HANDOUT #12

DRAFT
DRERIP Coarse-Level Evaluation Summary: Fabian Tract/Union Island tidal marsh/floodplain restoration

Highlighted Text = Evaluator comments

Evaluation Date: July 31, 2008

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Action Description

Restore tidal marsh/floodplain habitat at Fabian Tract and eastern half of Union Island.

Approach: The approach includes:

1. Breach the levee Fabian Tract on the northwest side of Fabian Tract (~500 feet) to allow inundation by Old River. Breach the southern levee of Union Island along Grant Line Canal and the northern levee along Middle River near Tracy Blvd.

2. Move soil from areas up to two feet above tidal range (Fabian Tract: >5.4 feet NAVD88; Union Island: >## feet NAVD88) to fill in areas up to two feet below tidal range (Fabian Tract: <1.9 feet NAVD88; Union Island: <## feet NAVD88).

3. Approximately 4,000 acres of Fabian Tract would be tidally inundated. Approximately 8000 acres of Union Island would be tidally inundated.

Team assumption: the ultimate design will maximize biological results (number, location, and size of breach)

Outcomes: Expected outcomes of this action include:

1. Increased primary and secondary production in the marsh available to larval and juvenile splittail, delta and longfin smelt, steelhead, and fall-run Chinook salmon.

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.

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2. Increased export of primary and secondary production to the Delta ecosystem available to all stages of delta and longfin smelt, splittail, salmonids.

3. Increased frequency and success of splittail spawning in drier years.

4. Improved rearing success of larval and juvenile delta smelt, splittail, white sturgeon, and juvenile steelhead and fall-run Chinook salmon.

5. Reduced summer/fall water temperature through nocturnal thermal exchange and reintroduction of cooled water to Delta waterways.

Additional Positive Outcomes

Similar to Roberts Island

Negative Outcomes

1. Similar to Roberts Island

2. Maximum carbon discharge is in fall, this is time would be pumping, so would loose carbon exports to pumps.

3. High entrainment in all years except wettest w/o isolation. If OR isolated, particles still entrained in dry years because of high reverse flows.

4. Productivity coming out of marshes in summer/fall is at same time that south Delta is being pumped from.

Other Comments

1. Need to take advantage of opportunities to pull SJR flows onto Fabian and Union

2. To make work need little to no delta pumping

3. Flashier and earlier flows with climate change will increase opportunities for floodplain inundation.

4. Need to look at what happens with draw of water to inundate SJR floodplain on effects of flows available for restoration of Fabian and Union and upper Roberts. (how much and stage of water is available).

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5. Will not mimic floodplain/marsh interaction unless have east/west breaches in levee.—issue is whether or not enough water left in SJR to do floodplain there and here.

6. Need to model effects of stage changes in downstream areas of SJR floodplain concept to see what effects are on Old River and Middle River. If SJR floodplain only takes peaks off of high flows, then can we use lesser flows to inundate floodplain on Fabian and Union.

7. Would need to ensure that OR has capacity to carry flows to inundate floodplain.

8. Without isolated corridor: modeling shows if SJR flow is greater than exports, then less entrainment because of greater net flow.

9. SJR channel is constraint to flow volume if flows are increased in the future.

10. Breach location, number, and size change susceptibility to entrainment.

11. Would multiple breaches create circulation issues like Franks Tract—cld. locate breach on west side for tidal exchange and one on east side that allows flood flows in and tidal flows only on highest tides.

12. Create network of breaches along Grant Line

13. So little scour, won't likely scour own channels, so may need to excavate channels.