



# *Celebrate Maryland Agriculture!*

The People | The Land | The Community

Maryland Department of Agriculture 2007 Annual Report





### **Mission Statement**

To provide leadership and support to agriculture and the citizens of Maryland by conducting regulatory, service and educational activities that assure consumer confidence, protect the environment, and promote agriculture.

### **Vision Statement**

To achieve excellence in programs and in services that preserve and protect agricultural resources and the environment, promote profitable agriculture and consumer confidence, and enhance the quality of life for all Marylanders.



*Governor Martin O'Malley*



*Lt. Governor Anthony G. Brown*



*Secretary Roger L. Richardson*



*Deputy Secretary Earl F. Hance*



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Front cover: Main photo: Albert Schramm. Insets left to right: Ryan, Jenny and Chris Rhodes, Queen Anne’s County – poultry (Photo: Mark Odell). Ed Boyce and Sarah O’Herron with son Dennis Boyce, Black Ankle Vineyards, Frederick County – wine grapes (Photo: Ted Hull). Logan and Alecia Bender, children of Robert and Alice Bender, Cove Run Farm, Garrett County – dairy and agritourism (Photo: Mark Odell).

Back cover: Main photo: Governor’s Photography Office. Insets left to right: Peggy Campanella, left, Harris Orchard, Anne Arundel County – fruit (Photo: Tom Nappi). Pam Saul, Montgomery County – equine (Photo: Edwin Remsburg). Bernie Kohl, Angelica Nurseries, Inc. – Kent County (Photo: Anthony DiPanise).

# Maryland Highlights for 2006

Numbers of Farms	12,000
Average Size Farm - Acres	170
Land in Farms - Acres	2,035,000
Gross Farm Income	\$2,007,170,000
Farm Production Expenses	\$1,051,932,000
Total Net Farm Income	\$594,569,000
Gross Farm Income Per Farm	\$167,264
Net Farm Income Per Farm	\$49,547

## Poultry, Livestock and Products

Commodity	Marketing Production	Unit	Cash Receipts <sup>1</sup>
Broilers	1,228,800,000	lbs.	\$534,886,000
Milk	1,161,000,000	lbs.	186,624,000
Cattle & Calves	83,089,000	lbs.	81,842,000
Hogs	20,126,000	lbs.	6,920,000
Eggs	798,000,000	eggs	29,907,000
Sheep and Lambs	1,225,000	lbs.	1,018,000
<b>Total Poultry, Livestock &amp; Products</b>			<b>\$872,143,000</b>

## Crops

Commodity	Acres Harvested	Production	Unit	Cash Receipts <sup>1</sup>
Corn for Grain	425,000	60,350,000	bu.	\$120,785,000
Soybeans	465,000	15,810,000	bu.	86,234,000
Corn for Silage	60,000	1,020,000	tons	---
Wheat	125,000	8,500,000	bu.	29,970,000
Hay, All	205,000	569,000	tons	30,943,000
Barley	32,000	2,784,000	bu.	4,163,000
Potatoes	2,900	928,000	cwt.	8,854,000
Vegetables	—	—		63,229,000
Greenhouse/Nursery	—	—		355,479,000
Apples	—	34,000,000	lbs.	6,164,000
Peaches	—	3,650	tons	3,739,000
<b>Total All Crops<sup>2</sup></b>				<b>\$725,556,000</b>
<b>Total All Commodities<sup>2</sup></b>				<b>\$1,597,700,000</b>

<sup>1</sup> Preliminary estimates by the Economic Research Service, USDA. <sup>2</sup> Total includes other commodities not published separately. <sup>3</sup> Excludes potatoes.

## Counties Ranked by Production

Commodity	1	2	3	4	5
Corn, Grain	Queen Anne's	Kent	Worcester	Talbot	Caroline
Soybeans	Queen Anne's	Dorchester	Talbot	Kent	Caroline
Barley	Caroline	Kent	Dorchester	Frederick	Queens Anne's
Wheat	Queen Anne's	Caroline	Frederick	Kent	Carroll
All Hay	Frederick	Garrett	Carroll	Washington	Harford
Milk	Frederick	Washington	Carroll	Kent	Cecil

**Dear Friends,**

It has been my great honor to work with Secretary Roger Richardson, Deputy Secretary Buddy Hance, and each and every one of you over the past year to advance and enhance agriculture in our State. The Maryland that we love today has been shaped throughout history by its greatest stewards, our farmers. To continue that legacy of strong Maryland agriculture, our Administration is working to come together in collaboration with you. Not only because it is important, not only because it is the right thing to do, but because our future depends on it.

We have made great strides despite the difficulties we face together, including the devastating drought, constant growth pressures and our nation's turbulent economy. We look forward to continuing to make progress by protecting the priorities of our people across this great State: strengthening our middle class, our family-owned businesses and family farms, as well as our commitment to public safety and public education, and expanding opportunity for more people rather than fewer.

Looking ahead to Maryland's future, we must also work to make our state more sustainable – for the land, the water, the air and the Bay that we share. Together, we must upgrade water and wastewater treatment plants, protect and expand forest cover and land preservation, and improve best management practice research and implementation.

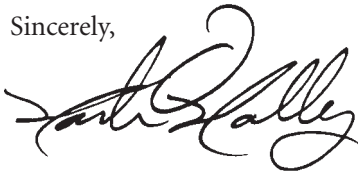
That better future that we seek for our children and our grandchildren is also firmly dependant upon our vital farming traditions. So we must work in collaboration to ensure that our young people can make a living from the same land that has been in the hands of the generations that came before them.

In these challenging economic times, our State must turn toward its strengths, and farming has always been one of our greatest. You deserve a government that works as hard as you do – that partners with you to make our farms more profitable, to make our State more sustainable, and to provide for our kids the opportunity to carry this timeless tradition forward.

Benjamin Franklin called farming a continuous miracle. So to keep that essential part of our state, that miracle, strong in Maryland, in order to help you do your important work, our State has a responsibility to make farming viable and ever more profitable.

Thank you for allowing me to serve you. Together, we are moving Maryland agriculture forward to a better future.

Sincerely,



Martin O'Malley  
Governor



During a visit to the Holland family's Chesapeake Bay Farm market in Berlin, Governor O'Malley learns about their venture making and selling ice cream and cheese from the milk they produce at their Worcester County dairy.

**A**s we move into 2008, let's take some time to celebrate agriculture and its importance to our lives. Farming is at the root of who we are today and who we will be in the future. These are exciting times for Maryland agriculture.



In the past year, we welcomed Governor Martin O'Malley who is deeply invested in seeing that agriculture remains a strong part of our economy and that Maryland farming is profitable. Together, the Governor and MDA advocated for Maryland's agricultural interests in the 2007 Farm Bill and continue to follow it.

At the same time, we have been working aggressively on the vast majority of recommendations from the Statewide Plan for Agricultural Policy and Resource Management (Ag Forum) and the O'Malley Transition report. We have already accomplished more than one third of the 109 recommendations, improving land preservation, farm profitability and agricultural research. In addition, MDA is working with partners to pursue the proposals of task forces to sustain the dairy industry, open markets for biofuels, address agricultural tax structures, and expand the use of crop insurance.

As an industry, we responded rapidly and strongly to the dual challenges of the gypsy moth and emerald ash borer infestations, as well as the severe drought. Together with local governments, this year the Maryland Agricultural Land Preservation Foundation permanently preserved an additional 15,000 acres for a total of more than 265,000 acres preserved since the start of the program.

Looking toward the future, we will continue to protect the environment, to maintain our local food supply, to uphold fairness in the marketplace, and to ensure that agriculture remains a strong economic force in Maryland's future. To further these goals in 2008, Marylanders can expect to see a strengthening of MDA's education, regulation, preservation, promotion and service activities.

We will expand efforts to continue to clean up the Chesapeake Bay through cover crops and cost-share funding for the installation of more on-farm best management practices. Our efforts to promote the application of new, innovative activities that protect the environment are also designed to maintain the profitability of farming in Maryland.

In the coming year we look to promote local agricultural products through the Maryland's Best brand to meet and expand consumer demand for locally-grown and branded produce. Furthermore, we will pursue opportunities to promote Maryland's agricultural products overseas, building on the successes of recent international sales.

We are proud to serve our neighbors and hope that you are pleased with the progress we have made, together, this year. Let's celebrate our accomplishments and all that our future holds.

Sincerely,

Roger Richardson  
*Secretary*  
*Maryland Department of Agriculture*

## The Maryland Agricultural Commission

An advisory body to the Secretary and Deputy Secretary of Agriculture, the commission consists of 30 members representing various industries within Maryland agriculture, and includes both a consumer and a University of Maryland representative.

In 2007, the commission sponsored a public information meeting on the Farm Bill. Guest speakers provided perspectives on the bill components, insights on the proposed bill, and asked for feedback from farmers about the areas of importance. In addition, the commission held its bi-annual farm tours in Kent and Queen Anne's counties in the spring and Montgomery and Howard counties in the fall. The commission continues to be proactive with agricultural issues as indicated by the roles and strategies the group has developed in an effort to fulfill its mission.

The commission worked actively on implementation of the Statewide Plan for Agriculture and Resource Management. This document was developed through a year-long grassroots process led by the commission to guide agricultural policy into the future. Almost one-third of the 109 recommendations have been accomplished. An implementation committee is working with guidance from the commission to follow up on more of the recommendations.



Members of the Maryland Agricultural Commission visit Waredaca Farm in Montgomery County during their twice annual tour of agriculture in counties across the state. This day, they visited numerous operations in Howard and Montgomery counties.

## Office of the Attorney General

Staff of the Office of the Attorney General (OAG) represents the department on behalf of the State Office of the Attorney General and provides legal representation and advice. The office routinely provides legal assistance to the boards and units within the department, reviews regulations proposed by various offices within the department for legal sufficiency, and assists in producing educational programs for department staff.

In 2007, the office:

- Assisted the department in a damage claim against a Michigan nursery that illegally shipped emerald ash borer-infested nursery stock into Maryland.
- Provided legal services to the Maryland Agricultural Land Preservation Foundation. With nearly 2,000 land preservation easements (covering 265,000 acres) held statewide, this important program faces an ever growing number of problems that call for legal services, including issues over the termination of easements, easement enforcement and easement arbitration appeals before the local Property Tax Assessment Appeals Board.
- Assisted the State Board of Veterinary Examiners in licensing and disciplinary matters.
- Assisted the Nutrient Management Program in its effort to bring farmers into compliance with the program. This program regulates farmers who are required by state law to have nutrient management plans for their farms or be subject to civil penalties that the department collects. The office handles any appeal hearings before the Office of Administrative Hearings, or further appeals to a court.
- Provided staff support in litigation over the National Tobacco Grower Settlement Trust.
- Provided legal support to the Tri-County Council for Southern Maryland in the tobacco buyout program.
- Provided legal advice to soil conservation districts.

## The Maryland Agricultural Land Preservation Foundation

The Maryland Agricultural Land Preservation Foundation (MALPF) was created by the Maryland General Assembly in 1977 to preserve productive agricultural and forested land that provides for the continued production of food and fiber for the present and future citizens of the State. Preservation of agricultural and forested land helps to curb the expansion of random urban development, protects wildlife and preserved the environmental quality of the Chesapeake Bay and its tributaries.

During FY 2007, the Foundation approved 235 new agricultural districts representing 23,923 acres. Agricultural districts represent landowners voluntarily restricting their land for at least five years by a recorded agreement that restricts the land to agricultural use. As of July 30, 2007, 429,469 acres were enrolled in the agricultural district program. Starting July 1, 2007, establishing a district is no longer an eligibility requirement for landowners selling easements to MALPF. On June 30, 2012, all MALPF district agreements will be terminated by statute.

As of July 1, 2007, if a landowner's property meets the minimum eligibility criteria for soils, size, and location as established in statute, the landowner may apply to sell an agricultural land preservation easement to MALPF. An easement restricts the land to agricultural use in perpetuity, limits in perpetuity the ability of the land to be subdivided or developed for residential, commercial, or industrial use, and requires good stewardship practices.

During FY 2007, 116 easement offers were accepted by landowners, covering 15,286 acres. As of June 30, 2007, MALPF has purchased or had pending offers to purchase easements on a cumulative total of 1,933 properties, permanently preserving 265,691 acres. MALPF committed a record of approximately \$91 million to purchase easements during FY 2007, made possible by the high volume of real estate transfers and high real estate values. As real estate values flatten or diminish and the number of real estate transactions decline in the foreseeable future, transfer tax revenues are expected to decline, resulting in less funding available to purchase easements.



A preserved farm in Baltimore County.



Other than the elimination of agricultural districts from the MALPF program, the General Assembly did not adopt any major legislation affecting MALPF during the 2007 legislative session. MALPF continues to develop the Installment Purchase Agreement program to provide an easement payment alternative to provide a stream of tax-exempt income over the period of the agreement (usually 15–30 years) and payment of the principal at the end of the agreement to help landowners minimize the impact of capital gains taxes associated with the preservation of a farm. MALPF expects to have this program in place for those receiving offers during the 2008 easement acquisition cycle. MALPF continues to work on the establishment of the Critical Farms Program authorized by the General Assembly in the 2005 legislative session.

MALPF also partners with other state agencies and local governments to meet a legislative goal (SJ 10, 2002) of preserving 1,030,000 acres of agricultural land by 2022. As of June 30, 2007, Maryland has preserved over 500,000 acres of agricultural land under MALPF, Rural Legacy, GreenPrint, and through local land preservation and transfer of development rights programs.

## The Office of Administrative Services

The Office of Administrative Services manages all technical and support services for the department. It is comprised of three sections – Central Services, Fiscal Services, and the Human Resource Office.

The department has approximately 460 permanent and seasonal employees and the Human Resource Office facilitates the recruitment, training, appropriate compensation, and retention of qualified individuals. Programs and services for employees include risk management and total quality management, employee leave bank, teleworking, wellness, and blood drives, training and employee recognition.

Central Services manages facilities, records, inventory, telecommunications, warehousing, the agency motor fleet and the distribution of supplies and mail. The office also oversees departmental procurement. The office is responsible for the maintenance and repair of 340,000 square feet of facilities on 44.5 acres of owned and leased facilities throughout the state. The maintenance staff implements energy-saving projects wherever possible. A recycling program uses compost piles to transform organic waste into mulch, which is utilized in landscaping projects at MDA. The motor pool provides quality maintenance and repairs of the department's 285 vehicles in addition to semi-annual inspections on all vehicles. The MDA fleet traveled more than 2.6 million miles last year.

Central Services provides procurement assistance throughout the department; continues to improve management practices and automated data concerning motor vehicle operating costs, telephone costs and billing, inventory control and minority procurement; and continues to incorporate the financial management information system to improve monitoring, ordering, and delivery of goods and services.

Fiscal Services handles all centralized accounting transactions for the department. This encompasses all phases of the budget, grants management, accounts receivable, accounts payable, payroll and leave management. The office has continued its fine record of paying MDA bills 99 percent of the time, as defined by the State “on-time” guidelines.

## Public Information and Outreach Offices

The Public Information and Outreach offices reach out to the media, general public, government agency peers, elected officials, the agriculture industry, and to MDA employees with the intent of strengthening the appreciation and understanding of the importance of agriculture and MDA activities to the everyday lives of Marylanders. A Schaefer Center Survey states that the public has an increasingly positive view of many of the agency's priority activities – farmland preservation, purchase of local products and environmental stewardship by farmers – an indicator that public relations efforts at MDA may be having impact over the long term.

Two of the most prominent public events produced by the Public Information and Outreach offices are the agency's Open House in March and its "exhibits" at the Maryland State Fair in August. Both of these events showcase the agency to thousands of people and require the involvement of dozens if not hundreds of employees. In addition, the offices produced the prestigious Century Farm and Governor's Agriculture Hall of Fame awards programs. The offices represented MDA at a number of events such as the Delmarva Chicken Festival, and the Maryland Municipal League, Maryland Association of Counties, and the Maryland Farm Bureau conventions.

During FY2007, staff distributed 232 news releases to approximately 265 news outlets, which generated approximately 660 logged calls from the media. The office is expanding the use of a media monitoring system to track and research media contacts. Each day, the system is used to find news stories about subjects of interest to MDA and its constituencies. The news stories are clipped, linked to the agency's website and distributed to all staff and other interested parties.

During the year, the Public Information Office increased the agency's presence on the Internet, making it the first point of agency contact for more and more people. There were approximately 288,000 unique visits during the year. Without a designated agency web master, a team representing the Information Technology and Public Information offices and the Plant Protection and Weed Management Section keeps the site up-to-date and meets regularly to determine ways to expand and improve it.

Some of the biggest news stories handled by the information office in 2007 were a neurologic equine herpes virus outbreak in Virginia that caused trace forwards and testing on 13 Maryland farms; the stop sale orders of tainted pet foods; regulatory action taken at a Carroll County livestock operation; the Administration change; the recurrence of the emerald ash borer in Prince George's County; the Maryland Agricultural Land Preservation Foundation's accomplishment of permanently protecting 250,000 acres of farmland; and the promotion of Maryland made, grown, and harvested products.



Above: Deputy Secretary Buddy Hance speaks with a reporter during a Buy Local Challenge Week event on a farm in Charles County.

Left: The Donald Dell family from Carroll County was inducted into the Governor's Agriculture Hall of Fame in 2007.



The Malkus brothers from Dorchester County were inducted into the Governor's Agriculture Hall of Fame in 2007.

Other high-profile media inquiries included the expansion of the cover crop program as a result of consistent funding through the Bay Restoration Fund; successful nutrient management compliance rates; and the environmental accomplishments or impacts of agriculture.

Planning for emergency communications in the event of plant and animal disease outbreaks is an important component of the program. The Public Information Office was actively involved in multi-agency efforts (Delmarva Poultry Industries – Health Departments Joint Task Force) to refine response and communications plans in the event of avian influenza outbreak on the Delmarva Peninsula.

As an outcome of the Governor's Agricultural Forum, MDA along with a broad range of organizations interested in supporting the viability of Maryland farming, have put aside their individual interests and are initiating an umbrella public relations effort. The intent of the campaign, which is under development, is to improve the perceived value of agriculture and its importance to the general public with the goal of ultimately improving demand for and profits from the sale of Maryland products. While supporting marketing efforts, the campaign also will build public understanding of agriculture that will support policy initiatives, farmland protection, careers in agriculture and more.

## USDA/National Agricultural Statistics Service

The Maryland Field Office of the U.S. Department of Agriculture's (USDA) statistical agency, the National Agricultural Statistics Service (NASS), provides the public with data relating to the production of most crops grown and livestock raised in the state. Annual information is provided on the general economic well being of the state's agricultural sector. NASS statistics are used to administer and support USDA farm programs that benefit Maryland farmers, to determine the feasibility of new ventures affecting our state's farmers, and to direct program research and development.

In 2006 – the most recent year that statistics are available for this report – agriculture generated nearly \$1.6 billion in cash receipts for the state's farmers, not accounting for the additional impact provided by related jobs and services.

Maryland's leading cash commodities were broiler chickens, greenhouse/nursery products, milk and dairy products, corn, and soybeans. The Maryland Field Office of USDA-NASS estimated there were 12,000 farms in 2006 with an average size of 170 acres. Total land in farms in Maryland was 2.04 million acres, one-third of the state's entire land area.

Maryland farmers planted more corn and fewer soybeans in 2006 in response to higher prices and increased demand for ethanol. Hot, dry weather during most of the growing season resulted in below-average corn and soybean crop yields. Hay supplies were short in 2006 while winter wheat producers had a 36 percent increase in grain production compared to 2005. Livestock production and prices remained strong.

To obtain a copy of the complete Agriculture in Maryland 2006 Summary or the 2002 Census of Agriculture, call (410) 841-5740 or log on to [www.nass.usda.gov/md](http://www.nass.usda.gov/md). Starting in December 2007, Maryland farmers will participate in the 2007 Census of Agriculture. The Census, which is conducted once every five years, provides the only source of uniform, comprehensive agricultural data for every county in the state. Other reports available through NASS include state-level studies on the Maryland turf, nursery and landscape, and equine industries.



Staff of the Maryland Office of NASS works to provide unbiased, accurate information about farming in the state.

## Office of Information Technology Annual Report 2007

The Office of Information Technology (OIT) is responsible for the creation, maintenance and upgrading of the data processing systems at the Maryland Department of Agriculture. During the past year, our network, programming and technical support sections all made significant progress toward the goal of providing both more effective and efficient services to the department and ultimately the public that we serve.

The network infrastructure at MDA's headquarters building was completely redesigned and upgraded. Additional electrical service was added to the computer room to accommodate the new network components and monitors were installed to alert administrators if computer room temperatures exceeded safe thresholds. Most of the servers are now rack-mounted, raid enabled to minimize downtime, and connected to two separate networks: one for day-to-day, normal use; and the other reserved exclusively for backups. The isolation of backups to a dedicated, high speed network (1Gb) has reduced the time of nightly backups by as much as 75 percent. The network operating system, Novell, was upgraded to the latest version (6.5) as part of this migration. The Novell server located in the Animal Health Laboratory in Frederick was also upgraded (hardware and software) as part of this migration.

The network upgrade included the introduction of Novell's iPrint, which has replaced the old, queue based printing. The system is entirely web based and significantly reduces the time necessary to add a new printer to the network or update the drivers when needed. In addition, the network faxing system was also upgraded.

MDA's GroupWise e-mail system was also upgraded as part of the network migration to the latest version (7.0). This upgrade allowed us to increase the services available to our users and add necessary security and monitoring systems.

E-mail access over the Internet was introduced shortly after the migration. This introduction has enabled our users to access their GroupWise account from any computer with Internet access. Anti-virus software (Wasp) was added to protect this service, and a log file analyzer (Sawmill) was installed to monitor web access activity. The use of web access also increased the overall security of the mail system as accounts must be password protected to utilize these web-based services.

The new e-mail system also allows MDA blackberry "smart phone" users to access to their GroupWise mailboxes with subscription to the Notify Technology Service. Messages can be read, created, and attachments viewed directly on this mobile device. The upgraded GroupWise software also allowed system monitoring software (Redline) and mailbox administration software (Reveal) to be added to the e-mail system.

E-mail archiving has been problematic for MDA e-mail users in the past. Employees were responsible for archiving their own e-mail messages, and these archives were stored on individual workstations. Data residing on workstations is not routinely backed up, and hard drive failures resulted in lost archives. In addition, there was no way to search across the individual archives to comply with potential legal requests for e-mail based information. A new, centralized archiving system (GWArchive) was put in place to centralize e-mail archives, automate the archiving process, and provide a way to search archives and extract messages in a searchable, printable format as necessary.

IT Services also completed the network IP address migration, returning the public 167.102.147.XXX addresses to DBM and making MDA's network completely based on the private 10.32.XXX.XXX addressing scheme.

Fiber cable was installed between the headquarters building and the greenhouse/motor pool complex, expanding the MDA LAN and providing network services to the motor pool and greenhouse staff.

Overall network security was enhanced with the installation of firewall log file analysis and reporting system and a Cisco MARS (network Monitoring, Analysis, and Reporting System) appliance.

The OIT staff, working with MDA's Marketing Services, brought a completely redesigned website on-line, supporting the Maryland's Best branding program (<http://www.marylandsbest.net>). The website was designed for the Unix/Linux platform and has a MySQL back end with PHP used as the front end to the database. The website has querying capabilities that interface with Google Maps to identify and locate participating businesses/farms. Marketing Services maintains the participant database as an Oracle application and OIT staff updates the MySQL database via an Excel spreadsheet. OIT staff also is responsible for site maintenance and backup.

The Maryland Seafood and Aquaculture website (<http://www.marylandseafood.org>) is another Linux/Unix based website that is maintained and backed up by OIT staff. Assistance is provided in the maintenance of MDA's primary website (<http://www.mda.state.md.us>)

MDA has contracted with University of Maryland to develop a web-based system that will enable farmers and consultants to submit their annual Nutrient Management Implementation Reports over the Internet. The prototype for this system has been delivered and the system should be fully functional sometime in 2008.

The last hardware migration at MDA was in 2002 when Windows 95 was replaced with Windows XP. The hardware used for this migration is still in place and in need of replacement. Information Technology staff has been evaluating replacement hardware as well as the possibility of moving to Windows Vista. This evaluation includes system performance as well as software and application compatibility.

A complete physical inventory of all MDA Information Technology equipment was taken both at headquarters and all field offices. In addition to validating the IT Inventory, this process has confirmed the number and location of all PC's and laptops in MDA in anticipation of the hardware migration discussed above

The OIT is responsible for most computer and computer peripheral purchasing for MDA, in addition to configuration, software installation, maintenance and repair of these devices. The OIT Technical Support Services is developing an Access database that tracks all purchasing and maintenance tasks associated with this equipment. The database also interfaces with the OIT Oracle inventory database.

The Oracle RDBMS is the back end for virtually all of the licensing, registration, and laboratory tracking systems for MDA. With the migration to the new network infrastructure, MDA's Oracle databases are being upgraded. Most had been maintained on the Novell platform. These databases are being migrated to Linux-based servers and are also in the process of being moved from client/server based to web-based access. The first phase of this conversion will be completed using the recently purchased Oracle Business Intelligence (BI) Publisher. This product will be used to web-enable all reports generated from the database. With the successful conversion of reports, web-based data entry screens will then be developed

In conjunction with database development, existing Oracle applications are under continuous maintenance and development. New/additional reports have been written to support egg grading services, cover crops, fiscal services, marketing and horse stable inspections. Existing applications for the veterinarian registration and nutrient management databases have been modified to provide additional features. The Maryland Agricultural Land Preservation Foundation database was completely re-written including both data entry screens and reports. MDA programming staff routinely process requests for data extractions of the Oracle databases that are requested by the various database owners

In the rapidly evolving world of information technology, continuing education is mandatory. The OIT staff has received training in network security; Novell and Linux installation and administration; Microsoft Vista installation, configuration and deployment; and Oracle administration, backup and recovery. The OIT staff also has provided training sessions for MDA employees in advanced techniques using Microsoft Office products. A total of 123 students attended this training.

The OIT staff continues to work to provide the best possible service to MDA employees and the people of Maryland that they serve.

## Office of Resource Conservation 2007 Annual Report Highlights

The Maryland Department of Agriculture's Office of Resource Conservation (RC) works closely with Maryland farmers to plan and implement conservation practices and programs that balance crop and livestock production with the need to protect natural resources. The RC office provides a range of educational, financial, technical assistance and regulatory programs to improve agricultural management in Maryland and protect natural resources for future generations. The office works with a number of local, state and federal agencies, while implementing policies established by the State Soil Conservation Committee. Four key areas—Program Planning and Development, Conservation Grants, the Nutrient Management Program, and Conservation Operations comprise the Office of Resource Conservation.

### State Soil Conservation Committee

Established in 1938, the State Soil Conservation Committee (SSCC) consists of 11 members representing local soil conservation districts (SCDs) and state and federal agricultural and natural resource agencies. The SSCC coordinates the activities of Maryland's 24 soil conservation districts and appoints SCD supervisors. SSCC also develops, reviews and refines policies on soil conservation and water quality issues, while advising the Secretary of Agriculture on these matters. Importantly, the committee serves as a forum for all agencies involved in protecting natural resources.

*In 2007, the SSCC:*

- Recommended modifications to the heavy use area best management practice (BMP), which included Maryland Agricultural Water Quality Cost-Share (MACS) Program support for concrete pads constructed at poultry house entrances. Specifications were changed in order to be consistent with USDA size allowances associated with animal type.
- Authorized revisions to the 2007/2008 Cover Crop Program, which included the addition of hulless barley as a commodity cover crop eligible for cost-share. Cost-share funding for hulless barley is available through a USDA Conservation Innovations Grant provided by the Maryland Grain Producers.

- Defined which agricultural management activities were included under the agricultural section of Maryland Department of the Environment (MDE) sediment control requirements.
- Recommended MACS cost-share funding for water control structures in field drainage systems based on their water quality benefits.
- Proposed salary adjustments to alleviate inequities for MDA field staff who work in soil conservation district offices.

*Received briefings and tracked the following initiatives:*

- Nutrient Trading—a policy development process for point sources to purchase “nutrient credits” from agricultural BMPs.
- Environmental Protection Agency (EPA) regulations for confined animal feeding operations (CAFOs).
- Activities and recommendations of the Water Resource Management Advisory Committee.
- Reduction of Ammonia and Odor from Manure Demonstration Project—reviewed preliminary project objectives to examine the effectiveness of minimum disturbance manure injection equipment to reduce odor and ammonia emissions.

In other areas, the SSCC sponsored activities to provide feedback to the USDA Natural Resources Conservation Service on ways to modify and improve the conservation delivery system.



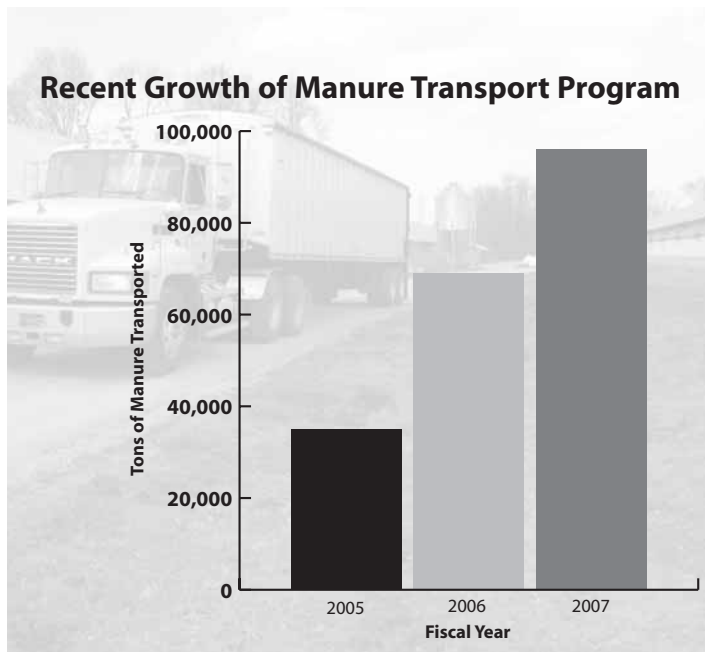
Maryland's soil conservation districts were honored as the Chesapeake Bay Foundation's 2007 Conservationists of the Year for their work in improving water quality and helping farmers implement conservation practices.

## Program Planning and Development

This section is responsible for planning, developing and coordinating policy, programs, and public information on resource conservation issues and nonpoint source pollution. Programs and activities are coordinated among local soil conservation districts, federal and state agencies, and public and private agricultural and natural resource organizations. The section provides staffing support to the State Soil Conservation Committee, BayStat and the Conservation Reserve Enhancement Program (CREP) Advisory Committee.

### Manure Transport Program

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 \$490,000 in state grant payments to transport a record 99,300 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 \$847,000. Transport of other types of manure is cost-shared at 87.5 percent.

A Manure Matching Service supports the Transport Program by linking farmers who have excess manure with others who can use the manure safely as a nutrient source.

### Geographic Information Systems

A geographic information system (GIS) is a computer system capable of acquiring, storing, analyzing and displaying geographically-referenced information that is data-identified according to location. GIS combines data from many sources, including digitized and scanned maps, aerial photography, soil surveys, and global positioning systems to create a “smart map” of a specific location. In agriculture, this “smart map” is comprised of layers of information concerning soil types, crops, topography, and a farm’s proximity to streams and roads. Because of its ability to manage large amounts of data about a specific location, GIS helps soil conservation staff to more accurately site, design and evaluate the effectiveness of best management practices installed on a farm to protect water quality.

In 2007, office staff completed the training manual for ArcGIS 9.2 software program while working closely with the Manure Transport Program to track and document manure resources that have been transported to other watersheds. In addition, staff working under the auspices of Governor O’Malley’s BayStat effort, developed an agricultural base map with best management practice (BMP) data layers. Staff also provided training to several MDA programs for the *MD Property Map Finder*, an online mapping system from the Maryland Department of Planning.

### **Information and Education**

The Information and Education Program provides creative, editorial, design, and production services to all program areas within the Office of Resource Conservation. In addition, the program provides educational displays, brochures and other collateral materials to soil conservation districts to assist with their outreach efforts.

In 2007, efforts to educate Maryland's agricultural community on Maryland's nutrient management regulations continued. The office produced the spring and winter editions of the newsletter, *Maryland Nutrient Management News*, which were mailed to approximately 8,000 farmers and certified nutrient management consultants. The program also supervised the direct mailing of required nutrient management reporting forms to 6,500 farmers.

Throughout the year, a number of farmer publications, direct mailers, annual reports and informational displays were developed or updated to reflect program enhancements and educate both farmers and the public on Maryland's agricultural conservation efforts.

A major campaign to promote the popular cover crop program was initiated in April, in order to educate farmers on program enhancements and increased funding. As a result of these efforts, sign up for this year totaled just over \$13 million with 330,600 acres enrolled.

In other areas, the office worked with USDA and the Maryland Department of Natural Resources to develop a 2008 informational calendar for landowners enrolled in the Conservation Reserve and Conservation Reserve Enhancement Programs. The calendar includes tips on planting and maintaining streamside buffers of grasses or trees.

Finally, the popular homeowner series, Backyard Actions for a Cleaner Chesapeake Bay was revised and updated with the assistance of the master gardeners and the Maryland Cooperative Extension Home and Garden Information Center.

### **Conservation Grants**

Since 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program has helped farmers protect natural resources on their farms, maintain farm productivity, and comply with federal, state and local environmental requirements. Because productive soil and healthy waterways benefit all Maryland citizens, MACS provides farmers with grants to cover up to 87.5 percent of the cost to install best management practices on their farms in order to prevent soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay.

During the year, MACS provided Maryland farmers with \$13.1 million in grants to install 2,100 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 18,300 tons of soil annually and 1,900 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.



## Special Projects: Highlights and Accomplishments:

### ■ *Cover Crop Program*

Provided Maryland farmers with \$7.69 million in MACS grants to plant a record 240,400 acres of cover crops statewide during the 2006-07 planting season—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.

### ■ *Nutrient Management Cost-Share*

Issued \$405,000 in cost-share grants to 350 farmers who hired private consultants to develop nutrient management plans for 183,700 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 of 2007 and temporarily stopped accepting new cost-share applications.

### ■ *Conservation Reserve Enhancement Program (CREP)*

Provided 144 landowners throughout the state with \$338,800 in cost-share funds to install riparian buffers and conservation cover on lands enrolled in the Conservation Reserve Enhancement Program (CREP), a voluntary federal-state initiative that pays landowners to take environmentally sensitive cropland out of production and plant vegetative buffers or install other conservation practices. Signup for CREP is ongoing until 100,000 acres are enrolled. To date, approximately 74,000 acres are 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.



Left to right: Robert Wevodau, Secretary Roger Richardson, Judy McGowan, Deputy Secretary Earl F. Hance, Fred Samadani and Renato Cuizon accept the Nutrient Management Program's 2007 Innovation in Public Service State Agency Award. The award was presented to MDA for its innovative approach to implementing the Nutrient Management Program.

## Maryland Nutrient Management Program

Nutrient management plans are science-based documents that help farmers manage fertilizers, animal waste and other nutrient sources more efficiently in order to meet crop needs while protecting water quality in streams, rivers and the Chesapeake Bay.

The Water Quality Improvement Act of 1998 requires by law that all farmers grossing \$2,500 a year or more or livestock producers with 8,000 pounds or more of live animal weight run their operations using a nutrient management plan that manages both nitrogen and phosphorus inputs. The requirement applies to all agricultural land used to produce plants, food, feed, fiber, animals or other agricultural products.

Farmers are required to update their nutrient management plans, take new soil samples a minimum of once every three years and file annual reports with MDA describing how they implemented their nutrient management plans during the previous year.

Farmers who own or manage 10 or more acres of agricultural land and apply their own nutrients are required to attend a two-hour MDA-sponsored education program on nutrient application once every three years. Professionals and farmers certified to prepare nutrient management plans are required to take continuing education courses in order to keep abreast of the latest nutrient management technologies and regulations.

Non-agricultural nutrient applicators, including commercial lawn care companies, landscapers, golf course managers and public groundskeepers, are required by law to follow Maryland Cooperative Extension guidelines when applying nutrients to lawns, athletic fields or other landscapes.

The Nutrient Management Program oversees enforcement activities, a certification and licensing program for consultants and farmers, training and education programs and an urban nutrient management program.

### **Program Highlights and Accomplishments:**

#### ***Agricultural Enforcement***

- MDA is responsible for seeing that nutrient management plans are developed and submitted to the Nutrient Management Program according to state regulations. By December 31, 2007, approximately 97 percent of the state's 6,100 eligible farmers submitted nutrient management plans to MDA. These plans cover approximately 1.3 million acres or 98 percent of the cropland affected by the law.
- In 2007, MDA ramped up enforcement efforts to bring the small number of farmers without nutrient management plans into compliance with the law. In calendar year 2007, MDA issued 90 first notices and 43 warning letters to farmers who had not submitted plans. Most farmers subsequently submitted nutrient management plans to MDA; however, 16 charge letters were sent to the remaining non-compliant farmers ordering them to comply with the law, pay the fine, or attend a hearing.
- Once a farmer has obtained a nutrient management plan, he/she is required to submit an Annual Implementation Report to MDA by March 1 of each year. The report describes how a nutrient management plan was implemented during the previous cropping season and verifies that an up-to-date plan is in place for the upcoming year. By December 31, 2007, 94 percent of the state's 6,100 eligible farmers had filed their Annual Implementation Reports with MDA. These farmers care for approximately 99 percent of the state's 1.3 million acres of regulated cropland.
- MDA conducted 500 on-farm nutrient management inspections targeted toward farmers who have not submitted their Annual Implementation Reports, operations with a history of compliance problems and certain high risk animal operations and farms using manure, imported organic wastes and sludge.

#### ***Certification and Licensing***

- Conducted approximately 80 reviews and field inspections in order to ensure the quality of nutrient management plans prepared by certified consultants. Evaluated an additional 500 plans for MDA cost-share projects to make certain that they met regulatory standards.

- Certified 21 new consultants who successfully passed the nutrient management exam, bringing to 1,090 the number of certified consultants available to Maryland farmers. The figure includes 200 consultants who operate under licenses and are actively writing plans and 30 University of Maryland Cooperative Extension consultants who are funded by MDA.

- Trained and certified 30 farmers to write their own nutrient management plans. To date, 230 farmers have been certified by MDA to write nutrient management plans for their own operations.

#### ***Training and Education***

- Provided a two-day training course attended by 35 individuals interested in taking the Nutrient Management Certification Exam.
- In partnership with the University of Maryland Cooperative Extension, offered 26 comprehensive continuing education workshops for 700 participants. The program also reviewed and approved 50 workshops and training programs sponsored by recognized organizations and neighboring universities to help consultants fulfill their continuing education requirements. The training is required for both certified consultants and farmers certified to write the own nutrient management plans.
- Working with the University of Maryland Cooperative Extension, conducted 52 voucher training sessions attended by more than 1,400 nutrient applicators. Individuals who apply any nutrients to 10 or more acres of cropland that they own or operate are required to attend the training once every three years.

#### ***Urban Nutrient Management Program***

- Since inspections began in 2002, MDA has reviewed the records and fertilizer programs of 252 companies to determine program compliance concerning phosphorus and nitrogen application rates, record keeping and soil testing. Forty-eight of these inspections were performed in 2007. One hundred seventy-five of the firms inspected were fully or substantially in compliance with the law; 60 firms received a fair rating; and the remaining firms received unsatisfactory reviews. Efforts are ongoing to ensure that companies with fair or unsatisfactory reviews improve their fertilizer management programs. The program also worked to ensure that newly licensed companies were briefed on the nutrient management requirements.

- During the year, golf course nutrient guidelines outlining application rates for nitrogen, phosphorus and potassium were released by the University of Maryland. MDA subsequently sponsored a workshop to brief golf course managers on the new guidelines. In 2008, MDA will target its inspections toward golf course fertilizer programs to ensure compliance with the new guidelines.

**Resource Conservation Operations**

This program provides operating funds and staffing support to the state’s 24 soil conservation districts for promotion and delivery of soil conservation and water quality programs at the local level.

**Conservation Planning**

Much of the work performed by soil conservation districts involves helping farmers protect soil, water and other natural resources on their property. MDA field staff working in soil conservation district offices develop farm plans, also known as soil conservation and water quality plans (SCWQPs) for farmers. These plans provide a roadmap for farmers to follow when planning environmental management and enhancement projects.

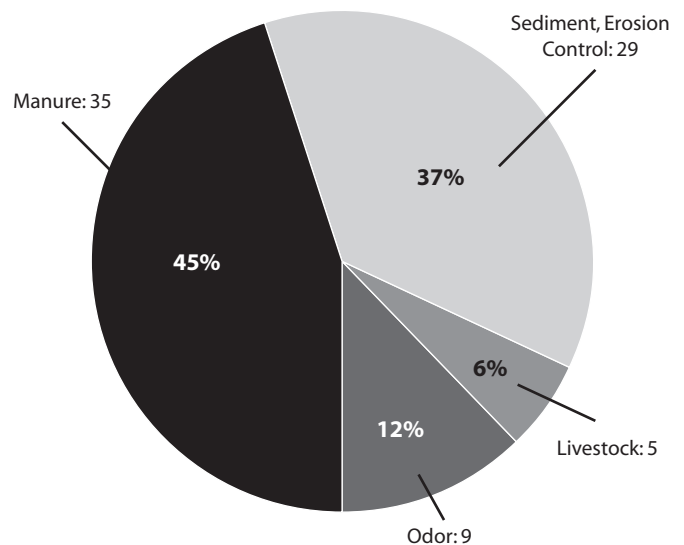
SCWQPs outline conservation measures—best management practices—that can be implemented on the farm to control soil erosion, manage animal waste, protect water quality and enhance natural resources. BMPs recommended in the farm plan are usually implemented by the farmer in stages over several years, as time, environmental need, and money allow. Because no two farms are alike, no two farm plans are alike. A waste storage shed or composting facility might be recommended by a soil conservation planner for a poultry operation. Grain operations benefit from planting cover crops after the harvest to reduce soil erosion and nutrient runoff. A dairy operation may require a heavy use area, stream crossing or fencing to keep animals away from streams.

In 2007, soil conservation planners developed 920 Soil Conservation and Water Quality Plans for 75,500 acres of Maryland farmland. Another 980 plans affecting 127,300 acres of farmland were updated to ensure their continued effectiveness in protecting natural resources. Together, these plans included more than 8,200 BMPs.

**Enforcement**

Maryland has a procedure in place for addressing cases of water pollution caused by agriculture. The strategy uses a progressive approach to handling individual pollution cases based on the severity of the situation. Conditions that are likely to cause pollution or that have resulted in inadvertent farm pollution require timely corrective action, whereas chronic or willful mismanagement of farm resources is handled through a formal enforcement action. The Maryland Department of Agriculture and the Maryland Department of the Environment work jointly with soil conservation districts to assess farm management complaints and take action against polluters when necessary. Emphasis is placed on voluntary corrective actions by farmers or landowners with assistance provided by the local soil conservation district or the University of Maryland Cooperative Extension. In 2007, 78 agricultural complaints were received concerning sediment and erosion control, odors, manure and livestock concerns. Of this figure, 76 complaints were corrected or closed and two enforcement actions are pending.

**2007 Types of Agricultural Complaints**



## Special Projects and Grants

The Office of Resource Conservation actively seeks grants for a number of special programs and demonstration projects designed to help dairy farmers, small sized equine operations, poultry producers and other landowners improve pasture and manure management, control soil erosion, manage nutrients, reduce runoff and safeguard water quality in streams, rivers and the Chesapeake Bay. Following is a list of ongoing special grant-funded projects that the office manages:

### ***Innovative BMP Implementation Strategy to Improve Water Quality in the Choptank Watershed with a Targeted Effort in the Tuckahoe Sub-Basin***

**Grantor:** Chesapeake Bay Targeted Watersheds Grant Program, National Fish and Wildlife Foundation, Chesapeake Bay Trust

**Partners:** USDA Agricultural Research Service, University of Maryland, Caroline and Queen Anne's soil conservation districts

**Grant Amount:** \$796,600

### ***A Program to Improve Dairy Herd Nutrition Using Milk Urea Nitrogen***

**Grantor:** USDA-NRCS Conservation Innovation Grant

**Partners:** University of Maryland, Virginia Tech University, Land O' Lakes Milk Producers Cooperative, Dairy Farmers of America, Maryland and Virginia Milk Producers Cooperative, Dairy One Cooperative, Eastern Laboratory Services, QC Laboratories

**Grant Amount:** \$788,845

### ***Reducing Nutrient Loads from Equine Operations***

**Grantor:** Chesapeake Bay Targeted Watersheds Grants Program, National Fish and Wildlife Foundation

**Partners:** Maryland Horse Outreach Workgroup, Maryland Horse Industry Board, University of Maryland, USDA Natural Resources Conservation Service

**Grant Amount:** \$700,000

### ***Program Delivery & BMP Alternatives Targeted to Maryland Equine Industry***

**Grantor:** USDA Conservation Innovation Grant

**Partners:** Maryland Horse Outreach Workgroup, Maryland Horse Industry Board, University of Maryland

**Grant Amount:** \$604,794

### ***Demonstration of Management Intensive Grazing Systems for Dairy Production***

**Grantor:** Conservation Innovation Grants, USDA, NRCS

**Partners:** Frederick and Washington County Cooperative Extension offices, Frederick, Catocin, Carroll and Washington County soil conservation districts

**Grant Amount:** \$434,500

### ***XML Regional Data Exchange for Best Management Practices for the Chesapeake Bay States Utilizing the National Environmental Information Exchange Network***

**Grantor:** National Environmental Information Exchange Network Grant Program, U.S. Environmental Protection Agency (EPA) Region III

**Partners:** EPA Chesapeake Bay Program Office, Maryland Departments of Natural Resources and Environment, Virginia Departments of Conservation and Recreation and Environmental Quality, Pennsylvania Department of Environmental Protection

**Grant Amount:** \$395,424 (Maryland portion: \$141,924 /MDA portion: \$60,000)

### ***Implementing and Evaluating Small Grain Commodity Cover Crops for Water Quality Protection and Bio-Energy Production: Chester River Watershed***

**Grantor:** Chesapeake Bay Targeted Watersheds Grant Program, National Fish and Wildlife Foundation

**Partners:** USDA Agricultural Research Service, University of Maryland, Kent and Queen Anne's soil conservation districts, Maryland Grain Producers Utilization Board

**Grant Amount:** \$355,000

### ***Piloting Point Source to Non-Point Source Nutrient Trading in the Upper Chesapeake Bay***

**Grantor:** USDA Conservation Innovation Grant

**Partners:** Maryland Departments of Environment and Natural Resources, University of Maryland, USDA Natural Resources Conservation Service

**Grant Amount:** \$250,000

### ***Demonstration of Alternative Containment Structures for Stockpiling of Poultry Manure***

**Grantor:** Conservation Innovation Grants, USDA NRCS

**Partners:** University of Maryland, Caroline, Dorchester, Somerset, Wicomico, and Worcester soil conservation districts

**Grant Amount:** \$217,231

***Enhancing Nutrient Efficiencies in Dairy Farms in the Monocacy Watershed, MD and PA***

**Grantor:** Chesapeake Bay Targeted Watersheds Grant Program, Chesapeake Bay Trust, National Fish and Wildlife Foundation  
**Partners:** University of Maryland, Frederick Soil Conservation District  
**Grant Amount:** \$138,000

***Managing Nutrient Delivery in Drainage Systems on the Eastern Shore***

**Grantor:** Chesapeake Bay Trust  
**Partners:** Caroline Soil Conservation District  
**Grant Amount:** \$124,375

***Corsica River Targeted Watershed Study Agricultural Implementation***

**Grantor:** EPA Clean Water Act Section 319(h) Funding  
**Partners:** Queen Anne’s Soil Conservation District  
**Grant Amount:** \$106,000

***Cost Effective Strategy to Reduce Nitrogen Loss from Land Application of Dairy Manure***

**Grantor:** Pioneer Grant, Chesapeake Bay Trust  
**Partners:** University of Maryland  
**Grant Amount:** \$98,580

***Demonstration of a System for Improved Poultry Manure Management***

**Grantor:** Water Quality Programs—EPA Region III  
**Partners:** none  
**Grant Amount:** \$90,250

***Corsica River Cover Crop Program***

**Grantor:** EPA Clean Water Act Section 319(h) Funding  
**Partners:** Queen Anne’s Soil Conservation District  
**Grant Amount:** \$60,000

***Lower Monocacy Watershed Alternative BMPs to Accelerate Agricultural Implementation***

**Grantor:** EPA Clean Water Act Section 319(h) Funding  
**Partners:** Frederick Soil Conservation District, Frederick County Division of Public Works  
**Grant Amount:** \$35,000



With MACS assistance, Maryland farmers nearly doubled the amount of cover crops planted last year.

### **Agricultural Water Management**

To prevent pollution and protect water resources, the Office works with local public drainage associations (PDAs) to assure operation and maintenance plans for public drainage systems are technically adequate and properly implemented. In FY2007, technical assistance was provided for the operation and maintenance of more than 820 miles of drainage ditches.

### **Tributary Strategy Team Activities**

Resource Conservation staff and soil conservation districts are active supporters and participants in Maryland's Tributary Strategy Teams. These teams—comprised of local citizens, farmers, business leaders and government officials—meet monthly in each of Maryland's 10 major tributary basins to recommend pollution prevention measures and address local water quality problems unique to each watershed with the overall aim of improving water quality in the Chesapeake Bay

In 2007, the tributary teams published Maryland's Tributary Strategy Statewide Implementation Plan. The plan moves the Bay restoration forward by providing critical background information and detailing steps necessary to implement Maryland's tributary strategies. Specifically, the plan identifies implementation strategies for point sources, stormwater management, septic systems, growth management, agriculture, and air deposition. Additionally, it identifies state initiatives to address implementation gaps and contains strategies to achieve, maintain and monitor water quality goals. The plan may be viewed by visiting [http://www.dnr.state.md.us/BAY/tribstrat/implementation\\_plan.html](http://www.dnr.state.md.us/BAY/tribstrat/implementation_plan.html).

Basin-level Tributary Strategy Implementation Plans are also under development by Maryland's tributary teams. These plans will deal specifically with conservation measures needed for developed lands. In 2007, ag team members participated in a series of introductory meetings with county governments to initiate the process.

In other areas, Maryland's tributary teams provided valuable data used by the Governor's office in the development of BayStat, an innovative new tool that provides citizens better and more immediate access to information on the health of Chesapeake Bay and its tributaries, and the status of related state programs and decision-making. Citizens may view Bay cleanup progress by visiting [www.baystat.maryland.gov](http://www.baystat.maryland.gov).



Above, right: MDA field staff serve as mentors to students participating in the Envirothon program, an outdoor natural resources competition for high school students interested in learning about natural resources and gaining a better understanding of today's complex environmental issues.

### **Maryland Envirothon**

The office supports soil conservation districts that sponsor the Maryland Envirothon, an outdoor natural resources competition for high school students interested in learning about natural resources and gaining a better understanding of today's complex environmental issues. Designed by soil conservationists, foresters, wildlife experts and other natural resource professionals, the Maryland Envirothon challenges students to move beyond the classroom in order to solve real life environmental problems in a natural setting.

Students taking part in the competition spend the year studying Maryland's natural resources with local conservation professionals. Working in teams of five with one to two alternates, students are trained and tested in four natural resource areas including soil, aquatics, forestry, and wildlife, plus an environmental issue that changes from year to year. Teamwork, problem solving and oral presentation skills are evaluated as each team offers a panel of judges an oral presentation containing recommendations for solving an environmental challenge. Teams compete at the local, state and national levels.

Students from Walkersville High School in Frederick County won this year's state competition and went on to place 16th among 53 teams from across the United States and Canada at the 2007 Canon Envirothon, held at Hobart and William Smith College in Geneva, New York.

The Maryland Envirothon is sponsored by the Maryland Association of Soil Conservation Districts and the State Soil Conservation Committee. In addition to MDA, contributors and supporters include USDA's Natural Resources Conservation Service, the Maryland Department of the Environment and the Maryland Department of Natural Resources.

## Marketing Services

The Marketing Services Division's principle role is to identify and develop profitable marketing opportunities for Maryland farmers and agricultural producers. The division also serves as a conduit for federal resources and for policy information specific to the agricultural sector. These programs have direct and indirect financial impact on farmers and producers and the way they sell their products and develop new buyers. In response to the General Assembly's Agricultural Stewardship bill, the Maryland Agricultural Commission's 2005–2006 listening sessions and Governor's Agricultural Forum, marketing staff provided a report to Governor Martin O'Malley and the General Assembly on the level of funding that may be needed in order to meet existing and future needs for the marketing program to support Maryland agriculture. The report calls for and numerous other initiatives and reports have emphasized the need for increased state support of Maryland's Best, the state's buy-local marketing initiative, and a state cost-share for federal crop insurance among other programs.

### National Marketing and Agribusiness Development

The Marketing Services staff works with farmers and agricultural producers to assist farmers in marketing their products directly to supermarkets, hotels, food service businesses and to other wholesale buyers as well as directly to consumers at farmers' markets and other venues. The Maryland's Best™ program enables producers to capitalize on the consumer's preference for local agricultural products. The 2007 Maryland's Best campaign promoted Maryland farmers on eight radio stations during the prime growing season as well as in press releases statewide throughout the year. The entire campaign was designed to direct consumers to the revamped and searchable Maryland's Best website where additional information was available.

Maryland's Best Direct provides opportunities for farmers and producers to sell their products directly to wholesale buyers in Maryland and beyond. In 2007, the division held two annual Produce Buyer-Grower Seminars, introducing 78 Maryland growers to buyers from major chains including Weis, Wal-Mart, Safeway, and Giant as well as chefs and buyers from area institutions. The division continues to cultivate relationships with more major supermarket chains as well as restaurants, schools, prisons, garden centers, state agencies, and other wholesale buyers, and to work to minimize obstacles to direct-to-wholesaler sales.



MDA and Whole Foods Annapolis hosted a local agriculture promotion in the store, featuring local producers and MarDelicious watermelons from the Delmarva Peninsula.

The marketing office supports the growth of 74 farmers' markets in all 23 Maryland counties and the City of Baltimore. In 2007, MDA was actively involved with 43 farmers' markets, providing various levels of support from the initial creation and development of new markets to promotional materials and occasional consultation for well-established markets. These markets are an important source of revenue to farmers; farmers estimated their sales (for insurance purposes) at \$2.9 million in 2007.

At farmers' markets across the state, 253 farmers participated in the Farmers' Market Nutrition Programs (FMNP) for Women, Infants, and Children (WIC) and for seniors in 2007. Funded primarily by USDA's Food and Nutrition Service, the FMNP provides fresh produce for nutritionally at-risk women, infants, children and income-eligible senior citizens, while increasing sales for farmers. MDA leveraged \$65,000 in state funds to generate a total program commitment of \$665,771. The FMNP is a standing program commitment from USDA and must be administered by a state department of agriculture or similar agency, which requires that MDA provide both staff and state general fund resources to continue.

Marketing staff administer and/or provide support for various grant programs, task forces and other activities which improve the policy climate and long-term profitability for farmers. These include the Maryland Dairy Industry Oversight and Advisory Council, the Renewable Fuels Incentive Board, and the Maryland Wine and Grape Advisory Committee, and numerous other industry organizations. In 2007, staff secured and/or administered grants under the Specialty Crop Promotion Program, the Federal-State Market Improvement Program, the Maryland Agricultural Education and Rural Development Assistance Fund Program (MAERDAF), the Maryland Wine and Grape Advisory Committee, and the Chesapeake Bay Trust's Pioneer Grant Program.

On-going staff assistance and support is provided to other agricultural groups throughout Maryland, including the Maryland Soybean Board, Maryland Grain Producers Association, Maryland Nursery and Landscape Association, Maryland Food Center Authority, Maryland Greenhouse Growers Association, Maryland Agricultural Council, Maryland-Delaware Forage Council, Maryland Organic Certification Advisory Committee, Maryland Organic Food and Fiber Association, and others.

The Maryland Agricultural Conflict Resolution Service (ACReS) provides prompt, low-cost, confidential and collaborative mediation and other services for resolving disputes related to agricultural production. The mediation program, funded mainly by USDA with matching funds from existing state resources, not only serves those who have received an adverse ruling related to a USDA program or other regulatory matter, but also provides assistance for a broad range of issues including those involved in loan servicing and payment issues, farmer-neighbor disputes, family farm and estate conflicts. The program staff also works closely with other government agencies and organizations on policy development and implementation in order to create a more business- and consumer-friendly face of government. Only state departments of agriculture can request certification by USDA and receive USDA funding for this program; if MDA did not provide the service, it would not be available to Maryland citizens.

Marketing staff manage a federally-funded program to inform Maryland farmers of crop insurance. This program, financed with \$370,000 from the USDA-Risk Management Agency (RMA), combines the resources of MDA, the University of Maryland, RMA and the National Agricultural Statistics Service to target producers for promotional and educational activities. From 2003 to 2005, participation among Maryland farmers increased by 14 percent—the greatest increase in the Northeast. Farmer investment in crop insurance helps stabilize Maryland's agricultural economy. Following the drought of 2002, for example, producers received \$23.4 million in indemnity payments from crop insurance designed to help them survive bad weather, insects, disease, and market fluctuations. The payments translate to more than \$7 for every \$1 spent by producers to purchase crop insurance.



George Mayo, executive director of the Maryland Agricultural Education Foundation, led Sarah Noble, 7, and Deputy Secretary Buddy Hance in a special agriculture activity.



## International Marketing and Trade Development

The International Marketing and Trade Development office's mission is to increase export sales by Maryland agricultural producers and agribusinesses in order to enhance their economic well being. The two person staff accomplishes this by conducting outreach and educational programs, organizing and conducting trade promotion activities and facilitating participation by Maryland companies in international trade promotion events.

International marketing activities focus on two areas: market access and international policy and relationships. The priority areas for market access activities are livestock, value-added foods and seafood. Activities ranged from researching new and developing markets, to designing and implementing missions and trade shows, hosting reverse trade missions, arranging one-on-one meetings with buyers and Maryland agribusinesses, conducting seminars, and assisting companies with developing international market strategies. The staff worked with more than 250 agribusinesses in more than 40 countries.

Through international policy and export activities, International Marketing participates in the development of export phytosanitary protocols for agricultural products going into new markets. In late 2006, for example, international marketing staff worked with the USDA Foreign Agricultural Services (FAS) on the behalf of Maryland spinach growers to

reopen Canadian markets that were closed after concerns with *E. coli* in Western U.S.-grown spinach. (Approximately half of the production from the state's major grower in Kent County was going to Canada.) The market was reopened with Canadian officials creating forms to allow Maryland and other Eastern states to segregate their product when exporting to Canada.

Beyond the normal difficulties of international trade, such as differences in language and business practices, exporting food products, livestock and nursery products poses additional challenges because such products require phytosanitary certificates and adherence to labeling standards. Program staff helps prepare Maryland's agricultural processors, manufacturers, and farmers to be export ready, to develop niche markets that are competitive in the global market place and to pursue an export marketing management program that is results oriented.

Exporting agricultural products provides additional income to farm families and is increasingly important for small- and medium-sized farmers and agribusinesses. The FAS reports that every \$1 of product exported generates another \$1.62 for the economy in related economic activity, such as transportation or packaging. It also reported that employees engaged in export businesses receive higher wages than their counterparts in non-export businesses.

Diversification into profitable export markets can serve as a good risk management tool for U.S. farmers and can help keep domestic prices high. Exporting has increasingly become a part of the maintenance of a profitable family farm sector and USDA offers a number of incentive programs to encourage farmers and processors to enter the global marketplace.

MDA's International Marketing unit garners federal funds to underwrite nearly all of its trade missions, trade shows and reverse buyer's missions. Given the complexities of exporting agricultural products, most USDA funds are awarded to state departments of agriculture where they are administered for the benefit of the state's farmers and processors. The Economic Research Service of USDA estimates that Maryland agricultural exports totaled \$244 million in 2005, the most recent data available. The top three agricultural exports were: poultry products, soybean products and feed grains.



Mike Pons (left) and Christie Holden (right) of Country Life Farm with Armando Sanchez, a breeder from the Philippines, posing with his recent purchases. MDA hosted a delegation of horsebuyers from the Philippines (November 2007 at Country Life Farm).

International marketing specialists work closely with USDA staff at embassies worldwide and with other organizations to

facilitate successful exports of Maryland products to more than 35 countries. Through the Southern U.S. Trade Association (SUSTA) and the United States Livestock & Genetics Export Association (USLGE) specifically, MDA invested \$12,500 in membership dues which resulted last year in more than \$200,000 in funding for international trade missions managed by MDA. These activities included reverse trade missions bringing foreign buyers from several countries to visit Maryland farms. Through SUSTA and the Market Access Program (MAP), an additional \$130,000 in federal funding was allocated directly to Maryland companies for their own export promotions.

*Export activities implemented by International Marketing in 2007 included:*

#### **Canada**

Staff participated in Go South!, a Southern U.S. Trade Association program to promote the export of southern fruits, vegetables and seafood to buyers in Ontario and Quebec. Canada is the region's largest trading partner and MDA is working closely with growers so that they can take advantage of selling to our northern neighbor. While Maryland growers of spinach, sprouts and potatoes currently sell in the Canadian market, there are significant opportunities for other Maryland products.

#### **Europe**

MDA has worked one-on-one with producers and processors targeting nations in the European Union. A consultant hired by the Southern U.S. Trade Association provides marketing assistance to Maryland companies free of charge.

#### **South Korea**

Korea is Maryland's third largest market for agricultural products. International Marketing is active in the promotion of food and seafood products to Korea. In 2007, staff organized the participation of three Maryland food companies at the Seoul Food & Hotel Show and arranged a reverse trade mission at MDA in Annapolis. Sales from the activities are estimated to be more than \$150,000. International marketing staff has also worked closely with the Southern U.S. Trade Association in exporting croaker (fish) to Korea.

#### **Philippines**

In 2007, following two years of building business relationships through U.S. Livestock Genetics Export Inc.-funded activities, representatives of the Philippine Racing Commission and private buyers spent more than \$300,000 purchasing more than 20 horses at the Fasig-Tipton auction in Timonium as well as directly from farms in Baltimore, Harford and Carroll counties. The Filipinos are determined to improve their racing

industry. International Marketing staff is in frequent contact with the buyers as well as with the USDA Agricultural Trade Officer based in Manila as MDA continues to cultivate this emerging market for Maryland Thoroughbred horses.

#### **Russia**

International marketing staff has built an excellent relationship with the All-Russia Horse Breeders and Racing Association and continues to provide logistical support for visiting buyers. In October 2007, Russian and Ukrainian horse buyers spent more than \$275,000 at the Fasig-Tipton auction for yearlings. In cooperation with its partners, MDA continues to host reverse trade missions focused on dairy genetics, meat processing, equine-related products and the development of food processing enterprises in Russia. In 2006, the government of the Russian Federation allocated significant funds to develop agricultural production throughout the country. The contacts and relationships forged by MDA's International Marketing unit will prove helpful as Russia seeks both products and technical expertise from abroad.

MDA manages an on-going and successful Russian Federation food promotion for the Southern U.S. Trade Association. In 2008, MDA plans to organize a seafood pavilion at World Food Moscow 2008 as well as to continue to support the poultry industry and processors at the show. This trade show is the largest in Russia and brings buyers from throughout the country to Moscow for new food products. MDA also works with the United States Poultry and Egg Export Council to promote poultry in Russia. Russia is a key export for the poultry industry and poultry is Maryland's leading agricultural export.

#### **China**

With funds from the Southern U.S. Trade Association, MDA hosted a delegation of Chinese food buyers in July. There was strong interest among the buyers for seafood products not available in China. The Southern U.S. Trade Association has a consultant based in China who has been working closely with three Maryland seafood processors to develop partnerships and to establish relationships with Chinese importers. Two companies participated in trade shows in China and have plans to return.

In 2008, MDA is focusing activities in the Philippines, South Korea, Russia, China and Turkey. A new initiative will use advertising in international livestock magazines to promote Maryland as source of top genetics for horses and dairy cattle.

## Seafood Marketing and Aquaculture Development Program

### Aquaculture Development Program

The Aquaculture Development Program supports the Maryland aquaculture industry through promotional, educational, and technical assistance programs. In 2007, there were 35 commercial aquafarms in production in Maryland. Maryland has eight licensed fee-fishing operations and 50 schools, nature centers, government agencies, and private organizations producing fish, shellfish, and aquatic plants for educational and restoration projects. The industry produces a diverse array of products ranging from traditional shellfish such as oysters and clams to aquatic plants for use in water gardens and shoreline stabilization. In addition, the use of aquaculture products for restoration has been an area of increasing research and interest in recent years.

The Maryland Aquaculture Review Board, which is chaired by the MDA Aquaculture Coordinator provides monthly interagency review of permits and issues across departmental lines. The passage of House Bill 1188 during the 2006 legislative session involved investigation into the applicability of current laws and regulations towards aquaculture. In response to HB1188, the Board submitted recommendations to the Aquaculture Coordinating Council to remove a size limit on farm-raised shellfish, allow relay of oysters up to November 1 and remove any daily harvest limit for these products. In 2007, the Board reviewed 15 applications for aquaculture projects in Maryland. These included operations proposing to raise shellfish seed, market clams, oysters, and fish. As a result of this effort, 10 new aquaculture businesses have been established in Maryland, with three others currently under review.

The Maryland Aquaculture Coordinating Council is made up of 11 designated representatives from academic, regulatory, and political organizations as well as six members from industry appointed by the Governor. The Aquaculture Coordinator serves as a member of the coordinating council and provides administrative support. In early 2007, the program assisted the council in finalizing Best Management Practices (BMPs) for all forms of aquaculture. Aquaculture BMPs are now posted on the program's website. Program staff is working with the coordinating council to develop recommendations for the establishment of Aquaculture Enterprise Zones in the Chesapeake and Coastal Bays and to provide for the production of shellfish seed in unclassified waters. Final reports will be submitted to the Governor and General Assembly in 2008.



The multi-agency Aquaculture Review Board looks into aquaculture permits.

The overall farm gate value of Maryland aquaculture products in 2007 remained stable and relatively unchanged from 2006 at nearly \$4 million. Maryland growers concentrated on the production of aquatic plants, clams, and oysters. Shellfish production is expected to increase in 2008. Two finfish production facilities opened in 2007. One facility produces pond stockers and the other raises fish for wholesale food markets. Ornamental species continue to dominate Maryland aquaculture production and sales, accounting for more than 85 percent of the total farm gate value.

The Aquaculture Development Program continues to provide the industry with the opportunity to participate in regional, national, and international trade shows, conferences, fairs, and tours in order to promote and market Maryland farm-raised products. Cooperative programs with the Maryland Watermen's Association, Maryland Sea Grant, Maryland Seafood Marketing Advisory Commission, the National Aquaculture Association, and many other organizations are essential to providing aquafarmers with these opportunities.

### Seafood Marketing Program

The Seafood Marketing Program promotes increased sales and consumption of Maryland seafood and aquaculture products through consumer education, promotion, public relations, and advertising. The total estimated value of the Maryland seafood industry is more than \$700 million. There are 77 processing plants employing 1,733 people and more than 6,000 watermen who work the Chesapeake Bay. In 2006, watermen landed 51.2 million pounds of seafood at a dockside value of more than \$53.5 million. This represents

a 3.4 percent increase in landings and 9.1 percent increase in value over 2005.

Advertising funds are generated from a \$10 surcharge fee collected from commercial fishing and seafood processing licenses. In 2007, the fee garnered \$65,000. Funds were used to place advertisements in newspapers and trade journals and for special promotions. The use of the \$10 surcharge is overseen by the Seafood Marketing Advisory Commission and the Tidal Fisheries Advisory Commission. The Seafood Marketing Advisory Commission is composed of 11 industry members who recommend marketing activities.



An award-winning advertisement promoting Maryland Seafood.

The program's website, [www.marylandseafood.org](http://www.marylandseafood.org), features information for consumers as well as wholesale and retail dealers of seafood. It includes a searchable database, seafood handling and nutrition information, recipes, cookbook order forms, an annual seafood festival list and information on starting aquaculture ventures. In 2007, the site had more than 1.9 million hits. This is an increase from 914,000 hits in 2006. In addition, more than 246,000 pieces of information were distributed.

In order to promote the sales of Maryland seafood in the fall, the Seafood Marketing Program developed the October is Maryland Seafood Month promotional campaign, entitled "Make a Splash with Maryland Seafood." Newspaper ads were placed throughout the state and radio ads were aired in Baltimore. The program provided retail markets with point of sale materials. News releases were distributed to the press with Governor O'Malley's proclamation of "October is Maryland Seafood Month." Consumer recipe brochures were distributed and information was placed on the web site.

Other seafood promotions, including newspaper, radio, and Internet advertising and recipe distribution, revolved around seasonal availability and holidays. Advertising campaigns included: "Celebrate the Holidays with Maryland Seafood," "Fish on Fridays," "Maryland Rockfish Celebration" and crab and oyster seasons. The program placed ads on the Baltimore Orioles radio during baseball games.

The Seafood Marketing Program developed three new print ads for trade and magazine ad placements. The cutting-edge ads depict Maryland seafood (oysters, crab and rockfish) as "fresh accessories." The ads were placed in *Seafood Business*, *Wild Catch*, and *Baltimore Magazine*.

The program distributed 10 news releases to more than 300 food editors in the mid-Atlantic region. The topics covered seasonal species, special events and promotions. Consumer education included in these news releases discussed safety, handling, and nutrition information. The releases included photos and recipes with an opportunity for consumers to request more information or recipe brochures by mail, phone or website. These releases are posted on the Maryland seafood website as well as MDA's main website.

Program staff participated in a wide array of trade shows, conferences, exhibits and special seasonal events including: International Boston Seafood Show, International Restaurant Show, the Mid-Atlantic Food Service, Lodging and Beverage Expo, East Coast Commercial Fishermen's and Aquaculture Trade Expo, Maryland Dietetic Association Annual Meeting and Exhibit, MDA's Open House and the Maryland State Fair. At the events, informational literature, point of sale information and Maryland seafood samples were offered.



Seafood industry and MDA representatives exhibiting at the International Boston Seafood Show.

At the International Boston Seafood Show, space is shared with industry members, assisting them in marketing their products. In 2007, six companies participated in the state booth and another 13 companies were represented in the largest seafood show in the United States. The program sponsored and administered several seafood cooking contests including: National Oyster Cook-off, Great American Seafood Cook-off, the Mid-Atlantic Chesapeake Seafood Chef Contest and the National Hard Crab Derby & Fair Cooking Contest.

The Seafood Marketing Program is involved in seafood education through various programs including the sponsorship of the Maryland Watermen's Association's "Waterman in the Classroom" project. This program enables watermen to visit schools to educate students on the life of a waterman and includes lessons on ecology.

The Seafood Marketing Program administers the Maryland Crab Meat Quality Assurance Program. This voluntary program, which the industry helps fund, provides an extra level of sanitary inspection and education through the Maryland Sea Grant Program. Product and environmental surfaces are microbiologically tested and evaluated for *Listeria*, *E. coli* and bacteria plate counts. More than two-thirds of Maryland crabmeat processors belong to the quality assurance program. Staff promotes the participating quality assurance program companies through the website, literature and

advertising. In 2007, there were no cases of *Listeria* found in any of the crab meat from participating companies. Maryland is the only state where such a program exists. Future plans for this program will include elimination of shell in product for an extra quality assurance.

The program continues to distribute Maryland seafood information on safety, handling, nutrition and recipes. These are distributed through travel centers, seafood markets, grocery stores, direct consumer requests, trade shows and the website. The program also produces and distributes a variety of point of sale materials including decorations, pins, table tents, menu inserts, and posters. The program sells the world-famous *Maryland Seafood Cookbooks* and uses the funds to offset the cost of printed materials.

The program participated in meetings that were held to discuss the H2B guest worker program of the federal government. The Maryland seafood industry processors depend heavily upon this program to provide seasonal employees. Many plants may close due to the lack of workers if the cap is not lifted for the 2008 season. U.S. Senator Barbara Mikulski led the passage in the Senate of legislation to lift the cap. The legislation has not passed in the House. New federal legislation is needed to revise the H2B program to eliminate the shortage of workers for the future. Due to the high demand for seasonal workers, the current cap is met in early January, before seafood processors need workers.

The program has increased its responsibility for the marketing of Maryland seafood internationally. While there is no increased funding for such activities, the staff was able to work on a few projects. These included SUSTA activities such as; distributing invitations for Maryland seafood companies that export to participate in various trade shows in Korea, Canada, China, and Brussels. The program assisted in a reverse trade mission with a group of seafood buyers from Korea at the International Boston Seafood Show; assisted SUSTA at the Fancy Food Show in New York; and participated in a Korean mission to Maryland for a variety of products including seafood.

## Animal Health Program

The Animal Health Program is responsible for preventing and controlling infectious and contagious diseases in Maryland livestock and poultry. A key component of these programs is the Animal Health Diagnostic Laboratory System, a network of five regional facilities. The location of these laboratories provides closer access to services than is available in any of the 49 other states. Regional staff members work closely with counterparts in local, state and federal government, neighboring states and related animal industries to ensure an efficient team effort for disease prevention, detection and control.

The program also has responsibility for responding to all animal emergencies under the state emergency management system. Animal emergencies are categorized as 1) animal health emergencies, such as a disease outbreak and 2) animals in emergencies, such as a natural disaster. Experience with Hurricane Katrina made clear that effective evacuations of humans from harms way cannot occur in the absence of effective animal evacuation operations. To this end, the program, with other state, local and private partners published the Maryland Animal Sheltering and Evacuation Plan in August of 2007. This plan was tested in a drill in Southern Maryland that was linked to an existing exercise sponsored by the Maryland Emergency Management Agency.

In 2007, the regional services delivery system was made fully operational. For the first time, MDA regional veterinarians were given full operational command and control authority over regulatory activities in their areas of responsibility.

As part of an ongoing internal evaluation, staff reviewed all policies, practices and procedures to determine where improvements were needed. Several regulations were revised in 2007, including those pertaining to poultry and the exhibition of livestock. Other regulations are scheduled for review in 2008. On October 1, 2007, legislation prohibiting persons from falsifying or tampering with animal health documents or devices became effective. This enforcement authority allows the program to ensure animal health documents and devices are protected and that persons fraudulently using them can be held accountable.

In 2007, several positions were realigned and position descriptions modified to reflect new paradigms and operating imperatives. The program received approval for a second assistant chief (operations) to free the existing assistant chief (regional services) to focus on regional regulatory and diagnostic activities. Several key vacancies were filled, including the new assistant chief, the regional veterinarian and poultry specialist for the Lower Delmarva Region, an inspector for the West Central Region and several support staff across the system. The program has been very successful in recruiting talented staff, but continues to have difficulty retaining them. In 2007, the program lost several staff to retirement, but also lost an assistant chief and a field veterinarian to local competitors offering higher salaries.

With the continued threat of foreign animal diseases and the unprecedented spread of avian influenza across Asia, Europe



MDA personnel from the left, Dr. Jo Chapman, Deputy Secretary Buddy Hance, Pageen Morgan, Danny Mast, Dr. Marla Stevens, Secretary Roger Richardson and Keith Hendricks with Governor O'Malley during his tour of the Cow Palace at the Maryland State Fair.

and Africa, disease surveillance continues to consume a large amount of staff effort. The polymerase chain reaction diagnostic equipment the College Park Laboratory fielded in 2007 enabled the staff to separate most avian influenza (AI) diagnostic activities between commercial and non-commercial operations. The Salisbury laboratory will focus on support for the commercial industries, while the College Park laboratory will support non-commercial industries and wild bird surveillance for AI. In addition to needed surge and redundant capacity,

the College Park laboratory's AI capability largely removes higher risk AI samples from the Salisbury facility, reducing the risk of an accidental cross contamination of commercial samples with AI from wild or non-commercial birds. The added capacity also allows the Salisbury staff to focus on the increased workload associated with the AI testing of 100 percent of commercial broiler flocks prior to slaughter established in 2006. Federal monies from various cooperative agreements continue to be utilized for staff effort, testing activities and necessary laboratory upgrades allowing for more efficient and effective disease surveillance.

Program staff has participated in numerous industry emergency readiness planning activities and supported those activities in numerous local jurisdictions. The program is a national leader with other Delmarva partners in developing improved technologies and tactics for detecting and responding to emergency poultry diseases (EPD), including protecting the health of workers participating in EPD responses. In 2007, the program, working with the State of Delaware led in the development of the Mid-Atlantic Agriculture and Animal Partnership Alliance (MAAPA). This interstate organization involving departments of Agriculture and Emergency Management in states from Virginia to New York is modeled after similar organizations in the Southern and Midwestern states. The collaboration is intended to facilitate mutually beneficial interactions among member states.

Animal Health Program personnel continue to collaborate with the Department of Health and Mental Hygiene, the Maryland Emergency Management Agency and the Board of Veterinary Medical Examiners to recruit, train and organize the State Voluntary Veterinary Corps, a group of approximately 100 veterinarians and technicians willing to support emergency operations of the program when activated. In 2007, Veterinary Corps members were provided several opportunities for group and individual training, with more planned in the near future.

In 2007, the Animal Health Program along with the Maryland Veterinary Medical Association and other partners continued to develop and expand the Maryland State Animal Response Team (MD-SART). While similar to the agency-sponsored Volunteer Veterinary Corps, MD-SART is a non profit entity with broad membership among those with responsibilities, interests and resources for animal emergency situations. The long term vision for the Maryland SART is to be an organization that can provide trained and organized animal response expertise and other resources to the secretary, other

state agencies and local governments upon activation. SART serves as a mechanism for multi-entity coordination and training to better address various emergency situations involving animals, such as foreign animal disease incursions or animal sheltering in disasters. The MD SART focus in 2007 was to promote the formation of County/City Animal Response Teams (CART) across the state to support local governments. Numerous CART organizations are either formed or in various stages of development. Those efforts will continue through 2008.

During the past year, the program continued to be successful in obtaining seats at the Plum Island Animal Disease Center to train staff veterinarians with live agent foreign animal diseases (FAD). Animal Health Program and USDA staff also continue to co-sponsor the FAD Practitioner course at the College Park Animal Health Diagnostic Laboratory. The course is designed as an intermediate level of training for veterinarians who have not attended the live agent training at Plum Island or as a review for those who have. Demand for live agent FAD training far exceeds available capacity at Plum Island and this local training has improved readiness nationally. Eighteen Maryland veterinarians, including four members of the Veterinary Volunteer Corps have received this training during the three one-week courses presented during 2007. Two additional courses are scheduled for 2008.

The 2007 fair and show season presented more opportunities for disease surveillance and producer education concerning biosecurity and the prevention of infectious diseases. The field inspection staff, augmented by other program staff, exhibit officials and trained volunteers, inspected and tested livestock and poultry upon entry to events and during the course of the exhibition. A 2006 evaluation of the regulations and procedures pertaining to livestock and poultry exhibition in the context of new and emerging disease threats has led to a new paradigm in regulating livestock exhibitions which was field tested in the 2007 season and will be formalized in 2008.

In January, staff responded to an equine neurologic herpesvirus (EHV) outbreak. While centered in Northern Virginia, the outbreak involved more than 50 horses on 13 Maryland premises in nine counties. Existing response protocols were modified for application to the circumstances and to utilize the rapidly evolving diagnostic technologies available. In the end, only one horse in Maryland was infected and the other premises initially implicated were tested and released from movement restrictions in record time. The U.S. Department of

Agriculture commissioned a study of EHV response practices in 2007. Maryland experience and practices contributed heavily to that report.

Johne's disease in cattle continues to be a serious threat to profitable dairy and beef operations. Animal Health staff efforts have assured that Maryland's part in the National Johne's Control Program has steadily grown in momentum. A great deal of energy has been put into the educational/informational process to producers. This involves enlisting the support of practicing veterinarians as well as producers. Despite substantial federal support reductions in 2007, the Johne's Program is expected to maintain momentum and growth during 2008 because of strong industry support and the ability to accomplish significant diagnostic effort with state-supported staff.

Other livestock diseases such as bovine spongiform encephalopathy (BSE or mad cow disease) in cattle, brucellosis and tuberculosis of cattle, illegal garbage feeding to swine and scrapie in sheep and goats continued to be part of our surveillance programs.

This year saw continued progress in the Maryland Department of Agriculture's participation in the USDA National Animal Identification System (NAIS). The goal is to use automated recordkeeping, similar to that used for tracking packages to trace the movements of animals implicated in a disease outbreak within 24–48 hours. While identifying the animals of concern is a priority, an equal or greater priority is identifying those animals, farms and facilities which are not involved in a disease investigation, so they can resume normal commerce.

The first step of registering producer premises in NAIS is well underway. To date, there have been more than 1300 premises registered in Maryland. This represents approximately 15 percent of Maryland producers. Program staff, with federal and industry partners are looking at ways to effectively integrate animal identification with existing production, marketing and disease control systems.

The NAIS staff also is aggressively registering poultry premises to comply with legislation enacted in 2005. To date, 2,600 poultry premises are registered under the state program. In



Animal Health staff, volunteers and representatives from other agencies during an emergency decontamination drill.

2007, veterinarians treating avian patients were registered. In December 2007, as in September 2006, staff used the poultry premise registration database to identify producers located near the site of a wild bird species found to have been infected with a mild form of avian influenza. The database allowed staff to quickly identify nearby premises, visit them to test birds and provide appropriate information for those producers. As in 2006, no nearby birds were found to be infected.

Throughout the year other MDA Animal Health programs remained active. These included the licensing of livestock markets and dealers, issuance of permits to hatcheries and dealers of poultry and hatching eggs, investigation of antibiotic residues in meat, accreditation of new veterinarians and overseeing the Maryland Contagious Equine Metritis Program for horses coming into the United States from overseas for breeding purposes. Maryland is an active participant in the National Poultry Improvement Plan (NPIP) and continues longstanding obligations to NPIP as well as vigorous participation in recent expansions of NPIP activities in response to avian influenza concerns.



## Veterinary Diagnostic Laboratories

Maryland Department of Agriculture operates five diagnostic laboratories. They are strategically located in regions of the state where livestock activities create a need for these services. The laboratories are specialized to some extent according to the need.

The Eastern Shore, which rears predominantly poultry, has two laboratories. The Salisbury laboratory performs the critical function of servicing the poultry industry. This laboratory is in the forefront in the diagnosis of important poultry diseases that may affect the production and productivity of poultry on the Shore or be a threat to the industry. The Centreville laboratory specializes in large animals while the College Park, Frederick and Oakland laboratories handle all species, but few poultry.

This year, the laboratories have been very productive. The Salisbury Laboratory reported an increase in necropsies during the months of February, July and December. The major conditions seen January and December were airsacculitis and colibacillosis. Both conditions were probably initiated by stress due to the cold weather. Conversely, the increased necropsies in July revealed that the mortality was heat related. The increased necropsies in December were mainly due to an outbreak of laryngotracheitis.

The Salisbury laboratory also provides services for other species. Necropsies and tests are done for the Salisbury Zoo, the Humane Society, the Maryland Department of Natural Resources, the U.S. departments of Agriculture and the Interior and residents of the area. Avian tuberculosis was diagnosed on several occasions in birds and also in a Cavy submitted by the zoo. In order to assure the public and our trading partners that Maryland poultry is free of important diseases, every commercial flock is tested before slaughter for avian influenza. During the year, 8,083 tests were done representing more than 40,415 birds.

In order to maintain our state's brucellosis-free status, staff conducted a significant amount of testing on bovine animals. A total of 9,931 tests using the milk ring test or BAPA were done. The College Park and Frederick laboratories saw the majority of these samples since they service the dairy production section of the state while staff at the Centreville laboratory ran fewer due to the decreased number of dairy farms on the Eastern Shore.

Other concerns of cattle and dairy farmers include bovine leucosis, Johne's disease, and mastitis. Farmers are encouraged to have their animals tested if bovine leucosis is suspected. Johne's disease is important because of its effect on dairy cattle productivity, its status as a differential diagnosis, and its possible link to Crohn's disease, a human gastrointestinal disease. Several farms are participants in the Johne's eradication program, and this necessitates the submission of sera and/or fecal samples for testing.

The economic importance of mastitis to the dairy industry is understood by the dairy community, perhaps as a result of extension outreach and economic reality. Milk samples submitted for testing totaled 698.

Rabies continues to be a matter of concern among all susceptible species since it is a human disease risk and a reportable disease. A total of 315 potential cases were submitted to the laboratories. Of these, nine of the 35 submitted to Salisbury were positive. Many rabies suspect animals are submitted directly to the Maryland Department of Health and Mental Hygiene due to possible human exposure.

College Park is the designated laboratory for contagious equine metritis testing. Upon importation from designated infected countries, horses are quarantined within Maryland and tested for the disease. After a designated number of negative tests, the animals are released from quarantine. A total of 2,687 samples representing 1,015 horses were submitted and tested.

In order to maintain the status of being free of equine infectious anemia, horses must test negative for the disease on an annual basis using the Coggins test. A total of 17,536 Coggins tests were done in our laboratories.

Conducting necropsies is a major activity of the laboratories. Frederick had the greatest number of necropsies with 305, the majority of which were food animals (109) and horses (39), though there were a significant number of dogs and cats (57). The remainder was made up of a variety of species such as deer and other wild life species.

Most of the 111 necropsies done at the Centreville laboratory 36 were food animals, 19 were domestic dogs and cats, and 29 were equine. Of the horses, 24 were fetuses. Though this may appear to be a significant percentage of the total, it is considered normal given the number of horses bred during the year and

that five percent is expected to abort. The number of dogs and cats is not unusual given the rural location of the community, though 120 cremations were done.

Of the 162 necropsies done at College Park, most were of dogs and cats (84). This is not surprising given the urban location of the laboratory and the corresponding large pet population. Twenty-five necropsies were of food animals. The remainder comprised a variety of other species.

The Oakland laboratory performed 71 necropsies. Twenty four of these were food animals and four were dogs and cats. The remainder comprised a variety of species with no significant trends.

In addition to disposals after necropsies, the laboratories also occasionally provide cremation services for pet owners. These transactions are always done bearing in mind the sensitivity of the situation.

The laboratories are first responders and continue to be in a state of readiness to handle emergencies of an animal health nature. Several training courses and exercises were done to ensure proficiency and efficiency in the event of a disease challenge.

In order to effectively carry out the department’s mission, in spite of decreasing financial resources, there is increased reliance on funds provided through cooperative agreements. These agreements are managed by laboratory directors, veterinarians and field inspectors. Training exercises were done in collaboration with USDA to ensure that the process is understood.

## Summary of Tests and Activities by Laboratory

	Frederick	Centreville	College Park	Oakland	Salisbury	TOTAL
Necropsy	305	111	162	71	62	711
Rabies	126	105	49	0	35	315
Mastitis	478	87	94	39		698
Brucellosis	3,628	1,324	4,532	447	80	10,011
Johne’s Disease	129	604	720	40	0	1,493
Contageous Equine Metritis	0	0	2,687	0	0	2,687
Equine Infectious Anemia	9,680	4120	3,646	0		18,414
Bovine Leucosis	385	176	460	2	1,045	
Parasitology	476	101	212	46	272	1,107
Equine Herpesvirus	14	0	24	0	0	38
Avian Influenza					8,083	
New Castle Disease					1,275	

*Note: Numerous ancillary tests were performed in each laboratory as an aid to a diagnosis and were not be included in this table.*

## The Maryland State Board of Veterinary Medical Examiners

The State Board of Veterinary Medical Examiners (SBVME) is responsible for setting standards to which veterinarians, registered veterinary technicians, and veterinary hospital owners must comply through statutory and regulatory adoptions and amendments. The SBVME also licenses and registers veterinarians; licenses and inspects veterinary hospitals and humane organizations; registers veterinary technicians; provides disciplinary information to other state veterinary boards and the public; and submits licensure verification to other state licensing boards upon request. Additionally, the SBVME investigates consumer complaints, initiates its own investigations, and determines whether disciplinary action shall be taken against licensees or registrants. Requests for approval of continuing education credits are reviewed by the SBVME.

The SBVME consists of seven members appointed by the Governor to serve five-year terms. Five of the members are veterinarians; of these five members, two must be primarily large animal practitioners. The remaining two members are consumers. SBVME staff consists of an executive director, administrative specialist, office secretary, and two agricultural inspectors, both of whom split their time between the SBVME and the Maryland Horse Industry Board.

During the last quarter of 2007, the SBVME hired an administrative officer, whose main function will be investigating the more complex and serious allegations presented by the public. The SBVME is the first program at MDA to employ an individual for this purpose, and the SBVME believes that such a position is crucial to fulfilling its mission of protecting the public and promoting animal health and welfare.

This year marked the first year the State Veterinary Technician Committee (VTC) assisted SBVME staff in reviewing registration applications for veterinary technicians. The VTC also participated in the review of initial applications from those individuals seeking to become registered veterinary technicians for the first time. Two goals set for this year pertaining to the VTC were met: 1.) to develop continuing education requirements for registered veterinary technicians; and 2.) to sponsor and send a job analysis survey created by the VTC to all registered veterinary technicians.

Several meetings between SBVME staff and the Information Technology department of MDA resulted in changes affecting not only SBVME staff, but more recently and more significantly, changes affecting licensees and the public. With revisions to the SBVME's database, some steps previously taken during the registration of veterinarians have been eliminated.

Additionally, in an effort to improve public outreach, work was begun to revise the SBVME's webpage last year. Some of the items Internet users may now easily access include: laws and regulations governing the practice of veterinary medicine in Maryland; licensing applications and instructions; names and license numbers of currently registered veterinarians; and information on taking examinations, obtaining continuing education credits and requesting letters of good standing.

This year, the SBVME made several changes to its regulations, the more noteworthy of which include the following:

- 1.) The submission of an emergency action permitting the SBVME to waive the current requirement of five years of continuous clinical practice or five years of continuous teaching of clinical veterinary medicine for individuals who have exigent circumstances that have interfered with their ability to practice continuously.
- 2.) The addition of regulatory language that would permit veterinarians to obtain up to 50 percent of their continuing education credits through computer-based courses.
- 3.) The revision of examination requirements for foreign veterinary graduates seeking licensure in Maryland. These amendments were made in accordance with new requirements of the Educational Commission for Foreign Veterinary Graduates.
- 4.) An amendment to the administrative procedure by which veterinary licensing candidates may register to take the national veterinary licensing exam. Examinee candidates are now required to contact only the National Board of Veterinary Medical Examiners for approval to take the exam.
- 5.) The development of continuing education guidelines for registered veterinary technicians.

In addition to hiring an investigator this year, a part-time attorney was hired through the Office of the Attorney General to prosecute the growing number of cases warranting the issuance of formal charges by the SBVME. The hiring of an assistant attorney general to work exclusively for the SBVME is the first of its kind during the SBVME's over 100-year history. The addition of such a key individual is anticipated to assuage the number of cases currently pending and to more quickly adjudicate newer cases presented for action.

A challenge the SBVME continues to face is the difficulty in offering on-line registration to its licensees. The ability to provide this service would benefit enormously not only many of the SBVME's stakeholders, but also would permit the SBVME's staff to carry out its other responsibilities more expeditiously. Despite the technological constraints faced by the SBVME, it will continue to seek out ways to address this issue.

*Listed below are key statistics from the past three fiscal years:*

<b>Category</b>	<b>Year 2005</b>	<b>Year 2006</b>	<b>Year 2007</b>
Licenses issued to new veterinarians	166	127	149
Registrations issued to veterinarians	2,376	2,385	2,412
Registrations issued to registered veterinary technicians	86	75	80
Licenses issued to veterinary hospitals	495	492	508
Percentage of veterinary hospitals inspected and in compliance	99	98	99
Number of new complaints received	71	91	77
Number of complaints pending from previous year	29	24	61
Number of complaints closed	64	54	78

## Maryland Horse Industry Board

The Maryland Horse Industry Board (MHIB) consists of 11 members appointed by the Governor to four-year terms, plus the Secretary of Agriculture. Chapter 416, Acts of 1998 defined six statutory duties of the Maryland Horse Industry Board—licensing and inspecting horse stables in the state, advising the MDA on matters affecting the horse industry, and supporting research, education, and promotion of the Maryland horse industry. The board conducts projects for the benefit of the horse industry utilizing a specially funded source and continues to achieve all of its legislatively mandated functions. As the commodity board for the Maryland horse industry, the board hopes to continue to develop and to continue to grow the success of the recreational horse industry and to work to re-establish the prominence of the Maryland horse racing and breeding industries

*Projects slated for the benefit of the Maryland horse industry in the near future include:*

- Completing the BWI Thurgood Marshall Animal Import and Export Feasibility Study;
- Conducting the 2009 Maryland Equine Census in conjunction with the Maryland Agricultural Statistics Service;
- Hosting a 2009 Maryland Horse Forum which will serve as a follow up to the 2004 Maryland Horse Forum. Industry leaders will be invited to attend and develop strategic plans for the future of the Maryland horse industry;
- Finalizing the Maryland Horse Park Project through the selection of a final location.

*The main challenges the Board faces in the next year are:*

- The loss of revenue, horse businesses, and horses from the breeding and racing sectors of the Maryland horse industry due to an uneven economic playing field created by the installation of slot machines at race tracks in neighboring states;
- A lack of funds for an update of the 2002 Maryland Equine Census. The approximate cost of the census is \$180,000, which is beyond the current budget of the MHIB. The information from an equine census and economic impact report is vital to understanding the facts related to the Maryland horse industry including the perceived, but as of yet unstudied, decline in Maryland's racing and breeding sectors; and

- The limited budget for the promotion of the Maryland horse industry. The MHIB with a budget of less than \$120,000 (including staffing), of which approximately \$115,000 is brought in as funds directly from the horse industry through an assessment on feed.

### Key Accomplishments in 2007

***Achieved an 86 percent approval rating from members of the Maryland horse industry.***

At the beginning of 2007, the MHIB surveyed representatives of every sector of the Maryland horse industry and the major equine organizations in the state. More than 200 respondents filled out a questionnaire. In most cases those respondents were the heads of industry organizations who replied for their respective organizational memberships. They represented more than 1,600 industry members. Eighty-six percent of respondents indicated that they approved of the activities of the MHIB; three percent did not support the activities of the MHIB; and an additional 11 percent had no opinion. Respondents indicated that, of the current activities of the MHIB, the most important project was working to reduce the cost of obtaining insurance for horse operations in the State, followed closely by the work for the establishment of a Maryland Horse Park.

***Disseminated the information from the initial Feasibility Study of the Maryland Horse Park.***

The proposed Horse Park would create a new large scale market for Maryland equine goods and services as well as an attraction for increased business, media attention, and marketability of Maryland's equine industry. If located in Central Maryland, a Maryland Horse Park would generate more than \$123 million dollars a year in economic impact to the local and state economy; over 1,900 new jobs; and millions of dollars in annual tax revenue from tourists. This project was one of the original missions of the MHIB and will remain as such until its completion. The project was highlighted in Governor's Transition Team report as an important project for the future of the industry. While the MHIB elected not to pursue a long-term lease on the property in Gambrills, Anne Arundel County, the board intends to pursue its establishment at another site to be determined. A number of counties including Harford, Howard, and Wicomico have publicly expressed interest in the project.

***Licensed 528 horse stables.***

The MHIB licensed 528 stables in 2007, an increase of 65 stables over 2006. The rise in facility licenses may be attributed to the work of the stable inspectors, the hiring of a full time executive director, the implementation of an Oracle database to monitor licensed and unlicensed stables, improved records being supplied to stable inspectors, and the installation of civil penalties to allow the MHIB to pursue illegally operating stables more effectively.

***Awarded \$23,246 in Maryland Horse Industry grants.***

Grant awards from the MHIB increased \$2,330 over the previous year. Projects funded include 4-H youth educational programs, therapeutic riding programs, horse rescue programs, adult education and extension outreach projects, university research and teaching projects, promotional campaigns for Maryland equestrian events. The money for the grant program is derived from special funds obtained through the Maryland Equine Feed Assessment, and is thus funded entirely by the equine industry itself.

***Obtained federal and state funding for the feasibility study of an international import and export facility for horses and other livestock.***

As international marketing efforts continue to attract foreign buyers to the Maryland market and as the popularity of Maryland horse competitions increases, there is rising need to improve the quarantine and transportation options in the mid-Atlantic region. The creation of an animal export and import facility associated with the Baltimore-Washington International Airport (BWI) would enhance the equine industry. The facility would reduce transportation costs, enhance the marketability of Maryland horses to foreign buyers, and improve access to in-state events, all of which contribute to the viability of this industry thereby preserving working lands. The study is undergoing its final edits and will be released in early 2008.

***Assisted several divisions of MDA in their implementation of policies, statutes, and regulations which involve the Maryland horse industry.***

The horse board members have assisted various sections of the Maryland Department of Agriculture including Resource Conservation, Nutrient Management, the Maryland Agricultural Land Preservation Foundation, Animal Health, National and International Marketing, and the Office of the Secretary.

***Continued meetings of the Equine Health Advisory Committee.***

The Equine Health Advisory Committee was established to:

- Advise the MHIB on matters of equine health and disease in the State,
- Ensure the establishment and implementation of effective industry and community communication vehicles; and,
- Review and offer advice on Maryland policies and protocols regarding reportable diseases, Maryland statutes and regulations relating to equine health, interstate health requirements, capabilities of MDA Animal Health Diagnostic Laboratories, and emergency preparedness protocols.

The committee has drafted more than 15 recommendations to the MHIB and MDA. Of those recommendations three have been enacted, four are currently being completed, and eight have been yet to be acted on. Those recommendations include seeing that all state agricultural fairs and shows require horses, and other susceptible livestock species, to be vaccinated for rabies and that the MDA develop the capacity to identify diseases such as neurologic equine herpesvirus-1 in the MDA Animal Health Diagnostic Laboratories through the use of PCR testing.

Listed below are program statistics from the past three fiscal years:

<b>Category</b>	<b>Year 2005</b>	<b>Year 2006</b>	<b>Year 2007</b>
Number of stable licenses issued	473	463	528
Number of inspections performed annually	495	468	440 <sup>†</sup>
Percentage of facilities inspected and in compliance	99%	100%	100%
Revenue collected from licensing and inspecting horse stables in Maryland and directed to General Funds.	\$35,475	\$34,725	\$39,675
Revenue collected from \$2 assessment per ton of horse feed sold in Maryland <sup>1</sup>	\$91,826	\$108,356 <sup>††</sup>	\$85,579
Total amount of money distributed as grants for for promotional, educational, or research projects for the Maryland horse industry.	\$22,952	\$35,721	\$20,916
Percentage of total special fund revenue distributed as grants for the Maryland horse industry. <sup>2</sup>	25%	33%	24%
Additional funds obtained for MHIB projects from public and private sources.	\$3,250	\$227,500	\$63,750
Staffed booths or presented talks at trade shows, conferences, fairs and exhibitions promoting Maryland equine.	12	20 <sup>†††</sup>	13

<sup>†</sup> Inspections are lower due to unavoidable medical absences. <sup>††</sup> Increase due to adjustment made to budgetary cycle. Previously the April 1st through June 30th feed fund assessment quarterly payment had been counted in the following fiscal year as the payment was due by July 30th, this quarterly payment will now be considered as revenue from the fiscal year it was obtained. <sup>†††</sup> Increase due to Maryland Horse Park feasibility study public outreach.

## Weights and Measures Section

The regulation of commercial weights, measures, weighing and measuring devices, prepackaged products and methods employed in the sale of commodities is a necessary function of government and is the responsibility of the Weights and Measures Section. These controls serve both buyer and seller by establishing standards of commercial measurement that can be uniformly applied to the exchange of goods and service.

While the federal government has some limited responsibility for weights and measures controls, the states have historically taken the initiative in this area. Today, enforcement in the United States is recognized primarily as a state government responsibility. The federal government plays an important role by providing assistance to the states through the National Institute of Standards and Technology (NIST). NIST is responsible for maintaining the national standards and operating a laboratory for certification of standards. The National Conference on Weights and Measures (NCWM) in cooperation with NIST develops and promotes uniformity in standards, laws and inspection methods to provide maximum public protection through an equitable marketplace. The NCWM also manages the National Type Evaluation Program (NTEP), which type-certifies weighing and measuring equipment prior to entering the marketplace.

In FY2007, the field staff conducted approximately 48,880 inspections of commercial weighing and measuring devices. This is approximately 2,500 fewer devices than the previous year. The inspectors also tested 11,680 individual lots of prepackaged commodities offered for sale. This is approximately 1,000 lots less than the previous year. In FY2007, the field staff investigated 515 consumer complaints. The large number of complaints can be attributed to consumers being more aware of the Weights and Measures Section and the high price of gasoline. The investigation of consumer complaints is given priority over routine inspections. Complaints continue to require the equivalent of 1.5 inspectors working full time. With no one dedicated to investigating complaints, inspectors must be redirected on an as needed basis and therefore, fewer routine inspections can be done. The Weights and Measures Section needs a full time investigator who not only has investigative skills but understands all specifications and tolerances in NIST Handbook 44 along with the relevant test procedures for all devices.

Funding for the field inspection program continues to be a major concern. The field inspection program currently operates on special fund revenue collected from device registration fees. Increases in health care and gasoline costs make it difficult to maintain the current staff. The 1992 Maryland General Assembly established the registration fees to offset General Fund budget reductions. We were successful in our efforts to increase fees in the 2005 Maryland General Assembly. The increased fees were only a temporary fix to the funding of weights and measures inspection staff. The statewide interval between inspections has risen to approximately 20 months. We anticipate this trend will continue due to the small number (18) of inspection staff. In light of its funding issues, the Weights and Measures Section continues to review the operational aspects of the program in an effort to maintain an acceptable level of service.

The registration of approximately 7,000 businesses has created a database that is an effective management tool. It allows the administrative staff to put our limited resources in the most critical areas and provides each field inspector a tool to plan his or her inspection work more efficiently, thereby reducing driving time and providing more uniform inspection coverage. This information will assist the section in prioritizing its limited resources to protect Maryland consumers and maintain a level playing field for industries that operate in the state.

The section published regulations for the Voluntary Registration of Service Agencies and Service Technicians early in FY2004. This program establishes controls over the installation, servicing or repairing of commercial weighing and measuring devices with a goal of reducing the number of callback or follow-up inspections necessary each year. Currently, 43 states have a program establishing some type of control over the installation, servicing or repairing of commercial weighing and measuring devices. The effort has produced some additional special funds for the section, but not nearly enough to eliminate the problems we have encountered in the last five years.

Maryland's Metrology Laboratory maintains primary standards of mass, length, volume and temperature that are legally traceable to the National Institute of Standards and Technology and provides a measurement capability at the state level that is consistent with national measurement goals.



The Maryland Weights and Measures Laboratory is recognized by the National Voluntary Laboratory Accreditation Program (NVLAP) for compliance with criteria set forth in The International Standard ISO/IEC 17025:1999 and relevant requirements of ISO 9002:1994.

The NVLAP is an independent agency under NIST in Gaithersburg. NVLAP accredits testing and calibration laboratories that are found competent to perform specific tests or calibrations, or types of tests or calibrations.

It is the laboratory’s policy to provide the highest quality measurement services attainable to clients and field staff through a continuous improvement of the quality system. Following the International Standards, the Maryland Weights and Measures laboratory assures consistency and accuracy in

regulatory activities and test measurement services for many industries, including manufacturing, science and technology, in addition to calibration laboratories and government agencies.

Maryland’s National Type Evaluation Program (NTEP) Laboratory is authorized as one of only four fully participating laboratories in the nation. NTEP laboratories are authorized by the National Conference on Weights and Measures. Meeting the required performance standards and formalized procedures denotes a high degree of technical and professional competence. Authorization is specific to a type of weighing or measuring device. The Maryland NTEP laboratory is authorized in 14 areas of evaluation.

## Weights and Measures Activities Tables

### Field Inspection and Test Effort

	2005		2006		2007	
	Percent in Violation	Total Tests	Percent in Violation	Total Tests	Percent in Violation	Total Tests
<b>A. Weighing Systems</b>						
Large Scales	30.7	1,326	35.5	1,269	35.5	1,230
Medium Scales	18.8	977	20.0	1,315	22.3	877
Small Scales	14.0	10,615	16.0	11,289	16.8	12,140
<b>B. Liquid Measuring Systems</b>						
Gasoline Dispensers	16.8	38,838	18.7	35,486	18.7	32,012
L P Gas Meters	28.5	460	26.7	511	28.2	852
Vehicle Tank and Other Large Meters	13.5	1,733	15.5	1,323	18.3	1,641
<b>C. Grain Moisture Meters</b>	16.0	143	9.0	157	6.5	132
<b>D. Programmed Tare Inspections</b>	10.0	3,955	10.8	4,640	10.4	4,107
<b>E. Price Scanning and Method of Sale</b>	2.2	9,892	3.4	8,161	3.3	7,249
<b>F. Delivery Ticket Inspections</b>	1.7	3,055	1.7	2,572	.9	3,715
<b>G. Package Lots</b>	11.2	10,029	12.5	12,759	13.9	11,680

*Inspection and testing of packages involve not only correct weight or measure determinations but compliance with method of sale and labeling requirements.*

## Weights and Measures Activities Tables

### Laboratory Effort Inspection and Test

	2005		2006		2007	
	Tested	% Rejected	Tested	% Rejected	Tested	% Rejected
Weights	6,490	10.5	6,901	5.1	6,773	9.8
Volumetric Measures (Non-Glass)	243	38.0	188	32.4	254	29.5
Length Devices	5	0.0	0	0.0	0	0.0
Temperature Devices	61	0.0	46	0.0	46	0.0
Timing Devices	9	0.0	0	0.0	13	24.0
Volumetric (Glass)	0	0.0	12	0.0	10	0.0
Scales/Meters	0	0.0	0	0.0	0	0.0
Milk Samples	160	2.5	114	2.6	108	5.6
Standard Grain Samples	700	N/A	654	N/A	710	N/A

*The laboratory effort involves technical support of the field effort and provides a base of measurement for Weights and Measures officials. Additionally, it provides measurement support for other state agencies and Maryland industries.*

### Administrative Controls and Miscellaneous

	2005 Number	2006 Number	2007 Number
Weighing and Measuring Devices Registration Certificates Issued	7,373	7,239	7,255
Type Evaluation of Devices Conducted (NTEP)	55	57	26
Samplers and Testers Licenses Granted	19	19	15
Citizen Complaints Received and Investigated	444	567	515
Disciplinary Hearings, Criminal Arrests and/or Summonses Obtained	18	18	25

*Aside from day-to-day administration, coordination and support of the laboratory and field activities, the Weights and Measures Section is involved in the registration of commercial weighing and measuring devices, and the examination and licensing of individuals for specific functions.*

## Food Quality Assurance Program

### Grading Services

The Grading Services Section offers producers and processors a voluntary certification program for agricultural commodities including meat, poultry, eggs, fruit, vegetables and grain. Maryland Department of Agriculture graders sample commodities for comparison with standards developed by the U.S. Department of Agriculture and/or MDA for reduction of microbial, chemical and/or physical contamination, quality, size, labeling and packaging. Commodities meeting the criteria established by USDA and/or MDA standards are identified and certified by MDA graders. Official certification provides a uniform basis for the marketing of agricultural commodities that enhances the marketability of Maryland commodities. Foreign countries, wholesale food suppliers, large grocery store chains, and state institutions, among others, often require official certification to ensure they are purchasing agricultural commodities that meet their specifications. The provision of a cost-effective and service-oriented grading program is crucial to Maryland producers competing in these markets.

In addition to providing certification services to the producing industry, the section has assisted buyers in developing specifications to meet their needs. Many buyers have begun requiring audits of production practices in addition to the certification of product. The section conducts audits of agricultural production facilities for compliance with standards for animal welfare, good agricultural practices, food security, food safety and quality assurance programs. As buyers and consumers continue to demand verification of compliance with standards for animal welfare and food safety, the section anticipates increased demand for audits of these practices. Additional staff members are being trained to accommodate the anticipated increase in audit requests.

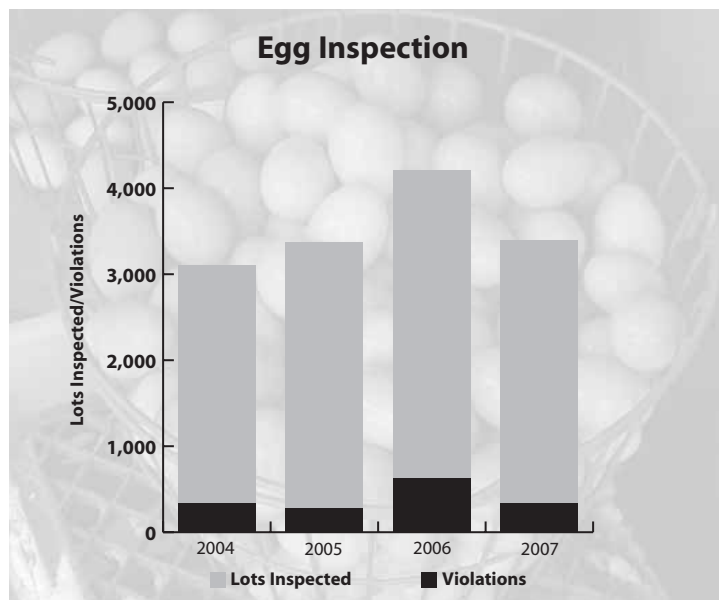
The agricultural commodity industry has continued to change and the section has adapted to these changes by offering the services necessary for the industry to market their products. Consolidation in the poultry and egg industry has reduced the number of processing plants in the state reducing the pounds of poultry and eggs certified. These reductions have resulted in higher fees charged to industry for the services provided. The primary commodities graded by the section this year were 309.9 million pounds of poultry, 39.4 million pounds of shell

eggs and .5 million pounds of fruits and vegetables. The number of Good Agricultural Practices audits conducted increased significantly as more buyers required the audits after an *E. coli* outbreak in spinach caused increased concern about food safety and fresh produce.

### Egg Inspection

The Egg Inspection Program is responsible for enforcement of the Maryland Egg Law. Inspections are performed at the wholesale, food service and retail level to ensure eggs sold in our state meet the standards established for quality, size, refrigeration, microbial and physical contamination, labeling and record keeping. The section is also responsible for the registration of egg wholesalers and packers. Portions of the labeling, record keeping and registration requirements were developed to provide traceability in the event of a *Salmonella enteritidis* outbreak. Other sections of the law were established to reduce the risk of consumers purchasing eggs that could cause food-borne illness. Eggs found to be out of compliance with the established standards are removed from sale and violation notices are issued to the responsible party. The inspection activities are funded through the collection of \$.0026 per dozen of eggs sold in Maryland.

The percentage of eggs sampled found to be in compliance with the Maryland Egg Law increased to 89 percent this year compared to 83 percent last year. The lots inspected decreased as a result of vacancies in the program. The egg inspection chart shows comparison data for the eggs inspected and violations.





Left: Keith Connolley, agricultural commodity grader, collects a sample for pesticide residue testing during an inspection for organic certification.

### Organic Certification Program

The federally accredited Maryland Organic Certification Program certified 84 farms and 18 handlers of organic products in Maryland in 2007. The program also registered an additional 15 farms as organic that are exempt from the inspection requirements.

Maryland organic producers and handlers continue to benefit from the federal Cost-Share Reimbursement Program funded by USDA. This cost-share program allowed MDA to reimburse 75 percent of the inspection costs growers paid for certification. This program is expected to continue until 2007.

During 2007, the program developed a certification program that meets the requirements of the ISO 65 guidelines. In April 2007, the certification program was audited and accredited. The additional accreditation will allow MDA-certified producers and handlers to export their products to the European Union, Canada, and Japan.

### Grain Laws

All persons in the business of buying, receiving, exchanging or storing grain from a grain producer are regulated by this section. Licenses are issued to businesses that meet requirements set by law for insurance and financial status. There are four categories of licenses issued based on the number of bushels purchased in a calendar year. Fees range from \$50 to \$300. *A Directory of Licensed Grain Dealers* is published and distributed annually. The section licensed 42 businesses with 68 business locations in 2007.



Top: Jeanine DeLeonardo, agricultural commodity grader, examines a sample of eggs to grade for quality. Above: Sam Monaghan with the Food Quality Assurance office checks the sanitizer strength and water temperature of a shell egg washer.

## Mosquito Control



### *In Memoriam*

MDA lost a dedicated and talented employee and friend in Cy Lesser when he passed away suddenly last year. Lesser had worked in the Mosquito Control Section for 31 years, eventually becoming chief of the section. He was an internationally known expert in mosquitoes and mosquito

control and his contributions to Maryland are immeasurable. His passing is a great personal and professional loss for MDA.

During 2007, the Maryland Department of Agriculture and cooperating local agencies provided mosquito control services to 1,974 communities, with an estimated population of 1.3 million residents in 22 counties and the City of Baltimore. The reason for the decline in community participation from 2,106 in 2006 was the severe, prolonged drought that plagued Maryland throughout the year. Most mosquito species were adversely impacted by the drought. An exceptionally dry spring (for the second consecutive year) resulted in greatly reduced breeding habitat for the freshwater/floodwater group of mosquitoes. The virtual absence of floodwater mosquitoes in the spring and summer throughout central and western Maryland logically resulted in the large decline of public participation in the mosquito control program.

By most measures, mosquito populations in Maryland during 2007 were well below normal. Light trap collections of mosquitoes were the lowest recorded since 2001. Landing rate counts of adult mosquito biting activity was the lowest seen in more than a decade. Public service requests, which are primarily complaints about mosquito annoyance, were the lowest since 1999.

There were exceptions to the low mosquito population. The tiger mosquito (*Aedes albopictus*) was not adversely affected by the 2007 drought and, based on landing rate collections and public complaints, this species appears to have occurred in higher numbers than normal. This species is exclusively a container breeder, primarily found in the urban and suburban environment where it lives in close association with people. Containers of all types from flower pots to tire casings, discarded cans and bottles, plastic tarps, and boat bilges serve as

breeding locations. A very small amount of rain or irrigation provides sufficient water for this species to prosper. There is evidence that drier than normal conditions are beneficial to tiger mosquito breeding success because abundant rainfall fills the breeding containers causing them to overflow, which flushes tiger mosquito larvae out of the containers to the ground where they quickly die. The large number of tiger mosquitoes from July through October is the principle reason for the increased community participation in Anne Arundel County.

Salt marsh mosquitoes (*Ochlerotatus sollicitans* and *Ochlerotatus taeniorhynchus*) were not adversely affected by the drought. The larvae of these mosquitoes develop on tidal marshes. Flooding to trigger the hatch of mosquito eggs on the salt marsh is provided by tidal flooding in the absence of rainfall. A drought year such as 2007 benefits salt marsh mosquitoes by severely disrupting the normal hydrology of the marsh, causing normally wet areas such as ponds to become dry mudflats which are not able to support the normally large population of small fish that are the primary biological control agent of salt marsh mosquito larvae. Due to the absence of their primary predators, salt marsh mosquitoes flourish during a drought year. Coastal areas, primarily on the Eastern Shore, experienced large outbreaks of salt marsh mosquitoes throughout the summer of 2007 which continued through the late fall.

Mosquito control efforts, primarily the applications of insecticides, increased by 20 percent in 2007 as compared to 2006 activity, but 2007 was still 15 percent below the previous five year average of insecticide application. Very little mosquito control spraying was done prior to July 1, 2007 as a result of the low mosquito population and low risk for mosquito-borne disease. Spraying activity increased significantly after July 1 as a result of a management decision, based on experience in 2006, to increase mosquito control efforts to reduce the risk of disease, primarily West Nile virus. In 2006, when mosquito control spraying was greatly reduced as a result of following a pest management regimen for the entire season, three cases of West Nile virus (WNV) illness occurred in Maryland communities with active mosquito control programs. To avoid a repeat of this unacceptably high level of disease, mosquito control efforts were changed from pest management to disease suppression mode for all participating communities in July, which is the start of the period of highest risk of mosquito-borne transmission to the public in Maryland.

Ground applications of insecticides increased by nearly 22 percent in 2007, as compared with 2006. Aerial spraying increased by 24.5 percent in 2007. There was extreme variation in the amount of mosquito control activity among counties. Spraying in Allegany, Carroll, Frederick, and Washington counties declined by 100 percent from 2006 activity because of low mosquito populations and a season-long vacancy in our entomologist staff for the position which supervises mosquito control in these counties. On the opposite extreme, spraying in Harford County increased by nearly 300 percent in 2007 versus 2006 as a result of tiger mosquito infestation and two human cases of West Nile illness, and over 100 percent in Worcester County due to salt marsh mosquito populations and one case of West Nile illness.

The stocking of stormwater ponds with mosquitofish increased by 281 percent in 2007, as compared to 2006. Stocking of fish in 2007 was also 10 percent above the five year average. In part, the increase is due to the success of the aquaculture pond established at the Salisbury office in 2006 for the propagation of mosquitofish. This pond provided an excellent source of fish for distribution throughout the State.

Wetland management as a source reduction technique of mosquito control continued to make slow progress in 2007. Permits from federal and state agencies remain difficult to obtain. One permit application for a significant project in Worcester County has been under review since early 2007, but by the close of the year, no decision has yet been made. One other permit application for a project in Dorchester County is also under review. Two permits were issued to MDA for water management projects: one for Dames Quarter, Somerset County, and one for a small project in Worcester County adjacent to the Ocean City Airport. A total of 302 acres of mosquito breeding habitat were subjected to source reduction work in Somerset County during 2007.

The public education effort continues to teach the public how to eliminate mosquito breeding sites in communities, primarily by draining or removing containers. In 2007, mosquito control staff participated in 10 community meetings, eight school presentations, seven workshops and nine individual meetings to promote community action to reduce mosquito breeding.

## **Mosquito-Borne Disease Surveillance**

The cooperative effort between MDA and the Maryland Department of Health and Mental Hygiene (DHMH) to monitor the occurrence and distribution of mosquito-borne pathogenic viruses throughout the State completed its seventh year of collaboration in 2007. A total of 21,024 mosquitoes were collected by mosquito control staff and analyzed for viruses by the DHMH laboratory. Six mosquito collections were positive for pathogenic virus. Of this total, five samples were positive for WNV and one sample was positive for eastern equine encephalitis (EEE) virus. All WNV positive samples were collected from Central Maryland: one from Anne Arundel County, three from Montgomery County, and one from Prince George's County. The EEE positive sample was collected from the Pocomoke Swamp in Worcester County.

The Department of Health and Mental Hygiene documented 10 cases of West Nile illness in Maryland residents during 2007. There were no fatalities. Cases occurred in the following counties: Anne Arundel (2), Baltimore (2), Calvert (1), Harford (2), Howard (1), Prince George's (1), and Worcester (1). Two of the 10 cases are believed to have been infected outside of Maryland. The resident of Calvert County was infected in Colorado. The Prince George's County case was infected in Pennsylvania. The Worcester County case may have been infected in Montgomery County, Md, but this can not be confirmed. For the first year since 2000, no human cases of WNV occurred in residents of the City of Baltimore. No human cases of WNV illness occurred in Maryland communities with mosquito control service in 2007 as compared to the three cases from communities with mosquito control service in 2006. The absence of disease in communities providing mosquito control in 2007 is attributed to the greater mosquito control effort from July through October as compared to the reduced effort in 2006 when a pest management strategy was followed.

## **Mosquito Control Customer Satisfaction Survey**

In early 2007, a survey questionnaire was distributed to participants in the mosquito control program. The survey return was greater than 50 percent. Ninety-seven percent of the 2,115 responses stated that mosquito control was a very important service. A similar percentage believes that mosquito control efforts are effective in reducing mosquito populations. Approximately half of the survey responses stated that mosquito control was done sufficiently to meet public expectation, but 48 percent of respondents felt that more mosquito control efforts are needed. By an overwhelming margin, respondents believe that mosquito control does not harm the environment (94%) or human health (95%). The value of the current mosquito control program is rated as good by 72 percent of the survey responses and 96 percent believe mosquito control should be done by a government agency such as MDA versus private companies.

## **Interaction with Other Agencies**

In addition to cooperative agreements with county and city governments and community associations necessary for operational mosquito control services, MDA has contractual agreements and memoranda of understanding with the Maryland Environmental Services (MES), Maryland Department of Health and Mental Hygiene (DHMH), Maryland Department of Natural Resources (DNR), Maryland Department of the Environment (MDE), Maryland Department of General Services (DGS), University of Maryland, U. S. Fish and Wildlife Service (FWS) and the U. S. Army Corps of Engineers (COE).

MDA and MES have an agreement for mosquito control service at the dredged material containment sites at Hart-Miller Island and Poplar Island. MES reimburses MDA all costs for providing this service.

The cooperative effort between MDA and DHMH for mosquito-borne disease surveillance has been an extremely valuable benefit to public health for the past seven years. DHMH administers a federal grant for mosquito-borne disease surveillance and provides funds to MDA for collection, identification and preparation of mosquito samples for virus detection. Unfortunately, the level of federal funding for this work has been greatly decreased during the past three years and currently pays for less than half of the actual costs incurred by MDA. Consequently, this initiative has been reduced. DHMH also established a laboratory in 2005 for the detection of pesticide exposure to people. Any patient or physician who suspects ill effects from exposure to pesticide can submit samples to the DHMH laboratory for analysis.

To date, there has been no documentation of ill effects to human health from insecticides applied for mosquito control in Maryland.

Cooperation between MDA, MDE and DNR on mosquito control has been a long-term association. MDE and DNR review all applications by MDA for Toxic Material Permits (needed for applying pesticides to waters of the state for larval mosquito control), as well as wetland alteration permits for source reduction permits. MDA currently has the necessary Toxic Material Permits to allow mosquito larvicide applications through 2010. Two wetland permits were issued to MDA for mosquito control source reduction projects in 2007 and two other permit requests submitted by MDA are currently under review. The principle controlling agencies for the wetland permits are COE and MDE. Cooperation between MDA and DNR is essential to provide effective mosquito control on wildlife management areas and other state lands under DNR management. MDA continues to work with MDE to develop effective stormwater management designs that do not create mosquito breeding habitat.

The University of Maryland has been the landlord for the Riverdale mosquito control office, which serves central Maryland. The Riverdale office has been an "interim" facility for over 15 years. In 2006, the University received approval from the Maryland Board of Public Works to award a construction contract for the building of a new office for mosquito control. Construction began in early summer and mosquito control staff moved from Riverdale to the College Park location on November 5. MDA owns the building and has a 99 year lease for exclusive use of the University property.

DGS is an essential partner for the mosquito control program. DGS arranges contracts for insecticide purchases and major equipment requisitions. During 2007, DGS negotiated a five year extension of a lease for the mosquito control office in Hollywood, which serves the southern Maryland region.

MDA continues cooperation with the FWS and DNR in marsh restoration projects on the Eastern Shore. Mosquito control staff and equipment were employed in March 2007 to restore 21 acres of tidal wetland on the Deal Island Wildlife Management Area in Somerset County.

## Mosquito Control Activity Summary

	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Communities Participating in Mosquito Control Program	2,204	2,104	2,106	1,974
Number of Light Trap Nights	3,198	3,333	3,762	3,539
Percent of Light Trap Nights Below Threshold	55	63	65	68
Number of Landing Rate Counts Performed	20,876	18,971	20,756	25,861
Percent of Landing Rate Counts Below Action Threshold	31	68	66	71
Number of Public Service Requests	3,532	3,324	4,636	2,879
Number of Mosquitofish Stocked	19,698	16,138	3,737	14,251
Acres Managed by Open Marsh Water Management	709	812	493	302
Acres Treated with Insecticide	2,109,236	1,701,685	1,431,127	1,716,510
Acres Treated for Mosquito Larvae	27,928	15,095	24,880	29,784
Acres Treated for Adult Mosquitoes	2,081,308	1,686,590	1,406,247	1,686,726
Acres Treated by Aircraft	118,120	81,631	220,038	273,880
Acres Treated by Ground Equipment	1,991,116	1,620,054	1,186,209	1,442,630
Number of Mosquitoes Tested for Arboviruses	52,616	74,930	51,289	21,024
Number of Mosquito Pools Positive for Arbovirus	20	24	9	6
Number of Human Cases of Arbovirus Statewide	16	5	11	10
Number of Human Cases of Arbovirus in Areas with Mosquito Control	3	0	3	0
Number of Cases of Arbovirus in Domestic Animals	2	0	0	0



## Number of Human Cases of West Nile Virus Illness in Maryland, 2001– 2006

	2001	2002	2003	2004	2005	2006	2007	TOTAL
Allegany								0
Anne Arundel		8	7	2			2	19
Baltimore City	3	5	14	4	2	6		34
Baltimore Co.	3	1	17	3	1	3	2	30
Calvert							1	1
Caroline			1	1				2
Carroll			2					2
Cecil								0
Charles		1	1					2
Dorchester				2				2
Frederick		5	3					8
Garrett								0
Harford			2				2	4
Howard			3			1	1	5
Kent								0
Montgomery		7	10	1				18
Prince George's		7	4	3	1	1	1	17
Queen Anne's			5					5
St. Mary's		1						1
Somerset								0
Talbot								0
Washington		1	4		1			6
Wicomico								0
Worcester							1	1
Statewide	6 (3*)	36 (7)	73 (9)	16	5	11	10	157 (19)

\*Number of fatalities in parentheses

## Number of Communities Participating in Mosquito Control 2006–2007

County	# of Communities		% Change
	2006	2007	
Allegany	6	6	0
Anne Arundel	177	206	+16.4
Baltimore City	1	1	0
Baltimore County	329	329	0
Calvert	91	69	-24.2
Caroline	67	8	-88.1
Carroll	3	3	0
Cecil	41	43	+4.8
Charles	91	92	+1.1
Dorchester	136	136	0
Frederick	21	9	-57.1
Garrett	0	0	0
Harford	53	42	-20.8
Howard	12	7	-41.7
Kent	36	38	+5.5
Montgomery	25	24	+4
Prince George's	318	302	-5
Queen Anne's	23	22	-4.3
St. Mary's	111	110	-1
Somerset	140	121	-13.6
Talbot	109	108	-1
Washington	7	7	0
Wicomico	173	161	-6.9
Worcester	137	130	-5.1
<b>TOTAL</b>	<b>2,107</b>	<b>1,974</b>	<b>-6.3</b>

## Cumulative Acres Treated with Insecticides for Mosquito Control By County During 2006–2007

County	Acres Sprayed		% Change
	2006	2007	
Allegany	2	0	-100
Anne Arundel	30,901	51,642	+67.1
Baltimore City	91	0.10	-99
Baltimore County	69,846	88,898	+27.3
Calvert	78,688	83,517	+6.1
Caroline	28,043	41,249	+47.1
Carroll	827	0.10	-100
Cecil	39,409	69,927	+77.4
Charles	85,661	87,364	+2.0
Dorchester	277,977	305,719	+10.0
Frederick	1,845	2.60	-100
Garrett	0	0	0
Harford	3,108	12,247	+294
Howard	3	1.80	-66.7
Kent	10,813	9,488	+13.3
Montgomery	6	6.80	+4
Prince George's	21,422	3,643	-83
Queen Anne's	74,620	102,818	+37.8
St. Mary's	96,077	108,019	+12.4
Somerset	179,129	198,971	+11.0
Talbot	122,490	138,016	+12.7
Washington	466	0.03	-100
Wicomico	213,428	213,467	0
Worcester	96,295	201,513	+109.3
<b>TOTAL</b>	<b>1,432,127</b>	<b>1,716,509</b>	<b>+19.9</b>

## 2006 Customer Satisfaction Survey Results Maryland Department of Agriculture Mosquito Control Section

1. Have you had personal experience with the mosquito control program in Maryland?  
Number responding: 2102  
Yes 94%  
No 6%
2. In your opinion, how important is it to control mosquitoes?  
Number responding: 2115  
Very important 97%  
Somewhat important 3%  
Not important 0%
3. Please indicate how you believe the mosquito population has changed in the past 5 years?  
Number responding: 1996  
25% There are more mosquitoes now than 5 years ago.  
34% There are about the same number of mosquitoes now as 5 years ago.  
41% There are fewer mosquitoes now than 5 years ago.
4. Please indicate if you agree or disagree with the following:
  - a. Mosquitoes decrease my comfort and enjoyment of being outside.  
Number responding: 2115  
Agree 99% Disagree 1%
  - b. Mosquitoes can spread disease to people and animals.  
Number responding: 2106  
Agree 100% Disagree 0%
  - c. Mosquito control improves the quality of life in my community.  
Number responding: 2102  
Agree 99% Disagree 1%
5. Do you believe that mosquito control efforts reduce the mosquito population?  
Number responding: 2054  
Yes 97%  
No 3%
6. How do you rate the mosquito control effort in your community?  
Number responding: 1968  
48% Mosquito control is not done enough to meet my expectation.  
52% Mosquito control is done enough to meet my expectation.  
0% Mosquito control efforts should be reduced or limited.
7. Please rate your satisfaction with the mosquito control program.  
Number responding: 1919  
Dissatisfied 16%  
Satisfied 84%
8. Do you believe that mosquito control efforts harm the environment?  
Number responding: 1861  
Yes 6%  
No 94%
9. Do you believe that mosquito control efforts harm human health?  
Number responding: 1834  
Yes 5%  
No 95%
10. Do you believe mosquito control should be done by a government agency such as the Maryland Department of Agriculture or by a private business such as a pest control company?  
Number responding: 1870  
96% Government Agency  
4% Private Business
11. How do you rate the value of mosquito control service for the price you pay?  
Number responding: 1982  
72% Good  
24% Fair  
4% Poor

## Pesticide Regulation Section

The Pesticide Regulation Section is responsible for regulating the use, sale, storage and disposal of pesticides. The primary functions of the section are to enforce state and federal pesticide use laws and regulations and to ensure that pesticides are applied properly by competent individuals so that potential adverse effects to human health and the environment are prevented. The Pesticide Regulation Section contains five major programs: (1) Pesticide Applicator Certification and Training; (2) Pesticide Use Inspection and Enforcement; (3) Pesticide Technical Information Collection and Dissemination; (4) Integrated Pest Management in Schools and on School Grounds; and (5) Special Programs.

### Pesticide Applicator Certification and Training

Two types of pesticide applicators are certified by the Pesticide Regulation Section—private and commercial. Private applicators are farmers and other individuals applying restricted-use pesticides to their own land or rented land for the purpose of producing agricultural commodities. Commercial applicators apply general use and restricted use pesticides as employees of licensed pest control businesses or public agencies.

A total of 69 private applicators were certified in 2007 for a three-year period after passing a closed book examination administered by section personnel during exam sessions. One thousand two hundred seventy-one (1,271) private applicators renewed their certificates by attending recertification training. Currently, there are 3,494 certified private applicators. Section staff approved and monitored 117 private applicator recertification training sessions that the University of Maryland Cooperative Extension, MDA, or the pesticide industry conducted.

A total of 559 new commercial pest control applicators and consultants were certified in one or more of the 13 categories of pest control by satisfying minimum experience or education requirements and by passing written certification exams. The section certified 996 public agency applicators in 2007, bringing the total number of certified commercial applicators to 3,947. Staff processed 489 applications for certification in 2007 and held 18 exam sessions during which 2,172 exams were administered to 934 applicants. Once certified, commercial applicators are required to participate in at least one update training session approved by the department each year in order to renew their certificates. Three hundred twenty-four (324) recertification training sessions for commercial pesticide applicators were approved and monitored by this section and were conducted by the pesticide industry, the University of

Maryland Cooperative Extension, or the department. By attending recertification training, 3,943 applicators were recertified in 2007.

During 2007, the section licensed 1,354 businesses to apply pesticides and to perform pest control services. Three hundred and one (301) public agency permits were issued to governmental agencies that apply pesticides. Forty-three (43) pest control consultant licenses were issued. A total of 2,408 registered employee identification cards were issued during 2007. The department currently has 47,719 employees of pesticide businesses and public agencies registered to apply pesticides under the supervision of certified applicators. A total of 149 dealer permits were issued to businesses that sell restricted use pesticides.

### Pesticide Use Inspection and Enforcement

Besides enforcing state pesticide laws, MDA enforces federal pesticide laws under a Cooperative Enforcement Agreement with the U.S. Environmental Protection Agency (EPA). Routine inspection activities are conducted throughout the year and include use observations and inspections of businesses, public agencies, dealers, market places and producer establishments. Consumer complaint and pesticide misuse investigations also are conducted by the staff.

In 2007, 657 routine business inspections were performed, during which 203 businesses were cited for violations of the Pesticide Applicators Law and Regulations. Seventy-eight (78) pesticide dealer inspections were conducted to ensure that restricted use pesticides were sold only to certified applicators. Sixty-six (66) use observations were conducted, during which pest inspections and pesticide applications performed by commercial and private applicators were observed by section personnel. A total of 79 consumer complaints were investigated. Under the federal cooperative agreement, 28 pesticide producer establishment and 35 market place inspections were conducted. Other enforcement actions taken during 2007 included the assessment of 21 civil penalties totaling \$8,000.

### Pesticide Technical Information Collection and Dissemination

The section developed and printed new training manuals on Rodent Control and Public Health and also modified EPA's National Core Manual to include a chapter on Maryland's laws and regulations.

A listing of pesticide sensitive individuals was first compiled in 1989. During 2007, this section registered 159 individuals. These individuals receive advance notification of pesticide

applications made to adjacent properties by commercial ornamental plant and turf pest control businesses and public agencies. A mailing was sent to all commercial companies and public agencies licensed or permitted in the ornamental plant and turf pest control category.

Searchable databases of registered pesticide products, licensed pesticide businesses, commercial and private applicators and pesticide dealers continue to be posted on the MDA's web site. These databases provide information to applicators and the public about pesticides that may legally be sold, distributed, or used in Maryland and the names and addresses of licensed pesticide businesses. Pesticide dealers can check the certification status of pesticide applicators prior to selling them restricted use pesticides. This database is linked to EPA's registration database so that information on each pesticide product queried, such as the EPA registration number, pest controlled, site of application, formulation, active ingredient, and the brand name, can be obtained.

### **Integrated Pest Management in Schools**

The section continues to promote and support implementation of the Integrated Pest Management (IPM) Program in Public Schools. Regulations that require schools to develop and implement notification and IPM plans for indoor pest control became effective in 1999, and regulations for notification and IPM plans for school grounds became effective in 2002. Staff provided technical assistance in the development of the plans and distribution of information on potential adverse effects of pesticides applied. During 2007, the section has made improvements to the department's IPM In Schools website including a Frequently Asked Questions page, a listing of the school systems contacts, links to both the law and regulations, a form for filing complaints or tips regarding compliance issues.

### **Special Programs**

During 2007, the section offered the recycling program for empty plastic pesticide containers to growers and commercial pesticide applicators at 17 locations. Collection centers were maintained in nine counties (Frederick, Harford, Kent, Prince George's, Talbot, Washington and Wicomico) with the assistance of county government agencies. A total of 28 collection days



were held from June through September.

In addition, 10 pesticide dealers/custom applicators participated in inspection and collection of containers at their own facilities. A total of 35,000 containers, weighing nearly 18 tons, were collected from 123 participants, of which 31 were first time participants. The containers were processed for transporting to a plastic recycling facility.

Maryland Department of Agriculture Pesticide Regulation Section staff continued to offer outreach and compliance assistance to growers and pesticide dealers under the Worker Protection Program. The Worker Protection Standard (WPS) was established to minimize occupational exposure to agricultural pesticides. The WPS requires agricultural workers, who might be exposed to pesticides, to receive training on pesticide safety.

Brochures on the Worker Protection Standard have been produced and widely distributed to the regulated community. To aid with on-farm compliance, the section has developed a pocket-sized WPS Compliance Evaluation Checklist, which is available to all of the WPS regulated community. The section also contracted with Telamon Corporation to provide pesticide safety training to farm workers. In 2007, Telamon members provided training to 480 farm workers and 78 non-farm workers (health care providers). Telamon also provided pesticide safety and awareness training to 62 farm worker children, from pre-K through eighth grade.

The section, in cooperation with the Maryland Department of the Environment, the University of Maryland Cooperative Extension and various agricultural organizations, offered an unusable/unwanted pesticide disposal program for all agricultural producers in nine Eastern Shore counties. More than 20,000 pounds of unwanted pesticides were collected from 30 sites in 2007. Since 1995, the program has collected more than 585 different pesticides totaling nearly 150,000 pounds of unwanted or outdated pesticides.

During FY 2007, the section contracted with the United States Geological Survey (USGS) to summarize MDA's ground water monitoring data. The focus area was within Maryland's Piedmont area. The finalized fact sheet will be available for distribution to all interested parties in 2008.

**Pesticide Regulation Section Activities 2005–2007**

	<b>2005</b>	<b>2006</b>	<b>2007</b>
Pesticide Businesses Licensed	1,557	1,374	1,354
Commercial Pest Control Applicators Certified in One or More Category	3,957	2,852	2,947
Registered Personnel Employed by Licensed Businesses and Public Agencies	43,204	45,311	47,719
Public Agency Permits Issued	311	299	301
Public Agency Applicators Certified In One or More Category	1,056	1,000	996
Private Applicators Certified to Date	3,778	3,516	3,494
Dealer Permits Issued	144	157	149
Examination Sessions Held	18	18	18
Individuals Taking Examinations	867	729	934
Examinations Administered in All Categories	1,784	1,823	2,172
Number of Businesses Inspected	861	823	801
Number of Businesses with Violations	205	199	203
Unregistered Employees	38	15	15
Records Incomplete or Inaccurate	128	101	98
Vehicles Not Properly Identified	41	4	30
No Anti-siphon Device	31	15	10
No First-aid/Safety Equipment	7	16	11
Incomplete or No Customer Information	15	15	0
Pesticide Dealer Inspections	79	81	78
Application Records Reviewed	1,144	973	801
Hearings and Investigation Conferences	1	2	0
Consumer Complaints Investigated	79	74	79
Pesticide Use Observations	77	76	66
Pesticide Samples Collected for Analysis	47	33	32
Market Place Inspections	32	33	35
Producer Establishment Inspections	16	20	28

## State Chemist Section

The State Chemist Section regulates the sale and distribution of pesticides, feeds, pet foods, fertilizers, compost, soil conditioners and agricultural liming materials in order to enhance and promote agricultural production, protect consumers and the environment from unsafe products, ensure the sale of effective products and provide the regulated industry with a competitive marketplace. Regulation is accomplished by product registration, laboratory analysis, inspection, voluntary compliance and enforcement actions such as stop sale orders. The section is totally fee-supported.

### Registration of Products

Pesticide products, commercial feeds, fertilizers, fertilizer/pesticides, liming materials, and soil conditioners are registered for sale or distribution only after careful review of the label to determine the material's nature, proposed uses and potential adverse impacts on agriculture, the environment, the general public, and the regulated industry. During 2007, the section registered 10,721 pesticide products; 3,483 fertilizers; 555 soil conditioners; 689 fertilizer/pesticide combinations; 162 liming materials and 13,209 commercial feeds. (See Table 1.)

### Inspection

Field inspectors routinely inspect regulated products at retail outlets, distribution centers, warehouses, and formulating facilities. These inspections enable the section to maintain efficient regulatory control that ensures the sale, distribution and use of effective products that are safe for the consumer and the environment, when used in accordance with approved label instructions. The inspectors sample a representative cross section of products for chemical analysis and obtain reliable data on the distribution, formulation and sale of these commodities. This enables the section to stop the sale or distribution of ineffective products or those that are harmful to humans, animals or the environment because of unacceptable levels of pesticides, plant nutrients, trace elements and/or toxic materials. In 2007, section inspectors performed approximately 1,519 on-site inspections. (See Table 2.)

### Laboratory Analyses/Investigations

MDA's state-of-the-science laboratory is staffed with chemists who have expertise and experience in the use of highly sophisticated computer controlled instruments used for the analysis of agricultural chemicals and toxic contaminants in commercial products, crops and environmental samples (water, soil, fish), etc. The laboratory staff provides reliable scientific data that are used to assist farmers and to initiate or support regulatory actions against violative products or violators of state and federal agricultural and environmental laws. The laboratory has also provided support to its sister agencies, the departments of the Environment and Natural Resources, and to the federal U.S. Department of Agriculture and the U. S. EPA.

### Homeland Security – FERN (Food Emergency Response Network) for Chemistry

The State Chemist Section's laboratory is the primary Food Emergency Response Network (FERN) chemistry laboratory for the State of Maryland. It is an essential part of a national federal/state network that is expected to be in a state of readiness for quick response to a chemical terrorist attack on state and/or national human and animal food supplies. In the event of such an attack, the section's laboratory staff would be expected to provide rapid and accurate analysis of food, feed, crops and water samples to determine whether any such items would be embargoed or released for human and animal consumption. The laboratory is an active participant in a federal/state laboratory proficiency program for the analysis of highly toxic materials in food and water.

### Enforcement

Any regulated product determined to be ineffective, misbranded or deleterious to the public, agriculture, or the environment is removed from the market place. Determination for product removal is based on inspection, laboratory analysis of official samples, information received from federal or state regulatory agencies, products offered for sale but not registered for use or distribution in Maryland, and review of labels or other materials submitted by companies to support product registration. (See Tables 2 and 3.)



## Food Safety Activities

### Pet Death/Illnesses

The Maryland State Chemist Section was the primary regulatory body that oversaw the recall/Stop Sale Orders that resulted in the removal of thousands of products that contained or may have contained melamine from the Maryland market place. Nationally these contaminated products were the cause of deaths and illnesses of a significant number of dogs and cats. Fatalities and illnesses specific to renal failure were probably due to the presence of both melamine and cyanuric acid (used to stabilize chlorine in swimming pools) which for reasons as yet not determined result in melamine crystallization in kidneys.

Melamine is a polymer used in many plastic products and is not in itself considered hazardous to humans. The chemical structure of melamine contains a high percentage of nitrogen from crude protein. Nitrogen is the principal measure for determining the percentage of protein in animal feed and pet food. The melamine was found in the wheat gluten, an ingredient in the pet food.

The section's inspectors spent many hours/days inspecting warehouses and retail outlets throughout Maryland and issued Stop Sale Orders for any products associated with a recall initiated by the U.S. Food and Drug Administration (FDA). The section's laboratory scientists confirmed the presence of melamine in numerous samples collected and Stop Sale Orders were issued. The results were forwarded to the FDA for a national danger assessment and to monitor the success of a national recall.

### Botulism

As was the case for melamine contamination of pet food, the Maryland State Chemist Section assumed the primary regulatory responsibility to remove thousands of potentially botulinum toxin-contaminated containers of pet food that presented a significant health hazard both to humans and pets. The contamination was probably a result of a lower than required temperature of canned pet food cooked under pressure on a specific processing line of a manufacturer. Section inspectors fanned out across Maryland tracking down all potentially contaminated products and issued Stop Sale Orders for any found. Through press releases and TV interviews, the section gave the public detailed instructions on proper methods and procedures to dispose of these potentially very dangerous products.

### Salmonella

As with the case for melamine and botulinum as previously described, section inspectors monitored all retail outlets/warehouses in Maryland to ensure various FDA recalls involving salmonella were successful in Maryland.

### Drought – Unsafe Levels of Nitrate Aflatoxin and Prussic Acid in Cattle Silage, Corn and Sorghum

Severe drought conditions in many areas of the state can increase levels of nitrate in corn silage, aflatoxin in corn and prussic acid in sorghum—sudan grass intended for cattle feed. Nitrate levels in silage greater than 0.45 percent and aflatoxin levels greater than 20 ppm may be toxic to cattle. Ruminant flora reduces nitrate to ammonia with nitrateite as an intermediate toxic product that forms methemoglobin. Methemoglobin is incapable of oxygen transport (*Merck Veterinary Manual*, 9th Edition). Prussic acid (hydrogen cyanide) is a result of a higher content of cyanogens glucosides in plants leaves (sorghum-sudan grass) formed by drought conditions. When these glucosides are ingested by cattle, bacteria, enzymes or water releases cyanide from the glucoside. Eighty samples were submitted for testing. Seventy-two samples were silage, three were sorghum-sudan grass and 10 were corn. Twelve silage samples contained excess levels of nitrate, one sorghum-sudan grass sample contained toxic levels of prussic acid and one corn sample contained 20 ppb or more of aflatoxin.

### **Milk**

The State Chemist laboratory staff is closely working with the Maryland Department of Health and Mental Hygiene and MDA's Animal Health Section to continue to determine the presence of lead in raw milk from a particular dairy farm. The State Chemist Section is uniquely capable of providing laboratory support for such a project because it has the expertise and the necessary sophisticated instrumentation to detect and quantify exceptionally low concentrations of heavy metals in many different matrices. (See Table 4.)

### **Bovine Spongiform Encephalopathy (BSE-Mad Cow Disease)**

The section continued an inspection program in conjunction with FDA that began in 1999 to determine if feed mills, retail and wholesale distributors, haulers and grain storage facilities within Maryland comply with FDA regulations pertaining to the prevention of bovine spongiform encephalopathy (BSE), also known as mad cow disease. Feed mills and/or feed distributors are issued Stop Sale Orders for products determined to be not in compliance with state and FDA regulations.

In 2007, the State Chemist Section completed 100 BSE inspections which included 35 feed mills, various retail and wholesale distributors, grain haulers/storage facilities and pet food manufacturers. All facilities that were inspected during the contract period were found to be in compliance and free of any violations of the FDA regulations pertaining to BSE.

Recent terrorist activities have resulted in placing additional emphasis on section inspection activities that go beyond the protocols established by the FDA. Section inspectors distributed handouts that list specific precautions that farmers, retailers, distributors and warehouses should follow to help ensure that ruminant animal feed manufactured or distributed in Maryland does not contain ingredients that may transmit BSE. The inspectors have been instructed to personally emphasize to mill workers, distributors, and others the need to read, understand and follow the specific precautions that appear on the warning handouts.

The economic havoc that would ensue if animal feed containing BSE transmissible ingredients was inadvertently or deliberately fed to the ruminant farm animal populations could be ruinous to the beef industry and allied businesses, such as fast food companies, food stores, and restaurants. Beyond the economic considerations, public health concerns would be even greater because ingestion by humans of BSE-contaminated meat could result in incurable fatal brain cell degeneration.

The section performed analyses for ruminant tissue on 179 samples collected from 36 feed manufacturing facilities in the state. The analyses were performed to confirm the findings of the inspections.

### **USDA – Pesticide Data Program (PDP)**

Since 1997, the USDA has contracted with the section to sample various food items from principal distribution centers in the state. These samples consist of such diverse items as pineapples, potatoes, processed food, processed fruit juices, produce, milk, and peanut butter. Approximately 6,800 food products were sampled and analyzed by federal and state laboratories for several hundred different pesticides. In 2007, the section collected approximately 752 samples. In concert with the EPA-Food Safety program, the data will be used to establish new pesticide food tolerances with added emphasis on the diet of infants and children.

### **USDA – Microbiological Data Program (MDP)**

Since 2001, the section has been contracted by with USDA to sample various produce items from principal food distribution centers for analysis to determine the presence of specific pathogens relative to a national health concern about food-borne bacteria. In 2007, at least 80 samples of raw agricultural food commodities were collected by section inspectors to be analyzed for *E. coli*, *Salmonella sp.* and *Listeria monocytogenes*. These analyses are being conducted by various federal and state contract microbiological laboratories.

### **Food Safety Survey of Maryland Produce**

In 2007, the section collected from roadside vegetable/fruit stands random samples of produce grown in Maryland. Forty-eight samples of various vegetables and fruits were collected for analysis of more than 400 different pesticides. The data will be sent to EPA and USDA for incorporation into national data banks.

### **Drugs and Additives in Livestock Feed**

In order to help ensure the safe and effective use of drugs in livestock feed, the section has expanded its feed analysis program. Any feed products containing drugs that do not meet the federal requirements relative to use, over-formulation or deficiency are removed from the market place. Removal of violative products not only protects farm livestock but also provides protection to the public against exposure to drug resistant bacteria. In 2007, the section analyzed 175 samples of feed for 10 different drugs and 46 feeds for phytase. All feed samples tested for phytase were in compliance. Distributors and registrants of defective feed products were notified and either Stop Sale Orders or warnings of potential regulatory action were issued to remove unacceptable products from the market place. In addition to monitoring animal feed for drugs and phytase, the section randomly samples and screens the ingredients that are used in the production of feed for pesticides and heavy metals.

### **Commercial Compost Inspection and Certification Program**

The commercial compost industry has grown significantly and sold/distributed about 150,000 tons to homeowners and horticultural establishments during 2007. The section has increased its efforts to monitor this important nutrient management tool, and has also been able to include representatives of the Maryland Department of the Environment and the local county governments on complaint investigations related to composting operations. This cooperation among agencies has resulted in corrective actions that have eliminated, or significantly reduced, the adverse impacts on the environment and the public from commercial composting, without seriously impacting the efficient operations of compost producers. All commercial compost facilities must have an MDA Certified Operator to oversee the operation. In 2007, the section administered the compost operator certification test to four applicants and processed inquiries from another 13.

### **Chemical Terrorism - Cooperation with DHMH**

The section has recently purchased an additional gas chromatograph with state-of-the-science detectors (flame pulse photometric and halogen specific detectors) and a polymerase chain reaction instrument for use in determining the presence of ruminant protein in cattle feed. These additions will be used to provide rapid and precise identification of pesticides and other toxic organic materials relative to (1) misuse and accident investigations, and (2) potential terrorist attacks on Maryland crops, animal feed as well as food intended for human consumption.

### **Assistance to a Sister State**

The section provided field inspector training to a newly hired Delaware chemist and agricultural field inspectors. Delaware's State Chemist felt that MDA's State Chemist Section inspection staff had the necessary experience and expertise to provide field training to its new employees. The section also, at Delaware's request, tested 14 pesticide regulatory samples and forwarded the results.

**Table 1. Product Registration and Enforcement Actions**

<b>Product Registration</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Pesticides	11,855	11,208	10,721
Fertilizers	3,363	3,383	3,483
Soil Conditioners	533	494	555
Fertilizer/Pesticide Combinations	522	550	689
Liming Materials	135	145	162
Feeds	11,957	12,515	13,209
<b>TOTAL</b>	<b>28,365</b>	<b>28,295</b>	<b>28,819</b>
Number of Companies with Registered Products			
		2,750	2,503
Registrants			
		2,300	2,086
<b>Enforcement</b>			
Non-Registered Notices	441	227	757
Stop Sale Orders	216	167	217

**Table 2. Inspection Program**

	<b>2007</b>
<b>Inspections (Feed, Fertilizer, Pesticides, Compost, etc.)</b>	
Plants, warehouses, retailers, etc.	1,519
Special investigations	26
Inspections for BSE (mad cow disease)	100
Pesticide and microbiological data sites visited (USDA/MDA)	196
Food Safety Program (farmer's market, roadside stands, etc.)	98
Composting sites	6
<b>Samples Obtained for Chemical Analyses</b>	
Pesticide formulations (farms, homes, disinfectants)	296
Fertilizers, soil conditioners, etc.	685
Fertilizer/pesticide combinations	39
Liming materials	81
Feeds (livestock, pet food)	1,505
Raw milk	80
<b>Non-Registered Product Stop Sale Orders</b>	
Pesticides	13
Fertilizers	16
Soil conditioners	3
Fertilizer/pesticide combinations	1
Liming materials	0
Feeds	184

**Table 3. Regulatory Actions****Sample Tracking Stop Sale Orders**

Deficiencies		
Pesticides		1
Fertilizers		198
Feeds		56
Over-Formulations		
Pesticides		1
Fertilizers		82
Feeds		9
<b>Label Violations</b>		<b>9</b>
<b>Warnings</b>		
Deficiencies		
Pesticides		1
Fertilizers		8
Feeds		29
Over-Formulations		
Pesticides		1
Fertilizers		14
Feeds		15
<b>Products Not Registered Brought into Compliance</b>		
Pesticides		11
Fertilizers		89
Soil conditioners		2
Fertilizer/pesticide combinations		1
Liming materials		3
Feeds		651
<b>TOTAL</b>		<b>757</b>

**Table 4. Samples Collected and Analyzed – 2007**

	<b>Samples Collected</b>	<b>Total Number of of Chemical Analyses</b>
Pesticide Formulation Analysis	260	1,040
Fertilizers (nitrogen, phosphorus, potassium, micro-nutrients)	633	4,937
Agricultural Liming Materials	50	192
Feeds and Pet Foods (protein, drugs, phytase, etc.)	1,536	19,126
Broiler Feed for Phytase	46	92
Livestock Feed for Drugs	175	883
Ruminant Tissue Analysis of Feed	179	216
Toxic Metal Analysis of Feeds, Fertilizers and Liming Material	118	1,770
Melamine & Related Compounds – Public Complaints	13	29
State Chemist Feed & Pet Food Inspection Samples	257	344
Aflatoxin in State Chemist Inspection Samples	182	218
Milk Samples for Lead Analysis	12	36
Food Safety of Maryland Produce & Fruit	48	17,545
Animal Health Samples	11	16
Plant Protection Soil Samples	6	60
Service Samples for Farmers, Veterinarians, etc.	80	960
National & International Quality Assurance Samples	80	3,284
EPA Samples (pesticide misuse investigations, market place product monitoring)	53	530

## Turf and Seed

Seed is the single most important input to any cropping system. To be successful, the grower, whether a farmer tilling hundreds of acres or a homeowner with a garden, must begin with quality seed. The Turf and Seed Section conducts regulatory and service programs, including seed inspection, testing, certification and quality control services, designed to insure the continued availability of high quality seed to Maryland's seed consumers.

Today's seed industry exists in an environment of rapid change. The continued development and expansion of GMO's (genetically modified organisms), or genetically-modified crops, has had an enormous effect on the production, distribution and marketing of seed and upon state seed programs. Seed regulatory, testing and certification programs throughout the country are being challenged to meet the demands brought about by these changes.

### Seed Laboratory

Maryland's seed testing laboratory is central to the operation of the section, supporting the regulatory, certification, supervised seed mixing and turfgrass activities, while also providing service testing for seed producers, dealers, farmers and other seed consumers. Turfgrass professionals look to the laboratory to provide them with extended purity and noxious weed examinations for seed destined for use on golf courses, sod production fields, public grounds and other areas demanding high quality turf. Commercial vegetable growers utilize the laboratory for specialized vigor testing, particularly for peas, garden beans and lima beans.

The State Highway Administration relies upon the laboratory to test all grass, wildflower, shrub and other seed planted along Maryland's highways. Maryland farmers participating in the Maryland Agricultural Water Quality Cost-Share (MACS) cover crop program utilize the laboratory to insure that the seed they use meets the standards required for that program. The laboratory also identifies seeds submitted by farmers, veterinarians, health officials, other government agencies and the general public. Round-up®Ready testing of seeds is conducted by the laboratory for authorized seed producers. The laboratory also tests seeds used on wetland mitigation and restoration projects.

Key to a successful laboratory operation is a well-trained staff. The Association of Official Seed Analysts (AOSA) maintains an accreditation program for seed analysts in official laboratories throughout the United States. Analysts who pass rigorous tests, which include both written and practical examinations, are

certified as official purity and germination analysts. At the present time, seven members of our staff are certified by AOSA in both purity and germination testing, out of a nationwide total of 98 analysts who have achieved this level of certification by AOSA. The laboratory staff also participated in various seed referees. These referees develop new testing methodology and ensure uniform and accurate seed testing throughout the country, while also serving as continuing education requirements necessary for certified analysts to maintain their credentials. During the past year, several of our analysts attended a seed testing workshop in Harrisburg, Pa.

### Seed Regulatory

The Maryland Seed Law requires that all seed offered for sale in the state must be accurately labeled and represented. This includes agricultural, vegetable, flower, lawn and turf seed, as well as specialized seed, such as seeds of trees, shrubs, native species, wildflowers and seed used in reclamation and wetlands mitigation projects. This seed is sold in quantities ranging from the small packets of vegetable and flower seed sold to home gardeners to bulk sales of thousands of pounds of crop seed sold to farmers. All seed distributed in Maryland is subject to inspection by this section.

For much of its seed needs, Maryland relies on other areas of the country and the world where climates are more suited to seed production. Thus, it is important that Maryland maintain a strong and effective regulatory program. Seed importing states that fail to maintain good seed regulatory programs become "dumping grounds" for low quality seed that is not acceptable to be sold in many other states.

Maryland's seed inspectors visit both retail and wholesale seed dealers throughout the state. They review label claims, ensure that germination test dates are current and look for seed lots that have been found to be mislabeled or otherwise illegal for sale, based on samples taken at other locations. Seed lots are sampled and submitted to the laboratory for testing. Lots found in violation of the Maryland Seed Law are placed under a stop sale order until they are brought into compliance. Corrective action may include re-labeling, reconditioning, destruction of the seed lot or its removal from the state. Seed dealers who fail to comply with a stop sale order are

subject to civil penalties.

### **Seed Certification**

The seed certification program is quickly adapting to changes in the seed business. As biotechnology increases in agricultural crops, movement away from traditional certification services is occurring. More and more seed varieties are being developed by large investments in biotech research by private companies. The involvement of public institutions, which in the past were the source for most certified seed varieties, continues to decline.

With the increased number of crop varieties being released by private companies, the demand for quality assurance inspections by third parties is strong, particularly from small to medium-sized seed companies that cannot afford their own quality control programs. Companies growing seed in Maryland look to this section for expertise in field inspections, sampling and laboratory analysis for quality control of their products. In the future, it is anticipated that quality control inspection acreage will increase as certified acreage decreases.

Staff members worked closely with seed growers and conditioners to assist them in producing a product that meets some of the highest quality standards in the United States. Maryland seedsmen have become a net exporter of wheat, barley, and soybean seed, adding much revenue to the Maryland agricultural economy.

Staff members cooperated with the Maryland Crop Improvement Association, the Maryland Agricultural Experiment Stations, and the University of Maryland in the production and distribution of Maryland Foundation seed. Much effort was spent to maintain the genetic purity of foundation seed of public varieties important to Maryland agriculture. This foundation seed was distributed to Maryland

seedsmen for the production of Maryland certified seed.

### **Supervised Seed Mixing**

The supervised seed mixing system enables certification to be continued when certified lots of different kinds and varieties of seeds are mixed together. Demand from the industry and consumers for supervised seed mixing is strong. The supervised seed mixing program's oversight ensures that the consumer receives quality seed by precluding the opportunity for substitution of varieties or seed lots that have not been approved. All seed used on State Highway Administration projects and the seed used for the production of Maryland certified turfgrass sod is mixed under this program. Many county and local governments, school systems, golf courses, recreation departments and professional seeding contractors also require that the seed they purchase be mixed under this program.

Prior to mixing, component seed lots must be officially sampled and tested by the Maryland State Seed Laboratory. Seed lots that meet applicable standards are then mixed under the direct supervision of an MDA inspector who insures that the mixer is free of any contaminants and that only approved seed lots are used in the mixture. Special tags are sewn onto each bag to verify that the seed was mixed under MDA supervision.

### **Turf Regulatory**

Maryland's Turfgrass Law requires that all turfgrass sod, plugs and sprigs be accurately labeled. Due to the overall high quality of sod produced by Maryland sod growers, staff efforts are usually limited to responding to complaints which are promptly investigated and resolved. In the majority of cases, the problems are determined to be due to site preparation and other growing conditions rather than the quality or condition of the sod. In these cases, our staff makes recommendations to remedy the situation. The Maryland public continues to be able to purchase some of the highest quality sod available anywhere.

### **Turf Certification**

Maryland's turf certification program is a leader in the nation and has served as a model for certification programs in other states. Growers must plant varieties recommended by the University of Maryland based on performance trials conducted in this region. All seed used in this program is tested by the Maryland State Seed Laboratory and mixed under the supervision of MDA inspectors. Many sod specifications require the use of Maryland certified turfgrass as a means of assuring the use of high quality turfgrass of varieties that are well adapted to this area.



**Turf and Seed Activities, 2005–2007**

	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>Field Inspections</b>			
Acres in Turf Certification Program	4,574	3,433	3,810
Acres of Crop Seed Inspected	14,964	11,189	10,726
<b>Supervised Mixing</b>			
Pounds of Seed Mixed (thousand)	2,801	3,937	2,486
<b>Retail and Wholesale Seed Inspections</b>			
Number of Lots Sampled	910	856	970
Number of Regulatory Seed Tests Conducted	3,213	2,984	3,221
<b>Seed Testing</b>			
Purity Service Tests Conducted	2,566	2,663	2,969
Germination Service Tests Conducted	5,290	4,925	4,646

## Forest Pest Management

The Forest Pest Management (FPM) Section is responsible for minimizing losses due to insect pests and diseases affecting Maryland's valuable forest and landscape trees in rural and urban areas. The FPM Section advises landowners about the management of forest pests. When there are serious outbreaks, as from the gypsy moth, the section will cooperate with local jurisdictions to manage the infestation. To accomplish this, monitoring, assessment, control and education actions are administered through two major programs, Cooperative Gypsy Moth Suppression Program and Cooperative Forest Health Program. Both are cooperative cost-share programs conducted with technical and financial assistance from the USDA, Forest Service (USFS).

The Cooperative Gypsy Moth Suppression Program conducts an integrated pest management (IPM) program to protect forest and shade trees from the continuing threat of defoliation and damage by the gypsy moth. An effective statewide IPM program for gypsy moth requires extensive amounts of accurate population data that must be collected annually. When survey data indicate the potential for defoliation that could lead to death or dieback of high value hardwood trees, aerial application of insecticides may be implemented.

The Cooperative Forest Health Program monitors and evaluates insects and diseases affecting Maryland forests and conducts education and training activities. In addition, separate projects are conducted to address specific agents or situations that are having or may have significant impact on the health of Maryland's forests. In 2007, specific assessment surveys were conducted for hemlock woolly adelgid (HWA), emerald ash borer, southern pine beetle and others.

### Cooperative Forest Health Program

The Maryland Cooperative Forest Health Program (CFHP) combines two federal cost-share programs: Cooperative Forest Health and Forest Health Monitoring. The objectives of these combined programs are to conduct surveys of major forest pests in Maryland and to provide technical advice and assistance to managers of state and private forests. The CFHP also provides training on the importance, identification and control of forest pests to various state and local agencies and forestry organizations.

### Surveys

**Hemlock woolly adelgid (HWA)**—The HWA-infested area now includes the metropolitan area between Baltimore and Washington and native stands of hemlock in Harford, Frederick, Washington, Allegany and Garrett counties. As part of a mid-

Atlantic, multi-state survey, MDA continues to monitor 13 plots established in six Maryland counties to assess the impact of the adelgid on hemlock resources. By the close of 2007, the leading edge of this pest was in central Garrett County.

**Southern pine beetle (SPB)**—Since 1989, Maryland has participated in a multi-state SPB survey throughout the southern United States using pheromone-baited traps. Trap data indicated that SPB numbers would remain low in 2007. Populations have been below outbreak level since 1994. A minor outbreak of SPB occurred in 2005 in Talbot County (99 acres, 22 spots), a first time record for that county that did not carry over into the next season.

**Emerald ash borer (EAB)**—With special funding from the U.S. Forest Service, MDA's Forest Pest Management Section conducted a survey for emerald ash borer in state parks where Michigan campers had visited by placing trap trees and conducting visual surveys. No detections were made in 2006 or 2007 by either survey method. In August, 2006 MDA's Plant Protection and Weed Management (PP&WM) Section found EAB infesting one natural and one trap tree very close to the site of the 2003 introduction of infested nursery stock in Prince George's County. FPM staff is providing administrative and field assistance with the eradication project.

**Pine shoot beetle**—In cooperation with the Plant Protection and Weed Management Section, surveys for the pine shoot beetle have been conducted since 1993. Garrett, Allegany, Washington, Frederick and Montgomery counties are now regulated by a federal quarantine. In 2007, surveys were conducted in Western Maryland, Central Maryland, Northeast Maryland and the Eastern Shore, a total of 13 counties.

**Exotic bark beetles**—In 2007, MDA participated in the U.S. Forest Service Early Detection Rapid Response program, which is a survey for exotic wood boring beetles. The CFHP Program set and serviced the several traps while the Cornell University provided identification of beetles collected. Warehouses receiving overseas shipments of tile, marble and granite that contain wood for protection and bracing were targeted. Pheromone-baited traps were placed in and around these warehouses from May through September. No target species were trapped in 2007.

**Ramorum blight (sudden oak death) disease**—In cooperation with the USFS and MDA's Plant Protection and Weed Management Section, Forest Pest Management conducted a survey for the organism causing sudden oak death. [See Plant Protection Section report for sudden oak death survey details.]

From 2004 to 2006, the Forest Pest Management Section conducted a U.S. Forest Service funded nursery perimeter survey around those establishments that received host plant material from the same source as the infected plants. Landscape and forest trees around 33 nurseries and forest sites were surveyed for *P. ramorum* infections in 2006. No infected plants were found in any of the surveys. In addition, nine watersheds near two nurseries positive for *P. ramorum* infested plants in 2004 were sampled in 2006 by leaf baits placed in the stream. In 2007, 10 watersheds were sampled by stream baiting. No *P. ramorum* was found in any of the samples, though numerous recoveries of other *Phytophthora* were made.

**Miscellaneous surveys**—*Sirex Woodwasp*. Trapping (using trap trees) was conducted in nine counties at nine sites. This exotic woodwasp is known to be a pest on four continents and was discovered for the first time in North America in New York State in 2004. No trap collections were positive for the insect in Maryland in 2007.

Cankerworms which stripped some 7,269 acres in 2006, were found to have subsided this year.

### Defoliation and Damage Report

After seeing 15,793 acres of gypsy moth defoliation in 2006, the second year of this gypsy moth outbreak caused 68,460 acres of defoliation in the state in 14 Maryland jurisdictions. This is the most defoliation in the state since 1995. The western counties of Garrett, Allegany and Washington combined to account for 89 percent of the defoliated acres. Defoliation rated as heavy accounted for 86 percent of the total while moderate defoliation was 14 percent. In comparison, nearby states had the following defoliation; Delaware 285 acres, Virginia 73,408 acres, West Virginia 77,910 acres, New Jersey 320,610 acres and Pennsylvania an estimated 800,000 acres.

### Suppression and Management Report

The hemlock woolly adelgid remains the major threat to the health of eastern hemlock. Infested hemlocks occur in the metropolitan area between Baltimore and Washington and in natural stands from Harford to Garrett counties. The predatory beetle, *Laricobius nigrinus*, was recovered from Rocky Gap in the fall of 2005 and 2006. The beetle release site in the Rocky Gap gorge has been declared an established population after recoveries in 2007. Recoveries have been so numerous that efforts have begun to establish a field insectary at Rocky Gap with the hopes of harvesting enough *L. nigrinus* in future years to release in other areas of the state. The beetles have also been recovered from a release site at the Fredrick City Watershed.

More beetle releases were made in 2007 at Rocky Gap, Allegany County, Hagerstown watershed, Washington County, and the Broad Creek Boy Scout Camp in Harford County. Two other predatory beetle species, *Scymnus sinuanodulus* and *Sasajiscymnus tsugae* were released at several different sites, with no recoveries made. Through 2007, 2,491 trees in priority sites have been soil injected and 218 were trunk injected with imidacloprid insecticide for control of HWA and an additional 382 trees were soil injected on property owned by The Nature Conservancy.

### Cooperative Gypsy Moth Suppression Program

The basis for all decision-making for the integrated pest management of gypsy moth in Maryland is timely, accurate pest population data. These data, in the form of annual population samples and other survey information and observations, are collected from state-owned land, forested residential areas, and privately managed forest tracts. Eighteen counties, Baltimore City and some municipalities were cost share partners in conducting the surveys in 2007. Recently, the FPM Section has been alert to growing populations in Northeastern, Central and Western Maryland. The 2006–7 fall/winter surveys disclosed a sudden increase in infestation levels resulting in the prescribed treatment of 50,173 acres of trees by the Forest Pest Management Section in 11 counties across the state, the most since 1995. Despite this, some 68,460 acres of defoliation were seen, again the highest in 12 years.

Treatment with aerial application of insecticide to suppress gypsy moth caterpillar populations may be proposed on a priority basis to protect high value forest and shade trees, especially in those areas where death and die back of the trees would not be tolerated. One of two insecticides is used—diflubenzuron (Dimilin) or *Bacillus thuringiensis* (B.t.)—and are chosen for their specificity and effectiveness. In 2007, some 34,363 acres (68 percent) were treated with the B.t. insecticide and some 15,810 acres (32 percent) were treated with the Dimilin insecticide.

Forty one percent of treatments in 2007 were to protect resources on State-owned land (State Forests, State Parks, etc.). The largest portion of the 20,692 acres of state land that was treated was in the Savage River State Forest in Garrett County where the worst part of the outbreak was centered.

This marks the second distinct outbreak of the gypsy moth since the mid 1990s. Both the current outbreak and an earlier one starting in 2000 have been characterized by a sharp initial increase in populations.

## Maryland Cooperative Gypsy Moth Suppression Program 1999–2007

NOTE: In 2005, no gypsy moth suppression was conducted.

Total Acres	2007	2006	2004	2003	2002	2001	2000	1999
Allegany	2,295	2,001	0	0	3,941	18,979	2,344	0
Anne Arundel	3,781	0	93	1,821	4,845	3,381	166	0
Baltimore	3,138	0	0	388	1,041	1,050	251	0
Baltimore City	709	0	0	0	135	0	0	0
Calvert	0	0	0	0	0	0	0	0
Caroline	0	0	0	0	0	0	0	0
Carroll	921	541	0	29	272	220	313	0
Cecil	3,220	2,941	567	5,644	13,114	2,971	0	0
Charles	0	0	0	879	3,809	1,517	362	0
Dorchester	0	0	0	1,198	1,148	156	416	521
Frederick	10,197	1,848	0	968	4,331	9,172	5,638	3,150
Garrett	16,340	14,188	0	0	0	429	0	0
Harford	1,134	870	0	0	0	0	0	0
Howard	813	216	0	159	255	149	0	0
Kent	0	0	0	0	0	0	0	0
Montgomery	445	0	0	1,273	413	2,112	640	26
Prince George's	0	0	0	0	505	499	512	0
Queen Anne's	0	0	0	0	0	0	0	0
Somerset	0	0	0	0	52	0	0	219
St. Mary's	0	0	0	0	0	0	56	0
Talbot	0	0	0	1,289	0	0	120	0
Washington	7,180	2,851	0	115	5,204	7,953	5,853	2,390
Wicomico	0	0	0	290	69	0	300	0
<b>State Totals</b>	<b>50,173</b>	<b>25,456</b>	<b>660</b>	<b>14,053</b>	<b>39,134</b>	<b>48,588</b>	<b>16,971</b>	<b>6,306</b>

## Defoliation by Gypsy Moth 1999 – 2007

NOTE: There was no gypsy moth defoliation detected in 2004 or 2005.

Total Acres	2007	2006	2003	2002	2001	2000	1999
Allegany	6,575	0	0	0	25,194	8,913	0
Anne Arundel	8	0	0	203	527	2	0
Baltimore	549	57	0	27	9	104	29
Baltimore City	12	0	0	0	0	0	0
Calvert	0	0	0	0	0	0	0
Caroline	0	0	0	0	0	0	0
Carroll	67	4	0	0	10	2	0
Cecil	683	2	0	1,161	49	734	11
Charles	0	0	0	346	0	0	0
Dorchester	0	0	112	7,055	12,150	4,698	1,101
Frederick	5,578	244	0	1,156	799	2,402	32
Garrett	45,524	15,422	0	0	0	0	0
Harford	341	16	0	0	0	0	0
Howard	114	14	0	0	4	13	0
Kent	0	0	0	0	2	0	0
Montgomery	46	0	0	755	116	272	0
Prince George's	6	0	0	50	98	2	0
Queen Anne's	0	0	0	0	0	0	0
Somerset	0	0	0	536	663	0	0
St. Mary's	0	0	0	0	0	0	1
Talbot	19	0	0	6	24	0	0
Washington	8,938	34	0	507	5,079	6,089	23
Wicomico	0	0	0	1,937	1,459	0	0
Worcester	0	0	0	0	0	0	0
<b>State Totals</b>	<b>68,460</b>	<b>15,793</b>	<b>112</b>	<b>13,739</b>	<b>46,183</b>	<b>23,231</b>	<b>1,197</b>

## Plant Protection and Weed Management

### 2007 Highlights

#### **Maryland Emerald Ash Borer Eradication Project—**

The emerald ash borer (*Agrilus planipennis*), is an exotic, devastating pest of ash trees was first detected in the Detroit, Michigan/Windsor, Ontario area in 2002. Because of the emerald ash borer, more than 20 million ash trees have died in Michigan, Ohio, and Indiana. In 2003, a Michigan nurseryman shipped infested trees, in violation of a quarantine in that state, to a Prince George's County, Maryland nursery. Eradication activities continued in 2007 for the emerald ash borer in the Clinton/Brandywine area. In March of 2007, the Maryland Secretary of Agriculture issued a revised Quarantine Order (#07-01) that prohibits anyone from moving ash trees, wood, or any hardwood firewood out of Prince George's County until further notice. The MDA, with federal funding support and in cooperation with federal, state, and local government partners, has undertaken a massive eradication effort continuing into 2008. In the winter of 2006/2007, more than 25,000 ash trees were removed from more nearly 14,000 acres. For more information on the Maryland Emerald Ash Borer Project, please visit [www.mda.state.md.us/go/eab/](http://www.mda.state.md.us/go/eab/)

**Mile-a-Minute Weed Biocontrol—**The Maryland Department of Agriculture, in partnership with the Howard County Department of Recreation and Parks (HCR&P), released 500 mile-a-minute weevil adults (*Rhinoncomimus latipes Korotyaev*). The weevil is a beetle that feeds exclusively on an invasive vine from Asia known as the mile-a-minute weed (*Polygonum perfoliatum L.*). The beetles were released in a test plot located on county property near Meadowbrook Park in Columbia, Maryland. The release is part of a cooperative effort with researchers at the University of Delaware Department of Entomology and Wildlife Biology in a mile-a-minute biological control study. Preliminary research on the beetle shows great promise as a host-specific control against mile-a-minute weed.

**The Red Imported Fire Ant—***Solenopsis invicta*, a South American stinging insect, is occasionally shipped out of the southern United States, in spite of a federal domestic quarantine that prohibits movement of a variety of commodities unless treated and/or certified free of fire ants. The insect's ability to quickly colonize in a variety of habitats, and its aggressive foraging behavior, pose additional dangers if established in Maryland. Thirty-two isolated infestations have been eradicated in the state since 1989. Imported fire ant detections were down from 12 in 2007 to three in Maryland in 2008. The reduction is largely due to MDA's efforts in the spring to inspect trucks transporting tropical foliage plants from the quarantined areas

of the southern United States and to work closely with officials in those states. The three positive sites of the 80 surveyed in 2007 were associated with areas under eradication and were likely not new infestations.

#### **Apiary Inspection**

The primary purpose of this program is to control honey bee diseases, mites, and pests in order to maintain healthy bees for the essential pollination of more than \$40 million of Maryland crops. Maryland growers of fruit and vegetable crops annually rent approximately 5,000 colonies to improve pollination. Beekeepers' colonies are essential to Maryland because two parasitic mites have nearly eliminated feral (wild) colonies.

**American foul brood disease** is the most serious brood disease of honey bees and can destroy a colony in one year. Colonies detected with American foul brood (45) were destroyed to control the spread of this bacterial disease to healthy colonies. The incidence of disease remains relatively low (less than two percent of colonies inspected).

**Varroa and tracheal mite** populations were very low in Maryland in 2007, but brood problems were attributed to Varroa mite in the season. The Varroa mite often has been found to be resistant to Apistan®, the primary product used to control this parasite. The Maryland Department of Agriculture requested and received a Section 18 Special Exemption from the U.S. Environmental Protection Agency for the use of Check Mite+® (Coumaphos) to control Varroa mites. Four additional products are now available to control Varroa.

**Africanized honey bees** arrive occasionally on cargo ships coming from South or Central America. Swarm traps for collecting and monitoring bees were placed at 35 sites at marine and other shipping locations. Only three swarms were collected in 2007 and were determined to be local bees, not Africanized. MDA is working with two groups—Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC), for education/information to the general public on emergency incidents, and the Apiary Inspectors of America (AIA), for information on the control of movement, other than through natural spread.

The **small hive beetle (SHB)** was detected in packaged bees and reported or detected in 13 counties this past year. Each apiary was treated and monitored to ensure successful control of the beetles. There have been no reports of larvae or damage to established colonies. The small hive beetle is a pest mainly in stored equipment and in honey houses, although it can render stored honey in the hive unmarketable.

**ETO-Fumigation:** There were 36 complete loads of equipment fumigated with a sterilizing gas to decontaminate infested equipment. The fumigation prevented beekeepers from replacing equipment, a value of \$27,000.

**Colony Movement:** Permits were issued for 3,860 honey bee colonies to move out of Maryland and 452 colonies to move into Maryland for pollination services. For the third year, Maryland beekeepers sent colonies to California for almond pollination. In December, 2,436 colonies were transported to California for this purpose, to return to Maryland in March of 2008.

### **Nursery Inspection and Plant Quarantine**

The nursery and greenhouse industry continues to be a viable part of Maryland's agricultural economy, currently ranking second among commodities with a total of approximately \$360 million in farm income. Other horticultural products and services sold boosted the total gross receipts to nearly \$1.04 billion. A primary goal of the state plant protection and quarantine efforts is the facilitation of production and sale of Maryland nursery stock. This is accomplished in large part by inspection and certification activities conducted on-site by MDA staff.

Maryland law and reciprocal agreements with other states require plant material at each producing nursery to be inspected annually for freedom from dangerously injurious plant pests prior to its subsequent sale to other states. State phytosanitary certificates that assure specific compliance with established domestic quarantines were issued to 12 states. Federal phytosanitary certificates required to export Maryland nursery stock were issued to 11 foreign countries including New Zealand, Ethiopia, and China. A total of 328 federal and state certificates were issued in 2007. Although this reflects a 48 percent reduction from certificates issued in 2005, MDA staff have pursued cooperative agreements and followed revised protocols that have streamlined and improved the preparation of Maryland nursery stock for sale and distribution to both foreign and domestic markets.

Inspections of plant material at 920 Maryland locations were conducted to intercept dangerously injurious or exotic pests. The general health of Maryland-produced nursery stock was found to be excellent.

### **Pest Survey**

Current information on pest distribution and abundance is needed for regulatory actions by the Department and for pest control actions by Maryland farmers. Maryland Department

of Agriculture Plant Protection & Weed Management's pest survey program is the agency fulfilling this mission.

**The Cooperative Agricultural Pest Survey (CAPS)** is a joint project between MDA and the U.S. Department of Agriculture Animal and Plant Health Inspection Service Plant Protection and Quarantine (PPQ). USDA recommends pests of quarantine export significance as survey priorities and provides funding for these surveys. MDA adapts the appropriate survey methods and conducts the actual survey. This cooperative program has provided necessary data used to certify Maryland products for export to many countries.

CAPS surveys document the presence or absence of exotic pests in Maryland, support PPQ exotic pest survey activities, and provide state-specific data for exotic pests in the United States. The establishment of any of these species would pose a significant threat to our agricultural production and have a significant impact on Maryland's ability to export agricultural commodities. Early detection of exotic pests before they become established will aid in any eradication or control efforts undertaken and protect Maryland agriculture and the environment from potentially devastating losses.

A total of 2,027 insect traps were deployed and monitored in 2007. Through the various types of surveys conducted, 12,098 samples were collected and over 70,887 insects identified. Trapping techniques involved a wide range of devices including blacklight and pheromone traps. Visual surveys accounted for the detection of one new site infested with giant hogweed in Harford County. The blacklight and pheromone traps have been instrumental in alerting growers on the Eastern Shore of potential outbreaks of black cutworm that can cause severe losses to corn and vegetables.

The surveys target pests that are both exotic and endemic to Maryland. Eighteen extensive surveys for exotic wood borers, stored product pests, field, fruit and vegetable crop pests including diseases such as soybean rust, were conducted. The majority of the pests targeted were either not present or did not reach significant levels of concern. A few caused responses, such as emerald ash borer and imported fire ant. A single bark beetle (*Pityogenes chalcographus*) previously unknown in the United States was intercepted in Baltimore City in August. An intensified survey in 2008 will determine if this pest has become established.

The department continues to survey for the **pine shoot beetle**, *Tomicus piniperda*, a potentially severe pest of pine trees in North America. This European beetle was inadvertently

introduced into the Great Lakes Region in 1992. Since that time, this pest has been found in 15 states. Its detection has resulted in a federal domestic quarantine to regulate the movement of pine nursery stock, cut pine Christmas trees, pine wreaths and garlands, and pine logs from areas where it is established. Tree-growing sites within the regulated area must be surveyed and found free of the beetle before regulated products can be shipped to areas outside the quarantined area. Alternatively, all pine products from within an area under quarantine may be fumigated, however that treatment is generally cost prohibitive.

MDA surveys first detected the pine shoot beetle in 1995 in Allegany County. Since then the pine shoot beetle has been detected in Garrett, Washington, Frederick and Montgomery counties. Over the past six years Garrett County has experienced a 10-fold increase in captured beetles however, over the last four years no beetles were trapped in Montgomery County. Infestations in Allegany and Washington counties continued to be monitored and remain relatively low. In 2007, three additional counties—Baltimore, Harford and Cecil—were added to the trapping program. The additions were in response to the entire state of Pennsylvania being placed under the federal quarantine for this pest. Five other Maryland counties, including the pine timber producing counties on the Eastern Shore, were surveyed and no beetles were detected.

MDA staff, in cooperation with federal Plant Protection and Quarantine officers, continues to work with the nursery, Christmas tree, and logging industries in Western Maryland to inform them of the quarantine and methods of compliance in order to minimize potential risks and to facilitate commerce and trade. Trapping and/or visual inspections were conducted at all nurseries and tree farms that requested or required certification of Christmas trees, pine nursery stock, and pine products. All farms met the requirements for shipping pine trees and pine products. MDA's Plant Protection and Forest Pest Management staff surveys made it possible for growers to confirm compliance with federal law and to continue shipping high quality pine trees and pine products from within the quarantine area in Western Maryland.

See the Plant Protection and Weed Management Highlights earlier in this section for information about the **emerald ash borer** and the **red imported fire ant**.

## Diagnostic Laboratories

The diagnostic laboratories provide testing and analyses that support departmental programs and provide answers to inquiries from outside the department and from the general public. During 2006, samples submitted to the laboratory were received from Plant Protection and Weed Management Section survey and inspection programs, other MDA sections, University of Maryland Cooperative Extension, nursery and landscape businesses, and the general public.

### Entomology Laboratory

Along with the expected identifications of emerald ash borer (*Agrilus planipennis*) and imported fire ants (*Solenopsis invicta*), both from known infestations, there were a number of interesting organisms encountered in 2007. Brown marmorated stink bug (*Halyomorpha halys*) was recorded from a number of sites, including Annapolis and Hart-Miller Island. There were five bedbug (*Cimex lectularius*) submissions, a new record for this lab, a reflection of the country-wide increase in occurrences.

The golden raintree seed bug (*Jadera haematoloma*), a recent arrival to Maryland, was noted in several sites where this tree occurs. This insect joins boxelder bug and others as an occasional or nuisance pest.

Two fortunate individuals found, but did not touch, saddle back caterpillars (*Acharis (Sibene) stimulea*). These caterpillars possess painful stinging spines the effects of which can last for hours.

Another citizen was not as lucky when she encountered stinging nettle (*Urticaria sp.*) as a weed in purchased annuals. This plant is used medicinally, but the hairs on fresh stems cause a painful burning sensation. There were fewer complaints of artillery fungus (*Sphaerobolus sp.*) spore specks on buildings and cars than last year. This is probably drought related.

### Plant Pathology Laboratory

The mission of the Plant Pathology Laboratory at the Maryland Department of Agriculture is to evaluate plant samples for plant pathogens and diseases. General activities include: evaluating plant samples in support of the Nursery Inspection Program to ensure that all plant material in Maryland intended for distribution or sale is disease free; diagnosing plant diseases submitted by other sections of MDA, other Maryland agencies, home gardeners, homeowners, consultants, and industry representatives; providing technical and diagnostic support for virus-free certification programs; supporting the Cooperative Agricultural Pest Survey Program



through laboratory assays for specific diseases; and supporting USDA APHIS and MDA regulatory functions through diagnostic assays for pathogens of regulatory importance.

In 2004, Ramorum blight /sudden oak death, caused by *Phytophthora ramorum*, a fungus-like microorganism, exploded on the American nursery industry. Economically-important nursery plants (e.g., *Camellia*, *Pieris*, *Rhododendron*, *Viburnum*) were found to be susceptible to what was previously a forest disease in California and Oregon on several oak species. More than 100,000 trees on the West Coast have been killed as a result of infection by this pathogen. Plants from nurseries where *P. ramorum* was found were shipped to all parts of the country, including Maryland where *P. ramorum* does not exist. In 2004, Maryland had three confirmed sites where shipped plants infected by *P. ramorum* were found.

From 2004–2006, an intense survey effort was made by MDA nursery inspectors, forest pest management, and the University of Maryland Home and Garden Information Center (HGIC) to look for *P. ramorum* through nursery, forest, watershed, and homeowner surveys. In 2007, funding was cut dramatically from the federal program, making more cost effective surveys essential. In 2007, plant samples tested for *P. ramorum* consisted of symptomatic plant materials collected during routine nursery inspections. The U.S. Forest Service funded an expanded watershed survey for *P. ramorum*, which MDA conducted. Additionally, numerous site visits were made to examine oak trees dying throughout the state.



Rhododendron leaf baits infected with various *Phytophthora* species.

In 2006, the MDA Forest Pest Management team conducted a pilot survey to look for *P. ramorum* in the watersheds of Maryland. The pilot survey worked well for detecting various *Phytophthora* species at minimal cost. The 2006 pilot survey used leaf baits (Rhododendron leaves) that were floated in streams for two weeks in each month from June through September in at least nine sites in Baltimore, Harford, and Carroll counties. In 2007, the survey was expanded to cover 10 sites in nine counties throughout Maryland including: Anne Arundel, Baltimore, Charles, Carroll, Frederick, Harford, Prince George's, Montgomery, and Saint Mary's. The survey was conducted during May, June, September, October, and November to avoid a problem with leaf breakdown that occurs at high temperatures during July and August. In addition to culture analysis conducted at the MDA plant pathology lab, samples were tested independently at Mississippi State University by real-time PCR. No samples tested positive for *Phytophthora ramorum* during the 2007 watershed survey. This survey is planned to continue next year using some existing survey sites and some new ones.

MDA received numerous reports of **dying oak trees**. Many of the trees observed were already under some sort of stress (e.g. construction damage, *Armillaria* root rot, borers, gypsy moth defoliation, etc.). Many of the dying oak trees were also associated with the severe drought that affected most of Maryland this year. None of the dying oak trees was diagnosed with *Phytophthora ramorum*, the cause of “sudden oak death” on the West Coast of the United States.

**Soybean rust**, caused by *Phakopsora pachyrhizi*, remains a threat to Maryland soybeans. Although this disease has the potential to severely limit soybean production, it was not found in Maryland this year. Soybean rust over-winters on kudzu and other legume hosts in the southern states and has the potential to move north every year, depending on weather conditions. This year soybean rust moved as far north as Iowa (nine counties) and was found as close to Maryland as Middlesex County, Virginia.

MDA established two sentinel soybean plots in St. Mary's County in Southern Maryland in 2007, in addition to those established by the University of Maryland. These plots were sampled biweekly for both healthy and diseased tissue. Further efforts were made in early November to detect soybean rust in Maryland after it was detected in nearby Virginia. Eight additional sites were surveyed for soybean rust in the following counties: Anne Arundel, Charles, Frederick, Montgomery, and Prince George's. Samples were collected from kudzu (6) and soybean (2). All samples were negative for *P. pachyrhizi*.



Beech scale as it appears on the trunk of an infested tree.

Beech scale is an exotic insect first found in North America around 1890. Current distribution includes many northeastern states and a localized infestation in northeastern West Virginia. The beech bark disease complex involves the beech scale (*Cryptococcus fagisuga*) and *Nectria* fungi.

In 2003, beech scale (*Cryptococcus fagisuga*) was first detected in Garrett County. In 2007, an effort was made to delineate how far north into Garrett County beech bark scale had advanced. This year's survey found that the scale had moved significantly north into Garrett County, and into Savage River State Forest. Further efforts are needed to determine if beech scale has moved eastward into Allegany County. Additionally, beech bark disease (*Nectria* fungi) was found for the first time in Garrett County, just north of the West Virginia state line. The fungus appears on trees after the scale has wounded them.

The MDA **Plant Disease Diagnostic Clinic** was established primarily to assist MDA nursery inspection staff with routine diagnostics of plant diseases. The clinic received 278 samples during the 2007 growing season. Samples were submitted by MDA nursery inspectors and pesticide investigators, Maryland nurseries, landscapers, IPM scouts, private consultants, and homeowners. Many samples submitted this year were diagnosed as drought injury. Efforts were made to provide submitters with information on watering tips for drought conditions through a fact sheet developed by the HGIC. Other samples received this year included common cankers, leaf spots, root rots, and several virus samples. Samples that tested positive for *Phytophthora* by ELISA tests were then cultured and screened for *Phytophthora ramorum*. Only typical *Phytophthora* species

were found associated with dying plants in Maryland in 2007. Overall, the drought resulted in a poor year for disease development, since most plant pathogens are fungi and require a moist environment to grow well. More wilt diseases were identified this year than the last few years. Plants affected by wilt diseases are more susceptible to drought injury and may decline and die quickly during periods of drought.

A total of 22 **site visits** were made this year, most of which were to investigate reports of bleeding cankers on dying oak trees suspected to be infected with *Phytophthora ramorum*. Bleeding cankers on trees may be caused by many factors, including insect pests, bacterial slime flux, various *Phytophthora* species, and other root rot fungi. In 2007, the most common cause of bleeding cankers associated with dying oak trees was bacterial flux. None of the dying oak trees examined by MDA plant pathology personnel had bleeding cankers caused by *Phytophthora ramorum*.

#### **Greenhouse Laboratory**

Plants were produced for integrated pest management and biological control programs that require food for insect colonies and plant material for research. A collection of herbaceous perennials used for teaching and testing purposes by the Certified Professional Horticulturist Program, in conjunction with the Maryland Nursery and Landscape Association, was increased.

#### **Plant Certification**

The **Maryland Ginseng Management Program** protects American ginseng, *Panax quinquefolius*, from over-harvest by monitoring the harvest and by licensing diggers and dealers of wild, wild-simulated woods-grown, and cultivated ginseng. MDA conducts a management program, in cooperation with the U.S. Fish and Wildlife Service (USF&WS), that follows established protocols to insure the continued availability of a potentially threatened native resource and to protect it from over-harvest. Harvested ginseng is certified through the program to enable licensed dealers to sell this wild-harvested plant product in international markets. MDA also works with growers of wild-simulated and woods-grown ginseng to enable them to market and export their highly valued crops. The dried roots are highly prized, especially in China and Korea, for their putative properties in promoting good health.

During the 2006–2007 harvest and sales season, the certification program inspected, collected size and age data from, and weighed 62.27 pounds of dry wild ginseng root; 1,015 pounds of “artificially propagated” dry ginseng root (this category, initiated by the USF&WS includes wild-simulated and

woods-grown ginseng categories); 154.4 pounds of green (fresh) “artificially propagated” ginseng root; and 181 pounds of soil simulated stratified ginseng seed. Data were gathered and reports submitted in accordance with U.S. Fish and Wildlife Service requirements. The amount of wild ginseng certified in 2006–2007 represented an approximate 32 percent decrease as compared to 2005–2006. Contrastingly, the certification and export of wild-simulated ginseng increased by nearly 121 percent. These data seem to reflect changing demand for ginseng on the international market.

The amount of ginseng “cultivated” (including woods-grown and wild-simulated designations) in Maryland, and certified by the department, remains high relative to the amount of wild ginseng. This reflects both continuing interest in ginseng as an alternative crop, and the ability of Maryland growers to produce high quality ginseng. If this trend continues, harvest pressure on wild ginseng may be reduced, in turn, allowing wild ginseng populations to rebound.

The MDA continues to participate in the virus-free **rose certification** program with Angelica Nursery. MDA maintained and certified stock plants of three varieties of roses in 2007. These were propagated by tissue culture, producing a total of 995 plants. Laboratory and greenhouse personnel participated in a visual inspection of all rose plants at the nursery both in the spring and the fall, and submitted 19 leaf samples of stock plants to Agdia for testing in their rose screen for viruses. Visual surveys are conducted twice a year, and testing occurs once each year.

### **Integrated Pest Management & Biological Control**

Cooperative efforts continued among MDA, the University of Maryland, growers, and the Northeast Integrated Pest Management Center (NEIPMC). MDA represents Maryland state regulators at the NEIPMC through a seat on the Advisory Council. In 2007, the section helped to plan and participated in a Plant Protection Guest Lecture Series at the University of Maryland, in ongoing cooperation with the Maryland Plant Protection Center, a collaboration between USDA and the University of Maryland, which aims to establish a leading academic research and extension program in the mid-Atlantic region.

#### **Weed Integrated Pest Management (IPM)**

Under the direction of Plant Protection and Weed Management Section entomologists, staff assisted in an IPM program to provide biological control of certain thistle species. The program has helped greatly to control musk thistle along highway areas that are inaccessible to mowing and/or spraying equipment. MDA provided technical assistance to various federal, county and state agencies with noxious weed problems on public

land, including the University of Maryland, the Department of Natural Resources, correctional institutions, county road departments, State Highway Administration and the U.S. Department of the Interior.

Weed IPM research activities are conducted at field plots at the MDA facility in Cheltenham. Field plots established along State Highway Administration rights-of-way sites during each of the past seven years continued to be used for evaluation and to conduct weed suppression trials. Investigations continued on integrated pest management of *Cirsium* and *Carduus* thistles. Research is concentrating on the evaluation of organisms for potential biocontrol, testing herbicide formulation efficacy, and evaluating the use of competitive vegetation (including native grasses and forbs) in an effort to provide environmentally-sound and cost-effective methods for suppression of noxious thistle species in Maryland. The department continues to work with the State Highway Administration in a thistle management program on state highway rights-of-way.

A survey for the presence and effects of **rose rosette disease** was continued in 2007. Rose rosette disease is a pathogenic malady of the multiflora rose, *Rosa multiflora*, which has become established in North America and is spread by natural means. The disease reduces populations of this invasive rose species. Rose rosette disease was detected for the first time in Cecil and Prince George’s counties in 2001. Results indicate that the disease is continuing to spread over a wide portion of Central and Northern Maryland. In 2002, a field experiment to test the relative susceptibility of various rose cultivars and native species to rose rosette disease was designed and implemented at the MDA facility in Cheltenham. Experimental results continued to be recorded in 2007. This experiment is intended to provide valuable information needed to assess the effects of the disease on rose species other than *R. multiflora* including native species and cultivars important to the landscape and nursery trade in Maryland.

This was another active year for releases of biological control agents, the leaf-feeding beetles *Gallerucella californiensis* and *G. pusilla* on populations of **purple loosestrife** (*Lythrum salicaria*). During the summer of 2007, more than 16,500 adult beetles were released at several locations on the Patuxent River near Jug Bay and adjacent to the Merkle Wildlife Management Area. Partners in this effort are the Maryland Department of Natural Resources (DNR), the Maryland-National Capital Park and Planning Commission (M-NCPPC), the Howard County Department of Recreation and Parks, and the Maryland Department of Agriculture (MDA). Funding for the project was, in part, derived from funds dedicated by the

Maryland Department of Transportation, State Highway Administration (SHA). MDA was the primary coordinating agency. To address the demand for adult beetles for release at various locations around the state in the future, and at the same time defray some of the additional expense of greenhouse heating, the rearing program was moved from Cheltenham to our main headquarters in Annapolis, and will be conducted at the MDA greenhouse and at the MDA insect rearing and quarantine laboratories. The MDA staff received shipments of the purple loosestrife leaf beetle, *Galerucella* spp., from the New Jersey Department of Agriculture in August 2007. The beetles are kept in diapause over the winter in the MDA laboratories at headquarters. Small numbers of “Maryland-raised” beetles are expected to be ready for release in 2008.

In addition to the releases and the rearing project described above, locations of prior releases in Prince George’s and Howard counties were surveyed for the biocontrol agent and beetle activity was detected. An average of 30,000 beetles per year had been released over several years through 2003 to establish populations of the leaf feeding beetles in field insectaries, to support field collections for biological control efforts, and to allow for redistribution in the future. Sites in Howard and Prince George’s Counties where beetles were released in past years were evaluated for levels of plant control and were surveyed for establishment of the beetles. No detectable level of control of purple loosestrife has been noted, but for the third consecutive year, high numbers of beetles were recovered at the Howard County site, indicating that established populations are reproducing at that location. Slow increase of beetle populations is not uncommon, and significant reduction of purple loosestrife populations has taken five to seven years or longer in some other states. Additional releases of adult beetles, and the expansion of the *Galerucella* rearing facility at Cheltenham are planned for 2008.

Experiments in the management of **Japanese stiltgrass**, *Microstegium vimenium*, were designed and initiated in 2004 in a cooperative effort with the Howard County Department of Recreation and Parks. The project is directed at finding proper management tools to help suppress and control this invasive weed species in both natural and roadside environments. In 2005, pre-emergent herbicide treatments were applied and

additional data gathered. Data was scrutinized in 2006 and sites revisited. It was decided that at least one more round of data should be gathered from treatment plots in 2007 and this data collection was completed in June of this year. The potential for widespread control of this pest plant through use of herbicides is rather limited. Herbicides are likely to be most effective on small populations, limited in spread. Large scale control of Japanese stiltgrass is likely only through use of biological control agents.

See the highlights at the beginning of this section for information on mile-a-minute biological control.

### **Noxious Weed Management**

This program supports the control and eradication of designated noxious weeds in order to reduce their economic and aesthetic impact on farmers and landowners. Noxious weeds (Johnsongrass, shattercane, thistles, and multiflora rose) cause losses in excess of \$15 million annually to Maryland agriculture due to reduced quality and yields of crops and forages, increased control costs, and increased roadside and development property management cost. The Maryland General Assembly enacted the first Nuisance Weed Law on Johnsongrass in 1969. In 1987, the Nuisance Weed Law was rewritten and renamed the Noxious Weed Law (Title 9, Subtitle 4, Agriculture Article, Annotated Code of Maryland). The Noxious Weed Law requires that a landowner, or a person who possesses and manages land, eradicate or control the noxious weeds on that land by using practices prescribed by the department, including mowing, cultivating, or treating with an approved herbicide. The law prohibits the importation and transportation of these weeds in the state and prohibits the presence of viable noxious weed seed and rhizomes in seed, topsoil, mulch, nursery stock, on-farm machinery, or any other article. The Noxious Weed Law also provides that the Maryland Department of Agriculture may enter into an agreement with a county or political subdivision to provide technical and financial assistance for initiating weed management and eradication programs.

A weed control advisory committee has been established in each of the 20 participating counties, with representatives from farming organizations, governmental agencies, and local farmers. Each committee provides advice or input into planning the noxious weed control program in that county. A county weed control coordinator, usually employed on a part-time basis, determines the degree of noxious weed infestations within the county, locates uncontrolled infestations, provides

information on currently recommended control practices, and initiates agreements with landowners to implement a control program. In many counties, the local weed control coordinator also performs spot-spraying on roadsides, in cooperation with the Maryland State Highway Administration, to help eliminate Johnsongrass or thistles and to control noxious weeds on private or public lands for a fee. In counties with no weed control coordinator, MDA employees handle these duties. This program was highly successful in most areas of the state during 2007.

The weed control program provided grant assistance to 20 counties, averaging \$4,400 per county which was leveraged with similar amounts of money from the counties and the counties generated in excess of \$700,000 from spraying services provided by the county programs. The county programs are supervised by the state personnel as specified by contract.

Under the direction of Plant Protection and Weed Management Section entomologists, staff assisted in an IPM program to provide biological control of certain thistle species. The program has helped greatly to control musk thistle along highway areas that are inaccessible to mowing and/or spraying equipment.

MDA provided technical assistance to the federal, state and local agencies with noxious weed problems on public land, including the University of Maryland, Maryland Department of Natural Resources, correctional institutions, county road departments, Maryland State Highway Administration and the U.S. Department of the Interior.

Noxious weed advisory notices were mailed to 111 managers of property infested with a noxious weed. Generally these notices were effective in obtaining compliance; however, when necessary, MDA sent follow-up correspondence resulting in compliance.

The weed control program responds to citizens' requests for technical assistance in controlling invasive, difficult to control, persistent weeds, such as phragmites, kudzu, mile-a-minute, *Ailanthus* (tree of heaven), Japanese stilt grass, purple loosestrife and Japanese bamboo (*Fallopia japonica*).

Giant hogweed is a federal noxious weed that was first detected in Maryland in 2003. Giant hogweed (*Heracleum mantegazzianum*) was originally detected at 29 sites in Baltimore and Harford counties. In 2005, eight additional sites in Garrett County were added to this list. An additional site was added in 2007. A multi-state eradication effort is underway, with all previous sites and all newly verified sites being included in this program. Plans are to continue this effort in 2007.

The staff participated with the Maryland Department of Natural Resources for the 12th year in providing a Phragmites Management Program. Upon request from landowners or managers, the Weed Control Program staff supplied technical and spraying assistance for control. The DNR provided 100 percent of the cost of chemical (Aquaneet®) applied in the nine counties of the Eastern Shore for phragmites. Total spray revenue for phragmites control exceeded \$60,000 for treating approximately 370 acres in 327 locations in 16 counties.

In all counties, the noxious weed control program's spraying service was offered to landowners participating in the Conservation Reserve Program (CRP) or Conservation Reserve Enhancement Program (CREP). Due to the likelihood of weed problems occurring on land in these programs, spraying services were offered for noxious weed control.



Ash tree bark is stripped off the trunk to look for evidence of the emerald ash borer.

### Other Section Activities

During 2007, MDA continued to take a leadership role in the Maryland Invasive Species Council (MISC), a forum for information exchange and consensus building among diverse interests in public and private agencies or organizations concerned with invasive species. Several Plant Protection and Weed Management staff members were directly involved with MISC and were able to assist other members or individuals with technical information on control of invasive plant species or with actual spraying as well as partner with other agencies on grants to control invasive species. Through MISC, the MDA has been able to disseminate information on many of the serious pests cited in this report. The MISC Web site is [www.mdinvasivesp.org](http://www.mdinvasivesp.org).

## Plant Protection and Weed Management Summary of 2007 Activity

	2005	2006	2007
Beekeepers Registered	987	1,059	1,331
Apiaries Registered	1,337	1,379	1,460
Apiaries Visited	776	734	620
Apiaries Inspected	591	572	509
Apiaries with Disease	40	32	29
Bee Colonies Registered	8,333	7,274	8,212
Bee Colonies Inspected	4,138	4,215	4,603
Bee Colonies with Disease (American Foul Brood)	74	50	45
Laboratory Diagnoses of Bee Diseases and Pests	77	82	98
Colonies Certified for Movement Out of State	4,303	5,140	3,860
Colonies Moved into Maryland Under Permit	523	378	452
Bee Colonies Certified During Inspection	4,138	4,215	4,603
Field Diagnoses for Varroa Mite	192	64	92
Ginseng Dealers Registered	8	9	10
Ginseng Collectors Licensed	229	210	230
Plant Inspections Conducted	1,217	1,263	920
Nurseries Certified	282	374	400
Nursery Acreage Certified	8,126	10,503	9,540
Plant Dealers Licensed	563	664	642
Plant Dealer Retail Outlets Licensed	679	734	739
Greenhouse Plants Inspected (1,000 sq. ft.)	7,556	7,853	7,978
Plant Brokers Licensed	17	14	13
Post-entry Quarantine Inspections	36	39	11
Phytosanitary Certificates Issued	678	510	328
Condemnation-Seizure Notices Issued	4	24	13
Plants Condemned	493	624	1,149
Imported Fire Ant Positive Sites	7	12	3
Imported Fire Ant Traps Placed	1,422	3,056	1,395
Imported Fire Ant Traps With Some Species of Ants	407	927	409
Special Insect Traps Monitored	2,329	3,934	2,027
Blacklight Samples Processed	6,490	6,433	5,875
Soil Samples Processed for Nematode Surveys	73	24	14

## Maryland Department of Agriculture Budget Allocations for Fiscal Year 2007

**Total State Budget** (Operating and Capital) .....\$29,729,489,801

**Maryland Department of Agriculture Budget** .....\$ 160,639,287

### Maryland Department of Agriculture Budget Sources

State General Fund .....\$ 29,263,163

Special and Reimbursable Funds

(Fees, Registration, Testing & MALPF) .....\$ 114,605,225

Federal Funds

(Grants & Cooperative Agreements) .....\$ 10,607,899

General Obligation Bonds

(Maryland Agricultural Water Quality Cost Share,  
Maryland Agricultural Land Preservation Foundation,  
and Tobacco Conversion Program) .....\$ 6,163,000

Source: *Fiscal Digest of the State of Maryland, FY2007*

C-12, C-27, SB370

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**Forest Pest Management**

Vacant (410) 841-5922

Fax (410) 841-5835

*Survey & Control*

Vacant (410) 841-5922

*Central Maryland*

Vacant (301) 662-2074

*Eastern Shore*

Steve A. Tilley (410) 479-2047

*Northeast Maryland*

Robert L. Tatman (410) 879-8034

*Southern Maryland*

Sarah A. Hughes (301) 782-7155

*Western Maryland*

David L. Cohen (301) 777-3601

*Forest Health Monitoring*

Vacant (410) 841-5922

**Pesticide Regulation**

Chief, Dennis W. Howard  
(410) 841-5710, Fax (410) 841-2765

*Enforcement*

Dennis W. Howard (410) 841-5710

*Certification/Training*

Edward A. Crow (410) 841-5710

*Special Projects*

Robert Hofstetter (410) 841-5710

**Plant Protection & Weed Management**

Chief, Carol A. Holko (410) 841-5920

Fax (410) 841-5835

*Nursery Inspection*

Vacant 410-841-5920

*Salisbury*

Mark Taylor

*Riverdale*

Robert Trumbule

*Annapolis*

Steve Malan

*Apiary Inspection*

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*Pest Survey*

Dick Bean (410) 841-2743

*Laboratory Services*

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*Noxious Weed Control*

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**State Chemist**

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Ken McManus (410) 841-2721

*Registration Manager*

Phil Davidson (410) 841-2721

*Supervisor, Inspection Staff*

Harwood Owings (410) 841-2721

*Compost Coordinator and QA Officer*

Don Lewis (410) 841-2721

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*Seed Certification*

Dale A. Morris (410) 841-5960

**Boards and Commissions**

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Chairman, Aaron Morgan

*Aquaculture Coordinator*

Noreen Eberly (410) 841-5724

**Aquaculture Coordinating Council**

Chairman, Don Webster

*Aquaculture Coordinator*

Karl Roscher (410) 841-5724

**Board of Review**

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**Maryland Agricultural Commission**

Chairman, Luke Howard

*Executive Director*

Buddy O. Bowling (410) 841-5882

**Maryland Agricultural Fair Board**

Chairperson, Harold Clark

*Executive Secretary*

Martin Hamilton (410) 841-5770

**Maryland Agricultural Land  
Preservation Foundation**

Chairman, Dan Colhoun

*Executive Director*

James Conrad (410) 841-5860

**Maryland Horse Industry Board**

Chairman, James Steele

*Executive Director*

J. Robert Burk (410) 841-5822

**Maryland Organic Certification**

**Advisory Committee**

Chairman, Luke Howard

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**Maryland Winery and Grape Growers**

**Advisory Committee**

Chairman, Richard Penna

*Agricultural Coordinator*

Theresa Brophy (410) 841-5770

**Seafood Marketing Advisory  
Committee**

Chairman, William Woodfield

*Agricultural Coordinator*

Noreen Eberly (410) 841-5820

**State Board of Veterinary**

**Medical Examiners**

President, Christopher Runde, D.V.M.

*Executive Director*

Laura Downes (410) 841-5804

**State Soil Conservation Committee**

Chairman, J. Bruce Yerkes

*Executive Secretary*

Louise Lawrence (410) 841-5863

**Young Farmers Advisory Board**

Chairman, Trey Hill

*Coordinator*

Gilbert O. Bowling (410) 841-5882



2007 Employee of the Year  
Robin Roscher

## Employees of the Quarter, 2007

Every three months, an MDA staff member is selected as Employee of the Quarter based on his or her outstanding performance, attitude and motivation, among other considerations. At the end of the year, one of the four is selected as Employee of the Year. In 2007, the employees were **Robin Roscher**, Maryland Horse Industry Board based in Annapolis; **Bettie McCaffrey**, Marketing, Animal Industries and Consumer Services based in Annapolis; **Susan Shepard**, Animal Health Section based in Centreville; and **Howard Callahan**, Nutrient Management Section based in Denton. The 2006 Employee of the Year, **Dwight Dotterer**, Resource Conservation Operations based in Frederick, had not been announced by publication of the annual report. The 2007 Employee of the Year is **Robin Roscher**.



Bettie McCaffrey



Dwight Dotterer (left), Employee of the Year for 2006



Susan Shepard (center)



Howard Callahan (second from right)



Governor Martin O'Malley

Lt. Governor Anthony G. Brown

Secretary Roger L. Richardson

Deputy Secretary Earl F. Hance

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