HANDOUT #11

DRAFT
DRERIP Coarse-Level Evaluation Summary: Roberts Island Tidal Marsh Restoration

Highlighted Text = Evaluator comments

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Action Description

Restore ## acres of intertidal marsh in Upper and eastern Middle Roberts Island.

Approach: The approach includes:

1. Breach the western levee of Upper Roberts Island along the Middle River (RM ##) and the northeastern levee along the San Joaquin River near French Camp Slough.

2. Move soil from areas up to two feet above tidal range (>~5.5-5.8 feet NAVD88) to fill in areas up to two feet below tidal range (<~2.2-2.8 feet NAVD88).

3. Approximately 2,500 acres of Fabian Tract would be tidally inundated.

Team recommendations:

1. Large sections of levee should be removed to provide unimpeded flow into restored marsh to avoid creating high velocity flows that could increase susceptibility of natives to predation.

2. Assume that egeria will need to be directly controlled to avoid likely infestation in subtidal portions of restored marsh area.

Outcomes: Expected outcomes of this action include:

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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1. Increased primary and secondary production in the marsh available to larval and juvenile splittail, delta and longfin smelt, white sturgeon, steelhead, and fall-run Chinook salmon. **Spring-run may be introduced in future and would also benefit.**

2. Increased export of primary and secondary production to the Delta ecosystem available to all stages of delta and **longfin** smelt, white sturgeon, **green sturgeon** splittail, salmonids. **Spring-run also if reintroduced.**

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

1. Reduced fish predation
2. Reduced toxics associated with retired farmland
3. Reduced diversion loss
4. Holding habitat by shallow subtidal for salmonids
5. Food production in subtidal—pelagic productivity
6. Could be good splittail habitat in dry years
7. Salmonid rearing habitat

Negative Outcomes

1. If not designed properly, hydrodynamic conditions similar to Frank's Tract could be created

2. Any design will result in major egeria issues

3. Corbicula could come in

4. Selenium sink for SJR loads

5. Increased hydraulic effects on downstream levees

6. Hydrodynamic effects on distribution and migratory pathways of fish (tides being out of phase)

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7. Lack of salinity gradient

8. Two openings may homogenize system

Other Comments

1. Make channels deep enough to preclude egeria or velocities high enough

2. Function of SJR marsh values cld be increased with increased SJR flows

3. Need to preclude loss of sea level rise expansion area if grade areas lower for fill of low areas-may not have enough

4. Will need to modify channels to provide capacity to allow sufficient water to enter multiple restoration sites, currently not enough excursion to do this

5. Question subsidence reversal as tool

6. No breach along Middle River with middle river conveyance

7. Need to design to have unconstrained tidal exchange—so do not create velocity issues.—biological reasons for doing this (maybe at velocities of 4 cfs or so).

8. Unless project can be designed to prevent egeria establishement, accept that egeria would need to be controlled.