

Lower Yolo Bypass Planning Forum
Yolo Bypass Conservation Measures
July 28th, 2009

The **Lower Yolo Bypass Planning Forum** (Planning Forum) is proposing the following **Yolo Bypass Conservation Measures** as a set of draft alternatives to the proposed BDCP conservation measure to modify the Fremont Weir to increase the frequency and duration of spring flooding in the Yolo Bypass (Bypass). The proposed actions are based on continuing Yolo Bypass Working Group discussions that began in 1998, when inundation of the Bypass was first brought forward as an aquatic habitat improvement measure. They are presented in the spirit of finding mutually beneficial solutions to the complex statewide water supply and habitat issues facing the Sacramento San Joaquin Delta. This is an evolving proposal that will benefit from additional comment and analysis as it is introduced to the larger community.

This proposed set of conservation measures will contribute significantly towards a multi species plan that benefits both terrestrial and aquatic ecosystems. Bypass stakeholders stand ready to engage BDCP staff to develop such a plan.

As plans for a Bypass Conservation Measure move forward, BDCP should also consider potential impacts to publicly and privately owned/managed lands and services within and adjacent to the Bypass. For actions that are not consistent with this document, the Lower Yolo Bypass Planning Forum developed a list of potential impacts and related solutions in the companion document entitled, "LOCAL IMPACTS FROM HABITAT CONVERSION AND DELTA INFRASTRUCTURE PROJECTS AND SUGGESTED SOLUTIONS." This document is intended to be applicable to all projects within the Bypass, not just those proposed by BDCP. A list of Planning Forum members in support of the Conservation Measures is included in Attachment A of this document.

Flood Protection

Flood protection is always the first priority in the Bypass. Notwithstanding agreements between landowners and local, state, or federal agencies within the Bypass itself, it also functions as a critical component of the Sacramento River Flood Control Project (FCP), and provides a direct flood protection benefit to urban and urbanizing areas including (but not limited to) the cities of Woodland, Sacramento, West Sacramento, and Davis.

As habitat creation and conversion projects move forward as a result of BDCP Conservation Measures, the flood protection function of the Bypass must be maintained. Additionally, plans for habitat projects must be designed and implemented in such a way that they do not impede or preclude future modifications of the Bypass necessary to maintain or improve the function of the FCP.

A good example of appropriate projects includes the creation of the Yolo Bypass Wildlife Area. Establishment of the Wildlife Area was pursued only after a commitment was made to manage it as part of the Sacramento Flood Control Project in a way that would not interfere with the flood control function of the Bypass. This was formalized in a “Local Cooperative Agreement” between the Army Corps of Engineers and the Department of Fish and Game in 1991.

Large modifications of the flood control project require a section 408 permit and must be approved by the Army Corps of Engineers in Washington D.C. Modification of the Fremont Weir would be considered to be a large modification and would also require approval by the Central Valley Flood Protection Board. The approval process for the projects discussed below will face fewer permitting challenges than wholesale changes suggested in BDCP or the Biological Opinion.

Agriculture

The Yolo County Agriculture Commissioner estimates that the Yolo Bypass contributes at least \$44 million in annual direct agricultural income to the Yolo County economy. Total effect on the local economy is about \$170 million annually. Rice contributes to the operating income on the Yolo Bypass Wildlife Area, while also providing a tremendous food source for migratory waterfowl. On both Conaway Ranch and the Wildlife Area, rice fields are flooded in the fall and winter to provide important waterfowl and shorebird habitat.

Early implementation Fish Habitat Improvement Projects

The “**Five Step Proposal**” created by the implementing agencies of CalFed’s Ecosystem Restoration Program should be at the core of any aquatic conservation measure proposed in the Yolo Bypass. These implementing agencies include the California Department of Fish and Game, US Fish and Wildlife Service and National Marine Fisheries Service with assistance from the California Department of Water Resources. These “early implementation projects,” were designed in partnership with a number of locally affected stakeholders, are the centerpiece of the Yolo Bypass Integrated Project within the Yolo County Integrated Regional Water Management Plan. The Five Step Proposal would improve upstream salmon and sturgeon passage and create about 4,000 acres of additional spring inundated floodplain habitat. These five steps include:

1. **Putah Creek** – Lower Putah Creek stream realignment and floodplain restoration for salmon passage improvement and multi-species habitat development on existing public lands. Tidal habitat improvements associated with this project would primarily benefit Splittail. The creek realignment would benefit fall run salmon, allowing them to move up Putah Creek, bypassing the Los Rios check dam on DFG property. Currently the dam is taken down before the annual fall pulse flow used to attract salmon up the creek. This flow takes place between

November 15th and December 15th annually. Total potential inundated floodplain habitat is about 800 acres.

2. **Lisbon Weir** – Modify or replace the weir to improve the agriculture and habitat water control structure for fish, wildlife, and agriculture; reduce maintenance.
3. **Additional multi-species habitat development** – Provide for controlled localized seasonal inundation on more frequent intervals; identify areas of opportunity only on: the Wildlife Area; other existing public lands; and private lands where cooperative agreements with willing land owners will provide mutual benefits. Estimated inundated floodplain habitat is about 3,000 acres
4. **Tule Canal connectivity** – Identify passage impediments (e.g. road crossings and impoundments); work with landowners to develop the best options for improving fish passage while ensuring water diversion capability.
5. **Multi-species fish passage structure**– Investigate the redesign of the existing fish ladder at the Fremont Weir; evaluate the feasibility of constructing a new upstream fish passage structure, operated to ensure continued maintenance of flood capacity; no substantial changes in timing, volume, and/or duration of flow; and minimal disturbance to existing land use and agricultural practices.

Long Term Implementation

A **sixth step** could be added that considers ways to pass juvenile salmon from the river through multiple routes into the Yolo Bypass in a managed scenario to utilize the high productivity of the inundated floodplain. These six measures would improve upstream fish passage and create approximately 6,500 – 10,000 acres of spring floodplain habitat for spawning and rearing of native fishes.

Building a Conservation Strategy from the Ground Up

A Conservation Strategy for the Yolo Bypass should build from these Five Steps which have been locally vetted and integrated into Yolo County conservation efforts. As we integrate the sixth step regarding juvenile salmon, we should utilize existing resources and opportunities while capitalizing on the tremendous on the ground experience of land managers in the Yolo Bypass. We should consider the following factors:

1. Productivity of Existing Land Uses
2. Multiple Conveyance Options
3. Willing Landowners
4. Existing Planning Efforts
5. Local Stakeholder Groups/Non Governmental Organizations

Productivity and Benefits of Existing Land Uses for Wildlife

The current mosaic of agriculture and management wetlands keeps the floodplain clear of dense vegetation that could impede flood flows. The flood plain provides tremendous food resources for birds and fish in the form of seeds and invertebrates. This productivity is most likely a result of the current land uses occurring in the Yolo Bypass. These land uses are dependent upon the existing **infrastructure** used to manage

water. This infrastructure could also be utilized to create and manage inundated floodplain habitat for fish. Retaining infrastructure retains the agricultural and habitat value of property, making the possibility of native fish management a palatable option for land owners. The native fish rearing would take place after the field was used for agricultural production or wetland management. This concept of “double cropping” could be tied to landowner incentive programs.

Multiple Conveyance Options

We should research and model different means of bringing water on and off the flood plain to improve salmon rearing and spawning/rearing habitat for Sacramento Splittail. These flows would also transport increased organic matter to the Delta, increasing general productivity in the Cache Slough area. Each of these options could be implemented in a tiered scenario based on river stage, but must first undergo a thorough technical analysis and subsequent discussions with affected stakeholders. Some possibilities include:

1. Bringing water down the **west side of the Yolo Bypass** to allow land owners to run water (and fish) through flooded wetlands or rice fields in a managed scenario. This may be accomplished through a structure on the west side of the Fremont Weir or through the Knights Landing Ridge Cut Canal. Ultimately, the water and salmon would flow to the Toe Drain or Tule Canal, thence downstream to the Delta. During the appropriate time period, fish laden waters could be delivered through existing managed wetlands to serve as shallow flooded habitat. These fish would then be released into the Toe Drain and sent to the Delta when ponds are drained in the Spring. Flow rates through the wetlands and fields would be managed to avoid exceeding the capacity of the Toe Drain and subsequently flooding property owners downstream.
2. It should be possible to run water from the Sacramento River to the Yolo Bypass just north of Interstate 5. This could be used to inundate land adjacent to the toe drain on the Conaway Ranch.
3. Sacramento River water could possibly be diverted into the Yolo Bypass at a location(s) between the Fremont Weir and the Sacramento Weir for controlled inundation of developed flood plain habitat. Managed diversions should not alter the historic configuration, operation and management criteria of the existing Fremont and Sacramento Weirs.
4. Flows from Putah Creek could be utilized as a water source to flood areas within a created floodplain or adjacent to the toe drain, but there shall be no new required flows beyond the Putah Creek Accord (May, 2000).
5. Water could possibly be made available from the Westside tributaries and drainages (if available) to the Bypass for fish management.
6. The tidal fluctuations of the toe drain south of Lisbon Weir could be used to inundate adjacent low lying areas.
7. It may be necessary to move water off of these inundated areas out of the Bypass to avoid impacts to landowners in the south Bypass. A structure through the east levee could move water into the Deep Water Ship Channel.

Willing Land Owners

There currently exists willing landowners in the Yolo Bypass area who have purchased property for conservation or have proposed projects. Pilot projects should be constructed in order to learn more from these ideas. Examples include:

Private Lands:

- Conaway Ranch – Conaway Preservation Group
- Sacramento River Ranch Project – Wildlands
- Yolo Ranch – Westlands Water District
- Liberty Island Conservation Bank – Wildlands
- Swanston Ranch duck clubs (Must be compatible with Partners for Wildlife Habitat Easements)
- Some duck club owners south of the Yolo Bypass Wildlife Area may be interested.

Public Lands:

- Fremont Weir Wildlife Area – Dept. of Water Resources/ Fish and Game
- Sacramento Bypass Wildlife Area – Dept. of Water Resources/ Fish and Game
- Yolo Bypass Wildlife Area (Putah Creek realignment/ tidal restoration) – Fish and Game

Existing Planning Efforts

Conservation strategies in the Yolo Bypass should work in concert with existing planning efforts including:

- Central Valley Flood Protection Plan
- Yolo Bypass Wildlife Area Land Management Plan
- Land Use and Resource Management Plan for the Primary Zone of the Delta
- Central Valley Joint Venture Implementation Plan
- NCCP/HCP programs underway in Yolo, Solano and adjacent counties
- State and Federal habitat conservation easements (Fish and Game, USFWS, NRCS)
- Putah Creek Action Plan
- Yolo County Integrated Regional Water Management Plan/Yolo Bypass Integrated Project.
- Projects currently being planned for discharge of treated effluent water by Cities of Davis and Woodland for their Water Pollution Control facilities.

Stakeholders/ Non Governmental Organizations

The diverse mix of land uses in the Yolo Bypass is nationally recognized and enjoys tremendous public support in Northern California. The CALFED vision with wildlife habitat being managed in a working landscape while providing tremendous public educational and recreational opportunities exists in the Yolo Bypass. This is largely a result of the involvement of local stakeholders through participation in the Yolo Bypass Working Group, facilitated by the Yolo Basin Foundation. There are also several other environmental organizations in the area that are actively involved in related projects. These entities should collectively be considered allies and a proven means to forge a broadly supported conservation strategy for the Yolo Bypass.

Larger Aquatic Recovery Efforts

Coordination with larger aquatic recovery efforts to protect and recover species such as Delta smelt, longfin smelt and Sacramento splittail are necessary. This Yolo Bypass Conservation Measure recognizes the need for species recovery, maintains the existing land uses and flood control functions of the Bypass, and recognizes the interests represented in the Lower Yolo Bypass Planning Forum. The Yolo Bypass projects are part of a watershed-wide approach to species recovery that should include (but are not limited to):

- Sacramento River National Wildlife Refuge flood plain habitat efforts
- Current aquatic ecosystem benefits emanating from the Sutter Bypass.

Potential Opportunities of the Proposed Yolo Bypass Conservation Measure

- Protection of valuable agriculture and ranching operations in the Yolo Bypass that contribute in excess of 100 million dollars to the Yolo County economy.
- Procurement of reliable adequate funding source for the management of the Yolo Bypass Wildlife Area and its public use programs, including the construction of a visitor center and Pacific Flyway Education Center.
- Bringing water down the west side of the Yolo Bypass will save hundreds of thousands of dollars in pumping costs and has the added benefit of bringing fish into the Wildlife Area wetlands.
- The Resources Agency could fully recognize and capitalize on the enormous potential of the Yolo Bypass Wildlife Area.
- Protection of waterfowl hunting throughout the season.
- Ability to protect the property between the city of Davis and the Yolo Bypass in a mixed use landscape of agriculture and habitat restoration. This area was recently included in the current 100 year flood plain maps.
- A Federal Section 408 Permit may not be required.

Potential Negatives of Unmanaged Flooding

- Section 408 permits required for large scale modifications

- Interruption of environmental education programs such as the “Discover the Flyway” program, which serves 4,000 K-12 Students, many of who come from underserved schools.
- Increased production of methylmercury through the creation of/conversion to tidal wetlands.
- Increased production of mosquitoes because of:
 - Presence of late spring water
 - Inability to implement “Best Management Practices”
- Negative impacts for non and semi-aquatic special status species such as the Giant Garter Snake, Snowy Plover and Swainson’s Hawk.
- Curtailment of hunting activity on public and private lands
- Loss of agricultural and ranching income.
- Negative impact on management of seasonal wetlands and agriculture.
- Adversely affects ground nesting birds.
- New agreements and easements would need to be negotiated with numerous unwilling landowners. Alternately, these landowners would be subject to eminent domain proceedings.
- Increased potential for erosion damage to flood control and navigation levees within and adjacent to the bypass.

Potential Supplemental Funding

- State and Central Valley Water Projects (SWP/CVP)
- Land owner incentive programs should continue to be developed with NRCS
- State and Federal Conservation Programs.
- Wildlife Conservation Board
- Federal stimulus money
- NAWCA Funding (requires local match)
- Central Valley Flood Protection Plan

**ATTACHMENT A: List of Lower Yolo Bypass Planning Forum Members in Support
of the Yolo Bypass Conservation Measure**

Kathy	Barnes-Jones	Solano County
Dave	Brown	Sacramento Yolo Mosquito Vector Control District
Regina	Cherovsky	Reclamation District 2035
Rose	Conroy	East Davis County Fire Protection District No Mans Land Fire Protection District
Gilbert	Cosio	Reclamation District 536
Dave	Feliz	California Department of Fish and Game
Neil	Hamilton	Reclamation District 501
Mike	Hardesty	Reclamation District 2068/2098
Tom	Hester	Ryer Island
Butch	Hodgkins	Central Valley Flood Protection Board
Henry	Kuechler	North Delta Water Agency
Jack	Kuechler	RD 2060
Robin	Kulakow	Yolo Basin Foundation
Barbara	McDonnell	DWR Division of Environmental Services
Julia	McIver	Yolo County Parks and Resources Department
Selby	Mohr	Mound Farms
David	Okita	Solano County Water Agency
Tom	Scheeler	Port of Sacramento
Don	Stevens	Glide In Ranch
Ron	Tadlock	Private Landowner
Melinda	Terry	North Delta Water Agency
Jan	Vick	City of Rio Vista
Erik	Vink	Trust for Public Land
Bob	Webber	Reclamation District 999
Maria	Wong	Yolo Habitat Joint Powers Agency
Linda	Fiack	Delta Protection Commission
Brad	Burkholder	California Department of Fish and Game