



# United States Department of the Interior



In Reply Refer to:  
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FISH AND WILDLIFE SERVICE  
Sacramento Fish and Wildlife Office  
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Sacramento, California 95825-1846

**SEP 14 2015**

Mr. Stacy Cepello  
FESSRO  
P.O. Box 942836  
Sacramento, California 94236-0001

Subject: Comments on Draft Central Valley Flood System Conservation Strategy

Dear Mr. Cepello:

Thank you for the opportunity to review and comment on the 2015 draft Central Valley Flood System Conservation Strategy. Developing the conservation strategy for the entire State Plan of Flood Control is a complicated task, given the wide array of stakeholders that carry out flood management projects, restoration, agriculture, and routine maintenance. The U.S. Fish and Wildlife Service reviewed the conservation strategy and accompanying appendices and provide the following comments for your consideration. We commend the California Department of Water Resources (DWR) for the effort that has been invested, including the data collection, analysis, stakeholder outreach and collaboration. We look forward to our continued partnership on this important project as DWR begins to incorporate the conservation strategy into the 2017 Central Valley Flood Protection Plan.

We appreciate your response to our comments on the administrative draft of the conservation strategy in setting numerical objectives and providing the methodology used in its analysis. It provides an avenue of information for stakeholders of the intent and extent of the conservation efforts. While we welcome this information, there is equal or greater concern for what is not available. There is adequate inclusion of the types of measures used, but the detail varies between those types, with emphasis on bypass-oriented measures (which would be effective only when there are flood flows), rather than on bank edge measures (which would be effective at all flows). In reviewing the methodology it would appear that the bypass-oriented projects were a product of efforts that are being made on the Basinwide Feasibility Studies, particularly the Sacramento Basinwide Feasibility Study. We have concern that in implementation of the conservation strategy and the Basinwide Feasibility Studies, there will be overemphasis on bypass measures that will not prevent the decline in terrestrial and aquatic species that depend on the riverine system.

Separate from the numerical objectives is the question of timeframe, over what period will the measures be implemented? Other than in Appendix E (Invasive Plants), the conservation strategy is silent on this issue. We recommend developing a near-term target for conservation measures expected to be achieved in the next 10 and 25 years. Additionally, how often will the conservation strategy be reviewed and updated? We are aware that DWR is working on a system to track

conservation projects as well as mitigation; however, reviewing and refining the measurable objectives over time would be beneficial in light of changes to the system from other interests (water supply or agriculture), climate change, and even new technologies that could emerge. Being able to go back and review and update the measurable objectives at 5 year intervals similar to the Central Valley Flood Protection Plan would greatly increase the conservation strategies long-term applicability. Currently the conservation strategy's goals are set as acres of habitat created. The Service would like to see this refined over time to include habitat connectivity, patch size, and scaled to an area smaller than the current conservation planning area. This should create a document that is more easily used and understood by future stakeholders.

Regarding Targeted Species identified for Focused Conservation Planning (Appendix G). In light of the recent decision to cease development of the Bay-Delta Habitat Conservation Plan we request that consideration be given to including the delta smelt as a targeted species for focused conservation planning in the conservation strategy. We believe it meets the three criteria identified as needed to be a target species. The smelt was initially included in the screening process, but not selected, we believe largely due to it already being included in the Bay-Delta Habitat Conservation Plan under development at the time selection of target species for the Central Valley Flood System Conservation Strategy was occurring.

We have additional minor and technical comments which my staff would like to meet and discuss with you and your staff. If you have any questions regarding our efforts on the conservation strategy, please contact Doug Weinrich of my staff at (916) 414-6563.

Sincerely,



Jennifer M. Norris  
Field Supervisor

## USFWS COMMENTS

Reviewer Name	Reviewer Office	Comment #	Section #	Page #	Line #	Comment: Importance	Comment: Issue	Comment: Solution
	USFWS-SAC	1	3	3-3	6th bullet,		it references the "goal emphasizes the need to avoid and minimize adverse effects on <i>sensitive species</i> , develop.....etc." Yet, Chapter 4, in particular Table 4-2, highlight <i>targeted species</i> . Pages 3-2 and 3-3 use the terminology of <i>at-risk species</i> . I am not sure if the terminology to define species is interchangeable, but it would be helpful to use the same words to describe species throughout the document as it was confusing in these two chapters. I would recommend <i>targeted species</i> as that also includes the species listed under our Act. It appears that on page 4-8, <i>targeted species</i> may have additional and more specialized habitat requirements than the other defined species, but it wasn't clear to me.	Check consistency of use of "sensitive species, targeted species, and at-risk species."
	USFWS-SAC	1	5	5-11			Table 5-2. Under "Habitats" it states the Existing Conditions for Floodplain agriculture--wildlife-friendly is "Not available" Same comment on table 5-8;	Will this information be developed? If so, state when this may occur; if not, it should be made clear there will be no effort to develop this information.
	USFWS-SAC	2	5	5-16			Table 5-4. Riparian--incorporate elderberries into riparian habitat...within 12 miles of habitat occupied by the VELB. Same comment on Table 5-7; 5-10; 5-13	Why not just incorporate elderberry shrubs into all riparian restoration areas as not all habitats occupied by VELB are known (no comprehensive survey).
	USFWS-SAC	3	5	5-38			Stressors- will the objective amount be determined?	
	USFWS-SAC	4	5	5-39			Fish passage barriers-will these be prioritized? Same comment on Table 5-15	
	USFWS-SAC	5	5	5-42			Fish passage barriers-will these be identified? Same comment on Table 5-16	
	USFWS-SAC	6	6	6-20			Help maintain farming, such as by: working with farmers to identify and resolve impediments to farm productivity.  creating agricultural stewardship plans when planning habitat restoration.	what does this mean....what agencies are being referred to? Do you mean flood control impediments? this needs some explanation.
	USFWS-SAC		7	7-5			Second to last paragraph: "These plans have helped facilitate economic growth while assisting compliance with environmental laws." This is an incorrect (and likely inappropriate) characterization of HCPs. HCPs are conservation plans first and foremost. They are not for facilitating growth; they are plans intended for conservation of covered species and must be prepared when a non-federal entity applies for a section 10(a)(1)(B) permit.	

USFWS-SAC		7 7-8	fourth bullet: "...analyzing the potential effects of implementing the HCP as well as issuance of the Incidental Take Permit(s) ..." This sentence implies issuance of an incidental take permit is a secondary objective. Since it's the primary Purpose and Need behind doing the EIS for an HCP, we recommend putting that first.	
USFWS-SAC		7 7-11	"The federal definition of "take" is contained in Section 9 of the ESA, and acts prohibited by the ESA can also include habitat modification or degradation that harms individuals by modifying behavioral patterns, and the destruction or adverse modification of designated critical habitat. ("Designated critical habitat" encompasses areas that are essential to the conservation of threatened and endangered species.)" This sentence is incorrect. Take is defined in section 3(19)(Definitions) of the Act not in section 9; section 9 is the prohibitions. Take is also defined at 50 CFR 402.02 and harm and harass are defined at 50 CFR 17.3. Destruction and Adverse modification of critical habitat are not defined as "take" under the ESA, nor is it in section 9. Critical habitat is designated under section 4 of the Act, and the only federal requirement is that federal projects do not adversely modify critical habitat.	
USFWS-SAC		7 7-11	"The activities that ultimately go through Section 7 will rely on the agreements made during development of the regional HCPs, thus allowing for more efficient Section 7 processes and also increasing certainty regarding the project conditions that will be required." This sentence is incorrect. The federal No Surprises Assurances afforded to non-federal permittees under section 10(a)(1)(B) does not apply to federal agencies or to projects covered under section 7 consultations. So projects that have a section 7 nexus cannot "rely" on the agreements in an HCP.	
USFWS-SAC		7 7-12	Take under CESA Section 2081; issuance criteria are identified here for CESA, but none for the section 10 discussion previously. Seems like if they identify one they'd want to identify both for consistency.	
USFWS-SAC		7 7-13	"If issued, an RGP would be valid for multiple years from the date of issuance..." I believe they are valid for up to five years.	
USFWS-SAC	7	8 8-5	Habitats-natural bank metric.	Is it going to be to costly to update every year?
USFWS-SAC	Append E	E-7-2	Sacramento NWR is incorrectly colored as USFS managed.	
USFWS-SAC	Append F	F-4-14	No banks with SRA potential on the Yuba River.	Would like some clarification.
USFWS-SAC	Append F	F-4-16	No banks with SRA potential on the Bear River.	Would like some clarification.
USFWS-SAC	Append F	F-5-11	Targeted and Other Sensitive Species section.	delta smelt should be added to the species targeted and occurring in this reach.

USFWS-SAC	Append F	F-5-24	Targeted and Other Sensitive Species section.	add yellow-billed cuckoo as being documented in this reach.
USFWS-LODI	Appendix G		see attached sheet	
USFWS-SAC	Append H	H-24	last sentence on page.	some text missing from sentence?
USFWS-SAC	Append J	J-12	"...basin and 20 percent of lands may be preserved outside the basin." This is incorrect. The section 10 permit requires all mitigation for the NBHCP has to be within the basin.	
USFWS-SAC	Append J		"...or in adjacent areas outside the basin (e.g., Knagg's Ranch in Yolo County, the northern Yolo Bypass, or the southern Sutter Bypass)." Similar to previous comment, mitigation for the HCP must be within the Basin. So conservation actions outside of the basin wouldn't meet the objectives of TNBHCP; however, they might complement the objectives if they are adjacent to protected lands under TNBHCP.	
USFWS-SAC	Append K	K-8	Footnote 4. DWR will identify existing barriers and migration concerns for the Lower San Joaquin River CPA in 2014.	Did this occur?
USFWS-SAC	Append K	K-9	Section 3.3.3 San Joaquin River Basin, last sentence of the 2nd paragraph says: The restoration flow path, which will also be the target migratory corridor, is expected to be designated in the 2014 <i>Framework for Implementation</i> .	Did this happen?
USFWS-SAC	Append K	K-10	Section 4.1.1 Sacramento River Basin-regarding fish barriers in the CPA.	Was the Sacramento Deep Water Ship Channel lock structure considered? It provides a barrier for salmonids which stray up the ship channel.
USFWS-SAC	Append L	L-9	Section 3.2.1 Central Valley Flood Protection Plan Planning Studies.	Will the ecosystem integration memoranda supporting the BWFS ever be publicly released?
USFWS-SAC	Append L	L2-41	Lower San Joaquin CPA	Will the inventory of bank revetment be completed in this CPA?
USFWS-BDFWO			see attached sheet	

## Lodi Fish and Wildlife Office Comments

### Appendix G Comments:

The three criteria used to identify target species and focused conservation plans are insufficient. It is imperative that climate change impacts on species be among the criteria used to select species to be included in conservation plans. Adaptations to climate change impacts require flexible planning to respond to the increasing risks to humans and native biota (Cloern et al. 2011). Managing fish and wildlife populations requires an understanding of the nature, magnitude, and distribution of current and future climate impacts (Wilsey et al. 2013). Evaluation of appropriate mitigation actions for existing bank stabilization structures and pro-active planning for flood control need to be central elements of a defensible conservation plan to enable sustainability of the endemic ESA listed Delta Smelt. Unless proactively managed, sea level rise and the predictable upstream movement of the low salinity zone will greatly reduce the area of the low salinity zone, on which Delta Smelt largely depends and it could also make the species more vulnerable to SWP and CVP entrainment. Hence effective proactive conservation planning is critical to prevent adverse population impacts due to interactions among sea level rise, flood control structures and targeted species. Such conservation planning may require extensive levee setbacks and other actions to ensure that existing and future flood control structures do not reduce the quantity and quality of habitats required by all life stages of Delta Smelt. Based on the anticipated interactions among flood control, Delta Smelt habitat and sea levels rise, Delta Smelt must be necessarily included among the species chosen for focused conservation planning.

Delta Smelt was found to meet two of these criteria (listed status FED/CA and potential target species). The definition of the third criterion, Potential CVFPP effect, stated: *"Implementation of the CVFPP, including flood projects and operations and maintenance, could temporarily or permanently affect California populations of the species, based on its distribution, habitat associations, and ecology (effects may be adverse or beneficial)"*. Table 2-1 correctly reported Delta Smelt is associated with the target habitat. However, there is no defensible scientific basis for excluding this species from focused conservation planning. The definition of the third criterion was not consistently applied in Table 2-1 since this table added the word "major" before "potential CVFPP effect". Even if table 2-1 had been in line with the original definition stated in the third criterion, Delta Smelt should not be excluded from the species chosen for focused conservation planning.

The habitat quality of all pelagic life stages of Delta Smelt depends on adequate levels of suspended sediment (Feyrer et al. 2007, Nobriga et al. 2008, Sommer and Mejia 2013). However, among other factors, sediment deposition in flood bypasses (Singer et al. 2008), and bank protection from riprap construction (Florsheim et al. 2008, USFWS 2000) have contributed to the decline in supply of suspended sediment in the Sacramento River. The potential for changes in the sediment transport resulting from decreased natural bank erosion following widespread use of riprap in the Sacramento and San Joaquin rivers and the north Delta could adversely affect all pelagic life stages of Delta Smelt.

Profound food web changes in the Delta ecosystem seem to be causing dietary shifts in Delta Smelt from pelagic to demersal areas. Under such conditions, even habitats presumed secondary for Delta Smelt may be becoming essential for the sustainability of this species. For

example, subadult Delta Smelt periodically relied heavily on very small prey and prey potentially associated with demersal habitat (Slater and Baxter 2014). Considering the ecological value of shallow estuarine areas as nursery areas, invertebrate prey associated to those areas are likely to be more vulnerable to flood control actions which could potentially further impact the limited food supply for Delta Smelt.

A further reason to consider Delta Smelt in the conservation plans is the increased occurrence of this species in the Yolo Bypass since the late 2000s, where juvenile and adult Delta Smelt have been monitored since 1998 (Mahardja et al. 2015). Such pattern greatly contrasts with the recent unprecedented decrease of this species throughout the Delta and Suisun Bay/Marsh.

Limited information about the spawning microhabitats and egg requirements for Delta Smelt is a further reason to consider this species in conservation planning to ensure properly designed studies to guide development of such conservation plan. Delta smelt are benthic spawners broadcasting their eggs close to the substrate during night-time hours, dusk to dawn (Lindberg 1992). Delta Smelt eggs require a substrate to attach (Mager et al. 2004), which may include aquatic plants; submerged and inshore plants; sandy and hard-bottom substrates (Wang 1986, 2007). Evidence from other smelt species indicate higher reliance on sandy substrates for spawning (Bennett 2005). Delta Smelt spawn in shallow edge waters of channels in the upper Delta and in the Sacramento River above Rio Vista and also in Suisun Marsh; Montezuma Slough and Napa River (Moyle 2002). Presence of adults and larval Delta Smelt also have been monitored by IEP in the upper Sacramento Deep Water Ship Channel since the mid 2000s, suggesting this area also serves as spawning area. Consequently, the available information on the spawning and eggs stage requirements of Delta Smelt suggests that flood control structures involving alteration of shoreline and adjacent bottom substrates could adversely affect the population.

## References

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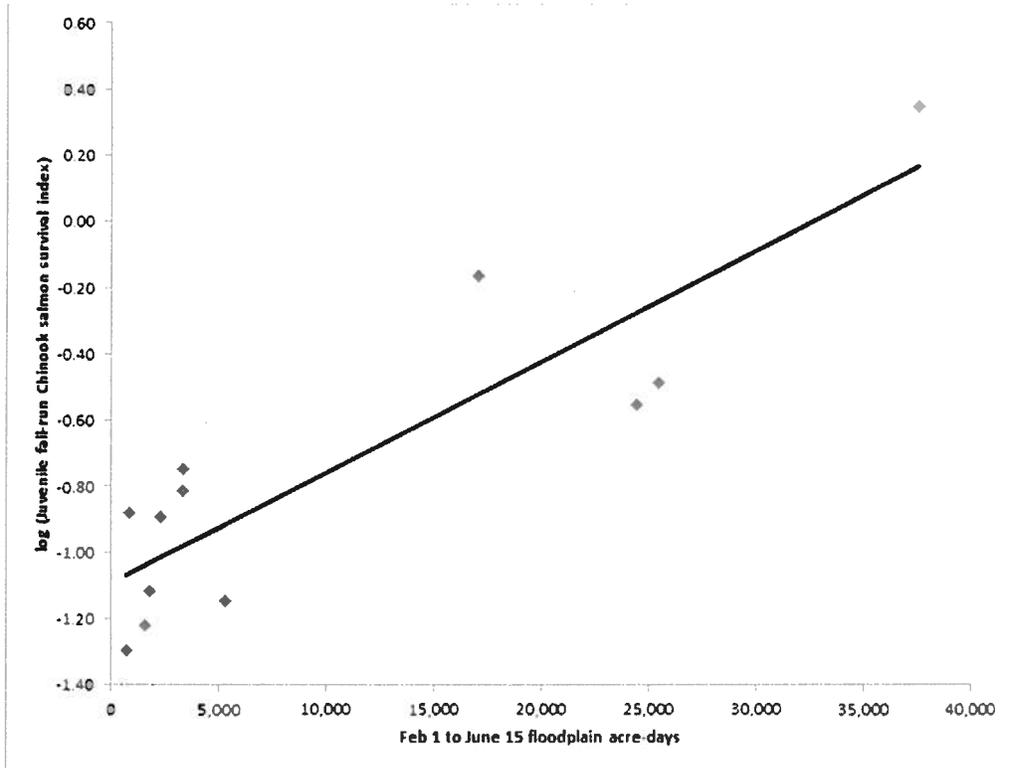
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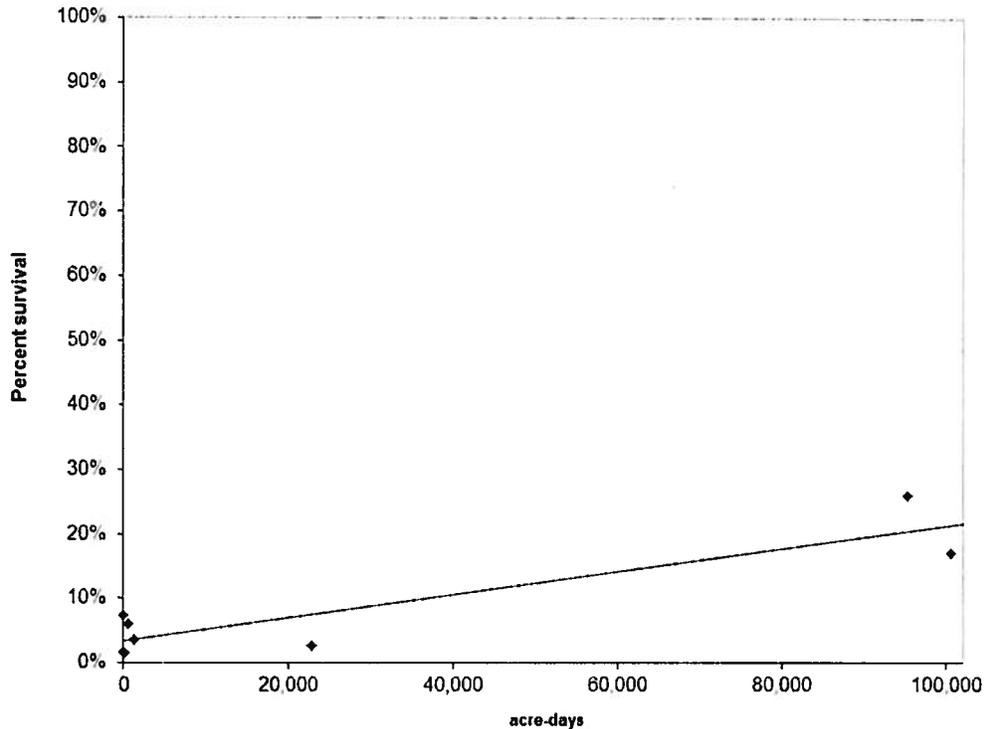
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**Appendix H Comments:**

Page H-6: Acre-days is a better metric to evaluate anadromous juvenile habitat, based on our analyses on the Stanislaus and Tuolumne Rivers:



La Grange Inundation vs Survival, 2/1/06-6/15/13



Page H-11. The EAH criteria are likely to result in a minimum of necessary habitat, as CV salmon are experiencing shorter generation times as a result of fishing and hatchery practices as well as using a short interval of 2 weeks which is likely insufficient to provide much in the way of zooplankton productivity.

Pages H-11 and H-20: Instead of looking at maximum flows, we would recommend integrating floodplain inundation for the entire flow hydrograph from Feb 1 to June 15, by using the total acre-days of floodplain inundation for that time period. We would recommend a timing of Feb 1 to June 15, rather than Dec 1 to May 31. In the Central Valley, the peak of fall-run spawning is typically mid-November, and the length of time from spawning to emergence is at least 2 months. As a result, fry rearing typically starts around Feb 1. We would not recommend a fixed duration, since longer duration of floodplain inundation has more benefits. We would recommend looking at all years, rather than a frequency of once every two years, since even small amounts of floodplain inundation in dry years are beneficial for juvenile rearing. The above would require that steps 3 and 4 be conducted for a range of flows, so that a flow-floodplain area could be developed for each CPA.

Page H-18: The assumption that hydrology will not change in the near term is not reasonable, given that flow regimes will likely change as a result of FERC relicensing (for example, for the Yuba, Tuolumne and Merced River) and changes in SWRCB flow standards.

Page H-21: Items 4 and 5 should be applied everywhere to take into account differences in juvenile habitat suitability for Shaded Riparian Area (SRA) and non-SRA riverbanks.

Page H-21 5) Discounting areas adjacent to highly impacted cover types likely removes the majority of existing rearing habitat from the analysis.

Page H-22: The flow-habitat relationships in U.S. Fish and Wildlife Service (2005) should be used for the Upper Sacramento River.

Page H-31: Restoration of floodplain habitats will also result in increased juvenile survival, based on our analyses above from the Tuolumne and Stanislaus Rivers.

Page H-31 Setting your survival rates based on CVPIA targets might result in values far outside of anything in reality (5% survival in-river is very optimistic given the current delta/lower SJ plumbing).

Page H-31 The Initial Abundance values chosen from CVPIA adult targets should be based on escapement numbers and not production numbers it is unclear which were used to populate the model. Also, how does the model handle hatchery returns? They are not included in CVPIA targets but do appear as part of the escapement. It appears from table 5-2 that the natural production targets are used. These are only appropriate initial abundances if there is no ocean or inland harvest and no escapement from hatchery sources. While it might be challenging to predict escapements necessary for CVPIA doubling, the current values do not reflect the actual doubling goals, though they are likely in the ballpark given the other assumptions made in this analysis.

Page H-31 Spawning grounds are also used for rearing habitat, and can in many cases be 10's of river miles in length. Starting fish downstream of this area discounts much habitat, as well as ignoring predation and other mortality in those reaches.

Page H-35 Was there any attempt to restrict RST timing and size values to only naturally produced fish? Much of the historic RST data comes from a period when very low marking percentages (as low as zero) were applied to hatchery origin juveniles, and even with current marking rates,  $\frac{3}{4}$  of hatchery origin fish are unidentified as such without an attempt to bin them based on size and timing characteristics.

Page H-43 Was there any attempt to proportion growth rates based on the relative amounts of in-channel and floodplain habitats, or did you just assume that all the future habitat would exhibit the faster floodplain growth?

Page H-45 Survival estimates of 5% for in-river appear to be extremely optimistic (at least for the San Joaquin Basin). See recent VAMP successor studies. A simple survival model from the Stanislaus River SEP process has egg to Caswell survivals of 0.003, 0.016, 0.036, and 0.136

for minimum, median, average, and maximum. Survival estimates from Caswell to the ocean are 0.003, 0.035, 0.065, and 0.254 for the same parameters.

Figure 1-1 is missing data from the upper San Joaquin CPA though the area appears in Figure 2-1. Despite the existence of a prior study for the upper SJ CPA, the information should be fully reported in this appendix.

Table 3-1. Why is the criteria flow for the Merced over twice that for the Stanislaus and Tuolumne rivers?

Tables 3-2 to 3-5 Should specify that the units displayed are in acres.

Table 5-3: Why wasn't screw trap data from the Tuolumne used for the Tuolumne? I would also assume screw trap data from the Tuolumne would be better to use for the Merced River than screw trap data from the Stanislaus River.

### **References**

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Additional comments:

Fundamentally, this approach provides a static acreage based on exceeding a flow threshold for a continuous period of 14 days. While it likely demonstrates the magnitude of the impacts to juvenile salmonid rearing habitat over time, it fails to capture the value of longer term inundations. As commented above, an approach of wetted acre days gives a more accurate representation of floodplain rearing opportunity. Additionally, it would be of value to assess longer time intervals of continuous inundation such as 1, 2, and 3 months. Also, representing large floodplains lower in the system separate from edge and side-channel habitat higher in the system would provide additional information. I assume that maps of the habitat could be generated that would also provide an idea of the distribution of habitat, as the needs of rearing and outmigrating fishes are distributed in space as well as time.



Bay-Delta Fish and Wildlife Office comments

Reviewer Name	Reviewer C#	Comment Page #	Line #/section	Comment: Importance	Issue	Explanation
Schoenberg	FWS	1 3-3	3.2.2	Major	Lack of strategy element to offset effect of SPFC facilities during low water years	The effect of dams, and rock placement (riprap) are amplified during low water years (drought). The SPFC facilities (dams) holds water back, and the very small flows released are in contact with rock bank. This type of effect cannot be offset by floodplains or bypasses, because these areas have no water during drought years. A strategy to mitigate this effect during these year types should be developed and discussed.
Schoenberg	FWS	2 3-4	Table 3-1	Major	Regarding "improving O&M"; "locate habitat where conflicts with O&M are minimized"	This strategy states that locating habitat where it is in least conflict with O&M is a conservation; this can result in making permanent large gaps in river corridors; the original projects for which the O&M is needed contributed to the declines in the species of interest, so ranking these areas low for restoration seems counterintuitive, and severely limits the spatial range of conservation actions.
Schoenberg	FWS	3 4.1	Table 4-1	Moderate	Target "riparian"; footnote 1	Somewhere in the document, the term "riparian" needs to be specified to include all of its types, with some of the most valuable being large trees and mixed age riparian. As to the footnote, which states that levees stress because they limit capacity; that's incomplete - levees also don't provide a stable substrate angle and surface (rock) for rooting.

Schoenberg	FWS	4 4.1.1	2nd para	Major	"DWR is evaluating....opportunities...flows.	The specific opportunities mentioned are forecast-based operations, reservoir coordination, and so on, but all of those mentioned are relevant to above normal years and event types. The real stress is in low reservoir stages when none of these activities apply. DWR really needs to examine much harder the ways to increase flows (and reduce exports/diversions) during drought years, when the effect on special status species is greatest. Inasmuch as flood control does result in increased storage, this is relevant to effects of SPFC facilities.
Schoenberg	FWS	5 4-5	1st para	Minor	"Upstream...LWM...only significant source"	Immediately adjacent banks are an important source of wood, transport downstream is not essential, it can imbed/stabilize at the point where it falls into the river.
Schoenberg	FWS	6 5-11	Table 5-2	Moderate	wildlife friendly floodplain agriculture - existing condition. Not available	Please make your best estimate of this area.
Schoenberg	FWS	5-11, 7 5-18	Tables 5-2 and 5-5	Moderate	Levees: project and non-project, 88 and 70% "in meander corridor"	Please respond to comment as to what paranthetical term means (does it mean there is 12 and 30% of it set back? And, what is excluded from a "meander corridor" and how much of the entire length is leveed?)
Schoenberg	FWS	8 5-19	last para	Moderate	"...elements being evaluated for the SSIA include...low-level ...outlets at New Bullards Bar Dam"	This reviewer doesn't recall explanation anywhere in the appendices of the outlet issue and what is proposed. It may relate to temperature control (water colder than desired?). Please add reference to document or appendix that explains.

Bay-Delta Fish and Wildlife Office comments

Schoenberg	FWS	9	5-22	Tables 5-7, 5-13, 5-16	Major	"incorporate elderberry shrubs into habitat...within 12 miles of habitat occupied by [VELB]"	This specificity hurts, rather than helps, this species. There are extraordinarily few observations of VELB, reflecting its extreme rarity (and low observability). Limiting or targeting enhancement (planting of elderberry) to areas near where it already exists doesn't help expand its distribution, and implies knowledge about current distribution specifics that doesn't exist. Elderberries should be incorporated in all riparian habitat, regardless of whether or not it is near one of the very few VELB adult sightings, or the somewhat more exit hole records.
Schoenberg	FWS	10	5-28	para 1 and 3	Major	"Channel Margin enhancement...by...small amounts"; "substantial SPFC-related constraints complicate attainment of ....objectives" "212 miles....110 miles of revetment, most of which contribute to impairment of ecosystem processes."	If the message is that these levees are never to be touched nor any setbacks in these large lengths, then that should be stated explicitly and honestly, not watered down as complicating attainment of objectives. The same goes for the "small amount" verbage on edge vegetation. The key to attaining objectives, and moderating effects of low water years like the last two, will be extensive channel margin enhancement, not "small amounts". However, if the intent is to do things small, or otherwise where-ever there is not riprap, the prospect of saving the affected species from further decline does not appear promising.
Schoenberg	FWS	11	5-29	para 1	Major	Multi-benefit projects could"...reduce these constraints..." followed by list of actions, largely associated with bypass habitat expansion	The constraints just mentioned are about rock riprap on hundreds of miles of levees, developed land behind levees, and subsided Delta islands. While the favored bypass habitat expansion may be of some benefit in some year types, it isn't providing values along the river margins - where all the water flows in low-water years.

Bay-Delta Fish and Wildlife Office comments

Schoenberg	FWS	12	5-30	Table 5-9, 1st two entries ecosystem processes	Minor	Unclear as to the division of "major river reaches" and "bypass/transient storage areas"	Perhaps this is explained better in Appendix L, but its not clear what these are: is one habitat along the edge of the river and another is bypass (or like a bypass)?
Schoenberg	FWS	13	5-34	Table 5-11 first entry "5200"	Minor	Changed from 28,200 to 5,200 with a footnote on restoration program; other numbers also changed, but moderately.	This change from the administrative draft is unclear, as is the new reference to Settlement Act restoration flows. Please explain.
Schoenberg	FWS	14	5-37	para 2	Moderate	Reference to Appendix I/FROA removed.	Compared to administrative draft, this now only refers to the lessor, objective amounts in Appendix L. How does Appendix I now enter into the conservation strategy, if it does?
Schoenberg	FWS	15	5-42	Table 5-14 first entry "7900"	Minor	Changed from 13,900 to 7,900 compared to admin draft; other numbers also changed, but modestly.	The significant change (lowered #) compared to administrative draft version raises concern as to how this estimate was made. Please explain.
Schoenberg	FWS	16	5-44	para 2	Moderate	"...selected levees....areas" and "Improvements...may include....setback levees...transitory storage areas at selected locations....such as at...junctions with [tributaries]"	The text suggests a known suite of locations. Please provide a map of current candidate areas, if available, or if already discussed elsewhere (e.g. appendices), please cite the appendix which contains this information.
Schoenberg	FWS	17	5-45	Table 5-15	Moderate	First row entry: reference to 2yr/14 day or longer metric conflicts with notes that opportunity includes all land, not just that with frequent inundation. Second row entry: "bypasses/transient" - what is meant by a bypass in this CPA? Is Paradise Cut considered a bypass/floodplain?	Inconsistencies noted require review/explanation/revision as appropriate.
Schoenberg	FWS	18	6-5	para 1	Minor	Setback benefit discussion incomplete.	To the extent that vegetation removal is reduced, this also reduces the cost of mitigation needed to offset effects of maintenance.
Schoenberg	FWS	19	6-15	para 1	Minor	Wording.	Suggest change to "In <u>unmanaged</u> areas <u>within</u> levees...."

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Schoenberg	FWS	20	6-16	bullets 5 and 6	Moderate	Conflict in message between bullet statements.	The last bullet, about allowing "limited...vegetation" in select areas conflicts with the bullet before it, which emphasizes a riparian corridor (no limitation stated). Limited allowance does not equate into typical understanding of what a riparian corridor is. Suggest rephrase.
Schoenberg	FWS	21	6-20	bulleted lists	Moderate	Suggested addition to list(s) of voluntary solutions and conservation actions with financial incentives.	Suggest that a measure be added focussed on keeping (and moving) permanent structures out of the floodway as well as out of flood-/levee-failure-prone areas. This is a significant problem that, if resolved, can open up restoration opportunities and reduce existing conflicts.
Schoenberg	FWS	22	8-15	para 2	Minor	Other potential management actions associated with restoration.	Vegetation may require monitoring/maintenance to ensure that it does not interfere with designed flood capacity. "unplanned disturbances"/"activities that damage" may include flood events (associated erosion/levee failure), boatwakes, informal trails, OHVs, etc.
Schoenberg	FWS	23	8-17	bullet 5	Minor	"Many other key partners are involved..."	That is not a bullet, should be indented, with the partners following.
Schoenberg	FWS	24	8-17	bullet 7	Minor	"USACE has broad authorities to...."	Suggest add "set O&M and inspection requirements" to this list of authorities.
Schoenberg	FWS	25	8-19	last para	Moderate	Corridor Management Plan process undefined/unclear	This (CMP) isn't listed in the 2nd para as one of the 3 planning processes involved in refining the SSIA; so how does it interact with (if it does) with any of those 3 processes? What stage is this CMP process at? Is it ongoing, a hope, or other?
Schoenberg	FWS	26	8-20	bullet 3	Moderate	Bay Delta Conservation Plan status may need to be revised/reconsidered	The BDCP, currently, is no longer proposed (replaced by "waterfix/eco restore"). Suggest revising the language and defining it more specifically than the current language ("long term conservation strategy to guide actions that improve overall ecosystem..)

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Schoenberg	FWS	27	8-21	Item 1.	Moderate	Mechanism to execute conflict resolution is unstated.	This statement talks about identifying and resolving conflicts with conservation plans, without saying how that will occur. Reopening previously approved HCPs can be done, but is a formal and lengthy process. It is more than a handshake.
Schoenberg	FWS	28	C-8	para 2	Minor	"Installation of revetment require 1-4 weeks"	Doesn't that depend on the size/length of the site, could a large site take longer? Check and revise if appropriate.
Schoenberg	FWS	29	E3-3-13	last para	Moderate	dividing 1,065/5 = 213 for each 5 years, assumes that invasives never reinvade areas where they are cleared, or the management area expands by a fifth every 5 years	While there is now an explanation of where the 213 acre number came from, its not entirely clear how - by spreading effort over 25 years - it will be effective in controlling invasives; see comment - then clarify/revise as needed.
Schoenberg	FWS	30	E3-3-18	last para	Minor	whichproject (editing)	which project
Schoenberg	FWS	31	E3-4-14	para 1	Minor	"Pampas grass competes..."; this sentence is incomplete.	Rewrite sentence so it makes sense.
Schoenberg	FWS	32	E-6-2	bullet 1	Minor	"...wouldfirst..."	Rewrite as "would first."
Schoenberg	FWS	33	E-6-4	Figure 6-1	Moderate	The "management trigger" discussed on prior p. E-6-3 (para 1), is not necessarily the same as - and could be set below - the measureable objective; in this way - action is not triggered unnecessarily for monitoring that falls insignificantly below the objective. The figure, however, has the diamond saying the question is "meet or exceed objectives?"; the figure needs to be revised so that it incorporates both the trigger and objective concepts.	See explanation in "issue."
Schoenberg	FWS	34	E-7-14	para 1	Moderate	The NRCS has other programs currently (e.g., Wetlands Reserve Program) or in the past recently (e.g., Conservation Reserve Enhancement Program) in California.	The various grant programs under NRCS need to be better researched and summarized as appropriate. It isn't clear why the innovation grant program is mentioned but no others.

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Schoenberg	FWS	35	F-1-11	para 2, last line	Minor	Incomplete.	Suggest add that inputs of upstream sourced LWM reduced due to dams and losses of riparian.
Schoenberg	FWS	36	F-1-21	para 3	Minor	"trees and shrubs can be successfully planted in revetment;..."	Sometimes this can be done, not always and not typically, with varying success; suggest rewording.
Schoenberg	FWS	37	F-2-4	para 1	Minor	"more closely (to) those referenced"	missing word
Schoenberg	FWS	38	F-3-9	para 5	Minor	"...blackberry occurrences of is spread throughout this reach."	Something is missing/misworded here. Check and revise.
Schoenberg	FWS	39	F-3-11 to F-3-12	paras 3,5	Minor	Text numbers don't match tables	"311 ac wetland" is 310 in table; 174 ac seasonal wetland is 173 in table; "two thirds (36,900)" is 36,910 in table; "12 miles of non-SPFC..." is 11.9 miles in table.
Schoenberg	FWS	40	F-3-13	last para	Minor	missing words	"one side river" (one side of the river?). Revise.
Schoenberg	FWS	41	F-3-16	2nd last para	Minor	table 4-3 should be table 3-3	edit typo.
Schoenberg	FWS	42	F-4-11	para 1	Minor	Feather...on the north side of the river.	No "north" side of Feather. West? Check/revise
Schoenberg	FWS	43	F-4-14; F-4-29	para 2; Table	Minor	"...no banks with...SRA cover within the Yuba River."; row 1 in table shows 0 for natural bank with riparian vegetation in Yuba River	There is certainly some riparian vegetation, nearly all willow, on this reach of this river; estimate it and revise.
Schoenberg	FWS	44	F-4-20	4.1.7	Minor	UP Interceptor not shown on any figures.	References to figures in appendix F1 which do not show this feature; also not shown in overall figure 3.2. Feature is near/parallel to Feather River?
Schoenberg	FWS	45	F-4-21	para 6	Minor	Text (2,860 ac) doesn't match Table 4-3 (2,870 ac)	see issue.
Schoenberg	FWS	46	F-4-22	para 7	Minor	"black birds"	should be blackbirds.
Schoenberg	FWS	47	F-4-25	para 2	Minor	"...only target or other sensitive species documented is tricolored blackbird..."	There is a black rail population just north of the Yuba River on the UC-Sierra property.
Schoenberg	FWS	48	F-5-4	para 3	Minor	BDCP is changed to different measures/extent (to Cal water fix and ecorestore)	Review current status; revise as/if appropriate.
Schoenberg	FWS	49	F-5-8	para 3	Minor	beextirpated	be extirpated

Schoenberg	FWS	50	F-6-11	para 1	Minor	"...40%...having a 67% chance sustained spring or a 50% chance FIP (Table 6-1..."	The 67% sustained spring FIP in the referenced table is less than 40% (267/1294). If it is meant to add the 67% and 50% together, the numbers still don't calculate to 40% (641/1294). Check/revise.
Schoenberg	FWS	51	F-6-14	paras 1,3	Minor	Text numbers don't match Table 6-3.	210 vs. 211 ac; Forty vs. 43 ac; 70 vs. 68 ac. Check and revise to make consistent.
Schoenberg	FWS	52	F-6-15	para 3	Minor	"There is 7 miles..."	"...are...". Please correct.
Schoenberg	FWS	53	F-6-21	last para	Minor	Text numbers don't match Table 6-3.	350 vs. 346 ac; 670 vs. 665 ac. Check/revise.
Schoenberg	FWS	54	F-6-24	para 1	Minor	Text numbers don't match Table 6-3.	450 vs. 445
Schoenberg	FWS	55	F-6-26	paras 4 7	Minor	Text numbers don't match Table 6-3.	"1,000 ac...representing 5%"; total area is ~16,000 ac, so 1,000 is 6%. 600 vs. 610 ac of nontidal.
Schoenberg	FWS	56	F-6-34	last two paras	Minor	Single sentence para goes with next.	These sentences go together. Combine as 1 para.
Schoenberg	FWS	57	F-7-17	para 5	Minor	"This reach has the least....marsh or other wetland"	It's the second lowest, not the least; the Merced has the least (26 vs. 29 ac for the Tuolumne). Fix.
Schoenberg	FWS	58	F-7-19	para 6	Minor	Not clear how the tiny patch size (0.1 ac) reflects high connectivity.	Explain somewhere in document, or this section, how patch size is related to connectivity, if it is.
Schoenberg	FWS	59	H-11, 20	para 1	Minor	"...maximum flows....satisfying the following criteria..." Also unclear how EAH approach considers areas with different durations and frequencies.	Why maximum flows? Is it meant to say minimum flows?; also clarify if areas with greater durations and frequencies are counted or weighted the same or greater than those which barely satisfy the criteria.
Schoenberg	FWS	60	H-21	5)	Moderate	"agriculture...not counted"	This may be overly conservative; there is perhaps some value with some types of inundated agricultural land.
Schoenberg	FWS	61	H-22	4) thru 7)	Minor	"Tributary suitability....determined....in [some tributary]."	Not clear what is being said; does this mean using the one tributary to estimate the suitability in other tributaries? Or some other meaning?
Schoenberg	FWS	62	H-34	para 1	Minor	theirSacramento	Change to "their Sacramento"
Schoenberg	FWS	63	Appx H	General Comment	Moderate	Overall improvement in clarity.	Revisions since the administrative draft of this appendix appear to successfully address prior general comments of this reviewer asking to better articulate the methodology used.

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Schoenberg	FWS	64	I-3	para 1	Minor	"specifically, floodplain modification"	Floodplain modification in context of this appendix is not a specificity, it is a term. A specificity would be something like "specifically, earthwork measures within existing floodplains to increase inundation frequency and extent", but this is not the intent. So say "termed floodplain modification" or some like phrase
Schoenberg	FWS	65	I-3	para 4	Minor	"DWR 2011a"	The reference title does not match this citation; it seems to be DWR 2012a.
Schoenberg	FWS	66	I-7	para 1	Moderate	Incomplete explanation of setback levee action benefit.	This paragraph could also mention reduced erosive force and need for bank armoring in set back areas (via reduced depth, velocity, and shear stress).
Schoenberg	FWS	67	I-8	bullet 2	Minor	Application of old (1978) reference unexplained.	What was this MBK 1978 atlas material used for? How have conditions changed (or not) since 1978 and if so, what is the potential bias in the analysis?
Schoenberg	FWS	68	I-8	bullet 6	Moderate	Concern about utility avoidance limiting restoration opportunities.	It is unclear as to what is meant by "avoided to the maximum extent possible"; does this mean that any utility crossing - would always exclude setback or floodplain measure? Why couldn't utility modifications be done to allow both?
Schoenberg	FWS	69	I-8	bullet 8	Moderate	"Substantially perched....not investigated"	Although it is conceptually understood what is implied, it is unclear as to what is meant by "substantially perched." Explain what this means, in terms of both horizontal and vertical distance from the existing levee.
Schoenberg	FWS	70	I-8	"3."	Minor	HAR and NMZ	These do not appear in the list of acronyms in the main report (p. 10-1 etc.). Suggest add them.

Schoenberg	FWS	71	I-10	4th and 5th bullets	Moderate	<p>These are "moderate and high" priority rankings for setback actions; differing only by the absence (moderate) or presence (high) of natural vegetation or preservation status.</p>	<p>In practice, the moderate and high rankings are very similar and could be reversed; the idea of ranking via presence/absence of vegetation is not a primary consideration because, once a setback levee is placed, areas inside it can (sometimes) be significantly enhanced via plantings or natural recruitment. As such, the benefit in terms of the difference between the existing and setback states is actually greater for the "moderate" ranking. The level of enhancement over existing conditions needs to be considered somehow - at least - to the extent of not excluding sites just because they don't have natural vegetation. Natural vegetation outside of existing levees is generally an exceptional case, and lack of such should not greatly reduce the rank of candidate sites.</p>
Schoenberg	FWS	72	I-13		5.3 Moderate	<p>"initially delineated to avoid existing utility corridors" ; "avoided to limit the inaccessibility of....utilities during a flood event, and to limit the potential for scour or seepage into underground utilities.</p>	<p>This reviewer does not believe, or accept, the components of this narrative. Utilities can be retrofitted or rebuilt so they are protected from scour or seepage or other damage. Further, access is limited during flood events in a floodway independent of whether or not it has a setback levee.</p>
Schoenberg	FWS	73	I-13	para 4	Moderate	<p>"HAR was used to confirm that areas were ...located on higher ground than the water surface...."</p>	<p>What "water surface" is this statement referring to? The summer average low flow surface? More? Less? Is it correct to assume this means that any land with a negative HAR was excluded? If so, this seems like an overly conservative criterion although this concern would depend on how HAR and "water surface" are defined.</p>
Schoenberg	FWS	74	I-14 to I-15	Tables 6-1 to 6-4	Major	<p>Cannot evaluate these outputs because there are insufficient figures to show the locations of potential action areas.</p>	<p>See comment 79.</p>

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							As stated in prior comments (on an administrative version of this Public draft); this figure is too small to evaluate the analysis of floodplain opportunities and hence - inadequate to evaluate this important element of the conservation strategy. The figure has no features labeled. It is at a very broad scale (1 inch = 20 miles). The source reference (AECOM 2013) is not provided. New figures should be provided, with more information and landmarks. Text should be provided on each of the potential opportunity areas. A complete citation is needed for AECOM 2013 and it needs to be publicly available. Failure to provide this information, especially in light of our earlier request to produce it in the public draft, is of major concern.
Schoenberg	FWS	75	I-17	Figure 6-1	Major	The figure is inadequate to evaluate the analysis.	
Schoenberg	FWS	76	I-20	4th reference	Minor	[DWR]...2011. 2012 Central Valley Flood Protection Plan. December	What is this reference? Since it does not appear to be the DWR 2011a referenced on p. I-3? (that is probably DWR 2012a), what is it for? Is it a complete reference citation? Please check.
Schoenberg	FWS	77	J-35	para 1	Minor	"...FWS is currently determining whether delisting is warranted..."	FWS has withdrawn its delisting proposal. Delete sentence.
Schoenberg	FWS	78	K-13	Table	Minor	Feather River...Figure 2	This is on Figure 1.
Schoenberg	FWS	79	K-17	Table	Minor	Upper San Joaquin...Figure 5	This is on Figure 2.
Schoenberg	FWS	80	L-5	table; riparian and marsh	Moderate	total amount on floodplain	Think about whether this should be weighted in some way with duration and/or frequency.
Schoenberg	FWS	81	L-6	last bullet	Minor	"...related, more recent content in USFWS 2006b"	That is outdated, partially incorrect, and superceded. I recommend the assistance document by Talley et al. (2006).
Schoenberg	FWS	82	L-7	1st bullet	Minor	GGs	Final recovery plan is in progress.
Schoenberg	FWS	83	L-7	2nd bullet	Minor	RBR	Draft RP outdated; a 5-year review and RP are in progress. Check for availability.
Schoenberg	FWS	84	L-7	para 3	Minor	"identified in recovery plans..."	Not all are recovery plans, some are management plans. Clarify

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Schoenberg	FWS	85	L-9	3.2; 3.2.1	Major	BWFS and FROA maps not available ("not publicly released"); "identified setback locations" (coarse map, 1 inch = 25 mile scale)	There are no maps in this appendix (and a very coarse one only in appendix I), that is inadequate to comment on the scope and range of potential restoration actions. It's hard to comment on the analysis without seeing where these opportunities may be.
Schoenberg	FWS	86	L-11	Natural Bank	Minor	No citation or maps.	This discusses the use of revetment inventories; it needs a citation and preferably maps as well.
Schoenberg	FWS	87	L-12	para 1	Minor	Discounting of revetment adjacent to riparian	Clarify if this means that revetment adjacent to riparian is excluded or included from consideration for removal.
Schoenberg	FWS	88	L-12	Riparian Habitat	Moderate	"...area with riparian...potential was estimated to be half of the...footprint"	The narrative goes on to say that the 1/2 is a likely underestimate; where did 1/2 come from and if there's a better estimate, recommend use it.
Schoenberg	FWS	89	L-1-1	Notes	Minor	Numbers in table notes do not match appendix H Table 6-1	Check and correct.
Schoenberg	FWS	90	general		Moderate	Conservation strategy assumes doing only or mainly rearing habitat actions in floodplain and not on river edge.	The document needs to explain what sort of actions are being contemplated for the vast majority of time, and years, where there is no/little floodplain inundation.
Schoenberg	FWS	91	L-1-2		Minor	example - where do numbers come from: "9,140 acres"	Apparently, this number was at one time calculated, but that calculation was translated into text, obscuring it from the reader. E.g., $150 \times 400 = 6000 \times 1/.6 = \sim 10,000$ but not 9,140. This is repeated throughout the attachment.
Schoenberg	FWS	92	L-1-2		Minor	example: how are numbers used in measurable objective formulation: "4,500; 7,000"	As an example, here in the table are some very specific numbers, and general locations; but it doesn't state where (nor match the number 11,500 in total on p. A2-11) . Better connection between the table (attachment 1) and the boxes (attachment 2) is needed. One other thought, albeit major, is to somehow combine the content in attachments A1 and A2 so it is more easily understood where numbers came from.

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Schoenberg	FWS	93	L1-2		Major	example: choosing smallest number, "each pair requiring 40 acres"; assumes full occupancy	This (40 acres) looks like an early guess, and carries no justifying explanation; based on internal discussion at FWS, it is small, and we feel at least 100 acres or more would be a better minimum, but even then the assumption that all suitable habitat is used is incorrect; perhaps 1/3 or 1/4 of the suitable habitat might be used (what we call suitable is not necessarily what the bird would use under optimum circumstances). So it may mean that 200 or more acres of riparian would be needed, to create the 100 acres that YBC would actually use. In truth, the effect on YBC of increasing habitat could be nominal and more of an academic exercise to derive an objective than actually recovering the species; as there is lots of YBC-unoccupied habitat for reasons that aren't clear.
Schoenberg	FWS	94	L1-2		Major	2-7.5 acres	More of the same; small objective numbers presume that the suitable 15-30% is occupied; but in the immediate term, its likely that suitability is much less than this due to presence of nest predators. It isn't known if more habitat will overcome this type of threat.
Schoenberg	FWS	95	L-1-4		Moderate	notes: "....preliminary evaluation of amount of revetment that would be removed...." "goal of doubling....swallow...(equal to size when....listed)"	No citation or description of stated evaluation. A goal of bringing swallows bank to the point where they were listed seems insufficient (to recover them would take much more).

Schoenberg	FWS	96	L1-5,10,17,25; L2-7,15,23	Moderate	SRA commitments, locations, unclear, scattered, and implicit	This reviewer searched without success to find what should have been defined; namely - what is it are you going to do for SRA cover? The document repeatedly re-cites a terse early comment that it is hard to relate this to recovery of salmonids. That's understandable. Less clear is how, absent this understanding - the strategy is to pick the midpoint between existing and opportunity as a goal. Think harder about the distribution of opportunities, and priorities, such as what would most reduce the threats and where (e.g., long lengths of river with not a scrap of SRA cover, such as downstream of Colusa). If what is planned is to fill in gaps in less impacted areas, well, that has benefit too - ut absent better description of the opportunities (i.e., than in Attachment 3), it's hard to know. The lower Sacramento CPA was perhaps a little better defined qualitatively - but actual locations aren't shown (for this or other CPAs).
Schoenberg	FWS	97	L1-13,21 compare to L2	Moderate	example: Objective topics and objectives different; linkage to conservation needs to objectives unclear.	Both mention similar needs for different parts of a recovery plan, but its unclear where, how, which, or whether, these actions are incorporated into the subsequent attachment L2; there is no section on "levees", nor mention of these measures. Perhaps some reference in the notes connecting which objective boxes go to what conservation needs, might help.
Schoenberg	FWS	98	L1-23 vs. L2-25	Moderate	example: cannot connect need to objectives.	As with the above prior comment, there is no connection made between this topic and the number in attachment L2 (or appendix H). The attempt to translate a calculation into verbage fails. Perhaps it is 5X what was in attachment 1 as some expansion factor but the message is lost.

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Schoenberg	FWS	99	L1-30	need actions	Moderate	example: can't tell whether, if, or where, numbers are used in objectives	In this case, most of the conservation needs don't have numbers, but maybe there are some numbers associated with them; but it can't be known from this table entry
Schoenberg	FWS	100	L2-4		Moderate	example: Explanation of source material lacking	This YBC example cites the CVJV, without providing any explanation of what was done in that reference; this type of citation/adoption continues throughout this attachment and is not adequate for review; it is as if the reader should accept this or otherwise be expected to read and decipher the reference. Then there's the unexplained Seavy caution that it all is being "reassessed" but assumes the (smaller?) current objective is to be adopted. Notably missing is the 40 acre/pair (p. A1-4) criterion which - absent discussion - appears small it doesn't enhance the quality of the number if it first occurs in the CVJVIP reference; the quality of the number is unexplained, and suspect.
Schoenberg	FWS	101	L2-4		Minor	example: no calculation/text verbage	Calculation of the number 11,400 is not shown; instead there is verbage about 80% assumptions, reference to Appendix G.
Schoenberg	FWS	102	L2-5		Moderate	no explanation of source material; no calculation	More citation of CVJV without stating what is in that reference and why it was chosen. The 12,900 acre number appears but there is no calculation.
Schoenberg	FWS	103	L2-6		Minor	No calculation	Cannot understand what was calculated or scaled.

							49% is ~half; and there are stretches without much in this CPA and moreso farther downstream; the midpoint pick lacks justification - maybe more needs to be done in some CPAs than others. Also, what opportunity is there to enhance the existing riparian-lined bank? Is it all the same (doubt it)? Given that optimal bank cover is believed to be higher (75%+), perhaps objectives should be higher. There is a caveat note that the midpoint presumes "other changes" would contribute to the unmet need; which is re-stated for other CPAs. What other changes? Without explanation, it cannot be assessed.
Schoenberg	FWS	104	L2-7		Moderate	Picking the midpoint; quality of existing 49%	
Schoenberg	FWS	105	L2-8		Minor	44 miles not explained/shown	See comment below on L2-9; more needs to be said other than citing BANS-TAC 2013.
							This page like others suffers from failed attempts to translate a calculation into words; a product of length x acres doesn't = acres. It has to be length x width. Something is lost in the translation. This would be better off showing the calculation. There's a paragraph in here on 44 miles of revetment, but no explanation of where that number came from (mere citation is inadequate) nor figure of where it is proposed to be done.
Schoenberg	FWS	106	L2-9		Moderate	Locations of specific actions unknown; calculation unclear.	
Schoenberg	FWS	107	L2-10		Moderate	Calculation not provided; verbage especially unclear. Locations not shown	The calculation is missing, the "notes" explanation in this instance is hard to understand. Show the full calculation to start. There is a brief mention of suitability and a choice in the middle; and no discussion where 10-25% range comes from; reviewer does not recall this from iAppendix H.
Schoenberg	FWS	108	L2-12		Moderate		See above comments on L1-2; also, show the calculation of the objective.

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Schoenberg	FWS	109	L2-13		Moderate	6900; CVJV	There is no calculation showing how this number was derived; the verbage approach is unsuccessful. There is no explanation of what went into the citation from which this number was apparently based. There are terms/caveats regarding "short-term" objectives which are also unexplained.
Schoenberg	FWS	110	L2-14		Moderate	1,700; CVJV	Same as previous comment; reviewer cannot understand the narrative approach to calculation/justification/scaling.
Schoenberg	FWS	111	L2-15		Moderate	27 miles	Not clear how this number was derived; reviewer notes it is 33 miles in the later, draft technical memorandum. Provide calculation and check the number.
Schoenberg	FWS	112	L2-16		Moderate	Specific identified actions....; 2 miles; 1,900 acres	Provide calculation of numbers and map showing potential locations of actions.
Schoenberg	FWS	113	L-2-18		Moderate	43,000; no calculation	The number doesn't appear in Appendix H and the verbage doesn't explain/show how the calculation. Does not match the 53,000 in the January 2015 technical memorandum. Check/revise and provide calculation.
Schoenberg	FWS	114	L2-19		Moderate	1,500 to recover target species; calculation/contribution of components insufficient; CVJV objectives	Cannot evaluate; needs showing of calculation and discussion of what is in original CVJV source.
Schoenberg	FWS	115	L2-21		Moderate	6600 acres	Insufficient discussion to evaluate; needs a calculation and discussion of what is in original CVJV source, to understand how value was derived.
Schoenberg	FWS	116	L2-23		Moderate	29 miles; no calculation; no maps; picking of midpoint	The narrative does not explain how this number was derived (which is revised to 57 miles in the later technical memorandum); it appears to be half the difference between historical and existing, but the text does not explain.
Schoenberg	FWS	117	L2-25		Moderate	3,300 acres	A typo (probably means 1,300 acres); seems like a very small number; the derivation of which is unclear. No calculation provided. Cannot assess further.

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Schoenberg	FWS	118	L2-27; general	Moderate	2,100 acres; number seems small; calculation not provided	Cannot evaluate due to lack of calculation, and lack of connection to or discussion of the references or other parts of this appendix (attachment L1) or other appendices (e.g. F).
Schoenberg	FWS	119	L2-29	Moderate	5,200 acres	Unclear how the number was derived from the 1,500 and 20,000 acres discussed as specific actions, or if calculated in some other way. Needs to be explained.
Schoenberg	FWS	120	L2-31	Moderate	102 miles; midpoint selection	This number (revised since to 114 in the draft technical memorandum); is the midpoint between existing and historical values (termed "maximal"). There needs to be some justification for picking the midpoint in relation to the need. The stated reasoning (that the need is "uncertain") doesn't seem to provide justification.
Schoenberg	FWS	121	L2-34	Minor	3,400 acres; data "in USBR 2012";	No citation (to USBR 2012) or summary of what was in the reference; noted this is revised downward to 2,800 in the January 2015 technical memorandum.
Schoenberg	FWS	122	L2-36	Moderate	300, 350, 400 ft	Notes seem to refer to locations on various tributaries; are there figures showing these? And where did these width numbers come from? Text says this would cover most of the active floodplain/meander zone but it seems there is a lot of the lower San Joaquin where the active zone is (and/or could be made) wider than this.
Schoenberg	FWS	123	L2-37	Moderate	CVJV objectives	To repeat prior comments; this reviewer doesn't know how these objectives were derived, this memorandum doesn't hint as to the origin, other than the repeated remark that they are interim.
Schoenberg	FWS	124	L2-38	Moderate	3,100 ac; one block	Justification for this small number for an entire CPA of millions of acres seems lacking (text says only that one block is a "provisional" estimate and recovery needs could be greater).

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Schoenberg	FWS	125	L2-39		Moderate	52 miles (revised since to 60 miles in draft technical memorandum); no calculation; no maps; picking of midpoint	The narrative does not explain how this number was derived ; it appears to be half the difference between historical and existing, but the text does not explain.
Schoenberg	FWS	126	L2-40		Moderate	0-25 miles (since revised to 19 miles in 1/2015 draft technical memorandum)	The box narrative says it isn't in the recovery plans, so how did the number come about? Was it measured, calculated, guessed, other? The fine print in the notes seems to imply a back-calculation from YBC habitat, and inference about meander, but where would removable revetment be, and where could the river meander? This may be possible in this CPA but the opportunities need to be mapped and quantified to know if this objective fits. The calculation needs to be shown, as the narrative alone is unclear.
Schoenberg	FWS	127	L2-43		Moderate	25,700; no calculations; suitabilities do not match Appendix H; no USBR 2012 citation and no description/summary of what is in it.	There is no calculation deriving the numbers stated. 17-20,000 acres are stated to be in another CPA, so it is unclear as to why it is stated here. Appendix H does not state the 10 and 25% suitability values referenced in this box.
Schoenberg	FWS	128		Attachment L3	Major	Tables without figures/locations; new bar figures add further questions as to what could be done and its spatial distribution.	The opportunity tables do add some sort of quantitative dimension, but need figures showing where all of this opportunity is. The very small figures in Appendix I are inadequate, and the rest of it (GIS files, BWFS, prelim DWR etc.) is stated to be not publicly available.
Schoenberg	FWS	129		Attachment L3 and main report/summary	Major	undefined terms and relationships: "need" "opportunity" "objective"	Define these more explicitly; e.g., other than the partial phrase on p. 6 of the tech memo that says an opportunity is the achievable part of an objective. Maybe "opportunity" to the writer had other inherent properties, such as low conflict with other uses. Lack of definition limits understanding and interpretation of the memorandum.

							Frequently, there is a mismatch between what is a greater need and a smaller opportunity to meet that need. There is not discussed, but noticeable in attachment L3 and more obvious in the later 1/2015 technical memorandum. This raises a basic question of whether the strategy intends to achieve the objective, or limit its achievement to the current opportunity. More discussion and clarity is needed as to which target the conservation strategy intends to pursue when these (objective and opportunity) are different.
Schoenberg	FWS	130	L15		Major	Limited discussion of opportunity; differences between objectives and opportunity	
Greater Sandhill Crane - Appendix F: Focused Conservation Plan - We reviewed this Public draft compared to our comments on an earlier version. Therein, we commented that there was a lack of clarity as to how management actions (Table 1, text) could be positive or negative with respect to mortality and requested further discussion. Although we note no additional text, the plan appears to be adequate overall.							
California Black Rail - Appendix F: Focused Conservation Plan - The plan is generally adequate, however, as we had commented earlier on a non-public draft, Figure 3 needs a label for Middle River as it is discussed in the text. As a pdf, Figure 3 is now of very poor quality and largely illegible. Please check and improve the figure quality.							
Slough Thistle - Appendix F: Focused Conservation Plan - Several minor changes have been made in response to our earlier comments; the plan is adequate and we have no further changes to recommend							
Central Valley Steelhead - Appendix F: Focused Conservation Plan - We note several changes (deletions, minor modification of text), in response to our earlier comments. Under "Current Distribution" (p. G4-2), however, the discussion of hatchery effects should at least mention the Mokelumne river hatchery - which produces steelhead.							
Central Valley Fall-Late Fall-Run Chinook Salmon - Appendix F: Focused Conservation Plan - The plan adequately has addressed most of our prior comments.							
Sacramento River Winter-Run Chinook Salmon - Appendix F: Focused Conservation Plan - We noted several changes in response to our earlier comments. However, as we commented earlier, the text does not mention or discuss the effect of exports/diversions as a either a consequence of dam construction and operation, or as a threat upon this species (i.e, less water - not strictly the entrainment effect). This should be appropriately discussed.							
Bank Swallow - Appendix F: Focused Conservation Plan - This plan has been extensively revised since a prior draft, has addressed most of our prior minor comments, and appears solid. We have no further comment at this time							
Central Valley Spring-Run Chinook Salmon - Appendix F: Focused Conservation Plan - This plan has been extensively revised since a prior draft, and has addressed our prior minor comments. We have no further comment at this time							
Swainson's Hawk - Appendix F: Focused Conservation Plan - This plan, particularly the conservation strategy section, has been largely re-written and/or extensively edited since our earlier comments - which we believe have been largely addressed. We believe this focussed strategy is now adequate and have no further comment at this time.							

Valley Elderberry Longhorn Beetle - Appendix F: Focused Conservation Plan - We note moderate revisions to the plan, some in response to our earlier comments. Questionable language in an earlier draft of this strategy - possibly derived from the earlier 2006 5-year review or 2012 proposed delisting, has been revised and corrected, or deleted. There are still a few issues with this Public draft, however. The term "VELB" is sometimes used where it means exit holes (e.g., p. G3-6, in discussing Collinge et al. 2001, the text states "...VELB were found in elderberry clusters..." or "...VELB were most commonly observed in dense stands..." These observations were not of beetles, but of beetle exit holes. It is an important distinction because observations of the beetle itself are never common. A more significant remaining issue is the strategy emphasis on locating conservation efforts "close to known VELB populations" (This appears six times in Table 2, pp. G3-17 to 18; and in the text p. G3-12 "particularly when in close proximity to known populations"). FWS does not necessarily support this strategy. The location of existing VELB populations is not well known - and - where it is known; some already have nearby enhancement efforts. We recommend instead - that the strategy emphasize creating new riparian habitat (including elderberry) - throughout the range of the VELB. Particular emphasis should be in the vicinity of major Central Valley rivers and tributaries, at low elevation, and where habitat has been lost or is near absent. This would create opportunities to restore the range of the species, and add resiliency and redundancy to its populations. This does not mean that adding to (adjacent to) existing habitat would be discounted, but it should not be the primary focus of the strategy with the heavy emphasis as currently written.

Delta Button Celery - Appendix F: Focused Conservation Plan - Given the limited information on this species, this conservation strategy is largely well-written, simplified, and reorganized compared to an earlier draft version we reviewed. On p. G1-7, the language appears to limit restoration actions like grading to areas "...adjacent to known populations...". Given the very limited current distribution (and larger former distribution), it may be appropriate to consider expanding restoration efforts away from the immediate vicinity of known populations to give the species an opportunity to expand.