



MAKING WAVES FOR THE CHESAPEAKE BAY





MESSAGE FROM THE SECRETARY



The health of the Chesapeake Bay and its tributaries is a top priority for the Maryland Department of Agriculture's Conservation Grants Program. In FY21, the program overhauled and updated its cost-share products to appeal to a broader, more inclusive farmer base. As the 2025 Chesapeake Bay cleanup deadline approaches, the program's goal is to help farmers make a splash on behalf of clean water and healthy natural resources.

Last spring, Governor Larry Hogan signed off on a new law that authorized the program to provide up to 100% cost-share for more than 20 high-priority conservation practices. Installation of these in-field and edge-of-field conservation practices will help Maryland meet its 2025 goals.

Promoting sustainable, regenerative agriculture practices is a main focus of the program. This year, we introduced new cost-share funding to install satellite storage facilities on farms that use poultry

manure as a crop fertilizer to improve soil health. These covered storage facilities preserve the nutrient content of poultry manure, which improves soil health when applied to crops based on the farm's nutrient management plan.

The impact of climate change on food production is also a major concern. Last spring, we announced new cost-share funding for five climate and water-friendly conservation practices. The practices include windbreaks, hedgerows, tree and shrub establishment, and silvopasture systems that integrate trees within pastures.

Cost-share to install pasture fencing to promote rotational grazing was also introduced.

Our Cover Crop Program remained a popular conservation option for Maryland farmers. During the 2020-2021 planting season, farmers collectively planted more than 433,000 acres of protective cover crops on their fields, despite challenging weather conditions. Moreover, our Manure Transport grants experienced another record year and contributed to a smooth transition for farmers affected by the Phosphorus Management Tool regulations.

Please read our full report to learn more about the many ways our Conservation Grants Program is making headway for Maryland's natural resources and the Chesapeake Bay.

AT A GLANCE...

In FY21, our conservation grants helped farmers:

- Install 257 capital projects on their farms to protect local water quality.
- Plant 433,116 acres of protective cover crops on their fields.
- Transport a record 377,215 tons of manure away from areas with high soil phosphorus levels.

Joe Bartenfelder
Maryland Agriculture Secretary

MAKING WAVES FOR A CLEANER CHESAPEAKE BAY

MDA's Conservation Grants Program helps Maryland farmers finance water quality improvement projects on their farms, invest in sustainable agricultural practices, and comply with federal, state, and local environmental requirements. The program is funded through a variety of sources, including general obligation bonds, the Bay Restoration Fund, the Chesapeake and Atlantic Coastal Bays Trust Fund, and various federal grants that finance highly valued best management practices (BMPs) included in Maryland's Chesapeake Bay restoration commitments.

The program funds three key programs:

- Maryland Agricultural Water Quality Cost-Share (MACS) Program
- Cover Crop Program
- Manure Management Program

The Conservation Grants Program is a key feature of Maryland's Watershed Implementation Plan to restore clean water in the Chesapeake Bay and its tributaries by 2025. The program is delivered by the state's 24 Soil Conservation Districts (SCDs) with technical guidance from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Our grants are used to help farmers install conservation practices on their farms that

OUR GRANTS HELP FARMERS PROTECT THE CHESAPEAKE BAY...

Farmers who received our grants invested approximately \$900,000 of their own money into projects that prevented:

- 3.2 million pounds of nitrogen,
- 30,980 pounds of phosphorus, and
- 16,716 tons of soil from entering Maryland waterways in 2021.

meet the clean water goals of the Chesapeake Bay Total Maximum Daily Load (TMDL). The chart shows MDA grant-supported practices that are expected to further reduce nitrogen and phosphorus runoff into local waterways, and help Maryland meet its 2025 nutrient and sediment reduction targets.

CHESAPEAKE BAY CLEAN-UP PROGRESS THROUGH JULY 2021*

BEST MANAGEMENT PRACTICE	2025 GOAL	2020-2021 MILESTONE TARGET	2021 PROGRESS	PERCENTAGE OF MILESTONE
ANNUAL GOAL				
Traditional Cover Crops	478,391 acres	478,391 acres	433,116 acres	91%
Manure Transported (Wet tons) <i>Alternative Use or Out of Watershed</i>	97,366 tons	97,366 tons	67,547 tons	69%
CUMULATIVE GOAL				
Exclusion Fencing (Acres of buffers)	1,867 acres	1,262 acres	997 acres	79%
Grass Buffers	43,706 acres	34,587 acres	31,637 acres	91%
Off-Stream Watering Without Fencing	12,730 acres	12,730 acres	39,372 acres	309%
Retirement of Highly Erodible Land	33,171 acres	27,355 acres	32,712 acres	120%
Streamside Forest Buffers	20,274 acres	17,818 acres	15,625 acres	88%
Waste Storage Structures (livestock)	99,654 animal units**	84,105 animal units	78,136 animal units	93%
Waste Storage Structures (poultry)	1,798,116 animal units	1,629,748 animal units	1,708,000 animal units	105%
Wetland Restoration	13,620 acres	10,172 acres	8,736 acres	86%

*In some instances, progress includes practices installed with funds from both MDA and USDA's Natural Resources Conservation Service.

**One animal unit = 1,000 lbs. of live animal weight

2021 FUNDING SUMMARY

In FY21, the Conservation Grants Program provided Maryland farmers with \$25.2 million in cost-share grants to install 2,120 conservation projects on their farms to prevent soil erosion, manage crop nutrients, and protect water quality. Grants cover up to 87.5% of the cost to install a range of eligible BMPs, including cover crops, grassed waterways, manure storage structures, and stream protection practices. Farmers who received these grants invested \$900,000 of their own money into projects that will prevent an estimated 3.2 million pounds of nitrogen, 30,980 pounds of phosphorus, and 16,716 tons of soil from entering Maryland waterways.

Low Interest Loans for Agricultural Conservation (LILAC) provide startup funds to help farmers get a project up and running. Guaranteed by the Maryland Water Quality Revolving Loan Fund, LILAC loans are typically offered at 3% or 4% below market rates and are available at lending institutions statewide. In FY21, the program worked with the Maryland Department of the Environment and local SCDs to approve nine applications totaling \$467,554 in loans. The loans were used to help Maryland farmers purchase conservation tillage and manure handling equipment, and install waste storage structures, heavy use areas, and agricultural chemical handling facilities.

PROGRAM SUMMARY FISCAL YEAR 2021		
CAPITAL PROJECTS	NUMBER OF PROJECTS	FUNDS
Total Approved from State Funds	299	\$ 6,865,302

Capital Projects Completed		
CREP Projects with State Funds	37	\$ 138,936
All Other Projects with State Funds	198	\$ 3,681,868
With Federal Funds	22	\$ 77,059
Total Capital Projects Completed	257	\$ 3,897,863

Special Projects Completed		
Cover Crops	1,349	\$19,085,554
Manure Transport ¹	464	\$ 1,889,179
Manure Injection	50	\$ 366,889
Total Special Projects Completed	1,863	\$21,341,622
Total Capital & Special Projects Completed	2,120	\$25,239,485²

ENVIRONMENTAL BENEFITS	NITROGEN	PHOSPHORUS
Estimated Pounds of Nutrients Removed by Capital Projects	185,445	27,515
Estimated Pounds of Nutrients Removed by Cover Crops	2,988,500	3,465
	Tons of Soil	Acres of Land
Tons of Soil Saved Per Year ³	16,716	1,061
Manure Managed Daily with Animal Waste Storage Structures	Tons of Manure	Animal Units ⁴
Poultry Manure Managed Daily	168	10,677
Dairy Manure Managed Daily	114	2,807
Beef Manure Managed Daily	109	3,265
Other Animal Manure Managed Daily	12	444
Total Animal Manure Managed Daily	403	17,193

¹ Does not include poultry company matching funds (\$602,791)

² Includes approximately \$13.2 million in special funds from the Chesapeake and Atlantic Coastal Bays Trust Fund

³ Based on the Revised Universal Soil Loss Equation (RUSLE)

⁴ One animal unit = 1,000 lbs. of live animal weight

Note: Nutrient reduction figures are based on the best information available and are consistent with the latest Chesapeake Bay Model.



The Maryland Agricultural Water Quality Cost-Share Program (MACS) provides farmers with cost-share grants to install BMPs on their farms to control erosion, manage nutrients, and protect water quality. In FY21, MACS provided Maryland farmers with \$3.9 million in grants to install 257 conservation projects on their farms. Significant changes were made to the MACS program in FY21 to help Maryland meet its 2025 Chesapeake Bay cleanup commitments:

- 100% Cost-Share Reimbursement**—Governor Larry Hogan signed a new law authorizing up to 100% cost-share for certain high-priority BMPs. MACS identified 23 practices that became eligible for this new rate in August 2021.
- New BMPs Introduced**—A new suite of practices that act as natural filters to protect water quality was introduced.
- Support for Rotational Grazing**—Non-exclusion perimeter fencing and interior fencing to support rotational grazing systems are now eligible for cost-share.
- Satellite Storage Facilities for Poultry Manure**—These protective structures became eligible for cost-share during the year to support farmers who want to build their soil's health by using poultry manure to fertilize their crops.
- More than 40 BMPs** are now eligible for cost-share funding.

SOIL CONSERVATION DISTRICT SUMMARY FOR CAPITAL PROJECTS FISCAL YEAR 2021		
DISTRICT	COMPLETED PROJECTS	MACS PAYMENT
Allegany	0	\$ 0
Anne Arundel	1	\$ 15,577
Baltimore County	4	\$ 28,477
Calvert	5	\$ 75,312
Caroline	9	\$ 196,952
Carroll	70	\$ 897,216
Catoctin	10	\$ 92,686
Cecil	11	\$ 179,638
Charles	2	\$ 10,333
Dorchester	1	\$ 19,311
Frederick	35	\$ 690,843
Garrett	4	\$ 147,639
Harford	7	\$ 41,002
Howard	1	\$ 15,382
Kent	23	\$ 214,237
Montgomery	1	\$ 24,971
Prince George's	4	\$ 50,641
Queen Anne's	32	\$ 279,897
St. Mary's	7	\$ 261,591
Somerset	0	\$ 0
Talbot	13	\$ 263,571
Washington County	13	\$ 219,667
Wicomico	3	\$ 136,168
Worcester	1	\$ 36,750
Total	257	\$3,897,861

COMPLETED COST-SHARE PRACTICES BY SOIL CONSERVATION DISTRICT | FISCAL YEAR 2021

PRACTICE

ALLEGANY

ANNE ARUNDEL

BALTIMORE COUNTY

CALVERT

CAROLINE

CARROLL

CATOCTIN

CECIL

CHARLES

DORCHESTER

FREDERICK

GARRET

Animal Mortality Facility					1			1				
Conservation Cover						4						
Contour Farming												
Contour Orchard												
Critical Area Planting		1	2	4		2		2		4		3
Diversion					1							
Fence				2		3	2	2	1		6	3
Field Border												
Filter Strip												
Forage & Biomass Planting												
Grade Stabilization Structure				2	1			1	1			
Grassed Waterway			2	1	1	23		4	1		18	
Heavy Use Area Protection				2	2	8	2	1		1	4	2
Lined Waterway or Outlet				1				6	1			
Livestock Pipeline												
Riparian Forest Buffer			1			12	1				1	
Riparian Herbaceous Cover					1							
Roof Runoff Structure				1		3		1	1		1	1
Roofs and Covers						5					1	
Saturated Buffer					1							
Sediment Basin												
Sediment Control Pond												
Spring Development			1			3	2				1	
Stream Crossing		1				3						2
Strip Cropping, Contour												
Strip Cropping, Field												
Structure for Water Control					2						1	
Subsurface Drain					1							
Terrace System												
Underground Outlet					1							
Vegetated Treatment Area												
Waste Storage Facility					1	7	2	1			3	1
Waste Treatment Lagoon												
Wastewater Treatment Strip												
Water Well				1	1							
Watering Facility			1	1		6	4	1			2	1
Wetland Restoration					2							
Grand Total	0	2	7	15	16	79	13	18	7	1	42	13



HARBOR	HOWARD	KENT	MONTGOMERY	PRINCE GEORGE'S	QUEEN ANNE'S	ST. MARY'S	SOMERSET	TALBOT	WASHINGTON COUNTY	WICOMICO	WORCESTER	TOTAL FY2021	TOTAL FY84-21	CUMULATIVE TOTAL
					1					1		4	1,054	1,058
		2										6	709	715
												0	47	47
												0	2	2
2	1	1		2		3						27	900	927
					3			5				9	541	550
2					1	2			6			30	1,409	1,439
												0	13	13
												0	22	22
									1			1	8	9
1		6			3			6				21	1,942	1,963
3	1	18	1		6	1		8	1			89	5,193	5,282
				2	4	4			1	2	1	36	1,185	1,221
4		3	1	1	7	1		10				35	481	516
												0	2	2
					2							17	1,559	1,576
					6				2			9	218	227
2				1	2	4			1			18	825	843
					1	2						9	42	51
												1	0	1
												0	51	51
		1										1	1,117	1,118
									1			8	1,197	1,205
									2			8	548	556
												0	61	61
												0	72	72
												3	46	49
					1				1			3	0	3
												0	92	92
						2			1			4	0	4
				1								1	1,692	1,693
				2	3	2				1		23	2,379	2,402
												0	15	15
												0	45	45
					1				1			4	202	206
				1	1	1			4			23	2,163	2,186
					5			1				8	45	53
14	2	31	2	10	47	22	0	30	22	4	1	398	25,877	26,275



MARYLAND FARMERS

Partners in Conservation

Stories from the Field

Watch Our Conservation Practices in Action

Meet the farmers and conservation professionals who are making a difference for the natural resources that we all depend on. Our new video series showcases Maryland farmers and the conservation projects they have installed to protect natural resources and make daily chores easier. Go to mda.maryland.gov/conservation to watch our videos.

Conservation Reserve Enhancement Program

Now in its 24th year, Maryland's Conservation Reserve Enhancement Program (CREP) has helped thousands of Maryland landowners plant streamside buffers, establish wetlands, protect highly erodible land, and create wildlife habitat on their property. CREP is a state-federal conservation partnership that pays landowners annual rental payments to take environmentally sensitive land out of production for 10 to 15 years and install conservation practices that protect water quality and provide wildlife habitat.

MACS provides participating landowners with grants to install conservation practices on eligible land that they have agreed to no longer till or graze. In FY21, MACS provided landowners with \$138,936 in grants to install 37 CREP-related projects. Special funds are used to award a \$100 per acre signing bonus to landowners who enroll or re-enroll land in the program. In FY21, landowners were awarded \$156,796 in signing bonuses during a transitional program year.



CREP PROJECTS COMPLETED BY DISTRICT FISCAL YEAR 2021		
DISTRICT	COMPLETED PROJECTS	MACS PAYMENT
Baltimore County	1	\$ 9,082
Caroline	2	\$ 18,508
Carroll	15	\$ 48,530
Catoctin	2	\$ 10,880
Frederick	1	\$ 3,410
Queen Anne's	11	\$ 26,864
Talbot	1	\$ 5,175
Washington County	4	\$ 16,487
Total	37	\$138,936

Now in its 24th year, Maryland CREP has helped thousands of landowners plant streamside buffers, restore wetlands, protect highly erodible land, and create wildlife habitat on their properties.

Cover crops recycle nutrients, protect fields from erosion, and enrich the soil with organic matter for spring crops.

COVER CROP PROGRAM

Cover crops are a farmer's first line of defense against nutrient runoff and soil erosion during the winter months when farm fields would otherwise lie bare. This program provides grants to farmers who plant cereal grains, legumes, and other types of cover crops on their fields following the harvest of summer crops. As they grow, cover crops soak up unused plant nutrients, protect against wind and water erosion, and add valuable organic matter to the soil for spring crops.

During the 2020-2021 planting season, Maryland farmers received \$19 million in cost-share grants to plant 433,116 acres of traditional cover crops, which are not harvested. Grants help farmers offset seed, labor, and equipment costs to plant fall cover crops. Planting was hindered by excessive rainfall resulting in poor field conditions. Funding for the Cover Crop Program is provided by the Bay Restoration Fund and the Chesapeake and Atlantic Coastal Bays Trust Fund.

2020-2021 COVER CROP PROGRAM			
DISTRICT	CONTRACTS	FALL CERTIFIED ACRES	MACS PAYMENT
Allegany	6	186	\$ 8,879
Anne Arundel	25	4,507	\$ 211,942
Baltimore County	33	10,200	\$ 431,300
Calvert	8	2,807	\$ 87,335
Caroline	113	30,242	\$ 1,291,810
Carroll	109	29,294	\$ 1,308,835
Cecil	75	18,350	\$ 862,209
Charles	27	2,857	\$ 124,759
Dorchester	78	28,376	\$ 1,118,757
Frederick & Catoclin	155	30,782	\$ 1,257,286
Garrett	22	1,308	\$ 70,338
Harford	64	15,840	\$ 690,032
Howard	13	2,649	\$ 129,730
Kent	102	56,542	\$ 2,634,958
Montgomery	34	18,726	\$ 573,076
Prince George's	11	1,770	\$ 88,995
Queen Anne's	120	57,898	\$ 2,706,655
St. Mary's	48	6,097	\$ 207,240
Somerset	34	9,301	\$ 422,299
Talbot	71	35,809	\$ 1,622,713
Washington County	71	12,632	\$ 530,577
Wicomico	70	22,416	\$ 1,049,289
Worcester	60	34,527	\$ 1,656,540
Total	1,349	433,116	\$19,085,554

Farmers hauled a record-setting 377,215 tons of manure away from areas with high soil phosphorus levels to alternative use facilities and qualifying farms.

MANURE MANAGEMENT PROGRAM

This program helps farmers manage manure resources, comply with nutrient management regulations, and protect water quality in local streams, rivers, and the Chesapeake Bay.

Manure Transport Grants

Established by the Water Quality Improvement Act, Maryland's Manure Transport Program provides cost-share grants to help poultry, dairy, beef, and other livestock producers haul manure away from areas with high soil phosphorus levels to other farms or alternative use facilities that can use the product safely. The program set another transport record in FY21 as farmers took advantage of favorable program changes along with an increase in the maximum

payment rate to haul poultry manure away from areas with high soil phosphorus levels.

In FY21, the program provided Maryland farmers with \$1,889,179 in grants to transport 377,215 tons of manure to approved farms and businesses. Delmarva poultry companies contributed \$602,791 in matching funds to transport poultry manure.

Livestock manure (dairy, beef, and swine) comprised 71% of the manure transported. Dairy

farmers typically use the grants to haul manure away from the barnyard area to distant fields with acceptable phosphorus levels. If soil phosphorus levels are elevated on the distant fields, the manure is hauled to other farms.

Poultry litter comprised the remaining 29% of the manure transported during the year. Of that amount, 63% was trucked to alternative use facilities, with the remaining 37% land-applied to crops as a fertilizer on qualifying fields.

MANURE TRANSPORT PROGRAM PAYMENT SUMMARY

FISCAL YEAR	ACTUAL TONS TRANSPORTED	MACS PAYMENT	POULTRY COMPANIES COST-SHARE PAYMENT*	TOTAL FUNDS ISSUED
1999	1,896	\$ 17,992	\$ 17,992	\$ 35,984
2000	13,366	\$ 111,464	\$ 111,464	\$ 222,928
2001	20,477	\$ 195,559	\$ 195,559	\$ 391,118
2002	47,481	\$ 434,610	\$ 420,395	\$ 855,005
2003	28,556	\$ 233,444	\$ 229,645	\$ 463,089
2004	40,755	\$ 295,356	\$ 285,806	\$ 581,162
2005	36,329	\$ 239,196	\$ 200,113	\$ 439,309
2006	69,009	\$ 380,694	\$ 293,728	\$ 674,422
2007	99,297	\$ 490,011	\$ 356,955	\$ 846,966
2008	99,817	\$ 520,357	\$ 370,985	\$ 891,342
2009	119,892	\$ 663,177	\$ 504,024	\$ 1,167,201
2010	80,899	\$ 469,398	\$ 402,846	\$ 872,244
2011	61,150	\$ 354,011	\$ 294,383	\$ 648,394
2012	35,554	\$ 297,587	\$ 283,951	\$ 581,538
2013	52,481	\$ 377,007	\$ 339,252	\$ 716,259
2014	118,995	\$ 608,259	\$ 419,929	\$ 1,028,188
2015	167,237	\$ 851,304	\$ 409,548	\$ 1,260,852
2016	213,151	\$ 954,300	\$ 447,882	\$ 1,402,182
2017	241,941	\$ 1,174,690	\$ 453,038	\$ 1,627,728
2018	249,421	\$ 1,020,910	\$ 453,876	\$ 1,474,786
2019	249,840	\$ 1,070,479	\$ 373,875	\$ 1,444,353
2020	309,374	\$ 1,382,822	\$ 455,681	\$ 1,838,503
2021	377,215	\$ 1,889,179	\$ 602,791	\$ 2,491,970
Total	2,734,133	\$14,035,406	\$7,923,718	\$21,959,124

*Dairy, beef, and other livestock manure became eligible for cost-share grants in Fiscal Year 2002. These producers do not receive matching funds from poultry companies.

Manure Injection Program

Nutrient runoff is a major source of pollution in the Chesapeake Bay and its tributaries. Injecting manure deep into the soil—instead of spreading it on the top of the ground—helps prevent nutrient runoff, reduces odors, and preserves beneficial surface residue. In FY21, 50 farmers were awarded \$366,889 in cost-share grants to offset operating costs associated with this practice.



SOIL CONSERVATION DISTRICTS DELIVER OUR CONSERVATION GRANTS TO FARMERS

Maryland's 24 SCDs— with technical guidance from USDA NRCS—help farmers choose the right BMPs for their operations, supervise their installation or construction, and develop maintenance plans to keep them in good working order. District staff help farmers calculate costs to install practices and apply for other state and federal grant and loan programs. BMPs are usually installed as part of a farm's overall Soil Conservation and Water Quality Plan. These plans are developed for farmers free of charge by SCD technical staff.

MARYLAND'S SOIL CONSERVATION DISTRICTS		
DISTRICT	PHONE	WEBSITE
Allegany	301-777-1747, ext. 3	alleganyscd.com
Anne Arundel	410-571-6757	aascd.org
Baltimore County	410-527-5920, ext. 3	bcscd.org
Calvert	410-535-1521, ext. 3	calvertsoil.org
Caroline	410-479-1202, ext. 3	
Carroll	410-848-8200, ext. 3	carrollsoil.com
Catoctin	301-695-2803, ext. 3	catoctinfrederickscd.com
Cecil	410-398-4411, ext. 3	cecilscd.com
Charles	301-638-3028	charlesscd.com
Dorchester	410-228-5640, ext. 3	
Frederick	301-695-2803, ext. 3	catoctinfrederickscd.com
Garrett	301-501-5886	garrettscd.org
Harford	410-638-4828	harfordscd.org
Howard	410-313-0680	howardscd.org
Kent	410-778-5150, ext. 3	kentsoilandwaterconservationdistrict.org
Montgomery	301-590-2855	montgomeryscd.org
Prince George's	301-574-5162, ext. 3	pgscd.org
Queen Anne's	410-758-3136, ext. 3	
St. Mary's	301-475-8402, ext. 3	stmaryscd.com
Somerset	410-621-9310	
Talbot	410-822-1577, ext. 5	talbotscd.com
Washington County	301-797-6821, ext. 3	conservationplace.com
Wicomico	410-546-4777, ext. 3	wicomicoscd.org
Worcester	410-632-5439, ext. 3	



Maryland Department of Agriculture

Office of Resource Conservation

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