

Agriculture Workgroup (AgWG)
Meeting Minutes
October 20, 2022
10:00 AM-12:00 PM
[Meeting Materials](#)

Summary of Actions and Decisions

Decision: The AgWG approved the [minutes](#) from the September AgWG call.

Decision: The AgWG approved the voting membership of the Phase 7 Ag Modeling Team (via email).

Action: Members are encouraged to reach out to Aaron Cook (amc521@psu.edu), Mark Dubin (mdubin@chesapeakebay.net) and Ted Tesler (ttesler@pa.gov) with questions and/or concerns about the PA Cover Crop Enhancement Pilot Project. Approval of the methods will be sought on the November AgWG call.

Action: Contact Kurt Stephenson (kurts@vt.edu) with any additional questions about his presentation and [recently published article](#).

Action: Members are encouraged to attend the [Water Quality GIT Oct 24 call](#) to hear Loretta Collin's presentation on the [2021 STAC Workshop report](#).

Introduction

- 10:00 **Welcome, introductions, roll-call, review meeting minutes** Workgroup Chair
- Roll-call of the governance body
 - Roll-call of the meeting participants- *Please enter name and affiliation under "Participants" or in "Chat" box*
 - **Decision:** The AgWG approved the [minutes](#) from the September AgWG call

CBP Assignments/Data & Modeling

- 10:05 **Agricultural Data Inputs (10 min)** Tom Butler
Tom Butler, EPA, reviewed the voting outcome for the Phase 7 Agricultural Modeling Team (AMT). Voting for 4 at-large slots occurred over e-mail by AgWG Governance members.

Discussion

Ted Tesler: Do you have a long-term schedule yet?

Tom Butler: We'll be discussing and creating the work plan at the two-day workshop in November.

Decision: The AgWG approved the voting membership of the Phase 7 Ag Modeling Team (via email).

Accounting & Reporting

- 10:15 **PA Cover Crop Pilot Study (45 min)** A. Cook, M. Dubin, T. Tesler
Aaron Cook, PSU, Mark Dubin, UMD, and Ted Tesler, PA DEP returned to the AgWG to further discuss the *Cover Crop Enhancement Pilot Project*. PA DEP has been working with PSU to match existing data from producer surveys and roadside transect surveys to enhance tracking and reporting of cover crop implementation in PA counties. The process and updated findings were presented, followed by discussion. Approval by consensus for the methods presented will be sought on the November 17 AgWG call.

Discussion

Ken Staver: On slide 25, what do you mean by not harvested? Are you talking about no harvest of any type or no grain harvest?

Ted Tesler: Referring to a crop that is crimped or burned. It wouldn't only include grains.

Mark Dubin: Both surveys include specific questions about harvesting and not harvesting.

Ken Staver: Commodity cover crop (CCC) is almost trivial. So is anyone green chopping in Lancaster county or not?

Mark Dubin: This is showing the CCC aspect is not as prevalent (no fall application of manure). Interesting findings, but this is a small portion of what's actually on the ground in PA not including the commercial production.

Dean Hively: That provides an important distinction where CCC is unfertilized and then harvest would include a fertilized cover crop (CC) that is taken to harvest as grain or as forage. Does the survey data distinguish between those?

Matt Royer: We did not ask any questions about the difference between the two or the goal of harvesting between small grain or forage. We only asked whether or not it was harvested and how many acres were harvested. We also asked species of CC planted. Any Fall nutrient application or "green chopping" would fall under our analysis as a double crop acre. It would count as a part of the 36.5%.

Dave Graybill: Transect surveys are being done at what time? Mid-may?

Mark Dubin: There's one in the Fall to capture plantings, and then one is in late Spring to gather crop residue management.

Dave Graybill: By late Spring, you would know by the comparison forage to grain for small grains.

Ted Tesler: Those double cropped acres (3,507 ac./36.5%) are not being reported in our annual progress report. They exist as a separate land use in the model.

Mark Nardi (in chat): Following on Ken's comment, the 1,572 acres of grass and legumes seems like forage/hay. Did you guys confirm that?

Clint Gill (in chat): I agree with Mark Nardi's comment. Is it possible that since the crop is not removed, the producer didn't interpret a hay cutting or forage as a 'harvest'?

Mark Dubin: Yes, that's the data coming out of the PSU survey.

Kathy Boomer: Do you see opportunities to use these data to inform remote sensing interpretation?

Ted Tesler: Absolutely, that would be ideal. This is a step towards that at a county level.

Dean Hively: Tabular info is interesting. Possible to look at different breakdowns of the data to specify harvest information. Will those be available for the group?

Ted Tesler: Yes, we can do that. I'll develop a methodology paper for this that will provide more granular details.

Dean Hively: when you're matching these PSU and transect survey data, how confident are you with the matching process? Do you think the mismatching of the results are due to mismatching in the pairing of the data or errors with reporting of the data?

Ted Tesler: I don't think they are necessarily errors. Transect survey is observing the portion of land that was nearest to the road, but it's possible there was a field back behind that can't be seen from the road, for example. Transect is limited because it's only what you can see.

Mark Dubin: Differences in scale of the two datasets could contribute to that as well.

Kathy Boomer: Will the methodology document contain the process and timeline and for which counties you want to use this in?

Ted Tesler: The write up will be specific to this project, but could be used as a blueprint for counties moving forward. Probably the south central region.

Loretta Collins (in chat): The current CBP Cover Crop BMP definitions are as follows:

Traditional Cover Crop (no harvest*)

Baseline: Fallow Ground + soil residual N + zero applied N

BMP Option 1: winter cereal/legume mix + soil residual N + zero applied N

BMP Option 2: winter cereal/legume mix + soil residual N + 50 lbs N/ac fall manure (70% of Option 1 Efficiency)

Commodity Cover Crop (harvest)

Baseline: Commodity small grain + soil residual N + 30 lbs N/ac

BMP: Commodity small grain + soil residual N + zero fall-applied N

Ruth Cassilly (in chat): The advantage of using this method as opposed to the PSU survey results alone is that the results can be extrapolated to the entire population of county row crop acres in CAST, whereas results of the PSU survey alone cannot be extrapolated. If this method is approved by the AgWG for verification use - will that approval include the ability to extrapolate the results?

Loretta Collins (in chat): Clarification of Ruth's question above in PAs proposal is important for clarity.

Ted Tesler (in chat): The Transect allows for extrapolation. The amount of that non-harvested acreage is defined by the Transect survey, those observed TS acres would receive the management information gleaned from the PSU analysis

Action: Members are encouraged to reach out to Aaron Cook (amc521@psu.edu), Mark Dubin (mdubin@chesapeakebay.net), and Ted Tesler (thtesler@pa.gov) with questions and/or concerns about the PA Cover Crop Enhancement Pilot Project. Approval of the methods will be sought on the November AgWG call.

Implementation

11:00 **Confronting Agricultural Nonpoint Source Challenges (30 min)**

Kurt Stephenson

Kurt Stephenson, Virginia Tech, discussed the recently published article, [Confronting our Agricultural Nonpoint Source Control Policy Problem](#). Abstract below:

Federal and state agricultural and environmental agencies have spent enormous sums since the 1990s to reduce nonpoint source (NPS) water pollution from agriculture. Yet, water quality problems are pervasive, and agriculture is a major cause. The lack of progress is often attributed to insufficient funding for pollution control practices relative to the scale of the problem. However, we attribute the lack of progress to shortcomings in agricultural NPS pollution control policy. We illustrate our argument after considering nearly four decades of federal, state, and local efforts to reduce agricultural NPS pollution to the Chesapeake Bay. Additional funding for current programs, absent fundamental program reform, is unlikely to produce reductions from agriculture needed to achieve desired water quality outcomes.

Discussion

Olivia Devereux: 1) You present this as if all BMPs are a cost to the farmer, but I don't think that's true. Some practices do have a benefit to the farmer. 2) You present agriculture in isolation but there are other source sectors. For example, we have seen significant reductions in atmospheric deposition and also wastewater treatment plants. Those had no benefits to the facilities themselves, they simply had to comply with regulations. 3) As a reminder, delistings of rivers/streams as they meet the TMDL are done through monitoring data, not the model. 4) I think focusing on outcomes rather than practices could be a solution if we align ourselves with how NRCS does things, making sure conservation needs are met on ag fields. What is right on one farm

is not the same on another. Doing that instead of counting individual BMPs, could solve problems of reporting of implementation.

Leonard Shabman: I think Olivia was endorsing regulation of agriculture.

Kurt Stephenson: I think it's going to require a mix of voluntary action and regulatory requirements. There are ways to do both more cost effectively and get greater involvement.

Jim Shortle: Our paper focused on the regulatory climate as it stands currently. The approach that is being followed is not really the best way to reduce pollution from agriculture most effectively.

Leon Tillman (in chat): In the scope of outcome based compensation (pay for performance) do we have adequate research data to quantify the amount of improvement for a majority of individual BMPs that are not edge of field loss? What kind of technologies or proxies would need to be explored?

Jim Shortle: The issue of how to quantify benefits is an important one. We have lots of models looking at field losses. There is a lot of uncertainty associated with those models and they don't always agree with one another. We have to have some kind of measure of performance or else you're lost. We can't let the perfect be the enemy of the good. We have to come up with methods for quantifying benefits across space and practice that are properly correlated. A great example is a program in New Zealand that uses a model and is a market-based P4P structure. Pennsylvania's nutrient credit trading program is another feasible example. Can't make the model too complex. Complexity doesn't equate to higher degrees of certainty.

Leon Tillman: Quantifying outcomes and improvement benefits is asked of NRCS often. A lot is model based, but it's difficult to capture how dynamic farming is even across the CB watershed.

Kurt Stephenson: There are efforts looking beyond models as well, or potentially in conjunction with modeling.

Alex Echols (in chat): One of the systems we completely miss is more efficient use of nutrient application by producers when they do the calculation entirely through the private sector

Amanda Barber (in chat): It certainly reduces soil loss and the need to purchase topsoil.

Alex Echols (in chat): Keep in mind how difficult it is to compare how difficult it is for farmers to pass on additional costs - they are price takers not price setters - where someone who produces a specialized product is better able to pass on costs.

Clint Gill (in chat): Alex, do you think we could be looking to regulation to require BMPs but ones that also come with payment for said BMPs so it does not hurt the bottom line but again that gets us into possibly targeting certain producers, and then we get into a real mess.

Marel King: Want to highlight recent legislation in PA that will create a clean water procurement program that will be outcomes-based, P4P program. PennVEST will be administering the program and will issue an RFP sometime in 2023.

Kurt Stephenson: Will they have scoring based on the certainty of reduction?

Marel King: PA DEP will have the oversight of verification. They will be responsible for creating a plan to ensure and verify reductions will happen.

Kathy Boomer: I'm hearing a need to move towards a regulatory approach. However, we don't know enough yet to develop effective regulations. Struggling with these recommendations and Jim's previous paper published in 2012, which states a regulatory approach is unrealistic and we're more likely to succeed if we improve capacity and build willingness, for example, by replacing practice-based payments with performance-based payments. Has your perspective changed? Also - do you think the way you framed these questions influenced the conclusions you drew?

Jim Shortle: Paper today is consistent with 2012 paper. In 2012 paper, my coauthors and I took the existing P4P approach as a given. We stated the polluter pays approach would be ideal but probably impossible from a political standpoint. But since then I've learned that we truly need to

stop spreading out our efforts and instead focus on critical places within the landscape that produce a lot of runoff and will be most effective in reducing pollution. Have to remember what is politically feasible - very expensive to regulate ag broadly due to its technical complexity in nature and number of farms. Need to focus on problem areas.

Kurt Stephenson: Agreed. Not suggesting a blanket approach to regulating agriculture. Need a strategic approach. And for places we can't regulate, we need to improve the effectiveness of our voluntary approach.

Jim Shortle: Yes, there is the 80/20 approach that states 80% of the problem comes from 20% of the land. Need to be figuring out what that 20% is and putting our resources there.

Leon Tillman (in chat): Does the paper differentiate where you're encouraging regulation? Because the presentation today does not declare any differences.

Paul Bredwell: You mention assigning ownership of manure from poultry producers. That concept has been around for decades. To start to meddle in private business and take away a revenue source for them will continue to be a non-starter. These integrators do not operate or control those farms. Looking into historical events around that particular scenario could provide some insights. Integrators are trying to address this to the best of their ability.

Kurt Stephenson: We're aware of prior efforts. The outcomes you get are in part how you structure the ask. We do know that intensive animal ag operations are hotspots. So looking for ideas on how to increase effectiveness in those areas.

Elizabeth Hoffman (in chat): To echo some of the thoughts about regulation, there is sometimes a hesitancy to provide data in order to opt in to PFP because of the concern it could then be used down the line for additional regulation and established baselines outside of the original context of those PFP programs. We've heard some of those concerns.

Ken Staver (in chat): The 80:20 bit is not a given, certainly across all nutrients and should not be stated as such.

Tim Rosen (in chat): For more information on pay for performance model EPIC has a lot of good content: <https://www.policyinnovation.org/procurement-finance/conservation-finance>

Kathryn Jo Brasier (in chat): Here is one resource on targeting (related to the Mississippi Basin) that might be useful for discussion: <https://targetingprimer.nri.wisc.edu/>

Kathy Boomer (in chat): Important and helpful clarifications regarding your thoughts on regulation. Thank you! Also appreciate your emphasis on being strategic with monitoring too. I am hopeful that we can build willingness with more refined information, specific to grower concerns. Linking practices to soil health benefits could also significantly increase willingness.

Clint Gill (in chat): For the Eastern Shore, we do cost share movement of manure outside of the watershed. To mushroom farms, etc. Poultry specifically, much easier to move.

Gurpal Toor (in chat): FYI, Maryland has a manure transport program:

https://mda.maryland.gov/resource_conservation/pages/manure_management.aspx

Clint Gill (in chat): To get it in before the end, agree with Paul, taking the litter from producers would pretty much completely upend the economy of the poultry industry.

Action: Contact Kurt Stephenson (kurts@vt.edu) with any additional questions about his presentation and [recently published article](#).

11:30 STAC Workshop Report-Out

Loretta Collins

The AgWG ran out of time to hear this presentation. Members are encouraged to attend the [Water Quality GIT Oct 24 call](#) where Loretta Collins, UMD, will provide a brief summary of proceedings and subsequent recommendations from a 2021 STAC Workshop: [Overcoming the](#)

[Hurdle: Addressing Implementation of Agricultural Best Management Practices \(BMPs\) Through a Social Science Lens.](#) Feedback from AgWG members is encouraged.

Action: Members are encouraged to attend the [Water Quality GIT Oct 24 call](#) to hear Loretta Collin's presentation on the [2021 STAC Workshop report](#).

11:50 **New Business & Announcements (5 min)**

- **Nov 2022 - Jan 2023: NFWF's Chesapeake Ag Networking Forum.** (Virtual).
 - More information/Registration: <https://sites.google.com/view/2022canf/home>
 - Contact: Joe Toolan, Manager of CB Programs (joe.toolan@nfwf.org)
- **Management Board/WQGIT joint meeting on CAST**
 - Special session Oct 19th to discuss next steps for CAST
- **NRCS Ag BMP Crediting- NEIEN Appendix Proposal**
 - AgWG determination at future meeting on options presented in [September](#)
- **Animal Mortality Expert Panel Technical Appendix**
 - Most recent draft technical appendix available [here](#)- CBPO working through revisions based on feedback.
 - Contact Jeremy Hanson (hansonj@chesapeake.org) with questions/comments.
- **Other Announcements?** - send to Jackie Pickford (Pickford.Jacqueline@epa.gov) for inclusion in "Recap" email

11:55 **Review of Action and Decision Items (5 min)**

Jackie Pickford

12:00 **Adjourn**

Next Meeting:

Thursday, November 17: 10AM-12PM, Call-in Zoom

Meeting Chat

From Clint Gill to Everyone 10:14 AM

Thanks for putting this together Tom. With the exception of those jokers from Delaware this is a really strong team!

From Thomas Butler to Everyone 10:17 AM

Clint, thank you, it has been a real team effort so I have to share the progress with everyone who has participated! I'm very excited to have the team I think we can really get things done!

From Mark Nardi to Everyone 10:37 AM

Following on Ken's comment, the 1,572 acres of grass and legumes seems like forage/hay. Did you guys confirm that?

From Ruth Cassilly to Everyone 10:40 AM

Commodity cover crops can be fertilized in the spring, but not the fall, is that correct?

From Loretta Collins to Everyone 10:40 AM

yes

From Ruth Cassilly to Everyone 10:41 AM

Thanks

From Loretta Collins to Everyone 10:47 AM

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Commodity Cover Crop (harvest)

Baseline: Commodity small grain + soil residual N + 30 lbs N/ac

BMP: Commodity small grain + soil residual N + zero fall-applied N

Above are the current CBP Cover Crop BMP definitions

From Clint Gill to Everyone 10:48 AM

I agree with Mark's comment. Is it possible that since the crop is not removed, the producer didn't interpret a hay cutting or forage as a 'harvest'?

From Clint Gill to Everyone 10:54 AM

*Mark Nardi

From Ruth Cassilly to Everyone 10:58 AM

The advantage of using this method as opposed to the PSU survey results alone is that the results can be extrapolated to the entire population of county row crop acres in CAST, whereas results of the PSU survey alone cannot be extrapolated. If this method is approved by the AgWG for verification use- will that approval include the ability to extrapolate the results?

From Loretta Collins to Everyone 11:02 AM

Clarification of Ruth's question above in PAs proposal is important for clarity.

From Ted T to Everyone 11:07 AM

The Transect allows for extrapolation. The amount of that non-harvested acreage is defined by the Transect survey, those observed TS acres would receive the management information gleaned from the PSU analysis

From Ruth Cassilly to Everyone 11:08 AM

Thank you Ted

From Leon Tillman to Everyone 11:19 AM

in the scope of outcome based compensation (pay for performance) do we have adequate research data to quantify the amount of improvement for a majority of individual BMPs that are not edge of field loss? what kind of technologies or proxies would need to be explored?

From Alex Echols to Everyone 11:21 AM

One of the systems we completely miss is more efficient use of nutrient application by producers when they do the calculation entirely through the private sector

From amanda.barber to Everyone 11:22 AM

It certainly reduces soil loss and the need to purchase topsoil.

From Alex Echols to Everyone 11:24 AM

Keep in mind how difficult it is to compare how difficult it is for farmers to pass on additional costs - they are price takers not price setters - where someone who produces a specialized product is better able to pass on costs

From Clint Gill to Everyone 11:35 AM

Alex, do you think we could be looking to regulation to require BMPs but ones that also come with payment for said BMPs so it does not hurt the bottom line

but again that gets us into possibly targeting certain producers, and then we get into a real mess

Also, Loretta, this is a great presentation, and well booked, but I hope everyone has already blocked out the rest of the day to talk about this!

From Loretta Collins to Everyone 11:36 AM

haha. I think we will be bookmarking some future time to discuss this more!

From Clint Gill to Everyone 11:36 AM

Indeed

From Olivia Devereux to Everyone 11:36 AM

Yes! I have to jump off for the CAST webinar at noon. The October webinar will highlight how to create scenarios and reports to visually represent changes in water quality. We will go over the content available in the 12 Tributary Summaries, and how they represent progress toward the Chesapeake Bay TMDL. Then, we will walk through how to use CAST and monitoring data to reflect the information found in the tributary summaries. <https://cast.chesapeakebay.net/Learning/FreeTrainingVideos>

From Leon Tillman to Everyone 11:47 AM

Does the paper differentiate where you're encouraging regulation? Because the presentation today does not declare any differences.

From Loretta Collins to Everyone 11:48 AM

Where to find STAC Workshop report (last item on today's agenda): <https://www.chesapeake.org/stac/document-library/overcoming-the-hurdle-addressing-implementation-of-agricultural-best-management-practices-bmps-through-a-social-science-lens/> Also there will be an extended discussion on Water Quality GIT on oct 24

<https://www.chesapeakebay.net/what/event/water-quality-goal-implementation-team-conference-call-october-24-2022>

From Elizabeth Hoffman, MDA to Everyone 11:50 AM

To echo some of the thoughts about regulation, there is sometimes a hesitancy to provide data in order to opt in to PFP because of the concern it could then be used down the line for additional regulation and established baselines outside of the original context of those PFP programs. We've heard some of those concerns.

From kstaver to Everyone 11:50 AM

The 80:20 bit is not a given, certainly across all nutrients and should not be stated as such.

From Timothy Rosen-ShoreRivers to Everyone 11:51 AM

For more information on pay for performance model EPIC has a lot of good content:

<https://www.policyinnovation.org/procurement-finance/conservation-finance>

From Kathryn Jo Brasier to Everyone 11:51 AM

Here is one resource on targeting (related to the Mississippi Basin) that might be useful for discussion:

<https://targetingprimer.nri.wisc.edu/>

From Kathy Boomer to Everyone 11:52 AM

important and helpful clarifications regarding your thoughts on regulation... thank you! Also appreciate your emphasis on being strategic with monitoring too. I am hopeful that we can build willingness with more refined information, specific to grower concerns. Linking practices to soil health benefits could also significantly increase willingness.

From Clint Gill to Everyone 11:53 AM

For the Eastern Shore we do cost share movement of manure outside of the watershed. To mushroom farms etc. poultry specifically, much easier to move

From Gurpal Toor | Univ. Maryland | to Everyone 11:54 AM

FYI, Maryland has a manure transport program:

https://mda.maryland.gov/resource_conservation/pages/manure_management.aspx

From Clint Gill to Everyone 11:55 AM

To get it in before the end, agree with Paul, taking the litter from producers would pretty much completely upend the economy of the poultry industry

From Kristen Saacke Blunk to Everyone 11:56 AM

NFWF's Chesapeake Ag Networking Forum - taking place virtually - Nov 2022-January 2023 - eight sessions. Please be sure to get this into the meeting notes - to ensure folks have access to registration for these sessions.

<https://sites.google.com/view/2022canf/home>

From Cassandra Davis, NYS DEC to Everyone 11:57 AM

Loretta, thanks for all your efforts! You will be missed :)

From Kristen Saacke Blunk to Everyone 11:57 AM

Loretta Collins! You have ROCKED the AgWorkgroup from the moment that you stepped into this role. It's reshaped and informed this process in ways that have been a gift to our collective work.

From Ruth Cassilly to Everyone 11:57 AM

Amen!!

From Matthew B Royer to Everyone 11:58 AM

Thank you Loretta, you are just terrific!

From Kathy Boomer to Everyone 11:58 AM

Loretta, THANK YOU! I have so appreciated the energy and insights you always bring to our conversations. Looking forward to reconnecting and collaborating again!

From kstaver to Everyone 11:58 AM

🙏 Best wishes Loretta

From Elizabeth Hoffman, MDA to Everyone 11:59 AM

Thank you for everything, Loretta!

Participants

Jackie Pickford, CRC

Loretta Collins, UMD-CBPO

Jeremy Daubert, VT/Chair

Kathy Braiser, PSU/Vice Chair

Clint Gill, DDA

Elizabeth Hoffman, MDA

Greg Albrecht, NY

Frank Schneider, PA SCC

Seth Mullins, VA DCR

Cindy Shreve, WVCA

Leon Tillman, NRCS

Jenna Schueler, CBF

Ken Staver, UMD

Paul Bredwell, US Poultry & Egg

RO Britt, Smithfield Foods

Emily Dekar, USC

Tim Rosen, ShoreRivers

Matt Royer, Penn State

Gurpal Toor, UMD

Dave Montali, WV Tetra Tech

Karl Blankenship, Bay Journal

Liz Feinberg, CalVan Environmental, NFWF Field Liaison

Olivia Devereux, Devereux Consulting

Aaron Cook, PSU

Mark Dubin, UMD-CBPO

Amanda Barber, NY

Cassie Davis, NYSDEC

Leah Martino, EPA R3
 Aaron Cook, PSU
 Matt Monroe, WV
 Marel King, CBC
 Kristen Saacke Blunk, Headwaters LLC
 Helen Golimowski, Devereux Consulting
 Tom Butler, EPA/CBPO
 Ted Tesler, PADEP

Carlington Wallace, ICPRB
 Ruth Cassilly, UMD/CBP
 Karl Blankenship, Bay Journal
 Jen Walls, DNREC
 Kathy Boomer, STAC
 Jim Shortle, PSU
 Leonard Shabman, Resources for the Future
 Kurt Stephenson, VT

*Common Acronyms

AgWG- [Agriculture Workgroup](#)
 AMT- [Agricultural Modeling Team](#) (Phase 7)
 BMP- Best Management Practice
 BMPVAHAT- [BMP Verification Ad Hoc Action Team](#)
 CAST- [Chesapeake Assessment Scenario Tool](#) (user interface for the CBP Watershed Model)
 CBP- [Chesapeake Bay Program](#)
 CBPO- Chesapeake Bay Program Office (houses EPA, federal partners, and various contractors and grantees working towards CBP goals)
 CBW- Chesapeake Bay Watershed
 CCC - Commodity Cover Crop
 CRC- [Chesapeake Research Consortium](#)
 EPA- [United States] Environmental Protection Agency
 NEIEN- National Environmental Information Exchange Network
 NFWF- [National Fish and Wildlife Foundation](#)
 PA DEP- Pennsylvania Department of Environmental Protection
 PSC – [Principals' Advisory Committee](#) (CBP)
 PSU- Penn State University
 STAC- [Scientific & Technical Advisory Committee](#)
 TMDL- Total Maximum Daily Load
 WQGIT- [Water Quality Goal Implementation Team](#)
 WTWG- [Watershed Technical Workgroup](#)
 UMD- University of Maryland
 USDA-ARS- United States Department of Agriculture-*Agricultural Research Service*
 USDA-NASS- United States Department of Agriculture-*National Agricultural Statistics Service* USDA-NRCS- United States Department of Agriculture-*Natural Resources Conservation Service*