

# Amador-Calaveras Consensus Group (ACCG)

General Meeting Brief Summary 7/19/2023, via Zoom and at Calaveras RD Office

## Meeting Brief

- Meeting facilitator: Michael Pickard
- Guest presentation: Curtis Kvamme, USFS Stanislaus NF, Forest Soil Scientist, Forest Applications of Biochar – Stanislaus Demonstration Site.
- July 17-18th SCALE Meeting: debrief, discussion on ACCG’s future participation at SCALE meetings
- Consensus item: ACCG 2023 SWOT Analysis (supporting documentation for 2023 Strategic Plan)
- ACCG Monitoring Work Group Field Monitoring Workshops: (1) Aspen field day on Amador RD, Sept. 13th, and (2) Meadow field day on Calaveras RD, Oct. 11th
- Roundtable updates and Work group updates.

## Action Items

Actions	Responsible Parties
Post final versions of meeting agenda and last month’s meeting summary to the ACCG website.	Layhee
Review suggestions received by ACCG at today’s meeting and update the SWOT analysis. Plan to bring back the revised SWOT analysis and the draft 5-Year Strategic Plan to get feedback on at the August general meeting.	Admin Work Group
Be the lead on prepping for and organizing the ACCG rep for next year’s scale meeting.	Admin Work Group
Find and reach out to local Calaveras CNPS contact and share with ACCG Monitoring work group regarding the upcoming field monitoring days.	Kelsey Retich
Share million-acre strategy email from John Buckley with the full ACCG email listserv.	Layhee
Virtual fencing presentation to ACCG, for inclusion and exclusion	Lisa Lucke, Chuck Loffland
Find and send paper on applying biochar in post-fire landscapes and info on producing biochar in field to Administrator.	Curtis Kvamme

## Modification and/or approval of agenda and last month’s meeting summary

No modifications were proposed to the agenda or last month’s meeting summary and approved. Megan will remove the draft watermarks and post them as final to the website.

## Presentations & Discussions

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## Forest Applications of Biochar – Stanislaus Demonstration Site

Presenter: Curtis Kvamme, USFS Stanislaus NF, Forest Soil Scientist

[Link to slides here.](#)

Curtis started off by talking about Debbie Page-Dumroese, who is the head of this project and is retiring later this year. The Biochar demonstration site is located on the Calaveras RD in the Lake Pines neighborhood of Arnold and was installed in 2018, talk about biochar and then the study. Site has preliminary results.

Curtis reviewed the study collaborators. See Collaborators slide.

Curtis briefly defined biochar, a stable form of carbon, basically charcoal, made by either burning, combusting organic material or pyrolyzing - heating organic matter - purest and most useful form. Pyrolyzation process creates pure biochar. High porosity and high surface area. Can be made from crop residue, manure, food waste, and woody biomass.

Showed a biochar properties schematic slide. Can absorb nutrients, heavy metals and water. See slide for details.

The most utility in the future of biochar will be to create it on site in the forest, to minimize travel cost. Burn piles, kilns, and air burners/pyrolyzer are ways to make biochar.

John B. - when burn piles are being burned if just the the exterior/surface logs get burned and not the interior of the pile, what's the process for getting the biochar?

- Curtis you have to continue to burn it longer to smolder or cut it up into smaller pieces, tradeoff there is that the smaller it is, the quicker it burns off. More efficient ways in the field are with kilns or air burner/pyrolyzers (less common, more expensive). Pyrolyzers have no CO<sub>2</sub> emissions from biomass but are really expensive. People like Debbie are working on that.

Industrial biochar production is more efficient than production on site, the tradeoff is the transportation costs. Merced was an earlier site, now in North Fork, and one is begin built in Wilseyville now (Jill added that). Early on the biochar produced for the Arnold site was originally from Merced. Process for most industrial locations is Pyrolyzation technical – biomass is converted to biochar, and several different commodities can come out (e.g., electricity, oils, etc.). Primary export was thought to be the electricity from biochar, but it turned out to be the biochar itself being sold to farmers is economically beneficial. This type of biochar production is more efficient.

Biochar impacts on soil and plants see the slide graphic for details. Overwhelming number of benefits to soils and plants, also has water use efficiency, reduce compaction, and increase microbial growth, increase filtration, and decrease overland flow.

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Chuck L. asked about the process of moving the biochar from the landing pile to a broader area.

Michelle asked about the Pacific Biochar company and wanted to know if they're experimenting with mobile biochar units. Curtis responded that he does not know the specifics about what that company is doing. Michelle also asked if there are studies on biochar improving soil texture and water percolation in high-severity burn or re-burn areas. Curtis mentioned that there is a study and that adding biochar wouldn't impact the texture, but could impact the water infiltration rate. You get increased erosion and less water percolation post-fire because there is no organic matter in the soil post-fire. So, applying biochar on the surface after a high-severity fire would act like a litter and duff layer, and yes, it could help in a post-fire setting.

**Action item** - Curtis will ask Debbie for the paper.

Jim added that State Parks has several air curtains/burn incinerators and asked how to produce biochar and asked Curtis to share more information offline about it.

Why biochar- add organic matter, increase 1% in us cropland, and help retain soil moisture in drought conditions.

Potential uses: avoid pile burning, log landing/skid trail restoration, rehab abandoned mine lands, keep understory green longer, reduce fuels.

Potential tradeoffs: still expensive, economy of scale, another piece of equipment, new methods techniques, soil nutrient tie up. Looked at bringing biochar to the meadow restoration effort on STF at Ackerson Meadow on Groveland RD, but still too expensive to apply.

- John B. asked if that's partly because of collection costs or just transport costs. Assume that is just production processing and transporting for that company, assuming. After on meadow project, it was just the transport cost.
- Stan asked to elaborate on the raw biochar applied to low-nutrient soils can hold. It's not an issue in N-rich soil, but if you are in poor N soil, inoculate with manure or food waste and fill up pore spaces and then add biochar so that the biochar will steal the nutrients.

Ag applications: feedlots or pens (prevent N leaching), degraded ag soil, water filtrations, Central Valley orchard water conservation (mixed in the soil where new orchards are planted).

Several slides showcasing examples of biochar application: establishing vegetation, road obliteration, restoration of mine site restoration,

Forest soil benefits: boost nutrient storage, enhance soil structure, biological carbon source, enhance carbon sequestration, ecosystems water storage, and available water, (see slide for rest of list).

The STF Forest Study Site included studying soil climate, decomp rates, insect activity, and termite activity. The 2016-2017 beetle kill hit and then was salvaged logged and biomass piles

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were made. Piles were converted to biochar and applied to the soil at replicated study plots in different rates (3, 10 tons/acre biochar, no biochar, and control sites- biochar with no tree mortality under green canopy). Variables – soil climate (soil moisture, temp), decomp rates, insect activity, termites.

Briefly went over the insect and termite study designs. They got so much data in the first insect study trial, they haven't done it again, short term study no data yet. The termite study is long-term.

Then went into Decomp rates study, which is a global study (e.g., Hawaii, North Pole, Southern Sweden, Spain), with wood stakes at each plot. Stakes removed, one each year and weigh it - decrease in mass equates to decomp rate (CO<sub>2</sub> released) then they can id what is doing to the decomp (DNA).

Soil climate study are looking at air temp, soil moisture, soil temp with climate sensors taking information continuously.

Preliminary results - Don't have full set of data, still another year of data to collect in the field. Looks like there may be a treatment effect on soil moisture, but it's too soon to be a definitive result. Soil temperature prelim results indicate a shift with biochar, too soon to be definitive. Chuck L. asked if higher soil temp is good or bad. Curtis said that in the northern latitude (Rocky Mountains) higher soil temp can be a good thing right now because decomp rate is slower, but with climate change decomp rates will increase the rate of organic matter loss. Might be a neutral effect in the future.

Richard asked how the biochar was applied at the stie, but biochar was just applied on the surface with a bobcat.

Michael asked if they were measuring snowpack, too. Curtis said no, but it would have been an interesting addition to the study.

John B. mentioned some other studies looking at thinning and whether it would help snowpack, and would impact soil. Curtis responded that biochar diminishes over time, soil heating is not going to stay there.

Michelle asked in the chat if there have been studies on where mastication occurred biochar was mixed in with chipped and decomp rates measured?

- Curtis mentioned that they don't have the decomp rate results back yet for the STF study but do have it for the study in Bitterroot NF. Masticate sites decomp rates was lower than the control over time, microbes are trying to break it down but there isn't enough N. If biochar is inoculated with N or have it in it already, you're still adding carbon but not messing up C:N ratio as much as with mulch. In plots with biochar, biochar increasing decomp rate faster than other treatments. Ideally perhaps adding biochar to masticated sites would balance the C:N ratio.

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Also described the results of the mass loss graph.

John B. asked that based on limited data and information from local study, it's not appearing that there is a clear, economically viable way to take these large burn piles and make biochar.

- Curtis responded that the economy the way it is now, there is no practical way to do it on a large scale economically. One of the purposes of study, in this SN region that we are not doing harm with adding biochar, if the answer is yes that would affect implement this in the future. If the answer is yes its beneficial or no impact, then there is reason to pursue biochar production this in the future. But capacity at North Fork is not there to take the volume available in the forest.

Jill added that Phoenix is planning to build small plants throughout the SN, and biochar is a big part of the economic model for Phoenix energy, so all of these plants would produce biochar.

- Richard asked what the market for biochar is. Jill mentioned that the primary is agriculture of high-value crops (long lifespan plant- vineyards, tree nuts), looking to work with water companies, and worked with a Swedish company experimenting using biochar in road beds (help with road filtration).
- Richard also asked how stable, sequester carbon? Chuck added what about the heavy metals? For stability, the pyrolyzed material is exceptionally stable (100s-1,000s year carbon source). Capacity to hold heavy metals, less clear.

Question about carbon credits. Yes, it's a factor. Applying biochar, you don't get a credit. Producing the biochar, you get credits.

Stan asked about when they collect the data. Every fall they collect the data (pulling up the stakes).

### **SCALE Meeting: debrief, discussion on ACCG's future participation at SCALE meetings**

Michael Pickard, Zach Browning, Michelle Wolfgang reported out on the SCALE meeting. Some of the meeting highlights were:

- The ACCG update provided by Michael went well, no questions. None of the information provided at the meeting was completely new, but added depth. Meeting started with Malcolm North on the same papers he presented here. Interesting to see that some of the methods are being implemented (e.g., SERAL). YSS (Liz Peterson) presented, and also North Yuba Forest Partnership and South Lassen Watershed group all about their large-scale planning efforts.
- There was also an update on wood innovations program (bill already passed?). USFS is going to be increasing amount of funding in wood innovations (doubling it to %50M) in the next five years.

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- Discussion on Joint Powers Authority, and UMRWA was mentioned as an example of utilizing JPAs as a fiscal agent for collaboratives.
- TCSI presented. Noted that there have been a lot of collaboratives that have developed post-TCSI.
- David Griffith with ABC presented.
- Janet Hatfield with Eastern Sierra Resiliency Project presented on their progress and developments over there.
- Patrick Wright spoke about what the CA Wildfire Task force is doing, and discussed Planscape. Existing treatments and planned treatments are going to be incorporated into the tool, including state grants, FACTs. The exploratory, non-analytical component of the tool is going to be available in end of August.
- Jessica Morris gave a talk on state goals funding mechanism, new bond probably coming up.
- SNC presented on their landscape investment pilot project
- Presentation on the Healthy Eldorado Landscape Partnership.
- Jim Mayer provided a great summary of the meeting
- USDA hub training opportunities, additionally helpful to navigate the barriers of landscape scale resiliency plans/projects together.
- Opportunities for additional bonds, would like to get more info on wood innovations grants - valuable to Action item: add to topics list.
- Johnathan Kusel brought up potential funding interim help/planning help.

The discussion moved the other component of the agenda topic, which was to discuss how ACCG should be more involved into the future.

It was suggested that ACCG has a lot to offer at the next year meetings. It was also added that it would be great for UMRWA to attend the next SCALE meeting to present on FPP, their process for developing Phase 1, Phase 2 and to give a sense of the steps that UMRWA-FS partnership.

The million-acre strategy was also mentioned as a parallel process happening and how the state is assessing project success of all of these various landscape scale projects.

It was also suggested that the Admin work group take the lead on reminding the ACCG sooner about the SCALE meeting next year, to organize who will represent the ACCG and provide presentation/update.

### **Consensus item: ACCG 2023 SWOT Analysis (supporting documentation for 2023 Strategic Plan)**

Presenters: Richard Sykes, Admin work group

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Track changes were made in the word document during this discussion item to track everyone's suggested changes. The Admin work group will review these track changes and make the revisions to the SWOT analysis. The work group will plan to bring the revised SWOT and the draft 2023 5-Yr Strategic Plan to the August general meeting for review by the full membership, and perhaps consensus support, if no additional modifications are suggested.

### ACCG Monitoring Work Group Field Monitoring Workshops

Megan put up the two upcoming ACCG Monitoring work group volunteer field monitoring day opportunities, including (with links to flyers) an (1) [Aspen field day on Amador RD on Sept. 13<sup>th</sup>](#) and (2) [a meadow field day on Calaveras RD on Oct. 11<sup>th</sup>](#).

Michelle Wolfgang asked CRD staff to find and reach out to the local Calaveras CNPS folks to send Michelle's way to get the word out about those field days.

## UPDATES

### Roundtable

- Michelle - a lot of really short-term windows for grant opportunities from the DC office to engage tribes in restoration work through GNA or tribal forest protection act proposal, due by Monday at noon (bipartisan infrastructure bill funding). Action item: Michelle will send the info to Megan to share with the full ACCG.
- Jim - successful burn around maintenance yard and fuels reduction project as well. Back out at south grove prepping for fall burn and other plots that we are prepping for upcoming burns.
- Michael - SNC is developing new 5-year strategic plan, want to get feedback from ACCG on role in the region. Forest and watershed health grant solicitation period closed, evaluating pre-proposals now.
- Carinna - Several timber sales have started, hazard tree removal at campground up Hwy 4 are happening. Pre-bid tour this week for McKays FB project (just under 1000 acres), including 20 contractors. Prather Medusa probably not being cut because it was bought by SPI, so it will be delayed. South Medusa will go out early next year (IRTC) because they are working with Mule Deer and getting additional funding to do service work in Prather Medusa.
- Richard - UMRWA Board meets next Friday, including a blue forest conservation update, ANEW organization (volunteer carbon credit market) presentation to see if possible, funding. Special board meeting set for August 25th for approval of contractor for the first phase of Phase 1. Phase 2 TAG meeting here this afternoon.

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- Chuck Beckman- 3 small Rx burns on EBMUD lands about 35 acres, treating medusa head and barbed goat grass. Another 3-4 burns scheduled for the fall before it gets too wet. For the Moke Hill FB - all bio surveys for CEQA are close to being wrapped up, implementation to start in fall. FB will start at Calaveras-Amador line on EBMUD property and up to Mokelumne Hill community. Tuolumne Calaveras PBA completed one project this spring with help from CAL FIRE. Couple weeks PBA will be posting a coordinator position. PBA had a number of projects on the list for the spring, but since they were higher elevation, they didn't happen.
- Chuck Loffland - Mastication with CHIPS along Highway 88 started about a week ago, careful lot of dust. Took GenGreen crew out last week for three days and did willow planting and lodgepole and other conifer removal from Foster Meadow. Reminded the group that both Foster Meadow and Three Meadows were projects that came through the ACCG and encouraged everyone to get out there to see them with good water, vegetation is growing back well. Attended the virtual fence workshop, because in the Sopiago Allotment about 15 miles of fence line burned up so they ended up putting a virtual fence out there and now they're in their 2nd year of using virtual fences, working with UC Davis extension program to using concentrated grazing along some of the areas where ceanothus is coming back as a "carpet" and to help try and maintain their fuelbreaks. But the workshop last week, highlighted that there are only 3 main vendors, and only 1 active vendor in US. Work to get a presentation on virtual fencing for the ACCG. Highlighted benefits on both inclusion and exclusion.
- Ray - last week STF and ENF met in person last week to discuss Phase 2, bottom line they did make progress, one analysis and have 2 decisions out of it. PIL discussions and a draft is circulating right now, including who will take the primary and secondary ID team roles. Looking to do standalone UMRWA and joint ENF-STF agreement for the future. Carinna will look into options.
  - John - did the framework for Phase 2 get discussed, i.e., SERAL 1.0 framework.
    - Chuck L. and Ray emphasized said nothings off the table right now, but what they look like may change with more discussion and may or may not look exactly like SERAL 1.0, but use it as a template.
    - Carinna added that both forests are committed to start designating staff to attend planning meetings and participate in discussions.
    - Michelle added that the 2 forest supervisors agreed that in terms of the agreement, that after the duration of the current agreements ends, they would move forward with a joint MSA that would last with UMRWA for 20 years (essentially a longer-duration agreement).
  - Ray added that the FS will give a debrief on this FS internal meeting at the next Phase 2 partnership team meeting. Carinna reminded them that the supervisors on both forests met with Richard this week to debrief him. Ray continued with his update including mention of the Summit RD Rx fire project which was about 4200 acres. Units on the Calaveras district we wanted to burn, including Sourgrass burn



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did not happen this spring, due to access. Irish Manuel burn had PAC activity, so no burn there. The Arnold-Avery burn had to be stopped after completion of about 20 acres to ensure it was out before fire season, since it was a mastication unit.

- Coleen – gave some reminders about Phase 2-related upcoming meetings, including next Phase 2 partnership team meeting is August 2nd, August 16th general meeting we will have a Planscape presentation, and on August 23rd next Phase 2 stakeholder meeting hosted by ACCG Planning work group.
- Jill – Administrator/project manager for three fuels reductions projects in the area including, CHIPS View 88 project, CHIPS A-A project, and fuels reduction project on this side of the Highway from Murphys to Forest Meadows CAL FIRE grant. All of those will be finished this year.
- John B. - continued onto the discussion that Ray mentioned, the Rx fire on the Summit RD, a pilot project, included some really hot burn areas (it's a blunt, not precise tool), hear the costs were very high, because of bringing in staff, etc. Emphasized to the group that if we are all thinking about doing 10,000s of acres of Rx burning for Phase 2, we might need to expect high cost, limited windows for treatments, etc. And at some point, it will be great for STF staff to report out on lessons learned, costs, etc.
  - Ray added that STF staff are reporting to Regional and Washington office, but at the forest-level, local level they need to discuss the lessons learned. We will have a debrief on how the pilot program went.
  - John added that the USFS got a lot of praise from the community (smoke, traffic management).
  - Ray added that reentry will be a lot cheaper. Chuck L. also added that seems like you need to compare relative cost to the cost of suppressing a wildfire (\$1M/day).
  - Carinna added that the cost was only a bit more than mastication contract. About \$3,000/acre.

**Work Group Updates:** Ran out of time.

**Next general meeting:** Next general meeting will be on August 16<sup>th</sup> hybrid via Zoom and in person at the Calaveras RD office in Hathaway Pines.

## Meeting Participants

Count	Name	Affiliation	Minutes attended
1	Megan Layhee	Outgoing ACCG Administrator (in person)	180
2	John Buckley	CSERC (in person)	180
3	Stan Dodson	CSERC (in person)	180
4	Kelsey Retich	USFS, STF Calaveras RD (in person)	180
5	Carinna Robertson	USFS, STF Calaveras RD (in person)	180
6	Michael Pickard	SNC	180

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7	Chuck Loffland	USFS, ENF Amador RD	180
8	Ray Cablayan	USFS, STF Calaveras RD (in person)	180
9	Chuck Beckman	EBMUD	180
10	Curtis Kvamme	STF (in person), guest presenter	180
11	Jill Micheau	Phoenix Bioenergy (in person)	180
12	Baljit Singh	Calaveras County OES	180
13	Mike Masonia	Calaveras County OES	180
14	Richard Sykes	UMRWA (in person)	180
15	Emily Graham	Mother Lode Job Training	143
16	Michelle Wolfgang	USFS, ENF	180
17	Zach Browning	Sierra Institute	103
18	Chris Trott	CT Bioenergy	162
19	Linda Diesem	Private citizen	180
20	Craig Case	CHIPS	60
21	Sue Holper	ACCG member, private citizen	180
22	Linda Helm	USFS, ENF Amador RD	180
23	Joe Stout	USFS, ENF	40
24	Jim Suero	CA Big Trees SP	178
25	Jason Kuiken	USFS, STF	34
26	Coleen Shade	Stantec	120