

Floodplains Reimagined Advisory Committee Bi-Monthly Meeting

August 12, 2022, 9 am – 11 am

Virtual Meeting, Zoom platform

The meeting objective was:

- Gathered input on preliminary scenario development
- Shared understanding of technical assistance process, eligibility, and funded project.

Action Items

- Julie Leimbach, Kearns & West and Barry O’Regan, KSN – Schedule meeting with Andy Duffey and Jon Munger for Floodplains Reimagined to plan outreach to landowners North of Hwy20 and relation to Sutter Bypass and Butte Slough Water Users Group.
- Julie Leimbach, K&W – Coordinate with Hans Herkert for Floodplains Reimagined to present at RD1004.

Welcome and Introductions

Julie Leimbach (Leimbach), Kearns & West, welcomed all attendees. Advisory Committee (AC) members in attendance are listed in the table below.

Name of Advisory Committee Member	Affiliation
Ally Bosworth	National Marine Fisheries Service (NMFS)
Amy Merrill	American Rivers
Andy Duffey	RD 70/1660, Butte Slough/Tisdale Irrigation
Bjarni Serup	California Dept. of Fish & Wildlife (CDFW)
Brian Ellrott	National Marine Fisheries Service (NMFS)
Craig Isola	U.S. Fish & Wildlife Service (USFWS)
Dan Fehringer	Ducks Unlimited
Ellen McBride	National Oceanic & Atmospheric Administration (NOAA)
Hans Herkert	RD 1004, Landowner
Holly Dawley	Glenn-Colusa Irrigation District
Jesús Esparza	Dept. of Water Resources (DWR)
Jon Munger	Montna Farms
Marc Fawns	Yocha Dehe Wintun Nation
Paul Buttner	California Rice Commission
Roger Swanson	Wild Goose Club, Inc.
Ryan Luster	The Nature Conservancy
Samantha Arthur	Audubon California
Socorro Reyes-Gutierrez	Yocha Dehe Wintun Nation
Steve Rothert	Dept. of Water Resources
Todd Manley	Northern California Water Association (NCWA)
Torey Byington	River Partners

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Virginia Getz	Ducks Unlimited
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The following Program and Technical Team members attended:

Program or Technical Team Member	Affiliation
Barry O'Regan	KSN
Bethany Taylor	Kearns & West
Eric Nagy	LWA
John Stofleth	cbec
Julie Leimbach	Kearns & West
Kristen Sesser	Point Blue
Kristy Dybala	Point Blue
Karis Johnston	Kearns & West
Steve Zeug	Cramer Fish Sciences

Leimbach reviewed the meeting agenda and objectives.

Preliminary Scenario Development

Leimbach introduced the Preliminary Scenario Development.

- The objective of the preliminary scenario development is for the Advisory Committee to generate additional preliminary concepts and gather feedback on these ideas to inform modeling scenarios and conversations with landowners.
- All preliminary concepts are just ideas to get the Advisory Committee members thinking of potential mechanisms to increase shallow wintertime inundation opportunities.
- The preliminary concepts are dependent on willing landowners and owners of the water infrastructure. The Program Team has only just begun to engage various landowners in development of preliminary concepts.
- The baseline hydrologic modeling will be available this winter.

John Stofleth (Stofleth), cbec, presented slides on Preliminary Scenario Development. Please refer to the presentation for further details.

- Floodplains Reimagined priorities, objectives, and related metrics served as the framework for preliminary scenario development.
- These preliminary concepts focus on river connections - changes to major infrastructure that can connect the river to the floodplain.
 - The Butte and Colusa subregion ideas only include these types of river connections.
 - The Sutter Bypass subregion includes some floodplain infrastructure and land management actions that have been developed in the Tisdale Sutter Management Plan.

Types of Actions

Actions are categorized into three types:

- River connections
- Floodplain infrastructure
- Land management

Butte and Colusa subregional scenarios are limited to “river connections” that add or modify large infrastructure that connect the river to floodplain habitat providing shallow winter-time inundation.

River Connections

- Include the following characteristics:
 - Increased number of fish
 - Increased frequency and duration of manageable flows
 - Existing and new diversions
 - Overflow and flood weirs
 - Outfall gates
 - Wintertime inundation timing to minimize impacts on agricultural production
- Potential Ideas include:
 - Butte Basin
 - Notch overflow weirs at M&T, 3Bs, Goose Lake
 - Notch flood weirs at Moulton Weir, Colusa Weir
 - Re-operate weirs and outfall gates at Butte Slough Outfall Gates (BSOG)
 - Colusa Basin
 - Re-operate diversions
 - Delevan new juvenile diversion facility
 - Canal 14A diversion facility
 - Re-operate weirs and outfall gates
 - Knights Landing Outfall Gates (KLOG)
 - Wallace Weir
 - Sites Reservoir releases
 - Sites / Dunnigan Pipeline
 - Sutter Bypass
 - Work in Progress
 - Actions are being evaluated as part of:
 - Sutter and Tisdale Bypasses Flood and Multi-Benefit Management Plan (RD 1500)
 - Lower Sutter Bypass Anadromous Fish Habitat
 - Management Planning Project (River Partners)
 - Re-Op Weirs and Outfall Gates
 - East-West Diversion Weir and Weir 5
 - Weir 1
 - Willow Slough and Nelson Slough Weirs
 - Notch Flood Weirs
 - Re-Op Tisdale Weir Operable Notch
 - Other
 - Feather River connections

Floodplain Infrastructure

The Program Team intends for floodplain infrastructure actions to improve fish passage.

Preliminary concepts floodplain infrastructure modifications in the Sutter Bypass include:

- East-west Diversion Weir and Weir 5
- Weir 1
- Willow Slough and Nelson Slough Weirs

Land Management

Preliminary concepts for land management actions in the Sutter Bypass include:

- Spreading and managing water to identify area of inundation
 - Allows for water recharge
 - Increases fish food supply
 - Allows for juvenile rearing
- Amenable to fish passage
- Can include the use of fish screens

Clarification Questions

- Clarify the meaning of “re-operate” with regard to gate function.
 - [Tech Team response] The goal is to allow for fish food to flow from the Basin out into Sac River and allow for passage from river into the basin. But that would need more detailed development.
 - [Program Team response] These are big concepts. The most critical is how to operate to minimize impacts and maximize benefits. With modeling and proposed concepts from landowners, you consider the water levels you want or don't want on your land. When you see opportunities, most are existing connections. The center of the program is defining that opportunity and how to operate it.
- Clarify preliminary concept for re-operations of both Knights Landing Outfall Gates and Wallace Weir. What is the intention for juvenile fish in these concepts?
 - [Program Team response] When the river is higher, juvenile fish can be captured on the other side. We can test the re-operation of Wallace Weir to move juvenile fish with zero infrastructure change.
 - [Tech Team responses] The concept is in the development phase and it is not yet determined if juveniles can access the lower portion. It will require more detailed analysis before providing a definitive answer.

General Comments

- Recommend quantifying the increased area of potential inundation in addition to the magnitude and duration of inundation.
 - Topography will drive the area of inundation.
 - [Tech Team response] Modeling will show those inundation area and depth of inundation.

Breakout Group Feedback on Preliminary Scenario Development

Leimbach instructed participants to choose from three breakout sessions – Butte, Colusa, and Sutter Bypass – intended to serve as a space to review and provide feedback on the preliminary scenarios and to generate new ideas for river connections.

Butte Subregion Breakout Group

- Facilitator: Karis Johnston, K&W
- Technical Team: Jon Stofleth, cbec
- Attendees: Amy Merrill, American Rivers; Hans Herkert, RD1004; Roger Swanson, Wild Goose Club; Virginia Getz, Ducks Unlimited; Ryan Luster, TNC; Todd Manley, NCWA

Breakout Group Reflections on slide Content – Butte Basin

Slide - Objective Statement Slide

- “Improved Pacific Flyway bird populations” – Suggestion to change to “bird habitat” instead of “bird populations”

Slide - Types of Preliminary Actions

- Land Management
 - Manage water on the field unit
 - Suggestion to add “bird habitat”
 - Suggestion to add “multi-benefit”; multiple benefits can be happening simultaneously

Preliminary River Connection Actions

- M&T
 - Recommend adding to the map to show the two sources of water coming together south of M&T. Some of the channels have very dense riparian.
- 3B’s
 - Recommend including Caltrans bridge replacement in project assessment.
 - Recommend including Llano Seco Project in modeled scenario.
 - Llano Seco Project parties involved including: TNC, CDFW, USFWS, Upper Butte Basin Wildlife Area, Northern CA Regional Land Trust, and Richard Theriot – landowner and Parrot Investment.
 - Project objective: Revamp the water conveyance system on the Llano Seco Ranch for agricultural lands and wetlands. Restore the original functionality of conveyance on the Llano Seco Ranch managed wetlands. There is drainage at Angel Creek and the Slough.
 - Status: Long-term multi-year investment. Issuing joint NEPA and CEQA documents in September.
 - Recommend discussing with these landowners when the time is right. The owner and ranch manager on this project play big roles in this system.
 - Recommend addressing the flow split system/easement in relation to preliminary concept.
 - There is a Federal levee system by the Butte Basin split flow system/easement. The flow split is located on the east side of this project and there is planned restoration there.
- Notch Moulton Weir

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- Clarification around fish access. How do you get juvenile fish on and off the floodplain if you are increasing the depth of an already inundated area? Or is the purpose to transport fish food because of flow through?
 - The inundation would end up increasing the depths of lands that are already flooded. Would notching the weir result in a NEW inundation or only increase already flooded rice fields.
- Concerns
 - Traffic access interruptions during inundation. At 2,500 cfs, the water gets deep and will wash out roadways [Herkert]
 - Inundation degrading levees and rice fields. If we are notching the Moulton Weir and the system is charged (already flooded), wave actions and white caps could cause damage to the levees and the rice fields.
 - Infrastructure resiliency under climate change
 - Recommend modifying infrastructure for resiliency under climate change conditions. Current infrastructure will not be able to contain increased dramatic precipitation given Climate Change scenarios.
 - Recommend modifying River Road for resiliency regardless of modification of the weir.
- Notch Colusa Weir
 - No comments at this time.
- General Comments
 - Recommend review of water rights and potentially use this program to allow for expanded access to water.
 - Recommend considering identification of landowners who would benefit from adding a lower pump to increase the time they have access to their diversion in early fall and summer. Some landowners have limitations on the magnitude they can divert/pump because the drought has decreased flows below their diversion works. The infrastructure was put in decades ago before low flows were this common.
 - Recommend development of safe harbor agreements for landowners to ensure they are not liable for fish kills, etc. Consider process for doing this moving forward?

Colusa Subregion Breakout Group

- Facilitator: Julie Leimbach, K&W
- Program Team: Lewis Bair, RD108
- Participants: Bjarni Serup, CDFW; Socorro Reyes-Gutierrez, Yocha Dehe Wintun Nation; Curt McCasland, USFWS; Torey Byington, River Partners; Ally Bosworth, NMFS

Characteristics of the Colusa Subregion

- Biological resources
 - Juvenile salmon
 - There are no juvenile salmon on the west side of the Sacramento River in the Colusa Basin.
 - Juvenile salmon are excluded by either fish screens at agricultural diversions or water is coming from west-side run-off.
- Water management
 - More control with existing infrastructure and may be more flexible than other regions
 - Unique lack of levees on both sides
- Land management
 - There is a lot of refuge property in the Colusa Basin.
 - Most agricultural land is converted through NRCS programs.
- Stakeholders
 - Stakeholders outside of the Colusa Basin tend to be unfamiliar with the Lower Colusa Basin and its hydrology. Passive ability for fish to move on and off the floodplain. Frontier more than the bypass on the west side. Development needs to be incremental.
 - Landowners in the Lower Colusa Basin includes a great group of agricultural landowners and private wetlands managers who have worked with NRCS and are trying to act in support of the environment.
- Water Quality
 - Timing
 - Uncertainty around seasonality
 - Summer season data demonstrates high salt levels.
 - Winter anecdotal data includes fish rescues prior to construction in 2013.
 - Delevan Refuge drains into Colusa Drain in the spring which could compromise the salmon.
 - Water Quality Challenges
 - State Board-designated impaired watershed
 - Salinity
 - Agricultural drain water results in a high level of salts in the Colusa Drain and Drop. This issue seems less severe on the wetland properties.
 - Aquatic vegetation
 - Potential to impair fish passage and water quality
 - Magnitude
 - When water levels are low, the Colusa Basin doesn't receive much input from the lower Sacramento River to sufficiently dilute the water.

- Water quality data
 - Water Board listed the Colusa Drain as an impaired watershed.

Issues to Address

- Bring in clean water supply sources from upstream as appropriate to address water quality issues.
- Add a fish screen at every pump and pumping restrictions at certain time and GCID is recapturing water.
- Develop salmon connectivity for egress and ingress.
- Reduce poaching in the Colusa Basin drain area.

New River Connection Suggestions

- Historic Sloughs - Proposed idea to restore historic sloughs that flow into and out of the KLOG and the Yolo Basin through the Ridge Cut.
 - Sycamore Slough area - Potential to put water in these sloughs to Lower Colusa Basin floodplain
 - Delevan Lateral - Bring juvenile salmon through Delevan lateral and move them down through a food rich watershed
 - Canal 14A at the lowest end of the Colusa Basin - 300 ft canal to the Roosevelt Ranch. It is a lower ponded area.
- Delevan Refuge
 - Land Management Objectives
 - Delevan Refuge charge is to manage for migratory birds and that cannot be compromised by introduction of salmon.
 - Managing for Birds and Salmon Together
 - Concerns about the target for salmon rearing during the most important season for waterfowl
 - Synergistic characteristics of salmon and birds together
 - Produce Nectonic crustaceans
 - Issues to Address for Juvenile Salmon Introduction
 - Sequence as the 2nd, 3rd 4th issue to address for Colusa Basin
 - Ensure juvenile salmon egress - Currently, ponds don't drain all the way and the evaporative drawdown provides habitat for shorebirds.
 - Screen Lift Pump facilities
 - Maintain wetlands - Currently working with GCID on workarounds to receive water from GCID.
- KLOG
 - KLOG is designed to move water one way. It's a screened gate and could have water flow the other way.
 - Juveniles don't currently have access.
 - Exception might be extreme flooding in 25 years when the water backs up to the Ridge Cut.

Process

- Suggest cultivating a shared understanding of the system.
 - Review of hydrology and biological resources in the Colusa subregion

- Review system functionality and flooding
- Hydrology
 - Baseline operations and spatial distribution of juvenile salmon and birds
 - High flows spatial distribution of juvenile salmon
 - Additional inundation areas under consideration by Floodplains Reimagined preliminary concepts
 - Current infrastructure and operations to exclude juvenile salmon
- Recommend broader landscape evaluation of need and tradeoffs for juvenile rearing floodplain and in-channel habitat in the Sacramento River, Yolo Bypass Cache Slough, and the Sutter, Butte, Colusa regions.
 - Identify the quantity of floodplain habitat in relation to other types of juvenile rearing habitat and on existing and potential salmon populations.
 - Identify the potential concerns and challenges to be addressed across the floodplain regions.
 - Evaluate maximizing the benefits of a diversity of juvenile rearing habitats including the existing side channels with juvenile rearing in Sutter and Yolo. Estimate of 75,000 acres of floodplains in Yolo Bypass Cache Slough and Sutter, Butte, and Colusa regions. This estimate should be updated.
 - Evaluate the need for creating another artificial side channel floodplains in Colusa subregion.
 - Identify subregional management goals for salmon and birds for each subregion related to management of birds and salmon. Use the subregional goals to consider how to use the Colusa subregion and back that out into a decision tree.

Representative Colusa Basin Landowner Interests

The Colusa breakout group included three landowners who expressed their interests as follows. This group does not intend to represent all landowners in the Colusa Basin.

- Yocha Dehe is one of the larger landowners along the Ridge Cut and a potentially affected adjacent landowner.
- River Partners projects – Willow Bend and three projects downstream of Willow Bend – opportunities or need for adaptation
- USFWS Delevan Refuge – maintain charge to support migratory bird populations

Sutter Bypass Subregion Breakout Group

- Facilitators: Barry O'Regan, Eric Nagy
- Participants: Andy Duffey, Brian Ellrott, Ellen McBride, Jesus Esparza, DWR; Jon Munger, Paul Buttner
- Notetaker: Bethany Taylor

Existing Work

- KSN is working with Jesús Esparza on the following:
 - Farming activities
 - Levees that are in substandard condition
 - Restoration with Butte Slough effort for salmon
- The Floodplains Reimagined approved Technical Assistance for Jon Munger, Sutter Bypass Butte Slough Water Users Association which plans to meet in September to kick off a proposed project.
 - Question to clarify details about the Butte Slough Outfall Gates. [Munger]
 - [NMFS] is actively engaged with DWR right now and looking at two separate paths: [McBride]
 - Short-term 5-year solution to address the health and safety issues there.
 - Long-term 10-year solution depending on a number of interim fixes or it could be building an entirely new facility.

Sutter Bypass Region Issues

Deferred Maintenance

- The bypass is a flood facility, first and foremost [Duffey]
- Invasive Aquatic Vegetation
 - The overgrown, uncontrolled vegetation in the channels is of the biggest maintenance issues. [Munger]
 - The east side of the Sutter Bypass received removal of vegetation and there seems to be progress there.
 - The west side of the Sutter Bypass is untouched, and the issues are compounding for the overall flood control system.
 - Mechanical vegetation removal is more expensive and more invasive for fish species than a chemical herbicide treatment would be. [McBride] Agreement around this issue.
 - Climate change is compounding these vegetation management issues. Efforts will need to be managed on a regular (e.g., annual) basis to keep up with mitigation of the effects.

Agriculture [Munger]

- Agriculture is compatible land use for the Bypass as a flood facility
- Keeping farming viable is a major concern
- Active Agriculture can help with some of the long-term land management issues in the bypass

Water Supply [Munger]

- Active agriculture requires a reliable water supply.
- Water conveyance and a reliable supply is a major concern for the Bypass.

California Rice Commission

- The California Rice Commission is one of many working on conservation in the Sutter Bypass.
 - One goal is to develop a Natural Resources Conservation Service (NRCS) practice for which growers could register. [Buttner]
 - Work to optimize habitat for rice fields and for salmon
 - Currently partnering with UC Davis on a pilot testing phase using hatchery fish; fourth year of field work.
 - To date, study shows that fish are able to move through the rice fields and boxes successfully.
 - Researchers will conduct additional evaluation next season.
 - Study is an example of critical field-level action taking place. [O'Regan]
 - Caveat to not oversell it, as not all questions are answered yet. There may be difficult challenges ahead. It's important to make people feel at ease with the project and its goals and not get too ahead of ourselves. [Buttner]
 - Agreement around that thought, and a good question for the group. One approach might be to identify and prioritize issues to be addressed. I hope we can engage all people needed for each item but don't have to have the group involved for everything. [McBride]
 - General inquiry about landowner community on this project. [Ellrott]
 - Unsure. Only landowners that could participate in the project are aware of it. I do have informational materials for distribution. [Buttner]

Additional Information and Engagement

- Group members did not provide suggestions for other interested parties, agencies, initiatives, or landowners to engage with the Advisory Committee.
- Group members relayed that the following, additional information could be helpful:
 - Information on scope and cost of operations and maintenance, as well as related roles and responsibilities
 - Request to clarify the primary problems related to land management and farming and how they translate to problems with fish populations. [Ellrott]
 - Request to consider how proposed projects are potentially affected by deferred maintenance within the existing flood system [Duffey]
 - Request to consider how/who will be responsible for maintenance of proposed new or rehabilitated facilities and how those actions might affect maintenance by adjacent landowners [Duffey]

Technical Assistance

O'Regan discussed the Floodplains Reimagined Technical Assistance Program process and eligibility. See the Technical Assistance document for further information.

If any landowner or water infrastructure manager would like to explore concepts for technical assistance, please call Barry O'Regan at 209-323-9684.

Process

- The Floodplains Reimagined Program is providing technical assistance to landowner with the objective to enable them to test and plan management actions on their lands to support the Floodplains Reimagined objectives. The Program intends to promote voluntary activities by landowners to contribute to the overall success of Floodplains Reimagined.
- A bottom-up approach is expected to be more successful with landowners than top-down.
- The Program Team is currently conducting individual and group landowner meetings to identify and discuss potential technical assistance projects. Please contact Barry if you are interested in exploring potential concepts.
- The Program Team will help develop projects with landowners and the Steering Committee will review concepts in relation to the evaluation criteria on a rolling basis.
- Advisory Committee members may share the Technical Assistance forms to provide a model or example to those interested in the Program.

Eligibility

- The Program is open to both private and public land managers, tribes, and water infrastructure owners.
- Please contact Barry if you are interested in exploring potential concepts.

Approved Technical Assistance

John Munger presented the Sutter Bypass Water Users Association (SBWUA) project which received technical assistance from Floodplains Reimagined. He said that it's important to reiterate that reconnecting the floodplain is important for the overall viability of the Sutter Bypass ecosystem, and that there are experts and funding available to help with this effort.

- Project Purpose - Model the proposed project portfolio of actions developed under Tisdale Sutter Bypass Management to inform landowners of the benefits, areas, frequency, and depth of inundation.
- Need - The project meets the landowners' needs to:
 - Inform their decision making on preferred actions and benefits of the proposed actions.
 - Understanding of the impacts of potential projects on the land and the implications for future farming in the Sutter Bypass. Montna Farms and various duck clubs are especially interested in the effects of the actions on properties and related income.
 - Understand the Tisdale Notch project in greater detail as this may ease some concerns with some of the actions being considered in the Sutter Bypass.
- Previous Work - The Sutter Bypass subregion has a more advanced portfolio of projects and willing landowners as compared to the Butte and Colusa subregions. The Sutter Bypass landowners submitted a portfolio of proposed shallow winter-time inundation projects as part of the Tisdale-Sutter Management Planning process and to the Voluntary Agreements.

Questions and Comments

Structural Analysis

- Clarification regarding the eligibility of structural analysis for technical assistance. Specifically, could technical assistance cover examination of the structural capacity to withstand higher flows resulting from potential weir reoperation. [Duffey]
 - [Program Team] O'Regan will consider if structural analysis of a facility is within the scope of technical assistance.

Schedule Update

Hydrodynamics Model Results

Leimbach shared that results from the hydrodynamics base model will be ready to present to the Advisory and Steering Committees by Winter 2022-2023. The Committees will discuss the results and allow for adjustments to program-related ideas.

The Program team will continue to conduct individual landowner meetings for technical assistance and work to build contacts in the weir areas who might assist with promotion of the Technical Assistance Program.

Individual Landowner Meetings

- Andy Duffey requested to convene a meeting of landowners north of Hwy 20 in relation to the Sutter Bypass Water Users Association scenario development and modeling. He offered the RD70 Board meeting as a potential meeting venue.
- Hans Herkert requested to convene a meeting or present to landowners in Butte including RD1004.

Future AC Meetings

The next Advisory Committee meeting is scheduled for Friday, Oct. 14.

Adjourn

Leimbach thanked attendees and adjourned the meeting.