

OUTCOMES MEMORANDUM

TO: Lower Sutter Bypass Planning Process Participants

RE: **May 3, 2021 Workshop #3: Agricultural Production**

Meeting Attendees:

Jeff Kohl, CDFW

Colin Purdy, CDFW

Bjarni Serup, CDFW

Duane Linander, CDFW

Morgan Kilgour, CDFW

Tanya Sheya, CDFW

Mike Hall, Conaway Ranch

Andrea Buckley, CVFPB

Greg Harvey, CVFPB

Doug Brown, Douglas Environmental

David Martasian, DWR

Mike Roberts, DWR

Maya Kepner, Dos Rios Norte

John Brennan, Goose Club

Dane Lowry, Goose Club

Barry O'Regan, KSN

Kimberly Clements, NMFS

Mike DeWit, Sutter

Mike Denny, Lundberg

Jim Earley, USFWS

Asia Jones, River Partners

Julie Retner, River Partners

Anna Schwyter, River Partners

Rene Henery, Trout Unlimited

Jacob Katz, Trout Unlimited

Consultant Team

Chris Campbell, CBEC

Greg Kamman, CBEC

Ryan Hogan, Swenson

Josue Medellin-Azuara, UC Merced

Josh Viers, UC Merced/Pacific Grove Ecology

Mark Henderson, USGS - Humbolt State

Bruce DiGennaro, Essex Partnership

Terra Alpaugh, Kearns & West

Action Items:

- John Brennan to share spreadsheet detailing how crop insurance works, what it covers, and implications of different ratings of insurance companies Team.
- Maya Kepner to connect Jose Medellin-Azuara to Virginia Getz at Ducks Unlimited re: the economic tool they are working on.
- All participants to send additional revisions to the planning objectives to Bruce, River Partners, and/or Terra.
- River Partners to connect with new NMFS staff to catch them up on the planning process.

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Discussion Highlights:

Agricultural Production in the Bypass

1. Mike Hall, Conaway Ranch:

- Description of Ranch: 17,500 acres, half inside Yolo Bypass and half out, from south of I-5 almost down to I-80; predominantly a rice farm, growing 9 to 11 thousand acres of rice, depending on the water availability and bypass flooding, and four thousand acres of row crops.
- Habitat-friendly changes to the Ranch: Since the Ranch was purchased in 2010, they implemented a joint intake from the Sacramento River with the cities of Woodland and Davis, selling them surface water so they could stop groundwater pumping, and four easements – a four-thousand-acre ag easement in the bypass, a one thousand acre giant garter snake easement (committing to plant a wetland crop in perpetuity), a one thousand acre Swainson’s hawk easement (committing to plant 50 percent alfalfa in perpetuity and 50 percent in wildlife friendly crops), and a 250 acre tricolored blackbird easement (committing to 100 acres nesting habitat and 150 acres foraging habitat). When Mike started farming on the Ranch 31 years ago, most farmers wanted a clean farm edge-to-edge, but since then Conway tenants have begun implementing some wildlife-friendly practices; for example, cleaning half a ditch one year and the other half the next, using flushing bars for birds when they cut the alfalfa, and not disking during nesting season. Lundberg Farms, which is a large portion of the Ranch, is organic.
- Challenges of farming in the Bypass: The Bypass floods two out of every five years on average, and the amount of flooding is variable – usually just the east side of Bypass but occasionally levee-to-levee. Most significant impacts of flooding: timing (flooding can push planting into the summer which means the harvest is later and more at risk of temperature and precipitation); need for continuous maintenance of canals and structures and leveling of the ground; and water supply disruptions (the canal that delivers water from the pump station on the river to the rest of the ranch is frequently blown out by flooding and is very expensive to repair).
- Questions (Q):
 - Project Team: How much does the cost structure change for cash crops when you have those disruptions? I.e., with and without flooding?
 - Fields are ranked as A, B, or C, each of which has a different cost structure. “C” fields are on the east and therefore cheaper, because farmers have to plant later and are likely to have a reduced yield.
 - 60-70 percent of the “A” fields are outside the bypass. “A” fields are largely outside and on the west side of the bypass where flooding is rare; to the east and south are “B” fields, and further east and south are “C” fields.
 - “A” fields and “C” fields are often paired. There are four to five tenants;

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they start planting on the dry fields and then move to the wetter areas – this allows them to maximize the use of their equipment.

- Goose Club: From a financial standpoint, equipment needs to be in use, and farmers have a schedule for their planting. Therefore, whether it is a dry year or not, the C fields always end up being planted last because that is where they line up in the operational schedule.
- River Partners: Is tailwater reused?
 - Conaway is a closed system (intakes near Tule Canal can be closed), so all the water is reused, which is critical July-September when supply is limited. Using tailwater is a key part of Conaway's water management.
- River Partners: How do you incorporate required maintenance into habitat areas? What are the challenges for maintenance?
 - Key is having drain system clean at the beginning of winter, so the water can quickly exit. Storms can fill in ditches with silt. Fast-growing primrose must be cleaned out entirely. Downstream obstructions, which landowners have less control over, are also a challenge.

2. Mike DeWit, Sutter property

- Description of ranch: Currently farm 200 acres in the Sutter Bypass upstream of the Hwy 113 Bridge, just south of Tisdale Weir. This year, since there is no water in Butte Slough and Term 91 will be enacted, they are not farming and will collect insurance.
- Challenges of farming in the bypass:
 - In dry years, they cannot plant – even in the fall, there will not be water for flooding.
 - Goose Club and Conaway Ranch pump from the river, but all the other farmers pump out of the toe drains (e.g., Colusa Drain, Butte Slough), which used to flow through the systems, but which are now drying up.
 - There is preventative planting insurance for situations when farmers cannot plant by June 1, which covers the base rent of the land. However, starting this year, you cannot collect if you have not farmed in the last four years. This insurance is *essential* to grow in the bypass – for both dry and flood years. Rice is one of the only crops that can be insured in the bypass.
 - John Brennan to share details on how crop insurance works, what it covers, and implications of different ratings of insurance companies.
 - Limited support/State subsidies available for providing habitat at this time:
 - Most conservation programs only cover the cost of the program. I.e., there are bird programs to create habitat during flooding periods, but those are generally cost neutral.
 - Rice Commission and NRCS have been developing standards by which farmers would get payments for generating salmon outcomes by

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activating their fields. The Rice Commission will be doing an info session on that effort in early July.

- There are some NRCS incentive-based programs but some of those also have income caps per landowner. There are also ag conservation easements in which farmers assign a value to the rice they are giving up. Tools vary depending on the kind of land and what the landowner wants to do with it.
- Virginia Getz at Ducks Unlimited is developing an economic tool looking at many of the same inputs the project team is examining in terms of costs of farming in the bypass. Maya Kepner will connect Jose Medellin-Azuara to Virginia.
- Hyacinth creates an inhospitable habitat for aquatic organisms; dealing with it would help water supply, farmers, fish, and habitat. Has become worse in the last 7-8 years in the Sutter Bypass upstream of the Feather River. There needs to be a treatment plan.

3. Dane Lowry, Goose Club Farms

- Description: Majority of Goose Club is planted in rice, with some row crops. 400 acres of timber and grasslands for wildlife. Have tried to introduce pheasants, but they leave when it floods. The ranch, particularly the bottom acres, flood in about 90 percent of years.
- Challenges:
 - Goose Club pumps all of its water out of the Feather; pumping will be a challenge this year given low water levels combined with the sandbars formed by the 2017 Oroville Incident.
 - They can survive a year or two of drought as long as there is enough water in Oroville to allow for regular flows; e.g., this year, there is not enough water to cover the pumps.
 - When the Bypass floods at the Sacramento Weir, it backs up into the Goose Club and collides with the Feather and puts pressure on the infrastructure. When the Oroville spillway failed, it blew their levee out and caused erosion damage and sand accumulation on the farm. Afterward, they raised the levee slightly.
 - They had to go through numerous agencies to get authorization to remove the sand, a process that included lobbying their State Senator to pass a law that gave farmers the right to clean up their fields if they were flooded by the Feather. Have a small “mom and pop” operation that gathers, screens, and transports the sand off the ranch and which allows Goose Club to break even on the costs of fixing the pumps and other infrastructure that were damaged by the sand.
 - The northern part of Goose Club also gets strong flows down from Tisdale Weir, which results in erosion. As part of erosion control, they do not till the upper half of the property in the fall, which also benefits the birds.

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- Feather River water flows across ranch into Butte Creek, which is clogged with lots of water hyacinth which traps fish and requires regular cleaning.
 - Open question: How much water will the Tisdale notch put into the Bypass, and how much water can the West Borrow Pit accommodate given the amount of Hyacinth clogging it?
- Too difficult to set up a Duck Club because of the frequent inundation.
- If fields are out of production for more than a couple years, trees and brush will grow quickly. Agricultural users are maintaining the flood conveyance system, but that is rarely quantified as a value provided by agriculture in economic models. Could be assessed by looking at the changes in roughness coefficients. River Partners asked for on-the-ground observations about the impacts of vegetation on flow.
- Shifting between rice and row crops can be arduous because vegetation needs to grow around the rice checks to hold them in place during winter flows. It takes two years to get enough vegetation.

4. Mike Denny, Lundberg Family Farms, Dos Rios Ranch

- Description: Dos Rios is surrounded on three sides by water – Feather River, Sacramento River, and Butte Creek. 1500 acres of certified organic farm with 120 acres of riparian forest on the edge. Has riparian water rights on Feather and Sacramento River; not sure if those will be curtailed this year.
- Challenges:
 - Have had significant hyacinth issues: hyacinth was piling up against their bridge and beginning to crush it, so they bought the bridge from the State because if the bridge failed, the State might not replace it.
 - Farming in the Yolo Bypass is much easier; flooding in Sutter is more frequent and severe.
 - Growing row crops results in significant losses, so they returned to rice because it is much more forgiving. Because rice has a 90-day development, planting can occur late and still harvest by October 1. If flooding persists late, they can plant wild rice because there is an even later cut-off date; have planted wild rice as late as July and gotten ok yields, though yields suffer the later the planting. Wild rice prices are very volatile, making it more difficult to plan ahead. In addition, if they do not use the wild rice seed in a given year, it has to be thrown out.
 - During below normal and dry years, there are more water transfers. Orchards need consistent water whereas rice farmers can skip a year.

Discussion: What conditions would be helpful to make farming the Bypass a better endeavor?

- Just the right amount of water: all the key issues mentioned today (e.g., irrigation supply, drainage, flooding, and sediment) are related to water.

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- Previously, farmed more in the dry years, but as the drains dry up, those years are no longer feasible. Likely, the area will move back toward bean production, which only require 60 days production, or seasonal grazing. Flexing back and forth between grazing and crops or widely varying the acreage of production is not feasible, because of the need to plan for the associated contracts and maintenance; farmers have to get loans at the end of the year and to do so, need a farm plan that outlines proposed production and maintenance. Predictability is key.
- Will need a range of solutions from property and property.

Discussion: Explore what types of actions could be done to improve conditions for salmon and what would the impacts on ag production look like.

- CDFW: Our working assumption is that the limiting factor for salmonids is access to floodplain habitat, so we may just need to remove migration barriers into and off the Bypasses. Fish need flow to get onto the bypass, which increases inundation of the bypass. Do not yet have data on specific microhabitat use on bypass, or evidence that fish are habitat limited once they get onto bypass. Not saying that there are not actions on bypass landscape to increase habitat quality, but not clear whether it is needed, so the primary objective is to get more fish onto the bypasses. Anecdotally, we do not see a lot of stranding of native species within the rice fields in Yolo Bypass, whereas there is significant stranding around larger manmade structures like flood weirs.
 - CalTrout: (1) There is much research on relationships between fish and habitat area. While we might not have evidence that fish are habitat limited now, there are ways of thinking about at what point they could become habitat limited if fish numbers increased. (2) Even though we do not have info on fish microhabitats, the fish food work is revealing that habitats do differ in the food they produce and the bioenergetic conditions the fish are experience. Evidence that habitat is not created equal. There may be a few dominant variables (e.g., amount and timing of the water) that matter most in determining habitat on floodplains, but that does not mean all habitats (e.g., canals vs different types of ag land with different lengths of inundation) should be considered the same in terms of value to fish. Need to find management scenarios that are most beneficial to fish and to ag and look for overlap.
 - Doug Brown: Concerned that resource agencies are saying they do not see value in that type of management.
 - CDFW: Think there is a misunderstanding. CDFW is suggesting, as first step, that water be allowed to bring fish onto bypass and fish be allowed to choose where they go on the bypass. This does not necessarily require micro-management, which seems like it would be attractive to landowners.
 - Doug Brown: Worry that the lack of support from the resource management agencies will prevent the group from looking at opportunities to hold the water and increase residence time, thereby potentially missing out on benefits.
 - CDFW: We are looking at a broad range of management activities; there are project

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- proponents on this call who have submitted proposals that incorporate more actively managed inundation. CDFW is conveying what they do have a lot of evidence in support of, which is getting fish onto the fields.
- Mike Denny: Butte Creek is choked with hyacinth and debris. It seems like both farmers and fish need to be able to move water through that area more quickly.
 - CDFW: Aquatic weeds are an issue for fish passage; increasing flow capacity in drainage canals is a joint benefit.
 - CalTrout: An interesting idea would be to look into the potential to use the hyacinth as a feedstock for methane digestion, which could cover some of the costs of removal for farmers. EBMUD has a robust methane digestion facility.
 - Mike DeWit: Agree with the hyacinth issue. Another concern is the timing of water on the bypass. From a farming perspective, water needs to come off the bypass in a non-flood year by mid-March at the latest, and earlier is better. Extending the inundation into late spring would be problematic, and maybe salmon do not need it that late if they are already grown, the water is warming, and predation is increasing. If the water could be drained off by mid-March and Butte Creek could be cleared to make a smooth path down to the Sacramento River, this deal could work for salmon and farmers.
 - CDFW understands the landowners concerns about timing. While they would prefer longer inundation, which would benefit spring run, they will take whatever additional time on the floodplain the farmers can make available to the fish.
 - John Brennan: One debate will be whether to clean the West Borrow Pit – farmers will want it clean and fish would benefit from it remaining clogged.
 - CalTrout: Does not need to be a tradeoff -- clogged drains are only good for fish in a broken landscape in which they subsist on whatever intermittent benefits are available. What would be really good for fish is thinking about landscape and infrastructure as a whole and managing it in such a way that habitat conditions are available on a consistent basis, while also giving farmers what they need.
 - River Partners observed that many properties have margin acres and edges that already operate as habitat and whose performance could be further improved.

Update on Anadromous Fish Habitat Planning Process

- The Project Team shared the draft objectives that the Core Working Group has been discussing. Suggested changes included:
 - Changing “maintaining” flood control and ag production to “increasing” it. For instance, if there are more opportunities for farmers to get compensation for habitat investments, it could increase agricultural production by improving its financial viability.
 - Or changing “maintaining” to “improving,” so that the objective reads, “Enhance the ecological functions of the Lower Sutter Bypass while *improving* flood management

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and agricultural viability.”

- The Project Team staff leading the agricultural modeling work provided a brief description of their efforts, which will produce estimates of changes in crop revenues that might result from various project alternatives. Feedback included:
 - Landowners stressed the importance of being able to get on the land to plant, i.e., having adequate time for the fields to drain and dry. Production suffers if they cannot plant by May 15th. In addition, landowners will be interested in whether there will be long term impacts of flooding the soil every winter, including any potential for long-term degradation of the microbial community.
 - They asked for the opportunity to provide feedback after they can see the assumptions baked into the analysis.