



SF ESTUARY
Wetlands
Regional
Monitoring
Program

Wetlands Regional Monitoring Program Technical Advisory Committee Meeting Tuesday January 27, 2026 9:00 - 11:00 AM

Attending: Alex Braud, Aviva Rossi, Chris Janousek, Christina Toms, Cristina Grosso, Iryna Dronova, Jaime Lopez, Jemma Williams, Jeremy Lowe, Jim Hobbs, John Callaway, Josh Collins (until 10), Karen Thorne, Karen Verpeet, Katie Smith, Kendall Harris, Laura Feinstein, Levi Lewis, Lisa Beers, Matt Ferner, Melissa Foley, Sasha Harris-Lovett (first hour), Stuart Siegel, Susan De La Cruz (second hour), Todd Hallenbeck, Zooey Diggory

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

NOTES:

1) Welcome & Once-Around; Christina Toms (RWQCB) and All TAC members

- Ali Weber Stover needed to step down from TAC due to shifted federal priorities
- Katie Smith - small mammal ecologist added to TAC. UC Davis, CDFW, WRA, experience with sport fisheries, The Wildlife Society.
- John C. - Restore America's Estuaries conference coming up this fall - let's ensure that we have an WRMP session
 - WRMP-themed sessions/field trip ideas are being formed right now
 - <https://estuaries.org/>
 - If folks want to help organize a RAE session, we're meeting from 2-3 PM on Thursday, March 5th - reach out to Sasha for the meeting invitation

2) WRMP Implementation Updates; Christina Toms (RWQCB), Aviva Rossi (SFEI)

- Funding updates
 - Applying for competitive and non-competitive funding through EPA.
 - Letters of Support requests coming out soon
 - Non-competitive funding will cover most WRMP subawards for all five years of the award (2025-29)
- Field notes:current fieldwork
 - Fish work happening now
 - Lidar is looking like April/May release, going through QA/QC now
 - Planning for CRAM 2026
 - Piezometer data collection
 - Photomonitoring planning
 - Vertical and horizontal control contracting
- EcoAtlas Landscape Profile Tool Webinar
 - Huge success! 90+ registered, 70+ logins (some with multiple attendees) from multiple agencies

- Presentations/Press
 - KQED story on WRMP and Tidal Wetland extent aired nationwide
 - www.wbur.org/hereandnow/2026/01/08/california-wetlands

3) Cross-Indicator Analyses; Christina Toms (RWQCB), Aviva Rossi (SFEI), Lisa Beers (SFEI)

- WRMP data are coming in
- Goal is to use incoming data to begin addressing Guiding and Management questions
 - Discuss initial analyses
 - Who is the audience for the analyses
 - Decision makers. Purpose is to show, not tell. Demonstrate usefulness of WRMP products
 - How will we present this information on the website to a variety of different audiences
 - Start dialogue with/get feedback from the TAC
- 5 initial cross indicator analysis options (using existing data) identified
- Identified on analysis option to kick off TAC discussion
 - How do veg communities vary across site age and location, and how do plot level data relate to level 1 and 2 data?
 - Address Q's 1A and 4A from science framework
 - Available data includes historic IRWM, current (abundance/dist/veg/elevation/salinity), CRAM scores, and 9 sites with both CRAM and Veg transect data, level 1 BHM metrics
 - Current- 17 sites with 30 plots, $\frac{2}{3}$ of sites have groundwater data for most of 2025
 - Matt Ferner
 - Be sure to include NERR vegetation data from China Camp (annually starting 2013) and Rush Ranch (annually starting 2016)! Those veg plots coincide with WRMP monitoring locations at each site.
 - Designed the sentinel site program around 2000 to inform coastal zone management.
 - Vert control marks
 - WQ monitoring stations
 - Etc
 - Those sites were taken into consideration when choosing WRMP site network
 - Papers from Karen:
 - A couple of papers Chris and I have done with plot data and spatial analysis - Jones, S. F., C. N. Janousek, M. L. Casazza, J. Y. Takekawa, and K. M. Thorne. 2021. Seasonal impoundment alters patterns of tidal wetland plant diversity across spatial scales. *Ecosphere* 12(2):e03366. 10.1002/ecs2.3366

- Chris J
 - Since CRAM was not done at exact same locations as veg transects, are there opportunities in 2026 to do surveys at the same location? Important because of diversity of west coast wetlands
 - Idea to look at age of restoration projects is a great one. Only 5 right now. Probably data from many other sites that we can pull from. Time for space substitution is very interesting, worth looking at.
- Iryna Dronova
 - One of the challenges is having very heterogeneous wetlands. Even biomass predictions are very complicated at these sites. Comparing CRAM with more thorough plot assessments would be very useful
 - Just had paper come out-
 - <https://kwnsfk27.r.eu-west-1.amazonaws.com/L0/https:%2F%2Fdoi.org%2F10.1016%2Fj.ecoinf.2026.103610/1/0102019bfb09f9b-fde4d207-0cab-47fa-892c-b16a9889bd48-000000/RiG-MNTR9e-43KLR3qvITZmDeGQ=462>
 - Stuart - Iryna comments direct to my question.

From chat:

- Hobbs - marshes are like snow flakes [in response to Chris Janousek's point that they are all unique]
- Stuart - From probabilistic standpoint, what is potential for the small scale plots not to "land" in places that capture change even if occurring? ie, chance of missing change
 - Chris - One additional advantage of doing the on-the-ground veg work is that we are making additional observations outside of the plots. These are qualitative but we can note the arrival of new non-natives for example, things that won't be captured by remote sensing.
- Josh - CRAM is inexpensive. It could be run at the L3 plots with remote sensing data to investigate correlations across L1-L3. I expect the TAC will need to go to the field as a multi-disciplinary group with the various data in hand and talk integration across scales.
- <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecs2.3366>
- <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1582>
- <https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2023.1215964/full>
- Chris - This is a new paper where we address long-term veg change in older restored marshes on the west coast, including some pairs of restored-reference sites in SF Bay <https://www.int-res.com/abstracts/meps/prepress/meps15014>
- Josh - Building on John's advice, and recalling previous discussions, we will want to search for thresholds with cause and effect relations that might trigger management responses.
- Laura Feinstein in Q&A
 - There's been work to back-validate CRAM to finer scale indicators. How would this work build on those efforts?
- **Discussion 2**
 - Leveraging existing and current monitoring data in restoration sites, can trends in vegetation change over time be detected? How should these analyses be

conducted to best inform management decisions? Is there sufficient data to conduct an estuary-wide analysis?

- John C
 - Need to get at drivers and cause and effect relationships. How is inundation affecting shifts in vegetation at sites for example
 - Reminder that all of the drivers are laid out in 2022 program plan - compendium of conceptual models
- **Discussion 3**
 - What analysis options would most effectively illustrate the relationships between plot-based vegetation surveys & BHM metrics that might inform permit-driven monitoring requirements?
 - Get back to WRMP doing more of the data collection that agencies rely on for their analysis
 - Need to improve and hone data visualizations for these purposes
 - Zooey D: It would be really helpful to have more info on relationships between CRAM and plot based veg data
 - VW getting push back on using CRAM for compliance/permit-required monitoring
 - Being able to have more data, even in systems we aren't actively working on, is really helpful
 - Chris J: What are the products that we want from these analyses? White paper? Interactive material? Etc... Important to keep in mind as we ask all of these questions.
 - Laura F: perhaps old datasets that were collected for validation, could have new purposes for us
- Cross Indicator Analysis Discussion (TBC at a combined workgroup meeting)
 - Considering the initial data coming in (BHM/lidar, CRAM, SET-MH, Vegetation, and Fish), what were some cross-indicator analyses you were hoping to see first to address the Guiding Questions?
 - Poll for scheduling discussion will be sent out
- Jim Hobbs
 - Might be helpful to have managers chime in with all the management decisions they need to make so that we can better focus our metrics to serve management decisions.
- **Poll to identify a date/time for an inter-indicator workgroup meeting:** [Timeful](#)

4) SET-MH New Locations; Lisa Beers (SFEI)

- Next two SET-MH locations
- Notable gaps
 - Hayward Shoreline (inc. Oro Loma and Cogswell)
 - Eden Landing
 - Napa/Sonoma
 - Restoration sites

- Karen: Feasibility feedback - a lot of restrictions due to endangered species and winter. If there is anything that can be accessed year round or in winter, we should take that into consideration.
 - This year, between the shut down and storm, USGS could not access all SET locations
 - Would like help installing SETs, will know dates by next month
- Stuart - North bay centennial marshes

Chat

- Stuart Siegel
 - SET-MH - I would offer up north bay centennial marshes, in particular Sonoma Creek West, Sonoma Creek East, Strip Marsh East. SCW has had enhancement implemented, SCE a "reference" with no actions currently planned, SME has large enhancement upcoming.
 - Toms: can we get Caltrans to pay for these instead of the WRMP?
- Janousek, Christopher N
 - How about Whale's Tail and/or Cargill? Whale's Tail seems to be showing some erosion on the bay edge. Those sites are accessible year-round
- Stuart Siegel
 - Relevant also because these marshes are all primary "natural" shoreline protection marshes. Suggest breadth of system type and range of functions to maximize span of understanding.
- John Callaway - Eden Landing and Whales Tail seem like an important place to grow given restoration future in the region
- Jaime Lopez (Edited)
 - I second Whale's Tail as that is a location where a new sediment placement technique (USACE 1122 strategic sediment placement pilot project) was implemented a few years ago. So continued data collection in that area would be helpful
- Matt Ferner (NERR)
 - Similarly, maybe a couple new SET/MH could go in at Emeryville Crescent in advance of the upcoming strategic sediment placement pilot just offshore.
- Janousek, Christopher N
 - Maybe we also need to measure lateral loss more comprehensively across the WRMP, e.g, staking marsh edges at the bay...
- Stuart Siegel
 - Karen brings up great distinction - bayfront erosion distinct from interior marsh accretion. Solid examples of bayfront NBS for eroding marshes that avoid riprap. Maybe have high priority need at Whales Tail per Karen's comments?
- Karen
 - Central Bay - Oro Loma?
- Janousek, Christopher N
 - I've wondered if the radio tower marsh near the Bay Bridge might eventually be a good central bay site to add

- Toms - Radio Beach Marsh - yes, it's relatively low in the tidal frame compared to other Emeryville Crescent marshes. Planned strategic sediment placement offshore at Emeryville may be another reason to install one in that area
 - Maybe we also need to measure lateral loss more comprehensively across the WRMP, e.g, staking marsh edges at the bay...
 - Matt - Imagery is also good at documenting marsh edge retreat, and I think SFEI is working on that bay wide
 - Alex B. - Yes, Baylands Habitat Map change analysis will include shoreline erosion/accretion assessment between 2020 and 2025. We're also working on piecing together recent past shorelines from NAIP imagery (2010, 2016, and maybe others depending on algorithm success) to have more data points.
 - Toms: photopoints might also be able to capture edge erosion
- Jaime - Would Hoffman Marsh be a SET option for Central Bay? Noticed there wasn't much in that area.
 - Toms - Hoffman and Stege could be options. One challenge is that there isn't much more restoration planned for that area, but data from there could help inform future management (e.g. need for strategic sediment placement)

Not chat

- Are there any concerns about installing at a site that's actively eroding?
 - Need to consider geomorphic site content. Very different than non-eroding sites.
 - Toms: we know from Karen and Jessie's work that Whale's Tail's issue isn't vertical accretion, it's lateral edge erosion - need to pair methods with conceptual models
 - Need to think about what metrics we're most interested in
 - Chris J: need to figure out the cycle of sediment on the marsh?

5) WRMP Profile Tool 10:10-10:25

<http://sfei.li/wrmp-lp>

Cristina Grosso (SFEI)

- **Action Items for Cristina Grosso**
 - **Add information on how best to access the source data**
 - **Include link to factsheets when available on how to access the data and to each of the sections**
 - **Highlight AU on map when hover over bar**
 - **Add link to webinar recording**
- Analysis Units Profile Tool display options
- Sites <1ac are not shown on map or included in analysis
- All incorporated into printed report as well as online
- Feedback from TAC:
 - Christina T: Huge improvement
 - Levi L: This is amazing! This is exactly the data we need for our fish analysis.
 - How can we access the data files for additional analysis?

- All data is on SFEI's data center. Might need to add links for direct access
- He's really excited to see this data, knows other people will be excited to see this data.
- Alex B - WRMP BHM2020 Metrics
v1.0 <https://www.sfei.org/data/baylands-habitat-map-2020-gis-data>
- Fact sheets for these will also be linked from these when they are ready
 - Different levels of analysis
 - UVVR
 - Elevation capital
 - How we classify wetland typology (existing, restored, or evolving)
 - Callaway - be sure to link to these from the data download locations too

6) PTTWRM 2025 Review 10:25-10:55

Kendall Harris (SFEI)

- New sites & added water regime
 - Repeatable annual update cycle
 - Formal review cycle
 - Final release, data publication on EcoAtlas
 - Accurate, consistent, regional citable reference
- Do you know of any projects that started groundwork or returned to tidal action in the last year?
 - Resources sent to TAC via email last week
 - Friday Feb 13 is final timeline for input data
 -
- **Action item for TAC: By Feb. 18th, please provide PTTWRM update feedback on the Felt interactive website:**
 - Allows for spatial feedback directly
 - Table symbol in the upper right provides a tabular view - can toggle see all of them or what's in the view
 - Turn layers on/off
 - Corresponding document:
 - **Project Tracker Tidal Wetland Restoration Review 2025 [SHARED]**
 - When you provide a comment, if it doesn't show your photo/name, please include your name and contact information so that we can get back to you
 - The comment fields in 'the Pacific' provide general instructions

From chat:

- Josh - how are uses of the EcoAtlas (base map, restoration map, related resilience atlas ...) being tracked? How can we assess effectiveness, especially within its target audience?
- Karen T - Is tidal a requirement for inclusion? I am thinking of the Valley Water project for upland restoration - City of Palo Alto Horizontal levee pilot project.

- Toms - I think projects like that, which are meant to enhance existing tidal habitats, should be included
 - Lisa - To date we've only included tidal wetlands. There will be an update to include muted and managed wetlands.
- Stuart - Want to laud the work of SFEI on the restoration map and dataset! A huge lift especially given the ~150 projects Kendall mentioned included. Ability to provide input fantastic. They also found a few much older restorations that had been "lost" to our inventory.
 - Being a researcher and able to query it is valuable
 - Spoken - really applaud this effort. This is great. Thank you.
- Stuart - Good luck with the Delta! Years ago CALFED gave me boxes of poor resolution grant docs of funded projects, some subset of which are "tidal" restorations such as linear levee setbacks. Those boxes are...who knows where. The big sites far easier. IRWM compiled large site restoration info back in 2003.
- Jemma - This is a great example of the importance of entering new projects into and keeping them updated in-- Project Tracker/EcoAtlas--this tidal marsh dataset is entirely made up of that information and I encourage all of the TAC to continue to be diligent in keeping projects up to date (annually +) within your orgs & agencies. Including keeping contacts up to date too :)!
- Jaime - Excellent tool! Appreciate the homework and I may have missed it. But, will project managers for some of the projects be contacted for some of the information being asked for as well?
- CToms - strides we've been able to take in understanding the acreages, and what resulted in those acres. Being able to speak with this kind of detail about how the estuary is changing in response to action by voters, funders, and land managers. This is huge for storytelling. Many of us interact with scientists and managers from other regions of the world, and they look to investments from the Bay Area for things they want to achieve.
- Lisa Beers - acknowledge April Robinson's work in getting this going, and expanding this work into the Delta. Incorporation into the Our Estuary Work. A next step in future years.
- Zoey Diggory
 - Really great application of project tracker data, really powerful visualization
 - We are going to do this every year thoughts -
 - 6 months ago to all Project Tracker users with a request and a deadline for entering new data. It was a great process. Clear instructions. With clear deadline. Impetus she needed. Thinking about updating this kind of information for projects in coming years - One person doesn't know all of the things. Sometimes they don't have the institutional knowledge. The administrative region was a challenge. Couldn't sort by Valley Water projects alone. Thought projects were missing, but they had just been coded to another regions. Is there a way to have multiple administrative regions? Easier for organizations to see what is in there and what is not. Jemma agrees.

- Ability to have >1 Admin Region
 - Comment about “Enhanced” projects. Understands looking at different project types for different regions. And we don’t have consistent data yet to include on maps. BUT - there is substantial effort and investment into enhancements. They are HUGE lifts. A plea to consider adding the Enhancement category. Lovely for folks to see that effort as well.
 - +1 from CToms
 - Maybe there’s another way to capture that within this framework
 - Stripmarsh east is an example. How is that captured?
 - Karen Thorne: I think enhancement projects are important. In some areas they would be described as restorations.
- Cristina Grosso
 - We know the just 1 for the admin region is a hindrance. Working on funding to add more than just that one.
- Reviewed Problem sites
 - Existing sites where we are still unclear. (Actually constructed, or just early planning)
 - We are seeking input or contacts for the following projects, where information is still limited.
 - Napa Urban Waterfront Restoration
 - Jemma Williams, SFBJV: I might be able to help on the Napa project Q if I can see where it's located (there appears to not be spatial data in EA). &/or a contact
 - First Street Highway 29 Exchange
 - Community-Based Restoration and Stewardship - Marin Islands NWR
 - Carquinez Bridge Seismic Retrofit Project
 - I-80 Improvements/HOV Land Project
- We’ve sent emails to listed project managers for these project, but a lot of them have retired or moved to new jobs
- CToms - we could reach out to Caltrans District 4 for some of these projects
 - Aviva - I can help with Caltrans contacts
- Josh Collins
 - is it possible to estimate projects costs? I got asked by a fed senator about average costs of restoration per acre. I said we can take the sum of all fed-state monies pent and divide by sum of acres but that seems stupid.
 - **Laura Feinstein:** It would be interesting to look at cost per acre on a site-by-site basis
 - Christina Toms - project costs are so variable, and would hate to see them get detexualized and shared that way. Especially with multibenefit projects.
 - **Zoey Diggory** - Maybe WRMP side project could dive into a few projects with all context to come up with some ranges.

- **Matt Ferner:** Also could be important to distinguish between ecological project cost vs. associated public access costs. Getting at the multi-benefit complexities of public trust investments
 - +1 **Laura Feinstein**
- CToms - good to discuss with Steering Committee too - that represents the project funders - answers questions at a finer scale. Seems like something SFBRA would be working on.
- **Jemma Williams:** The SFBJV visits DC every year for the Fly-In w/ partners (advocating for project funding in the region) and presents electeds with a subset of projects & their funding needs within the region. We don't calculate per acre but we provide both acreage and total project cost est for 3-5 years. I'm currently gathering updated project needs for our 2026 Factsheet. We'd be happy to chat about that process more with anyone! Here's the 2024 Factsheet (SFEI helps us w/ the map too!)
<https://drive.google.com/file/d/1yEetqvs3nwKtS6yVm4deJk1OXPRVyu23/view>

7) Next Steps and Wrap Up; Christina Toms (RWQCB)

- 2026 TAC meeting schedule (9-11 AM)
 - March 3
 - April 28
 - June 2
 - July 14
 - September 1
 - October 13
 - December 8
- 2026 SC meeting schedule (10 AM-12 PM)
 - March 19
 - June 18
 - September 17
 - December 17