

Yolo Bypass Fish Technical Team 08.22.11
Draft Biological Criteria for Evaluating Floodplain Inundation Options

The Yolo Bypass Fish Technical Team (Fish Technical Team) is a subgroup of the Yolo Bypass Fishery Enhancement Planning Team (Planning Team). The charge of the Fish Technical Team is to provide fisheries information to the Planning Team.

One of the key fisheries issues discussed during the Planning Team meetings was how potential floodplain inundation options would be evaluated to determine fisheries benefits. To help streamline these evaluations, the Fish Technical Team developed a set of biological criteria for evaluating floodplain inundation options.

Biological Criteria for Evaluating Floodplain Inundation Options:

1. Water Sources
 - a. The proposed option should have the ability to deliver fish from all tributaries that supply fish during a natural spill over the Fremont Weir and provide source signatures that limit straying of adult migrants from their natal spawning areas.
2. Water Quality
 - a. The proposed option should minimize water quality concerns (e.g. contaminants, temperature, dissolved oxygen).
 - i. Source water should be high quality.
 - ii. The floodplain area utilized in the proposed option should not have soil contaminant characteristics that are harmful to covered species.
 - iii. The proposed option should provide the ability to manage water quality in the floodplain habitat.
3. Juvenile Capture
 - a. The proposed option should be effective in bringing juvenile fish onto the floodplain.
 - b. The proposed option should passively bring fish onto the floodplain.
 - c. The proposed option should not require intervention to bring fish onto the floodplain.
4. Habitat Connectivity
 - a. The proposed option should provide floodplain habitat with connectivity to the entire floodplain footprint.
 - b. The proposed option should provide floodplain habitat connectivity to the “deep fish passage channel” to facilitate upstream adult fish passage.
5. Drainage Connectivity
 - a. The proposed option should provide a floodplain habitat that adequately drains and maintains “flow through conditions” to limit stranding.
6. Habitat Mosaic
 - a. The proposed area of floodplain inundation should be heterogeneous.

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- b. The proposed options food web productivity should be similar to the productivity of a natural spill over the Fremont Weir.
 - c. The proposed option should provide adequate refugia.
 - d. The duration of the proposed inundation footprint should be long enough to benefit all life stages of covered species and export productivity to the Delta.
7. Predator Exposure
- a. The proposed option should address and minimize predation impacts.
 - i. The proposed option should avoid or limit predation to covered species as they emigrate through systems such as canals and structures
 - ii. The proposed option should avoid creating year-round refugia for predators.
 - iii. The proposed option should avoid or limit the potential for increased predator density when compared to a natural spill over the Fremont Weir.
 - iv. The proposed option should avoid or limit human created “bottlenecks” that may lead to an increased density of covered species and predators.
 - v. The proposed option should avoid or limit avian predation on covered species when compared to a natural spill over the Fremont Weir.