



Wetlands Regional Monitoring Program Technical Advisory Committee Meeting Friday March 7, 2025 9:00 - 11:00 AM

Zoom link: <https://zoom.us/my/sfeiconfrl1>

Attending: Alex Braud, Alex Thompson, Aviva Rossi, Chris Janousek, Cristina Grosso, Donna Ball, Doug Bell, Iryna Dronova, Jaime Lopez, Jemma Williams, Jeremy Lowe, Josh Collins, Julian Wood, Julie Gonzalez, Karen Verpeet, Lindsey Sims, Lisa Beers, Lydia Vaughn, Matt Graul (at 10am), Mike Vasey, Miranda Melen, Sasha Harris-Lovett, Todd Hallenbeck, Zooley Diggory

NOTES:

[Meeting Slides](#), [Vegetation Slides](#), [Agenda](#)

1) Welcome & Once-Around - Donna Ball and Christina Toms

- New People in Attendance
 - Lindsey Sim/SFEI - Software Engineer in EI, EcoAtlas coding
 - Miranda Melen - Seagrant Fellow with WRMP working with SFEP
 - Doug Bell - wildlife biologist at EBRPD
 - Matt Graul - stewardship director at EBRPD
- CToms: Acknowledging the very difficult time since the last TAC meeting.
- Rebecca Schwartz Lesberg - organizing Friends of EOS to save the Estuary Ocean Science Center; please reach out to her if you're interested:
rebecca@coastalpolicysolutions.com; <https://www.friendsofeosc.org/faq>
- Aviva: Moving forward, we will not be recording/transcribing TAC meetings or using any AI tools, and will instead manually type meeting notes
- Todd Hallenbeck - BCDC: Regional Shoreline Adaptation Plan (RSAP) - Guidelines for subregional adaptation were approved in Dec 2024 and moved into implementation. The goal is that a lot of WRMP data - BHM, EcoAtlas - will be made available/summarized through that tool. It's in the testing phase right now. Welcoming people to provide feedback on that tool through the end of March - reach out to him for links. It will be ready to launch at the end of May. Todd is happy to present on to TAC on this during June TAC meeting

2) WRMP Implementation Updates - Donna Ball and Christina Toms

- WRMP Funding Updates on SFBRA and EPA - Donna
 - Wrapping up existing RA contract in the next 5-6 months. Next \$3M funding starts right after that, pays for next BHM labor, CRAM, etc.
 - We have EPA funding for the first 2 years for \$5 million. Funding for a 3rd year of implementation from FY25 Continuing Resolution is in review. Word is that this funding source (SF Bay Program) is stable for now.
- Field Work updates

- Vegetation - Chris Janousek, Oregon State University ([link to slides](#))
 - Presents the plan to implement field transect component
 - 3 components to vegetation monitoring:
 - Remote sensing based approaches (BHM)
 - Field-based permanent transects - this talk
 - Transition Zone study by Mike and Tom at SF Bay NERR
 - Started laying out transects in Dec 2024
 - 18 Benchmark, Reference, and Project sites (6 each) chosen throughout the Bay in the six priority regions:

Network (sub-region)	Site	Site type	Owner/manager
Santa Clara Valley	Laumeister (LAU)	Benchmark	USFWS
Santa Clara Valley	Coyote Triangle (COY)	Reference	USFWS
Santa Clara Valley	Pond R4 (R04)	Project (2023)	USFWS
Alameda Creek	Whales Tail (WHA)	Benchmark	CDFW
Alameda Creek	Cargill (CGL)	Reference (1998)	CDFW
Alameda Creek	Mt Eden Creek (EDC)	Project (2008)	CDFW
Novato-Gallinas	China Camp (CHC)	Benchmark	CA St Parks
Novato-Gallinas	McInnis (MCI)	Reference	CDFW/Marin Co Parks
Novato-Gallinas	Sonoma Baylands (SON)	Project (1996)	USFWS
Wildcat-Pinole	Pt Pinole (PPI)	Benchmark	EBRPD
Wildcat-Pinole	Giant (GIA)	Reference	EBRPD
Wildcat-Pinole	Dotson (DOT)	Project (2016)	EBRPD
Napa-Sonoma	Raccoon, ancient (RIB)	Benchmark	CDFW
Napa-Sonoma	Pond 2A (P2A)	Project (1995)	CDFW
Napa-Sonoma	Bull Island (BUI)	Reference (1968)	CDFW
Suisun	Rush Ranch (RRA)	Benchmark	Solano Land Trust
Suisun	Hill Slough East (HSE)	Reference	CDFW
Suisun	Hill Slough Restored (HSR)	Project (2021)	CDFW

- In addition to the vegetation transects, also conducting elevation, surface accretion and groundwater monitoring.
- In Summer (at sites with no species restrictions) and Fall, the vegetation surveys will be conducted and the marker horizon (accretion) plots established
- Field Methods
 - Elevation RTK-GNSS surveys using the CA Real Time Network (CRTN)
 - Veg plots pretty standard, but still working out size of plot (could be up to 1 m²)
 - Soil salinity will be collected when we sample veg. Snapshot in time, but provides some spatial data on distribution of salinity
 - Adding some supplemental feldspar marker horizon plots - supplementing Karen Thorne's
 - There are 3-4 transects/site, orientated along elevation gradients
 - Consistent with MAREA, NERR protocols

- At 2 transects/site for Reference and Benchmark sites - also adding piezometers to measure shallow (1 m) groundwater levels
- Goal - 30 veg, 8 accretion plots, 2 piezometers - and if possible 2 soil cores from the piezometer location for carbon stock analysis at a later date
- Generally transects are randomly located, but did modify to be close to SETs or historical transects
- So far only implementing water level loggers in piezometers, but would like to install salinity loggers if more funding becomes available; loggers record 1000s of points per year, can look at daily, monthly, seasonal patterns
- Progress to-date at 18 sites
 - Napa/Sonoma sites require boat access, haven't started those, but started logistics for that.
 - 12-16 GW stations currently running, and already have time series for these. First download will be this summer.
- Questions for Chris:
 - MikeV is excited about the work
 - Do they need access to a boat?
 - Planned to go with USGS in April, but the USGS maybe not an option
 - Might consider kayak access, but not solo - maybe a volunteer or Trevor to join.
 - Julian Wood - Point Blue going there for point counts, and open to teaming on that to get WRMP veg access. Maybe WRMP can borrow the boat?
 - Doug Bell: EBRPD
 - What are next steps assuming completion of transect installation at all sample sites?
 - To do first round of monitoring
 - Species restrictions, can't get into all sites until mid-Sept
 - %cover by species in all plots
 - 550 plots across all sites
 - Macroalgal, bareground, soil salinity
 - Sample again in ~3 years (2028)
 - Alex Braud:
 - Request: Possible to collect vegetation height? Can pair with LiDAR to assist with veg correction for elevation models
 - Chris has thought about it. Easy to do, hard to do consistently. Max, average, by species?? If there is a most helpful metric for Alex/BHM, that would be helpful to know.

- Alex said that average veg height would be most appropriate
 - Julian - Veg height is important for bird community! The way Point Blue has done veg height, mostly do Max Veg Height. Can be tricky, needs calibration among observers. Maximum - 90th percentile of veg height within a given area is best for birds.
 - Chris - did light attenuation to measure veg density (ie. Licor sensor). But thinking about structure for nesting/sediment trapping, could be useful.
 - Donna - Chris, ok to share slides? Chris - yes.
- Fish - Aviva Rossi
 - Levi is in the field; existing literature review for WRMP is underway, scoping inclusion of fish indicators for SOE report; hiring staff; ensuring permits are up to date; starting work in the South Bay first; aligning methods with other surveys in SFE; will update TAC in April
- WRMP Bird Working Group Update - Aviva
 - Added comments in on monitoring questions; a lot of comments on indicators and metrics; work is paused currently but resuming soon
- LiDAR - Delta - Alex Braud
 - High likelihood of the planned WRMP low tide LiDAR collection to include the Delta; still some uncertainty - but conversations are underway with Delta Stewardship Council; DSC has some funding, people are excited
 - Hoping to include Yolo Bypass
 - Working with LiDAR vendor on costs
 - This is a very fast turnaround - using the WRMP Hydrogeomorphic SOP was highly useful when shared with DSC and saved a lot of time in the discussion
 - Also working with DWR on this
 - Christina gives shout out to Josh Collins about his hard work to align a whole Estuary approach - "Singular Science Enterprise"
 - Josh is almost emotional - listening in and blown away about progress; congratulations - excited about Chris J. being involved
- Lisa - 'Behind the Scenes' work
 - There is a lot of work that has been happening beyond the work we've been talking about with the fieldwork
 - Baylands Habitat Map 2020
 - Tidal Wetland Extent Memo
 - Implemented Science Framework
 - Priority Monitoring Site Network Memo
 - WRMP Monitoring Plan
 - Workgroup and SOP creation
 - Indicator Alignment Report (now available on website)
 - Bird Workgroup
 - Research Permits for 2024/2025 Surveys

- WRMP Data Submittal Portal
 - WRMP Field Monitoring Guide
- Many more!
- We are excited about the upcoming months as the RA grant is wrapping up. We will be rolling a lot of these products out. Keep an eye out for review requests.
- CToms - Are we making sure these are all findable on our website?
 - Lisa - yes, and we are rolling out a new website also.
- Donna - Going to be a webinar on Tidal wetland extent memo and indicator alignment memo in April.

3) Wetland Management Unit (WMU) review - Alex Braud (SFEI)

- Hosted a series of workshops with various folks on TAC and land managers to define these.
- Walk through hierarchical framework idea for WMU
- Goal is to identify a spatial unit of analysis that's in between an Analysis Unit (single marsh) and OLU, a scale more meaningful to wetland managers
 - Intermediate metric reporting unit
 - Easier to assess actions
 - This one is largely characterized by geomorphology like the others, but not entirely - it considers ownership and managers.
 - Approaches taken by workshop attendees to delineate WMUs vary by subregion to reflect different needs of managers. For example, in Suisun, WMUs are largely driven by levee configurations.
- Hoping to have the TAC review and name the WMUs
- They can include single or multiple analysis units and may combine fully tidal and diked baylands
- FELT - used this collaborative web mapping interface
 - Used to delineate and create polygons around estuary
- <https://felt.com/map/Wetland-Management-Unit-Review-V01S9Bp87SnSziWxiOTzNEA?loc=37.9804,-122.3319,11.26z&share=1>
 - Everyone can comment on it, but not edit it at this point
 - Alex walked through how to use FELT, turning on and off layers
 - There are some Project Tracker data, parcel boundaries, CA protected areas database, other layers to toggle on/off.
- Really need help on naming! Got busy in workshops with delineating, but didn't have time for the names.
- Be aware that there were color limitations for polygons so please pay attention to this as you're exploring
- Review of WMU due: Aiming for March 21 - 2 weeks
- Jeremy - This is great! Agrees that FELT is useful. Nice to see about naming.
 - Is the one big blob in Suisun stands out, is that intentional?
 - Alex - yes, much of the delineation in this region was island based. But definitely add your thoughts.
- Donna - Moment to Celebrate Alex!!

- Alex - Thank you to workshop attendees!
- CToms - if you weren't able to participate in the workshops, please reach out. Concept has been challenging to communicate. Trying to find something that isn't super small or landscape scale.
 - Because land management regimes are different in different areas of the Bay, we used different rules and different groupings, because we are trying to respond to what the land managers could use and want.
 - Now that we have everything on one screen, it will be a little more intuitive.

10 minute break

4) Application of the WRMP Framework to Wetland Stewardship in the Central Bay - Arrowhead marsh and other EBRPD sites - Matthew Graul (EBRPD) and Christina Toms

- CToms
 - Now is the time to really talk about how the WRMP can support its program partners
 - This was somewhat hypothetical until we got our implementation funding
 - How the program can generate data to support program participants
 - EBRPD as a specific example - partner from the beginning - they have had a vision about how they could use WRMP to help their decision making
 - Hoping that over the years, we will have a lot of meetings like this
 - How do we want to steer program to develop information for our partners
 - Monitoring supports
 - We need timely information to inform decision making
 - Restoration siting, design, management - support community engagement and stewardship
 - Simpler permit conditions, suite of performance measures we've agreed on
 - EBRPD trying to understand landscape conditions/evolution, status and trends, thresholds of change for targeted interventions, project prioritizations/resource allocation
 - Many EBRPD management questions align with WRMP Management Questions (see [slides](#))
 - Currently most of the East Bay tidal wetland work is concentrated in the Richmond and Pinole shorelines.
 - Driven by monitoring priorities - ongoing or planned restoration, vulnerable communities, historic data to leverage, etc.
 - Richmond shoreline - includes benchmark, reference, and project sites
 - San Pablo Creek Marsh was the original Benchmark site - there were access issues so shifted to Point Pinole (Whittell Marsh).
 - EBRPD - where they have tidal wetlands
 - Martin Luther King Regional Shoreline in San Leandro Bay
 - You should go to Arrowhead and New Marsh - very bold Ridgway Rails

- Management Challenges and Opportunities:
 - ½ treatment for Invasive spartina
 - Concerns about tidal marsh resilience
 - Highly urban
 - Limited sediment
 - Not a lot of natural connectivity
 - Lots of restoration planned
 - Need to help the marsh and its sensitive species persist into the future
 - McLaughlin Eastshore State Park
 - Against heavily developed shoreline (fill, freeways, etc.)
 - Hayward Regional Shoreline
 - Oro Loma Marsh
 - Cogswell Marsh
 - Long term vision for management and restoration
 - Partnering with HASPA (Hayward Area Shoreline Planning Agency)
 - Management concerns:
 - Marsh erosion/drowning
 - Wetland edge retreat
 - Levee erosion
 - Trails on old levees
 - Popular recreation area - most accessible parts of nature is the shoreline for many of the urban areas
- How can the WRMP support EBRPD?
 - Help define management and monitoring questions
 - Identify priority monitoring sites
 - Adjusting sites based on field realities and management priorities
 - Data collection
 - Partners seeing how we can do monitoring to support them
 - Status and trends: Elevation/vegetation, water quality/sediment supply, accretion/elevation change, fish/wildlife, other?
 - Data synthesis, interpretation, and application (not just collecting the information, but helping it be applied and understood)
 - What are thresholds of change that would trigger action?
 - What are practicable goals for habitat stewardship? (gets back to prioritization needs, so investments can be made to support long term vision)
 - What habitat enhancement/restoration approaches may be most effective/enduring? (Most effective, enduring, and align with priorities and goals)
 - People & Wetlands Group - EBRPD to get people into nature to learn about wetlands, learn more about them, tribal use
- Do we want to prioritize future WRMP investments in East Bay monitoring?

- What potential concerns can we focus our monitoring efforts on?
- How can we support management at landscape and park scales to align with EBRPD vision
- Matt Graul (on WRMP Steering Committee from the beginning)
 - Doug has had to do a lot of the monitoring for the sensitive species in these parks
 - Earlier phases of WRMP planning were a rewarding professional experience, but it was more academic. But now we are actually doing the work!
 - Directly benefits their mission
 - EBRPD manages 55 miles of shoreline, and thousands of acres of marshes
 - Mission critical to manage to support endangered species and public access. Protect for future generations. A lot of challenges with sea level rise. This data helps them prioritize, and create designs that will protect these areas.
- Chris Janousek
 - Worked at Martinez shoreline, and there are dozens of sites we'd like to include in WRMP, but wants to include this site in particular because it has a unique species combination because its location in the Bay and Suisun; it has Spartina
- Iryna Dronova
 - Brilliant idea to include Arrowhead Marsh for reasons CToms mentioned, but unique in some ways but representative to so many issues at once
 - This is what a lot of marshes will be facing in the future - it's drowning
 - It has high visitation for birders, among others, just general location in the Bay and ease of access
 - It is a proactive monitoring of what those conflicts might look like
 - There is upland fringe, thinking about shifts
 - Shrinking of habitat, upland migration
 - But also is isolated
- Doug Bell
 - From a Wildlife perspective - in terms of long-term monitoring they've done a lot along their shorelines. Shout out to Point Blue. Invasive Spartina Project has taken over a lot of rail monitoring (a lot of invasive spartina; half of Arrowhead treated). They've relied on partners to help monitor.
 - Arrowhead is most threatened due to sea level rise. Low plain/sediment deprived.
 - Overall - done a lot of restoration; Doc Quack has created shorebird nesting islands. It's interesting to see the social aspect of it. A lot of volunteer efforts. Public scrutiny associated with those locations (trespass, opinions etc.). Attracts predators, including feral animals. Predator surveillance monitoring to maintain success of those sites.
 - Concern varies by sites
 - 4-legged mammals vs corvids
 - Developed feral cat policy
 - Trapped where possible, work with shelters in regions to rehome or working cat programs
 - Led by Natalie Reader

- Julian - he likes this idea - plugs WRMP science into management decisions.
 - Funding question - how important is this information to East Bay parks? Is this a potential for EBRPD to help fund some of this?
 - Matt - Interested in info, but we don't have any money for this level of monitoring. Would need to partner for a grant. Would need additional funding/staffing for something like this.
 - Ways to phase in some of the WRMP monitoring to help cover some of this.
 - Want to make sure any changes and site decisions to run by park.
 - CToms - The WRMP is in the early phases of monitoring - in future years, we want to use WRMP funding to expand monitoring to more sites.
 - Should probably start elevation transects at Arrowhead.
 - What are thresholds for management actions - good site for that.
 - Being strategic about WRMP monitoring for getting the most bang for buck
 - Not only for regional science - tied to anticipated monitoring needs
 - But also collect data from program partners with direct benefits
- Jeremy
 - Prioritization: is there a process for this? What drives prioritization? Working backwards from the answer to what science is needed. What do we need to do to get to the questions that you really need answered. Prioritization of resources
 - We have context for individual marshes
 - Doug Bell
 - Arrowhead is ground zero of the Central Bay population of Ridgway's rail.
 - Partner with ISP, CCC, USFWS to perhaps bring in outside partners for justification for prioritization of this site
 - Matt Graul - Arrowhead is the biggest need, but Cogswell also sees a lot of erosion. And lots of planned restoration at Hayward marshes.
 - Dotson has been restored, but useful to get information for expansion etc.
 - All of them could be prioritized based on different criteria
 - Todd Hallenbeck
 - Would like to see Arrowhead marsh included in WRMP
 - Sea Level Rise adaptation planning via West Oakland - Alameda Estuary Adaptation Working Group
 - Unique opportunity to see how WRMP can inform sea level rise planning
 - CToms - Why we want to hear more about RSAP and how WRMP can support those science needs!
- Julie Gonzalez:
 - CRAM as one metric but what about site level metrics combined with CRAM for a better sense of condition?
 - CToms - yes, one of the things about CRAM is it contains a bunch of subcomponents that combine to the overall assessment number. Some are veg, hydrology, landscape positions. Our intention with our broader science framework - when we have additional data - when you have a CRAM score - then you have

additional information to dig into why the score was great or not great. Always been the intent, why our science framework integrates BHM, CRAM, and Site Specific

- Donna - Collecting a broader suite of CRAM data across the whole estuary also gives a better framework of where a wetland fits within the condition of the overall estuary
- CToms - this is the beginning of the conversation, not the end.
 - Great talk about how we can target our monitoring efforts to support our program partners
 - Arrowhead and Cogswell sounds like priorities

5) Other Updates - Lisa Beers

We are going to be releasing some of the data products that were mentioned earlier.

- Project Tracker Wetland Restoration Layer
 - PTTWR
 - SFEI staff looked at every Project in Project Tracker and updating things like when it was breaching, intentional, or accidental. Basically cleaning up and standardizing data.
 - 2020 all sites up until 2020, and 2024 will have additional sites
- Tidal Wetland Extent Memo
 - Thank you everyone for feedback on this; final report will be out in a few weeks
 - Webinar on April 16 to talk about Memo and PTTWR layers
- Posted revised Indicator Alignment Report on website, which incorporates all the TAC feedback

6) Next Steps and Wrap Up - Donna Ball and Christina Toms

- SC Meeting March 20
 - TAC Members can attend, highly encouraged that you do. SC has a broad diversity of viewpoints about WRMP and its work.
 - Science Team will be providing an update on current WRMP science and relating them to Management Questions.
- TAC Meeting April 29
 - Shared all TAC and SC dates for 2025

Meeting adjourned