

## Floodplains Reimagined Advisory Committee Bi-Monthly Meeting

October 14, 2022, 9 am – 11 am

Virtual Meeting, Zoom platform

The meeting objective was:

- Shared understanding of input gathered from Advisory Committee members on preliminary concepts
- Input gathered on proposed Approach to Water Management Modeling

### Action Items

- Jenna Duffin, cbec, and Craig Isola, USFWS – Connect on wetlands management information.
- Scott Wright, cbec, and Kristen Sesser, Point Blue – Connect on sharing water depth data.
- Technical Team – Assess rice field flooding adjacent to refuges and look for differences in flood timing (some rice fields near refuges start flooding mid-October to account for hunting season). [Breakout session item]
- Technical Team and Program Team – Assess the need to showcase extreme baseline conditions, given climate change (i.e. extreme dry/drought years and extreme wet/flood years). [Breakout session item]
- K&W – Connect with the GSPs to flesh out potential scenarios with groundwater benefits
- Hans Herkert, RD1004 – Connect with Barry O’Regan, KSN re: technical assistance for lifting pumps.

### 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)
Andy Duffey	RD 70/1660, Butte Slough/Tisdale Irrigation
Baker Holden	U.S. Fish & Wildlife Service (USFWS)
Bjarni Serup	California Dept. of Fish & Wildlife (CDFW)
Brian Ellrott	National Marine Fisheries Service (NMFS)
Craig Fleming	California Department of Fish and Wildlife (CDFW)
Craig Isola	U.S. Fish & Wildlife Service (USFWS)
Dan Fehringer	Ducks Unlimited
Hans Herkert	RD 1004, Landowner
Jesús Esparza	Dept. of Water Resources (DWR)
Jim Earley	U.S. Fish & Wildlife Service (USFWS)
Jim Wallace	Landowner, Wallace Bros. Farms

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Justin Fredrickson	California Farm Bureau Federation
Mark Thompkins	FlowWest
Matt Brown	U.S. Fish & Wildlife Service (USFWS)
Roger Cornwell	Landowner; Sutter Mutual Water Co.
Ted Trimble	Western Canal Water District
Todd Manley	Northern California Water Association (NCWA)
Virginia Getz	Ducks Unlimited

The following Program and Technical Team members attended:

Program or Technical Team Member	Affiliation
Barry O'Regan	KSN
Bethany Taylor	Kearns & West
Bronwen Stanford	SFEI
Chris Campbell	cbec
Eric Nagy	LWA
Eric Holmes	Kearns & West
Jenna Duffin	cbec
John Stofleth	cbec
Julie Leimbach	Kearns & West
Kristen Sesser	Point Blue
Lewis Bair	RD 108a
Karis Johnston	Kearns & West
Kayla Kelly-Slatten	Kearns & West
Mark Cowan	LWA
Scott Wright	cbec
Steve Zeug	Cramer Fish Sciences

Leimbach reviewed the meeting agenda and objectives.

### Report-out on Input for Preliminary Scenario Development

Leimbach reoriented the group to the main concepts from the August Advisory Committee presentation on the Preliminary Scenario Development.

#### Reorientation on 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.
- Presented concepts are preliminary only and dependent on the willing participation of landowners. Ideas are not limited to those presented.
- Baseline hydrologic modeling results will be available starting winter 2022.
- For the Butte and Colusa regions, the preliminary concepts presented are modifications to infrastructure that increase river connections to the floodplain.
- The Sutter Bypass region includes some preliminary concepts for modification to floodplain infrastructure and land management actions.

The Program Team reported out on input from the August Advisory Committee Meeting breakout discussions of the Preliminary Scenario Concepts. During the breakout groups, Advisory Committee members gave reactions and input to cbec's presentation on Preliminary Concepts Development.

## Report Out from Breakout Discussions from August Advisory Committee

### *Report Out Feedback for Butte Subregion Breakout Group, August AC Meeting*

- Participants discussed incorporating more existing projects and infrastructure into the concept development process.
  - Examples: M&T, Llano Seco Project
- Participants suggested that the concepts account for landowner risks.
  - Example: Development of safe harbor agreements ensuring landowners are not liable for fish kills
- Participants suggested that the concepts address road access during periods of inundation.
- Participants suggested that the concepts account for impacts on water rights.

### *Report Out Feedback for Colusa Subregion Breakout Group, August AC Meeting*

- Current conditions: juvenile salmon are excluded from the Colusa Basin by fish screens.
- Participants suggested bringing in clean water supply sources from upstream to address water quality issues with salinity.
- Participants suggested adding a fish screen at every pump and restricting pumping to specific times.
- Participants suggested developing connectivity for juvenile salmon egress and ingress.
- Participants acknowledged the issue of poaching in the Colusa Basin Drain.
- Participants suggested addressing potential tradeoffs between salmon and bird management for the whole Colusa subregion and specifically at Delevan Wildlife Refuge.
- Participants suggested broader evaluation of need and tradeoffs for juvenile salmon rearing floodplain and in-channel habitat in the Sacramento River, Yolo Bypass Cache Slough, and the Sutter, Butte, and Colusa regions.
  - Suggestion for subsequent evaluation of the need and benefit of creating another juvenile salmon rearing floodplain in Colusa.

### *Report Out for Sutter Bypass Subregion Breakout Group, August AC Meeting*

Participants want to address the following issues:

- Maintenance needs and responsibility for long-term maintenance of the Sutter Bypass flood management system
- Removal and management of aquatic invasive vegetation from the East and West Borrows of the Sutter Bypass
- Maintain viability of agriculture
- Maintain reliable water supply conveyance

### *Additional Comments on Preliminary Concepts*

Leimbach reported out on comments received after the August Advisory Committee meeting. A member requested development of more concepts that focus on modifying flood structures to

inundate the Sutter Bypass more frequently and for longer durations during the wintertime to increase floodplain connectivity.

Participants also discussed the science being conducted by the Rice Commission and UC Davis to understand juvenile salmon ingress and egress on surrogate floodplain rice fields.

Participants requested additional information to evaluate feasibility and benefits of preliminary concepts to include:

- Scope, cost of operations and maintenance, roles and responsibilities for maintenance of infrastructure;
- Effects of flood management facilities on preliminary concepts and effects of development of those concepts on maintenance of flood management system facilities.

## Approach to Water Management Modeling

Jenna Duffin (Duffin), cbec, presented on the Approach to Modeling Water Management for rice fields for both public and private wetlands.

### Management Plan Objectives

- Wetland types – rice fields, private wetlands, or public wetlands – receive a specific flood-up and drawdown schedule. Each wetland type has a specific target depth or water level.
- The Technical Team plans to adjust terrain data in areas of bad LiDAR data where there is no representation.

### Simplifications

Cbec reviewed the assumptions they made about the fields, water year types, and water delivery systems in order to develop the hydrologic model.

- The Technical Team does not plan to model the details of the water delivery system due to uncertainty around the location of field drainage and complexity of the system.
- Rice fields and wetlands are assumed to have a local water source via a delivery system.
- Model includes variability, understanding that data limitations exist, and the model will not be able to predict climate change conditions.

### Flooding Schedule

#### *Rice fields*

- Flood-up occurs over two weeks in November.
- A target depth of ten inches would be maintained through winter.
- Drawdown would occur over one week in February.
- Schedules are still in the proposal stage and depend on discussions with land managers.
- Comments
  - A ten-inch water depth seems accurate for managed wetlands, but could be a little deep for some rice fields. [Herkert, RD 1004]
    - Additional concern that 10 inches may be too deep. [Brian Ellrott, NMFS]
    - Point Blue, The Nature Conservancy, and Audubon generally recommend 10 inches as an average depth. We have data on management of water

depth. The water levels fluctuate in actuality, but an average depth is needed for modeling purposes. [Kristen Sesser, Point Blue]

- The Technical Team requests water depth data from Point Blue and any anecdotal input on water depth.
- The modeling will include variances between target depths and habitat suitability for birds. [Technical Team]
- Late season spring and summer irrigations were conducted for water soil management. [Technical Team]

### *Private wetlands*

- Includes Butte Sink duck clubs and other lands managed for waterfowl
- Flood-up simulations begin October 1.
- Proposed average target depth is ten inches.
- Drawdown would begin March 1 and continue through mid-April – approximately six weeks.
- The depth and conditions for wetland reserves and easements would vary somewhat from wetlands used for waterfowl.
- Comments
  - Observation that the Butte Sink also floods up in May or June for approximately two weeks to manage the cockleburs and hydrate the trees. Some of the hunting clubs do that as well. [Andy Duffey, Roger Swanson; landowners]
    - RD 1004 also uses the spring flood-up to suppress invasive vegetation in the managed wetlands. [Hans Herkert, RD 1004]
  - Beginning flood-up on October 1 is not representative of the Butte Sink; this year we started in August. Should the schedule be for September when we are taking on a lot of water?
    - The model accounts for the areas that are already flooded up by October 1. [Technical Team]
  - The flooding schedule map currently is missing information on some of the private wetlands. Craig Isola, USFWS, will provide management information on 2,000 acres of conservation easements.

### *Public wetlands – Little Dry Creek, Gray Lodge, Howard Slough, Rancho Llano Seco*

- Field location will determine the staggered, flood-up and drawdown schedules.
  - Flood-up
    - Some locations would begin flood-up on October 1.
    - The majority of locations would be flooded up by November 1.
    - All locations would be flooded up by December 1.
  - Drawdown
    - Drawdown would begin on March 1 and last for approximately one month.
- Proposed average target depth is ten inches.
- Comments
  - In state wildlife areas, we take on water to irrigate approximately six weeks after the ponds are drawn down. This is intended to germinate the cockleburs but also

benefit the waterfowl grass and the smartweed. Water is held on the surface for 10-14 days and then released. [Craig Isola, USFWS]

- The springtime drawdown is critical for managing wetlands to produce desirable vegetation for waterfowl. [Virginia Getz, Ducks Unlimited]

### *Public wetlands - Federal / National Wildlife Refuge*

- Flooding schedules would be dependent on each individual field unit.
  - Flood-up would occur between August and December and last for +/- two weeks.
  - Average target depth is ten inches but would be adjusted to appropriate levels for each field unit.
  - Drawdown would occur between March and May and last for +/- two weeks.

### *Additional Questions and Comments*

- Long-term maintenance is required to develop an ecosystem that provides benefits and habitat. Need to identify entities and operations plans for maintaining this water management process system. [Jesús Esparza, DWR]
- Do the baseline assumptions account for climate change conditions such as drought and wildfires? Has prescribed fire been considered? [Justin Fredrickson, California Farm Bureau Federation]

## Breakout Sessions

The Advisory Committee went to breakout sessions to provide any further comment and discussion on the proposed Watershed Approach to Water Management Modeling as presented by cbec in the Plenary. The summary of the comments and discussion from the three breakout sessions are provided below:

### Room 1 Breakout Session

- Facilitator: Karis Johnston, K&W
- Technical Team: Chris Campbell, cbec; Steve Zeug, Kramer Fish Sciences; Kristen Sesser, Point Blue
- Program Team: Lewis Bair, Mark Cowan
- Attendees: Jim Earley, USFWS; Jim Wallace, landowner – Wallace Bros. Farms; Roger Cornwell, Sutter Mutual Water Co. / RD 1500; Mark Thompkins, FlowWest

### Fish Food Production

- This hydrologic modeling is not incorporated into the model because it's a higher level of detail not yet being examined. [Technical Team]
- The Technical Team has drafted juvenile salmon presence into the model, but the model does not include fish food production where there are currently no juvenile salmon. This is a gap to be filled in future modeling. [Program Team]

## Climate Change and Modeling

- Climate change is considered a separate complication and will not be included in the baseline modeling. We're imposing typical water schedules. [Technical Team]

## Flooding Schedule

- Rice Field 10-inch depth
  - Please clarify the proposed 10-inch water depth. If 10 inches is the actual average that incorporates many variations, it's doubtful that they can all be accounted for in the models. If the average depth was seven inches, and it were to flood by five additional inches, it would still be suitable for ducks. Is 12 inches a cut-off depth? Are we concerned about low and high thresholds? [Kristen Sesser, Point Blue]
  - Habitat suitability for some waterfowl species has a hard cutoff of 12 inches, which is something we will examine more at the next Bird Model Ad Hoc Group Meeting. We'll consider if there's a sliding scale that allows for partial suitability. We know the depth of inundation can be between six and 14 inches. Landing on an average depth of 10 inches was a considerable compromise. [Technical Team]
  - The modeling incorporates topographic variability and habitat suitability criteria. Conditions for waterfowl, for example, can oscillate between suitable levels or excessively high levels, but are also affected by natural variability due to rainfall or water pulses moving through the system. The 10-inch depth is considered a compromise not just for topography but for suitability for waterfowl. [Technical Team]
- Colusa Drain - There are rice fields along the Colusa Drain that regularly flood unintentionally. What can we expect from the modeling for those properties? [Jim Wallace, landowner]
  - Any time there's a flood pulse or storm system that moves through, the Technical Team will be doing habitat suitability calculations and inundation outputs for those lands. When comparing scenarios, maybe we identify opportunities for additional water management or recharge potential. [Technical Team]
- Butte Sink - For an area such as the Moulton Weir, a major weather event could flood the Butte Sink up to 2-3 feet, which leads to running the weir with excess water and exacerbating the situation. [Roger Swanson, Wild Goose Club]
  - Once we develop the baseline tool, we'll be running hypothetical scenarios. We've got internal basin runoff events to help us determine how are we exacerbating inundation depths or are there things we can do to mitigate that issue. It's a complicated network of fields and drainage facilities and we are determining if there will be a landowner benefit and thinking about actions that could be promoted on the landscape. [Technical Team]
  - Modeling is about finding what works for landowners. That's our boundary. We aim to get folks to find what actions work for them and that they're agreeable to them.

## Room 2 Breakout Session

- Facilitator: Julie Leimbach, K&W
- Technical Team: Scott Wright, cbec; Bronwen Stanford, SFEI
- Program Team: Barry O'Regan, KSN

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- Participants: Ally Bosworth, NMFS; Andy Duffey, landowner / RD 70 & 1660; Baker Holden, USFWS; Bjarni Serup, CDFW; Brian Ellrott, NMFS; Jesús Esparza, DWR

## Action items

- Connect with the GSPs to flesh out potential scenarios with groundwater benefits
- Hans Herkert, RD1004 will connect with Barry O'Regan, KSN re: technical assistance for lifting pumps.

## Flooding Schedule

- Satisfied with the proposed flood schedule assumptions as presented by cbec. The proposed flood schedule levels are for the landowners. It's really about the landowners feedback [Brian Ellrott, NMFS and Bjarni Serup, CDFW]
- Flood management and fisheries management gets layered on the baseline hydrologic modeling.
- Interested in how the ecosystem benefits could work with groundwater benefits and Flood MAR [Jesus Esparza, DWR]

## Technical Assistance

- Is there funding and eligibility of projects for lifting water diversion pumps so they can reach the creek at lower water levels. Some property owners have had a problem accessing water because the level of the river is below their pump intake. [Hans Herkert, RD1004]
  - USBR has funding for 50% match for these types of projects including raising pumps. [Barry O'Regan, KSN]

## Room 3 Breakout Session

- Facilitators: Kayla Kelly-Slatten
- Technical Team: Jenna Duffin, cbec
- Program Team: Eric Nagy, LWA
- Participants: Craig Isola, USFWS; Justin Fredrickson, California Farm Bureau Federation; Virginia Getz, Ducks Unlimited

## Baseline Assumptions

- Baseline Assumptions - Do average baseline assumptions take account of recent drought and reservoirs restrictions not before seen? [Justin Fredrickson, California Farm Bureau Federation; via Chat]
  - What period of record are you using as the basis for an average water year?
    - Specifically for the managed fields it comes down to where we have data. For rice fields, we use 15 years of data and then determine what was managed based on four years of inundation extent of average water years. Private and public wetlands tend to be managed the same way every year and we have approximately 10 years' worth of data. [Technical Team]
  - Would you do any sort of projection or extrapolation for this study to use the data you have to anticipate the frequency at which fields are inundated? Would you consider how that frequency shifts with climate impacts? [Program Team]



- We don't have anything like that incorporated into the model. We will use our existing set of data for all 22 water years where we will be plugging in variable flows. For drought years, we will not see any additional flooding, so we will not see any difference between baseline and alternatives. [Technical Team]
- A climate impact sensitivity tweak showing variability would be useful. Highs and lows such as bigger flooding and longer droughts. [Fredrickson, California Farm Bureau Federation]
- Given how complex the modeling is, I would not recommend cbec try to incorporate climate impacts. This may be more of a post-processing analysis with some statistical work showing how conditions would deviate. Might be more of a global analysis, but there is no way to not address climate. [Program Team]
- Suggestion for the Technical Team to provide a "climate change" scenario, modeling the baseline within extreme parameters (extreme drought/heat year and unusually wet year).
- Baseline conditions are meant to represent an average rather than extreme water years. The purpose is to represent the average conditions and what fields would be managed during an average year. Most actions in the scenarios will be taken during wet years when there is water to move onto the floodplains. Therefore, average representation is better for those scenario checkups. [Technical Team]
- Reminder that these actions are voluntary, and people will need to select which actions are suitable for their land and land use. Conditions need to be suitable for these scenarios to play out. [Technical Team]

### Assumptions and Simplifications for Baseline Flood Schedule

- Hunting Club Flood Up Schedule
  - The change in the Butte Sink is relative; it's not absolute. How much variability can be incorporated? For example, if water is raised four inches, then 70% of the property is in the desired conditions. If you raise it six inches, then 70% of property is *not* in the desired conditions. [Virginia Getz, Ducks Unlimited]
    - Currently, we just want baseline conditions so we can begin to build out model and propose scenarios for introducing waters.
    - Important to remember what the modeling period is with rice water depths. There is water on rice fields later than March for shorebirds. That will be shallow water – less than 10 inches. That water is put on initially for straw decomposition and hunting as a secondary use. With four inches of depth, you would have a lot of straw and land showing. [Getz, Ducks Unlimited]
      - My understanding is that rice decomposition occurs before October for the most part so we are not including that in our model because it is outside our model simulation timing. We are more focused on the winter flood-up that occurs for the longer period of time. We don't want to decrease steps to a level that is more representative of decomposition. [Technical Team]
- Group consensus to flooding in November.
- Rice Field Flood Up Schedule

- Quite a few rice fields flood up on the third Saturday of October. In good water years, they may flood even by mid-October. [Craig Isola, USFWS]
  - Will take this observation to the Technical and Program Teams and look at the rice fields directly adjacent to the refuges to see if there is any additional correction or data to verify.
- Freeboard
  - Denise Carter and Virginia Getz propose that four inches of freeboard is not enough for a rice field. [Getz, Ducks Unlimited]
  - Four inches of freeboard is based on the lowest point of the berm which would be the minimum freeboard on the field. It would increase at other places along the field. We set that so we could get a similar water capacity on those fields as if we were imposing rice checks as well. It is a sweet spot that gets us the best volume and is also generally representative of the minimum freeboard. [Technical Team]
  - There are clubs without internal levees, so if you were a foot above freeboard on the external levy, there could be uncontrolled flooding. It is important how the freeboard will be used, in particular in the Sink. [Getz, Ducks Unlimited]
    - LiDAR data was collected on the berms. Using this data, we tried to find an average freeboard between the water surface elevation and the berm height. We lowered the LiDAR data by a foot for the exterior field berm outside of Wild Goose Club. Anywhere with more detail, we are overriding those berms with taller berms especially along some major roads. We corrected every berm in the Butte Sink to a one-foot freeboard. Then we corrected again where we have berms that we know are higher. [Technical Team]

### Additional Items

- Vegetation Removal - On deferred maintenance, past notes mention chemical and mechanical options for removal of invasive vegetation, but what about fire? Has prescribed fire ever been considered? [Fredrickson, California Farm Bureau Federation; via Chat]
- Policy Repercussions - I assume the process will lead to policy questions such as will there be voluntary agreements? Will things continue status quo? The CA Water Board's Phase II unimpaired flow scenario is another big policy question.
  - The Program Team is looking at policy as part of the feasibility study. Modeling the baseline is our current focus.

### Schedule Update

#### Ad Hoc Group Meetings

- Bird Model – Tuesday, Oct. 25
- Salmon Benefits – Monday, Nov. 14

#### Future AC Meetings

The next Advisory Committee meeting is scheduled for Friday, .

### Adjourn

Leimbach thanked attendees and adjourned the meeting.