Maryland Department of Agriculture

2021 Climate Change Report to the Governor and the Maryland Commission on Climate Change

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Conservation of Agricultural Land for Greenhouse Gas Emissions Reduction Benefits

Program Description

Land conservation offers an important mechanism for mitigating and adapting to climate change. Healthy and vigorous forests and grasslands not only provide direct benefits in GHG reduction but keeping them intact also helps to avoid or diminish GHG emissions associated with development.

MDA seeks to safeguard Maryland's network of natural areas, agricultural lands, and coastal zones through its established conservation programs and practices. MDA continues to pursue policies and programs that curb the conversion of agricultural lands and encourage the conservation of natural resources while working with its partners at DNR and MDP to promote the preservation and restoration of forested, grassed, and wetland areas on agricultural lands. Two MDA programs key to these efforts are the Maryland Agricultural Land Preservation Foundation (MALPF) and the U.S. Department of Agriculture's Conservation Reserve Enhancement Program (CREP).

MALPF, which purchases permanent preservation easements, was established in 1977 and is one of the most successful programs of its kind in the country. Besides maintaining prime farmland and woodland as a viable local base of food and fiber production, the protection of agricultural land reduces random urban development, safeguards wildlife habitat, and enhances the ecology of the Chesapeake Bay and its tributaries.

Maryland has participated in CREP since 1997 to target high-priority conservation concerns by offering rental payments for 10 to 15-year set-aside contracts and other incentives to agricultural producers to protect environmentally sensitive lands, improve wildlife habitat, and reduce nutrient and sediment loss. Currently Maryland landowners can receive four types of payments: a one-time signing bonus, annual rental payments that include a per-acre incentive, cost-share assistance, and a one-time practice incentive payment.

Program Objectives

Maryland has an official land preservation goal of 1,030,000 acres. The goal was initially created by Senate Joint Resolution 10/ House Joint Resolution 22 in 2002; it tripled the acreage of productive agricultural land up to that point by Maryland Agricultural Land Preservation Foundation (MALPF), Rural Legacy, GreenPrint, and Local Purchase of Development Rights/Transfer of Development Rights (PDR/TDR) programs. Originally, those four programs were to achieve the acreage preservation goal by 2022.

House Bill 860, signed into law by Governor Hogan in 2021, added two more easement programs to the effort: The Next Generation Farmland Acquisition Program run by the Maryland Agricultural and Resource-Based Industry Development Corporation (MARBIDCO), and easements managed by the Maryland Environmental Trust (MET). The bill also extended the deadline for reaching the preservation goal from 2022 to 2030.

If fully implemented at its authorized 100,000 acres, CREP has the potential to plant up to 16,000 acres of marginal land into grass, shrubs, and trees, establish 77,000 acres of grassland and forest buffers and 5,000 acres of water and wetland habitat, and restore 2,000 acres of habitat for declining, threatened, or endangered species.

Implementation Milestones (have they been met?)

MALPF:

- As of November 1, 2021, 2,528 farms have been protected and land has been preserved in each of Maryland's 23 counties.
- MALPF's purchases represent a cumulative public investment of $839.8 million and increase total acres preserved in the program to 340,375.
- Current acreage totals bring MALPF's contribution alone to 33% of the 2030 goal.
- Current data indicates that as of Nov.9, 2021, the six programs have preserved 853,527 acres, or 82.9% of the goal.

CREP:

- As of September 2021, CREP enrollment in Maryland was at 43,683 acres
- State cost share to support landowners in the adoption of CREP projects totaled $174,038 in grants to install 30 CREP-related projects during state fiscal year 2021, and landowners were awarded $156,796 in signing bonuses.
- In 2021, state cost-share was increased up to 100% (previously 87.5%) for the installation of high priority conservation projects - including many CREP practices.
- In addition, DNR's Easement Program has targeted CREP acres for permanent protection and now has 11,049 acres of former CREP-enrolled land under permanent conservation easement.
- During 2021, MDA also offered a pilot Conservation Buffer Initiative to promote riparian buffers. Agreements offered more flexible management options and shorter contract terms than CREP. The pilot year resulted in an additional 195 acres of buffers to be planted.

Estimated Emission Reductions for CY 2021

The revised emission reductions from the Conservation of Agricultural Land for GHG Benefits initiative in 2021 are estimated to be 0.192 MMtCO2e.

Enhancement Opportunities

Passage of legislation by the 2018 General Assembly will enable MALPF to participate in the U.S. Department of Defense's Readiness and Environmental Protection Integration Program (REPI) and enter into agreements with the Navy and other partners to share acquisition costs of easements to preserve agricultural land uses and natural habitat near military installations and ranges.

Also, through collaboration with the Mitigation and the Adaptation and Resilience Work Groups, MDA's Healthy Soils Program will complement and supplement existing preservation and conservation programs by enhancing the sequestration capacity of agricultural lands.

Funding

MALPF's purchases are funded by dedicated percentages of the Real Estate Transfer Tax and the Agricultural Transfer Tax, along with county and state allocations.

The federal monies toward CREP vary with authorized funding and participation levels based on USDA incentives administered through its Farm Service Agency, while the Maryland Agricultural Water Quality Cost-Share Program (MACS) offers grants, which are financed by State bond funds, to provide up to 100% (as of 2021) of the costs to install high priority best management practices. State signing incentive payments are funded through grants from the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund.

Challenges

Since FY 2019, MALPF has returned to the annual application cycle and full funding to the program has been restored. This change has enabled MALPF to increase the number of properties placed under easement each of the past three fiscal years. However, even with the return of the annual application cycle and being fully funded, the applications for participation in MALPF still exceed available funding every year.

Annual CREP enrollment continues to decline since a peak enrollment of 74,500 acres in 2008. While many factors influence participation, an aging farm population and turn-over in ownership, together with concerns about the ongoing demands of maintenance standards, suggest that farm operators are less willing to enter into the lengthy contracts typical of CREP. Accordingly, MDA is looking at innovative ways to increase CREP adoption through increased cost share and signing bonuses, while complementing program options like the Conservation Buffer Initiative.

Healthy Soils for Greenhouse Gas Emissions Reduction Benefits

Program Description

The 2017 Healthy Soils Act charged the Maryland Department of Agriculture (MDA) with the development of a Healthy Soils Program to improve the health, yield, and profitability of Maryland's soils and promote the further adoption of conservation practices that foster soil health while increasing sequestration capacity. In support of this initiative, MDA has collaborated with stakeholders from the Healthy Soils Consortium to complete a comprehensive scientific literature review to identify those practices that are most effective in improving soil health and building soil carbon stocks and create a menu of Maryland-specific practices. MDA also intends to use this information to explore the options for the metrics and tools that will be used to quantify soil carbon as well as provide incentives to encourage the widespread implementation of climate-friendly soil practices. Existing programs, too, are being examined and expanded to find ways to capitalize on co-benefits for both air and water quality, and carbon sequestration that build upon Maryland's nationally recognized progressive farming practices and programs.

Program Objectives

Consistent with the 2017 legislative objectives, MDA is developing a framework for the Healthy Soils Program in collaboration with the Healthy Soils Advisory Committee established in 2019. Building off the work of the Healthy Soils Consortium to develop a menu of Maryland-specific practices, the Healthy Soils Advisory Committee has helped MDA prioritize conservation practices to be incentivized within the Healthy Soils Program.

As the full Program is being developed, MDA secured two pilot grants from the National Fish and Wildlife Foundation and from USDA-Regional Conservation Partnership Project. The latter grant is limited to four counties on the mid-Eastern Shore (Kent, Queen Anne's, Caroline, and Talbot) while the other is statewide. Both grants provide direct financial and technical support to producers towards the adoption of key soil health practices and include on-farm evaluation of soil health measures pre- and post-implementation of the conservation practices. The grant outcomes and soil health measures are intended to inform the Healthy Soils Program that will continue beyond the conclusion of the above pilot programs in 2023.

Additionally, the grant from the National Fish and Wildlife Foundation includes an objective to create a carbon sequestration module, based on the COMET tool, within the state's existing Nutrient Trading Tool. Carbon would be "stacked" onto existing nutrient and sediment credits as tradable commodities. This will increase the potential value of the total credit package and serve as an incremental step toward building a comprehensive environmental marketplace and potentially generate revenue for the farm operation.

MDA is also evaluating the use of COMET tools to quantify the carbon sequestration of prior conservation practice adoption to improve the state's GHG inventory of the agricultural sector. It is MDA's intent to find the best methods to represent the prominent level of stewardship among Maryland farmers, historically and in the future.

Implementation Milestones

As of September 2021, over 8,000 acres have been enrolled in the Healthy Soils pilot program through MDA and its partner network. Of this, most producers are opting to plant multispecies and/or extended season cover crops to increase the diversity and timing of their crop rotations. Additionally, MDA and its partners have engaged more than 250 producers across the state through field days focused on soil health, webinars, and digital content. While in-person events have been slow to resume since 2020, MDA is optimistic additional field events, and in-person engagement opportunities will begin occurring in 2022.

Soil health evaluations using the NRCS Soil Health Card and soil sampling - active carbon and microbial respiration - have been completed at 110 locations across Maryland. This data collection effort will help MDA and its partners gain a greater understanding of current soil health conditions on a range of diverse farms.

Concurrently, the Healthy Soils Advisory Committee has held nine full Committee meetings since its inception and several sub-Committee meetings (10-11 Committee members per sub-committee). A suite of priority conservation practices has been finalized, and the Committee has endorsed the development of two new initiatives for inclusion in the Healthy Soils Program - a Healthy Soils Competitive Fund and *Cover Crop+*. The latter would leverage the success of the current MDA Cover Crop Program to focus primarily on multispecies and extended season cover crops over the course of a longer-term contract. Final recommendations from the Committee are expected in early 2022.

Lastly, MDA is reviewing a beta version of the updated Nutrient Trading Tool with the carbon module. Additional refinements are needed for improved user-experience and alignment with COMET tools, but a final version is in expected in mid-2022.

Estimated Emissions Reductions for CY21

The approximately 8,000 acres enrolled in the Healthy Soils Program have sequestered or avoided an estimated 5,331 tons of CO_2e emissions annually. Estimations are based on the best available COMET-Planner data available at the time of writing.

Enhancement Opportunities

As MDA continues developing the Healthy Soils Program, opportunities to collaborate with sister agencies and other partners will help to strengthen program impact. MDA is currently working with MDE and DNR to determine the best way to account for GHG outcomes in the state's inventory. It is MDA's intent to find the best methods to represent the high level of stewardship among Maryland farmers, historically and in the future.

MDA is also expanding partnerships with American Farmland Trust to strengthen connections with local land trusts and landowners to advance understanding of soil health. Longer land tenure for leased agricultural lands will be critical to advance the adoption of soil health practices and achieve the benefits of these practices.

As MDA continues to build out Healthy Soils Program offerings, the department remains mindful of the opportunity to do so in a way that prioritizes diversity, equity, inclusion, and justice among resources made available to producers across the state and allows producers to flourish in their role as land stewards, a critical piece of the state's GHG reduction goals.

Funding

As mentioned above, the Healthy Soils Program is currently funded through two pilot grants. Funds from the National Fish and Wildlife Foundation are currently completed for Year 2 of the grant while funds from the USDA-Regional Conservation Partnership Project are almost fully obligated at Year 3 of funding.

MDA is currently exploring long-term funding options to support the Healthy Soils Program. In the interim, a budget of $200,000 from the Chesapeake and Atlantic Coastal Bays Trust Fund has been secured to pilot the recommendations of the Healthy Soils Advisory Committee beginning in fiscal year 2023.

Challenges

Farmer outreach for the Healthy Soils pilot program began in earnest in early 2020, during the onset of the COVID-19 pandemic. This has delayed, and continues to delay, in-person events hosted by MDA and partner agencies. This has slowed enrollment and engagement opportunities.

A dedicated funding source for the Healthy Soils Program would allow more consistent resources and planning for program delivery.

Relevant Information

Current Healthy Soils Program activities in the state are in a pilot phase. Lessons learned from the active grant projects will inform future program development. Recommendations from the Healthy Soils Advisory Committee for the full program are expected in early 2022.