



SMART, GREEN AND GROWING

MACS

2011 ANNUAL REPORT



MARYLAND AGRICULTURAL WATER QUALITY COST-SHARE PROGRAM

MILESTONES

MACS HELPS FARMERS MEET 2011 MILESTONES FOR REDUCING NITROGEN AND PHOSPHORUS IN THE CHESAPEAKE BAY

2-Year Milestone Progress (2009 through June 30, 2011)*

Cover Crops

GOAL: Plant 325,000 acres of cover crops annually

STATUS: 400,331 acres planted during the 2010-2011 planting season

PERCENT OF MILESTONE COMPLETED: 123 percent

Manure Transport

GOAL: Transport 45,000 tons of poultry litter out of the Bay Watershed annually

STATUS: 29,016 tons of poultry litter transported out of the Bay Watershed in 2011

PERCENT OF MILESTONE COMPLETED: 64 percent

Stream Protection with Fencing

GOAL: Erect fencing to exclude livestock access and protect 5,400 acres along streams by 2011

STATUS: 7,563 acres protected with stream fencing

PERCENT OF MILESTONE COMPLETED: 140 percent

Stream Protection without Fencing

GOAL: Install stream protection measures (excluding fencing) on 2,000 acres of land by 2011

STATUS: 2,062 acres protected

PERCENT OF MILESTONE COMPLETED: 103 percent

Livestock Waste Storage Structures

GOAL: Construct 80 livestock waste storage structures by 2011

STATUS: 113 structures constructed

PERCENT OF MILESTONE COMPLETED: 141 percent

Poultry Waste Storage Structures

GOAL: Construct 50 poultry waste storage structures by 2011

STATUS: 56 structures constructed

PERCENT OF MILESTONE COMPLETED: 112 percent

Water Control Structures

GOAL: Construct 125 water control structures by 2011

STATUS: 46 structures installed

PERCENT OF MILESTONE COMPLETED: 37 percent

Runoff Control Systems

GOAL: Construct 175 runoff control systems by 2011

STATUS: 204 systems installed

PERCENT OF MILESTONE COMPLETED: 117 percent

ABOUT MACS

Since 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program has been helping farmers protect natural resources on their farms, adopt sustainable agricultural practices and comply with a growing list of federal, state and local environmental requirements.

More recently, MACS has played a key role in helping Maryland implement its Watershed Implementation Plan, the federally mandated document that serves as a road map for restoring the health of the Chesapeake Bay.

MACS provides farmers with conservation grants that cover up to 87.5 percent of the cost to install best management practices (BMPs) on their farms. BMPs are conservation measures used to prevent soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay. Thirty BMPs are currently eligible for MACS funding.

The majority of the practices cost-shared by MACS are financed through the capital program, which includes the sale of general obligation bonds. Cover crops, manure transport and portions of the Conservation Reserve Enhancement Program are financed using special funds from the Chesapeake Bay 2010 Trust Fund, Chesapeake Bay Restoration Fund (Flush Fee) and general fund allocations.

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

For a full description and progress report on agriculture's role in the Bay cleanup visit: www.baystat.maryland.gov/2yearplan.html

MESSAGE FROM THE SECRETARY OF AGRICULTURE



In 2011, Maryland farmers were smart, green and growing cover crops in record numbers to protect the Chesapeake Bay from soil erosion and nutrient runoff. Using grants provided by the Maryland Agricultural Water Quality Cost-Share (MACS) Program, approximately 1,600 Maryland farmers planted an unprecedented 400,000 acres of protective cover crops in their fields last fall. It was by far the largest cover crop planting in the program's history, and will go a long way toward helping Maryland comply with new pollution caps for the Bay spelled out in its Watershed Implementation Plan.

In recent years, consistent funding—provided by the Chesapeake Bay 2010 Trust Fund and the Chesapeake Bay Restoration Fund—easy enrollment, and more planting options have made the cover crop program a popular conservation choice for Maryland farmers. In 2011, cover crops outpaced all other MACS-funded conservation practices by a margin of three to one. By all indications,

next year's cover crop planting is on track to meet or exceed this rate, with approximately 570,000 acres approved during the summer enrollment period.

But cover crops are not the only best management practice (BMP) that MACS funds. Since 1984, MACS has been providing farmers with grants to help offset the cost of installing dozens of BMPs on their farms that reduce soil erosion, curb nutrient runoff and protect water quality in the streams and rivers that feed the Chesapeake Bay.

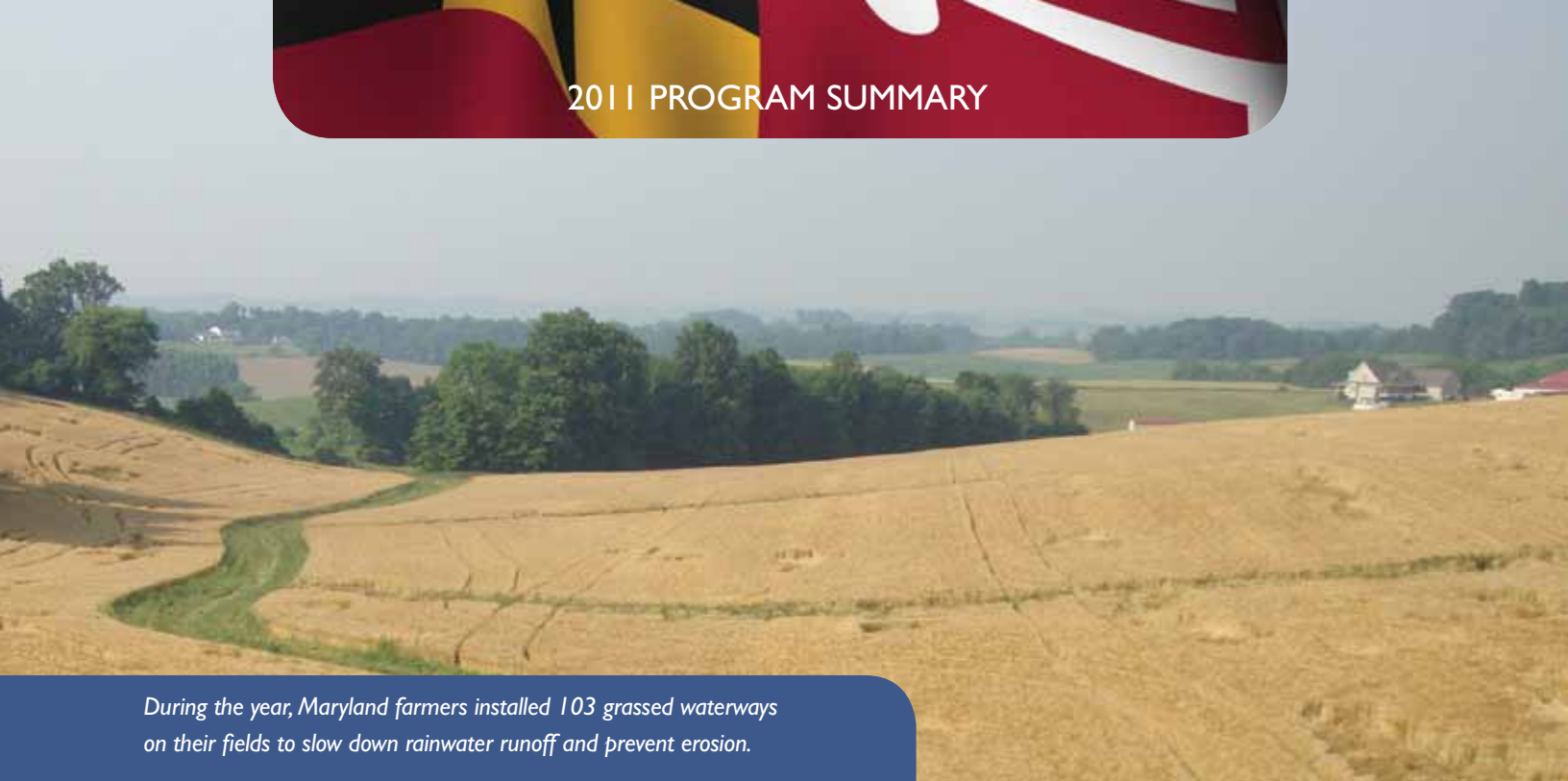
Simply put, MACS makes conservation affordable for farmers. In the face of soaring seed and fertilizer costs, fluctuating fuel prices, unstable commodity markets and extreme weather conditions, Maryland farmers installed 539 BMPs on their farms in 2011, with the help of MACS. These grants, however, do not cover the entire cost of installing BMPs, and despite the uncertain economy, Maryland farmers invested approximately \$1 million of their own money into conservation projects last year and made the commitment to maintain these BMPs for 10 to 15 years.

Many of the BMPs financed by MACS will help Maryland meet mandatory Total Maximum Daily Load (TMDL) pollution reductions for the Bay established by the Environmental Protection Agency (EPA) last year and addressed in Maryland's Phase I Watershed Implementation Plan. They are also a key tool in Phase II Watershed Implementation Plans now being developed in every Maryland county. These plans, which will include specific details about a broad range of pollution controls to be implemented locally, are due to EPA in December 2011.

Included in this annual report are milestone markers that provide a framework for accountability to ensure that progress is being made and deadlines are met. Adaptive management practices are in place, which allow us to monitor and adjust goals in order to achieve the best possible outcome for the Bay. As we move forward in the process, MACS and MDA will continue to help farmers meet Bay restoration targets by providing financial and technical assistance to install BMPs that protect waterways from nutrient and sediment pollution.



Maryland farmers planted a record 400,000 acres of cover crops during the 2010-2011 planting season.



During the year, Maryland farmers installed 103 grassed waterways on their fields to slow down rainwater runoff and prevent erosion.

SOIL CONSERVATION DISTRICT SUMMARY FOR CAPITAL PROJECTS | FISCAL YEAR 2011

In Fiscal Year 2011, the Maryland Agricultural Water Quality Cost-Share Program (MACS) provided Maryland farmers with a record \$23.2 million in grants to install 2,200 conservation projects on their farms aimed at controlling soil erosion, reducing nutrient runoff and protecting water quality in streams, rivers and the Chesapeake Bay.

Collectively, these projects will prevent an estimated 2.5 million pounds of nitrogen and 105,200 pounds of phosphorus from entering Maryland waterways each year. With a record-setting 400,000 acres planted, cover crops were responsible for the majority of the projects (1,567), the bulk of the nitrogen savings (2.4 million pounds) and roughly 75 percent of the phosphorus savings (80,000 pounds). Farmers who received cost-share grants from MACS in 2011 invested approximately \$1 million of their own money into conservation projects.

Protecting waterways from sediment pollution is another important MACS

District	Completed Projects	Payment Amount
Allegany	10	\$ 49,743
Anne Arundel	1	\$ 7,870
Baltimore County	31	\$ 149,084
Calvert	6	\$ 38,711
Caroline	16	\$ 101,462
Carroll	124	\$ 894,041
Catoctin	15	\$ 104,831
Cecil	3	\$ 31,492
Charles	2	\$ 4,243
Dorchester	82	\$ 347,952
Frederick	34	\$ 349,864
Garrett	2	\$ 3,370
Harford	35	\$ 331,919
Howard	20	\$ 60,287
Kent	39	\$ 146,980
Montgomery	15	\$ 169,120
Prince George's	5	\$ 15,047
Queen Anne's	16	\$ 209,147
Somerset	11	\$ 313,667
St. Mary's	13	\$ 52,959
Talbot	10	\$ 72,998
Washington County	15	\$ 226,335
Wicomico	19	\$ 425,896
Worcester	15	\$ 471,490
TOTAL	539	\$4,578,508

PROGRAM SUMMARY | FISCAL YEAR 2011

goal. In Fiscal Year 2011, MACS helped farmers prevent an estimated 10,400 tons of soil from impacting waterways by cost-sharing a range of erosion control practices, including 103 grassed waterways, 28 grade stabilization structures and 12 sediment control ponds. Additional measures aimed at protecting streams from livestock traffic were installed through the Conservation Reserve Enhancement Program and included 48 livestock fencing projects, 15 spring developments, and 11 stream crossings.

Managing animal waste to protect local waterways is a major Bay restoration goal. In Fiscal Year 2011, MACS helped farmers construct 38 animal waste storage structures that collectively will help manage 744 tons of manure daily.

Although MACS helps farmers install conservation practices that they otherwise could not afford, the grants do not cover equipment purchases or start-up costs for major projects. Low Interest Loans for Agricultural Conservation (LILAC) provide farmers with the cash they need to get a project up and running. Guaranteed by the Maryland Water Quality Revolving Loan Fund, LILAC loans are typically offered at three to four percent below market rates. They are available at lending institutions statewide. In Fiscal Year 2011, MACS provided farmers with \$643,000 in LILAC loans to help pay for conservation tillage and manure handling equipment. This figure represents a three-fold increase over last year.

Capital Projects Approved	Number of Projects	Funds
From State Funds	682	\$ 7,124,940
From Federal Funds	22	\$48,465
Total Capital Projects Approved	704	\$ 7,173,405
Capital Projects Completed		
CREP Projects with State Funds	157	\$ 276,353
All Other Projects with State Funds	330	\$ 4,104,678
With Federal Funds	52	\$ 197,477
Total Capital Projects Completed	539	\$ 4,578,508
Special Projects Completed		
Cover Crops	1,567	\$ 18,286,823
Manure Transport	85	\$ 354,012 ¹
Total Special Projects Completed	1,652	\$ 18,640,835
TOTAL CAPITAL AND SPECIAL PROJECTS COMPLETED	2,191	\$ 23,219,343
	Nitrogen	Phosphorus
Estimated Pounds of Nutrients Removed by Capital Projects	117,154	25,189
Estimated Pounds of Nutrients Removed by Cover Crops	2,401,983	80,066
	Tons	Acres of Land
Tons of Soil Saved Per Year ²	10,404	2,476
Manure Managed Daily with Animal Waste Storage Structures	Tons of Manure	Animal Units ³
Poultry Manure Managed Daily	387	19,685
Dairy Manure Managed Daily	122	2,845
Beef Manure Managed Daily	184	5,103
Other Animal Manure Managed Daily	51	1,266
Total Animal Manure Managed Daily	744	28,899
Capital Appropriations for Fiscal Years 1984-2011		
Projects Completed with State Funds	19,403	\$102,095,760
¹ Does not include poultry company matching funds (\$294,284)		
² Based on the Revised Universal Soil Loss Equation (RUSLE)		
³ One animal unit = 1,000 lbs. of live animal weight		
Note: Nutrient reduction figures are based on the best science available and are consistent with the Chesapeake Bay Model.		

COMPLETED MACS COST-SHARED PRACTICES BY DISTRICT | FISCAL YEAR 2011

Practice	Allegany	Anne Arundel	Baltimore County	Calvert	Caroline	Carroll	Catoctin	Cecil	Charles	Dorchester	Frederick
Conservation Cover						11	1				
Contour Farming											
Contour Orchard											
Critical Area Planting			1								
Dead Bird Composting Facility					4					3	
Diversion						3		1			
Fencing	2		3	1		17	3	1		1	4
Field Border											
Field Windbreak											
Filter Strip						3				14	
Grade Stabilization Structure				1	9	1		1			1
Grassed Waterway			5			46		1	1		5
Heavy Use Area Protection	2		10	1	1	3	1			8	4
Lined Waterway or Outlet											
No Till											
Pasture & Hay Planting			3			1					
Pipeline											
Riparian Forest Buffer	1		1			5				1	5
Riparian Herbaceous Cover						1				55	1
Roof Runoff Structure	2	1	2	2		11	2		1		4
Sediment Basin											
Sediment Control Pond				1	1		2				5
Spring Development			1			9	3	1			1
Stream Crossing						5					
Strip Cropping, Contour											
Strip Cropping, Field											
Terrace System											
Waste Storage Pond											
Waste Storage Structure	3		1		1	4				1	5
Waste Treatment Lagoon											
Wastewater Treatment Strip	1										
Water Control Structure											
Water Well	1					2	1				
Watering Facility	3		9			14	3	1			1
Wetland Restoration											
TOTAL	15	1	36	6	16	136	16	6	2	83	36



Garrett	Harford	Howard	Kent	Montgomery	Prince George's	Queen Anne's	St. Mary's	Somerset	Talbot	Washington County	Wicomico	Worcester	Total FY 2011	Cumulative FY88-11
		1	12		1								26	632
													0	47
													0	2
		1	1	1			3			1			8	815
								1			3	2	13	918
		1				1	2			1			9	497
1	3	2		3		1	1			5			48	1,090
													0	10
													0	2
					2	2			4				25	1,673
	2	1	7			2			3				28	1,753
	5	7	17	4	1	2	6		2	1			103	4,438
	9	3		1		3		8	2		13	12	81	701
				3	1	2			2				8	374
													0	12
	1	1											6	14
													0	3
1						3							17	1,385
			10			2				4			73	79
	4	1	1	1			1						33	628
													0	49
	1		2										12	1,066
													15	1,148
	3	1								2			11	446
													0	61
					1								1	72
													0	89
													0	36
	2	1		5	2	2		3		1	6	1	38	2,081
													0	15
	1												2	37
								1				1	2	17
	2									2			8	175
	9	3		1			1		1	3			49	1,928
													0	2
2	42	23	50	19	8	20	14	13	14	20	22	16	616	22,295

PROJECTS FINANCED WITH SPECIAL FUNDS



Earlier this summer, Governor Martin O'Malley visited the Lazy Days Farm in Vienna, Maryland to announce another year of record cover crop enrollment.

2010-2011 WINTER COVER CROP PROGRAM

2010-11 WINTER COVER CROP PROGRAM

During the 2010-2011 planting season, MACS provided Maryland farmers with \$18.3 million to plant a record 400,000 acres of cover crops on their farms. It was by far the largest cover crop planting in the program's history and will go a long way toward helping Maryland meet tough new pollution caps for the Bay.

Planted in the fall following the summer harvest, cover crops are cereal grains such as wheat, rye and barley that grow in cool weather. They help slow down rainwater runoff during the winter, when the soil would otherwise be exposed, while recycling any nutrients remaining in the soil from the previous summer crop. MACS grants help farmers offset seed, labor and equipment costs associated with planting cover crops.

MACS offers a Traditional Cover Crop Program, which does not allow for harvest, and a Commodity Cover Crop Program for farmers who want to harvest their cover crops. During the 2010-2011 planting season, farmers

District	Contracts	Acres	Total Payment Amount
Allegany	10	609	\$ 32,791
Anne Arundel	24	2,328	\$ 87,784
Baltimore County	42	9,454	\$ 389,765
Calvert	22	3,751	\$ 123,745
Caroline	117	30,015	\$ 1,121,276
Carroll	127	21,675	\$ 987,652
Catoctin	6	822	\$ 30,880
Cecil	82	17,436	\$ 727,415
Charles	33	7,119	\$ 356,017
Dorchester	99	33,029	\$ 1,285,413
Frederick	177	29,542	\$ 1,401,159
Garrett	18	866	\$ 69,109
Harford	78	10,970	\$ 525,055
Howard	17	2,143	\$ 86,476
Kent	125	43,425	\$ 1,980,550
Montgomery	36	11,304	\$ 425,386
Prince George's	23	2,568	\$ 116,038
Queen Anne's	119	40,160	\$ 1,685,915
St. Mary's	63	9,035	\$ 388,436
Somerset	48	17,882	\$ 915,341
Talbot	89	45,508	\$ 2,247,038
Washington County	73	12,968	\$ 710,042
Wicomico	85	23,895	\$ 1,276,912
Worcester	54	23,827	\$ 1,316,628
TOTAL	1,567	400,331	\$18,286,823



CONSERVATION RESERVE ENHANCEMENT PROGRAM

Maryland's Conservation Reserve Enhancement Program (CREP) is a federal-state conservation partnership that pays landowners to take environmentally sensitive cropland out of production for 10 to 15 years and install conservation practices that protect water quality and provide wildlife habitat. Established in 1997, the program is now in its 16th year.

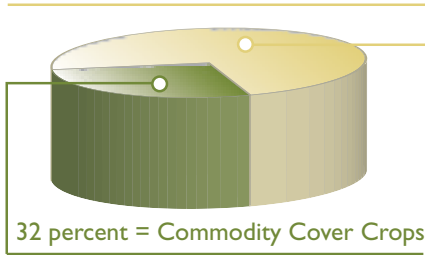
In 2011, members of the CREP partnership worked with landowners to successfully enroll approximately 2,513 acres of environmentally sensitive land. The Chesapeake Bay 2010 Trust Fund provides a one-time \$100/acre state signing incentive to farmers who enroll or re-enroll in the program. In 2011, MACS provided \$249,620 in sign-up bonuses for this acreage.

CREP is a key feature in Maryland's Watershed Implementation Plan (WIP) to place natural filters on private lands. As of June 30, 2011, farmers had exceeded WIP goals for CREP by implementing these BMPs at an average rate of 111 percent. Program participation stood at 71 percent of its statewide enrollment cap of 100,000 acres. Enrollment figures continue to fluctuate from year to year as some contracts expire while others are renewed and new contracts added.

MACS provides CREP participants with cost-share grants to establish conservation practices on environmentally sensitive land that they have agreed to no longer till or graze. In Fiscal Year 2011, MACS provided 157 landowners statewide with \$276,353 in cost-share funds to install streamside buffers, conservation cover, wetlands, livestock crossings and animal fencing on land enrolled in CREP.

ACRES PLANTED IN COVER CROPS

68 percent = Traditional Cover Crops



32 percent = Commodity Cover Crops

who planted traditional cover crops received a base rate of \$40/acre and up to \$55/acre in add-on incentives for using highly valued planting practices. Farmers who harvested their cover crops received \$25/acre with a bonus payment of \$10/acre if they planted rye as the cover crop. Thirty-two percent of the cover crop acreage planted during the 2010-2011 season was harvested.

Funding for the Cover Crop Program is provided by the Chesapeake Bay 2010 Trust Fund and the Chesapeake Bay Restoration Fund.

CREP PROJECTS COMPLETED BY DISTRICT | FISCAL YEAR 2011

District	Completed Projects	MACS Payment
Allegany	1	\$ 3,048
Baltimore County	1	\$ 491
Carroll	30	\$ 66,356
Catoctin	2	\$ 16,626
Dorchester	70	\$ 86,029
Frederick	7	\$ 22,740
Garrett	1	\$ 1,879
Howard	7	\$ 17,305
Kent	20	\$ 22,717
Queen Anne's	5	\$ 5,034
Talbot	4	\$ 2,777
Washington County	8	\$ 31,177
Worcester	1	\$ 174
TOTAL	157	\$276,353



MANURE TRANSPORT

If not properly managed, excess animal manure can threaten the health of streams, rivers and the Chesapeake Bay. Maryland's Manure Transport Program provides grants to help poultry, dairy, beef and other animal producers transport excess manure off their farms. Animal producers with high soil phosphorus levels or more manure than they can handle receive up to \$20 per ton to transport excess manure to alternative use facilities or other operations that can use the manure safely. Cost-share rates are 25 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties on the Eastern Shore.

MANURE TRANSPORT PROGRAM PAYMENT SUMMARY

Fiscal Year	Actual Tons Transported	MACS Payment	Poultry Companies Cost-Share Payment*
FY1999	1,896	\$ 17,992	\$ 17,992
FY2000	13,366	\$ 111,464	\$ 111,464
FY2001	20,477	\$ 195,559	\$ 195,559
FY2002	47,481	\$ 434,610	\$ 420,395
FY2003	28,556	\$ 233,444	\$ 229,645
FY2004	40,755	\$ 295,356	\$ 285,806
FY2005	36,329	\$ 239,196	\$ 200,113
FY2006	69,009	\$ 380,694	\$ 293,728
FY2007	99,297	\$ 490,011	\$ 356,955
FY2008	99,817	\$ 520,357	\$ 370,985
FY2009	119,892	\$ 663,177	\$ 504,024
FY2010	80,899	\$ 469,398	\$ 402,846
FY2011	61,150	\$ 354,012	\$ 294,284
TOTAL	718,924	\$4,405,270	\$3,683,796

*Match provided for poultry litter only.



Delmarva poultry companies provide matching funds to transport poultry litter off farms with high soil phosphorus levels.

**COMPLETED MANURE TRANSPORT PROJECTS
BY COUNTY | FISCAL YEAR 2011**

District	Projects	Tons of Manure	MACS Payment	Poultry Companies Cost-Share*
Baltimore County	1	201	\$1,249	\$0
Caroline	1	243	\$2,188	\$2,188
Cecil	3	4,082	\$11,248	\$0
Dorchester	1	1,017	\$8,457	\$8,457
Frederick	2	6,992	\$11,200	\$0
Garrett	4	5,965	\$16,668	\$0
Queen Anne's	2	492	\$4,396	\$4,396
Somerset	13	7,265	\$61,655	\$61,655
Talbot	3	1,942	\$10,463	\$0
Washington County	4	4,161	\$8,900	\$0
Wicomico	28	15,296	\$103,809	\$103,809
Worcester	23	13,494	\$113,779	\$113,779
TOTAL	85	61,150	\$354,012	\$294,284

**Match provided for poultry litter only.*

In Fiscal Year 2011, Maryland farmers transported 61,150 tons of manure to approved farms and businesses using \$354,012 in state grants. Nearly half of this manure was shipped out of the Chesapeake Bay Watershed. Delmarva poultry companies provided matching funds to transport poultry litter, bringing the total amount of financial support provided to farmers through the Manure Transport Program to \$648,296. Other animal producers received up to 87.5 percent cost-share or a maximum of \$7,500 per farm.

MARYLAND'S SOIL CONSERVATION DISTRICTS—BRINGING MACS TO FARMERS

Maryland's 24 soil conservation districts play a crucial role in helping farmers use MACS to protect natural resources on their farms. Located in every Maryland county, soil conservation districts—with technical guidance from USDA's Natural Resources Conservation Service—help farmers select the right BMPs for their operations, supervise their installation or construction and develop maintenance plans to keep them in good working order. District staff also help farmers calculate costs to install BMPs and apply for state and federal cost-share and low interest loans.

MARYLAND'S 24 SOIL CONSERVATION DISTRICTS

Allegany	301-777-1747, ext. 3
Anne Arundel	410-571-6757
Baltimore County	410-527-5920, ext. 3
Calvert	410-535-1521, ext. 3
Caroline	410-479-1202, ext. 3
Carroll	410-848-8200, ext. 3
Catoctin	301-695-2803, ext. 3
Cecil	410-398-4411, ext. 3
Charles	301-934-9588, ext. 3
Dorchester	410-228-5640, ext. 3
Frederick	301-695-2803, ext. 3
Garrett	301-334-6950, ext. 3
Harford	410-838-6181, ext. 3
Howard	410-489-7987
Kent	410-778-5150, ext. 3
Montgomery	301-590-2855
Prince George's	301-574-5162, ext. 3
Queen Anne's	410-758-3136, ext. 3
St. Mary's	301-475-8402, ext. 3
Somerset	410-651-1575, ext. 3
Talbot	410-822-1577, ext. 3
Washington County	301-797-6821, ext. 3
Wicomico	410-546-4777, ext. 3
Worcester	410-632-5439, ext. 3



**Maryland
Department of Agriculture**

Office of Resource Conservation

Conservation Grants Program
50 Harry S. Truman Parkway
Annapolis, MD 21401
www.mda.state.md.us



Martin O'Malley, Governor | Earl F. Hance, Secretary
Anthony G. Brown, Lt. Governor | Mary Ellen Setting, Deputy Secretary



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