



Wetlands Regional Monitoring Program Technical Advisory Committee Meeting Tuesday September 05, 2025 9:00 - 11:00 AM

Attending: Alex Braud, Alex Thompson, Aviva Rossi, Chris Janousek, Christina Toms, Donna Ball, Iryna Dronova, Jaime Lopez, Jemma Williams, Jim Hobbs, John Callaway (second hour), Julie Gonzalez (second hour), Karen Verpeet (second hour), Laura Feinstein, Levi Lewis, Lisa Beers, Matt Ferner, Pete Kauhanen, Sarah Firestone, Stuart Siegel, Todd Hallenbeck

NOTES:

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

Agenda

1) Welcome & Once-Around, Christina Toms and all TAC members

Brief (1-2 min) updates on relevant items (related efforts, proposals, etc.)

- Jeremy's receiving the Bay Adapt Award! Hooray!
- Donna - SBSP Lunch and Learn - Josh Ackerman will present on birds [next Tuesday](#)
 - <https://www.southbayrestoration.org/event/lunch-and-learn-science-breeding-waterbird-ecology-and-management-restoration-project-josh>
- Todd H. - BCDC
 - launched the Shoreline adaptation atlas - brings in and formally makes data relevant to the WRMP front and center (like OLU, BHM) - in beta phase so please use it and let us know
 - EcoAtlas and Project Tracker - develop workflow for annual updates; messaging to project managers will go out shortly to make updates; worked with JV to make data upload more streamlined; hopefully this all will help with better quality data
 - EcoAtlas - SFE Geospatial WG - webinar hosted on Nov 1 from 2-3, re-emphasizing utility of EcoAtlas - top 5 tools and use case presentations

2) WRMP Implementation Updates, Donna Ball

- Funding updates
 - No update; but wrapping up first SFBRA contract and still waiting to hear about additional EPA funds;
- Fieldwork updates

Thank you to UCD and Point Blue for access to boats for fieldwork - it is truly appreciated and highlights our common goal

 - Lisa in field with Chris J in Napa -
 - 12 of 17 sites have been completed and by the end of next week that will be 16 of 17!
 - In the works - Photomonitoring Plans for sites
 - Got Permit from CDFW for water quality at Eden Landing
 - Working with USGS for fall surveys, installing SET-MHs at 2 new sites
 - Pond 2A and Mt Eden Creek Marsh, bot restoration sites

- From chat - Stuart - For Pond 2A, lots of data from 2003-2006 collected by IRWM crews: topo, water quality, vegetation, birds, geomorphology, fish, inverts.
- Fish Surveys
 - 100 survey locations they've been sampling 2x/season
 - over 250 trawls so far!!!
- CRAM
 - Monitoring Plan has been developed with random points generated across the lower Estuary's tidal wetlands to better understand changes in restoration site conditions over time. And develop a more comprehensive Cumulative Distribution Function (CDF) curve for the Bay
 - Over 3 years will collect 100+ assessment areas across sites of all ages
 - From chat: Laura - Maybe others already know this, but the EcoAtlas cumulative development function curves allow us to see the rate at which restored marshes reach reference conditions over time. Once we have a CDF curve, we can assess whether relatively recent restorations are on track to reach reference conditions or not.
- New CDFW Access permits
- LiDAR update
 - A lot of South Bay, San Pablo, Suisun is done.
 - Will get an update today - they send them out on Fridays
 - SFEP published an excellent [LiDAR Blog post](#)
 - Data collected when tides are below Mean Sea Level
 - Final deliverables end of Jan 2026
- Science products
 - EcoAtlas WRMP Landscape Profile tool and corresponding memo
 - SFBRA Dashboard Update is live now:
<https://ecoatlas.org/dashboard/sfbraDashboard-1.php>
 - PTTWRM - now known as the Restoration Map
- People & Wetlands update
 - StoryMap on PCBs in SF Bay, developed by Sofia Bibbo - addressing environmental quality around the Bay
 - StoryMap on flood risk reduction, developed by Miranda Melen and Natalie Rossi
 - Process of Wetland Decision Making results - Miranda and Natalie Rossi - can't host on WRMP or SFEP webpages because of federal restrictions so looking for a place where these can be hosted
 - WRMP Explorer - public access and shoreline restoration - access via bike, walking, driving, public transit - also trying to find a place to host this
 - Restoration Project benefits - worked with Cristina Grosso to get this data accessible on EcoAtlas
 - Stuart: Julie Gonzalez to start on 3 year project with DSC - project to see how people around Delta and Suisun perceive wetland restoration - Cristina Grosso is also involved; will start later this fall.
- Presentations to partners
 - Past

- BRRIT/PMC - CToms and Donna
 - Donna - CToms gave overview of WRMP and focused on what we're doing and collecting is starting to help restoration projects
- CWMW - CA Wetland Monitoring Workgroup - CToms presented overview of WRMP
- SFEP Implementation Committee - Aviva and Sasha (SFEP) presented overview of WRMP
- Upcoming
 - [State of the Estuary Conference](#) Planning Update - Lisa and Aviva to give a longer introduction talk followed by a series of lightning talks and then an interactive session about the WRMP science and online products
 - Encourage everyone to attend, interact, engage, and learn

3) The WRMP, NOAA, and Tidal Datums, Christina Toms and Alex Braud

- CToms: Met with NOAA CO-OPS, who run Tides and Currents - talked about upcoming transitions to a new tidal data epoch - all currently based on 1983-2001 epoch and will soon transition to 2002-2020 epoch; talked about the potential for WRMP to develop 5 year rolling epoch; also discussed CORA
- NTDE update - the new tidal datums are expected to be released after 2027 (may be later due to staff shortages); there's an update process - automated process to develop new stats; do data collection and reanalysis, new survey leveling; confidence in datum; compute and then public release
- In most of US, this national epoch cycle is how new datums are calculated - some exceptions for Alaska and Louisiana for various reasons - updating every 20 years isn't sufficient though to account for changes due to SLR - calculations for many indicators and metrics are based on tidal datum
- Potential issues with Z^* and % below MHHW - we use this info to understand veg patterns, sediment deposition, and risk of drowning; z^* of 0 = MSL, 1 = MHHW
- Example - Baylands Resilience Metrics - % of marsh unit elevation below MHHW - histograms of elevations in individual marshes relative to z^*
- Alex Braud - current histogram for Wildcat marsh based on current tidal epoch (1983-2001_ has 9 % below MHW; with new tidal epoch, 29% below MHW - does this mean that the marsh is drowning? No - just a shift in the epoch; It becomes challenging to communicate the change
- Potential issue with z^* and % below MHHW - tidal data are static until updated every 20 years; interpretation of z^* may be difficult to communicate
 - % below MHHW or MHW will shift as datums change
 - Orthometric heights are also changing - will changes be significant or just a few centimeters
- Slide of MSL in the San Francisco Estuary - seeing a change since 1941
 - Variations in tidal range in lower south bay - ranging between +0.11 to +0.14
- These new data sets won't be available until 2027
- Thinking about options for being more flexible and responsive to changes, do we interpolate from CO OPS station and add

- Thinking about CORA, modeled, data-assimilation.
- Ring of points that show different tidal datum values at different locations. Historical Baylands extent. Spatial variability. There were differences between AECOM, NOAA VDatum.
- Not really getting nuance in AECOM like up the Napa River, VDatum a little better
- CORA
 - Similar resolution to VDatum
 - Measures waves and water levels
 - Measures Water level, elevation, pressure, waves
- From chat: Stuart - Can the histogram axes be switched so that Y is elevation (Z^*) to align with high elevation top, low elevation bottom?
 - CToms - for the current Baylands resilience metrics - no. we can discuss changing the format for the next update of the metrics
- How is it different from CoSMoS
 - Earlier are physics only hindcasts
 - CORA does is physics and data simulation/tide gauge observations
 - Better represents sea-level rise trends over time
- If we make new tidal datums, make very explicit what the purpose is. Emphasize that it is not for navigation.
- 8/8 Survey to WRMP TAC and BAAFPA (Bay Area Association of Flood Protection Agencies)
 - Received a LOT of responses back. Very helpful.
 - Slide shows blue text - particularly relevant for WRMP
 - History to provide context for WRMP metrics
 - Long Term Planning
 - Regional planning tools (like efforts Todd Hallenbeck is working on with BCDC)
 - Identify triggers and thresholds for intervention and management
 - Something that came up a lot
 - More straightforward interfaces for showing observed and anticipated sea level rise trends. NOAA did this (hopefully this will still remain up and running)! <https://coast.noaa.gov/sealevelcalculator>
 - Puts in regional and global context
 - CToms very impressed
 - NAV88 Conversion
 - Less reliance on this with the North American Pacific Geopotential Datum. Less reliance on physical benchmarks and leveling.
 - A lot of the fieldwork needed will be less relied on in the future
 - From chat: CToms - The more I learn about geodesy, the more I think it's a miracle that we can say anything about how the surface of the Earth changes
 - Stuart - Going fully GNSS and no BMs means using only GPS equipment (\$\$) and ingesting its inherent vertical uncertainty. The "old school" leveling to local BMs can be a

lot cheaper and if close tightly, high precision and allows education programs to engage more easily.

- Laura F - +1
- Tide gauge locations
 - NOAA - deepwater, along spine of estuary
 - Most in the Baylands operated by a mix of agencies (DWR, Marin FCD, etc.)
- Throughlines from the discussion with NOAA and survey results
 - Need data tailored to Baylands. Especially where tributaries enter baylands
 - Not waiting for 20 years between updates
 - Integrating non NOAA gauges into NOAA system
- Next Steps
 - Joint presentation to WRMP and BAAFP re: CORA
 - Still working on scheduling it
 - Need more information on non-NOAA tide gauges
 - Hydrogeomorphic Workgroup - If WRMP wanted to calculate our own, what would it involve
- C. Janousek
 - 1. A lot of water level stations are in relatively deep water (sloughs, Bay). That is relevant and pertinent to some areas, in terms of flooding etc. What we are really lacking a lot information on water levels inside smaller tidal channels inside our marshes. Levees are abutting levees and communities. Can we implement for relatively low cost (pressure sensor, not laser) water level monitors in wetland
 - 2. We have all these sources of error in assessing long term change. Even a year of data from NOAA (super precise) and calculate and theres still a couple of CM of error. Reliant on RTK GPS, which also has error.
 - Useful to think about sources of errors, how they may compound with each other, and what the relative magnitude they each are.
 - SLR is mm/year. That adds up over the decades, but with a snapshot. We end up with cm of error compared to mm of change.
 - Matt Ferner: Would love to see this list of errors. Something we can request or require from NOAA. To have an error analysis. Some kind of understanding of compounded area. How it varies spatially and temporally. How WRMP data is relevant in terms of this overall error range.
 - Do have long-term water data (7-8 years) from upper level channels of China Camp. Very different from Bay datums and subtidal channels.
 - CToms - when would we get those datums from the NERR? Very soon.
 - Stuart - also just calculated tidal datums at [Rush Ranch?]
 - From chat
 - Stuart - IRWM has extensive in-marsh water level data and I recall calculated tidal datums, for six marshes from Brown's Island in east to Carl's Marsh in west.
 - CToms - you're getting those data to Lisa, correct?

- Stuart - It's all on IRWM website hosted by SFEI
- Lisa - I have channel tidal and salinity data from 6 sites from my PhD work (~2007-2012 ish): China Camp, Petaluma marsh, Raccoon island, Rush Ranch, Browns Island and Sand Mound Slough. Surveyed regularly using RTK
- From Stuart - Chris J - YES. Signal to noise ratio. cm-scale uncertainty in various data collection efforts while trying to assess mm-scale change. Time is part of the solution so can see change getting into cm-scale so less noise.
- From Alex B. - https://repository.library.noaa.gov/view/noaa/70293/noaa_70293_DS1.pdf
- Chris J. - Stuart - will the new datums at First Mallard and China Camp be tied to NAVD88?
 - Stuart - Yes they all are/will be.
 - Matt - The First Mallard gauge hasn't been regularly surveyed, so there is some potential effort/drift at that location.
- Matt F - The upper reaches of tidal wetlands will never be covered by NOAA so that seems like where WRMP effort will be most impactful.
- IRWM data is one of the reasons the WRMP is reoccupying so many sites. But only funds to put out one multiparameter gauge (that's the one Matt is putting out at Eden Landing).
- CToms - we are not Tidal Flooding Regional Monitoring Program, must make sure the burden of dealing with the lack of coverage of tidal gauges shouldn't be borne by WRMP. So excited to talk to BAFFTA more. Maybe more resources to get more gauges out there. Improve vertical confidence in the data.
- Donna - Thinking about timing.
- CToms. Hydrogeomorphic workgroup coming together timeline, needs to talk about as a science team. Maybe this winter due to capacity. Nearer term, discussion with CORA.
- Stuart - "Really excited with everything I'm seeing today" "coming together remarkably strongly" "can really have commentary about where the marshes are going" "workflow is coming together to answer core questions" "emergent capacity"
 - From chat - Donna - Thanks for those comments Stuart!! It all takes time...
- Tidal inundation is such a driver, really want to get this right.
- Janousek - plug for the groundwater monitoring we are doing. In progress.
 - Future TAC agenda item.
 - Have 4-5 months of data already
 - 12 sites, 24 piezometers total
- From chat - Stuart - For Alex - Sears Point LiDAR DEM just about done and ready to pass along to you.
 - CToms - let's make sure we share that with the Australian DEA Intertidal team too

- CToms - tremendous everyone supporting each other in the field

4) WRMP Website Updates, Karen Verpeet

- Goal: centralized and accessible to report out. And expand the scope of the website, and engage multiple WRMP audiences.
- Up until now, focused on structure and governance, NOW we actually have results
 - Flipping to focus on results, and de-emphasize the work we've done with planning
- Intended Outcomes

Broad WRMP audiences

- ...are **introduced to the WRMP** in an engaging and clear way
- ...can **understand** what is being monitored and why
- ...can **easily locate and understand**
 - the latest summary-scale information
 - detailed information for any given metric
 - information about the program and related efforts

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- A year and a half long effort. Worked with ESA (web design consultant).
- We have coordinated with the Steering committee
- Walked through Mock Ups
 - Homepage - "Bento Box" layout
 - Highlighted Indicator
 - Highlighted Metric
- Tony Hale, Rachele Lang (both SFEI), and others have finished the development site. Currently in internal review.
- Going live around September 25:
 - Please review site when it goes live and let karen know for red flag errors
 - No wordsmithing or structural reorganization
- Viewing across platforms
 - Website, EcoAtlas, Geocatalog
 - The next contract has some time to continue to evolve and develop website.
 - How to seamlessly and intuitively allow users make their way into EcoAtlas and/or Data Catalog in a way that feels smooth and gentle transition. Next 1-1.5 years is this process.

From chat

- Matt F - How does the "commitment to justice and equity" sit with the EPA at the moment? It can come back later!
- Matt F - I have to jump to another call. It's great to rejoin this meeting (my first chance in many months). Keep up the great work!

Levi - asked to give a presentation on FFH at next SC Meeting. Will be participating in WRMP session, and also Fish Indicator update for SOE Report. How WRMP can be used for NEW wetland indicator.

5) Next Steps and Wrap Up, Christina Toms and Donna Ball

- Plan for fall 2025 workgroup meetings
- 2025 TAC meeting schedule (9-11 AM)
 - Friday October 17
 - Friday December 5
- 2025 SC meeting schedule (10-12 AM)
 - Thursday September 18
 - Thursday December 18