

DRAFT
DRERIP Coarse-Level Evaluation Summary:
Floodplain enhancement in the Yolo Bypass

Highlighted Text = Evaluator comments

Evaluation Date: July 29, 2008

Coarse-Level Evaluators:

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Action Description

Increase the frequency of spilling from the Sacramento River at the Fremont Weir to flood the Yolo Bypass for at least 45 consecutive days during late winter to early spring from ~17% of years (with existing Fremont Weir height) to ~50% of years.

Approach: The approach includes:

1. Modify the Fremont Weir to an elevation of 17.5 feet (NAVD88) to allow at least 4000 cfs and up to 10,000 cfs under managed flooding into the Yolo Bypass in 48% of years during late winter to early spring (see Appendix).
 - Would not change existing frequency of large flood events in the Yolo Bypass and would build on these flood events to augment inundation duration
 - In drier years, this action would cause inundation where there otherwise would not have been inundation
 - This action would also augment and extend the duration of flood inundation in the Yolo Bypass from Westside tributaries
 - Preliminary hydrologic modeling predicts that 4000 cfs would inundate approximately 29,000 acres of the Yolo Bypass to a mean depth of 2.0 feet, with a mean water velocity of 0.5 ft/sec and 7.0 day residence time within the bypass (see Appendix)

Note: This action is submitted for coarse-level evaluation of its likely biological performance in achieving BDCP conservation objectives. This action has not yet been evaluated for its financial or institutional feasibility.

2. Place operable gates on the notch of the weir. Design and operate the weir to allow passage of covered fish species. Operable gates on the weir will be operated to optimize timing of floodplain inundation to maximize benefits native species and minimize benefits to non-native species.
3. Excavate a canal (225' width, side slopes 2:1) that sends water at the Fremont Weir to the Tule Canal downstream where the elevation is suitable (approximately 1 mile).
4. Modify landform to prevent stranding of covered fish species

Pdf pg 18 (xvii), for steelhead on floodplains, documentation in CV is lacking—(Williams 2006)—Sommer et.al., may use Sutter Bypass (pg. 11), use Sutter bypass (pg 11). (pg 13, 14 is more)

Chironmid production high, exported and picked up in screw traps downstream. Salmonid stomachs full (Harrell, pers. Com)

Outcomes Evaluation

Outcomes: Expected outcomes of this action include:

1. Increased frequency and success of Sacramento splittail spawning

Mag-4, Cert-4: splittail = *High Worth, Medium Risk*

2. Improved growth rate of larval and juvenile splittail and Chinook salmon (winter-, spring-, and fall-run).

Mag-4, Cert-4: Chinook = *High Worth, Medium Risk*

3. Improved survival of larval and juvenile splittail and Chinook salmon (winter-, spring-, and fall-run). Survival of steelhead—if acts as a better corridor for steelhead existing channels—reduced entrainment, predation exposure.

Mag-4, Cert-3.5: Chinook = *High Worth, Medium Risk*

4. Increased primary and secondary production in the Yolo Bypass available to larval and juvenile and adult splittail, potentially steelhead, and

Chinook salmon (winter-, spring-, and fall-run), delta smelt (they are in toe drain spawning) that are in the Yolo Bypass.

Mag-4, Cert-4: Chinook = *High Worth, Medium Risk*

5. Increased export of primary and secondary production to the Delta ecosystem available to delta smelt, longfin smelt, sturgeon, splittail, and fry and juvenile salmonids in the Delta.

Mag-3, Cert-3: Chinook = *High Worth, Medium Risk*

6. Reduced stranding/poaching losses of adult sturgeon and salmonids below Fremont Weir

Mag-2, Cert. 4 = *High Worth, Low Risk*

7. Provide more natural and reliable migratory pathway for improved passage for juveniles

Mag-4, Cert 4: Chinook = *High Worth, Medium Risk*

8. Provide more natural and reliable migratory pathway for improved passage for adult fish during inundation periods

Mag 2: Cert. 3 = *Medium Worth, Medium Risk*

Additional Positive Outcomes

1. Possible benefits to juvenile sturgeon if get on floodplains (Zoltan)—Pg 20 green sturgeon, says unlikely used floodplains.
2. Longfin smelt adults have been captured in Yolo—spawned (Harrell).
3. Food for LS and DS (stressor tables): Questionable if corbula substantially removes food

Negative Outcomes

1. Methylation of mercury-- Mag: 2, Cert. 3

2. Removing flows from Sacto River into Yolo Bypass could adversely affect fish coming out of American and Feather River (somewhat less than American because can back track into Yolo)
3. Increased temperatures could cause DS issues(?) uncertain. ET would reduce temps to compensate (?)
4. Transport of selenium into floodplain from splittail
5. If Hood bypass is too low, could it lessen velocities such that increases egeria.

Other Comments

1. Alternate possibility of moving east DWSC west to create floodplain.
2. Need to define longfin and delta smelt habitat requirements—cld. be research actions.