the rivers could have been listed and a final determination with rationale included be made.

The Delta analysis should have been separate from the upstream analysis but the way the EIS was structured it combined migration effects from upstream through the Delta when it considered a migratory effect. The Delta analysis was sparse and Table 11.17 indicated that only the DPM and flow changes from Calsim were used. The Newman and Perry analysis that was undertaken in the HCP should have been available to assess this critical part of the project area under the Alternatives. Predation was applied to the ND intakes and that was helpful in the sense that the more intakes the greater the predation effect but did not really relate to flow changes.

Alternative 4 was difficult to assess in whole as it had four different operating scenarios. The high outflow (H4) and the low outflow (H1) were different enough to make consolidating results of this Alternative unfeasible. The effects determinations of this Alternative really depended on what scenario was analyzed. It would have helped if it was made clear to the reader that the Alternative could be called Not Adverse or Beneficial based on any one of the scenarios meeting that criteria but that the opposite did not apply (ie, the Alternative would not be called Adverse if one of the scenarios resulted in an adverse effect as that particular scenario would likely not be forwarded.) At least, that is the logic we see that was applied to this Alternative when changing from No Determination to something else.

The complexity of analyzing biological effects for the multiple Alternatives and species in the project area is a very difficult undertaking. Trying to accomplish this under a compressed time schedule with limited review and input from subject matter agencies leads to many aspects of the EIS being unsatisfactory. It would be impossible to gain consensus on some aspects of the analysis or Alternatives put forth for review under any time schedule. NMFS provided input and guidance when possible during limited review periods and some concerns were addressed satisfactorily. Ultimately, this EIS is a product of DWR and their contracted consultants and should not be misconstrued to represent the official viewpoint or opinion of NMFS.

With the understanding that the scenario developed for the BA would be incorporated into the Final EIS, we would like to identify that determinations could (and should, if warranted by the data) change as a result of analysis of that alternative. This has not been clearly defined. Similarly, given that Alt 4A is the preferred alternative, will the methodology that is presented be applied to the determinations for

alternatives other than Alt 4A? If so, then our concerns about consistency between determinations is reiterated as we would like to see a uniform and logical approach to all alternatives.

Table 11-1A-9. Juvenile Winter-Run Chinook Salmon Annual Entrainment Index\* at the SWP and CVP Salvage Facilities—Differences between Model Scenarios for Alternative 1A

Water Year	Absolute Difference (Percent Difference)	
	EXISTING CONDITIONS vs. A1A_LLT	NAA vs. A1A_LLT
Wet	-9,862 (-87%)	-10,282 (-87%)
Above Normal	-5,115 (-77%)	-5,239 (-78%)
Below Normal	-3,827 (-53%)	-3,403 (-50%)
Dry	-569 (-15%)	-262 (-8%)
Critical	-213 (-17%)	-74 (-7%)
All Years	-4,129 (-61%)	-4,069 (-60%)
Shading indicates >10% increased entrainment.		
Note: Estimated annual index of fish lost, based on normalized salvage densities.		

Table 11-2A-8. Juvenile Winter-Run Chinook Salmon Annual Entrainment Index at the SWP and CVP Salvage Facilities—Differences between Model Scenarios for Alternative 2A

Water Year Type	Absolute Difference (Percent Difference) <sup>a</sup>	
	EXISTING CONDITIONS vs. A2A_LLT	NAA vs. A2A_LLT
Wet	-10,144 (-89%)	-10,565 (-90%)
Above Normal	-5,399 (-81%)	-5,523 (-82%)
Below Normal	-3,751 (-52%)	-3,327 (-49%)
Dry	-1,175 (-31%)	-868 (-25%)
Critical	-347 (-27%)	-208 (-18%)
All Years	-4,598 (-68%)	-4,539 (-67%)
Shading indicates 10% or greater increased entrainment.		
<sup>a</sup> Estimated annual number of fish lost, based on normalized data.		

Table 11-3-8. Juvenile Chinook Salmon Annual Entrainment Index\* at the SWP and CVP Salvage Facilities—Differences between Model Scenarios for Alternative 3

Water Year Type	Absolute Difference (Percent Difference)	
	EXISTING CONDITIONS vs. A3_LLT	NAA vs. A3_LLT
<b>Winter-Run Chinook Salmon</b>		
Wet	-3,467 (-30%)	-3,888 (-33%)
Above Normal	-1,582 (-24%)	-1,707 (-25%)
Below Normal	-1,626 (-23%)	-1,202 (-18%)
Dry	-337 (-9%)	-30 (-1%)
Critical	-195 (-15%)	-56 (-5%)
All Years	-1,546 (-23%)	-1,486 (-22%)
Shading indicates entrainment increased 5% or more.		
<sup>a</sup> Estimated annual number of fish lost based on normalized data.		

Table 11-4-10. Juvenile Winter-Run Chinook Salmon Annual Entrainment Index at the SWP and CVP Salvage Facilities—Differences between Model Scenarios for Alternative 4 (Scenario H3)

Water Year	Absolute Difference (Percent Difference)	
	EXISTING CONDITIONS vs. H3	NAA vs. H3
Wet	-7,816 (-69%)	-8,237 (-70%)
Above Normal	-3,919 (-59%)	-4,043 (-60%)
Below Normal	-2,666 (-37%)	-2,241 (-33%)
Dry	-1,116 (-29%)	-809 (-23%)
Critical	-343 (-27%)	-205 (-18%)
All Years	-3,584 (-53%)	-3,524 (-52%)

Note: Estimated annual number of fish lost, based on normalized data.

Table 11-7-8. Juvenile Winter-Run Chinook Salmon Annual Entrainment Index<sup>a</sup> at the SWP and CVP Salvage Facilities—Differences between Model Scenarios for Alternative 7

Water Year	Absolute Difference (Percent Difference)	
	EXISTING CONDITIONS vs. A7_LL1	NAA vs. A7_LL1
<b>Winter-run Chinook salmon</b>		
Wet	-8,255 (-73%)	-8,675 (-74%)
Above Normal	-5,358 (-81%)	-5,483 (-81%)
Below Normal	-5,953 (-83%)	-5,529 (-82%)
Dry	-3,701 (-98%)	-3,393 (-97%)
Critical	-1,261 (-100%)	-1,122 (-100%)
All Years	-5,565 (-82%)	-5,505 (-82%)

\* Estimated annual number of fish lost, based on normalized data.

Table 11-8-8. Juvenile Chinook Salmon Annual Entrainment Index<sup>a</sup> at the SWP and CVP Salvage Facilities—Differences between Model Scenarios for Alternative 8

Water Year	Absolute Difference (Percent Difference)	
	EXISTING CONDITIONS vs. A8_LL1	NAA vs. A8_LL1
<b>Winter-Run Chinook Salmon</b>		
Wet	-8,199 (-72%)	-8,619 (-73%)
Above Normal	-5,273 (-80%)	-5,397 (-80%)
Below Normal	-6,032 (-84%)	-5,608 (-83%)
Dry	-3,709 (-98%)	-3,401 (-98%)
Critical	-1,261 (-100%)	-1,122 (-100%)
All Years	-5,572 (-82%)	-5,512 (-82%)

**Spring-Run Chinook Salmon**