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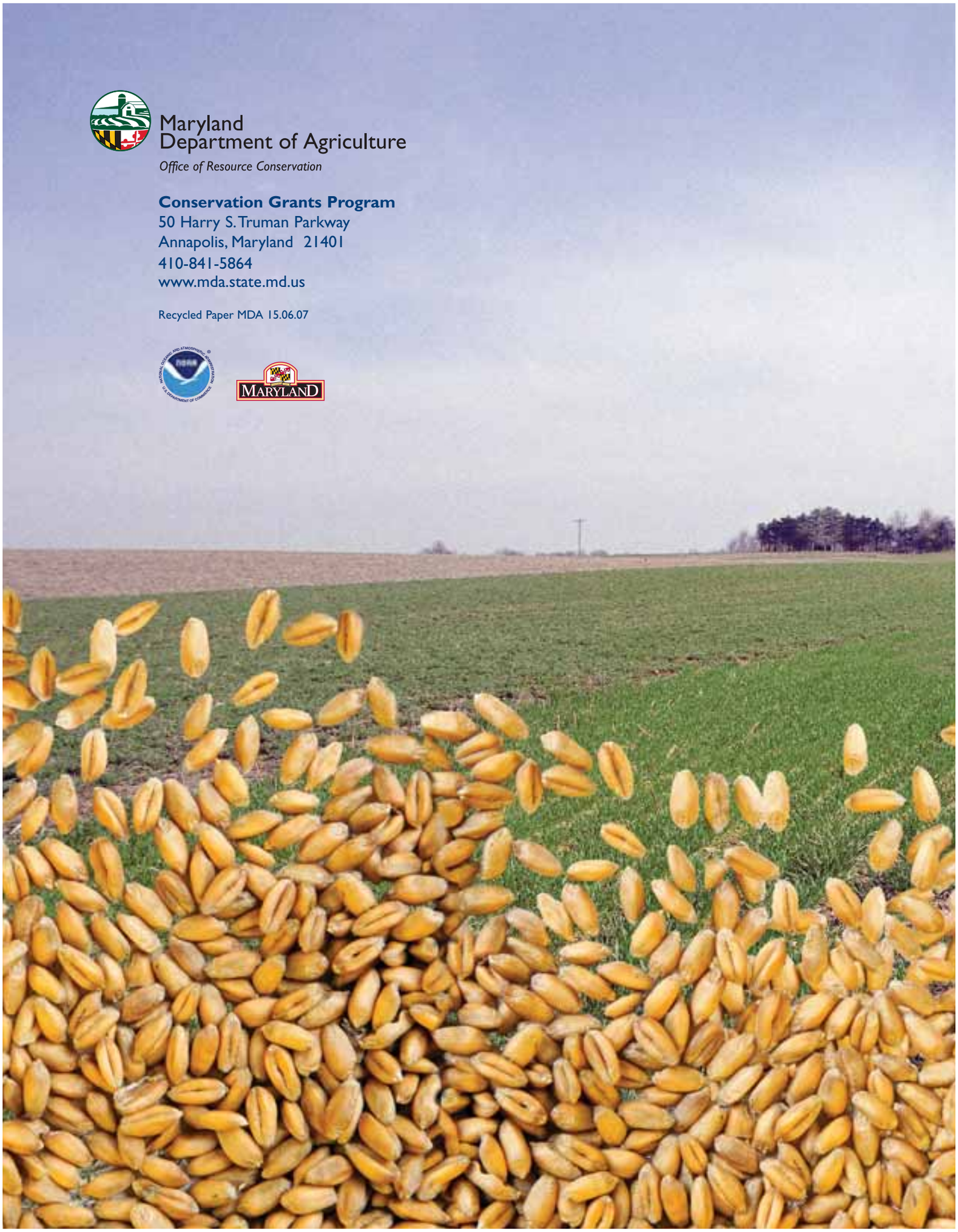

Maryland
Department of Agriculture
Office of Resource Conservation

Conservation Grants Program
50 Harry S. Truman Parkway
Annapolis, Maryland 21401
410-841-5864
www.mda.state.md.us

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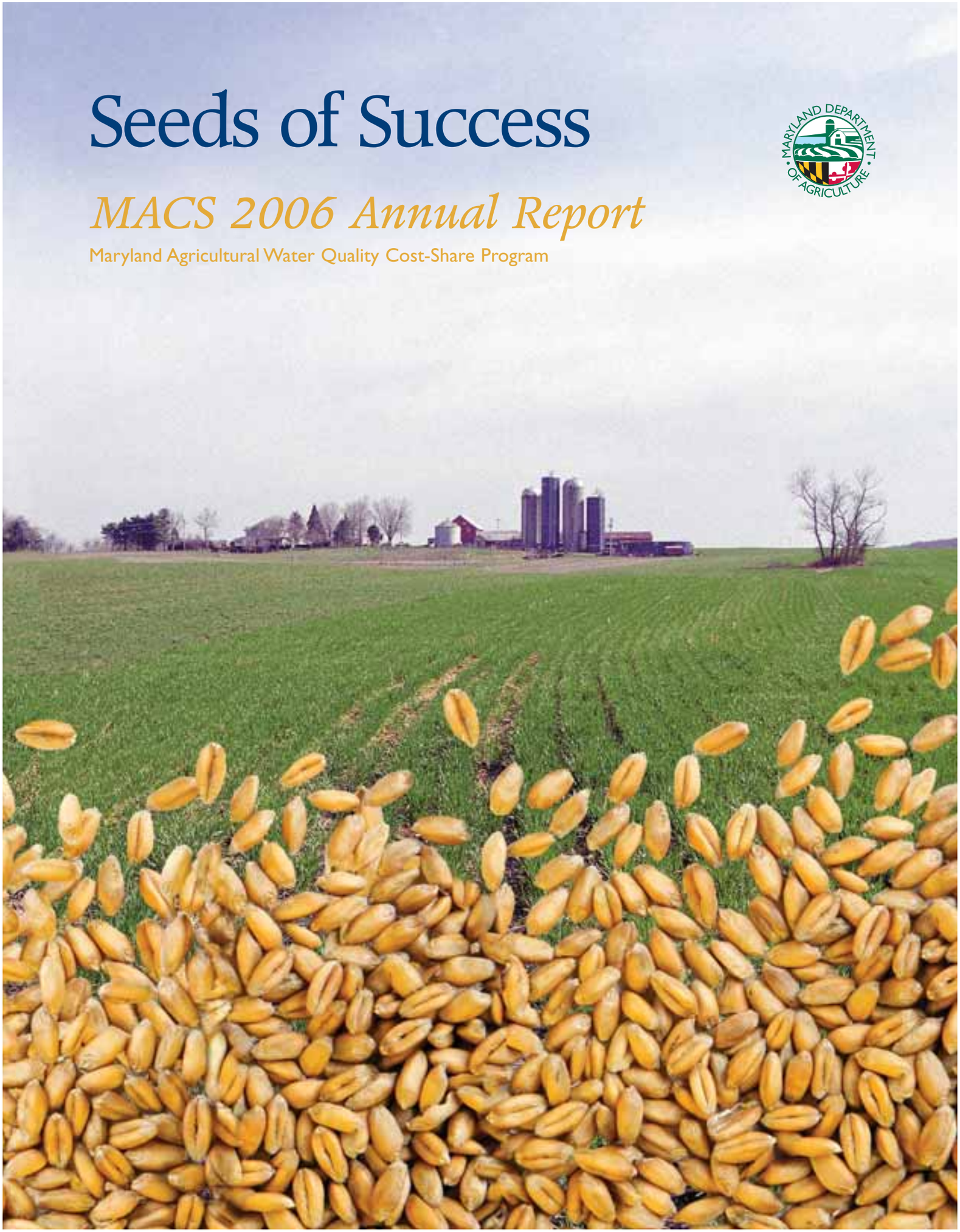
Seeds of Success

MACS 2006 Annual Report

Maryland Agricultural Water Quality Cost-Share Program



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Field strips help reduce erosion on slopes.

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. Among 30 BMPs currently eligible for MACS grants are 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.

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Growing Success

In Fiscal Year 2006, Maryland farmers responded overwhelmingly to improvements made to the cover crop program, helping to ensure the growing success of this program in protecting farm fields from soil erosion and waterways from agricultural runoff during winter. All told, during the 2005-2006 planting season, Maryland farmers planted 128,600 acres of cover crops throughout the state, nearly three times the amount planted the year before. The tremendous increase in program participation is due to a number of factors, including program improvements recommended by farmers and implemented by MDA during the year and a dedicated funding source provided by the Chesapeake Bay Restoration Fund.

But the good news for the cover crop program and conservation in general does not end there. Funding for this year's cover crop program will increase from $5 million to $8 million.

Additionally, in May of this year, the Maryland General Assembly passed the Agricultural Stewardship Act of 2006, a far reaching bill that will increase funding for agricultural conservation and farmland preservation programs in Maryland.

Among the bill's provisions are modifications that allow farmers to harvest cover crops and additional funding for conservation practices financed through the Maryland Agricultural Water Quality Cost-Share (MACS) Program. Moreover, some Maryland farmers will participate in a pilot program to enhance the value of cover crops by growing a new variety of "hulless" barley that will protect water quality and serve as a feedstock for a proposed new ethanol plant in Maryland.

Looking ahead, Maryland farmers have received program approval to plant an unprecedented 290,000 acres of traditional and commodity cover crops this fall. This record acreage will prevent an estimated 1.8 million pounds of nitrogen and 45,000 pounds of phosphorus from entering the Chesapeake Bay and its tributaries this winter.

In other areas, MACS continued to adjust its programs and services to respond to the needs of farmers. To help farmers cover the rising cost of installing best management practices, MDA received legislative authorization to raise its funding caps in 2006. Effective October 1, 2006, the cost-share ceiling for animal waste treatment and containment projects will increase from $75,000 per project to $100,000 per project. Funding caps for the remaining BMPs will increase from $20,000 per project to $35,000 per project.

In order to provide farmers with more choices and more opportunities to protect natural resources on their farms, MACS is evaluating the cost effectiveness and environmental benefits of several promising new practices that are currently eligible for federal cost-share funding. By providing farmers with the financial assistance they need to install effective conservation practices and developing new partnerships, MACS is helping farmers plant the seeds of success for Maryland's natural resources and the Chesapeake Bay.

Lewis R. Riley
Maryland Secretary of Agriculture

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Waste storage structures allow farmers to protect stored manure from rainwater runoff until it can be applied safely to fields as a fertilizer.

2006 *Program Summary*

In Fiscal Year 2006, Maryland farmers received $9.4 million in grants from MACS to install more than 1,600 projects on their farms to control soil erosion, manage nutrients and protect water quality in streams, rivers and the Chesapeake Bay. This figure represents a substantial increase over last year due in part to special funding provided to the cover crop program by the Chesapeake Bay Restoration Fund.

Farmers who received cost-share grants from MACS in 2006 invested more than $1.3 million of their own money into a range of capital and special projects that will collectively prevent an estimated 1.2 million pounds of nitrogen and 28,500 pounds of phosphorus from entering Maryland waterways each year. Cover crops were responsible for 90 percent of the nitrogen savings. The BMPs installed this year will also help prevent an estimated 14,026 tons of soil annually and 1,276 tons of manure daily from impacting local streams. Cover crops, nutrient management services, grassed waterways, manure transport, waste storage structures, riparian forest buffers, filter strips and watering facilities are 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 typically offered at three to four percent below market rates and are available at more than 20 lending institutions with local branch offices statewide. In 2006, MACS worked with the Maryland Department of the Environment and soil conservation districts to provide farmers with more than $2 million in LILAC loans. The funds were used to help pay for agricultural waste systems, manure handling equipment, conservation tillage equipment and irrigation systems.

District Summary for Capital Projects *Fiscal Year 2006*

District	Completed Projects	Payment Amount
Allegany	15	$ 46,621
Anne Arundel	2	9,827
Baltimore	14	145,778
Calvert	2	6,482
Caroline	28	510,376
Carroll	120	579,842
Catoctin	14	83,968
Cecil	16	137,998
Charles	8	25,743
Dorchester	20	262,608
Frederick	46	314,859
Garrett	8	28,227
Harford	19	106,366
Howard	9	34,141
Kent	71	180,640
Montgomery	7	43,206
Prince George's	3	24,605
Queen Anne's	36	207,992
Saint Mary's	14	89,380
Somerset	11	241,529
Talbot	18	123,011
Washington	13	187,311
Wicomico	22	324,985
Worcester	11	212,537
TOTAL	**527**	**$3,928,032**

Program Summary *Fiscal Year 2006*

Capital Projects Approved	Number of Projects	Funds
From State Funds	679	$ 5,723,881
From Federal Funds	14	74,103
TOTAL CAPITAL PROJECTS APPROVED	**693**	**$ 5,797,984**
Capital Projects Completed		
CREP Projects With State Funds	74	$ 172,295
Other Projects With State Funds	425	3,500,968
With Federal Funds	28	254,770
TOTAL CAPITAL PROJECTS COMPLETED	**527**	**$ 3,928,033**

Pounds of Nutrients Removed Per Year	Nitrogen	Phosphorus
	84,156	2,805

Special Projects Completed		
Cover Crop Projects	723	$ 4,744,246
Manure Transport Projects	105	380,694*
Nutrient Management Cost-Share	314	352,963
TOTAL SPECIAL PROJECTS COMPLETED	**1,142**	**$ 5,477,903**

Pounds of Nutrients Removed Per Year by Cover Crops	Nitrogen	Phosphorus	Acres
	1,088,000	25,728	128,638
TOTAL CAPITAL AND SPECIAL PROJECTS COMPLETED	**1,669**		**$ 9,405,936**

Tons of Soil Saved Per Year**	Tons	Acres of Land
	14,026	1,518

Manure Managed Daily in Storage Structures	Tons of Manure	Animal Units***	Pounds of Nitrogen	Pounds of Phosphorus
Poultry Manure Managed Daily	386	26,887	28,036	8,905
Dairy Manure Managed Daily	626	15,454	6,954	1,082
Beef Manure Managed Daily	204	6,462	2,003	711
Other Animal Manure Managed Daily	60	1,943	—	—
TOTAL ANIMAL MANURE MANAGED DAILY	**1,276**	**50,746**	**36,993**	**10,698**

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

Capital Appropriations *Fiscal Years 1984-2006*

	Number of Projects	Funds
Projects Approved from State Funds	19,259	$ 99,214,542
Projects Approved from Federal Funds	1,871	8,465,879
TOTAL PROJECTS APPROVED	**21,130**	**$107,680,421**
Projects Completed with State Funds	16,765	$ 74,027,638
Projects Completed with Federal Funds	1,938	8,739,387
TOTAL PROJECTS COMPLETED	**18,703**	**$ 82,767,025**

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Completed MACS Cost-Shared Practices by District *Fiscal Year*

Practice	Allegany	Anne Arundel	Baltimore	Calvert	Caroline	Carroll	Catoctin	Cecil	Charles	Dorchester	Frederick	Garr
Conservation Cover						9		1	1			
Contour Farming						2		1				
Contour Orchard												
Critical Area Planting						3					2	
Dead Bird Composting Facility					6					7		
Diversion	1				1	4					1	
Fencing	5		6			13	1	1	1		3	2
Field Border												
Field Windbreak												
Filter Strip				1		9		1		9		
Grade Stabilization Structure					13		1	5	1			
Grassed Waterway		1	6	1	2	55	8	6	3		8	
Heavy Use Area Protection	1		2		2	7			1		4	
Lined Waterway or Outlet												
No Till												
Riparian Forest Buffer	4		4			14		1		3	2	3
Roof Runoff Structure	3				1	2		3	1		12	
Sediment Basin												
Sediment Control Pond					1	1						
Spring Development	1		1			1	3				5	3
Stream Crossing	1					1	1				1	
Strip Cropping, Contour												
Strip Cropping, Field											2	
Terrace System												
Waste Storage Pond												
Waste Storage Structure	1		1		9	3		2	1	8	2	
Waste Treatment Lagoon												
Wastewater Treatment Strip	1					3					1	
Water Well	1	1						1	1			
Watering Facility	3	1	1			5	4	1	1		9	2
Total	**22**	**3**	**21**	**2**	**35**	**132**	**18**	**23**	**11**	**27**	**52**	**10**

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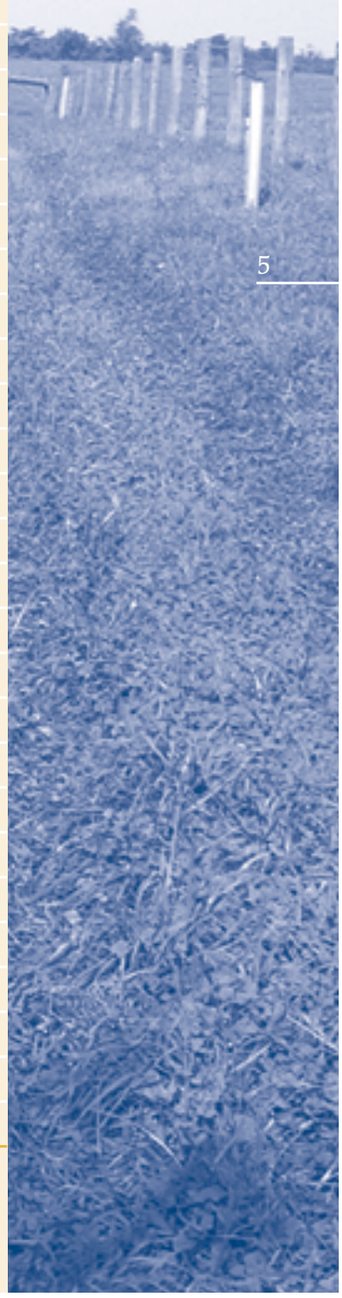
ar 2006

Garrett	Harford	Howard	Kent	Montgomery	Prince George's	Queen Anne's	St. Mary's	Somerset	Talbot	Washington	Wicomico	Worcester	Total FY2006	Cumulative FY88-06
			4	1									16	545
													3	45
													0	2
										2			7	767
						3		7			7	7	37	806
							2						9	447
2	4	3		1	1	1	1			7			50	840
													0	9
													0	2
			15			21			2		7	2	67	1,479
	1		11		2	3		3	12				52	1,557
	1	1	42	1	2	6	6		8	1			158	3,822
	3	1	2	1		1				4			29	237
					1	3			5				9	332
													0	12
3	5	1	6	3		2	1				4	2	55	1,276
	2		1			1			1	2	1		30	488
													0	46
			3				1						6	1,010
3										1			15	1,061
	1	1						1		1			8	369
													0	61
													2	69
			2										2	81
													0	36
	1	2	2			3	1	7		2	9	7	61	1,832
													0	15
	1												6	14
	1				1		2						8	126
2	2	1			1		1			2			34	1,693
10	**22**	**10**	**88**	**7**	**8**	**44**	**15**	**18**	**28**	**22**	**28**	**18**	**664**	**19,079**



During the 2005-2006 planting season, farmers planted 128,638 acres of cover crops. This will prevent an estimated one million pounds of nitrogen from entering the Bay.

2006 Special Projects

Cover Crop Program

Cover crops are widely recognized as one of the most cost-effective and environmentally promising ways to reduce agricultural runoff into the Chesapeake Bay and its tributaries. Planted in the fall following the summer harvest, cover crops are cereal grains such as oats, rye, wheat and barley that grow in cool weather. They help slow down rainwater runoff during the winter when soil would otherwise be exposed, while recycling any nutrients remaining in the soil from the previous summer crop.

During the 2005-2006 planting season, Maryland farmers planted 128,638 acres of cover crops statewide—nearly three times the amount of cover crops planted the previous year—using a record $4.7 million in MACS grants. In addition, sign up for the 2006-2007 cover crop program—which ran from June 12 to July 28 of this year—exceeded 450,000 acres.

The tremendous growth of the cover crop program in recent years is due to commitments made by MDA and the Maryland legislature to provide a program that is straightforward, scientifically sound and cost-effective. Moreover, new funding has enabled MDA to offer farmers more attractive cost-share rates to plant their cover crops early, when the environmental benefits are the greatest. Farmers who planted their cover crops by October 1 received $50 an acre in cost-share funds. During the 2005-2006 planting season, this figure included a $10 early planting bonus provided by the U.S. Department of Agriculture's Natural Resources Conservation Service. Farmers who planted at later dates received cost-share grants ranging from $25 to $40 an acre depending on when they got their cover crops in the ground.

Program improvements recommended by farmers and implemented by MDA—such as split reimbursement payments dispersed in the fall and spring, a higher enrollment cap of 500 acres, uniform statewide planting dates and an online application that could be faxed to local soil conservation districts for processing—have contributed to the program's growing success and popularity.

Winter Cover Crop Program *2005/2006*

District	Applications	Acres	Payment Amount
Allegany	5	222	$6,893
Anne Arundel	4	459	$16,258
Baltimore	10	777	$26,035
Calvert	4	419	$13,890
Caroline	51	6,239	$226,079
Carroll	42	4,495	$165,695
Catoctin	15	2,828	$99,299
Cecil	35	5,342	$194,669
Charles	18	2,865	$111,129
Dorchester	57	14,600	$564,264
Frederick	57	6,655	$231,282
Garrett	7	203	$7,858
Harford	35	4,195	$160,472
Howard	4	166	$6,355
Kent	81	14,872	$550,477
Montgomery	19	6,250	$230,443
Prince George's	14	1,653	$59,143
Queen Anne's	64	11,476	$391,803
St. Mary's	26	2,270	$77,883
Somerset	31	6,590	$245,763
Talbot	52	14,005	$540,888
Washington	18	1,529	$57,761
Wicomico	40	11,894	$432,033
Worcester	34	8,634	$327,874
TOTAL	**723**	**128,638**	**$4,744,246**

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Nutrient management plans, required by Maryland law, help farmers manage fertilizers and animal wastes more efficiently.

District Summary for Nutrient Management Cost-Share *Fiscal Year 2006*

District	Applications	Acres	Payment Amount
Allegany	0	0	0
Anne Arundel	13	3,160	8,639
Baltimore	19	6,056	18,254
Calvert	2	568	2,240
Caroline	32	13,343	38,345
Carroll	25	5,049	18,111
Catoctin	1	759	1,991
Cecil	27	14,223	33,375
Charles	1	1	438
Dorchester	22	17,414	34,374
Frederick	61	17,527	60,151
Garrett	2	255	1,279
Harford	15	4,959	14,083
Howard	12	4,063	12,187
Kent	30	22,312	39,235
Montgomery	10	6,186	12,936
Prince George's	0	0	0
Queen Anne's	6	3,312	6,825
St. Mary's	2	1,679	2,646
Somerset	8	2,484	9,763
Talbot	16	6,696	21,157
Washington	0	0	0
Wicomico	4	3,028	6,288
Worcester	6	7,679	10,646
TOTAL	**314**	**140,753**	**$352,963**

Nutrient Management Services

Maryland law requires farmers with gross annual incomes of $2,500 or more or livestock operations with 8,000 pounds or more of live animal weight to operate their farms using an approved nutrient management plan that protects waterways from excess crop fertilizers and animal wastes. MACS provides financial assistance to farmers who hire private, non-government consultants to develop or update a nutrient management plan 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 2006, MACS issued $352,963 in cost-share grants to 314 farmers who hired private consultants to develop nutrient management plans for 140,753 acres of farmland. By the end of calendar year 2006, 94 percent of Maryland's farmland or 1.25 million acres were being protected by nutrient management plans.

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Manure Transport

Managing manure resources is vital to protecting water quality in the Chesapeake Bay and its tributaries. The 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 inadequate land to spread their manure can receive cost-share assistance of up to $20 per ton to transport excess manure to other farms or alternative use facilities that can use the product in an environmentally sound manner. Cost-share rates are 20 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties due to the large number of poultry operations in this region and their potential impact on water quality.

In Fiscal Year 2006, the Manure Transport Program provided farmers with $380,694 in state grant payments to transport 69,009 tons of manure to other areas that could use the product safely. Cost-share funds to transport poultry litter, which accounts for just over half of the manure transported, were matched by Delmarva poultry companies, bringing the total amount of financial support provided to $674,422. Participation in the program by dairy farmers also more than doubled over Fiscal Year 2005 levels, with $87,000 in grants awarded to these operations.

MACS helps cover the cost of transporting excess manure from farms with high soil phosphorus levels to other farms or facilities that can use the manure safely.

Manure Transport Program

Fiscal Year	Approved Transport Projects		Payments for Transport		
	Tons	Cost-Share Amount	Actual Tons Transported	Poultry Companies Cost-Share*	State Cost-Share
FY1999	5,500	$ 110,460	1,896	$ 17,992	$ 17,992
FY2000	19,901	330,279	13,366	111,464	111,464
FY2001	36,930	706,341	20,477	195,559	195,559
FY2002	65,522	1,251,396	47,481	420,395	434,610
FY2003	47,527	757,911	28,556	229,645	233,444
FY2004	46,155	698,817	40,755	285,806	295,356
FY2005	107,834	1,056,850	36,329	200,113	239,196
FY2006	105,142	1,209,490	69,009	293,728	380,694
TOTALS	**434,511**	**$6,121,544**	**257,869**	**$1,754,702**	**$1,908.315**

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

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Special funding is available through the Conservation Reserve Enhancement Program to help farmers install conservation measurers that prevent runoff and improve water quality.

Conservation Reserve Enhancement Program

In 1997, Maryland became the first state to participate in the Conservation Reserve Enhancement Program (CREP), a voluntary federal-state initiative that pays landowners to take environmentally sensitive cropland out of production for 10-15 years and plant vegetative buffers, create wildlife habitat or establish wetlands to protect local streams. In certain instances, landowners have the option of selling a permanent easement on their land to the State of Maryland.

Signup for CREP is ongoing and will continue through December 31, 2007 or 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 2006, MACS provided 74 landowners with $172,295 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 play an important role in promoting and delivering MACS assistance to local farmers. Located in every Maryland county, soil conservation districts—with technical support from USDA's Natural Resources Conservation Service—help farmers select the right BMPs for their operations while 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.