Soil Health Advisory Committee Notes September 21, 2020

Committee Attendance:
Steve Ernst
Alan Girard
Philip Bogonoff
Deborah Herr Cornwell
Alisha Mulkey
Aaron Cooper
David Smith
Tim Rosen
Colby Ferguson
Michael Calkins
Steve Darcey
Cleo Braver
Elliot Campbell
Dietrich Epp Schmidt
Kate Everts
Trey Hill
Chris Beck
Ray Weil
Lindsay Tompson
Shantel King
Tom Croghan
Matt Fry
Amy Jacobs

Public Attendance:
Harry Huntley
Steve Strano
Elizabeth Beggins
Mimi Wright
Susan Payne
Anna Chaney
Hans Schmidt
Kevin Antoszewski

Alisha Mulkey called the committee to order at 1 PM and began the meeting. Alisha announced the session was being recorded and reviewed technology rules for the meeting. After the public comment section, conversation will be limited to committee members.

Mike Calkins moved to approve March 2 meeting minutes
Steve Darcey, seconded
The March minutes were approved and will be posted on the MDA website.

Public Comments

Mimi Wright (Dorchester Co. landowner): Currently, FSA is concerned about field centers being included in the CREP program. They say there is no benefit, because current practices will address any erosion or sediment issues. I hope the committee will recognize that soil does a lot to sequester carbon. Cover can be burned and the carbon will remain in the ground. The carbon that's in the ground from the CREP program should remain in the ground. She hopes that MDA will consider this benefit provided by soils.

Presentation

In this meeting committee members are continuing the conversation of conservation practices and their relevance to the MDA Healthy Soils Program.

Alisha reviewed the legislative charge for the Healthy Soil Program, and the Committee's scope of work to consider practices and incentives for inclusion in the program. An initial discussion of conservation practices began in March and through the process reviewed (see matrix reference sheet), eight practices have been initially identified for further exploration and conversation. These 8 practices are:

- Conservation crop rotation,
- nutrient management,
- cover crops,
- conservation tillage,
- forage and biomass planting,
- prescribed grazing,
- conservation cover, and
- critical area planting

Colby Ferguson: The phase three WIP includes comprehensive soil health. Is the healthy soils program also going to be a baseline for this?
Alisha: We haven't had this conversation yet, but yes it does make sense. The Healthy Soils Program will support the state meeting several goals across programs.
Jason Kepler: The comprehensive soil health buckets developed during the WIP are to recognize all the co-benefits of the healthy soils program.

Roundtable discussion on list of 8 conservation practices

After reviewing the presentation, Committee members are being asked for their concurrence with the eight listed practices to begin the next steps of a "deeper dive" into the practice data, economics, and science. The floor was opened for 25 minutes of discussion prior to a consensus score exercise.

Cleo: There are a couple of areas of concern with the matrix. There are important practices that are present, but some of the practices are overvalued. I am confused about the valuation of carbon sequestration. silvopasture is something that's richly rewarded, but only for the first year of production. That seriously de-values the environmental benefits of silvopasture. Strategic planning across the state recognized the need to expand pasture based animal systems. We haven't talked about the science of pasture production. Subject matter experts should be brought in to present to the committee. Second, reduction of synthetic nitrogen has not been a part of the conversation. There are studies that show that reduction of synthetics can eliminate the degradation of soil biota that are necessary for healthy soils. There are hundreds of farmers in MD that are adopting low(er) input methods, if their practices sequester carbon, they should be recognized. We need to take a look at reductions that improve

outcomes for soil biota before we can say we have done our job. There are already carbon markets for farmers that reduce synthetics.

Ray Weil: adding to Cleo's remarks. In some ways, many of those considerations seem to be on the table under nutrient management (NM) and integrated pest management (IPM). For organic certification, there's a bright line between natural and synthetic but not for science, especially with fertilizer. The key for N is to not exceed what's agronomically beneficial. Over application can be detrimental to the soil biology.Maybe more focus should be put on eliminating positive nitrogen balances. That's not easy to achieve but should be a goal. Similar story for pesticides and IPM. Big part of IPM is to not apply pesticides (whether or not natural) if you don't need to. There's progress to be made in IPM with seed coating and neonics. The other point to consider is synergies. What two or three practices work together to provide a benefit that's more than the sum of the parts?

Cleo: The broad definitions of NM and IPM don't really target these things in particular. There is a need for broader conversation with experts. Agrees with the importance of synergies. The work that MD is doing will not be judged in a vacuum, there are other states doing this work in tandem, and MD is clearly missing some big pieces.

Alisha: The conversation of nutrients (source and rate) will be considered under the umbrella of Nutrient Management.

Cleo: There is a massive category of practices that we need to consider.

Tom: Tends to agree with Cleo. There are a lot of practices we haven't talked about and there are management styles we haven't talked about either. The practices we've talked about have slowed soil degradation, but they haven't restored soil health. This is about more than carbon, it's also about the food we eat. Forty years ago people of color (POC) owned more land than the 2% of farmed land they own now. We have an obligation to view the recommendations of the committee through the lens of racial justice. That doesn't even start to address the problems caused by climate change. Lower yields and less nutrient content are a result of increasing temperature. Problems in MD are significantly impacted by other problems as well, including sea level rise and saltwater intrusion. One way to actually turn this around is to add POC to the committee. Agrees with Cleo to bring some experts in to talk about problems we are facing. We should think fundamentally about what healthy soils are. We haven't had a conversation about what a healthy soil ecosystem is. I think we need to take a deeper look before moving on.

Cleo: Without healthy soils we won't produce healthy food and we won't create healthy people. We need to broaden our perspective or we are going to be left behind.

Lindsay: I want to tie what we've been talking about to our previous conversations. The path that was laid out was very clear at that time. We are still in the investigative phase. We are still trying to understand what practices are worth investigating and exploring that through conversation. Looking at the priority practices that were sent out, these 8 practices are what came to the forefront, but it doesn't mean that they are the only practice we can look at. I think that it's important for us to utilize the work we have done so far and take a look at the nuances of the practices we have prioritized so far and look at what that deliverable might look like. This is a good starting point for us to see what the "how" might look like. The Soil Conservation Districts in their promotion of healthy soils work with all producers of all sizes and types. They meet you where you are to figure out what your resource concerns are and

develop tailored recommendations from there. We need to make sure that programs developed are applicable to everyone.

Cleo: I think you are alienating some of the producer population when you don't recognize the benefits of low input agriculture or those that put land into the CREP program.

Lindsay: I don't think that those are being left off the list. The 8 practices mentioned include many of the practices mentioned for further exploration. These 8 practices are the first iteration for a path forward, but don't eliminate other practices from the list.

Cleo: I would like to see the list of practices again. We shouldn't let reimbursements from other programs remove things from the list (speaking about edge of field practices).

Tom: When you say "what's the list of practices" do you mean you want more specificity about what it is we are selecting?

Cleo: Yes. Nutrient Management and Integrated Pest Management are compliance issues.

Tom: We have a list of 8 practices. I don't know, and we haven't heard any discussion about their role in creating a functional ecosystem. It becomes hard to endorse the list of practices because we haven't talked about this. We have been using these practices for a long time and we continue to see soil degradation. Historically we've just moved farms to a new site when soils became too poor.

Ray: A lot of your historical observations are true only because these practices have not been widely or effectively adapted on a large scale. If you look at the health of those individual systems, these practices have been very effective. They haven't been widely enough adopted to affect the overall rates of adoption. Maryland is far ahead of the rest of the country, but it hasn't gone far enough.

Tom: agrees that this may be the case. The question is why aren't they widely adopted?

Cleo: We have never asked our farmers to report soil organic matter as a part of their nutrient management reporting. Maybe we should start because we could learn a lot from the number.

Steve Ernst: There's been a lot of valid points brought up. Practicality and necessity have put MD at the forefront of a lot of these practices. When we look at the specifics of soil health, Cleo mentioned organic matter. The timing and dryness of the soil can dramatically affect the organic matter test results. There are so many moving targets when you pick out specific metrics. I'm also a certified crop advisor, I have to sign an ethical agreement to provide recommendations that are in the best interest of the producer. Vast differences in practices exist between states, just based on the awareness of producers. There is a huge movement among smaller producers towards some of these practices because they're seeing what their neighbors are doing and what has been successful, but neighbors aren't forcing others into these practices. Economics will push people in the right direction. Doesn't want the conversation to turn into an "us against them" between different types of producers.

Alisha: Reminder, the goal is to focus the team's energy around a smaller list of practices and iterate there. If need be, practices can be added or removed, but we need to start somewhere.

Roundtable discussion ended and consensus scoring was completed. See attached table for consensus results

Members rated their agreement with the list of 8 practices as a 3, 2, or 1. 3 represents full agreement with the list, 2 represents some agreement, but needs some changes or further discussion to reach full agreement, 1 represents disagreement.

Alisha called on a few people that responded "2" to hear their thoughts.

Amy: When I saw the list my initial thoughts were that edge of field track practices are important to be included in the list.

Philip: Just on the basis of this conversation, even the initial 8 categories need to be more precisely defined. Likes what Cleo has said about broadening our understanding of the role of pasture animals and reduction of synthetic inputs.

Agroforestry Roundtable

Alisha reminded the Committee that MDA is actively working with Maryland Department of Environment (MDE) as it updates the state's Greenhouse Gas Reduction Act (GGRA) plan. MDA has committed the Healthy Soils Program, and the carbon sequestration value of adopted practices, as part of the state's strategy to address climate change. To further support the strategy, MDA is partnering with DNR to pursue agroforestry demonstration projects on state lands. Agroforestry provides an opportunity to maximize carbon sequestration while maintaining productive lands. While the agroforestry pilot project is being pursued by MDA and DNR independent of the committee, MDA asked the Committee if they wished to equally prioritize agroforestry practices with the other 8 practices? The floor was opened for 10 minutes of discussion prior to a consensus score exercise.

Colby: The biggest challenge with ramping agroforestry up is that we need a demand. We've lost so many pulp wood and paper mills in the region. I struggle with the idea of putting a lot of agroforestry practices in place without this infrastructure.

Cleo: That's a good point, and also with the prevalence of wildfires (as we are seeing out west) there are tradeoffs.

Tom: I think it's a great idea. Both for timber and non-timber products.

Dietrich: I support looking at more diverse agroforestry inputs. It is important to keep in mind that even though we all might not know what markets are available, there are markets. Individuals are already developing creative marketing solutions. The conversation so far today has seemed to be between those that want to push the envelope and some that want to shore up the solutions we already have, but we can do both at the same time.

Cleo: agree.

Phillip: Inspired by the work of Mark Sheppard, in multilayer perennial work. Production of calories per acre in these systems may be able to rival the caloric output of corn or wheat.

Ray (chat): Could we add integration of livestock and cropping as a 10th area for the coming discussion?

Amy: What does equally prioritized mean?
Alisha: When we start the deep dive, we would also bring into the conversation some of the agroforestry practices.

See attached table for consensus score results for this discussion.

To conclude the meeting, Alisha discussed next steps for planning meetings, topics, and speakers. The MDA team will review today's comments and consensus scores to consider follow up actions. Alisha will reach out to those that were "1" and "2" in the first roundtable for further comment and discussion.

Members were provided the opportunity to share any announcements relevant to the Committee.

The meeting was adjourned at 2:30.

Comments for the Record -- The following comments are taken from the chat box during the meeting or submitted by committee members after the close of the meeting.

00:22:48.858,00:22:51.858
Anna Chaney: Hello Alisha - I'm wondering where agro-forestry/forest farming is located in the priority list? In other words, previously tilled or farmed acreage is transitioned into forest farming of edible foods; for example native fruits and nuts. This is a very effective strategy in generating income while addressing soil degredation via erosion and death of soil microbiology from chemical inputs. We have transitioned acreage on our farm at this time and beleive it to be a viable option. Thanks.

00:32:13.914,00:32:16.914
Lindsay Thompson: Alisha - can you bring up the 8 practices you mentioned?

00:34:53.978,00:34:56.978
Harry Huntley: Anna, I'm sure Alisha has more to say, but I do know there's some work going on looking into agroforestry, and I think I'll be talking about it some later

00:37:59.321,00:38:02.321
Dietrich Epp Schmidt: thanks that's a very good point about racial justice!

00:41:11.037,00:41:14.037
Anna Chaney: I agree with Tom 100%. What is healhty soil and what are the goals seems to be

very fundamental questions that need to be answered to guide this group's processes.

00:43:40.753,00:43:43.753
Arjun Makhijani: The number of Black and Indigenous farmers has declined by well over 90% since 1900.

00:49:22.535,00:49:25.535
Anna Chaney: Also, I agree that some experts should be brought in to present to this group. I would love to see some of the top soil scientists and finding the prototypes of functioning farmers/farms incorporating their living soils practices to help this group formally define what we believe is "healthy soil". I know you are getting to this - and "living soil" most certainly begins the conversation of contemporary science's starting point.... I"m anxious to see a list of potential presenters. Thanks!

00:54:14.381,00:54:17.381
Lindsay Thompson:
file:///C:/Users/linds/Downloads/590_NHCP_CPS_Nutrient_Management_2017.pdf

00:54:45.100,00:54:48.100
Lindsay Thompson: "Nutrient source
Choose nutrient sources compatible with application timing, tillage and planting system, soil properties,
crop, crop rotation, soil organic content, and local climate to minimize risk to the environment."

00:57:42.426,00:57:45.426
Lindsay Thompson: I'd like to go on the record that I have a fundamental problem with this committee allowing or condoning demeaning of farmers' intelligence and integrity but suggesting that they do not understand how to implement practices that we are discussing.

Alan Girard: Two additional suggestions for the committee:

1. Ray mentioned early on the importance of synergistic effects of practices. I think you know that Lisa Garfield on the MAC team has been doing a lot of work in this area. Her research and recommendations can be shared with committee members to inform this aspect of the conversation as we do the “deeper dive” you mentioned. Happy to work with you to find a good fit for the sharing.
2. Also mentioned today: the “nuances” of each practice. Wondering if it makes sense during the deeper dive to frame conversation on nuances around the legislative definition of soil health? (See below.) Perhaps academics or practice experts can provide an objective account of the specific ways in which each of our 8 (or 9) priority practices meet these definitions.

From HB 1063/2017:

“HEALTHY SOILS” MEANS THE CONTINUING CAPACITY OF SOIL TO:

(I) FUNCTION AS A BIOLOGICAL SYSTEM;

(II) INCREASE SOIL ORGANIC MATTER;

(III) IMPROVE SOIL STRUCTURE AND WATER AND NUTRIENT HOLDING CAPACITY; AND

(IV) SEQUESTER CARBON AND REDUCE GREENHOUSE GAS EMISSIONS.