

California Blue Carbon Collaborative (BCC) Meeting #3

Thursday, June 24, 2021

3:00pm – 5:00pm

Summary Notes

For a complete recording of the meeting please watch the following recording: [CLICK HERE](#)

Presentation slides for each speaker are attached in the email with these notes.

Meeting Agenda:

3:00pm	Welcome and Roll Call
3:10pm	Updates <ul style="list-style-type: none"> ○ 30x30 ○ California State Budget
3:25pm	Updates from the Field <ul style="list-style-type: none"> ● Katie Warnell, <i>Policy Associate, Ecosystem Services Program, Duke Nicholas Institute for Environmental Policy Solutions</i> ● Melissa Ward, <i>Postdoctoral Scholar at San Diego State University</i> ● Matt Costa, <i>Postdoctoral Scholar, Scripps Institution of Oceanography</i> <p><i>Short Q&A</i></p>
3:50pm	California Blue Carbon Policy and Implementation <ul style="list-style-type: none"> ● Cyndi Dawson, <i>Principal, Castalia Environmental</i> ● Jody London, <i>Sustainability Coordinator, Contra Costa County</i> ● Marilyn Latta, <i>Project Manager, State Coastal Conservancy</i> <p><i>Discussion and Q&A</i></p>
4:55pm	Next Steps
5:00pm	End of Meeting

Welcome

Zach Plopper from WILDCOAST welcomed participants to the meeting and introduces himself and Tegan Hoffmann and Scott Shatto from Coastal Quest. Zach reviews the overall idea of the BCC: to aggregate experience and opportunities around blue carbon in California and beyond.

The BCC wants to learn about research going on, identify opportunities to promote and policies that institutionalize blue carbon, form partnerships, and use the BCC as a networking platform. We aim to learn from decision makers and agencies at a regional and state level for the need to advance blue carbon understanding, restoration, and conservation as a method to achieve carbon neutrality, 30x30, and elevate blue carbon ecosystems as a priority.

30x30 Updates

- The group coordinated a few smaller BCC meetings to discuss regional workshop talking points. We drafted a letter to CNRA and participated in 30x30 meetings. Moving forward there will be a topical focus on coastal systems.
- California Nature has done a good job of revamping the website to make info about the process clearer.
 - <https://www.californianature.ca.gov/pages/396c80b7af4f47d4912be3b18a12c700>
- Comments can be submitted until September. There is an opportunity to provide stakeholder input into the 30x30 and climate smart working lands documents. Our input focuses on the need to prioritize blue carbon ecosystems because they will help achieve 30x30 and climate smart goals.
- The Port of San Diego also submitted a comment letter, focused on recognizing working seascapes as a component of natural working lands, facilitation, collaboration, stewardship, and funding. They are planning on submitting another letter focused on conservation investment strategy.
- NOAA is involved in a federal 30x30 effort and hopes to see alignment with the state.

California State Budget

- There is currently \$200 million in the proposed budget for coastal restoration.
 - This has not been signed by the governor yet and may change.
 - Are there additional funds that might be earmarked for coastal systems and blue carbon? How can we make sure these funds are used effectively?

Science Updates from the Field, Summary Notes

For a complete recording of the meeting please watch the following recording: [HERE](#)

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Tegan introduces Katie Warnell, Melissa Ward, and Matthew Costa for science updates from the field.

Katie Warnell, *Policy Associate, Ecosystem Services Program, Duke Nicholas Institute for Environmental Policy Solutions*

- The Duke Nicholas Institute for Environmental Policy Solutions pulls together research and data in the scientific world and puts it into a format for decision makers to easily understand.
 - Funded through the US Climate Alliance in partnership with 6 states.
 - North Carolina, Virginia, Maryland, Delaware, New Jersey, New York
- They are currently investigating how sea level rise (SLR) will affect coastal habitats and blue carbon they store through the end of the century.

- o Incorporates mapping and big picture monitoring to understand habitat and blue carbon changes.
- o Focused on 2 different habitats: salt marsh and sea grasses.
 - Projected changes under 4 ft SLR by 2100
- o Found that salt marshes are vulnerable to SLR.
 - 98% of original marshes are lost in this scenario.
 - Low sediment supply and low elevation will lead to the marshes drowning.
- o Sea grass
 - Under these conditions, they end up being light limited.
 - 30% of the original area of sea grasses will be lost just due to light limitation and other depth effects.
 - Total loss is probably greater with other pressures.
- o Inland marsh migration
 - Some marshes can migrate inland with SLR.
 - Wide and flat coastal plains could give areas that can convert to coastal marshes.
 - About 30% of salt marsh could be offset by this migration in 2100
 - Can have a lot of marsh migration happen at low SLR, but at 4 ft. of SLR, new migrated marsh might also be lost because water level will be too high.
- o In this study, they also looked at current blue carbon storage and what it looks like in 2100.
 - Baseline:
 - Coastal marshes and seagrass currently store 302 million metric tons of CO₂ and sequester an additional 1.1 million metric tons each year.
 - Existing habitats in the transition zone, like forests and freshwater wetlands, sequester 848,000 metric tons CO₂ each year.
 - In 2100:
 - As marshes are lost, carbon that is currently stored in sediment will be lost and emitted to the atmosphere.
 - Marshes moving inland can replace things like forests, there are unknowns about what happens with carbon stored in those forests as those habitats change.
 - o Some might be incorporated into marsh and preserved long term, but it is unknown.
 - Freshwater marshes emit methane and could have decreased carbon emissions as they become saltier due to marsh migration.
 - In a no sea level rise scenario/model, 221 million metric tons of CO₂ is sequestered each year.
 - In a 4 ft. of SLR model, 96 million metric tons of CO₂ will be emitted each year.
 - This effectively converts the coastal zone from carbon sinks to carbon sources.

Melissa Ward, Postdoctoral Scholar at San Diego State University

- She recently released a report in partnership with Pacific Marine Environmental Partnership (PMEP) which pulled together restoration from the West Coast to improve and evaluate eelgrass restoration success along the west coast.
 - Paper Link: <https://www.pacificfishhabitat.org/eelgrass-restoration-synthesis/>
 - Most of the restoration has been done for compliance reasons, and many reports are lost or not publicly available.
 - This report was to uncover all this lost data.
 - Found data from 42 total restoration projects, but they are still working on finding more.
 - Report findings:
 - Identify the success of restoration.
 - Roughly 50-65% of projects were successful, although the definition of success varied.
 - While the restoration method is important, it is not as important as site conditions, such as presence of macroalgae, light availability, and sediment characteristics that lead to restoration success.
 - Data availability and accessibility needs improvement.
 - Standardization is necessary for the advancement of restoration science.
- Another recent publication showed that sea grasses can increase pH and reduce acidity up to 30%
 - This can persist for weeks, unaltered by normal nightly respiration of the seagrasses.
- Another paper that is not published yet finds that salt marshes store 2 times more carbon than seagrasses and that seagrass wrack in neighboring salt marshes is unlikely to be buried in sediment.

Matthew Costa, Postdoctoral Scholar, Scripps Institution of Oceanography

- Matt is studying blue carbon stock variability in salt marshes and sea grass beds in San Diego County
- There is research suggesting that we know enough about coastal wetland carbon stocks to value them at a functional level. This raises the questions of “what is the value of adding more data to these blue carbon stock data sets if we know enough to start valuing them?”
 - There is a lot we do not know about local variability in the low ground landscapes of these ecosystems (the sediment column).
 - We can learn about ecosystem history, resilience and give us insights on how to actively manage these ecosystems.
- Currently Matt’s team is collecting blue carbon data in estuaries along the San Diego County coast to build baseline data.
 - San Dieguito lagoon
 - Found high accretion rates of sediment, but relatively low carbon stocks.
 - Mission Bay

- Huge range of carbon stocks from 77 to 188 tons of carbon. There is a lot of spatial variability in carbon here.
- Famosa Slough
 - There are extremely variable sediment depths. Even in small wetlands, there is a lot of variability in these environments that can be explored to understand how these wetlands have persisted.
- Matt is also working on reconstructing the marsh history and blue carbon potential of Mission Bay and assessing plant species biochemical features associated with carbon burial.
- Matt is also doing a lot of education, trainings, field courses and presenting to local government groups about blue carbon.
- What's next?
 - There is growing interest in what is going on with kelp and how it relates to carbon storage and sequestration.

Question and Answer Key Highlights

For a full dialogue listen to the webinar at this link: [LINK HERE](#)

The group discussed the following:

Melissa, can you talk to the group about how your findings might inform the California Eelgrass Mitigation Policy (KEMP) to reach the goals of no net loss of ecological function of eelgrasses?

- There should be standardization of methods and data reporting mandates.
- KEMP is a powerful but limited policy.
 - It is meant only for compliance.
 - Documented permanent loss of sea grasses due to human activity and unknown things. It is not the KEMPs job to protect that eelgrass. We need to start thinking about policies that we can start to get the jump on the other things that are killing sea grasses.
- We need to incorporate seagrass functions into monitoring. We have no net loss of eelgrass function defined yet.

Katie, as you think about those forests on the edge of conversion in those Atlantic states, are you working on any financing strategies related to their conservation and/or protection?

- Not thinking about financing yet.
- Have started to wonder whether there are strategies that can help reduce the loss of forests or the loss of carbon from those forests. At this point the uncertainty is still so high that it is hard to think about financing solutions.

How do we balance data gaps/needs with the more immediate need of protecting/enhancing blue carbon habitats and processes now? What is the priority data gap that needs to be addressed in order to justify protections based on carbon mitigation?

- The potential risk of losing carbon is huge compared to carbon that is sequestered. Research into what happens to carbon when environments change and what we can do to manage high value ecosystems to slow down or reverse those processes is important.
- It is hard to get to the point where we can justify projects just because of blue carbon restoration. Sometimes it is easier to focus on other benefits in the short term in order to fill in gaps around blue carbon.
 - The co-benefits cannot be disentangled. Each of these habitats provide varying levels of all three benefits related to climate adaptation (SLR or OA), biodiversity and carbon sequestration.

When eelgrass becomes light-limited, what takes its place?

- Macroalgae or mud flat

Is there any likelihood that dredge can be used to raise salt marshes and eel grass beds? Can we become disciplined in using reusable dredge spoils?

- It is a possibility. It has happened on small scales but there are challenges to implement this because dredgers and restorers are not communicating well.

Blue Carbon Leaders in the Field: Opportunities and Lessons Learned, Summary Notes

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Tegan introduces John Baxter, Lindsey Sheehan, Michael Beck, and Christopher Janousek to speak about different case studies on blue carbon initiatives around the U.S. and in Scotland.

Cyndi Dawson, Principal, Castalia Environmental

<https://linktr.ee/CastaliaEnvironmental>

- Blue carbon initiatives in California
 - Who are the major players?
 - For Carbon accounting
 - California Environmental Protection Agency (Cal EPA)
 - California Air Resources Board (CARB)
 - California Natural Resources Agency (CNRA)
 - Office of Planning and Research (OPR)
 - Ocean Protection Council (OPC)
 - Not an agency, has no regulatory authority, but is an overarching policy guidance branch.
- Important upcoming documents:
 - Natural and Working Lands Climate Smart Strategy document, CNRA, coming out in Oct. 2021

- Blue carbon and coastal lands fall under this document.
- Lays out how these habitats are critical to CA meeting greenhouse gas reduction goals.
- This is a high-level policy document.
- Need to make sure blue carbon is called out as a critical ally to California meeting their greenhouse gas reduction goals.
- Pathways to 30x30, CNRA, coming out in Feb. 2022
 - Similar to Natural and Working Lands Climate Smart Strategy
 - Will be a little more detailed and provide detail on how to specifically achieve these goals.
- Wetlands Action Plan, OPC
 - Not clear what the public process will be like for this.
- Climate Change Scoping Plan Update, OPR/CARB/CNRA, end of 2022
 - Digging into the technical part of how the land use pipes contribute to carbon sequestration for the state.
- Budget Fiscal Year 21/22
 - \$211.5 million over two years to OPC for coastal wetland restoration
 - The majority of this funding would go through coastal conservancy.
 - Increases in budget to California Department of Fish and Wildlife by \$252.1 million
 - There is an overall focus on equity, improving access and climate resilience.

Jody London, Sustainability Coordinator, Contra Costa County

- Contra Costa County, 2.1 million people in the bay area.
 - 7 of the 10 largest industrial facilities in the bay area are located in Contra Costa County.
 - Underserved communities are located directly adjacent to these facilities.
 - Contra Costa County is where the Bay meets the Delta.
- Contra Costa County got a grant from the state for \$250k to do a feasibility study of carbon sequestration in different land use types in Contra Costa County.
- Deliverables of the project include
 - A common understanding of carbon sequestration and its application for different land use types.
 - An educational video.
 - Potential for carbon sequestration for different land use types and associated economic benefits, including operational cost savings and revenue streams, with attention to how these strategies can preserve lands currently in use for agricultural purposes.
 - Stakeholder support for carbon sequestration projects
 - Understand how to use available interactive tools that allow users to determine potential carbon sequestration of a given area.
 - A feasibility study for realizing carbon sequestration projects.

Marilyn Latta, Project Manager, State Coastal Conservancy (SCC)

- Multi-benefits of eelgrass meadows and living shorelines.
 - Shoreline hardening is our default approach for shoreline protection.
 - SoCal is hardening up to 80% in some areas.
- SCC has been working on various living shoreline projects.
 - Living shoreline definition:
 - Provides both biological goals and shoreline protection goals.
 - Helps minimize erosion and maintain coastal process and natural habitat.
- There is a lot of policy support in California for living shorelines.
 - Executive Order B-30-15, which prioritizes natural infrastructure solutions.
 - SB 246, the Integrated Climate Adaptation and Resiliency Program.
- There are multiple co-benefits from living shoreline restoration:
 - Creates fish and wildlife habitats.
 - Attenuates wave energy.
 - Accrete sediment.
 - Reduce erosion.
 - Can provide outdoor recreation.
 - May sequester carbon.
 - May buffer ocean acidification.
- San Francisco Bay living shoreline projects:
 - Giant Marsh project
 - Placing oyster reef elements in Richmond California.
 - Eelgrass plantings and other vegetative elements.
 - Looking at each of these elements and seeing how they provide multiple benefits.
 - Blue carbon considerations
 - They need more local eelgrass bed data to understand the benefit of eelgrass.
 - Eelgrass beds vary in size, density, and persistence.
 - There are 7 treatments up the shoreline. They are trying to understand the impacts of a combination of several treatments.
 - Newport Bay Living Shorelines Project
 - 4 sets of plots where they have planted eelgrass in combination with oysters.
 - They had initial planting in 2018 and lots of growth has occurred since then. They have grown over an acre of eelgrass.
 - San Diego Bay
 - Living shorelines project planned to be constructed in 2021/2022.
 - Will include oyster reef placements.

Question and Answer, Key Highlights

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The group discussed the following:

Equity – how can we design blue carbon projects that ensure equity? What are best practices or what should we consider?

- A good place to start is the CalEnviro screen map of disadvantaged communities (DACs)
 - Some organizations are now calling them impacted communities.
- Involving the community in the design of the projects
- Valuing the time of the organizations that you are going to ask to help you.
- Coming in with a pre-conceived notion of what needs to happen and where is not equitable.
- There is a small grant program in Marin County that is supposed to increase capacity for underserved community engagement.
 - 13 projects that have been funded that all provide a different model with how to work with underserved communities. We will be starting an evaluation of this program and sharing lessons learned.

What are the biggest challenges in getting buy-in from local communities, impacted areas, stakeholders, landowners to make a site more feasible for a nature-based solution?

- There is incredible public support. Very few community members express concern.
- People tend to be more familiar with public lands near their home, but generally support living restoration of coastal ecosystems.
- We are still in the design phase and figuring out what nature-based solutions actually work and how specifically it should be done.
- A tough time getting property owners to pay attention to this. The issue seems far away, and it is tough getting people to pay attention sometimes.

Is there any movement toward having CEQA require quantification of the positive and negative carbon sequestration impacts of project alternatives?

- On the state side they did a big CEQA update 3 years ago and there are no rumblings of doing it again. Do not anticipate this as something included in CEQA in the near future.
- What about at the municipal level?
 - Municipalities can have a higher bar than CEQA, but it is unlikely that it would be embedded into the statute.

How can we most effectively support public funders in spending resources effectively in promoting and restoring blue carbon?

- An opinion piece by Jody on partnering with schools on climate issues
<https://edsource.org/2021/california-climate-investment-fund-should-support-schools/656549>
- There are a lot of funding streams for similar activities. The SCC is trying hard to make information accessible to local governments and simplify the process of getting funding.
- When new funding opportunities become available, there is usually a public process in developing grant guidelines. Keep an eye on these as they are being created and communicate what you value in the process.

How much funding is needed to support the lifecycle of projects? How to promote a longer-term funding commitment or other revenue streams?

- General funds might have more flexibility than bond funds in supporting the lifecycle of projects.
 - Bond funds usually have specific language that directs the funds to a specific task.
- There is an opportunity to express that ongoing upkeep, maintenance, and monitoring needs funding.
 - Some of these aspects are critical in fully understanding the co-benefits of habitat restoration.

Is there an opportunity to create offsets and support restoration projects that sequester blue carbon through local government in their climate action plans?

- There is enough interest driven by the co-benefits of these habitats. Continuing to understand how we value these things in concert will probably be more effective than trying to get money exclusively through the carbon market.

What are the alternative ways of institutionalizing blue carbon in action planning without going into the carbon markets?

- Having CARB conduct a very accurate assessment of existing carbon stocks is a big part of this. The last assessment they did showed coastal habitats as a source and not as a sink, but more recent studies showed the opposite. Making sure all of this is aligned with the national stock assessment is important in moving the carbon market forward.

What is a local municipality to do when we want a planning board to factor in longer term impacts of their decision making, given that the science has some missing questions? Have you seen any municipalities that are doing it well?

- There is motion in this direction, but no great examples at a municipal level.

What do you see as the potential role of the BCC in elevating and promoting blue carbon moving forward?

- Provide input in RFP processes in how funds are dispersed.
- Helping make blue carbon understandable is important. Information sharing and basic education.
- What lane does the BCC want to be in?
 - Do we want to focus on science or policy?
 - Where are our strengths and how can we apply the influence of the group?
- Continue knowledge sharing across all lanes.

Next Steps

Zach reviews next steps for the BCC team.



WILDCOAST

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- Next meeting will be in the early Fall.
- We may have some smaller working groups focused on 30x30 and Natural Working Lands Strategy in the future.

Contacts

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