Conservation *Innovations*

MACS

MARYLAND AGRICULTURAL WATER QUALITY COST-SHARE PROGRAM

2007 Annual Report

The MACS *Mission*

Since 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program has been providing farmers with grants to cover up to 87.5 percent of the cost to install conservation measures known as best management practices (BMPs) on their farms to prevent soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay. Cover crops planted after the harvest to absorb residual fertilizers, streamside buffers of grasses and trees planted to protect waterways from sedimentation and farm runoff, and animal waste management systems constructed to help farmers safely handle and store manure resources are among 30 BMPs currently eligible for MACS grants.

New BMPs left to right are: Poultry House Pad, Hulless Barley and Water Control Structure

Conservation *Innovations*

Innovation. It is a word you hear frequently today in news reports about science and technology. But in conservation work, innovation takes on a greater meaning. If agriculture is to be successful in protecting the Chesapeake Bay and its tributaries from soil erosion and nutrient runoff, we need to apply every conventional conservation practice to the land while seeking out new and more efficient ways of running the farm and protecting precious natural resources. In short, we need conservation innovations.

I am pleased to report that in 2007, the Maryland Agricultural Water Quality Cost-Share (MACS) Program approved cost-share eligibility for several innovative conservation practices that will help farmers manage natural resources more efficiently and protect water quality in our streams, rivers and the Chesapeake Bay.

Based on the impressive results of demonstration projects conducted on the Eastern Shore, water control structures have been added to our list of eligible best management practices (BMPs). These structures are built across drainage ditches to prevent gully erosion, manage water to improve crop production and reduce the movement of nitrates to downstream waters.

Heavy use areas or poultry house pads were approved as an eligible conservation practice earlier this year to help growers protect groundwater resources against nutrient runoff during poultry house cleanouts. These concrete pads are installed at poultry house entrances to provide a stable surface for farm equipment, to capture any litter spilled during clean out and to prevent ground and surface water contamination from leached nutrients. This newly approved BMP will be eligible for cost-share in early 2008.

In 1992, MACS pioneered cost-share funding of a small pilot program for cover crops based on their nutrient uptake benefits. In 2007, more than 240,000 acres of farmland statewide were protected by cover crops. We expect that acreage to continue to grow, now that a harvest option and a dedicated funding source have been secured for the program.

This year, several Maryland farmers participated in a unique pilot program to gain experience in growing a new variety of cover crop known as "hulless" barley, which can be harvested as a feedstock for a proposed new ethanol plant in Maryland. This exciting new program could change the way we look at cover crops and ethanol production in the future.

Now in its ninth year, our Manure Transport Program, the first of its kind in the nation, transported a record 99,000 tons of manure away from high risk areas in 2007. Other states—including Georgia, the top poultry producing state in the country—are seeking our advice as they work to improve their poultry litter management programs.

Throughout its history, MACS has been a leader in helping farmers protect soil and water resources by providing conservation grants to install tried and true conservation measures as well as innovative, state-of-the-art practices. The following report more fully describes the many ways that MACS is helping Maryland farmers do their part to protect natural resources for future generations.

Roger Richardson

Roger Richardson
Maryland Secretary of Agriculture

2007 Program Summary

During the year, MACS provided Maryland farmers with $13.1 million in grants to install 2,181 capital and special projects on their farms to control soil erosion, manage nutrients and protect water quality in streams, rivers and the Chesapeake Bay. The figure represents the program's largest annual funding allocation since its inception in 1984.

Farmers who received conservation grants invested more than $1.4 million of their own money into projects that will collectively prevent an estimated 2.7 million pounds of nitrogen and 149,000 pounds of phosphorus from entering Maryland waterways each year, with cover crops accounting for the bulk of the nutrient savings. The projects will also help prevent an estimated 18,281 tons of soil annually and 1,868 tons of manure daily from impacting local streams.

Cover crops, nutrient management services, manure transport, grassed waterways, waste storage structures, watering facilities, livestock fencing, filter strips, grade stabilization structures and dead bird composting facilities were among the most popular BMPs installed during the year with MACS assistance.

To help farmers supplement grant payments on expensive structural BMPs such as animal waste management systems and certain types of conservation equipment, Maryland provides Low Interest Loans for Agricultural Conservation (LILAC) to qualified applicants. Guaranteed by the State Revolving Loan Fund, these loans are offered at three to four percent below market rates and are available at more than 20 lending institutions with local branch offices statewide. In 2007, MACS worked with the Maryland Department of the Environment and soil conservation districts to provide farmers with $1.3 million in loans to help pay for animal waste management systems and manure handling equipment.

District Summary for Capital Projects

FISCAL YEAR 2007

DISTRICT	COMPLETED PROJECTS	PAYMENT AMOUNT
Allegany	5	$ 16,538
Anne Arundel	2	8,926
Baltimore	9	91,574
Calvert	9	59,169
Caroline	20	548,827
Carroll	129	600,458
Catoctin	17	154,636
Cecil	14	154,486
Charles	3	13,489
Dorchester	16	124,199
Frederick	51	266,360
Garrett	12	107,786
Harford	38	306,504
Howard	8	100,481
Kent	60	332,839
Montgomery	7	103,391
Prince George's	1	4,821
Queen Anne's	41	586,843
St. Mary's	21	141,511
Somerset	1	31,758
Talbot	20	151,928
Washington	20	106,974
Wicomico	9	217,154
Worcester	14	261,445
TOTAL	**527**	**$4,492,097**

Program Summary

FISCAL YEAR 2007

	NUMBER OF PROJECTS	FUNDS
Capital Projects Approved		
From State Funds	551	$ 4,872,554
From Federal Funds	7	$ 71,100
TOTAL CAPITAL PROJECTS APPROVED	**558**	**$ 4,943,654**
Capital Projects Completed		
CREP Projects with State Funds	144	$ 338,799
Other Projects with State Funds	364	$ 3,988,093
With Federal Funds	19	$ 165,205
TOTAL CAPITAL PROJECTS COMPLETED	**527**	**$ 4,492,097**
Special Projects Completed		
Cover Crop Projects	1,190	$ 7,689,018
Manure Transport Projects	121	$ 490,011[1]
Nutrient Management Cost-Share	343	$ 405,066
TOTAL SPECIAL PROJECTS COMPLETED	**1,654**	**$ 8,584,095**
TOTAL CAPITAL AND SPECIAL PROJECTS COMPLETED	**2,181**	**$13,076,192**

	NITROGEN	PHOSPHORUS
Pounds of Nutrients Removed Per Year by Capital Projects	**680,000**	**101,000**
Pounds of Nutrients Removed Per Year by Cover Crops	**2,043,485**	**48,082**

	TONS	ACRES OF LAND
Tons of Soil Saved Per Year[2]	**18,281**	**1,218**

	TONS OF MANURE	ANIMAL UNITS[3]
Manure Managed Daily		
Poultry Manure Managed Daily	935	16,615
Dairy Manure Managed Daily	407	9,512
Beef Manure Managed Daily	450	5,962
Other Animal Manure Managed Daily	76	1,482
TOTAL ANIMAL MANURE MANAGED DAILY	**1,868**	**33,571**

[1]Does not include poultry company matching funds
[2]Based on the Revised Universal Soil Loss Equation (RUSLE)
[3]One animal unit = 1,000 lbs. of live animal weight

Livestock fencing keeps animals away from sensitive areas such as streams and newly planted buffers.

Capital Appropriations

FOR FISCAL YEARS 1984-2007

	NUMBER OF PROJECTS	FUNDS
Projects Approved from State Funds	19,810	$ 104,087,096
Projects Approved from Federal Funds	1,878	$ 8,536,979
TOTAL PROJECTS APPROVED	**21,688**	**$112,624,075**
Projects Completed with State Funds	17,273	$ 78,354,530
Projects Completed with Federal Funds	1,957	$ 8,904,592
TOTAL PROJECTS COMPLETED	**19,230**	**$ 87,259,122**

Fiscal Year 2007
Completed MACS Cost-Shared Practices by District

Practice	Allegany	Anne Arundel	Baltimore	Calvert	Caroline	Carroll	Catoctin	Cecil	Charles	Dorchester	Frederick	Garrett
Conservation Cover				1		11	1				2	
Contour Farming						1						
Contour Orchard												
Critical Area Planting				1		2					2	
Dead Bird Composting Facility					9					3		
Diversion					1	1		2			1	
Fencing	2		2	2		14	2	2	1		11	4
Field Border												
Field Windbreak												
Filter Strip					2	5				10	1	
Grade Stabilization Structure			1		4	2		6				
Grassed Waterway		1	1	1		49	6	5	1	1	6	
Heavy Use Area Protection			1	1		3		1	1		6	
Lined Waterway or Outlet				1		1		1				
No Till												
Riparian Forest Buffer						5	1	2		1	1	1
Roof Runoff Structure						3		2	1		10	
Sediment Basin							1				1	
Sediment Control Pond				1		1						
Spring Development	2		3			6	1				1	4
Stream Crossing			1			9	1	1			6	
Strip Cropping, Contour												
Strip Cropping, Field												
Terrace System												
Waste Storage Pond												
Waste Storage Structure					13	4	2	1		3	1	1
Waste Treatment Lagoon												
Wastewater Treatment Strip						3			1			
Water Well	1	1		2		1					2	1
Watering Facility	3		3	3		19	3				5	6
TOTAL	**8**	**2**	**12**	**13**	**29**	**140**	**18**	**23**	**5**	**18**	**56**	**17**

Harford	Howard	Kent	Montgomery	Prince George's	Queen Anne's	St. Mary's	Somerset	Talbot	Washington	Wicomico	Worcester	Total FY2007	Cumulative FY88-07
3		5										23	568
												1	46
												0	2
	1			1		1						8	775
					7		1			6	4	30	836
1						3						9	456
7	1	2	1			1			5			57	897
												0	9
												0	2
3		6			17	2		3		2	5	56	1,535
6		7			5	2		11				44	1,601
4		37	1		3	6		9	1			132	3,954
5	1		2	1	1			1	2			26	263
					1			4				8	340
												0	12
1	1				2			1	9		1	26	1,302
4		2			2	1						25	513
												2	48
1	1	4				4		1				13	1,023
2	2											21	1,082
1	1	2	1	1	1			1	1			27	396
												0	61
												0	69
		2										2	83
												0	36
1	1	2	3		10	1	1		1	7	8	60	1,892
												0	15
												4	18
2						3			3			16	142
6	2					2			5			57	1,750
47	**11**	**69**	**8**	**3**	**49**	**26**	**2**	**31**	**27**	**15**	**18**	**647**	**19,726**

2007 Special Projects

With help from MACS, Maryland farmers nearly doubled the amount of cover crops planted last year. Cover crops help control erosion and protect water quality in winter, when fields are at the greatest risk for nutrient runoff.

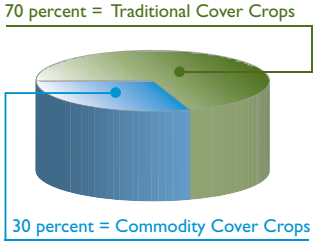
Cover Crop Program

Cover crops have a proven track record of helping farmers control soil erosion and protect water quality in the Chesapeake Bay and its tributaries during the winter months when fields are fallow and at greatest risk for nutrient runoff. MACS provides grants to farmers who plant cover crops of wheat, rye, barley or other small grains following the summer corn, soybean, sorghum, tobacco or vegetable harvest.

During the 2006-2007 planting season, Maryland farmers received $7,689,018 in MACS grants to plant a record 240,410 acres of cover crops statewide—nearly double the amount of cover crops planted the previous year. In addition to the Traditional Cover Crop Program, which does not allow for harvest, a Commodity Cover Crop Program was offered to farmers interested in harvesting their cover crops. The use of manure and fertilizer is restricted in both programs.

Cost-share rates for the Traditional Cover Crop Program ranged from $30/acre to $50/acre depending on how early farmers were able to plant their cover crops. Farmers who participated in the Commodity Cover Crop Program received $20/acre in cost-share since this program offers a harvest option. Many of these farmers also participated in a pilot program to enhance the value of cover crops by growing a new variety of hulless barley that not only locks nutrients in place, but can serve as a feedstock for a proposed new ethanol plant in Maryland when harvested.

Acres Planted in Cover Crops



2006/2007 Winter Cover Crop Program

DISTRICT	APPLICATIONS	ACRES	TOTAL PAYMENT AMOUNT
Allegany	7	147	$ 4,028
Anne Arundel	15	1,417	36,258
Baltimore	23	3,117	60,726
Calvert	18	1,774	40,231
Caroline	99	17,082	509,350
Carroll	90	14,796	440,298
Catoctin	39	5,531	150,230
Cecil	60	10,965	337,133
Charles	28	4,867	154,080
Dorchester	87	23,696	797,972
Frederick	109	14,914	454,092
Garrett	8	420	12,534
Harford	53	7,138	250,673
Howard	10	853	19,716
Kent	103	21,354	724,841
Montgomery	30	8,939	268,700
Prince George's	31	2,712	82,144
Queen Anne's	88	23,173	740,670
St. Mary's	40	5,101	153,194
Somerset	44	11,670	330,123
Talbot	77	27,091	966,790
Washington	33	4,850	155,805
Wicomico	52	13,852	497,922
Worcester	46	14,951	501,508
TOTAL	**1,190**	**240,410**	**$7,689,018**

Channel composters help poultry farmers dispose of dead birds in an environmentally sound manner. Animal waste and poultry mortality are addressed by nutrient management plans.

Nutrient Management Services

District Summary for Nutrient Management Cost-Share

FISCAL YEAR 2007

DISTRICT	COMPLETED PLANS	ACRES	PAYMENT AMOUNT
Allegany	0	0	$ 0
Anne Arundel	18	4,813	16,918
Baltimore	8	2,868	8,153
Calvert	0	0	0
Caroline	32	12,621	35,284
Carroll	17	13,708	16,793
Catoctin	0	0	0
Cecil	26	12,031	30,226
Charles	0	0	0
Dorchester	27	22,821	43,803
Frederick	74	25,909	76,931
Garrett	1	202	1,000
Harford	21	9,348	25,988
Howard	3	1,876	4,559
Kent	52	43,688	64,847
Montgomery	9	9,520	15,416
Prince George's	1	6	286
Queen Anne's	10	6,392	13,640
St. Mary's	12	2,500	10,776
Somerset	3	607	2,969
Talbot	10	4,529	12,024
Washington	1	113	594
Wicomico	13	7,747	19,358
Worcester	5	2,363	5,501
TOTAL	**343**	**183,662**	**$405,066**

Maryland farmers are required by state law to follow nutrient management plans when applying fertilizer, manure or other nutrient sources to their crop fields. These plans must be prepared by a consultant or farmer who is trained and certified by MDA to develop an approved plan for his/her operation. MACS provides financial assistance to farmers who hire private, non-government consultants to develop or update nutrient management plans for their farms. The reimbursement rate is 87.5 percent of the cost of the plan, up to $3,000 per operation. Grants cover one nutrient management plan/update per operator, per year. Certain out of pocket expenses incurred by farmers certified to develop their own plans and operators whose plans are developed by University of Maryland Cooperative Extension consultants are also covered.

During Fiscal Year 2007, MACS issued $405,066 in cost-share grants to 343 farmers who hired private consultants to develop nutrient management plans for 183,662 acres of farmland. This represented a 12 percent increase in cost-share provided for nutrient management services over the previous year. Due to budget reductions and high demand, the program exhausted its funding budget in May 2007 and temporarily stopped accepting new cost-share applications.

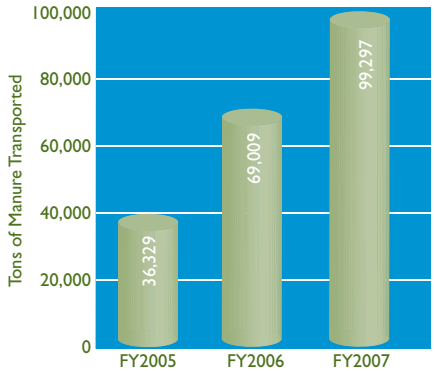
In Fiscal Year 2007, the Manure Transport Program helped farmers with excess manure move a record 99,000 tons of manure to other farms or facilities that could use this valuable resource without harm to the environment.

Manure Transport

In 1999, Maryland became the first state in the nation to provide cost-share funds to help farmers transport excess manure off their farms. Poultry, dairy, beef and other animal producers with high soil phosphorus levels or inadequate acreage to spread their manure may apply for cost-share grants of up to $20 per ton to transport excess manure to other facilities that can use the product without harm to the environment. Cost-share rates are 20 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties due to environmental concerns posed by the large number of poultry operations in this region.

In Fiscal Year 2007, the Transport Program provided farmers with $490,011 in state grant payments to transport a record 99,297 tons of manure to other farms or businesses that could use the product safely. Cost-share funds to re-locate poultry litter were matched by Delmarva poultry companies, bringing the total amount of financial support provided to transport excess manure to $846,966. Participation in the program has increased steadily over the last three years, as additional funding became available.

Recent Growth of Manure Transport Program



Manure Transport Program

FISCAL YEAR	TONS TRANSPORTED	PAYMENTS FOR TRANSPORT	
		STATE COST-SHARE	POULTRY COMPANIES COST-SHARE*
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
TOTAL	**357,166**	**$2,398,326**	**$2,111,657**

*Match provided for poultry litter only. Other manure transport cost-shared by MDA at up to 87.5 percent.

Tree shelters help protect newly planted trees from rodent, deer and bear damage. MACS provides farmers with cost-share funds to plant streamside buffers of trees, shrubs or grasses on environmentally-sensitive land.

Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) is a voluntary federal-state initiative that pays landowners to take environmentally sensitive cropland out of production for 10-15 years and plant vegetative streamside buffers, create wildlife habitat or establish wetlands to protect local streams. Landowners have the option of selling a permanent easement on their land to the State of Maryland.

Sign up for CREP is ongoing and continues until 100,000 acres are enrolled. To date, approximately 74,000 acres have been enrolled. When fully implemented, CREP will help achieve Maryland's water quality goals by reducing an estimated 5,750 tons of nitrogen and 550 tons of phosphorus from entering Maryland waterways each year. Sediment loadings to the Bay will also be reduced by an estimated 200,000 tons annually.

In Fiscal Year 2007, MACS provided 144 landowners throughout the state with $338,800 in cost-share funds to install riparian buffers and conservation cover on CREP enrolled lands.

Maryland's Soil Conservation Districts—Bringing MACS to Farmers

Maryland's 24 soil conservation districts promote and deliver MACS to local farmers. 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 while designing and supervising their installation or construction and developing maintenance plans to keep them in good working order. Agricultural planners working in soil conservation districts also help farmers calculate costs to install BMPs and apply for state and federal cost-share and low interest loans.

Maryland
Department of Agriculture
Office of Resource Conservation

Conservation Grants Program
50 Harry S. Truman Parkway
Annapolis, MD 21401

www.mda.state.md.us

Soil Conservation Districts

Allegany	301-777-1747, ext. 4
Anne Arundel	410-571-6757
Baltimore County	410-666-1188, 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	301-334-6951
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	301-797-6821, ext. 3
Wicomico	410-546-4777, ext. 3
Worcester	410-632-5439, ext. 3

Financial assistance provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA).