

California Blue Carbon Collaborative (BCC) Meeting #2

Thursday, March 25, 2021

3:00pm – 5:00pm

Summary Notes

For a complete recording of the meeting please watch the following recording:

https://us06web.zoom.us/rec/share/ArIf_xFmZlu2o3j-KKVAwAVOVfX1MJNSQD0CEwAJHLS8Kxva6ai2vrbnSWErTfbY.FriyKTU_WHhI3VNw

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

Meeting Agenda:

3:00pm	Introduction Share BCC Purpose and Vision Discussed in Meeting #1
3:10pm	<p>Blue Carbon and Achieving Conservation and Climate Benefits</p> <ul style="list-style-type: none"> ○ Mark Gold, Executive Director, Ocean Protection Council; Deputy Secretary for Ocean and Coastal Policy, California Natural Resources Agency ○ Nathan Fletcher, San Diego County Supervisor <p><i>Discussion - how can California advance blue carbon?</i></p>
3:50pm	<p>Blue Carbon Leaders in the Field: Opportunities and Lessons Learned</p> <ul style="list-style-type: none"> ○ John Baxter, Chair of the Scottish Blue Carbon Forum ○ Lindsey Sheehan, Principal Engineer, Environmental Science Associates ○ Michael Beck, AXA Chair in Coastal Resilience, University of California Santa Cruz ○ Christopher Janousek, Department of Fisheries and Wildlife, Oregon State University <p><i>Discussion and Q&A</i></p>
4:55pm	Next Steps
5:00pm	End of Meeting

Welcome

Tegan Hoffmann from Coastal Quest and Zach Plopper from WILDcoast welcomed participants to the meeting. Zach reviews ideas for the BCC purpose and vision and brings up questions and needs that were posed at the first meeting. Zach also gives an update on blue carbon research at Wildcoast and Scripps.

Blue Carbon Collaborative Purpose and Vision

- Better understand how blue carbon can be integrated into climate action planning on a local, regional, and state level.
- This collaborative can leverage knowledge, resources, and experience.

- Support blue carbon related policy and science throughout the state.

Questions and Needs Established in Last Meeting

- There is a need for a database and data sharing.
- There is a desire to learn from other regions, states, and countries on blue carbon efforts.
- There needs to be better outreach about blue carbon – what it is and how can it be implemented into action.
- We need more information on financial and jurisdictional hurdles.

Scripps Research Updates

- Wildcoast and Scripps has collected 166 samples from 25 cores collected at 2 wetlands sites.
- Will be sampling next in Famosa slough and Batiquitos Lagoon.
- After sampling they will move on to analysis and report
 - Will produce a document that paints a picture of what carbon storage looks like in San Diego wetlands, areas that are most at risk, a framework to guide restoration of those areas moving forward.

Blue Carbon and Achieving Conservation and Climate Benefits, Summary Notes

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Tegan introduces Mark Gold and Nathan Fletcher to discuss blue carbon and achieving climate benefits in California.

Mark Gold, Executive Director, Ocean Protection Council; Deputy Secretary for Ocean and Coastal Policy, California Natural Resources Agency

- **Ocean Protection Council (OPC) background:**
 - OPC is the coast and ocean science and policy advisors to the state housed under the California Natural Resources Agency (CNRA)
 - The OPC Leadership group is comprised of representatives from CNRA, the Environmental Protection Agency (CalEPA), State Lands Commission (SLC), 2 ex officio members (1 from the State Assembly, 1 from the State Senate), 2 public members.
- **Blue Carbon priorities from OPC Strategic Plan:**
 - Target to ensure an additional 10000 acres of coastal wetlands be protected, restored or created by 2025.
 - Blue carbon is a part of this effort, but not the main driver.
 - Developing a coastal wetland action plan.
 - Developing a standardized approach for optimizing coastal wetland climate resilience including carbon sequestration, flood control, biodiversity benefits by 2022.

- Developing innovative approaches to accelerate wetland and seagrass habitat creation and restoration, such as blue carbon mitigation banking.
 - Preserve the existing known 1500 acres of seagrass beds and create an additional 1000 acres by 2025
 - A climate resilient bond that could be on the ballot next year will help with funding coastal resilience efforts, especially in coastal wetlands.
- **Other efforts by OPC:**
 - Funding a coastal habitat inventory with the San Francisco Estuary Institute (SFEI)
 - Working to get a baseline on wetland and eelgrass acreage.
 - Funded Ocean Science Trust (OST) to do state of science report on best available science on wetland, eelgrass, kelp forest carbon sequestration as well as carbon accounting methods.
 - <https://www.oceansciencetrust.org/wp-content/uploads/2021/02/Carbon-Accounting- State-of-the-Science -report External Draft Feb2021.pdf>
 - Creating a Natural and Working Lands Climate Smart Strategy for the 30x30 initiative.
 - This has a major sequestration focus, including coastal wetlands.
 - A draft of the strategy will be available for public review this summer. A final version should be done by the end of the calendar year.
 - Tracking Pacific Northwest (PNW) Blue Carbon Working Group.
- **Remaining data gaps:**
 - Better understand methane (CH₄) emissions from wetlands.
 - The state has entered into a MOU with JPL to better share remote sensing data to help inform point source emissions.
 - Lack of understanding of how long it takes restored habitats to reach sequestration.
 - rates seen in the natural landscape.
 - Carbon fluxes at air/sea interface.
 - Carbon storage in native and imported sediments.
 - Need a more consistent approach on how to optimize sequestration in restoration in various different wetland types.
- **Focus for the future:**
 - Coming up with the best carbon accounting methods
 - Quantifying lateral transport and fluxes of carbon especially between blue carbon habitats
 - How long it takes for restored habitats to reach optimal sequestration rates.

Nathan Fletcher, *San Diego County Supervisor*

Contact: <https://mailchi.mp/865e84e85179/getnathansnews>
nathan.fletcher@sdcounty.ca.gov
619-531-5544

- San Diego County has a new Board of Supervisors that is willing to take on major climate change issues.

- The new Board is making clear what the San Diego County position is on climate change and what needs to be in their new Climate Action Plan.
 - This includes issues on sustainability, environmental justice, and a road map to get to carbon zero by 2035.
- Often wetlands do not make it into the larger discussion about climate change, especially in understanding the carbon value of these ecosystems.
- Climate issues are often a jurisdictional issue.
 - Some governments don't have any coasts in their jurisdiction.
 - This is a problem that needs to be figured out.
- He wants thinking about the concept of blue carbon to be top of mind, so people do not have to google it to talk about it.

Question and Answer Key Highlights

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

The group discussed the following:

Are there opportunities for counties and cities to include blue carbon and nature-based climate solutions into their climate action plans?

- There is a need to figure out how to quantify blue carbon benefits in a meaningful way.
- There is a need to figure out how to better share resources between counties, regions, and other local areas.

How can blue carbon be integrated in the climate smart strategy?

- The State Climate Smart Strategy is all about sequestration. Blue Carbon will be incorporated, but unknown to what extent.
 - There is a need to make sure wetlands are a huge part of the solution.
 - Eel grass may not be as prioritized as wetlands will be in the strategy

Is there consideration for including blue carbon as a new type of protected area? How is blue carbon being considered regarding 30x30?

- 30x30 will have 9 meetings to discuss how it is being considered.
 - 5 meetings will be located along the coast.
 - Mark recommends attending these meetings and making recommendations on blue carbon.
- No decisions have been made yet on how 30x30 will work.
 - One major question for discussion currently is "What is the definition of conservation?"
 - They are still in the very early phase of discussing a path forward and are open to all recommendations on what to include.

How can blue carbon projects be funded in county municipalities?

- San Diego County is starting over with its climate change action plan.

- Hopefully better financing mechanisms will be included in the plan.
- There is still more work to do to ensure that project benefit is verifiable and can be a part of the carbon inventory program, but once that is figured that out, if a project is in the County and it can be monitored, there should not be a problem in supporting a project that is slightly out of jurisdiction.

How is OPC defining coastal wetlands in terms of the wetland action plan? Will it include wetlands in the delta?

- This has not been resolved, it is still being decided.
- The inventory should include all types of wetlands including delta wetlands. We need to use federal opportunity to continue to move in aggressive ways.
 - Local government needs to build out in house expertise.
 - San Diego County does not have internal expertise because they have never done this, they are trying to create a department to actually think about these things.
- The science is evolving and taken into consideration.

What opportunities or role would you suggest stakeholders on the call play as we advance the blue carbon movement in California?

- Attend the 30x30 meeting to suggest ideas and engage the state on blue carbon topics
- *Become ambassadors for blue carbon and try to make it top of mind when discussing climate topics.*

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

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

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

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.

John Baxter, Chair of the Scottish Blue Carbon Forum

<https://www.bluecarbon.scot/>

- The Scottish Blue Carbon Forum wants to change the thinking about the classical definition of blue carbon being saltmarsh, seagrass, and mangrove.
 - They want to expand the definition to try and embrace all carbon that is stored and sequestered in the marine environment.
 - New definitions: Blue Carbon is the carbon that is captured and stored by the ocean and coastal ecosystems. The carbon captured by living organisms in the ocean is stored in the form of biomass and in sediments.

- Identified a range of key carbon capture and sink habitats.
 - Included marine habitats that sequester directly and indirectly like:
 - Mussel beds, maerl, algae, seabed sediments
- A report was commissioned to assess carbon budgets and potential blue carbon stores in the Scotland marine environment.
- Second report looking specifically at blue carbon in marine protected areas in Scotland.
- These reports prompted a response by the Scottish government.
 - Scottish government found blue carbon as a good way to help reach climate goals and established the Scottish blue carbon forum.
 - An attempt to pull together universities in Scotland that were working on marine science that had a potential blue carbon component to them.
 - Government agreed to fund a program of PhD students to look at questions that had been raised by the two initial reports to better estimate the amounts of blue carbon in marine Scotland.
 - This program has it has been running for 4 years.
 - There have been additional questions added and more students funded.
- Currently, they are working to incorporate blue carbon protections into the marine management plans for the different marine regions around Scotland.

Maerl (Rhodolith) in California:

<https://escholarship.org/content/qt2562b0gb/qt2562b0gb.pdf?t=lv45my>

<https://caseagrant.ucsd.edu/news/ra-re-coral-like-algae-rhodoliths-build-habitat-on-the-ocean-floor>

Lindsey Sheehan, Principal Engineer, Environmental Science Associates
[Tamp Bay Blue Carbon Assessment](#)

- Quantifying blue carbon in Tampa Bay, Florida and looking at habitat changes that will happen with sea level rise (SLR).
- Tampa Bay Blue Carbon Assessment
 - Major goals were to connect blue carbon opportunities in Tamps Bay and use it as a driver for restoration and into inform management decisions.
 - Secondary goals are to identify priorities for property acquisition for restoration.
 - Looked at 4 different time frames for different habitats and modeled how SLR will change these habitats.
 - Quantified blue carbon sequestration of sea grass.
 - Looked at How enhancement of water quality and sea grass will impact carbon sequestration.
 - Working on 2 reports to move forward with blue carbon.
 - A Habitat master plan
 - A Best management practices document

Michael Beck, AXA Chair in Coastal Resilience, University of California Santa Cruz

- **How we quantify coastal resilience benefits**
 - Lots of models go into estimating flood risk and the benefits provided by habitats.
 - Can compare flood risk with and without wetland habitats to quantify the benefits provided by keeping habitats in place.
 - Using these estimates and models, they create hot spot maps to show where certain habitats (wetlands, saltmarshes, etc.) are creating the best flood reduction benefits and can put a dollar value on it.
 - They work with insurers to use their models to estimate flood reduction benefits.
 - Been learning from blue carbon initiatives about the need to develop standards for coastal resilience accounting.
 - Developing one under VERRA.
 - Will help set up a verifiable accounting scheme for coastal resilience credits that could work along side blue carbon crediting.
- **Recommendations:**
 - Need better analysis of blue carbon benefits for more habitats.
 - Need to understand blue carbon risks in insuring long-term sequestration.
 - Need greater inclusion of blue carbon in cost effectiveness analyses.
 - Need to improve restoration approaches to help meet blue carbon sequestration and environmental goals.
 - Need more bonds that include blue carbon.
 - Need new insurance-based tools for blue carbon.
- **Lessons learned:**
 - Rigorously value benefits that can support innovation for conservation funding.
 - There are opportunities to transfer some of the risk for long term sequestration of carbon benefits using insurance, but we need to:
 - Identify the parameters that create that risk.
 - Identify the data that allows us to assess their likelihood.
 - Be clear on who will benefit and who will pay.

Christopher Janousek, *Department of Fisheries and Wildlife, Oregon State University*
<https://www.pnwbluecarbon.org/>

- **PNW blue carbon working group and database:**
 - Established in 2014.
 - Natural scientists, social scientists, managers, policy makers.
 - Shared goal of advancing blue carbon science in the region and data sharing.
 - Membership is informal at this point.
- **Working Group Projects**
 - PNW stocks project (2016 – 2019) to quantify blue carbon stocks in a variety of habitats and create a state database.
 - Assessment of blue carbon finance project feasibility in PNW (2018-2019).
 - Two current carbon sequestration and GHG emissions projects.

- **Blue Carbon Database**

- Baja California to Alaska.
- Lots of types of wetland types included.
 - Seagrass meadows, tide flats, tidal marsh, mangroves, scrub-shrub wetlands, forested tidal swamps, pastures.
- Lots of different data types.
 - Soil carbon content and density.
 - Soil accretion and carbon accumulation rates.
 - Environmental drivers (elevation, plant species, etc.)
 - Greenhouse gas emissions.
- Over 900 cores in database from over 30 different studies.
 - Over 850 cores with depth-specific carbon density values.
 - 250 cores with some measure of carbon accretion rate.
- This database has been valuable in identifying data gaps regionally.
 - Need more data on forested wetlands and restored wetlands.

Question and Answer, Key Highlights

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The group discussed the following:

What catalyzed building the political will in Scotland? What were some barriers?

- The production of the two reports really hit the mark with the politicians in Scottish government.
 - There were committed to doing everything they could to mitigate climate change.
 - Pushing these reports to elected officials and explaining it to them helped in them understanding the potential.
- Peat bogs were to poster child of carbon storage until these reports came out.
- The immediate reaction was a need to protect maerl beds in Scotland. Giving them tangible evidence in a simple way.
- There have not been a lot of barriers.

What are the parameters that one would measure for blue carbon to be able to be insured?

- Need to understand how long wetlands will be able to store carbon.
- Need to quantify what is the likelihood something will impact wetlands and the ability to keep storing carbon in those wetlands, and then develop some risk transfer insurance to help deliver a greater amount of certainty that wetlands will be able to continue storing carbon.
- This is coming to market with credits in Tampa. The Tampa study was looking at how this might change in the future, but less so with specifics about having a project that creates a certain amount of blue carbon credits and how certain that could be.

How can industry become involved in funding or support blue carbon projects?

- Whiskey company in Scotland is looking to restore oyster beds in an estuary in where their distillery is. They want oyster beds to act as a natural filter as they send their effluent into the water.
- If industry can see a benefit in getting into blue carbon work, they will want to.
- Lots of interest in business figuring out ways to reduce their carbon footprint or become carbon neutral.
- Worth looking at the [Task force on climate related disclosures](#).
 - The more businesses are looking at their climate risks, the more they will be looking to mitigate that climate risk.
- Lots of interest in industry funding this work specifically related to credits, but it is tough finding projects with a large enough scale.
- Maybe we can find a way where companies can market that they are doing valuable work in restoration and showing the benefits of carbon sequestration as well.

How can one incentivize gathering data in all relevant blue carbon habitats?

- There are a lot of data gaps in figuring out what restoration projects will be profitable and understanding ecosystems in their entirety.
 - Carbon projects become marketable when the restoration reaches a certain size.

Next Steps

Zach reviews next steps for the BCC team.

- Next meeting will be in June and build off this meeting to find knowledge gaps to start exploring.
 - We will look at specific examples of implementation work and other ideas that evolved from this meeting.
- Start thinking about what the direction is for this collaborative.
 - Are we still information sharing phase?
 - Do we need to break into workout groups to work towards tangible outcomes?
- Create a survey to send out to the group on the potential direction of the BCC.
- Attend the upcoming 30x30 meetings and suggest incorporating blue carbon into the 30x30 strategy.
 - Once 30x30 meeting details are available we will forward them to all BCC members.

Contacts

Zach Plopper: zach@wildcoast.org

Tegan Hoffmann: Tegan@coastal-quest.org