USDA-NRCS Agricultural Conservation Practice Data:

Opportunities for Improved Partnership Data Sharing

Chesapeake Bay Program Partnership's Agriculture Workgroup

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Summary

In preparation for discussions between USDA and the Chesapeake Bay Program (CBP) Partnership on the possible development of new and implementation of enhanced 1619 data sharing agreements with the Bay watershed states, the members of the Chesapeake Bay Program Partnership's Agriculture Workgroup (AgWG) have considered opportunities to enhance USDA Conservation Practice (CPs) data attributes for representation in the CBP Partnership's models. The following list of USDA CPs were identified by the agricultural partnership as representing the highest data sharing limitations between the USDA agencies, the Chesapeake Bay watershed jurisdictions, and the Chesapeake Bay Program Partnership's models. Other CPs not represented here may also create data sharing limitations depending on their use and reporting.

Identified USDA Conservation Practices

- **Cover Crops**
  Limitation: USDA-NRCS currently identifies, tracks, and reports cover crops under a single Conservation Practice code (340) and standard. The CBP Partnership currently defines cover crops by four attributes—species, planting method, timing of planting, and nutrient applications—to determine the effectiveness of reducing the loss of nutrients and sediments to the environment.

  Opportunity: Enhancements to the USDA CP code that could identify all four elements, or even single elements such as species, would allow for improved utilization by the CBP jurisdictional partners and representation in the CBP Partnership's models. Default values can be assigned to non-reportable elements where required, using conservative effectiveness values.

- **Fencing**
  Limitation: USDA-NRCS currently identifies, tracks, and reports livestock fencing under a single Conservation Practice code (382) and standard. The CBP currently defines livestock fencing as a component of the land management change it creates. Examples include the establishment of riparian buffers or rotational grazing.

  Opportunities: Enhancements to the USDA CP code that could identify the location and use of the fencing, or the associated components of the management system that could assist in

identifying the land management change, would allow for improved utilization by the CBP jurisdictional partners and representation in the CBP Partnership's models. One example would be to link associated CPs with the fencing practice. Examples of linking land management associated CPs to fencing could include riparian forest buffers (391), riparian herbaceous cover (390), or stream crossings (578) for representing riparian fencing. Examples of linking grazing and pasture management improvement CPs with fencing could include prescribed grazing (528) or animal trails and walkways (575). Other CPs that could potentially be associated with either land management change would include watering facilities (614) and spring developments (574). The Pennsylvania State Office for USDA-NRCS has been investigating opportunities to enhance the utility of 382 through association linkages with other CPs.

- **Nutrient Management**

  Limitation: USDA-NRCS currently defines tracks, and reports nutrient management (NM) planning under a single Conservation Practice code (590) and standard with multiple modifiers. The CBP Partnership currently defines nutrient management under multiple management levels including N-based NM, P-based NM, Enhanced NM and Precision/Decision Ag NM with variations in management levels and effectiveness values for reducing nutrient losses to the environment.

  Opportunities: Enhancements to the USDA CP code that could more readily identify differences in NM planning and implementation would allow for improved utilization by the CBP jurisdictional partners and in the CBP Partnership models. An example of CP code enhancements was previously developed by the Maryland State Office of USDA-NRCS for tracking and reporting multiple (4) NM categories through the use of a letter suffix to the CP code. The new 590 standards have significantly expanded the categories of NM but without an indentifying reporting mechanism.

- **Feed Management**

  Limitation: USDA-NRCS currently identifies, tracks and reports feed management under a single Conservation Practice code (592) and standard for multiple livestock species, but does not typically track and report the type and amount of excess nutrients reduced in the manure due to the management system. Feed management systems can focus on N and P individually or in combination, leading differences in results. The CBP BMP defines feed management as the change of pound of N and P reduced in the livestock manure as a result of the reduction or enhancement of feed nutritional components.

  Opportunities: Enhancements for the USDA CP code and standard could identify differences in feed management focused on N and P separately or in combination. In addition, tracking and reporting of the change in manure nutrient concentrations as a result of the practice would allow for utilization within the CBP models. The Pennsylvania State Office of USDA-NRCS has taken the initiative to obtain copies of the feed management plans and analysis data through

their Technical Service Providers (TSPs) to enable tracking of the results.

- **Residue and Tillage Management**
  Limitation: USDA-NRCS currently identifies, tracks and reports residue and tillage management under several Conservation Practice codes (e.g. Mulch Till- 345, No-Till/Strip Till/Direct Seed- 329, and Ridge Till- 346) and standards for multiple residue and tillage management systems. The CP-329 standard includes multiple discrete management systems under a single CP code and standard. The CBP Partnership's approved BMP currently defines residue and tillage management under three management levels (e.g. conventional, conservation and Continuous No-till) based primarily on crop residue management using previous CTIC data and new sources.

  Opportunities: Enhancements for the USDA CP code and standard for residue and tillage management CP-346 could identify differences in the crop residue and tillage management systems incorporated in the standard to enable increased utility to the CBP jurisdictional partners and in the CBP Partnership's models.

- **Riparian Forest or Herbaceous Buffers**
  Limitation: USDA-NRCS currently identifies, tracks and reports riparian forest and herbaceous buffers under separate Conservation Practice codes (391 and 390) and standards for the two land management systems, but does not identify the functional widths of the riparian buffers created other than a minimum of 35 feet, or an option of 2.5 times the stream width for herbaceous covers. The CBP Partnership's approved BMPs currently define riparian forest or herbaceous buffers based not only on management of the buffer, but also on its width from top of stream bank to represent variations in effectiveness values for reducing nutrient losses to the environment.

  Opportunities: Enhancements for the USDA CP code and standard for riparian buffers that could identify additional functional width differences in the management systems would enable increased utility to the CBP jurisdictional partners and in the CBP Partnership's models.

Conclusion

The Chesapeake Bay Program partners and the members of the Partnership's Agriculture Workgroup value and appreciate the opportunity to provide the above identified Conservation Practices to support the discussions between USDA and the Chesapeake Bay Program partner jurisdictions on the possible development of new and implementation of enhanced 1619 data sharing agreement with the six watershed states. The agricultural partnership represented by the AgWG feel that the consideration of these opportunities to enhance USDA Conservation Practice (CPs) data attributes for representation in the CBP Partnership's models will prove beneficial to all parties, including the agricultural community and producers. We wish to note that CPs not represented here may also potentially create data sharing limitations depending on their use and reporting. Thank you in advance for your consideration.