

ADVISORY COMMITTEE MEETING SUMMARY

April 18, 2023, 9 – 11 am
Zoom Virtual Meeting

Meeting Objectives

- Shared understanding of the baseline hydrodynamic model results and initial habitat suitability model results
- Shared understanding of the model results of river connection actions and the related habitat suitability benefits
- Input on approach to modeling the river connection outcomes.

Action Items

- cbec
 - Provide the geographic area of the model to Ben King.
 - Consider talking through the 3/30/23 Scenario Development slides with those who missed the meeting.

Recommendations to Steering Committee

The Advisory Committee did not make any recommendations to the Steering Committee at this meeting.

Welcome and Introductions

Julie Leimbach (Leimbach), Kearns & West, welcomed all attendees, reviewed the meeting agenda, and objectives.

Baseline Hydrodynamic Modeling Results

Presenters Chris Campbell (Campbell) and John Stofleth (Stofleth), cbec, reviewed recent and upcoming Floodplains Reimagined Events:

- Scenario Development Ad Hoc Group meeting, March 30, 2023
- Managed Wetlands Ad Hoc Group meeting, April 28, 2023
- Salmon Productivity Coordination, May 2023

Campbell outlined four main stages to the Scenario Development process:

- Develop potential actions

- Pre-screen potential actions – Current stage
- Develop potential grouping of actions
- Evaluate scenarios

Campbell shared hydrodynamic model animations depicting baseline inundation and water depth across the landscapes of the upper, middle, and lower regions of both Butte and Colusa basins.

Comments and Questions

Modeling

- Clarify the reasoning for choosing WY 2019; the flooding appears excessive. [Mike Healey, CDFW]
 - The Technical Team is also examining other water years, including drier years that will be part of the evaluation. [Program Team]
- Have you considered pulling satellite imagery from 2019 and looking at the footprint of water on those images compared to the model results? [Dan Fehringer, Ducks Unlimited]
 - Yes, the Technical Team has examined that for select areas. We are using a standard inundation footprint and have applied specific criteria. [Program Team]
- How is the model accounting for seepage? [Ben King, Colusa Co. Resource Conservation District / Landowner]
 - We are representing filtration in the model; it's not a fully integrated groundwater model. We've calibrated infiltration based on other studies that have occurred, such as on soil properties. We have managed inundation on the footprint of the model on the landscape. What we don't have incorporated is seepage from the river or the levees. We can't really represent that aspect in the model. We looked at satellite imagery and other remote sensing techniques; if the seepage was not major enough to be picked up from imagery and remote sensing, it won't be reflected in the model. [Program Team]

Suite of Actions Overview

Introduction

Campbell and Stofleth have previously presented the Suite of Actions proposed for the Floodplains Reimagined Program. The four types of actions include:

- River Connections
- Floodplains Infrastructure
- Land Management
- Habitat Restoration

This presentation is focused on the River Connections type of action, including Weir Notch Actions at Moulton and Colusa Weirs.

Leimbach asked the Advisory Committee to be ready to respond to the following questions after hearing the presentation:

- Has the Technical Team demonstrated engineering feasibility of the notch action?
- Which flow levels should the Technical Team carry forward for scenario development and further evaluation of benefits?

Weir Notch Actions

Presenters provided statistics for notch operability for each weir:

Moulton Weir Notch Action

- Existing weir overtops at 60,000 cfs and 76 ft.
- River stage range: 61 – 76 ft.
- River flow range: 18,000 – 60,000 cfs
- Operational time frame: Nov. 1 – Mar. 1

Comments and Questions Regarding Moulton Weir Notch Action

The group provided the following comments and questions:

- There is concern that crop insurance may not interpret the notch flows, as weirs have historically been used as flood control devices, and that farmers will suffer financially as a result. Insurance payout is extremely important for rice growers when they're unable to plant. It has to be a natural disaster or event to receive payout. This will require clear policy coordination with RMA, which could require significant time to bring about. [Herkert, RD 1004 & Paul Buttner, California Rice Commission]
 - Notching could be a short-term mitigation solution, but crop insurance policies will require additional research. Acknowledging that farmers could eventually lose their crop insurance if the same planned scenarios occur repeatedly. [Program Team]
 - Suggestion to consider a different agricultural cutoff date from the current date of March 1. An earlier date may be needed to protect rice growing in the region. [Serup, CDFW & Program Team]
- Request to model the Colusa and Moulton Weirs simultaneously. [Roger Swanson, Wild Goose Club & Bjarni Serup, CDFW]
 - The Program Team confirmed that they would produce the requested model. [Program Team]
- The Moulton Weir drains more slowly than it inundates, and even low flows can lead to land damage. [Herkert, 1004]

Colusa Weir Notch Action

- Existing weir overtops at 30,000 cfs and 61 ft.
- River stage range: 50 – 61 ft.
- River flow range: 16,000 – 30,000 cfs
- Operational time frame: Nov. 1 – Mar. 1

Presenters shared modeling animations of the inundation effects of each weir notch at the following flow levels, noting that the inundation effects start to diminish as flows increase:

- 1,000 cfs

- The 1,000 cfs levels looked appropriate for the Colusa Weir, but north of the weir is where water starts to back up and affect managed wetlands and crop fields, potentially causing duck clubs to see loss of use and property devaluation. [Hans Herkert, RD 1004]
- 2,000 cfs
- 3,000 cfs
- 6,000 cfs

Comments and Questions Colusa Weir Notch Action

The group provided the following comments and questions:

- What additional impacts are happening between the 3,000 cfs and 6,000 cfs flow rates? [Serup, CDFW]
 - The water depths deepen, and the footprint expands as more water is introduced. In the Moulton area, there are impacts to transportation, agriculture, road crossings, erosion, and infrastructure costs. The last overtopping event was approximately 2,500 cfs and the Technical Team looked at aerial imagery from that event. [Program Team]
 - Suggestion to include loss of revenue impacts to rice farming and duck clubs. The 2,500 cfs event overtopped the levees and overflowed the rice fields, eroded the levees, and filled the duck blinds with water. Gravel also washed off the roads. [Herkert, RD 1004]
- The increase in water depth could lead to a general decrease in waterfowl. Nearly all managed wetlands are easements; the ones controlled by Fish & Wildlife Service are part of the refuge system. The Butte Sink has served as a good example of managing waterfowl numbers. How do we improve the wetland structures? [Craig Isola, USFWS]
 - Actions can be implemented in the upper and lower regions to handle those higher flows. [Program Team]
- What are the big-picture assumptions of operations? Are you looking at other scenarios that include sensitivity analysis? Hoping that some of it never comes to fruition, such as the Water Board's Phase 2. There are too many unknowns.
 - The Technical Team is not currently modeling climate change, but it is something that could be incorporated in a subsequent program phase. [Program Team]

The Program Team reminded participants, Floodplains Reimagined is a voluntary effort for landowners who can use the provided information to determine what is and isn't possible, and what will work with their existing easements. The Technical Team can help them put together proposals that make sense for them.

Weir Notch Model Suggestions

The following items were proposed as approaches to improve the model:

- Model the Colusa and Moulton Weirs together to identify the cumulative effect.
- Document the seepage level prior to and after inundation in the basins.
- Coordinate with RMA to determine if inundation actions will be acceptable for insurance coverage requirements.

- Put into context the small differences we are seeing in the scenarios, and any rationale for a margin of error.
- Look into the need for additional flow easements for Moulton and Colusa Weirs.
- Consider the potential devaluation of property.
- Address the current infrastructure on the property.
- Model the compatibility of high flows going through both private properties and waterfowl management properties and the effects of those flows.
- Consider evaluating the sensitivity analysis to major projects that are being proposed, such as the SWRCB unimpaired flow regime, for Phase II.
- Consider a different cutoff date for Moulton Weir.

Juvenile Salmon Habitat Suitability Results

Jesse Rowles (Rowles), cbec, presented the results of the habitat suitability analysis for juvenile salmon. cbec and San Francisco Estuary Institute (SFEI) developed the analysis to show if salmon habitat has improved or worsened and have performed preliminary sensitivity testing. Rowles shared the following suitability criteria:

- Inundation timing: Nov. 1 – Jun. 30
- Optimal duration: 14 days or more
- Optimal depth: 0.9 ft. or greater
- Optimal velocity: Up to 1.5 ft./second
- Optimal connectivity:
- Natural areas are hydraulically connected
- Managed fields are connected through berm overtopping
- Optimal landcover: Riparian / wetland / open water

Rowles showed animations for the baseline conditions as well as for inundation depths at various flow levels for the Moulton and Colusa notches.

Comments and Questions

The group provided the following comments and questions:

- The 2,000 cfs in the Colusa animation looked like an anomaly. The inundation level drops, then goes back up at 3,000 cfs. What's happening at the 2,000 cfs level to cause this? [Buttner, California Rice Commission]
- It's possible there are structures causing the water to not fully connect. They would need another water event that overtops their brims to reconnect them. cbec will work with SFEI to conduct more sensitivity testing on connectivity. [Program Team]

Bird Habitat Suitability Results

Rowles presented the results of the habitat suitability analysis for waterfowl, shorebirds, and sandhill cranes.

Waterfowl Criteria

- Inundation timing: Aug. 15 – Mar. 1
- Depth: Under 1 ft.
- Landcover: Managed wetlands and rice fields

Shorebird Criteria

- Inundation timing: Jul. 1 – May 15
- Depth: Under 4 in.
- Landcover: Managed wetlands, rice fields, and row crops

Roosting Sandhill Crane Criteria

- Inundation timing: Oct. 1 – Mar. 15
- Depth: Under 8 in.
- Landcover: Managed wetlands, rice and corn fields

Foraging Sandhill Crane Criteria

- Inundation timing: Oct. 1 – Mar. 15
- Depth: Under 2 in.
- Landcover: Wetlands or annual crops within 5 km of known roost

Rowles indicated that water depth is the major deciding factor, with waterfowl requiring the greatest inundation depth. He also showed maps depicting inundation depths for the Moulton and Colusa notches at various flow levels. Campbell added that the inclusion of additional water years in the modeling will cause results to shift somewhat.

Comments and Questions

The group provided the following comments and questions:

- Comment that Sandhill Cranes annually migrate to his land and have been observed to forage differently than other wildlife, eating small mammals such as gophers. Actual roosting locations are unknown to him. [King, Colusa Co. Resource Conservation District / Landowner]
 - That's helpful information, as we, along with SFEI, are looking at areas within 5 miles of bird roosts. [Program Team]

Closing Remarks and Adjourn

Leimbach reviewed the action items requiring follow up, and then thanked Advisory Committee members for their attendance and adjourned the meeting.

Participants

Advisory Committee	
Affiliation	Name
California Farm Bureau Federation	Justin Fredrickson
California Rice Commission	Paul Buttner
CDFW	Bjarni Serup David Pesavento Mike Healey
Colusa Co. Resource Conservation District / Landowner	Ben King
Ducks Unlimited	Dan Fehringer
DWR	Colin Hanley Jesus Esparza
Flow West	Mark Thompkins
Murdock Ranch, Gun Club / Foraker Properties	Erik Foraker
NCWA	Todd Manley
NMFS	Ally Bosworth Brian Ellrott
RD 1004	Hans Herkert
Reclamation District 70, 1660 / Tisdale Irrigation District, Butte Slough Irrigation	Andy Duffey
River Partners	Julie Rentner Torey Byington
Sutter Mutual Water Co. / RD 1500	Roger Cornwell
USFWS	Craig Isola Jim Earley Matt Brown Tricia Bratcher
Wallace Bros. Farms / Colusa Drain Mutual Water Co. / Colusa Groundwater Authority	Jim Wallace
Wild Goose Club	Roger Swanson

Program Team	
Affiliation	Team Member
cbec	Chris Campbell

	Jesse Rowles John Stofleth Scott Wright
Kearns & West	Bethany Taylor Julie Leimbach
KSN	Barry O'Regan Holly Dawley
LWA	Eric Nagy
RD 108	Lewis Bair
SFEI	Alison Whipple Kelly Iknayan