

OUTCOMES MEMORANDUM

TO: CAMT Members
FROM: Bruce DiGennaro
DATE: July 28, 2020
RE: July 21, 2020 CAMT Meeting #93

Attendees: Ben Geske, Bill Harrell, Brad Cavallo, Brycen Swart, Carl Wilcox, Cathy Marcinkevage, Chuck Hanson, Dana Lee, Darcy Austin, Deanna Sereno, Denise Reed, Erik Loboschefskey, Erin Cole, Eva Bush, Frances Brewster, Henry DeBey, Jason Peltier, Josh Israel, Kate Spear, Kaylee Allen, Larry Brown, Lynda Smith, Mario Manzo, Rachel Johnson, Rene Henery, Sam Luoma, Scott Hamilton, Shawn Acuna, Stephanie Fong, Steve Culberson, Steve Lindley

Action Items:

- All – let Kaylee know if interested in reviewing draft Delta Smelt Supplementation Strategy
- Carl, Cathy, Kaylee – help develop species status update for 7/31 Policy Group Meeting
- Bruce – distribute Anna’s presentation as a pdf
- Frances, Brad – bring latest Salmon Entrainment Study Proposal back to Salmon Subcommittee to discuss revisions based on feedback

Discussion Highlights:

1. Agenda and Updates

- Coordinated Salmon Science Plan (CSSP) (Silberblatt)
 - Survey completed (high participation rate, robust data set)
 - Held webinar to go over early results and how best to present results in plan
 - Based on Subcommittee feedback, the survey results will be presented thematically:
 - Beneficial Activities with High Agreement
 - Activities with High Implementability and Agreement
 - Actions with Highest Deviation in Agreement
 - Next steps include selecting a representative set of activities to include in the plan as case studies
 - ESSA is hoping to share draft plan by early to mid-August
 - Received a no-cost contract extension to provide more time for peer review and Subcommittee input
- Delta Smelt Supplementation Strategy (Allen)
 - Intention is to share a draft with partner agencies (any others interested in providing feedback) by end of month
- Nutria (Wilcox)
 - Eradication efforts continue, unaffected by Covid: 30 staff + 18 seasonal workers have taken 1500+ nutria.
 - Funding goes through 2022 (including large grant from Delta Conservancy), will be seeking additional funding in 2022-23 budget.
 - Have only found one nutria in Delta (in 2019) – closest population was in Walthall Slough (roughly 500 removed from that area)
 - Found in many types of habitats

Facilitator Notes, Not Reviewed or Approved by Meeting Participants

- Covid impacts on monitoring
 - Covid constrained 20mm and Kodiak trawl in March and part of April due to lack of PPE and inability to practice social distancing. Also impacted Bay study.
 - Mossdale trawl has been canceled, all others have resumed.
 - July 31 Policy Group agenda (DiGennaro)
 - Updates
 - Species Status
 - Habitat Restoration (CVPIA, Cutting Green Tape)
 - Management Needs and CSAMP Priorities
 - SRSP Science Plan
 - Nutria
 - Salmon Use of the Delta
 - CAMT Salmon Entrainment Proposal
 - Future Policy Group Agenda Topics
2. Research Presentation – Salmon Use of the Delta (Dr. Anna Sturrock, UCD)
- Delta has been transformed from dynamic wetland habitat to disturbed channelized structure, how well does this support salmon rearing?
 - Most salmon are fry sized when entering Delta and smolt sized when leaving
 - More data/science re: smolt, less known about fry (too small to tag)
 - Used otolith and gut samples from ITP fish dating back to 2014 to track fry and determine what they were eating and how much/where they grew
 - In terms of size (fry/smolt) at entry to Delta: in wet years 90/10 split, in dry years evenly split
 - Very poor survival of fry in drought years, in wet years fry rearing in Delta is a viable strategy
 - Delta growth is slightly lower during drought but overall similar to in-river growth, in wet years roughly even
 - Large spread in growth rates → spread in emigration timing → portfolio strategy
 - Broad range of residence times, long residence times not detected in drought years leaving the system at Chipps Island. During extreme drought years those trying to rear in Delta likely didn't make it out.
 - What did they eat?
 - In wet years, fish caught below Columns (near flood plain) had much larger percentage of cladocera
 - Fry rearing is supported by trophic subsidies
 - Using machine learning to identify where fish are from (looking at eye lenses to determine hatchery vs wild)
 - Moving from proportional watershed productivity to absolute number by source
 - Fry can and do successfully rear in Delta so long as the strategy is expressed in the first place and there is some food and habitat
 - Delta can support good growth rates (temp x food) and residence times of multiple months
 - Delta restoration and food production is especially important given climate change
 - Particularly in wet years the marsh habitats downstream of Chipps could be really important
 - Maintaining/creating shifting habitat mosaics support broader migration timings and help to maintain adaptive capacity critical for improving salmon resilience in changing environment
 - Questions/Comments
 - Surprised to see that marsh habitat downstream of Chipps could be important since that's not an area usually targeted for restoration

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- In dry years it's unlikely that there's much rearing south of Chipps but hard to gauge because there's not much sampling south of Chipps
- It's all relative: in different circumstances and different years, different locations may be more/less important. Focus should be on creating a habitat mosaic to provide options for every year (consistent with salmon's co-evolution with habitat)
- It seems like there was reduced growth in American River in wetter years
- Otolith data is still very coarse resolution in terms of distinguishing between different parts of Delta (north and south). Flows/inundation can vary greatly in different parts of Delta (even in wet years).
 - Very little successful Delta rearing from south Delta fish

3. Salmon Entrainment Proposal (Brewster)

- Before Covid, the entrainment working group was developing questions for potential studies. In parallel, the group working on Science Action Agenda questions put together a long list of entrainment related questions which fall into three broad management needs questions:
 - What are the conditions and mechanisms that drive salmon migration, behavior, and entrainment?
 - What are the effects of entrainment loss on the population?
 - What is the relationship of entrainment and loss to management and operations?
- PWA proposal addresses a subset of entrainment questions narrowly focused on SWP/CVP entrainment, waiting on CSSP and broader management needs discussion before recommending next steps on other questions.
- PWA proposal identifies three topics:
 - Topic 1: Evaluate mechanisms underlying 2017 SST conceptual model
 - Earlier conceptual models useful, but don't identify "how", "why" and "where" effects are likely to occur
 - Propose to build upon driver-linkage-outcomes (DLOs) created by SST (2017)
 - Factors to be considered:
 - Differences between life stages; rearing vs. migration
 - Juvenile salmonid sensory capabilities (what conditions do fish perceive)
 - How exports alter hydrodynamic and WQ conditions that juvenile salmonids can perceive
 - How do juvenile salmonids behaviorally respond to conditions
 - Expected management value:
 - Refine our understanding of how, when and where water project operations are likely to influence juvenile salmonids in the Delta
 - Provide useful guidance to future or ongoing studies related to indirect effects of Delta water project operations
 - Topic 2: Proportional loss
 - What is proportional loss?
 - Proportion of a juvenile cohort (by run/basin/species) entering the Delta that are subjected to entrainment loss (i.e. loss in the context of population-level impact)
 - Distinct from analyses based on salvage density
 - Discuss and improve upon Zeug and Cavallo (2014)
 - Expected management value:
 - A tool for predicting run type and origin-specific proportional entrainment loss of

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- juvenile salmonids
 - Inform possible modifications to Delta water project operations
 - Expected limitations
 - Like all tagging studies, provides only a surrogate for potential effects on natural origin salmonids/earlier life stages
 - Topic 3: Indirect effects
 - What are indirect effects?
 - Export effects that influence juvenile salmonids beyond entrainment and pre-screen mortality
 - Several efforts underway to evaluate survival consequences of indirect effects
 - Propose to evaluate a novel approach for quantifying the proportion of juvenile salmonids that may be influenced by indirect export effects
 - Potential management value:
 - A tool for estimating proportion of juvenile salmonids approaching the South Delta (therefore exposed to indirect effects)
 - Provide guidance for augmented receiver arrays or other studies to better address this topic
 - Expected limitations
 - Available observations may be limiting
 - In this circumstance, will report available data, estimate power to detect signal, make predictions based on varying assumptions about routing and survival
- Overall approach to work
 - With CAMT guidance, select members of Analytical Team, Expert Advisers and Independent Reviewers
 - Analytical team will be most actively involved, guide specifics of how analyses are completed
 - All three topics can be addressed concurrently
 - Topic 1 is focused on informing future studies
 - Topics 2 and 3 are dependent on existing data; not mechanistic, not influenced by Topic 1 findings
- Tasks and deliverables
 - Task 1. All work completed to date.
 - Task 2. Establish and convene Analytical Team, develop detailed study plan for CAMT and independent review ☑ Complete by March 2021
 - Task 3. Complete analysis described in detailed study plan. Deliver draft report for CAMT and independent review
 - Complete by Jan 2022
 - Task 4. Finalize reports and tools. Present deliverables to CAMT and others
 - Complete by May 2022
- Questions/comments
 - Is this a CAMT study or a PWA study? If a CAMT study, how does it fit in with other work/priorities?
 - Would like CAMT's input along the way, not sure if that makes it a CAMT study. If other agencies don't want their name associated that's fine but would still like input/buy-in on results.

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- Haven't codified what a CAMT effort is.
- Great place for us to provide input but don't have a sense of collective ownership.
- Sounds like a next step is for it to go back to the Salmon Subcommittee to discuss changes since previous iteration.
- CDFW intends on staying engaged, views this as a good opportunity for collaboration.

4. Habitat Restoration

- Overview
 - Policy Group members have expressed interest in CSAMP focusing more on restoration actions (including flow and non-flow actions).
 - The CAMT 2020 Workplan includes a line items for habitat restoration, but CAMT has not discussed.
 - Habitat restoration actions are included in the resiliency strategies, Delta Smelt SDM and CSSP. CAMT also recently completed a study on Delta rearing habitat for salmon.
- CVPIA Update (Manzo)
 - CVPIA has moved over to Bay Delta Office
 - SIT planning underway for 2022, would like feedback on priorities
 - Questions/Comments
 - Any change in opportunities for policy, core team conversations, incorporation into 2020 ROD BiOp work?
 - Not sure how all the pieces will fit together, but now that CVPIA will be in the same office coordination should be more efficient
 - Did the Battle Creek project move with CVPIA?
 - No, Battle Creek is staying put. Acceleration and Reintroduction is with BDO.
- Barriers to Restoration (Harrell)
 - EcoRestore initiative was put in place to try and push through restoration project challenges
 - Funding
 - Challenges
 - Realizing and adjusting to the cost of doing business (in terms of time and money, including staffing, stakeholder engagement, litigation, planning, permitting, construction, contracting)
 - Strings Attached – limitations to bond and grant dollars (especially when many smaller grants have to be stitched together) and State receiving money (DWR doesn't have reimbursable authority, money goes to general fund)
 - Local agency opposition
 - Real estate: fair market value and ecological value (DGS highest and best use appraisal)
 - Successes
 - DWR relies on many sources, sometimes combined
 - Request for proposal
 - SFCWA JPA
 - Permitting
 - Challenges
 - Overlapping regulatory jurisdictions
 - Legal latitudes

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- Single species mitigation for mitigation
 - Easements and in perpetuity funding requirements (requires endowments)
 - Successes
 - EcoRestore
 - Socioeconomic
 - Challenges
 - Land use changes (e.g., regional crop production thresholds impacts on availability of processing services)
 - Local needs – outreach and communication (need for a single point of contact)
 - Safe harbor – fear of regulation (restoration project may invite more endangered species into the area leading to additional regulations for neighboring properties)
 - Successes
 - Lower Elkhorn Basin Levee Setback Project – provided new pumping equipment
 - Land management and Stewardship
 - Challenges
 - Realizing and adjusting to resource needs – including for monitoring for adaptive management, reporting out and sharing results
 - Consistent funding - hard to access general funds
 - Finding methods to share resources maximize efficiency – need for multi-agency agreements (especially for O&M to meet good neighbor agreements)
 - Local concerns over state land stewardship
 - Successes
 - Near term monitoring – Fish Restoration Program
 - Modest amount of General Fund dollars for non-SWP projects
- Cutting Green Tape Initiative of the CA Natural Resources Agency (Wilcox)
 - Restoration Projects are subject to the same regulatory requirements as development actions and are often delayed.
 - Working with California Landscape Stewardship Network
 - Four workshops convened thus far to explore ways to improve permitting and funding efficiencies
 - Work suspended due to Covid, anticipated to resume shortly
 - Potential changes to facilitate timely permitting of restoration:
 - Work with SWRCB to ensure new Habitat Restoration 401/WDR pathway is completed, meets the needs of practitioners, and that their companion CEQA effort results in a programmatic document that can be used by other project proponents.
 - Create unified permit application (ideally, on-line) for existing, and potentially any new, Small Habitat Restoration pathways including 401/WDR and HREA
 - Create programmatic permits for restoration/stewardship activities carried out by the state (including coverage for State-funded projects).
 - Expand the 5-acre limit on CEQA Cat ExClass 33 and associated pathways
 - Many instances where local governments are concerned about impacts of restoration on agricultural economies (as opposed to coastal areas that are less dependent on ag)
 - Current agency efforts are focused on:
 - SWRCB – Clean Water Act Section 401 Water Quality Certification and Waste Discharge

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Requirements for Implementation of Large Habitat Restoration Projects Statewide (projects > 5 acres and > 500 lf) – Currently in CEQA review

- CDFW – coordinating to use SWRCB CEQA to facilitate its permitting of restoration projects.
- CDFW reviewing how CESA permitting can be facilitated for restoration (particularly for flood plains) where action benefits a listed species and doesn't affect others
- Working with Sustainable Conservation to support efforts for to develop Programmatic ESA Authorizations, similar to but larger in scope than current NMFS restoration Programmatic.
- Bay Restoration Regulatory Integration Team (BRRIT) – multi-agency team that work with project proponents and seeks to improve the permitting process for multi-benefit habitat restoration projects and associated flood management and public access infrastructure in the San Francisco Bay and along the shoreline of the nine Bay Area counties (excluding the Delta Primary Zone).
- Questions/Comments
 - BRRIT could be a good model for the Delta
 - Save the Bay was instrumental in passing Proposition AA, could be helpful to hear from David Lewis regarding their experience (especially regarding creating public support to secure funding through a ballot initiative)
 - Would be important to highlight differences between Bay and Delta – issues and strategies may not be analogous
 - Is there a group (e.g., FAST team) in Delta that could play the role of BRRIT in Delta?
 - FAST team's focus/scope is more limited but is similar in intent. Additional agency reps would need to be brought in
 - Would require identified funding for agency reps to dedicate their time to participating on team
- Proposed next steps for CAMT
 - Focus on synthesis and monitoring. Take a more holistic view to evaluate how the system of restoration projects is performing (not just project by project).
 - Do recon on who is doing what in the space, potentially starting with a presentation from Stacy Sherman (CDFW fish restoration monitoring group).
 - Utilize CSAMP as a communication venue for reporting on the status of restoration projects.
 - Questions/Comments
 - Supportive of CAMT taking a holistic approach
 - Seems like we may need more time to discuss (e.g., in terms of how it relates to priorities, resources, etc.) so will plan on just providing an update at 7/31 Policy Group meeting (as opposed to a recommendation)
 - Seems like VAs could be a potential source of funding

5. Science Action Agenda Input and CSAMP Priorities

- Don't yet have a consensus document, options are as follows:
 - Submit material as draft, not representing CSAMP consensus
 - Don't submit a CSAMP document. Let member agencies submit individually
 - Expend the time to develop a consensus document
- Questions/Comments
 - Committee recommendation was to submit as a draft not representing consensus but some CAMT members have expressed concern regarding this approach

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- Reluctant to share if some member agencies are not on board with doing so
- Not clear that consensus would carry any more weight for SAA purposes based on their process (which does not include attribution), so may not be worth the time to try and reach consensus
- If member agencies all submit separately and there are repeated actions, DSP will note that repetition
 - Could share draft document with member agencies as a resource for their own submissions
- There will still be a need to work on these questions for CAMT's purposes (i.e., prioritizing work)
 - Will need to discuss resources needed and process
 - Assuming we are able to reach consensus on CAMT priorities, we can submit as part of SAA workshop down the road