

## Fertilizer Expert Group Meeting

April 3<sup>rd</sup>, 2023

01:00 PM – 02:30 PM

### KEY TAKEAWAYS:

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1. The group recommends the continued use of AAPFCO fertilizer sales tonnage for historic (prior to 2016) records.
  2. The group has recommended that in states where more recent state reported fertilizer tonnage sales data are available, they should be used.
  3. If a state cannot provide updated state reports the group recommends several courses of action:

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    - a. **PREFERRED** - Assume that the trend in fertilizer tonnage sales is the same as all the states which have updated state reported data.

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      - i. Ensures all states operate on the same trend.
    - b. **ALTERNATIVE** - Assume that the state(s) fertilizer tonnage sales amount is the same as the last year reported

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      - i. If a state's historic data is higher than another state's updated data, the state providing newer data may not see the expected drop in applications relative the state with historic data.
  4. The group further recommends that whenever new state reported fertilizer sales tonnage data are available, they will be incorporated into the next update to CAST.
  5. The group has recommended that for Phase 7 the CBPO partnership reexamine the use of both farm and nonfarm categories of fertilizer calculate agricultural fertilizer applications.
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### Action Items:

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- Tom Butler will work to compile and distribute a preliminary list of recommendations assembled from the group discussion on how to address inorganic fertilizer data concerns.
  - Members of the group will review and comment on this list.
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## Chesapeake Bay Program Progress [01:00-02:10]:

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### Updated Fertilizer Data: New insights into current Inorganic Fertilizer data– 01:10-01:40 [30 min (15 min presentation 15 min discussion) (Olivia Devereux, Devereux Consulting)]

After discussions with the Association of Plant Food Control Officials new information has come to light on the processing of inorganic fertilizer data. These updates have improved our data processing of inorganic data.

### Current CAST fertilizer application information – 01:40-02:10 [30 min (15 min presentation 15 min discussion) (Olivia Devereux, Devereux Consulting)]

At the request of Management Board members, we will investigate how existing fertilizer is applied in CAST for 2016-2022 progress scenarios. This will include a deeper dive into comparisons with the data shared by PA, DE, to AAPFCO, and CAST.

- Both of these presentations were given as a single talk

- Tom Bruulsema asks if outlier removal results in substantial differences between the sum of counties within a state and the state total?
  - Olivia says that we do outliers at the state level not the county so she cannot answer that question.
- Dave Montali asks if these updated figures reflect farm, nonfarm, or both?
  - Olivia specifies this just reflects farm.
- Dave Montali asks if these changes can be made going back to 1995 in phase 6?
  - Gary says that the rule of thumb is that 1995 has to stay the same. They can make adjustments based off the trend of some change, but they cannot substitute a brand-new set of numbers from a new data set.
- Alisha Mulkey comments that she is concerned that the issues with AAPFCO processing are just coming to light now. She feels it is good to revisit these data processing steps but that these issues should have been seen much earlier than today. She also notes that the differences were not substantial for all years but one that did show a difference was 2016. Given the importance of this year it might be worth reevaluating the current 2016 ratio in order to more accurately capture the trends of fertilizer use.
  - Olivia says that when we get new 2017 data, we will rerun all of this and make sure the corrections are in place.
  - Alisha thinks it is important to state that that is good but as of now 2016 is the last year and that this is determining the fertilizer use so people should know this.
- Alisha Mulkey adds that with the differences provided by the updated data it might be a good idea to revisit the use of both farm and nonfarm fertilizer data for agricultural applications.
  - Tom Butler responds that this can be a good recommendation for the Phase 7 Agricultural modeling team.
- Mark Dubin says the potential for fertilizer to be purchased in one location and used in another due to the added cost of tax does not impact the Ag sector. This is because ag operations are tax exempt.
- Dave Montali asks if the unknown categories provided by AAPFCO are a historic item or whether they still have these categories?
  - Olivia says that there never should have been unknowns but that these were the artifact of not fully understanding the fertilizer use codes for AAPFCO.
- Dave asks if this redistribution of unknowns may cause the nonfarm fertilizer numbers to increase?
  - Jessica Rigelman says that yes, this can happen. Most of the codes which were reported as unknowns refer to splits which differentiate nonfarm uses. This will only affect a few years though.

## **Potential New Data Sources [02:10-02:20]:**

**Action item progress updates– 02:10-02:20 [10 min (5 min presentation 5 min discussion) (Tom Butler, EPA)]**

We will provide an update on two of our previous meetings action items:

1. Collection and analysis of state reported fertilizer sales tonnage data from MD, VA, WV, and NY.
2. Comparison of AAPFCO data processing from CBPO and NuGIS

- Dave Montali says that we will need to manage expectations in that we will not be able to get to 2013 for all of the fertilizer data but thinks that if we **can collect the annual AAPFCO reports at the same time we can improve the latency**. He suggests that we discuss the factors which would go into that decision.
  - Tom Butler agrees this could be a good route and asks others what they think?
  - Dave Montali adds that his understanding is New York will not be able to provide us with any data. He asks if this is correct? If so, he suggests that we will need to find some type of recommendation to deal with states who cannot provide data.
    - Olivia asks if Greg Albrecht from NY might be able to confirm that NY has no data to provide. She elucidates the issues that VA had before getting data to the CBPO and wonders if other states are having similar issues?
      - Mark Dubin says that this has been a discussion since approximately 2007 so a lot of thought and effort has gone into this. He also adds that for many states the AAPFCO data is treated as the states historic record. This leads him to think we will be using AAPFCO data in some way moving forward. He suspects that there will be a need to use a hybrid form of the AAPFCO and state reports to improve data latency concerns.
- Ruth Cassilly CHAT: A quick reminder that AAPFCO data comes from the states- so if they do not have data from a state for a particular year, they just carry the data forward from the previous year. For example- the data from NY for 2016 was carried forward from 2015 since NY did not report to AAPFCO in 2016
  - Greg Albrecht responds to Olivia that Jan Morawski is working on the fertilizer data collection and would be better equipped to respond.
  - Jan Morawski responds that work is ongoing.
- [Dressler, David CHAT I would caution using the counties in northern PA as an indicator of NY agriculture. We have a lot of forested areas in our northern counties.
- Olivia Devereux CHAT @David, we would have to normalize to acres of ag land. Agreed that we can't consider the non-ag land.
- Tom Butler checks with the group to see if they want to see more data comparisons with states and AAPFCO moving forward?
  - Olivia Devereux asks Tom what the decision-making process is for this group? Do they need to vote on a path forward?
    - Tom Butler clarifies that this group is making recommendations only. These will be sent to the PSC where a decision will be made. We simply need to come up with a list. He asks if one of the possible scenarios could be to use a hybrid where available state data is provided and fill gaps in history with AAPFCO?
    - Dave Montali voices support for this recommendation but says that he isn't sure that it can be done. Dave asks for clarification that DE, PA, and VA have provided historic data as well as their most recent years of data?
      - Olivia Devereux says yes.
      - Jess Rigelman in the chat specifies the most recent year is 2020 in PA.

#### **General Discussion and Closing – 02:20-02:30 (10 minutes)**

- Dave Montali says that it sounds like we can use the state supplied data but that we must work to come up with a recommendation for how to deal with the states which cannot provide data past 2016.

- Mark Dubin responds that the agricultural community is largely in favor of using the most accurate and up to date information. He adds that we should evaluate solutions for when we lack data post 2015 as with New York.
- Tom Butler asks if we could get even a tentative timeline from the states of MD, NY, and WV?
  - Jan Morawski says that they have no timeframe for accomplishing this in NY.
  - Alisha Mulkey of MD says that they are actively working to resolve these issues but that they don't have a timeline for getting this done.
  - Dave Montali refers to Chad Linton to discuss the WV progress. Chad is not online.
- David Dressler clarifies that the reason PA only provides data up to the past two years is that they receive delinquent reports. If he reported data prior to the two years cool off period, then the data would need to be updated whenever a new report came in.
- Tom Butler asks where people stand on making recommendations to hold data constant after 2016 if no state reports exist?
  - Ruth Cassilly adds that 2016 is already being held constant for New York and that we have already had to deal with data gaps by holding numbers constant for states at various times. She asks if it is possible to work towards **getting updated state data and where we cannot simply carry forward the existing 2016 AAPFCO data**? Would this be possible and work well?
  - Olivia Devereux says that this is possible but would need to be a partnership decision.
    - Tom Butler asks if this is feasible?
      - Jess Rigelman says this is doable if the partnership makes that decision.
    - **Olivia Devereux says that this can be done but might not be desirable.** She says that if this is done states may not see the same results. If for example a state uses their 2015 data and another uses 2020 data, they are both combined into a watershed wide bucket. This could potentially lead to reduced fertilizer in the state using 2015 data but not for the state using 2020 data.
    - Mark Dubin says that we have been dealing with one-year skips for some time, but the issue here is that the skips are now longer than that.
- Gary Shenk adds that it is important to clarify that if there are no recommendations then we will stick with the default which here includes no new data and the current AAPFCO data and processing. When we work with the current data, we are using a watershed wide bucket, so we follow the trend of the entire watershed. This helps to reduce the effects of single state projections.
  - Tom Butler asks if we would be willing to recommend keeping the number the same for the states that don't have data past 2015 and then use the state data past 2015?
  - **Dave Montali suggests that we come up with several different things that we could do to fill the data gaps. This might include assuming that a state with no new data has the same fertilizer trends as other states.**
    - Gary Shenk thinks that we could come up with several other solutions like this.
- Tom Butler clarifies several recommendations so far:
  - Use state provided data as available and where none exists hold fertilizer numbers the same as the most recent year of data from AAPFCO.
  - Use state provided data as available and where none exists utilize the trends of surrounding states with state data to create a more current number.
- Tom Butler asks if we might then propose to **update data with state reported information as it is available**?

- Marel King says that this is a good idea and that we should work to quickly incorporate state data as it is available.
  - Dave Montali says that for phase 6 this would mean working within the existing CAST update timelines and that this would require adding data only between newer versions of the Phase 6 model whether that be CAST 21, 23 etc.
  - Lee McDonnell says that it is most useful to come up with a set of recommendations that we can use since we are not sure which versions of CAST, we might have but that this can help us release a CAST 21 update sooner.
- Olivia Devereux voices her concerns with the timing of getting recommendations out.
- Tom Butler says he will work to summarize these recommendations and circulate them throughout the group.

#### **Attendees:**

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| • Ruth Cassilly (UMD)                 | • Tom Bruulsema (Plant Nutrition         |
| • Lontz, Justin M. (DDA)              | • Institute)                             |
| • McDonnell, Lee (EPA)                | • Montali, Dave (Tetra Tech WV)          |
| • Dressler, David (PA Bureau of Plant | • Williams, Candiss (NRCS)               |
| • Industry)                           | • Soroka, Alexander M (USGS)             |
| • Sweeney, Jeff (EPA)                 | • Mark Dubin (UMD)                       |
| • Gary Shenk (USGS)                   | • Ruth Cassilly (UMD)                    |
| • Davis, Cassandra M (DEC)            | • Lane, Cecilia (DOEE)                   |
| • Farmer, Douglas (USDA-NASS)         | • Kevin Du Bois, (DoD)                   |
| • Alisha Mulkey (MDA)                 | • Leanna Nigon (The Fertilizer           |
| • Jessica Rigelman (J7 Consulting)    | • Institute)                             |
| • Elizabeth Hoffman (MDA)             | • Veith, Tamie (USDA- ARS)               |
| • Clint Gill (DDA)                    | • Robert Mosheim (USDA ERS)              |
| • Marel King (CBC)                    | • Olivia Devereux (Devereux consulting)  |
| • Dell, Curtis – (USDA ARS)           | • Frank Schneider (PA Director, Nutrient |
| • Linton, Chad (WV DA)                | & Odor Management Programs)              |
| • Morawski, Jan (NYS department of    | • Patrick Thompson (President and Chief  |
| • Agriculture and Markets)            | Executive Officer of Energy Works        |
| • Albrecht, Greg (NYS department of   | Group)                                   |
| • Agriculture and Markets)            | • Austin Douglas (EPA)                   |
| • Gianino, David (VDACS)              | • Tom Butler (EPA)                       |
| • Philip Davidson (MDA)               |  |

Up Next: May 1<sup>st</sup>, 2023; 01:00-03:00

\*\*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](#)