



Chesapeake Bay Restoration

CBP Soil Conservation and Water Quality Plans

Jeff Sweeney

EPA, Chesapeake Bay Program Office

Agriculture Workgroup Meeting

February 16, 2023

Proposal to the Agriculture Workgroup

- Form an EPEG (Expert Panel Establishment Group) to investigate the formation of an Expert Panel to address crediting SCWQP in the Bay Program models.
- If the AgWG decides there is a need for an EPEG:
 - The EPEG would identify priority tasks for the Expert Panel.
 - Recommend areas of expertise that should be included on the Expert Panel.
 - Draft the SCWQP Expert Panel charge for the review process.
- If the AgWG decides not to recommend the formation on an EPEG, then the AgWG would:
 - Provide justification for not convening an Expert Panel.
 - Provide an alternative recommendation to address SCWQP in the model in lieu of an Expert Panel.

CBP Soil Conservation and Water Quality Plans

- Some states are able to track and report Soil Conservation and Water Quality Plans (SCWQP) as composite plan acres while others are not.
- Chesapeake Bay Program SCWQP Definition (Simpson & Weammert-Lane)
 - A comprehensive plan that considers management of natural resources on agricultural lands and utilizes BMPs that reduces soil loss to or below tolerance, defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained = meet a USDA-NRCS Revised Universal Soil Loss Equation prediction of soil losses at or below the soil loss tolerance value (T) for the accredited land acreage.
 - Plans are subject to other state-specific programmatic requirements, where they exist.
 - The term used for a “Soil Conservation and Water Quality Plan” may vary based on state programs, e.g., PA Ag E&S Plans, but the purpose of the qualifying conservation plans remains the same.

CBP Soil Conservation and Water Quality Plans

SCWQP practices help control erosion and nutrient runoff by modifying cultural or structural practices. Agronomic practices may change yearly and include changes to crop rotations. Structural components consist of longer-term conservation measures. BMPs in a SCWQP may include – but may not be limited to – the following USDA-NRCS conservation practices:

Access Road (560)	Lined Waterway or Outlet (468)
Alley Cropping (311)	Residue Management, Seasonal (344)
Animal Trails and Walkways (575)	Rock Barrier (555)
Brush Management	Row Arrangement (557)
Conservation Cover (327)	Shallow Water Development and Management
Conservation Crop Rotation (328)	Sediment Basin (350)
Contour Buffer Strips (332)	Stream Habitat Improvement and Management
Contour Farming (330)	Stripcropping (585)
Critical Area Planting (342)	Subsurface Drain
Diversion (362)	Structure for Water Control (587)
Field Border (386)	Terrace (600)
Filter Strip (393)	Underground Outlet (620)
Grade Stabilization Structure (410)	Water and Sediment Control Basin (638)
Grassed Waterway (412)	Windbreak/Shelterbelt Establishment (380)
Hedgerow Planting	

CBP Soil Conservation and Water Quality Plans

- The CBP accounts for several practices that can be part of a SCWQP under their own unique BMP categories with their own nutrient and sediment reduction effectiveness values.
 - Low-Residue Tillage: Minimal disturbance to the soil in an effort to maintain 15 to 29 percent crop residue coverage immediately after planting each crop.
 - Conservation Tillage: Maintains 30 to 59 percent crop residue coverage.
 - High-Residue Tillage, Maintains at least 60 percent crop residue coverage.
 - Pasture and grazing management BMPs = Prescribed or Rotational Grazing.
 - Cover Crops
 - Others

CBP Soil Conservation and Water Quality Plans

The effectiveness of composite SCWQPs in the model are based on the suite of practices after excluding those credited in the other categories.

Load Source	Nitrogen	Phosphorus	Sediment
Grain w/ Manure	8%	15%	25%
Grain w/o Manure	8%	15%	25%
Silage w/ Manure	8%	15%	25%
Silage w/o Manure	8%	15%	25%
Small Grains and Grains	8%	15%	25%
Full Season Soybeans	8%	15%	25%
Legume Hay	3%	5%	8%
Other Hay	3%	5%	8%
Double Cropped Land	8%	15%	25%
Specialty Crop High	8%	15%	25%
Specialty Crop Low	8%	15%	25%
Other Agronomic Crops	8%	15%	25%
Pasture	5%	10%	14%
Ag Open Space	3%	5%	8%

CBP Soil Conservation and Water Quality Plans

- The SCWQP effectiveness values (developed prior to 2009) were approved by the AgWG and summarized in a Simpson and Weammert-Lane [2009 Report](#).
- CBP BMP protocol directs workgroups to investigate if new data exists that could update existing pollutant reduction efficiencies.

**CONSERVATION PLANNING:
FIELD AND PASTURE EROSION CONTROL PRACTICES**
Definition and Nutrient and Sediment Reduction Effectiveness Estimates

**For use in calibration and operation of the
Chesapeake Bay Program's Phase 5.0 Watershed Model**

Synthesis by

**Tom W. Simpson, Ph.D.
University of Maryland/Mid-Atlantic Water Program
Project Manager**

And

**Sarah E. Weammert
University of Maryland/Mid-Atlantic Water Program
Project Leader**

NRCS Suggested Options to Move Forward

1. Confirm that the load reduction efficiencies of individual practices under a CBP SCWQP are the same as the efficiencies for a combination of practices.
2. Develop new efficiencies for individual BMPs under a SCWQP.
3. Inform unit conversions needed by some states to add acres for individual BMPs.

CBPO Proposal to the Agriculture Workgroup

- For those states that track acres of composite plans, an Expert Panel would update nutrient and sediment reduction effectiveness values that cover all BMPs in the plan as a group.
 - A BMP cross-walk would update the list of practices in a SCWQP.
 - A cross-walk would be among CBP, NRCS, and state conservation plan BMPs.
- For other states that can't track composite plan acres, an Expert Panel could recommend to the AgWG:
 - Which BMPs are and are not included in a SCWQP = crosswalk.
 - Should these BMPs be credited individually and, if so, does information exist to do so, e.g., literature search?
 - If BMPs are not credited individually, how can these states track and report acres in a plan from individual components and how do we address BMPs that are not in area units, e.g., acres?