

Fertilizer Expert Group Meeting

May 1st, 2023

01:00 PM – 03:00 PM

Key take ways:

-
- The group would like to see the differences in N and P stock amounts using each of the three recommendations provided in the [recommendations document](#) under recommendation 2.
 - NOTE* Expenditure data used to calculate fertilizer stocks will need to be held constant since the last five-year Census of Agriculture (2017).
 - The group would like to examine if the fertilizer trends in each state are independent of each other.
 - The group suggests that AAPFCO data are used until 2016 and that after this state reported data and an agreed upon method be used to calculate the watershed wide fertilizer stock.
-

Action Items:

- Calculate three different fertilizer stocks to see differences in overall N and P
 - Perform trend analysis on fertilizer data sets.
 - Determine the percentage of states within the watershed reporting their own data
 - Document discussions
-

Background [01:00-02:00]:

Recommendation discussion – 01:00-01:30 [30 min (Tom Butler, EPA)]

We will discuss the recommendations which have been created from previous group discussions.

- CHAT: Jill Whitcomb asks what are the constrains on updates for Phase 6?
 - Tom Butler answers that we cannot do full sale changes of data sets and that we are looking for a trend or to prove the equivalency of state reports to AAPFCO so that we can supplement AAPFCO with these new data. Further details are posted in the groups [charge](#).
- Jill Whitcomb asks how these guidelines were determined? Was this a group recommendation?
 - Tom Butler answers that this came from higher up within the CBP partnership. There were discussions with the CAST team and modelers regarding breaking the calibration period which helped to inform this scope.
 - Mark Dubin adds on to this that the CBP decided on dividing the fertilizer topic into short and long term solutions. This group is focused on the short term solutions which do not entail changing the process for inputting data into CAST.
- Dave Montali asks what recommendation two options a, b, and c mean. He asks if for phase 6 we are stopping at 2016 with AAPFCO and then saying what we can do between 2016 to the present or are we going back to 2013 where we last had AAPFCO data? Dave also asks if recommendation two a is saying that we will treat each states reported data as unique to that state and then calculate a trend from each of these to apply no nonreporting states?
 - Tom Butler clarifies that we have up to 2016 data in the model now so we are not talking about changing the historic data prior to 2016 even if states supplied this from their own reports. The intent behind option two is that we want to stay with a watershed wide fertilizer. Options a, b, and c are simply different ways to fill the portion

of this bucket that represents states who have not provided more up to date fertilizer data.

- Dave Montali asks if we would use the state supplied data for the specific state that provided it? For example, if VA provides data would their own data be applied to them specifically?
 - Tom Butler says no we are always combining all of the state reported data into the fertilizer stock so that it is representative of the entire watershed.
 - Dave Montali asks if we are going to sum all of the states with reported data and create a rate of change and apply that rate of change to the stock?
 - Tom Butler clarifies that we will this to calculate a contribution from states who did not report fertilizer. The states who did would have their reported data used to create this fertilizer stock.
- James Martin says that for **recommendation 2A** you are assuming that the all of the states within the watershed experience similar changes in fertilizer application rates. This would mean that an increase in fertilizer for states reporting data would also be happening in states that do not report data. For **recommendation 2B** you would carry forward the last reported value from each nonreporting state in a flat line trajectory from the last reported AAPFCO data. This means that all nonreporting states fertilizer trends are independent of other states. **Recommendation 2C** would again allow non reporting states fertilizer usage to remain independent of the states which reported. This would be accomplished by creating a trend based on historic AAPFCO data from individual states.
 - Tom Butler thanks James for the explanation saying his descriptions are correct.
 - Dave Montali thanks James for clarifying the options.
- James Martin asks if we would stick with the state data and trends calculated for nonreporting states or whenever AAPFCO came out with new data would this replace the state reported data?
- Olivia Devereux suggests that her presentation might show the current data and help us answer that question.
- Tom Butler says that we will move into Olivia's presentation so we can see the data and answer James' question.

THIS PRESENTATION WAS MOVED TO THIRD IN THE ORDER OF PRESENTATION

Versions of the Chesapeake Assessment Scenario Tool – 01:30-02:00 [30 min (10 min presentation 20 min discussion) (Tom Butler, EPA)]

Over the development of CAST 21 there have been several changes worth noting. We hope to test the group's recommendations with a single version of CAST prior to formalizing recommendations. By going over the development of CAST 21 we will acclimate the group to the version of CAST which will be used to test the group's recommendations.

- James Martin asks what we would gain by running each of these stocks through CAST vs just looking at them in terms of overall numbers.
 - Tom Butler suggests that this will show what differences we might see in loads rather than simply overall stock numbers.
- James Martin asks for clarity on if we would calculate each stock and then run each through CAST so that we could see the load changes in the model.
 - Tom Butler says yes but clarifies that we can do whatever the group wants.
- James Martin says that it might be helpful but doesn't think it is necessary for this. He wonders how the load calculation to counties could differ with different fertilizer stocks.

- Jess Rigelman says that she can answer that, if you just look at the fertilizer stock for each recommendation then you would see a different amount of N and P for each. If you wanted to see nutrients distributed to different counties you would need to actually run the stocks through CAST.
- Dave Montali says that he doesn't think we need to run the different buckets through CAST and that calculating them will be enough.
- James Martin agrees with Dave.
- Tom Butler clarifies that we will just look at the actual calculated stocks for each recommendation and perform trend analyses to see if state fertilizer sales are independent of other state fertilizer sales.
- James Martin says that if we see large differences between the stocks then we may want to dig deeper.
 - Tom Butler agrees but also cautions that with our timeline we may not have enough time to then run each stock through CAST and see what is happening.
 - Dave Montali says that just seeing the overall numbers is fine since the group can't make decisions on other factors impacting loads just the input of fertilizer data.
- Tom Butler says that we will look at creating a fertilizer stock for recommendations 2A, 2B, and 2C and looking at overall numbers of N and P.
- Dave Montali says that we should have some analysis that indicates what percentage of states are reporting state data. We should have some number to meet a threshold.
 - Gary Shenk says that we should have some threshold where we don't rely on a single state. Something between 10 and 50%.
 - James Martin says we should set the percentage to 50 for all states reporting.
 - Dave Montali agrees.

Potential New Data Sources [02:00-03:00]:

THIS PRESENTATION WAS MOVED TO SECOND IN THE ORDER OF PRESENTATION

State reported fertilizer tonnage sales data – 02:00-02:20 [20 min (10 min presentation 10 min discussion) (Olivia Devereux, Devereux Consulting)]

We will show and discuss each of the states who have supplied fertilizer sales tonnage reports, including: PA, DE, VA, MD

- James Martin asks if the current state data provided by DE, MD, PA, and VA meet the first requirement of 50% of historic data?
- Olivia Devereux asks what is meant by 50%? Does this mean 50% of states? 50% of fertilizer lbs? 50% of nutrient lbs?
 - Tom Butler clarifies that the intent is to find 50% of the lbs of fertilizer in the watershed but this is open for discussion.
 - James Martin asks if there is an easy way to break out the lbs of N to just within the watershed? For example, the NY data shows the entire state which is a much larger amount of fertilizer than many other states and could inhibit the use of state data if we were to require 50% of fertilizer lbs.
 - Olivia Devereux says that it would be more consistent to stay with the whole state to calculate the stock. She isn't sure how this would affect the 50%.

- Tom Butler clarifies the intent was to reduce the impact of something like NY data being a disproportionality large fertilizer total compared to a relatively small watershed proportion within the watershed. He asks the group for feedback on what might be desirable for the 50% in terms of total states vs watershed.
- Dave Montali asks if we can easily define the fertilizer stock for 2016?
 - Olivia Devereux answers yes
- Dave Montali asks if individual state reported data would be a component of the new stock? He asks if it is easy to say that the data we have is 50% of the 2016 data for the fertilizer stock?
 - Olivia Devereux says that we have expenditure data through 2017 so we can break it out for the watershed counties for the year 2017. She assumes that we would **hold expenditure data constant** until we got newer data and then we could do an interpolation.
- Dave Montali asks if we need to maintain the expenditures for this time period and if we would need new data from the five year census of ag?
 - Olivia Devereux and Jessica Rigelman both say yes.
- Dave Montali asks if we would assume that the expenditures would be the same from 2016 or would we come up with a new approach? Dave asks for clarity on how we allocate the fertilizer throughout the watershed?
 - Jessica Rigelman says that when it comes to removing outliers we only have the whole state level of data. This is then combined to the entire six state region. This entire six state has expenditure data for how much is spent in counties inside the watershed boundaries as well as the entire six state area. We are not splitting anything into counties, it is literally a giant bucket of six states split into a smaller bucket of six states that only includes the Chesapeake Bay counties. Once we get past the outlier removal and rolling average steps nothing is by states anymore.
 - Dave Montali thanks Jess for the clarification and asks if the last time we had expenditures was the 2017 ag census?
 - Jessica Rigelman says yes but we will get new data in 2024. We will just need to decide how to proportion things up until we get that since we only have the 2017 data.
- Tom Butler says that this gets to the feasibility of being able to reach that 50% mark for watershed fertilizer. Can we break out the watershed proportion and determine 50% of that? If we can do we want to use total lbs of fertilizer? Lbs of N? Lbs of P?
- Olivia Devereux runs through the remainder of her presentation including some urban figures.
- Kevin DuBois asks if it is correct to assume that within the watershed the existing efforts to reduce the amount of fertilizer applied would result in a watershed application that is less than the rate of individual states?
 - Tom Butler clarifies that this is something to talk about offline with David Wood from the Urban Stormwater Workgroup. He notes that it is good they already connected about the upcoming meeting.
- Jill Whitcomb asks if we would need to be on a timeline that would coincide with the August 31st domain input reporting?
 - Tom Butler asks for clarity on what the domain input reporting is?
 - Olivia Devereux asks if Jill is talking about the construction acres and harvested forest acres and having these done by the August 31st due date?
 - Jill Whitcomb says yes the CSO, CAFO split ratio. Would this be a part of that?

- Olivia Devereux says this can fit into either the annual progress report where baseline conditions are established in land uses for a specific year with the data provided OR as part of the two year updates to CAST. She adds that the two year updates have not been regular and that we are 3.5 years into the update timeline and no new version of CAST has been released.
 - Jill Whitcomb says that we should probably have this as a known deadline for people for this upcoming year.
- Dave Montali asks if we have made any decision on following the farm fertilizer processing methods with the nonfarm?
 - Tom Butler says that no decision to this effect has happened to his knowledge. He notes the large number of questions related to the urban side of fertilizer and gives David Wood, the Urban Stormwater Workgroup coordinator, the opportunity to talk about his upcoming meeting.
 - David Wood discusses that he is towards the end of the process but has an Urban Nutrient Management Task force through the Urban Stormwater Workgroup. These meetings have been happening since July or August last year and dealing primarily with data smoothing in CAST 21. He clarifies that there has been no decision made but that Jeff and Olivia will be talking about it this Wednesday. Hopefully this will lead to some decisions later this month or possibly June.
- James Martin asks are we starting from 2016 and looking forward with state data or is the reinterest in trying to use these state data to replace AAPFCO for states where the data is available prior to 2016?
 - Mark Dubin says that many states do not have good historic records and in fact use AAPFCO data as their own historic records. The recommendations reflect a hybrid approach due to the fact that states refer to the AAPFCO data prior to 2016 and so we would keep these data in place.
 - James Martin asks if we would use state reports, not for the entire historic record but the period where there is overlap with AAPFCO? He suggests sticking with AAPFCO.
 - Tom Butler asks others if they have further comment, and no one replies. He then asks what do we use going forward?
- James Martin asks what happens with the AAPFCO data from 2017 arrive? Should new AAPFCO data be added to the historic data to keep it consistent with the current AAPFCO data and only look at the states for 2018 and beyond?
 - Mark Dubin says the NY data is going to be missing from AAPFCO even with updated years. These data were last reported in 2015 and so nothing has been reported from them since then.
 - James Martin asks what was used for NY in 2016 AAPFCO data?
 - Olivia Devereux says that AAPFCO has a specific methodology for 2016 NY data which is similar to any other state which may have no reported data. This is some sort of interpolation what the CBP hasn't yet replicated.
- Dave Montali asks if the 2017 AAPFCO data will this interpolation for NY or will there be no data?
 - Tom Butler says that the interpolation would continue and that they calculate this based off national level data. This brings up a potential discussion point of if we would like to use the AAPFCO interpolation or base something off the more specific Chesapeake Bay Watershed region?
 - Dave Montali says that we should stick with 2016 data and try to get our money back for the 2017 data. We would need to make a plan to get us through 2020. He assumes that

after 2020 in Phase 6 we will need to continue the process via the fraction of the crop application rate and holding this fraction constant. We don't have a chance to change the processing method from this fraction, do we?

- Tom Butler says this is correct and that the next update would come whenever the next version of CAST was released, whichever number this would be. This is in line with recommendation number 3. We will not be able to make any changes between versions of CAST.
 - Mark Dubin says that AAPFOC will have 2017 data for WV directly. but we are not able to get this information from the state. Since we are unable to access this directly, he wonders if we should try to use a statistical value from our own interpolation?
 - Dave Montali is looking for simplicity, he knows that WV doesn't make a large portion of the farm fertilizer, so he isn't sure what's better.
 - James Martin says that the idea of sharing a fertilizer stock with NY is not very appetizing due to the projected increases seen in the state data. He suggests using the 2016 data and then switching to state reports and whatever growth rate we see from these data. He also suggests removing the 50% rule from the first recommendation and just using a percent change for states who have not reported.
 - Gary Shenk says the reason for a 50% threshold was to avoid having one state report and basing the entire watersheds fertilizer stock on trends from this single state. Looking at the data we currently have this does not seem like a major problem but the wording is necessary to avoid the case he just mentioned.
 - James Martin says that he understands this and thinks the probability is fairly low.
- Dave Montali hopes WV can get their data and submit this, if that happens then NY is the only concern and that the percentage of the stock from the previous year would still be over 50%. He feels that determining a trend that fills the remaining states fertilizer seems reasonable as well. Since the 50% threshold is somewhat arbitrary he mentions that he feels by adding VA, PA, DE, and MD we are already much higher than 50%.
 - Tom Butler says these are good points and that we can change the wording to use state reported tonnage data for all states that report it. The main goal behind coming up with these scenarios is that we can test them by calculating the stock in each recommended way and then run them through CAST.
 - James Martin adds that this approach is just for Phase 6 and so it will have one or two executions of these rules. Once in September and maybe once more in 2025, then we will come up with some new rules for Phase 7 right?
 - Gary Shenk says this is true.
 - Dave Montali asks if we can run one of the options and is in favor of option 2A but would like to hear from others. He also adds that none of this should be done for anything other than farm data.
 - Jill Whitcomb suggests running a scenario for each of these options with a list of pros and cons for each of these options for the next presentation.
 - James Martin adds that the only question between the options is do you believe state fertilizer trends are consistent across the states or are they unique to states? If you believe the trends are unique then recommendation 2C is the way to go. If you think trends from one state are representative of trends in other states who don't report then the preferred option is 2A.

- Jill Whitcomb would like to see a trend analysis to see if the trends on each state are unique or if reporting states can represent the trends in nonreporting states.
 - Gary Shenk supports this analysis.

Tom Runs through some chat questions:

- CHAT Whitcomb, Jill: How does the 2020 sales data line up with NASS agricultural application data?
 - Tom Butler answers that we do not have these exact numbers for comparison, we would need to pull out the data and years in which these were collected from our current data as to compare these the surveys. We have had several USDA representatives talk about this in the past.
- CHAT Tom Bruulsema: NuGIS for 2016 has 148 tons of fertilizer N in the CBW. = ~300M pounds. The figure Olivia was showing suggests the state totals add up to around 650M pounds. I'd guess that among the states, NY has the smallest % of its N in the CBW > I don't know if this helps.
 - Whitcomb, Jill: Tom Bruulsema - that's an interesting point - I wonder where the discrepancy comes from?
 - Tom Bruulsema: No discrepancy (except I misstated NuGIS tons - should be thousands of tons). New York cropland is geographically more concentrated in the northwest corner between Buffalo and Syracuse.
 - Tom Bruulsema says: From NuGIS for 2016: the northernmost five 8-digit hydrologic units of the CBW account for all of NY and a very small amount of PA. They sum to 8,589 tons of fertilizer N = 1.7M pounds of N. For phosphorus, they sum to 2,784 tons of fertilizer P₂O₅. That should be 17M pounds of N, not 1.7M.
 - That should be 17M pounds of N, not 1.7M. Less than 6% of the watershed's N input is in NY.
 - Williams, Candiss - FPAC-NRCS, DC: Via CEAP data for the Bay, in the last decade, N application rates have increased by 15% and phosphorus application rates decreased by 4% and incorporation of P decreased by 44%.
 - Tom Bruulsema: Candiss, what's the latest date for CEAP? Could you share a web link?
 - Williams, Candiss - FPAC-NRCS, DC: <https://www.nrcs.usda.gov/sites/default/files/2022-09/CEAP-Croplands-ConservationPracticesonCultivatedCroplands-Report-March2022.pdf> The latest date for CEAP 2 is 2013-2016. The report came out December 2022.
- Jill Whitcomb asks if the documentation for what AAPFCO does is clear and either has been or will be provided?
 - Olivia Devereux and Kaylyn Gootman say this will be done.
- CHAT Mark Dubin: The VA VDACS data was modified through an arrangement with VADEQ to provide a dataset the CBPO could use for the assessment. James - would this VDACS modified data be available moving forward through time for CAST updates?
 - Olivia Devereux answers that, Director Rolband and Mr. Branosky said it would
 - Martin, James (DCR): @Mark Yes I think the VDACS data would be available into the future, likely with a lag of a year or two...2021 data by September 2023 and 2023 data by June 2025
- CHAT Whitcomb, Jill: It's important for the Fertilizer Expert Group to reflect back on the expectations in the MB approved Fertilizer Action Plan - as it relates to recommendations on other source data, etc.

https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/CAST-Fertilizer-Action-and-Accounting-Report_1.11.2023_clean.pdf

- CHAT Dressler, David: I don't think you should use one state's data to calculate what another state should be. Each state would be unique with the amount of fertilizer that is sold in that state. There are so many factors that determine fertilizer use, especially when it comes to agricultural lands. Some crops require more fertilizer than other. Some crops even put nutrients back into the soil. I would recommend using a historical trend with a state to fill in the gap. David also clarifies that he thinks we should not go back 15 years for the trends using recommendation 2C considering how much fertilizer costs have risen over time. He also cites changes in agricultural practices such as the implementation of nutrient management.
 - Tom Butler asks how far back we should go?
 - David Dressler says he would go less than 5.
 - Dave Montali says that to account for the increases or overall changes in time in fertilizer it would be a good idea to use the trend of other states who do report rather than keep the same numbers or historic trends.
- Tom Butler says that the group seems to be gravitating towards options 2A and 2C with 2B being a distant third. He asks if the group would like to focus on just these two options?
- Clint Gill suggests that we do all three options since we do not know what to expect and some of the results may show us something unexpected.
- Leanna Nigon asks if there is a way we can use NASS data for agrochemical surveys in some sort of covariate analysis, or as a descriptor for what's happening at a national scale? Maybe we could use both these and state data?
 - Gary Shenk observes that the group has made a large amount of progress from its start as examining any potential data sources including these NASS agrochemical surveys. After looking at these with the group it appears that we do not have enough data to replace the current data. This does not mean that we cannot use things like the agrochemical application surveys. They could play a role in calibrating the model.
 - Tom Butler will add this to the list of recommendations for Phase 7.
- Tom Butler seeks to clarify the term for establishing a trend with the current set of recommendations, where did the group settle for these if not the 15 years?
 - Leanna Nigon supports the 5 years David Dressler mentioned earlier, she is open to other opinions though.
- James Martin asks what is the current methodology used to forecast forwards for the application data? Is that the double exponential smoothing or is that urban?
 - Tom Butler clarifies this is more of an urban processing and that David Wood would be able to better speak to this.
- James Martin asks how are we currently doing this?
 - Tom Butler clarifies that we are not as much projecting forward as calculating a percentage of crop nutrient needs that are met by organic and inorganic fertilizer sources. This fraction is the same since our last year of data so in this case 2016.
 - James Martin supports the use of the 5 year timer period for the trend.
 - Dave Montali asks if were going to do the trend after we remove outliers or before this and a rolling average are taken?
 - Tom Butler says his take would be on doing this with the raw data before anything processing has taken place but opens the floor to anyone else.
 - Dave Montali says that he thinks we should process the data the same way we have and examine the past 5 years for a trend.

- James Martin observes that with option 2A you are really looking at the change on a one year basis right? Following this logic it would make sense to use a shorter trend like 5 years for option 2C.
- Tom Butler clarifies that we would want to know how to do this in terms of the process, being before or after outlier removal.
- James Martin wants to know how outliers are determined. Are you looking at outliers from each county or an aggregated state?
- Olivia Devereux Outliers are by nutrient and state and 2 standard deviations from the median.
 - James Martin asks if Olivia's data were before any outliers were removed?
 - Olivia Devereux says yes.
 - James Martin asks if he can see the images again and try to see where outliers might be?
 - Olivia Devereux says that her presentation from last months meeting actually does this and explains several years which were outliers, that is they fell outside the two standard deviations from the median and so were removed.
 - James Martin says **doing this after outlier removal** would be his preferred method.
- Leanna Nigon asks for an explanation as to why 2 standard deviations was used?
 - Olivia Devereux does not know why this was chosen.
- Jill Whitcomb ask for some documentation on this determination
 - Mark Dubin says this would have been a part of the Phase 6 Ag modeling subcommittee and the decision should be reflected in older AgWG notes.
- CHAT Alisha Mulkey I don't remember why/how we landed on 2 SDs. Sorry
 - Gary Shenk from section 3 of the model documentation: These statewide sales data can vary drastically from one year to the next, and it is not known if the variability is real or caused by a lack of reporting or other human error. The Phase 6 Model reduces some of the variability by replacing any yearly statewide N and P sales totals that fall outside of two standard deviations from the median for the state over all years for which data were recorded.
 - Tom Bruulsema I presume you replace them with the median? or with the mean? If replaced with the mean, the total input to the CBW over the time period would be the same as if a rolling average was used, if the math part of my brain is working correctly. That's also assuming that high outliers are removed at the same frequency as low outliers....
 - Olivia Devereux Replaced with the average of the prior and post year for that state.
 - Tom Bruulsema Olivia, there is some danger with using just the prior and post year. Some of the discrepancies could arise because of changes in inventory carryover. If that's the case, the year before and after a high number may tend to be lower than the actual average amount applied, and vice versa for a low number. **I'd suggest going at least two years before and two years after.**
 - Olivia Devereux Worth considering for Phase 7. I'll ask Tom to note it in case he misses the chat item.
 - Mosheim, Roberto - REE-ERStwo standard deviations from the mean covers 95% of observations assuming a normal distribution. Is this it?

- Dell, Curtis - REE-ARSI was chair of earlier ag modelling subcommittee, but I'm not remembering the details of the reasoning for the decision. The minutes for the subcommittee probably weren't as detailed as they should have been. As Mark pointed out, minutes from the Ag Workgroup might explain the reasoning.
- Dave Montali comments that on the farm side there are outliers outside of PA and DE
 - James Martin says this is a good point and that outlier removal might not play a large role.
- Dave Montali asks if we would be comparing a three year rolling average to a single year for the new state data? Would we want to apply a previous three year average to a new three year average?
 - Olivia Devereux says that we do a three year rolling average to smooth data for ag which accounts for purchasing and use variability. This is separate from the outlier removal process.
 - Dave Montali asks if we would need to include the new data into a new three year rolling average to compare to an existing three year rolling average?
 - Olivia Devereux says this hasn't been part of our methods in the past so we wouldn't likely start it now.
 - Tom Butler jumps in and adds that we take a three year rolling average to reduce variability in the purchase of ag fertilizer not an extrapolation of the fertilizer use. We still need the crop need to be met which is dependent on the fertilizer stock.
 - Jess Rigelman answers Dave's question, if we do get 2017 data we don't just use 2017 data. We would take a three year rolling average of 2015, 2016, 2017 for the expenditures that create the stock.
- CHAT Martin, James (DCR) Jessica: can you explain how you will run the Alternative 2 using 5 years with the current method of 3-year rolling average
 - Jessica Rigelman I will need to think through the details and once we have them Tom can send to the group.
- Tom Butler clarifies that we next hope to work through each of these scenarios in a CAST run and move forward to see what everyone within the group wants to do as far as recommendations.
 - Olivia Devereux says it was unclear to her if we were testing one or multiple recommendations.
 - Gary Shenk agrees with this lack of clarity.
 - James Martin says he was leaning towards options 2A and 2C.
 - Gary Shenk seeks clarity on if we are testing the creation of the stock or the running of the stock through CAST. Or if we were going to look at finding correlation between states?
 - Tom Butler expresses that the intent was to run the stocks through CAST and see what was actually happening.

Comparing AAPFCO processing, CBPO and NuGIS – 02:20-02:40 [20 min (10 min presentation 10 min discussion) (Tom Butler, EPA)]

We will discuss the ways in which AAPFCO data are processed by two different entities.

- Due to discussions related to earleir4 presentations we were unable to discuss this topic. It will be on the agenda for next months meeting.

General Discussion and Closing – 02:40-03:00 (20 minutes)

Attendees:

- Alex Soroka, USGS
- Alisha Mulkey, MDA
- Tom Butler, EPA/CBPO
- Tom Bruulsema, IPNI
- Candiss Williams, NRCS
- Cassie Davis, NYS DEC
- Cecilia Lane, DOEE
- Chad Linton, WV Dept of Ag
- Curt Dell, USDA-ARS, University Park, PA
- Dave Montali, Tetra Tech, WV
- David Dressler, PA Dept of Ag
- David Wood, Chesapeake Stormwater Network
- Elizabeth Hoffman, MDA
- Frank Schneider, Pa SCC
- Gary Shenk USGS@CBPO
- Helen Golimowski, Devereux Consulting
- James Martin, VA DCR
- Jeff Sweeney, EPA
- Jessica Rigelman, J7 Consulting
- Jill Whitcomb, PA DEP
- Justin Lontz, Delaware Dept. of Ag
- Karl Blankenship, Bay Journal
- Kaylyn Gootman, EPA/CBPO
- Kevin Du Bois, DoD Chesapeake Bay Program
- Kevin McLean, VA DEQ
- Leanna Nigon, TFI
- Lee McDonnell - EPA/CBPO
- Mark Dubin, UM/CBPO
- Marel King, CBC
- Olivia Devereux, Devereux Consulting
- Phil Davidson - Maryland
- Ruth Cassilly, UMD
- Scott Heidel, PA DEP
- T Wayne Pendleton, VDACS

Adjourn –03:00

Up Next: June 5th, 1-3 pm

****Common Acronyms**

AgWG- [Agriculture Workgroup](#)

AMT- [Agricultural Modeling Team](#) (Phase 7)

BMP- Best Management Practice

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

CRC- [Chesapeake Research Consortium](#)

EPA- [United States] Environmental Protection Agency

PSC – [Principals' Advisory Committee](#) (CBP)

STAC- [Scientific & Technical Advisory Committee](#)

TMDL- Total Maximum Daily Load

WQGIT- [Water Quality Goal Implementation Team](#)