

MARIN CONSERVATION LEAGUE

Climate Action Working Group: January 15, 2016

Muir Woods Conference Room, 175 N. Redwood Blvd., San Rafael

Present: Co-chairs Pam Reaves and Doug Wilson, George Carver, Ed Mainland, Belle Cole, Kiki La Porta, Pat Nelson, Heather Furmidge, Steve Crooks, Mary Morgan, Rick Fraites, Susan Stompe, Bill Carney, Bob Bundy, Roger Roberts, Nona Dennis, Bob Miller, Bob Bundy, Kate Powers, Judy Teichman, Damon Connolly.

Doug called the meeting to order at 9:05.

Approval of the Agenda: The agenda was approved by consensus.

Approval of Minutes: Pam will be sending minor editing corrections offline. M/S/P. Judy/Susan/Approved as amended offline.

9:10 Discussion Topic: Another Part of the Sequestration Picture – Forested Land and Wetlands

Doug introduced our speaker, Dr. Stephen Crooks, Climate Change Manager at Environmental Science Associates. Doug noted MCL's intent to gain a fuller understanding of how carbon sequestration works, to complement our understanding of GHG reduction. We want to understand how the pieces fit together and also how carbons sequestration would work in the context of the currently proposed Bay Area wetland restoration tax.

Dr. Stephen Crooks: Steve elaborated on his professional background as a geomorphologist with more than 20 years of experience in coastal wetlands and their response to human impacts and climate change. He specializes in translating climate response science into formats accessible to the wide variety of individuals and teams responsible for developing and implementing climate policies.

Steve has worked on coastal wetland issues in Europe. He was a member of Working Group II of the Intergovernmental Panel on Climate Change (IPCC). Working Group II contributed a report, Climate Change 2014: Impacts, Adaptation, and Vulnerability, to the IPCC Fifth Assessment Report. The Fifth Assessment report synthesized the contributions of three working groups. He has been a delegate to the U.N. climate change negotiations since 2010. He was a lead author of the IPCC 2013 Supplement to the 2006 IPCC Guidelines on National Greenhouse Gas Inventories: Wetlands, and a member of the IPCC Delegation to COP 19.

Steve came to California in 2000, and worked with Phillip Williams Associates, and then with Environmental Science Associates. He has worked on the adaptation side of climate change, putting the project in the context of the next 100 years.

Steve is a co-founder of U.S. and International Blue Carbon Initiatives and a member of the International Blue Carbon Science and Policy Working Groups. Steve co-authored a white paper

and assisted NASA in mapping carbon sinks. He has addressed GHG accounting for wetlands and the role of wetlands in the carbon cycle. As a result of these efforts, in 2016, the U.S. GHG Inventory Report on Emissions and Sinks inventory of emissions and reductions will include wetlands.

Background science: The role of trees in carbon sequestration has already been well recognized: the role of soil is being recognized increasingly. Peatlands and coastal wetlands are important, storing carbon in the soil and above-ground biomass. Carbon is sequestered slowly in deep organic soil, at a rate of 1.2 ton or carbon per acre per year. The wet condition of the soil is important—wet conditions lead to low oxygen, which promotes good carbon storage. Wetlands account for more than 25% of carbon storage/year.

Draining wetlands reduces carbon storage quickly. Carbon evaporates when the soil is no longer wet. Peat soil decomposes when it is exposed to air and releases carbon dioxide. In addition, the ground level sinks, requiring the construction of levees as in the Sacramento Delta. One billion tons of carbon has been released as a result of the draining of the Delta, from soil that was 30 feet deep initially. Destruction of wetland sequestration capacity accounts for 450 million tons of carbon release, equal to the whole amount of California's emissions.

The U.S. has reduced its loss of wetlands and is engaging in wetland restoration. Other places, such as Indonesia, are destroying their wetlands and chopping down vegetation as fast as possible.

Q. Nona: Have you done any work on local wetland restoration projects?

A. Yes, Steve led the Hamilton restoration project, which produced a small but ongoing amount of carbon accumulation, which in turn produces other ecosystem benefits, such as habitat for wildlife.

Understanding GHG fluctuations over the landscape leads to better management practices. For example, in the Delta, opening up the floodplain and creating space for water to spread would promote better management of water. Dam managers can wait longer to dump water, until there is greater certainty of flood danger.

Q. Roger: What is the impact of the Twin Tunnels?

A. Once there is a secure path for water extraction, commitments tend to be forgotten. If there is an earthquake on the Hayward fault, the levees will collapse. There will be less money available for the Delta, and the levees won't be restored. The Delta ecosystem will be more saline.

Q. Ed: Will the benefit of wetland restoration be vitiated by sea level rise?

A. To some extent. It depends on the location. Wetlands will migrate where there is space to do so. The availability of sediment also plays a role. Some wetlands currently don't get much sediment deposition. For example, Richardson Bay will be more mudflat, less wetland. San Pablo Bay is a big circle where waves predominate and erode wetlands. Levees will erode as well. Petaluma wetlands are the most resilient. Some South Bay wetlands are resilient as well. Important factors are less wave energy and more sediment. Some current wetlands will become mudflats, and then subtidal.

Living shorelines, such as oyster reefs or sandbars, can work, depending on the setting—for example, San Pablo Bay. That would not work at Richardson Bay, because the problem is not erosion, but drowning.

More space could be created in Sonoma and Napa Counties. We can create wetlands up-creek, for example, Novato Creek.

Q. Are sandbars good on mudflats?

A. It is best to have low-cost options, with resilience. We should prevent development in areas needed for future wetlands.

Q. Belle: What is the connection with the State Water Resources Control Board?

A. Cap and trade funding for wetland restoration—\$30 million for wetland projects with GHG benefits. There is a team working on Delta restoration and GHGs. Federal and state agencies' wetland regulations will recognize the role of GHGs. Mitigations may be larger.

Q. Belle: What about the upcoming parcel tax for Bay Area wetland restoration?

A. Issues are “how much carbon” and protection of uplands. Data exist on carbon in the Bay lands. Horizontal levees attenuate wave energy. Green infrastructure has a role. We can use wetlands to reduce flooding, extend wetlands upriver. Napa has a living river, allows the river to expand. The Corps of Engineers has now caught up with the current science. All of these factors correlate with management strategies.

Q. Bob Bundy: How do we “sell” the tax?

A. Reduced cost and environmental benefits. And flood management, reducing flood risk

Q. But why should “Point A” help “Point B”?

Comment (Pam): Because everyone is affected: All highways go through low-lying areas.

A. We need to consider tailwater. If we restore wetlands downstream, the water gets out faster. If we restore wetlands, upstream, that allows water to spread out.

Q. Nona: What about reservoir re-operation in the Delta?

A. We should dedicate lands below the reservoir to use as floodplain and delay the movement of water. This would also help with aquifer recharge.

Q. What is the cost?

A. \$20,000 - \$30,000/acre. Napa would be \$5,000/acre. It is a simple island. Petaluma would cost more because of the proximity of the railroad and levee. The South Bay salt pond may be \$1 billion.

The White House wants to shift the dialogue, look at wetlands restoration.

Q. Kate: Are there implications for creek and river restoration and the riparian corridor. Are there any carbon sequestration benefits being studied?

A. Good question. There is a net positive benefit, but there is limited data.

Q. Pam: What are the biggest obstacles to wetland restoration in the Bay Area?

- A. 1) Infrastructure in the way (ex., the railroad in Petaluma).
- 2) Money to buy land.
- 3) Space available.

The issue in Marin is not so much government roadblocks. That's more of an issue in the Delta.

Damon: There is Corps of Engineers interest in a bayside McGinnis restoration project, which ties in to the Gallinas watershed restoration approach. Studies have been done; they're at the beginning stage with the Corps.

Q. Roger (to Steve): What would you do with \$150 million? How would you prioritize? What are the criteria?

A. Maintain the balance of habitat over time. Petaluma is the most resilient—put money where there is more resilience. Think strategically.

Q. Doug: Re Hamilton, when it was diked, the land sunk; then it was raised up with dredge. Is that approach applicable to other wetlands?

A. Yes, that makes sense. It is good policy not to dump into deep ocean. Use a thin-lift application of dredge so vegetation can respond. Reconnect wetlands and rivers.

Nona: MCL objected to a proposed project at Port Sonoma, involving a sediment transfer station. There would have been a reuse of sediment, but there were other factors.

Steve: One big cause of wetland loss worldwide is the shrimp industry. The industry takes a slash-and-burn approach when it creates its ponds, a wholesale destruction of mangroves and draining of land. A shrimp meal is equivalent to 1,000 miles of driving, just for this aspect alone. There has been a limited amount of thinking re sustainable aquaculture.

Q. Bill: How does systems thinking get institutionalized? Through BCDC?

A. The Baylands Goals Update of the SF Bay Estuary Institute has a broad vision with consensus operationalizing. There is conflict between managing GHGs and what to do with other parts of the landscape.

Q. Bob Miller: Are there good websites on this topic?

A. Blue Carbon has a Facebook page and an initiative website. CAKE [Climate Adaptation Knowledge Exchange] has work on adaptation. The ESA website.

Q. Nona: How would you evaluate natural systems to capture carbon vs. technological/mechanical systems (putting it underground).

A. The natural-system segment is smaller but has immediate benefit. The technology is not here yet. There is greater value in doing something now to meet COP targets.

When asking students about solutions to climate change and barriers to solution, their answers differ according to nationality. For example, American and British student see the issue as government vs. individual responses. Italian and Indian students see the problem as too much corruption. Japanese and Korean students say "Do it with technology."

10:15 Reports

Lead On Climate – Belle

The group putting on the event reassembled in November and will continue to meet to determine their mission and consider future events. They will coalesce on a couple of events this year and are open to suggestions. They will address follow-through on the commitments made at COP. They have great speakers in mind.

Suggestions to Belle:

Doug: Put climate on the electoral agenda.

Kiki: Focus on the environmental justice component.

Bill added that they are looking at candidates' forums, sharpening the focus toward climate.

Sustainable Novato – Ed

They met with Josh Fryday. They are looking at climate action steps and articulate county representatives.

Novato Unified School has embarked on an ambitious solarization plan at 10 schools comprising 80% of the district's electrical needs. There is some NIMBYism, but it can be overcome. The next workshop is on January 19 at 6:00 at Novato High School.

Belle mentioned two Environmental Forum lectures on carbon sequestration: one just held on Jan. 13, featuring John Wick, and an upcoming lecture on Jan. 23, 9:00 at the Bay Model, featuring a deeper look at the subject.

Kiki: We could create a scorecard for candidates, with questions submitted by organizations. We would not be taking a position, but could be publicizing results.

Doug: We could sponsor a forum, a one-time event.

Main Street Moms – Mary

The Moms went to CPUC hearings on the PCIA (Power Charge Indifference Adjustment – Exit Fees charged by PG&E) CPCIA fee. The Moms are looking into paying more attention to the CPUC, to promote accountability to the public. There is a technical hearing in mid-March on how the PCIA fee is calculated.

Ed: It's February 16, and the hearing is set up to parse the methodology—it is not a frontal attack on the PCIA. Should consider an alternative. There is an interesting interview with Picker in the L.A. Times. The interview illustrates that Picker is implementing the Governor's views, and the Governor is the problem. The Governor vetoed 6 bills on reform of the CPUC. Picker is suggesting that the legislature has to do something to effect a change. There is a worry

that Picker might come out with an alternative that will vitiate the recent good decision on net metering.

Pam noted that PG&E already back-charged her on solar to September, at a rate three times what it was previously.

Tonight, 350.org will present student speakers – Lindaro at 6:30. There will also be a big event in May.

Community Marin – Rick

There was a meeting with elected officials concerning a shift of managers of special districts. The Sierra Club Marin has new people – Max Perrey – making it likely that they will become more active. And they can endorse candidates.

Announcements

Doug mentioned the “environmental shocker” in the Marin IJ, 1/7, re Marin’s large carbon footprint. The article exemplifies a different way of thinking about carbon emissions, our global footprint, taking account of consumption-based emissions, in which we “export” our emissions by buying products manufactured elsewhere. Other examples, large housing size and travel-based emissions.

Ed & Bill: Resilient Neighborhoods helps households to reduce their footprint. The program includes a section on shopping and consumerism. They need signups.

SFO has an offset presentation re air travel. We might invite a speaker from SFO.

Doug also mentioned that CAWG received an invitation from Cool Climate Network in Berkeley. We need a broader public awareness and discussion.

Kate suggested that groups might write letters to the IJ.

Next month, Chris Choo will be our speaker. We might have a speaker on consumption-based emissions at a later meeting.

Roger: There is a linkage with the County on ordinance changes. For example, CEQA now requires analysis on climate change.

Q. Pam to Damon: Is there an update on the subcommittee meetings under the County Climate Action Plan?

A. They just voted to create the subcommittee. The subcommittee will meet internally to decide on staffing, then there will be quarterly meetings. Key staff is currently funded by grants, and they are looking to change that. This is similar to San Rafael’s past practice.

Q. Kate: From what agencies? How can we avoid silos?

A. The lead agency is Community Development.

Comment, Bill: We want it to apply countywide, not just in unincorporated areas.
Comment, Pam: They should include the Health Department.

The MCL breakfast is coming up on January 29. Armando Quintero will speak on California Water Policy. The next King Tide will occur on Jan. 21 – 22. The County website has sea level rise mapping and vulnerability test results. The San Francisco CCA has launched.

Adjourned: 11:00

Minutes by PN.