



Celebrating **25** Years of Conservation Programs

MARYLAND DEPARTMENT OF AGRICULTURE 2009 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 Earl F. Hance



Deputy Secretary Mary Ellen Setting



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Dear Friends,

Over the past three years, Lt. Governor Anthony Brown and I have been honored to meet and learn from Maryland farmers and others who are invested, as we are, in sustaining and growing our state's leading industry – agriculture. A prosperous and thriving agricultural industry is so important to our shared priorities of strengthening our family farms and businesses and improving the health of our families and the Chesapeake Bay.

Agriculture is facing many challenges in these tough times. But these challenges offer unique opportunities such as meeting an increasing demand for locally grown and organically grown food, preserving our valuable farmland before it's lost to development, and balancing profitability while at the same time using the best research available to protect the environment.

Maryland farmers continue to set an outstanding example of stewardship for the rest of our state. Even in these tough budget times, we have provided full funding for farmland preservation programs and strong funding for conservation cost-share programs to help farmers reach the Bay goals. For more than 25 years, Maryland farmers have engaged in conservation activities such as CREP, cover crop and the installation of a record number of best management practices this year. Online programs like BayStat, GreenPrint, and now AgPrint demonstrate the real progress farmers have made in Maryland for resource conservation and water quality.

At the state level, we are making sure there is a level regulatory playing field across the nation. I have contacted EPA Administrator Lisa Jackson directly on

numerous occasions to make sure that Maryland's family farms and businesses receive fair and equal treatment in its animal feeding operation and other environmental regulatory programs. We cannot have one regulatory standard for farmers in Maryland and another lower standard in other states.

We remain as committed as ever to protecting farmland and ensuring that family farming remains profitable by expanding marketing opportunities. To that end, we are encouraging more Marylanders to "buy local" through our Maryland's Best branding initiative, which is designed to kindle a greater awareness that food that is farmed, fished, and raised locally makes for healthier plates, a healthier planet, and happier taste buds. The campaign has been very successful in raising sales and consumption of local products at schools, restaurants, institutions, grocery stores, and farmers' markets as a way to improve the health of our residents and the profitability of farmers.

We have also planted a food garden at Government House through a partnership with the University of Maryland Extension and Maryland Department of Agriculture to promote their "Grow It Eat It" campaign. It encourages Maryland families to improve health and save money by growing fresh vegetables, fruits and herbs at home using sustainable practices.



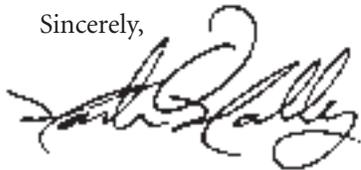
For the last four years, part of our mission has been to strengthen and grow Maryland's family-owned businesses and farms. Because we understand the fundamental importance of financing to farm businesses, we are committed to funding the Maryland Agricultural & Resource-Based Industry Development Corporation. We are also fighting for increased energy efficiency and reduced propane dependency through our EmPOWER Maryland Farm Energy Audit Program – now available for all agricultural producers in Maryland – which should save Maryland farmers \$4.35 million over the next decade.

With the help of the Maryland Congressional delegation, we received federal drought designations in 2009 to help Maryland farmers who suffered crop loss from drought or vomitoxin contamination. Also with help from our Congressional delegation, we have secured nearly \$2.5 million through the Dairy Economic Loss Assistance Payment program, along with FSA loan relief and MILC payments of \$5.8 million for our dairy farmers, who continue to bear a disproportionate burden of this recession.

I want to commend the agricultural community for its conservation leadership and for producing the high quality food we enjoy. We appreciate their perseverance during these challenging times.

Thank you for allowing me to serve you. I thank you for joining me and Lt. Governor Brown in protecting our shared priorities as we seek, together as One Maryland, a stronger, smarter, and more sustainable future. Together we are choosing a smarter, greener and growing future for agriculture, the bay and for our children.

Sincerely,



Martin O'Malley
Governor



Governor Martin O'Malley meets with dairy farmers during the Great Frederick Fair to discuss issues facing the industry during a period of economic distress.

Dear Friends

The Maryland Agricultural Water Quality Cost-Share program has just completed a milestone – 25 years of helping farmers improve the soil and water quality through the installation of on-farm best management practices (BMPs). The commitment of Maryland farmers to soil and water conservation along with Governor O’Malley’s commitment to funding, even in these difficult economic times, and transparent reporting combines to protect water quality while the farming sector remains vibrant and profitable. The agricultural conservation ethic illustrated through 25 years of MACS provides a healthy, local food supply, strengthens our economy, keeps farming profitable and of course protects the environment for the benefit of all Marylanders.

At the end of the 25th year of the Maryland Agricultural Water Quality Cost-Share program, the data for this program alone illustrate how invested farmers are in making sure that they do the best they can to protect the environment. Governor O’Malley’s data-driven reporting system, BayStat, shows that agriculture is making progress toward its Bay cleanup goals. Please take a minute to scan the feature on the MACS program in the following pages and www.baystat.maryland.gov to learn more about the progress toward Maryland’s Chesapeake Bay restoration goals. As residents of the Bay watershed, we all have an impact on our streams and the Bay and we all must help clean it up.



While Chesapeake Bay restoration is of the highest priority, MDA has a broader mission. Through our education, regulation, preservation, promotion and service activities residents can expect a clean and healthy environment and food supply, fairness in the marketplace and that agriculture remains a strong economic force.

Some of the department’s many accomplishments in 2009 included:

- Purchasing 75 new easements on 8,332 acres by combining FY 2009 and 2010 funds.
- Expanding marketing opportunities for local products through the Farm to School, buy-local, and farmers’ market initiatives as well as Governor and First Lady O’Malley’s Buy Local Cookout.
- Working with the Maryland Department of the Environment and farmers to develop a new Animal Feeding Operation program that is workable for farmers and meets federal and state regulatory objectives.
- Developing a new leasing program to encourage the expansion of aquaculture in the Chesapeake Bay.
- Advancing the Statewide Plan for Agriculture by accomplishing 102 of 109 initiatives in the plan and planning a second Forum to develop a new 15-year plan for Maryland agriculture.
- Containing the emerald ash borer, gypsy moth, and other insect pests and invasive plants that could damage our forests and ecosystems.

- Assisting in obtaining crop disaster designations due to a drought and vomitoxin contamination of winter grains.
- Establishing a regulatory action web page to add transparency to MDA enforcement actions across all programs.
- Initiating, with First Lady Katie O'Malley and the University of Maryland Home and Garden Information Center Master Gardeners, a Grow It-Eat It backyard food gardening campaign.

The 2007 Census of Agriculture illustrated that Maryland agriculture and related industries are changing as farmers respond to new markets, new conservation technologies, and many other business considerations. This is an exciting time for us at MDA as consumers become more involved in their food purchasing decisions, making connections between the farm and their fork. I am honored to serve the citizens of Maryland, the Executive Branch, and the General Assembly of Maryland State Government. Working together, we are creating a smart, green and growing future for agriculture and for all Marylanders.

Sincerely,



Earl F. Hance
Secretary
Maryland Department of Agriculture



USDA Deputy Secretary Kathleen Merrigan and Sec. Buddy Hance read to children and serve them breakfast at a day care center in Montgomery County to kick off President Obama's Summer of Service and draw attention to USDA food and nutrition programs.



Celebrating **25** Years of Conservation Programs

Maryland Agricultural Water Quality Cost-Share (MACS) Program

In 2009, MDA marked its 25th year of extraordinary success in helping farmers protect water quality in the streams and rivers that feed our great Chesapeake Bay. More than just another government incentive program, the Maryland Agricultural Water Quality Cost-Share (MACS) Program is the cornerstone of Maryland's efforts to protect natural resources and Governor Martin O'Malley's plan to accelerate the Bay cleanup. MACS provides farmers with the financial resources they need to place conservation practices on their farms to control soil erosion, manage nutrients, protect wildlife habitat and ensure the health and safety of all Maryland waterways. MACS has grown tremendously over the last quarter century and farmer interest and action in protecting natural resources has reached unprecedented levels. Despite the recent economic downturn, 2009 was our most successful year on record.

To put matters into perspective, back in 1984 MACS provided Maryland farmers with \$434,000 in grants to install roughly 130 conservation projects on their farms. This year, MACS provided Maryland farmers with a record \$19 million in grants to install 2,370 conservation projects on their farms. Farmers who received MACS grants over the last 25 years invested more than \$14 million of their own money into these conservation projects and must shoulder additional maintenance and upkeep expenses for a minimum of 10 years. Such action on the part of Maryland farmers dispels the notion that conservation takes a back seat – even in tough economic times.

A lot has changed in 25 years. In 1984, most of the conservation practices funded by MACS were used to control soil erosion and reduce the devastating effects of sedimentation in the Chesapeake Bay and its tributaries. Today, farmers are installing state-of-the-art waste management systems and innovative heavy use areas for poultry and livestock operations aimed at curbing nutrient movement into surface and ground-water. Many of these systems – which can cost upwards of \$100,000 – are now required by regulation for certain animal operations.

In recent years, our Cover Crop Program has expanded in both popularity and scope thanks to new, dedicated funding being provided by the Chesapeake Bay Restoration Fund and the Chesapeake Bay 2010 Trust Fund. A rising star in agriculture's efforts to minimize soil losses over the winter and reduce nutrient runoff from crop fields, cover crops planted on Maryland farms saved 1.17 million pounds of nitrogen and 47,800 pounds of phosphorus from entering Maryland waterways this year. They are prominently featured in Governor O'Malley's suite of ambitious two-year milestones aimed at accelerating the Bay cleanup. Cover crops alone are expected to achieve one-third of the Governor's nutrient reduction goals.

But the cumulative efforts of the MACS program speak for themselves: farmers have used about \$14 million of their own money to match about \$100 million of cost-share funding to install and maintain more than 20,000 conservation projects since 1984. That equates to almost 2.5 BMPs each and every day for 25 years. As Maryland ramps up its efforts to achieve even greater nutrient savings for the Bay, MACS will continue to help Maryland farmers lead the way toward a smart, green and growing future.



Mr. Lloyd Allen, a Kent County farmer and first MACS participant receives a symbolic check in 1984. Left to right: Wayne A. Cawley, Secretary of Agriculture; Louis Goldstein, Comptroller of the State of Maryland and Lloyd G. Allen.

Below: Front and back of the original MACS application.

SECTION IV - TECHNICAL REPORT

FINAL COST ESTIMATE

NUMBER	UNIT	COST ITEM	UNIT COST	TOTAL COST	PERCENT	TOTAL COST
1	PI	Deep Stabilization	3,500	87%	3,045.00	
2	PI	Site Prep	23.00	0.2%	517.00	
3	PI	Grassed Waterway	2.30	0.1%	517.00	
4	PI	Surface Planting	23.00	0.1%	517.00	
			TOTAL	\$4,576.00	TOTAL	\$4,576.00

SECTION V - AGREEMENT APPROVAL BY MW

Approved by: *Wayne A. Cawley* Date: *7-19-84*

Approved by: *Louis Goldstein* Date: *7-19-84*

Approved by: *Lloyd G. Allen* Date: *7-19-84*

SECTION VI - PERFORMANCE REPORT

Approved by: *Wayne A. Cawley* Date: *7-19-84*

Approved by: *Louis Goldstein* Date: *7-19-84*

Approved by: *Lloyd G. Allen* Date: *7-19-84*

1980 funds @ 89% = \$4,082.56

MARYLAND DEPARTMENT OF AGRICULTURE

LAND USE PROGRAM FOR THE CONTROL OF WATER POLLUTION

WATER QUALITY PROJECT FORM

SECTION I - APPLICATION

Applicant Name: *Lloyd G. Allen*

Address: *301, 41, Box 12, Snowsville, Md. 21000*

SECTION II - TECHNICAL DETERMINATION

Project Description: *Deep Stabilization*

Project Location: *Deep Stabilization*

Project Size: *3.5 acres*

Project Start Date: *7-19-84*

Project Completion Date: *7-19-84*

Project Status: *Completed*

Project Cost: *\$4,576.00*

Project Funding Source: *1980 funds @ 89% = \$4,082.56*



Clockwise from top left: MDA and Kent Soil Conservation District staff, contractors and property owner, Lloyd Allen, install the first cost-shared best management practice; An early heavy use area cost-share project being installed on a dairy farm; More recent MACS projects and assistance include a stream crossing, technical assistance on a farm, a poultry manure storage facility with composter, and a manure storage facility for a dairy operation.

The Maryland Agricultural Commission

The Maryland Agriculture Commission is the advisory group to the Maryland Secretary of Agriculture. There are 30 members on the Commission with representation from each of the State's major commodity groups: Poultry, dairy, equine, nursery, etc. as well as representatives from the University of Maryland, consumer interests, food processing and various other agricultural business segments.

The Commission holds monthly meetings and discusses issues of agricultural consequence. This year the Commission had notable speakers and subsequent in-depth discussion on the subjects of: agriculture-related University programs; the H2A and H2B Programs; the National Animal Identification System; the poultry industry; legislative initiatives; the green industry in Maryland: H1N1 novel flu virus; the history of water quality issues and programs; MDA Animal Health Diagnostic laboratories; the Forestry Summit; and a presentation on forest certification and chain of custody.

These topics along with reports from each of the commodity and business groups represented on the Commission keep the group proactive with agricultural issues and assure the fulfillment of the Commission's statutory mission. In addition, the Commission held its bi-annual farm tours in Prince George's and Charles counties in the spring and Somerset and Wicomico counties in the fall.

The Commission continues to work actively on the 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. One hundred and two of the 109 recommendations are either completed or underway. The Commission is planning a second forum to develop a new 15-year plan for Maryland agriculture.



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 units within the department for legal sufficiency, and assists in producing educational programs for department staff.

In 2009, the office:

- Provided legal services to the Maryland Agricultural Land Preservation Foundation. With nearly 2,000 land preservation easements 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 Commission visits the Holland Family's Chesapeake Bay Farms store near Berlin in Worcester County.

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, protect wildlife and preserve the environmental quality of the Chesapeake Bay and its tributaries.

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. The Foundation made 75 new easement offers on 8,332 acres using FY 2009 and 2010 funds combined for the FY 2009 easement acquisition cycle.

MALPF now has purchased or has pending offers to purchase easements on a cumulative total of about 2,079 properties, permanently preserving approximately 283,000 acres. By combining FY 2009 and 2010 appropriations, MALPF was able to commit almost \$50 million to purchase easements during this period, including almost \$10 million in federal matching funds. Real estate transfer tax revenues are the primary source of MALPF funding, and because real estate values and the number of real estate transactions have declined, funding available to purchase easements has declined.

The General Assembly adopted new legislation affecting MALPF during the 2009 legislative session. The most important change for the future of the program was to give the MALPF Board of Trustees the authority to initiate and assess civil penalties in cases of willful and serious violations of the deed of easement. Senate Bill 89 allows the imposition of a civil penalty of up to \$2,500 per violation each day until the violation is resolved, up to a maximum of \$50,000 for each administrative hearing. The law gives a landowner a reasonable amount of time to bring the property back into compliance with the easement before any administrative hearing or civil penalty is imposed.

New certification requirements from the Agricultural Stewardship Act of 2006 and House Bill 1354 (2007) went into effect on July 1, 2008. Regulations were developed to implement the statutory changes and became effective January 26, 2009. As of September 2009, all county certification programs had been reviewed under the changed requirements and brought into compliance with the certification regulations. As a result of the most recent reviews, three counties were fully recertified, 12 counties were conditionally recertified, and one county had its recertification request denied. Currently, 15 of Maryland's 23 counties have certified local agricultural land preservation programs.

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 January 1, 2009, Maryland has preserved almost 535,000 acres of agricultural land under MALPF, Rural Legacy, GreenPrint, and through local land preservation and transfer of development rights programs.



Permanently preserved farmland protected through the MALPF easement purchase program.

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 500 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, 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 and is responsible for the maintenance and repair of 331,600 square feet of facilities on 40.5 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 284 vehicles in addition to semi-annual inspections on all vehicles. The MDA fleet traveled more than 2.7 million miles last year.

Central Services provides procurement assistance throughout the department; continues to improve management practices and automate 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.

In FY09, MDA initiated an energy efficiency performance contract that will save MDA more than \$4.36 million over 14 years. All project costs will be funded through guaranteed energy-related savings as MDA's headquarters building implements the O'Malley Administration's goal to reduce power consumption by 15 percent by the year 2015. The MDA headquarters building projects include solar panels, lighting retrofit upgrades, water conservation retrofits, building envelope improvements, renewable technology, HVAC upgrades, direct digital controls, facility maintenance services, and measurement and verification services.



MDA worked with the South River Federation to install three rain garden/bioretention areas on the grounds that are helping to capture and filter stormwater and non-point source runoff that flows into Broad Creek and the South River.

The headquarters projects will have significant environmental impact by reducing greenhouse gases including 2.98 million pounds of carbon dioxide (CO₂), which is equivalent to the amount of CO₂ emitted by powering 120 homes, within the life of the 14-year contract. Other reductions include: 7,600 pounds of NO_x, 21,900 pounds of SO_x.

Other projects include:

- Working with the South River Federation to install three bioretention areas on MDA and Anne Arundel County property that are helping to capture and filter stormwater and non-point source runoff that flows into Broad Creek and South River.
- Recycling approximately 45.5 tons of materials that included: mixed paper, 15.8 tons; cardboard, 16 tons; landscape debris, 10 tons; car batteries 0.5 tons; and automobile tires, 1.6 tons in FY09 plus aluminum (128 pounds), toner cartridges and plastic bottles.
- Fiscal Services handles all centralized accounting transactions for the department. This encompasses all phases of the budget, grants management, accounts receivable, accounts payable and leave management. The office has continued its fine record of paying 99.5 percent of MDA bills on time as defined by 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 and to support policy initiatives. 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 an impact over the long term.

The most prominent events produced by the Public Information and Outreach offices in 2009 were the Buy-Local Cookout at the Governor's official residence in July to kick off Buy Local Challenge Week, the agency's "exhibits" at the Maryland State Fair in August, and the Farm-to-School launch in September. These events showcase the agency to thousands of people and require the involvement of dozens if not hundreds of employees. The office 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 FY2009, staff distributed 243 news releases to approximately 300 news outlets and interested parties, which generated approximately 775 logged calls from the media. The office uses a media monitoring system to track and research media contacts, to distribute news releases, maintain media lists for targeted stories, and to find news clippings of interest to the agency and its constituencies. Each day, 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 415,514 visits of which 65 percent were new visitors during the year. The visitors viewed nearly 900,000 pages. The activity increased steadily through the year. The leading page views after the homepage were farmers' markets, jobs, licenses and permits and the daily news clippings. 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 determines ways to improve it.



First Lady Katie O'Malley with volunteer Master Gardeners and University of Maryland Extension staff. Mrs. O'Malley is leading the Grow it Eat it effort with a highly visible food garden at her family's official residence in Annapolis.



Danny Mast of the Animal Health office and Julie Oberg of the Public Information Office work at an MDA booth at the Delmarva Chicken Festival in Queen Anne's County.

Some of the biggest news stories handled by the information office in 2009 were environmental regulatory issues like the Concentrated Animal Feeding Operation (CAFO) permit process, the local impact of national food safety issues, and the promotion of Maryland made, grown, and harvested products.

Other high-profile media inquiries included the new Maryland and federal animal feeding operation permit being required of poultry and livestock producers; and the environmental accomplishments or impacts of agriculture, funding for the gypsy moth suppression program and consumer complaints related to the high price of gas and the amount of fuel dispensed.

Exciting new initiatives that the public information staff led in collaboration with other MDA offices, the University of Maryland, state and local agencies and related non-profit organizations, were the Grow it-Eat it Backyard Food Gardening campaign and MDA's involvement in the O'Malley/Brown Administration's Capital for a Day community relations events.

The public information staff launched an online regulatory action center to publicize the department's enforcement actions. The goal is to give the public a better understanding of how MDA protects consumers, businesses and the environment on a daily basis. It is also intended to be a deterrent to future violations of the law by the regulated agricultural community.

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. Staff represents the agency on the Heritage Areas Technical Advisory Committee and the newly formed Maryland Agricultural Education Council. In addition, staff are actively involved in the Communications Officers of State Departments of Agriculture, the national Emerald Ash Borer public information working group and the Smart, Green and Growing Communications Committee.



MDA employee Genesis Parker greets visitors to the Maryland State Fair to explain the importance of turfgrass and seed programs.



UMD College of Agriculture and Natural Resources Dean Cheng-I Wei and Sec. Hance join forces to kick off the University's Grow it Eat it backyard food gardening campaign at the Master Peace Community Garden in Riverdale.

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 2008—the most recent year that annual statistics are available for this report—agriculture generated nearly \$1.97 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 NASS estimated there were 12,850 farms in 2008 with an average size of 160 acres. Total land in farms in Maryland was 2.05 million acres, one-third of the state's entire land area.

In February 2009, NASS published the results of its largest and most comprehensive data collection effort, the 2007 Census of Agriculture. The Census, taken every five years, is a complete count of Maryland farms and the people who operate them. The Census looks at land use and ownership, operator characteristics, production practices, income and expenditures and many other areas. It is the only source of uniform, comprehensive agricultural data for every county in the state. Maryland farmers helped make the 2007 Census of Agriculture the most successful count in history.

The Census found that 61 percent of all Maryland farmers have internet access, up from 53 percent in 2002. For the first time in 2007, the census also looked at high-speed Internet access. Of those producers accessing the Internet, 55 percent reported having a high-speed connection. Other "firsts" in the 2007 Census include questions about on-farm energy generation, community-supported agriculture arrangements and historic barns.



Bonnet Taylor with the Maryland office of the USDA National Agricultural Statistics Service conducts a telephone survey to gather information from farmers.

Many exciting and useful data products were generated from the results of the Census of Agriculture. For the first time, the Census data were made available by watershed, or by the six digit Hydrologic Unit Code (HUC), as defined by the U.S. Geological Survey. Additionally, the publication includes watershed data from the 2002 Census of Agriculture to demonstrate the changes in land use, production practices and livestock distribution in the past five years. Census data were also made available by congressional district. The congressional district profiles show changes in key areas at the local level since the last census was taken in 2002. They include data on such things as the number of farms and acres in farmland, the demographics of local farmers, livestock inventory, crop production, and total sales of agricultural products.

In May 2009, NASS conducted the first-ever, wide-scale survey to measure the impact and importance of organic crops and livestock products in the overall food supply and how it is meeting the growing demand. The survey results will help shape decisions regarding farm policy, funding allocations, availability of goods and services, community development and other key issues. The survey included farmers currently engaged in organic production as well as those making the transition to organic agriculture. Survey results will be published in February 2010.

To obtain a copy of the complete Agriculture in Maryland 2008 Summary call 410-841-5740 or log on to www.nass.usda.gov/md. The results of the Census are available online at www.nass.usda.gov or www.agcensus.usda.gov.

Office of Information Technology

IT Services has completed a complete hardware refresh/software upgrade encompassing all user workstations and laptops across the entire department. All new hardware has dual core processors and 2GB RAM. Microsoft Windows XP was chosen for the operating system after a problematic evaluation of Windows Vista.

Microsoft Office 2007 replaced Office XP in the new machines. This was a significant upgrade for most of our users, but most have adapted very well to the new working environment. WordPerfect Suite was not installed with this upgrade, and IT services assisted users with the conversion of old word processing documents into Word documents and Excel spreadsheets. A specific workshop was given by IT staff to demonstrate the conversion of Word Perfect labels into Word labels, which represented one of the greater challenges in the conversion process.

As new workstations came on line (both on the Local Area Network, and the Wide Area Network), they were coupled with the Network Access Control (NAC) system that had been purchased, installed, configured, and tested prior to the commencement of the migration project. This system has significantly improved the network security by not allowing any PC to connect to the network until NAC has verified that the system is current with Windows Security Update, the firewall is turned on, and anti-virus software is installed, running and its signatures are up to date.

Workstations connected to MDA over the Wide Area Network (WAN) now have the ability to connect to the Novell Netware operating system and have file services available that were not possible before the implementation of the NAC system. The number of GroupWise mailboxes has also been increased to provide MDA based e-mail services to WAN clients.

Prior to the migration, laptops were not allowed to connect to the network, as it had been impossible to verify where a particular unit had been used, if it was properly secured and updated, and not virus/worm infected. All new laptops are also configured to authenticate to the NAC system, and, with that in place, can now connect to the network. When laptops that are not configured with the NAC software, try to attach to the network they can still have limited access to the Internet, even if they do not meet NAC's configuration requirements. This will allow visitor to have Internet access for presentations, etc., without risking the security of the network.

As new hardware was distributed, the MDA Inventory System was updated and records now include the NAC address(es) of both the embedded standard network interface and the wireless interface (if present). This will greatly assist in network monitoring and trouble shooting

An RSA SecureID server has also been purchased, installed and configured. This is the final piece necessary for MDA users to have access to network resources, outside of MDA, over the Internet. Clients are issued a SecureID token which generates a new six-digit password every minute, providing two factor authentication of users – “something you know” (user ID), plus “something you have (the number generated by the token). With a high speed Internet connection, users can login to MDA's Virtual Private Network using their network ID and the password generated by the token. They are then prompted for their usual network credentials, and after passing the NAC verification process, users have full access to network resources including, files and Oracle databases

In September, 2006, MDA shutdown 2/3 of the WAN remote sites connected to the MDA Headquarters' core network. Funding for these sites was derived from grants that were not renewed. The primary expense was for the “last mile” Frame Relay circuits which were provided by Verizon, and connected the remote sites to network.Maryland services. Network.Maryland provides data transport to and from MDA. This past year network Maryland initiated the Ethernet Everywhere (EE) service which now provides end to end connectivity and eliminates Verizon's “last mile” charges. All 24 previously shut down sites, Resource Conservation county offices, have been restored.

Geographic Information Systems (GIS) are currently playing an increased role in data definition and access. Association of specific point data (latitude and longitude) with database items such as livestock herds, agricultural land, business addresses, and conservation practices is necessary to locate items for graphical display and emergency management. Five Oracle database applications (farmland preservation, pesticide sensitive farmland, poultry flock registration, Maryland'sBest, and Weights & Measures device registration) have been designed or modified to include geo-referenced data (centroids). This will enable the use of appropriate tools to get the database information associated with specific points on a map. These maps can be used for data verification or any number of regulatory and information services.

One of the key responsibilities of MDA's Office of Resource Conservation is to monitor and assist farmers in the management of nutrients that are applied to cropland. It is an essential component of the Bay restoration programs. IT Services has been working with the Resource Conservation Office and the University of Maryland to develop a reporting system to aid farmers submitting the annual implementation report (AIR), which is required as part of the management of their nutrient management plan (NMP). The NuMan Reporter is a free software product available by request on CD, or on demand over the Internet. This product enables a farmer to take the information stored in NuManPro (another software product developed by the University of Maryland), used to generate the initial NMP, and quickly modify the data to reflect the actual amounts of nutrients applied to various crops raised on the properties covered under the NMP and the acreage associated with each crop. The report also gathers information about manure production and transport as well as individual properties that may have been added to the cropland used by the farmer within the NMP during the past year. Once the report is complete the farmer or consultant working with the farmer, can upload an encrypted version of the data to MDA, where it is incorporated in to an Oracle database. Further enhancements to this software will make it an effective and efficient reporting tool.

Providing licensing and registration data services to Maryland citizens is one of IT Services' top priorities. Numerous obstacles must be overcome to accomplish this goal. The first phase is to make Oracle web-based services accessible to MDA employees. The second phase (public access) will require a complete re-design of these tools, with attention to the amount and type of data accessed, as well as addressing the significantly larger issues associated with facing any application to the Internet. To begin the first phase of this project, IT's Application Development Staff are learning the programming techniques associated with web-based systems deployed on an application server. Open Source tools have been selected for application development (JBoss Developer Suite), as well as the application server itself (JBoss Application Server). Staff will leverage their experience with Oracle's web based reporting tool (BI Publisher) to complete the suite of products necessary for the development of these applications.

The MDA website (www.mda.state.md.us) is the primary interface between the citizens of Maryland and MDA over the Internet. This site has been completely re-designed to reflect current web design standards as well as conform to the general guidelines for Maryland state agencies.

IT Services is working with the Office of Resource Conservation and an outside development team to produce the Maryland Nutrient Trading web-site. According to the site, "Nutrient trading is a form of exchange (buying & selling) of nutrient reduction credits. These credits have a monetary value that may be paid to the seller to install best management practices that reduce nitrogen or phosphorous. In general, water quality trading utilizes a market-based approach that offers greater opportunity for buyer and seller to exchange credits. It allows one source to meet and/or maintain its regulatory obligations by using pollution reductions created by another source at a lower cost" (<http://mdnutrienttrading.org/>). The site is currently on line, but only providing information at this time. It is scheduled to be fully functional within a year

IT staff have dedicated significant time in the maintenance and enhancement of the other MDA sponsored websites including the Maryland Seafood website (www.marylandseafood.org), and the Maryland's Best website (www.marylandsbest.net). In addition, significant staff time has been committed to Help Desk user support (hardware and software), network administration/management, as well as database application management and support.

Office of Resource Conservation

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 office provides a range of educational, financial, technical assistance and regulatory programs to improve agricultural management and help Maryland meet its Chesapeake Bay restoration goals. Staff 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.

2009 Highlights

2009 was a busy year for the Office of Resource Conservation. Of major significance, the Maryland Agricultural Water Quality Cost-Share (MACS) Program celebrated its 25th year of extraordinary success in helping farmers install conservation practices on their farms that protect water quality in the streams and rivers that feed the Chesapeake Bay. All told, during the last 25 years, MACS has provided \$98.6 million in grants to farmers to install more than 20,000 conservation projects on their farms. Maryland farmers invested an additional \$14 million of their own money into these projects.

The Chesapeake Bay restoration effort moved forward on several key fronts in 2009. In April, Governor Martin O'Malley and USDA Secretary Tom Vilsack signed a new agreement reauthorizing Maryland's Conservation Reserve Enhancement Program (CREP). The program is designed to help protect Maryland's waterways by offering incentives to farmers who take environmentally sensitive cropland out of production for 10 to 15 years and plant streamside buffers, protect highly erodible land or establish wetlands to safeguard local streams.

Less than one month later, Governor O'Malley announced a series of 27 ambitious two-year milestones aimed at speeding up Maryland's efforts to reduce nutrients entering the Bay and bolster accountability to the public. Seventeen of the 27 milestones are related to agriculture and focus on increasing the use of certain highly valued best management practices (BMPs) by farmers, including cover crops, poultry and livestock waste management systems, heavy use areas, precision agriculture, manure incorporation, and increased enforcement of nutrient management plans.

In order to provide a clearer, more accurate picture of the highly valued BMPS in use on Maryland farms, MDA implemented a new Conservation Tracker database system in local soil conservation district offices statewide. The new system, which became operational in September, provides



The Richard Soper, Jr. family with (from center left) Congressman Roscoe Bartlett, USDA Secretary Tom Vilsack, and Governor Martin O'Malley on the family farm for an Earth Day announcement of a new Conservation Reserve Enhancement Program agreement.

MDA with a geo-referenced profile of the location of BMPs installed on Maryland farms and calculates the nutrient reduction credits Maryland farmers receive for all their efforts. The Conservation Tracker system will help MDA target technical and financial resources to areas that can achieve the greatest water quality benefits.

MDA launched a Nutrient Trading Program in 2009 to create a public marketplace for the sale and purchase of nutrient (phosphorus and nitrogen) credits. The exchange will help non-agricultural industries such as wastewater treatment plants to offset new or increased discharges. At the same time, participating farmers can benefit from economic incentives for expanding non-point source nutrient reductions.

Later in the year, following a number of delays, the Maryland Department of the Environment (MDE) began issuing its general discharge permit for Maryland Animal Feeding Operations (MAFOs) and Concentrated Animal Feeding Operations (CAFOs). MDA is working closely with MDE to ensure that the permit is as manageable and affordable for poultry and livestock farmers as possible, while safeguarding water quality. Federal standards currently under development for new CAFOs involve new setback requirements for poultry houses, storage sheds and composters, and the use of certain best management practices to address runoff from production and waste handling areas.

Finally, new total maximum daily loads, or TMDLs, recently proposed by the U.S. Environmental Protection Agency (EPA) involve a strategy that will put the entire six-state watershed and the District of Columbia on a “pollution diet” in order to restore the Bay and its tributaries. The impacts will be wide and far reaching, affecting all types of land uses. The agricultural portion of these milestones will most likely involve enforceable or binding agreements with landowners to achieve agricultural goals.

Staff working in the Office of Resource Conservation are actively working to initiate these programs and keep agriculture in the forefront of the Bay restoration effort. The following report highlights their accomplishments more fully.

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 Fiscal Year 2009, the SSCC approved or recommended the following policy initiatives to MDA:

- Establishment and coordination of interagency priorities
- Eligibility guidelines for the 2009-2010 Cover Crop Program
- Soil conservation district roles and responsibilities in helping farmers comply with MDE’s new stormwater permit program
- A Memorandum of Understanding for forestry activities involving the Maryland Department of Natural Resources (DNR), the Maryland Association of Soil Conservation Districts (MASCD), MDA, the USDA Natural Resources Conservation Service (NRCS) and the U.S. Forest Service

In Fiscal Year 2009, the SSCC received the following briefings and tracked these initiatives:

- Allocation of resources for the Maryland Chesapeake Bay 2010 Trust Fund
- Regional watershed restoration specialist positions created by DNR to provide support and to engage local jurisdictions in developing watershed restoration plans
- Results of a survey on the Cover Crop Program conducted by the University of Baltimore Schaefer Center for Public Policy
- EPA requirements and MDE’s proposal to implement the National Pollution Discharge Elimination System (NPDES) permit for Confined Animal Feeding Operations (CAFOs) and Maryland Animal Feeding Operations (MAFOs)
- A Nutrient Trading Program for Maryland, including the role of soil conservation districts and opportunities for enhanced implementation of agricultural best management practices

- Maryland's Chesapeake Bay Milestone Goals and agriculture's role in reducing nitrogen loads to the Bay by 3.75 million pounds
- Farm Energy Audit Program initiated in Maryland under the auspices of the Eastern Shore RC&D

Program Planning and Development

The Program Planning and Development 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.

Geographic Information Systems

In Fiscal Year 2009, staff provided geographic information system (GIS) training to field personnel and continued to provide technical assistance and spatial data to a range of program areas within MDA. GIS is a powerful software technology that allows a vast amount of information to be linked to a geographic location. Data from many sources, including digitized and scanned maps, aerial photography, soil surveys, and global positioning systems are integrated by the GIS in order to create a "smart map" of a specific location.

During the year, staff reprocessed the 2008 Maryland cropland data layer produced by the USDA's National Agricultural Statistics Service (NASS). This data identifies farm fields by crop type and corresponding acreage estimates. In addition, GIS staff continued work on the Maryland Integrated Map (MDiMap), a statewide base map that uses the best available data and tools to allow government agencies and the public to assess state, local and municipal government performance. One of the applications contained in MDiMap is AgPrint, which targets areas for preservation and establishes conservation priorities based on certain criteria. In 2009, MDA developed and provided the 2007, 2008 and 2009 cover crop data layers to the MDiMap team for inclusion in AgPrint.

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 Fiscal Year 2009, efforts to educate Maryland's agricultural community on the State's nutrient management regulations continued. Staff produced the spring and winter editions of the newsletter, Maryland Nutrient Management News, which were mailed to approximately 6,500 farmers and certified nutrient management consultants. Over the course of the year, annual reports for the Nutrient Management Program, MACS,



Governor O'Malley and USDA Secretary Tom Vilsack sign a new CREP Agreement at the Richard Soper, Jr. farm near Westminster on April 24.

soil conservation districts, and Office of Resource Conservation were prepared. Additionally, a number of farmer publications, direct mailers, and informational displays were developed or updated to reflect program enhancements and educate farmers and the public on Maryland's agricultural conservation efforts.

A special ceremony with Governor Martin O'Malley and USDA Secretary Tom Vilsack was held in April to kick off the newly revitalized Conservation Reserve Enhancement Program (CREP). New CREP fact sheets, brochure, poster, and display were produced and distributed to farmers and soil conservation district field offices.

In order to promote Maryland's 2009–2010 Cover Crop Program, the office initiated a comprehensive communications program which included news releases, direct mail and posters.

In other areas, the staff worked with the University of Maryland Extension and the Master Gardeners to promote and expand the popular homeowner series, Backyard Actions for a Cleaner Chesapeake Bay. A new 30-second public service announcement on using pesticide alternatives was developed featuring a Maryland farmer as a spokesperson. An additional radio PSA on leaf composting was also developed. Public service announcements appeared on radio stations and Maryland Public Television to encourage homeowners to practice backyard conservation.



On-farm best management practices such as a watering trough and riparian stream buffers on the Richard Soper farm in Carroll County protect soil and water from agricultural runoff.

Conservation Grants

Since 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program has been helping farmers protect natural resources on their farms, adopt sustainable agricultural practices and comply with a growing list of federal, state and local environmental requirements. MACS provides farmers with grants to cover up to 87.5 percent of the cost to install conservation measures known as best management practices (BMPs) on their farms to prevent soil erosion, manage

nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay.

In Fiscal Year 2009, MACS celebrated its 25th anniversary with its most successful year ever. Farmers enrolled in the program received a record \$19 million in grants to install 2,300 conservation projects on their farms. Collectively, the projects will prevent an estimated 1.3 million pounds of nitrogen and 86,900 pounds of phosphorus from entering Maryland waterways each year. Cover crops were responsible for the bulk of the nitrogen savings (1.2 million pounds) and more than 50 percent of the phosphorous savings (48,000 pounds). The projects will protect streams from sediment pollution and animal waste by managing an estimated 12,459 tons of soil annually and 1,647 tons of manure daily. Cover crops, manure transport, heavy use area protection, grassed waterways, nutrient management consultant services, waste storage structures, livestock fencing, watering facilities, filter strips and grade stabilization structures round out the top 10 practices installed by farmers in 2009 with MACS assistance. Farmers who received cost-share grants from MACS in 2009 invested more than \$923,000 of their own money into start up costs for these projects.

Because MACS grants do not cover the entire cost of installing BMPs, Low Interest Loans for Agricultural Conservation (LILAC) are available to help farmers pay for start up costs and additional expenses on large ticket items. Guaranteed by the State Revolving Loan Fund, LILAC loans are typically offered at rates that are three to four percent below market rates and are available at lending institutions statewide. In Fiscal Year 2009, MACS worked with the Maryland Department of the Environment and soil conservation districts to provide farmers with approximately \$1 million in LILAC loans. The funds were used to help pay for conservation tillage and manure handling equipment as well as waste storage structures, heavy use areas, and agricultural chemical and handling facilities.

Special Projects: Highlights and Accomplishments:

■ Cover Crop Program

The Cover Crop Program is the centerpiece in a suite of 27 smart, green and growing actions that Governor Martin O'Malley has established to ramp up the Bay restoration and prevent an additional 3.75 million pounds of nitrogen and 201,000 pounds of phosphorus from reaching waterways by the end of 2011. Increasing the amount of farmland planted annually in cover crops to 460,000 acres will achieve nearly one-third of agriculture's overall nutrient reduction goal.

Participation in the 2008–2009 Cover Crop Program was up 25 percent from last year, with Maryland farmers planting 238,840 acres of cover crops statewide. MACS provided these farmers with \$10.7 million in grants to help offset associated seed, labor and equipment costs.

■ **Manure Transport Program**

The Manure Transport Program provides grants to help poultry, dairy, beef and other animal producers transport manure off their farms. Animal producers with high soil phosphorus levels or not enough land to spread their manure can receive cost-share assistance of up to \$20 per ton to transport manure to other farms or alternative use facilities that can use the product in an environmentally safe manner. Cost-share rates are 20 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties.

In Fiscal Year 2009, 132 farmers received \$663,177 in state grant payments to transport 119,892 tons of manure to approved farms and businesses. Delmarva poultry companies provided matching funds to transport the poultry litter. Increasing the amount of poultry litter that is transported annually out of the Chesapeake Bay Watershed to 45,000 tons is one of 27 two-year milestone goals targeted for completion by 2011. With 52,000 tons of poultry litter transported out of the watershed in 2009, the transport program has met this milestone goal in the first year.

■ **Nutrient Management Cost-Share**

MACS provides grants to farmers who hire private, non-government consultants to develop or update nutrient management plans for their farms. The reimbursement rate is 87.5 percent of the cost of the plan, up to \$3,000 per operation. Grants cover one nutrient management plan/update per operator, per year. In Fiscal Year 2009, MACS issued \$85,718 in cost-share grants to 75 farmers who hired private consultants to develop nutrient management plans covering 40,887 acres of farmland. Due to budget cutbacks, the program ran out of funds during the first three months of the fiscal year and stopped accepting applications.

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

In April of this year, Governor O'Malley and USDA Secretary Tom Vilsack signed an agreement to reauthorize CREP and stimulate program participation by offering increased incentives to landowners who protect valuable streamside property or stabilize highly erodible land.

MACS provides cost-share grants to CREP participants to help cover the costs of establishing BMPs to protect water

quality and create wildlife habitat on enrolled lands that will no longer be tilled or grazed. In Fiscal Year 2009, MACS provided 72 landowners statewide with \$105,000 in cost-share funds to install streamside buffers, conservation cover, wetlands, livestock crossings and animal fencing on land enrolled in CREP.

Maryland Nutrient Management Program

Nutrient management plans are science-based documents that help farmers manage crop nutrients and animal waste more efficiently in order to protect water quality in streams, rivers and the Chesapeake Bay. The Water Quality Improvement Act of 1998 requires all farmers grossing \$2,500 a year or more or livestock producers with 8,000 pounds or more of live animal weight to run their operations using a nutrient management plan that addresses both nitrogen and phosphorus inputs. These plans are required on all agricultural land used to produce plants, food, feed, fiber, animals or other agricultural products.

Farmers are required to update their nutrient management plans at least once every three years or when changes are made to their operations 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.

Agricultural Enforcement

Nutrient Management Plan Submissions

Maryland farmers are required by law to submit nutrient management plans to MDA that have been developed by an MDA certified consultant or farm operator who is trained and certified by MDA to develop a plan solely for his or her

operation. As of December 31, 2009, following ramped up enforcement efforts, nutrient management plans have been submitted for 99.8 percent (5,715) of 5,727 eligible farms. Progressive enforcement actions are being pursued against the 12 farmers who remain out of compliance with the program. In calendar year 2009, \$3,150 fines were assessed against farmers who failed to submit their nutrient management plans.

Annual Implementation Report Submissions

Farmers are required to submit Annual Implementation Reports (AIRs) to MDA by March 1 describing how they implemented their plans.

In calendar year 2009, MDA issued 1,646 warning letters to farmers who failed to file their AIRs by the March 1 deadline, followed by 553 notifications of pending fines. By December 2009, 99 percent of Maryland farmers had submitted their AIRs to MDA. Fifty-seven farmers remain out of compliance. In calendar year 2009, MDA issued \$31,250 in fines against farmers who failed to submit their AIRs.

On-Farm Plan Implementation Reviews and Inspections

MDA conducted approximately 400 on-farm plan implementation reviews and inspections in calendar year 2009 covering 101,500 acres to verify that farmers' nutrient application records and receipts were in line with their nutrient management plans. These inspections targeted a risk-based sampling of farms and included a visual spot check of the farming operation. Approximately, 69 percent of those inspected were fully in compliance, 25 percent were determined to be out of compliance due to expired plans and six percent failed their inspections due to inadequate records or failure to allow MDA staff to conduct inspections. MDA is working to bring these farmers into compliance. In calendar year 2009, MDA issued \$3,500 in fines against farmers who failed to take corrective actions.

Certification and Licensing

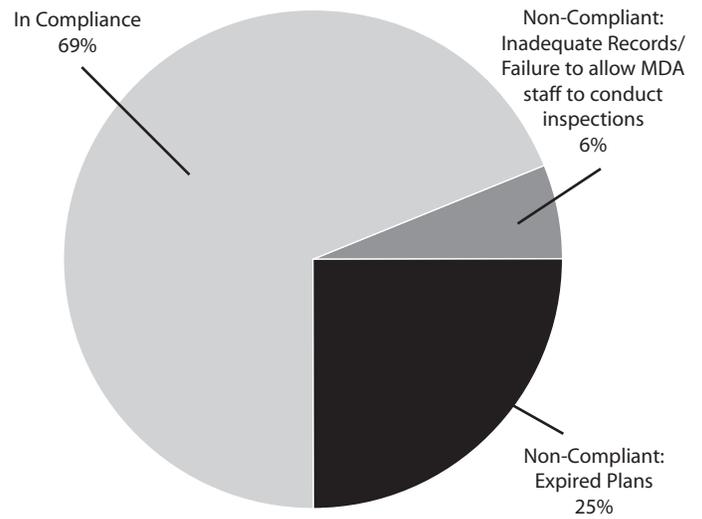
Nutrient Management Consultant Certification

In Fiscal Year 2009, MDA certified 23 new consultants who passed the Nutrient Management Certification Exam, bringing to 1,096 the number of consultants who have successfully been trained by the program. The figure includes 322 consultants who operate under licenses and are actively writing plans and an additional 28 University of Maryland Extension consultants who are funded by MDA.

Reviews of Plans Written by Certified Consultants

MDA conducts periodic reviews and field inspections to ensure the quality of plans written by the consultants that it certifies. In calendar year, 2009, MDA conducted 320 field inspections while evaluating 266 plans for MDA cost-share

On-Farm Implementation Reviews and Inspections



projects to make certain that they met regulatory standards. Approximately 91 percent of the consultants inspected passed their reviews. MDA provides ongoing training and continues to work with consultants to improve the quality of the plans they prepare for farmers.

Certification Exam Workshop

A two-day training course is offered to individuals interested in taking the Nutrient Management Certification Examination. In Fiscal Year 2009, 50 individuals attended this training with a passing rate of 66 percent.

Farmer Training and Certification Program (FTC)

Farmers who want to become certified to write their own nutrient management plans attend specialized workshops offered regionally for livestock, poultry, crop, and nursery and greenhouse operations. In Fiscal Year 2009, MDA trained and certified 27 farmers to write their own nutrient management plans. Since the FTC program began in 2005, MDA has certified 310 farmers to write nutrient management plans for their own operations.

Training and Education

In calendar year 2009, MDA, in partnership with University of Maryland Extension, offered 28 comprehensive continuing education workshops on topics ranging from how to write a nutrient management plan to using the Revised Universal Soil Loss (RUSLE) to determine nutrient losses. Approximately 2,174 participants attended the training during the year.

MDA reviewed and approved an additional 27 workshops and training programs sponsored by recognized organizations

and neighboring universities to help consultants fulfill their continuing education requirements.

Persons who apply any nutrients to 10 or more acres of cropland that they own or rent are required to attend an applicator training course once every three years. In 2009, MDA and the University of Maryland Extension conducted 32 voucher training sessions attended by 251 participants.

Urban Nutrient Management Program

Approximately 700 operations—including 200 golf courses and 400 lawn care service providers—are regulated by the Urban Nutrient Management Program. These urban land managers are required to take soil tests, follow the fertilizer recommendations of University of Maryland Extension and keep certain records of fertilizer applications.

In calendar year 2009, MDA reviewed the fertilizer records of 36 individuals/firms to determine program compliance. Following these inspections, MDA issued warnings to 10 firms/individuals who were directed to correct their programs within an established time frame or face fines of up to \$1,000. In 2009, one firm was fined \$250 for noncompliance with program regulations. The most common compliance issue is failure to take soil tests. Twenty-seven follow-up reviews involving companies with previous compliance issues were also conducted during the year resulting in four additional warnings.

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.

Soil Conservation and Water Quality Plans

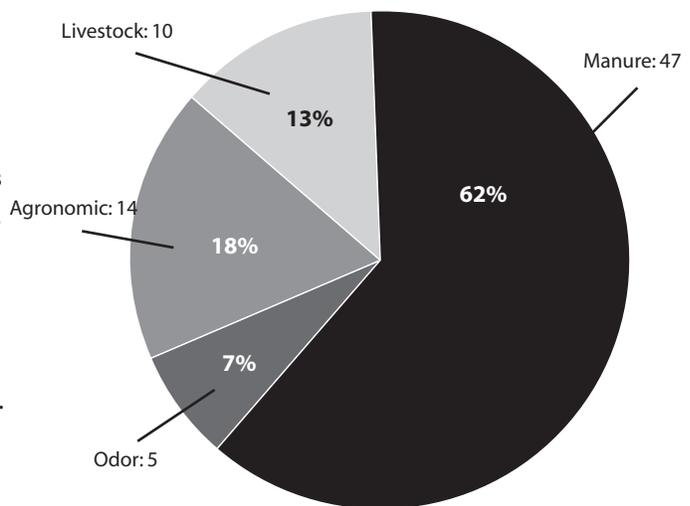
Soil Conservation and Water Quality Plans (SCWQPs) help farmers protect and enhance the natural resources on their farms. Unlike nutrient management plans, which deal specifically with fertilizer and manure applications, SCWQPs address a range of natural resource concerns for the entire farming operation and often include dozens of best management practices (BMPs) aimed at protecting water quality and enhancing wildlife habitat.

Because of their importance in protecting and managing natural resources, SCWQPs are required by the Federal Food Security Act on all highly erodible lands. In addition, SCWQPs must be implemented on all farmland enrolled in the Maryland Agricultural Land Preservation Foundation Program as well as farmland located in the Chesapeake and Atlantic Coastal Bays Critical Area—the 1,000 ft. strip of land along these shorelines.

The Maryland Department of the Environment requires certain livestock and poultry farmers to implement SCWQPs as a condition for obtaining its new permit.

In Fiscal Year 2009, MDA technical staff working in soil conservation district offices statewide developed 921 new Soil Conservation and Water Quality Plans for 44,250 acres of Maryland farmland. An additional 765 plans covering 59,124 acres were updated to ensure their continued effectiveness in protecting natural resources. Together, these plans included 1,260 highly valued BMPs that are being tracked by the BayStat program.

2009 Types of Agricultural Complaints



Enforcement

Maryland uses a progressive approach to handling cases of water pollution caused by agriculture that is 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. MDA and MDE 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 Extension. In Fiscal Year 2009, 76 agricultural complaints were received concerning sediment and erosion control issues, odors, manure and livestock concerns. Of this figure, 64 complaints were corrected or closed, eight complaints are pending and four enforcement actions have been initiated.

Agricultural Water Management

To prevent pollution and protect water resources, the office works with local public drainage associations (PDAs) to assure that operation and maintenance plans for public drainage systems are technically adequate and properly implemented. Due to budget cuts in Fiscal Year 2009, the office lost a PDA coordinator and state funding for emergency maintenance activities. As a result, PDAs must now perform their own maintenance on approximately 820 miles of drainage ditches using local revenues.

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. They are important components in helping Maryland reach its two-year Bay milestone goals.

On March 9, 2009 Tributary team members along with representatives from soil conservation districts met with Governor Martin O'Malley to discuss agriculture's role in the Bay cleanup and the importance of soil conservation and water quality plans to the cleanup effort. This was the first time that a Maryland governor had asked to talk with the soil conservation districts and engage in frank discussion about their vital role in the cleanup effort. Citizens may view Bay cleanup progress and learn more about the role of the Tributary Teams by visiting www.baystat.maryland.gov.

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 compete at the local, state and national levels.

A group of teens from Carroll County won this year's state competition and went on to place 3rd among teams from 45 U.S. states and seven Canadian provinces at the 2009 Canon Envirothon.



Venturing Crew 202 Envirothon Team from Carroll County placed 3rd in the international Canon Envirothon, besting some 250 students from 45 states and seven Canadian provinces.

The Maryland Envirothon is sponsored by the State Soil Conservation Committee and the Maryland Association of Soil Conservation Districts.

Special Projects and Grants

The Office of Resource Conservation is actively managing 24 ongoing research and technical assistance grants totaling \$5.6 million for 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.

In Fiscal Year 2009, the program received an \$118,980 EPA grant to implement an agricultural nutrient trading program for Maryland that will create a public marketplace for the sale and purchase of nutrient credits (phosphorus and nitrogen).

During the year, the program also partnered with the Caroline Soil Conservation District to manage a \$188,100 National Fish & Wildlife Foundation grant that will demonstrate two innovative options for reducing nutrient discharges from agricultural drainage channels. Finally, the program is working with the University of Maryland on a grant project to develop a ditch water filter technology system for ditch drained agro-ecosystems.

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. In 2009, Marketing Services continued to focus resources on initiatives designed to create demand among Marylanders for locally-produced agricultural products and open marketing channels for Maryland farmers. The University of Baltimore Schaefer Center for Public Policy's annual public opinion survey showed continued strengthening of consumer support for the purchase of local agricultural products vs. those from elsewhere. More than 78 percent said they would prefer to buy Maryland-grown fruits and vegetables. Also in 2009, Marketing staff successfully worked to develop the market potential for Maryland agricultural products in Cuba and seafood products in the European Union.

National Marketing and Agribusiness Development

The Marketing Services staff works with farmers and agricultural producers to assist them in marketing their products directly to supermarkets, schools, chefs, 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 2009 Maryland's Best campaign promoted Maryland-grown products through radio, television and print advertising as well as through press releases statewide during the year. The campaign was designed to direct consumers to the revamped and searchable Maryland's Best website where additional information is available.

Governor Martin O'Malley supported Maryland's Best by recording a television spot in 2009. He also hosted local food buyers, farmers and media at his official residence in July 2009 during a Buy Local Challenge Week cookout in July. This initiative, in its second year statewide, encourages Marylanders to eat locally-grown food during a week at the height of the State's growing season.

The Jane Lawton Farm to School Program is now in its second year. Created by the General Assembly in 2008 to honor the late Maryland House of Delegates member Jane Lawton of District 18, Montgomery County, this program led to county and state initiatives to incorporate locally-produced food in nearly every county in the State. More than 30 different



Maryland farms participated in the Maryland Home Grown School Lunch Week held September 14–18, 2009. This effort was coordinated by the Maryland Department of Agriculture and the Maryland State Department of Education with the Maryland Department of Health and Mental Hygiene, the Maryland Agricultural Education Foundation and the University of Maryland Extension 4-H and public school systems around the State.

The Division worked with a professional photographer to bring the story of Maryland's farmers to the consumer through five "sound books." A sound book is a photographic slideshow with narration by the farmer. Watermelon, strawberry, apple, dairy and turkey producers were profiled in the sound books this year.

The marketing office provides opportunities for farmers and producers to sell their products directly to wholesale buyers in Maryland and beyond. In 2009, the office held a buyer-grower meeting, introducing more than 140 Maryland farmers to buyers from major chains including Whole Foods, Weis, Wal-Mart, Safeway, and Giant as well as chefs and buyers from area institutions. The office 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. Through work with the Mar-Del Watermelon Association, staff coordinated a statewide promotion to boost marketing opportunities for Maryland watermelons. This included events at the City Dock in Annapolis with watermelon queens from Maryland and other major watermelon growing areas of the nation.

The marketing office supports the growth of 88 of the state's 103 farmers markets in all 23 of Maryland's counties and the

City of Baltimore. MDA has provided various levels of support from the initial creation and development of new markets to promotional materials and occasional consultation for well-established markets. Maryland farmers estimated their sales (for insurance purposes) at more than \$3 million in 2009.

At farmers' markets across the state, 300 farmers participated in the Farmers' Market Nutrition Programs (FMNP) for Women, Infants, and Children (WIC) clients and for seniors in 2009. 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 with the Department of Health and Mental Hygiene leveraged general funds of \$116,000 to generate a total program commitment of more than \$457,000, including funds from the U.S. Department of Agriculture. The FMNP is a standing program commitment from USDA and must be administered by a state department of agriculture, which requires that MDA provide both staff and general fund resources.

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, the Governor's Advisory Commission on Maryland Wine and Grape-Growing, and numerous other industry organizations. In 2008, staff secured and/or administered grants under the Specialty Crop Block Grant Program, the Federal-State Market Improvement Program, the Maryland Agricultural Education and Rural Development Assistance Fund Program (MAERDAF), and the USDA Risk Management Agency's Targeted States 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 Agriculture 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, farmer-neighbor disputes, family farm and estate conflicts, for example.

The program staff 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 \$324,000 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 2009, participation among Maryland farmers increased by 14 percent—one of the greatest increases in the Northeast. Farmer investment in crop insurance helps stabilize Maryland's agricultural economy. Following the drought of 2008, for example, producers received \$30.2 million in indemnity payments from crop insurance designed to help them survive bad weather, insects, disease, and market fluctuations.



Sec. Hance joins students in the cafeteria for a school lunch with locally-grown produce at the Hebron-Harman Elementary School in Anne Arundel County for the Maryland Homegrown School Lunch Week kick off.

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 market access, international policy and trade 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. In 2009, International Marketing worked with more than 3,000 companies and individuals in Maryland.

Through international policy and export activities, staff participates in the development of export phytosanitary protocols for agricultural products going into new markets and prepares Certificates of Free Sale for Maryland businesses.

Beyond the normal difficulties of international trade, such as differences in language and business practices, exporting food products, livestock and nursery products pose 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 a results-oriented export marketing management program.

Exporting agricultural products provides additional income to farm families and is increasingly important for small- and medium-sized farmers and agribusinesses. The USDA Foreign Agricultural Service 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 become an increasingly important part of the maintenance of a profitable family-farm.

The USDA offers a number of incentive programs to encourage farmers and processors to enter the global marketplace. The Department's International Marketing unit garners federal funds to underwrite nearly all of its trade missions, trade shows and reverse buyers' 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 \$357.5 million in 2007, the most recent data available. The top three agricultural exports were: poultry, wheat and soybean products.

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.

Key Export Activities Implemented by International Marketing in 2009 included:

Cuba: Secretary Earl Hance led a delegation of Maryland agribusinesses to Havana, Cuba in November. One Maryland agribusiness signed a contract for soybean meal valued at \$12.3 million.

European Union: Maryland Department of Agriculture worked with the Florida Department of Agriculture to lead the SUSTA mission to the EU's Seafood Expo in Brussels, Belgium. This key venue for the seafood industry in Europe resulted in sales of more than \$2.5 million from Maryland seafood companies.

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. The program also coordinates the statewide aquaculture permit review process. In 2009, there were 65 commercial aquafarms permitted in Maryland. Maryland has seven licensed fee-fishing operations and more than 50 schools, nature centers, government agencies, and private organizations producing fish, shellfish, and aquatic plants for educational and restoration projects. Shellfish aquaculture production is increasing in Maryland as more oyster and clam farms are being established in the Chesapeake and Atlantic Coastal Bays.



Don Webster, former chair of the Aquaculture Advisory Council, receives an award from State Senator Kathy Klausmeier, Delegate Anthony O'Donnell and MDA Aquaculture Coordinator Karl Roscher.



An exhibit of shellfish aquaculture at the Maryland State Fair.

The Maryland Aquaculture Review Board, which is chaired by the MDA aquaculture coordinator, provides monthly interagency review of permits and issues across departmental lines. In 2009, the board reviewed 16 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, seven new aquaculture businesses have been established in Maryland, two expansions/renewals have been approved and five applications are 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. The council got off to a fast and productive start in 2009 by providing recommendations included in proposed legislation to restructure the State's existing lease law. Council activities culminated with the selection of Aquaculture Enterprise Zone sites located in the Patuxent River and the drafting of new shellfish leasing regulations.

In 2009, Governor O'Malley signed House Bill 312/Senate Bill 271 into law. The requirements and regulations established as a result of the new shellfish lease law, coupled with the Coordinating Council's 2009 legislative recommendations, provide opportunity for leasing in the Chesapeake and Atlantic Coastal Bays and create the incentive to catalyze private investment in leasing operations while encouraging commercial fishermen to transition to aquaculture. This law is the culmination of a long process to bring about these changes supported by the MDA Aquaculture/Seafood program and the Aquaculture Coordinating Council.

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 and collaboration 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.



A billboard advertisement for Maryland crabs.

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 68 processing plants employing 1,310 people and more than 6,000 watermen who work the Chesapeake Bay. In 2008, watermen landed 58.3 million pounds of seafood at a dockside value of more than \$61.2 million. This is an increase in harvest by 13.9 percent and increase in value by 14.1 percent since 2007.

Advertising funds are generated from a \$10 surcharge fee collected from commercial fishing and seafood processing licenses. In 2009, 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.

The program's website, 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 2009, the site had more than 58,374 hits. This is an increase from 55,863 hits in 2008. In addition, the public received more than 244,000 pieces of information through the Internet and mailings.

In 2009, the program teamed up with the University of Maryland Environmental Finance Center to expand the sales

of seafood and aquaculture products on the internet through the use of the online Farmer's Market website known as Foodtrader.org. Beginning in September, the Maryland seafood and aquaculture industry began listing local fish, crabs, oysters and other products on Foodtrader.org. This is a free service and had drawn immediate response from consumers.

The "Buy Local Maryland Seafood" campaign was held in July. The promotion included advertising in newspapers and on radio. In addition, point of sale materials were distributed to retailers and a news release issued.

In order to promote the sales of Maryland seafood in the fall, the Seafood Marketing Program developed an October 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 station during baseball games.

The program is receiving a portion of the federal Blue Crab Fishery Disaster funding from the National Marine Fisheries Service through the Department of Natural Resources. The funding for seafood marketing efforts to alleviate potential blue crab fishery disaster by creating economic opportunities for commercial crabbers and the processing industry. The marketing funding is earmarked to conduct a public relations and advertising program designed to increase positive awareness of the Maryland crab industry. In 2009, the funding paid for a billboard advertisement, advertisements on radio and television and in newspapers. The three year funding continues through 2012.

The program distributed 12 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



International Boston Seafood Show attendees sample farm-raised oysters from Maryland.



Greg Sharpe, CEC, Certified Executive Chef of the Baltimore Convention Center wins the Chesapeake Chef Challenge and will represent Maryland in the 2010 Great American Seafood Cook-off in New Orleans.

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, East Coast Commercial Fishermen's and Aquaculture Trade Expo, Maryland Dietetic Association Annual Meeting and Exhibit, and the Maryland State Fair. At the events, informational literature, point of sale information and Maryland seafood samples were offered.

At the International Boston Seafood Show, space is shared with industry members, assisting them in marketing their products. In 2009, seven 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, Chesapeake Seafood Chef Contest, Jr. Rockfish Cooking Contest, and 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. 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 famous Maryland Seafood Cookbooks and uses the funds to offset the cost of printed materials.

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 several projects. These included SUSTA (Southern United States Trade Association) activities such as distributing invitations for Maryland seafood companies that export to participate in various trade shows in Korea, Canada, China, Japan, and Brussels. The program assisted in a reverse trade mission with a group of seafood buyers from Korea at the International Boston Seafood Show and co-partnered with the State of Virginia on a SUSTA sponsored cow nose ray promotion in Korea. Through a SUSTA grant, Maryland was able to participate in the European Seafood Show in Brussels. The six participating companies reported sales over \$35 million.

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 number of Good Agricultural Practices audits conducted has continued to increase as more wholesale and retail chain buyers are requiring the audits after recent high profile outbreaks such as an *E. coli* outbreak in spinach and a salmonella outbreak in tomatoes and jalapenos have caused increased

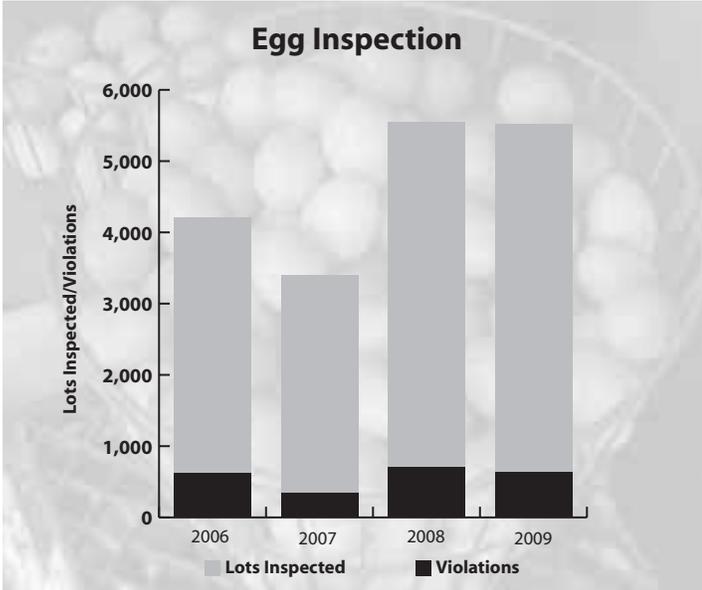
concern about food safety and fresh produce. The program has received an \$80,000 grant through the United States Department of Agriculture to develop and implement a Good Agricultural Practices program geared toward smaller producers selling fruits and vegetables directly to school systems and consumers. The primary commodities graded by the section this year were 361 million pounds of poultry, 47 million pounds of shell eggs and 12.5 million pounds of fruits and vegetables.

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.



A Food Quality Assurance inspector analyzing eggs for quality.



The percentage of eggs sampled found to be in compliance with the Maryland Egg Law increased to 87 percent this year compared to 85 percent last year. The lots inspected increased as a result of filling a vacancy in the program. The egg inspection chart shows comparison data for the eggs inspected and violations.

The program has begun conducting Country of Origin labeling reviews for the U.S. Department of Agriculture. The reviews are conducted in conjunction with egg inspections and the federal reimbursement for Country of Origin reviews has assisted with reducing the costs associated with conducting egg inspections.

Organic Certification

The United States Department of Agriculture-accredited Maryland Organic Certification Program certified 85 farms and 21 handlers of organic products in Maryland in 2009. The program also registered an additional 20 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 through 2010.



A Food Quality Assurance inspector obtains samples for pesticide residue testing.

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 39 businesses with 68 business locations in 2009.

The Maryland State Board of Veterinary Medical Examiners

The State Board of Veterinary Medical Examiners (SBVME) is responsible for setting standards by 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; licenses animal control facilities; 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, administrative officer/investigator, and two agricultural inspectors, both of whom split their time between the SBVME and the Maryland Horse Industry Board. The SBVME also funds the work of a part-time assistant attorney general, whose time is devoted exclusively to the SBVME.

During the 2009 session of the General Assembly, the SBVME submitted two bills—SB 78 and HB 1413, both of which passed and became effective October 1, 2009. SB 78 affects currently enrolled veterinary medical students and was drafted to address a long-standing concern amongst these students, who were prohibited in Maryland from obtaining clinical, hands-on experience in a veterinary hospital or animal shelter setting while they are attending veterinary medical school. Before the passage of SB 78, Maryland law required that an individual be a graduate of a veterinary medical school, amongst other conditions, before seeking licensure with the SBVME. SB 78 permits a veterinary medical student who has successfully completed three years of veterinary education at an institution approved by the SBVME, and who works under the responsible direct supervision of a veterinary practitioner, to be exempt from the definition of the practice of veterinary medicine. Additionally, under the Courts and Judicial Proceedings Article, such student is now granted the same immunity from liability conferred upon veterinarians when



Veterinarians must meet standards and adhere to laws and regulations overseen by the Vet Board.

providing free veterinary aid or assistance in emergency situations where the owner of the animal is not available to grant permission. The SBVME is in the process of drafting regulations that will set forth its requirements of veterinarians who will be supervising these veterinary medical students.

HB 1413 altered the requirement that Maryland-licensed veterinarians obtain 12 hours of continuing education annually to renew their veterinary license with the SBVME. Although the bill did not establish a maximum number of hours the SBVME could legally require, the SBVME recently promulgated regulations that require an additional 6 hours of CE annually. The additional hours must be obtained prior to July 1, 2010, and recorded on the registration application for the 2011 fiscal year. The SBVME believes that veterinarians should participate in a minimum of 12 hours of CE annually in courses that have significant intellectual or practical content dealing with skills directly related to veterinary medicine. Additional hours required by the SBVME may be directed towards non-scientific topics, such as practice management and improving client communications—areas that relate to the practice of veterinary medicine, but are not necessarily clinical in nature.

A third bill, SB 116, was submitted on behalf of the SBVME by the Department of Legislative Services (DLS) and extended the SBVME's sunset date by 10 years to July 1, 2021. This extension was based on a review conducted in 2008 to determine whether the SBVME is fulfilling its mission and meeting the

needs of its stakeholders and customers. In late September, the SBVME filed a specific report, as mandated by SB 116, which addressed recommendations and comments made by DLS.

In late 2008 and early 2009, a review of the SBVME’s complaint-handling process was conducted. Recommendations that are expected to decrease the length of time to investigate and resolve cases were proposed and accepted by its administrative staff. The hiring of a part-time assistant attorney general in 2007 has been instrumental in reducing the length of time devoted to resolving complaints. By the end of the 2009 fiscal year, approximately 28 percent more cases were closed than at the same time last year. Additionally, there was a 40 percent decrease in the number of pending cases when compared to the number of cases pending at the same time last year. To further reduce the length of time necessary to resolve cases, the SBVME has recently increased the assistant attorney general’s time by 10 percent. This change, coupled with a revised complaint-handling process, are expected to have a continuing positive impact on the investigation and resolution of complaints.

The SBVME recently solicited applications from registered veterinary technicians interested in serving as a member of the Veterinary Technician Committee (VTC). This process was begun as a result of the VTC’s chair stepping down earlier this year. The VTC is responsible, in part, for determining registration eligibility, establishing continuing education requirements, recommending regulatory language, and assisting the SBVME in registering veterinary technicians.

This year, the SBVME collaborated with a graphic designer to develop a logo specifically for the SBVME. The logo is now being used on certificates and hospital inspection forms utilized by the SBVME’s inspectors, and will be used on materials for marketing purposes.

Research has begun to determine the feasibility of offering on-line registration for the SBVME’s licensees. Each year, the number of licensees and registrants who desire this service increases. With a growing number of licensees and registrants each year, the ability of the SBVME’s administrative staff to process renewal applications in a timely manner has become increasingly difficult. This is a project the SBVME deems of primary importance in the coming months.

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

Category	Year 2007	Year 2008	Year 2009
Licenses issued to new veterinarians	145*	140	138
Registrations issued to veterinarians	2,412	2,475	2,416
Registrations issued to registered veterinary technicians	80	47	117**
Licenses issued to veterinary hospitals	508	512	526
Percentage of veterinary hospitals inspected and in compliance	99	100	99
Number of new complaints received	77	97	84
Number of complaints pending from previous year	61	60	75
Number of complaints closed	78	82	114

*This number was previously reported at 170 and was calculated based on the amount of revenue the SBVME had received. The number reflected in this report was derived by the number of actual licenses issued by the end of the fiscal year. Approximately 25 applications had been received by the SBVME’s office, but were not processed as of June 30, 2007.

**Veterinary technicians are required to re-register every 3 years. This number reflects a combination of initial, first-time registrants, and individuals registered in prior years who re-registered in FY09.

Animal Health Program

The Maryland Department of Agriculture Animal Health Program (MDA AH) is responsible for preventing and controlling infectious and contagious diseases in Maryland livestock and poultry. Headquarters and 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. A key component of the program is the Animal Health Diagnostic Laboratory System.

The program also has responsibility for responding to all animal emergencies under the State Emergency Operations Plan, Emergency Support Function 16. Animal emergencies are categorized as 1) animal health emergencies, such as a disease outbreak in livestock or poultry and 2) animals in emergencies, such as a natural disaster. The Animal Health Program provides secondary support to other state agencies managing Emergency Support Functions so assigned.

The official program regulatory role in protecting and promoting animal welfare is limited to livestock in auction markets and certain aspects of animal transport and exhibition. MDA AH frequently assists local animal control and other agencies with welfare issues through field consultation, training and investigative support and diagnostic evaluations of affected animals.

Program Operations

Program Consolidations: In response to long-term ongoing changes in the agriculture community leading to a 30 percent reduction in program revenues, increased program operational and personnel costs, and state budget cuts of approximately 18 percent for the department, Animal Health Program operations were consolidated from five regions to two regions, and three positions were cut, resulting in an approximate annual savings of \$300,000 in FY2010, and \$450,000 by FY2011. A majority of the savings, approximately \$250,000, was realized by the closing of the College Park Laboratory alone. Consolidation of laboratory testing at two laboratories results in more efficient use of resources, and was accomplished with no disruption to services, with the exception that certain clients who usually drop off samples at now closed labs may need to ship samples to the remaining laboratories. The program continues to look for efficiencies in the use of scarce resources while providing quality service to laboratory customers.

With the closing of the Oakland and College Park laboratories, Western regional services are now based in Frederick, Maryland and Eastern regional services are based in Salisbury after the closing of the Centreville Laboratory. The Frederick Laboratory will provide primarily livestock diagnostic services, while the Salisbury Laboratory will continue to provide primarily poultry diagnostic services, with the exception of Equine Infectious Anemia (EIA). The EIA tests, which are required for movement in Maryland, will be provided in Salisbury for Eastern Shore owners as well as in Frederick. For field and regulatory work, two field veterinarians and three inspectors will continue to serve the Western region, and one field veterinarian and two inspectors will serve the Eastern region.

Regulatory Actions: Through continued outreach and education by program staff, notable progress was made by fair and show exhibitors and sponsors in the implementation of livestock exhibition regulations, which were revised in 2008. MDA policies pertaining to animal handling and welfare at livestock auction markets were revised, adopted and implemented in 2009. Implementation of these more specific and stringent policies included outreach and training of all auction market personnel by Animal Health staff. The program restricted the use of the CEO (Chick Embryo Origin) ILT (Infectious Laryngotracheitis) vaccine in the state to control the spread of this disease caused by unrestricted use of this live virus vaccine. A draft regulation providing comprehensive application of administrative penalties for violation of Animal Health regulations was submitted for review in 2009 and is expected to be adopted in 2010, increasing MDA's ability to enforce animal health regulations.

"State Stat," a State-wide statistics tracking program, was implemented by MDA in 2009, to facilitate tracking of operational trends for short and long-term planning purposes. Selected parameters for the Animal Health Section from the final report are shown in Table 1 (see next page).

Emergency Response Readiness

The emergency response capacity of the program remains high through the continued training and provisioning of a department-wide Agriculture Responders unit, consisting of MDA personnel assigned and trained to respond to all agricultural emergencies, including animal emergencies. In addition, Animal Health Program personnel continue to collaborate with the Department of Health and Mental Hygiene, the Maryland Emergency Management Agency (MEMA), the State Board of Veterinary Medical Examiners and the Maryland veterinary community to recruit, train and organize the State Voluntary Veterinary Corps, a group of approximately 230 veterinarians and technicians willing to support emergency operations when activated. The program sponsored animal sheltering training, Incident Command System (ICS) training, refresher training in respirator and other personal protective equipment use, as well as Foreign Animal Disease training for Animal Health personnel, all MDA Agriculture Responders, collaborating agency personnel and accredited and volunteer veterinarians. All Animal Health field and laboratory technical staff received ICS 100 and 200 training under the departmental Emergency Operations and Incident Command System/Unified Command Plan.

Animal Health staff participated in four state-wide emergency responses in 2009. These responses including Presidential Inauguration Preparedness (Biosecurity and Equine Inspections of Parade Horses and Statewide Equine and Companion Animal Emergency Planning and Sheltering), Vomitoxin (fungal infestation of cereal grains) Investigations in grain and animals, MEMA activation for Hurricane Hannah emergency preparedness, and novel H1N1 preparation and response, particularly for swine industry surveillance and outreach.

Staff participated in numerous multistate industry emergency readiness planning activities and supported those activities in numerous local jurisdictions, particularly for avian influenza preparedness. The program is a national leader with other Delmarva partners in developing improved technologies and tactics for detecting and responding to emergency poultry diseases, including protecting the health of workers responding to such outbreaks.

Experience with Hurricane Katrina and subsequent storms made clear that effective evacuation of people cannot occur in the absence of effective animal evacuation and sheltering operations. In 2009, 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 of Agriculture, other state agencies and local governments upon activation. The MD SART focus in 2009 was to promote the formation of County/City Animal Response Teams (CARTs) across the state to support local governments. Considerable local progress on CART formation was made in 2009. Those efforts will continue through 2010.

Disease Surveillance and Response

The Animal Health program oversees or conducts ongoing routine and active or enhanced surveillance for several livestock and poultry diseases. Enhanced surveillance is defined as an increased frequency or number of tests for a disease of particular significance or risk. Specific surveillance programs are highlighted below. Other livestock diseases and issues such as bovine spongiform encephalopathy (BSE or mad cow disease) in cattle, brucellosis in cattle, illegal garbage feeding to swine, vesicular stomatitis in horses and scrapie in sheep and goats continued to be part of our surveillance programs.

As a result of disease surveillance and response efforts in 2009, quarantines (“hold orders”) were placed on farms for contagious equine metritis, equine herpesvirus, rabies in horses, infectious laryngotracheitis in poultry, and routine 30-day quarantines for swine entering the state.

Novel H1N1: The H1N1 pandemic influenza in 2009 gave rise to enhanced surveillance in swine by the Animal Health program, and this enhanced surveillance will continue through the 2010 influenza season. All swine with influenza like signs (ILI), including swine at auctions, exhibitions, and farms or presenting for necropsy, are tested for influenza. No positive H1N1 swine were detected in Maryland in 2009. Members of the Animal Health staff were heavily involved in national efforts to develop action plans for the novel H1N1 virus

Avian Influenza: The program continues enhanced surveillance for avian influenza and other high consequence diseases of poultry in commercial and non commercial flocks through federal funding. No avian influenza was detected in poultry in 2009 in Maryland.

Contagious Equine Metritis (CEM): An outbreak of contagious equine metritis in the United States in 2008 continued through 2009. Animal Health staff conducted five trace back investigations of Maryland horses in 2009. CEM is classified as



Staff at the Salisbury Animal Health Laboratory with Agriculture Secretary Buddy Hance.

a foreign animal disease, and is a bacterial venereal disease of horses which may cause infertility. Its presence in U.S. horses has significant economic consequences. As of the end of 2009, 998 horses linked to the CEM outbreak have been traced to 48 states, with a total of 27 horses testing positive for the disease. Maryland has had a total of six trace backs; all tested negative for the disease. Maryland is one of a small number of states approved to conduct laboratory testing for CEM. Maryland also hosts two CEM quarantine stations in partnership with private facilities; one of these stations opened in August of 2009 and is still in provisional approval status. At the quarantine station, imported horses receive extensive testing to ensure they are free of CEM prior to being released for breeding activity in the United States. Because of this extensive experience and laboratory capacity, Maryland is an important part of the national response to the CEM introduction.

Johne's Disease: Johne's disease in cattle continues to be a serious threat to profitable dairy and beef operations. Animal Health employees, working in close cooperation with our cattle industry and federal animal health partners, have enabled Maryland to continue participation in the Voluntary National Johne's Control Program, albeit at decreased levels due to cuts in all federal funding for this activity in 2009. MDA has focused a great deal of effort on educating producers and on enlisting the support of the attending herd veterinarian to work with the producer.

Tuberculosis: Of particular concern is the ongoing reemergence of bovine tuberculosis (BTB) in cattle and white tailed deer. BTB has occurred in numerous states during the past several years and appears to be on the rise. The Animal Health program has been heavily involved in national efforts to develop programmatic changes to the national plan needed to reestablish control over this threat to public and animal health.

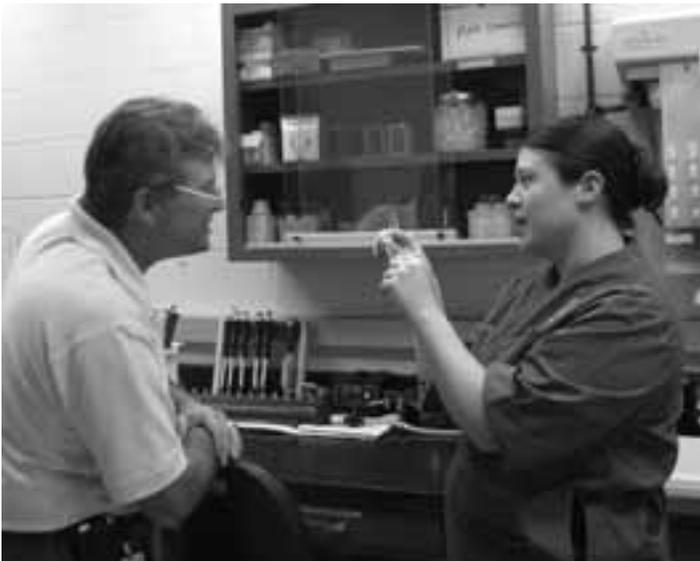
Livestock and Poultry Auctions: All commercial livestock auctions in Maryland are inspected by Animal Health staff. During the inspections, animals are observed for signs of infectious or contagious disease, including foreign animal diseases. If an illness is suspected, the animal is isolated and tested. No contagious or infectious diseases of significance were detected at auctions in 2009.

Animal Exhibitions: The 2009 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. Animals with signs of infectious or contagious disease were isolated and excluded from the exhibition. Outreach to 4-H and other fair and show exhibitors and sponsors was conducted throughout the year to educate animal owners in the recognition and isolation of diseased animals prior to an exhibition, providing increased protection against the spread of contagious and infectious disease. Fair sponsors have increased their efforts significantly in gate inspections and overall animal health control activities.

Animal Traceability/Animal ID: This year saw continued progress with 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 with little or no delay, minimizing economic losses and business disruptions.

To date, property owners and operators with livestock have registered 1,482 premises in Maryland. This represents approximately 18.9 percent of Maryland producers. To increase participation, program staff, along with federal and industry partners, are implementing 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, 3,462 poultry premises are registered under the state program. The database has been used to notify and educate poultry producers of biosecurity recommendations and testing availability, and has been used to locate flocks adjacent to farms where avian influenza has been suspected. The database allowed staff to quickly identify nearby premises, visit them to test birds and provide appropriate information for those producers.

Throughout the year other MDA Animal Health programs remained active. These included the licensing of livestock markets and dealers, investigation of antibiotic residues in meat, and accreditation of new veterinarians. Maryland also 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 and salmonella concerns.



Cristina Caplinger, a Laboratory Scientist at the Frederick Animal Health Diagnostic Laboratory, explains a testing process to Agriculture Secretary Buddy Hance.

2009 Animal Health Program Statistics

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Animal Welfare Investigations	0	1	4	0	2	2	9	1	0	0	2	0	21
Biologic Authorization Let	0	6	4	4	3	7	3	3	3	2	4	7	46
CEM Permits	12	7	8	14	8	9	9	16	13	18	7	12	133
Certificate of Movement	192	164	227	71	699	358	133	27	179	5	110	57	2,222
Dealer Inspections	0	7	2	0	1	4	0	1	1	0	0	0	16
Disease Investigations Domestic (Incl. Rabies)	0	0	8	2	7	10	0	7	3	2	0	0	39
Drug Residue Inspections	4	0	0	1	0	0	0	0	0	0	0	1	6
Equine Health Certificate – Export	199	179	180	311	434	418	414	248	463	595	321	145	3,907
Equine Health Certificate – Import	413	218	403	254	680	399	383	344	229	552	406	227	4,508
Exhibition Inspections	5	4	2	0	2	6	32	27	15	0	0	0	93
Export Certificates (Non Equine)	384	486	437	877	1,122	1,248	677	205	1,223	556	430	250	7,895
Foreign Animal Disease Investigations	1	1	2	3	3	2	0	0	0	1	1	0	14
Hatchery Inspections	0	1	4	0	0	1	1	2	0	0	0	0	9
Import Certificates (Non Equine)	1,647	2,422	4,010	1,355	2,405	2,499	3,624	6,111	2,478	1,512	3,956	2,795	34,814
Inspections – Total Combined	2,276	28	28	58	50	36	80	74	46	24	23	27	2,750
Intrastate Certificates Total (Show)	1	7	73	205	502	670	854	503	287	17	33	0	3,152
Livestock Dealer Permits	0	0	1	0	23	15	6	0	0	0	0	0	45
Market Inspections	25	20	20	35	31	32	29	33	25	20	25	23	318
Public Inquiries	0	19	219	20	122	692	396	158	170	91	162	104	2,153
Swine Permits Issued	21	13	28	32	17	17	17	18	17	13	16	19	228

Animal Health Diagnostic Laboratory System

The Maryland Department of Agriculture has consolidated its Animal Health Diagnostic Laboratory System to two laboratories, the Frederick and Salisbury laboratories, with each having both specific geographic and technical focus. Frederick specializes mainly in livestock and equine while Salisbury specializes in commercial poultry. The mission of the system is to support the animal and public health regulatory and emergency support missions of the Department; assist veterinarians and producers in maintaining healthy herds and flocks; and to support the regulatory activities of other governmental units involving animal health matters. To accomplish this mission, the system performs a wide array of diagnostic procedures on a variety of specimens and samples submitted by producers, agricultural businesses, animal owners, veterinarians and government agencies.

Staff and Laboratory Focus

The Frederick laboratory centers on food animal livestock and has a staff of four laboratory scientists, a veterinary pathologist and two office managers. The laboratory has special rabies, contagious equine metritis, equine herpes virus, equine infectious anemia, Lyme disease and Johne's disease diagnostic capabilities. The laboratory pathologist determines the nature, causes and effects of livestock, equine, and poultry diseases. Emphasis is placed on changes in organs, tissues and cells caused by reportable diseases which affect domestic and food animals and the public health. Additionally, the veterinary pathologist mentors senior students from the Virginia-Maryland Regional College of Veterinary Medicine, veterinary pathology graduate students from Johns Hopkins University and the Armed Forces Institute of Pathology.

The Salisbury laboratory has a unique poultry diagnostic laboratory and a staff of one veterinary poultry pathologist, three laboratory scientists, two field inspectors, a laboratory technician and a necropsy technician. The lab has a large molecular diagnostic capability that is dedicated to the detection of avian influenza and Newcastle disease and primarily serves the commercial poultry industry. Rabies and Salmonella diagnostics are carried out at the Salisbury lab, as well as many other specific poultry disease diagnostic tests. The laboratory staff participates in disease outbreak surge capacity programs with the Maryland Department of Health and Human Hygiene. The laboratory shares a new laboratory information management system (LIMS) with Delaware which serves poultry producers in Maryland and Delaware.



The MDA Frederick Animal Health Diagnostic Laboratory.

A major change to services provided to constituents occurred in March of 2009 when the Department of Budget and Management concluded that MDA could not legally charge for non livestock (e.g. companion animals) services, nor charge for disposal of any animals not associated with a necropsy. The consequence of this decision was that MDA Animal Health Diagnostic Laboratories could no longer provide testing or necropsies for companion animals except in cases of public health importance or by interagency agreements for disease control or animal welfare/cruelty cases. Also, incineration services are no longer offered for companion animals or livestock unless associated with a necropsy. This program change further reduced revenue to the program by an estimated \$45,000.

Statistics for selected livestock and poultry diseases are presented on the next page in Table 2.

Laboratory Training, Quality Control and Certifications

To ensure the quality of laboratory services, the laboratory administration develops standards and periodic training for staff. Presently, the administration is gaining laboratory accreditation through the International Standards Organization's (ISO) Section 17025 and the World Organization for Animal Health (OIE). This accreditation is administered by the American Association of Laboratory Accreditation. The Salisbury and Frederick laboratories will be participating in this program.

Animal Health Program Laboratory Statistics

Diagnostic Activity	Number	Result
Mammalian Necropsy	330	N/A
Avian Necropsies	8,816	N/A
Avian Influenza Samples	6,551	All negative
Rabies	205	10 positive
Equine Infectious Anemia	15,948	All negative
Contagious Equine Metritis	2,191	All negative
Equine Herpesvirus (EHV-1)	153	4 positive
Lyme Disease	121	78 positive
Johne's Disease in Cattle	5,280 (5,186 were serum Enzyme-Linked Immunosorbent Assay (ELISA) or PCR blood tests and 94 were fecal tests)	361 positive blood tests 30 positive fecal tests

The Frederick and Salisbury facilities have been certified as Basic Sentinel Clinical Laboratories by the Department of Health and Mental Hygiene (DHMH). They participate with the Maryland Laboratory Response Network which provides microbial challenge sets constructed by the State of Wisconsin. These tests are nationally and internationally recognized and check the proficiency levels of the technical staff and are administered by the Laboratory Emergency Preparedness and Response Committee of DHMH.

In 2009, the Salisbury diagnostic laboratory successfully enrolled in the USDA National Poultry Improvement Program which recognizes Salmonella diagnostic proficiencies. Additionally, the laboratory personnel in the Salisbury and Frederick laboratories have been participating in the National Animal Health Laboratory Network (a USDA program) which pertains to certification to perform molecular diagnostics associated with avian influenza and Newcastle disease.

A new safety and training officer has been appointed to oversee laboratory and field programs. The entire laboratory system staff was trained in shipping biological and chemical materials, and use of personal protective equipment. This training included the use of standard operating procedures, training materials and training records. Training also included out-of-state workshops on the subject of molecular diagnostics (avian influenza) at the National Veterinary Services Laboratory.

The United States Animal Health Association's (USAHA) annual meeting/training was attended by the State Veterinarian. Participation in the following USAHA committees took place:

Johne's disease, Nominations and Resolutions, International Standards, Government Relations and the National Assembly of State Animal Health Officials.

Laboratory directors participated in various livestock and poultry industry workshops. Laboratory directors and staff participated in Delmarva Incident Command workshops to plan and practice response to a possible avian influenza incident.

Animal Health Laboratory Partners and Customers

The Maryland Department of Agriculture's Animal Health Diagnostic Laboratories serve and cooperate with a wide range of public and private entities including livestock producers, zoological parks, private veterinarians, the Maryland State Board of Veterinary Medical Examiners, the State Chemist, the equine industry, and state agencies such as the departments of Health and Mental Hygiene, Environment, Transportation and Natural Resources, the Maryland Occupational Safety and Health Administration, the Maryland Emergency Management Agency, the Maryland State Highway Administration, the University of Maryland Extension, the Johns Hopkins University, local health departments, and local animal control organizations. Federal partners include the USDA-Animal and Plant Health Inspection Service, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Environmental Protection Agency, the Food and Drug Administration, the Federal Bureau of Investigation, the U.S. Army, and the Smithsonian Institution.

Maryland Horse Industry Board

The Maryland Horse Industry Board (MHIB) consists of the Secretary of Agriculture and 11 members appointed by the Governor to four year terms. Chapter 416, Acts of 1998 defined six statutory duties of the Maryland Horse Industry Board. Those duties are to: create public awareness of the value of equine activities as they relate to the preservation of greenspace and agricultural land; promote the development and use of horses in Maryland; support research related to equine health and related issues; advise the Maryland Department of Agriculture on matters affecting the horse industry; carry out the licensing, inspection, and enforcement of stables in Maryland; and develop and disseminate information concerning the equine industry, including the history and tradition of breeding and the role of horses in recreational activities.

The MHIB continues to conduct projects for the benefit of the horse industry utilizing a specially funded source. That funding source was legislatively increased in the 2009 legislative session. Thanks to this funding the board continues to achieve all of its legislatively mandated functions.

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

- Conducting the 2010 Maryland Equine Census, the first such census since 2002;
- Conducting a concurrent Maryland Equine Industry Economic Impact Report;
- Setting a strategic marketing plan for the entire horse industry for the next five years using the information compiled in the 2009 Maryland Horse Forum Final Report;
- Working on the Governor's Smart, Green, and Growing Initiative to make horse operations the most environmentally friendly farms in the nation, and by creating new opportunities for bio-energy production utilizing horse waste; and
- Finalizing the Maryland Horse Park project, through the selection of a final location.

The main challenges the board faces in the next year are:

- Obtaining funding for a Maryland Equine Industry Economic Impact Report;
- Retaining and expanding the entire industry in Maryland until such time as slot machine revenue is realized in the State;
- Improving, and preserving Maryland's historic race courses and other historic Maryland horse sites;



Governor O'Malley rides at Tailwinds farm in Cecil County as part of his Capital for a Day activities.

- Resolving the potential impact of increased federal environmental regulation directed toward horse farms coupled with the low to non-existent funding for the implementation of best management practices on small to medium sized horse operations; and
- Creating a cohesive plan to maintain and grow the horse industry during turbulent economic times.

As the commodity board for the Maryland horse industry the board hopes to continue to develop and grow the success of the recreational horse industry and to work to re-establish the prominence of the Maryland horse racing and breeding industries. To that end the board endeavors to find new sources of revenue to support its activities.

Key accomplishments in 2009

- *Hosted the 2009 Maryland Horse Forum at the Prince George's Equestrian Center and Showplace Arena.*

The event, which was organized following a recommendation from Governor Martin O'Malley, was an excellent step in demonstrating the overall unity of the Maryland horse industry. Through this event all sectors of the industry were able to develop recommendations to address all of the issues currently affecting the Maryland horse industry. In attendance at the event on August 6, 2009 were more than 300 leaders of the Maryland horse industry. The event was attended by Governor Martin O'Malley, who served as the keynote speaker. The event resulted in a comprehensive 55 page report which outlined how to strategically improve the overall structure and operation of the Maryland equine industry. For more information, visit www.mdhorseforum.com.

■ *Licensed 583 horse stables in FY 2009*

The licensing of 583 horse stables is an increase of 55 stables since FY 2008. The overall rise in facility licenses is attributed to the work of the stable inspectors, the executive director and administrative assistant, the continued use of a 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. The previous record of 528 licensed stables was dramatically eclipsed in FY 2009. Those numbers will most likely remain steady for FY 2010. For a complete listing of licensed Maryland stables visit www.horseboard.org.

■ *Worked with the Maryland Horse Council towards the passage of legislation clarifying equine activities as agricultural in nature.*

The board worked with the Maryland Horse Council towards the passage of House Bill 955 which clearly defined equine activities as including “teaching equestrian skills, participating in equestrian competitions, exhibitions or other displays of equestrian skills, and caring for, breeding, boarding, renting, riding, or training horses.” The legislation further clarified that “equine activities shall be treated as agricultural activities for the purposes of this subtitle.” While this only directly impacts the statute of the Maryland Department of Agriculture, it may potentially provide guidance to other agencies, and local governments when evaluating what is and is not an acceptable use of agricultural property.

■ *Received support from industry organizations to increase the budget of the board.*

In a show of support for the work of the Maryland Horse Industry Board, organizations such as the Maryland Horse Council, and the Maryland Horse Breeders Association worked to support a special fund increase of the board in the 2009 legislative session through House Bill 973. Starting in fiscal year 2010 the board will increase its budget by more than two times its size in fiscal year 2009 and it will rise to as much as three times the fiscal year 2009 budget by 2011. Those funds are derived from the entire equine industry through a reimbursable assessment on equine feed sold in the State.

■ *Continued to disseminate the information from the initial Feasibility Study of the Maryland Horse Park.*

The 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 the establishment of a Maryland Horse Park would generate more than \$123 million dollars a year in economic impact on the local and state economy, more than 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 a priority until its completion. The project was high-

lighted in the Governor’s transition report as an important project for the future of the industry. While the MHIB selected not to pursue a long-term lease on the property in Gambrills, Maryland, the board intends to work on its establishment at another undetermined location. Currently, a number of counties including Harford, Howard and Wicomico have publicly expressed interest in the project. The MHIB has also been approached by interested parties located on the Eastern Shore, Central Maryland and in Southern Maryland regarding the potential for the project in those areas.

■ *Continued meetings of the MHIB—Health Advisory Committee.*

This 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 advise on a number of subjects. The issues on which the committee advises include: Maryland policies and protocols regarding reportable diseases; Maryland statutes and regulations relating to equine health; Interstate health requirements; capabilities of the Maryland State Animal Health Diagnostic Laboratories; and emergency preparedness protocols. Many of the committee’s efforts have yielded positive results for the State including the establishment of PCR analysis of equine samples in Maryland. This capability enables the MDA Animal Health Section to resolve a potential disease outbreak in a matter of days as opposed to weeks and to better protect the horses and the industry.

■ *Assisted the interagency Horse Outreach Workgroup.*

This interagency task force has worked to reduce the overall contribution of the equine industry to sediment and nutrient run off. The group has been recognized nationally for its work and is being used as a model for other state programs.



Governor Martin O’Malley jokes with Steuart Pittman, Maryland Horse Council President at the Maryland Horse Forum.

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

Category	Year 2007	Year 2008	Year 2009
Number of stable licenses issued	528	518	583
Number of inspections performed annually	440*	376*	481
Percentage of facilities inspected and in compliance	100%	100%	100%
Revenue collected from licensing and inspecting horse stables in Maryland and directed to General Funds.	\$39,600	\$38,850	\$43,725
Revenue collected from assessment based on tons of horse feed sold in Maryland at \$2 a ton	\$85,796	\$78,426**	\$72,826**
Outcomes:			
Total amount of money distributed as grants for for promotional, educational, or research projects for the Maryland horse industry.	\$20,916	\$22,270**	\$0**
Percentage of total special fund revenue distributed as grants for the Maryland horse industry.	26%	28%**	0%**
Additional funds obtained for MHIB projects from public and private sources.	\$63,750	\$18,000**	\$0
Staffed booths or presented talks at trade shows, conferences, fairs and exhibitions promoting Maryland equine.	12	10**	6**

* In FY 2007 one of the two inspectors serving the MHIB and the State Board of Veterinary Medical Examiners was on medical leave for a portion of the year, and retired before the completion of the fiscal year. As a result the inspection numbers were down for FY 2007 and FY 2008. Mid-way through FY 2008 a new inspector was transferred to the Board by the MDA.

** In FY 2008 and FY 2009 the revenue generated from the equine commercial feed assessment continued to decline from FY 2007, most likely due to decreased feed consumption caused by the loss of breeding and racing horses to neighboring states with slots-supplemented racing and breeding sectors. The MHIB was able to acquire \$18,000 for its marketing efforts to offset the loss of revenue and enable the board to fund its grant commitments; however, the MHIB was forced to stop all of its remaining promotional activities and was unable to fund grants in FY 2009. The MHIB will have an increase in its special fund budget for FY 2010 and will be able to fulfill the granting commitments from FY 2009.

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 FY2009, the field staff conducted approximately 44,626 inspections of commercial weighing and measuring devices. This is approximately 6,500 more devices than the previous year. The inspectors also tested 12,356 individual lots of prepackaged commodities offered for sale. The inspectors also went into non food stores and did price verification and we found some large price deviations from the advertized price, one large error was an overcharge of \$10.00 per item. A number of firms received civil penalties for the price errors found. In FY2009 the Weights and Measures Section collected \$47,750 in civil penalties. The Weights and Measure Section does not receive or benefit from these funds as they are all sent to the State General Fund.

In FY2009, the field staff investigated 681 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 two 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. Fees were increased by the 2005 Maryland General Assembly. The increased fees were only a temporary fix to the funding of Weights and Measures inspection staff. The interval between inspections has risen to approximately 24 months. We anticipate this trend will continue due to the small number (18 field inspectors) 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 their 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.

Field Inspection and Test Effort

	2007		2008		2009	
	Percent in Violation	Total Tests	Percent in Violation	Total Tests	Percent in Violation	Total Tests
A. Weighing Systems						
Large Scales	35.5	1,230	24.1	786	20.8	914
Medium Scales	22.3	877	17.9	677	17.3	553
Small Scales	16.0	12,140	17.5	6,971	17.7	12,122
B. Liquid Measuring Systems						
Retail Gasoline Meters	18.7	32,012	18.0	27,665	21.7	28,808
L P Gas Meters	26.7	852	18.7	465	19.9	456
Vehicle Tank Meters and Other Large Meters	15.5	1,641	20.8	1,288	17.0	1,648
C. Grain Moisture Meters	9.0	132	8.0	136	7.6	131
D. Programmed Tare Inspections	10.8	4,107	9.0	2,026	7.8	3,152
E. Price Scanning and Method of Sale	3.4	7,249	5.1	5,962	4.2	18,513
F. Delivery Ticket Inspections	1.7	3,715	0.9	2,852	2.2	3,052
G. Package Lots	12.5	11,680	15.8	12,761	16.2	12,356

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

Laboratory Effort Inspection and Test

	2007		2008		2009	
	Tested	% Rejected	Tested	% Rejected	Tested	% Rejected
Weights	6,773	9.8	4,256	10.7	2,511	12.2
Volumetric Measures (Non-Glass)	254	29.5	138	37.6	60	43.3
Length Devices	0	0.0	0	0.0	0	0.0
Temperature Devices	46	0.0	38	0.0	20	0.0
Timing Devices	13	24.0	0	0.0	3	0.5
Volumetric (Glass)	10	0.0	0	0.0	0	0.0
Scales/Meters	0	0.0	0	0.0	0	0.0
Milk Samples	114	2.6	108	5.6	0	0.0
Standard Grain Samples	710	N/A	700	N/A	715	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

	2007 Number	2008 Number	2009 Number
Weighing and Measuring Devices Registration Certificates, Issued	7,255	7,239	7,079
Type Evaluation of Devices Conducted (NTEP)	26	21	16
Samplers and Testers Licenses, Issued	15	10	9
Citizen Complaints Received and Investigated	515	716	681
Disciplinary Hearings, Criminal Arrests, Summonses Obtained and/or Civil Penalties	25	44	42

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.

Maryland Agricultural Fair Board

Maryland's fairs and shows provide entertainment for the entire family and they showcase Maryland's rich agricultural heritage. The Maryland Agricultural Fair Board was created by the state legislature in 1937 to foster agriculture by promoting and assisting agricultural fairs and exhibits. It gives financial aid to qualifying organizations for premium awards to exhibitors of agricultural displays. Annually, the Board issues a schedule of fairs and shows to help publicize the events. The Board consists of nine members who represent various regions of the state and are appointed by the Governor. The daily affairs of the Board are handled by a part-time executive secretary. Headquarters for the Board has been the Maryland Department of Agriculture since the agency's creation and prior to that headquarters were at the Maryland State Fair grounds.

The Board administers grant funds for fairs, livestock shows, community shows, and 4-H and FFA youth activities through an application process. The Board funded fairs, community shows, livestock and other agricultural events, and the Maryland State Fair in 2009. Additional funding for 4-H and FFA enabled tens of thousands of youth to be recognized for their achievements and provided helped youth attend judging contests and other competitive events on the regional and national levels.

Youth participation continues to increase in all activities funded by the Board while adult participation in livestock events at fairs decreases. This can be attributed to the tight agricultural climate, labor, and weather. Indoor participation at fairs and shows is increasing for adults especially in the hand arts while fruit and vegetable exhibition is dependent on local weather patterns.



Top: Governor O'Malley with the 2009 Frederick County Fair King and Queen during his visit to the Great Frederick Fair.

Lower: Lt. Governor Anthony G. Brown, Governor O'Malley and Agriculture Secretary Buddy Hance enjoy a ride at the Maryland State Fair on Agriculture Day at the fair.

Plant Protection and Weed Management

2009 Highlights

In 2009, the USDA—Animal and Plant Health Inspection Service (APHIS) notified MDA that a nursery in a regulated area of Oregon, found to have plants infected with *Phytophthora ramorum*, shipped material to 28 recipients in Maryland. *P. ramorum* is the pathogen that causes sudden oak death, *ramorum* leaf blight, or *ramorum* dieback in a variety of desirable woody plants. MDA notified each of the households that received these plants and requested they send samples to MDA for testing. Sixteen have responded to date, sending a total of 24 suspect samples. Of the 24 received, only one, a witchhazel sent to Montgomery County, tested positive for the disease. The *P. ramorum* infected plant was removed and eradicated. Following USDA protocol, soil samples and associated *P. ramorum* host plants around the infected plants were also tested and found to be negative. MDA has followed up on the remaining 12 trace forwards to complete the record.

Klinker, a female black Labrador retriever, is MDA's newest dog trained to sniff out American foulbrood (AFB), a bee disease, in honeybee colonies and bee equipment. After extensive training and testing, she began working at full capacity this November. So far in 2009, she has visited 47 apiaries and inspected 539 colonies. Klinker, has detected AFB at five apiaries, in a total of six colonies. All six disease alerts were confirmed later by samples sent to the Bee Research Laboratory (BRL) in Beltsville. In addition, she has detected AFB (also confirmed later by BRL) that couldn't be found by routine, visual human inspection of equipment. Klinker must be retested by the trainers every three months for recertification. She is a pleasure to work with as well as a big asset to MDA and its Apiary Inspection Program.

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 Maryland crops valued at more than \$40 million. 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 colonies.

American foulbrood is the most serious brood disease of honey bees and can destroy a colony in one year. The 40 colonies that inspectors found to have American foulbrood 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 2009, 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. 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 terminals and other shipping locations. No swarms were collected in 2009. MDA is working with two groups—the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC) to provide information to the general public about 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 was detected in packaged bees and reported or detected in 19 counties this past year. Colonies are treated and monitored to ensure successful control of the beetles. There have been no reports of larvae 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.

Permits were issued for 3,975 honey bee colonies to move out of Maryland and 550 colonies to move into Maryland for pollination services. For the fourth year, Maryland beekeepers will send colonies to California for almond pollination. In December, 2,307 colonies will be transported to California for this purpose, to return to Maryland in March of 2010.

Nursery Inspection and Plant Quarantine

The nursery and greenhouse industry continues to be a leading part of Maryland's agricultural economy, currently ranking second among commodities with a total of approximately \$732 million in farm income. Other horticultural products and services sold boosted the total gross receipts to nearly \$1.04 billion. A primary goal of state plant protection and quarantine efforts is to facilitate the production, sale, and distribution 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 that plant material at each producing nursery 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 10 states. Federal phytosanitary certificates required to export Maryland nursery stock were issued to 10 foreign countries including Argentina, Spain, and Vietnam. A total of 38 federal and 71 state certificates were issued in 2009. Although this reflects a 27 percent reduction in total certificates issued from 2008, MDA staff continued to pursue further cooperative agreement opportunities 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.

Maryland Department of Agriculture staff inspected plant material at 417 Maryland locations 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 Section's pest survey program had been utilized for this mission. Economic circumstances necessitated significant reduction in state supported activities in 2009. Due to budgetary cutbacks, the blacklight and pheromone traps were not deployed early enough in the spring to alert growers on the Eastern Shore of potential outbreaks of black cutworm or true armyworm. The blacklight trap numbers were reduced by half, started later, and ended sooner than normal. The endemic pheromone traps were not deployed at all. The black cutworm can cause severe losses to corn and vegetable crops, and the armyworm to small grains. Further funding reductions have eliminated the blacklight trap program and one permanent state employee assigned to the program.

The Cooperative Agricultural Pest Survey (CAPS) is a joint project between the MDA and the USDA APHIS, 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. If any of these species were to become established, they 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. Federally funded surveys included exotic wood borers, exotic grape pest, imported fire ant, giant hogweed, noxious weed/Khapra beetle, pine shoot beetle, emerald ash borer, and *Sirex noctilio*.

A total of 5,810 insect traps were deployed and monitored in 2009. Through the various types of surveys conducted, 4,098 samples were collected and more than 14,443 insects identified. Trapping techniques involved a wide range of devices, including blacklight and pheromone traps. Educational efforts accounted for a new giant hogweed site being reported in Garrett County.

The surveys target pests that are both exotic and endemic to Maryland. Fourteen extensive surveys for exotic wood borers, stored product pests, and field, fruit and vegetable crop pests were conducted. The majority of the pests targeted were either not present or did not reach significant levels of concern. MDA conducted exotic bark beetle surveys in five counties and 14 sites and at nine vineyards in four counties in 2009. A few pests, such as the emerald ash borer and imported fire ant, required responses. It is interesting to note that the euonymus leaf notcher, an exotic moth that can completely strip a euonymus bush of its leaves, has again expanded its known range around Glen Burnie and Annapolis/Hillsmere and was found in Bowie, Prince George's County. Surveys in these areas show that it continues to slowly expand its range each year.

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. New imported fire ant detections in Maryland were down from three in 2007, two in 2008, to one in 2009. The reduction is largely due to MDA's efforts in the spring to inspect trucks transporting tropical foliage plants from the quarantined areas in the southern United States, work closely with officials in those states, and the brokers and recipients in Maryland. Three of the four positive sites of

the 83 surveyed in 2009 were associated with areas under eradication and were likely not new infestations.

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 17 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 pine shoot beetle in 1995 in Allegany County. Since then pine shoot beetle has been detected in Garrett, Washington, Frederick and Montgomery counties. All of these counties are under state and federal quarantine restrictions. Over the past eight years Garrett County has experienced a 10-fold increase in captured beetles. However, since 2003 no beetles have been trapped in Montgomery County. Infestations in Allegany, Frederick, and Washington counties continued to be monitored and remain relatively low. In 2009 no additional counties were positive. An additional nine 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.

The eradication efforts undertaken since the 2006 rediscovery of the **emerald ash borer** (*Agrilus planipennis*) in Prince George's and Charles counties have been redirected due to the realization that removal of all ash host material within prescribed distances from known positive trees was not



Never to move firewood.

I promise, because I care about the outdoors. For myself, my kids, and grandkids. But there's this beetle that's killing the trees. The Emerald Ash Borer beetle. It lives in firewood, and when you move firewood, you spread the beetle. So promise you won't move firewood. Don't move it to your camp. Don't take it home to your backyard. Burn it where you buy it. And help protect the trees in this state — for all of us. **Go to StopTheBeetle.info.**

eliminating the pest. A new plan of action utilizing all available strategies including quarantine enforcement and chemical and biological control are being undertaken to limit the spread of emerald ash borer. Intensive statewide survey using purple prism traps and visual detection will be increased in 2010. Systemic insecticides are being used to treat trap trees in the immediate vicinity of known populations in conjunction with the release and monitoring of three parasitoids (wasps that specifically target the egg or larvae of the beetle and kill them). With material and assistance from USDA, two sites with known infestations had over 10,500 parasitoids released in 2009. Within the eradication zone, 1,010 trap trees were planted in an effort to retain beetles that remain in the area. Six hundred eighty seven of these trees were treated with systemic insecticides as were 570 urban and forest trees. In 2010, urban and forest trees will be selectively treated around known infestations and heavily infested trees will be removed only where appropriate. In 2009, 2,478 purple prism traps were monitored in 18 counties. Detections were made from traps surrounding the eradication zone but no new areas were found. For more information on the Maryland Emerald Ash Borer Project, please visit www.mda.state.md.us/go/eab.

Sirex woodwasp survey—The Sirex woodwasp (*Sirex noctilio*), is an exotic pest of pine trees that was first detected in New York in 2004 and is currently known to occur in limited areas of Michigan, Pennsylvania and Vermont. Concern has been raised because this native of Europe, Asia and northern Africa has the potential to cause significant mortality of pines, including loblolly. This insect has a novel life cycle that includes inserting a fungus along with its egg into a healthy tree so that the young can feed on the wood fiber digested by the fungus. This fungus quickly kills the tree. Plant Protection and Weed Management staff surveyed Maryland's eight northern tier counties bordering Pennsylvania and 14 other high risk locations. Each of the counties had 10 traps which were serviced from June through October. No target specimens were collected.

Giant hogweed (*Heracleum mantegazzianum*) is a federal noxious weed that was first detected in the State of Maryland in 2003 at 29 sites in Baltimore and Harford counties. In 2005, eight additional sites in Garrett County were added to this list as was one additional site in 2007. Of the 11 locations reported in 2009, only one of the seven positive sites was new in 2009. Four of the seven sites treated early had no re-growth later in the summer. A multi-state eradication effort is underway; all previous sites and all newly verified sites were brought into this program. Plans have been made to continue this effort in 2010.

Diagnostic Laboratories

The Plant Protection and Weed Management 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 2009, samples submitted to the laboratory were received from within MDA, University of Maryland Extension, nursery and landscape businesses, and the general public.

Entomology Laboratory

In 2009, several unusual samples were submitted for identification. The white-footed ant (*Technomyrmex albipes*) was collected in Ocean City from fire ant survey cups. This ant is becoming a major house pest in southern states.

Also on the Eastern Shore, woolly pine scale (*Pseudophilippia quaintancii*), was detected from loblolly pine in Trappe. The wet year produced several slime mold, earthstar (*Geastrum sp.*) and dog stinkhorn (*Mutinus canus*) mushroom samples from peoples' yards.

A land planarian (*Bipalium sp.*) was found in a woodpile in Baltimore County. It has been seen previously in Howard and Prince George's counties. This large (3"-5" long) imported flatworm captures and feeds on earthworms, slugs, and other land planarians.

Brown marmorated stink bug (*Halyomorpha halys*) continued to vex citizens over much of the State. Although harmless and no longer of regulatory concern, these gregarious, fall house invaders can be annoying in numbers, much like boxelder bugs (*Boisea trivittatus*).

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. The Plant Pathology Laboratory was positively impacted in 2009 by the hiring of our new Plant Disease Specialist in the spring of this

year. Dr. Weston Msikita began work in the Plant Pathology Laboratory in May, conducting surveys, running the Plant Disease Diagnostic Clinic, as well as analyses for *Phytophthora ramorum* on trace forward samples, and training a high school student in correct laboratory techniques.

The MDA Plant Disease Diagnostic Clinic was established primarily to assist MDA nursery inspection staff with routine diagnostics of plant diseases. Nearly 200 diseased samples have been received in the lab since May, 2009. Samples have come from five different sources: plant inspectors (40%), directly from home growers (25%), commercial landscapers (18%), Pesticide Regulation Section (15%), and direct visits to growers (2%). Diseases diagnosed have varied with the host plant infected, and have ranged from root and stem diseases, bacterial infections, nematodes, viruses and nutritional disorders. The numerous plant samples on the *P. ramorum* host and associated host list the lab received from home owners, landscapers, and plant dealers around the state have tested negative for *P. ramorum*.

In 2009, the lab was involved in three different kinds of disease surveys: grape surveys for Phytoplasma yellows and brown rot fungus (*Phellinus noxius*); intensive survey for chrysanthemum white rust at a commercial production unit, and one spot check for Japanese rust at a home property.

- **(a) Grape Survey:** Nine vineyards in Baltimore, Carroll, Frederick and Montgomery counties were surveyed for the two diseases, and none were found to be infected. In an incident unrelated to the two diseases, one vineyard in Carroll County was found to have tomato ringspot virus (ToRSV) on some broadleaf weeds. Grape samples, soil, and a larger number of weed samples were tested for ToRSV, and presence of *Xiphinema spp.* (the nematode that transmits the ToRSV). No ToRSV was diagnosed on the grape samples, but the virus was confirmed on dandelions (*Taraxacum officinale*), and *Xiphinema spp.* were isolated from soil samples.
- **(b) Chrysanthemum White Rust:** Intensive surveys for chrysanthemum white rust at a commercial production unit on the Eastern Shore found no rust at the facility.
- **(c) Japanese Apple Rust:** Japanese apple rust was reported by USDA at a home in Silver Spring. An on-the-spot check was carried out, followed by a random inspection of host associated plants in the neighborhood. Rust was found on a few crabapple trees and at least one apple plant.

- **Training:** A high school student from Eleanor Roosevelt High School in Greenbelt has been gaining practical training in the lab periodically since October. She is using ELISA to improve detection of ToRSV in hard to detect host plant species, and is scheduled to finish her training before the end of the year.

Greenhouse Laboratory

Plants were produced for integrated pest management and biological control programs that require food for insect colonies and plant material for research. These included purple loosestrife (*Lythrum salicaria*) to produce colonies of the beetle *Galerucella pusilla* and mile-a-minute weed (*Persicaria perfoliata*), used to raise colonies of the stem boring weevil, *Rhinioncomimus latipes*.

A variety of native grasses were seeded and grown as part of our continuing effort to establish a new native grass nursery and germplasm repository at the University of Maryland Western Maryland Research and Education Center in Keedysville. A collection of herbaceous perennials used for teaching and testing purposes by the Certified Professional Horticulturist (CPH) Program, in conjunction with the Maryland Nursery and Landscape Association, was maintained and expanded.

Plant Certification

The MDA continues to participate in the virus-free rose certification program with Angelica Nursery, maintaining two varieties of roses and certified stock plants of one of the varieties in 2009. One variety was propagated by tissue culture, producing a total of 236 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 four 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.

The **Maryland Ginseng Management Program** protects American ginseng, *Panax quinquefolius*, 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 (FWS) that follows established protocols to ensure the continued viability of this 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 allow them to market

and export their highly valued crops. The dried roots are highly prized, especially in China and Korea, for properties that putatively promote good health. In 2008–2009 the program licensed seven ginseng dealers and 314 ginseng collectors in the State.

During the 2008–2009 harvest and sales season, the certification program inspected, collected size and age data from, and weighed 74.72 pounds of dry wild and wild-simulated ginseng root; 444 pounds of artificially propagated dry ginseng root and 1.5 pounds of wild-simulated stratified ginseng seed. These harvest and certification numbers were among the lowest in Maryland over the last two decades and are likely due to the status of the global economy which has driven down the price per pound of all types of ginseng. Many licensed harvesters did not sell the ginseng they dug in 2008, hoping for a recovery in the price of ginseng on the international market. Harvest and sales data were gathered and reports submitted in accordance with FWS requirements.

The amount of ginseng cultivated, including woods-grown and wild-simulated designations in Maryland, and certified by the department, continues to remain high relative to the amount of wild ginseng harvested and certified in the state. 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.

Integrated Pest Management & Biological Control

In 2009, Plant Protection and Weed Management staff again participated in a Plant Protection Guest Lecture Series at the University of Maryland, in ongoing cooperation with the Maryland Plant Protection Center. This effort is a collaboration between USDA and the University of Maryland that aims to establish a leading academic research and extension program in the mid-Atlantic region.

Weed Integrated Pest Management (IPM)

Plant Protection and Weed Management Section entomologists and staff continued to conduct an IPM program to provide biological control of certain thistle species. The program has helped significantly to control musk thistle along highway areas that are inaccessible to mowing and/or spraying equipment. MDA provided technical assistance with noxious weed problems on public land to various federal, county and state agencies, 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 were conducted at field plots at the MDA facility in Cheltenham, at the Western Maryland Research and Education Center in Keedysville, and along State Highway Administration rights of ways. These cooperative research projects have been conducted over each of the past nine years. IPM investigations continued to target the suppression of *Cirsium* and *Carduus* thistles. Research is focused 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 staff entomologist coordinating the weed IPM program and the MDA Plant Protection Section Program Manager met with State Highway Administration (SHA) Landscape Operations Division staff and SHA Research Division administrators to review program accomplishments and progress, and to coordinate and develop a new work plan and memorandum of understanding for research over the next two years.

A survey for the presence and effects of rose rosette disease was continued in 2009. Rose rosette disease is a disease of the multiflora rose, *Rosa multiflora*, a problem weed in pastures, woodlands, and rights of ways in Maryland and many other states. The disease, which has become established in North America and is spread by natural means, reduces populations of this invasive rose species.

Since the disease was first detected in Maryland in the 1990s, results of surveys conducted by MDA Plant Protection and Weed Management staff indicate that the disease is continuing to spread over a wide portion of Central and Northern Maryland, and has become locally established in Southern Maryland and on Maryland's Eastern Shore. In 2009, a field experiment to test the relative susceptibility of various rose cultivars and native rose species to rose rosette disease was continued at the MDA facility in Cheltenham. This experiment, begun in 2002, 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*). All of the beetles released this year were from beetles reared at the MDA plant pest quarantine facility in Annapolis. During the summer of 2009, more than 800 adult beetles were released at several locations on the Patuxent River near Jug Bay and adjacent to the Merkle Wildlife Management Area.

Additional releases were made in Anne Arundel County (200 adult beetles), in Prince George's County (200 adult beetles), in central Howard County (550 adult beetles), in southern Charles County near Port Tobacco (1,400 adult beetles) and on the Eastern Shore of Maryland in Caroline County (800) adult beetles. Partners with the Maryland Department of Agriculture in these efforts are the Maryland Department of Natural Resources, the Maryland–National Capital Park and Planning Commission, and the Howard County Department of Recreation and Parks. Funding for the project was, in part, derived from funds dedicated by the Maryland Department of Transportation, State Highway Administration. MDA was the primary coordinating agency.

The *Gallerucella* rearing program move from Cheltenham to our main headquarters in Annapolis has continued to be successful as well as efficient. MDA staff reared beetles at the MDA greenhouse and rearing laboratories in Annapolis and in 2008 were successful for the first time at bringing the adult beetles out of overwintering diapause and increasing beetle numbers significantly over the course of the spring and summer. Progress continued in 2009 and MDA staff is making preparations to increase production even further in 2010.

In addition to the releases and the rearing project described above, locations where beetles were previously released in Prince George's, Howard, Anne Arundel, Charles and Caroline counties were surveyed for *Gallerucella*, and were evaluated for levels of plant control. No detectable level of control of purple loosestrife has been noted, but for the fifth consecutive year, high numbers of beetles were observed 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 and larval beetles are planned for 2010.

The Maryland Department of Agriculture, in partnership with the Howard County Department of Recreation and Parks (HCR&P), released an additional 2,000 mile-a-minute weevil adults (*Rhynoncomimus latipes*) in 2009. The releases were performed at two new sites in central Howard County. In addition, weevils were released at four new sites in Prince George's County, the first releases in Maryland outside of Howard County. Three of the sites were at the USDA Beltsville Agricultural Research Center (BARC) and releases were made with cooperation from the USDA Agricultural Research Service. The other Prince George's County site was in Hyattsville, along the Anacostia River, and the release was

made with cooperation from the Anacostia Watershed Society. A total of 2,000 weevils were released at the four sites in Prince George's County

This weevil is a beetle that feeds exclusively on an invasive vine from Asia known as the mile-a-minute weed (*Persicaria perfoliata*). The first weevils were first released in Maryland in 2007 at test plots located on county property near Meadowbrook Park in central Howard County. The releases and subsequent data collections are part of cooperative research with the University of Delaware Department of Entomology and Wildlife Biology to study the efficacy of the weevil for biological control of mile-a-minute weed. Weevils have overwintered successfully at the field release sites and were very active in the spring and summer of 2009. As part of an agreement with the U.S. Forest Service, the Plant Protection Section Weed Biocontrol Program began a greenhouse and laboratory mile-a-minute weevil rearing program in 2008. The program continued in 2009, and has made modest progress to date. Field results show great promise for use of the weevil as a host-specific control against mile-a-minute weed.

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 \$25 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 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, local farmers and other property owners. 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 Weed Control Program employees handle these duties. This program was highly successful in most areas of the State during 2009.

The weed control program provided an average of \$2,900 per county in grant assistance to 20 counties. The grants were leveraged with similar amounts of money from the counties, which generated in excess of \$910,000 from spraying services provided by these 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 integrated pest management (IPM) program to provide biological control of certain thistle species. Noxious weed advisory notices were mailed to 348 managers of property infested with a noxious weed. Generally these notices were effective in obtaining compliance. 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, tree of heaven, Japanese stilt grass, purple loosestrife, Japanese bamboo, as well as invasive bamboo.

Giant hogweed is a federal noxious weed that was first detected in the State of 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, as was one additional site in 2007. No new sites were found in 2008. A multi-state eradication effort is underway, all previous sites and all newly verified sites were brought into this program.

The Weed Control staff partnered with the Maryland Department of Natural Resources for the tenth 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 the herbicide (Aquaneet®) applied in the nine counties of the Eastern Shore for phragmites. Total spray revenue for phragmites control was in excess of \$75,000 for treating approximately 320 acres in 291 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.

Other Section Activities

During 2009, 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 PPWM staff members were directly involved with MISC and were able to assist other members or individuals with technical expertise, 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 website is www.mdinvasivesp.org.

Section staff continued to administer the basic and specialist examinations for the Maryland Certified Professional Horticulturist (CPH) program. This is a voluntary program, sponsored by the Maryland Nursery and Landscape Associations (MNLA), for those desiring to demonstrate proficiency in horticulture. After meeting a combination of educational and work experiences, and studying a comprehensive manual that is the heart of the program, an applicant must pass a rigorous examination in order to be certified. The examinations have written and practical elements that are set up, proctored, and graded by the MDA.

Plant Protection and Weed Management Summary of 2009 Activity

	2007	2008	2009
Beekeepers Registered	1,331	1,152	1,363
Apiaries Registered	1,460	1,152	1,849
Apiaries Visited	620	725	845
Apiaries Inspected	509	593	660
Apiaries with Disease	29	25	23
Bee Colonies Registered	8,212	9,379	11,474
Bee Colonies Inspected	4,603	4,725	3,918
Bee Colonies with Disease (American Foul Brood)	45	34	40
Laboratory Diagnoses of Bee Diseases and Pests	98	21	96
Colonies Certified for Movement Out of State	3,860	3,975	2,527
Colonies Moved into Maryland Under Permit	452	550	773
Bee Colonies Certified During Inspection	4,603	4,725	3,878
Field Diagnoses for Varroa Mite	92	70	65
Ginseng Dealers Registered	10	9	11
Ginseng Collectors Licensed	230	230	303
Plant Inspections Conducted	920	602	417
Nurseries Certified	400	369	355
Nursery Acreage Certified	9,540	9,360	10,934
Plant Dealers Licensed	642	644	624
Plant Dealer Retail Outlets Licensed	739	838	839
Greenhouse Plants Inspected (1,000 sq. ft.)	7,978	7,978	7,978
Plant Brokers Licensed	13	16	14
Post-entry Quarantine Inspections	11	5	3
Phytosanitary Certificates Issued	328	301	109
Condemnation-Seizure Notices Issued	13	9	1
Plants Condemned	1,149	617	7
Imported Fire Ant Positive Sites	3	6	4
Imported Fire Ant Traps Placed	1,395	1,593	1,502
Imported Fire Ant Traps With Some Species of Ants	409	712	549
Special Insect Traps Monitored	2,027	3,663	5,818
Blacklight Samples Processed	5,875	5,611	2,077
Soil Samples Processed for Nematode Surveys	14	10	12

Turf and Seed

Seed is the single most important input to any agricultural 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, which are 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 of biotechnology and the expansion of genetically modified organisms (GMOs), 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

The Maryland Department of Agriculture'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 producer, dealers, farmers and other seed consumers. Turfgrass professionals look to the laboratory to provide them with purity and noxious weed seed examinations on seed lots 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 seed 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,



Maryland wheat seed that has been certified by MDA's Turf and Seed Section so that consumers can be sure it meets strict standards.

are certified as official purity and germination analysts. At the present time, six members of our staff are certified by AOSA in both purity and germination testing, out of a nationwide total of 108 analysts who have achieved this level of certification. 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.

Seed Regulatory

The Maryland Seed Law requires that all seed offered for sale in the state must be accurately labeled. 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 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 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 agriculture economy.

Staff members cooperated with the Maryland Crop Improvement Association, the Maryland Agriculture 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 the 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. 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, and all certified turfgrass fields are inspected for quality before harvest. Many sod specifications require Maryland certified turfgrass as a means of assuring the use of high quality varieties that are well adapted to this area.

Factors Affecting Turf & Seed Activities

The number of acres of turf fields inspected increased due to the hiring of an agronomist to fill a vacant position in 2007. This allowed the Turf & Seed Section to focus on turfgrass quality and renew an emphasis on consumer protection through additional service and regulatory turfgrass inspections.

The Turf & Seed Section's supervised mixing program has been affected by the economic downturn in the building and construction industries which rely on this service. Due to a temporary decrease in demand for seed mixes used on highway and building projects and for the seeding of turf grass sod, the section's revenue has been impacted as the number of pounds of seed mixed has been reduced.

Turf and Seed Activities, 2007–2009

	2007	2008	2009
Field Inspections			
Acres of Turf Inspected	3,810	7,140	9,272
Acres of Crop Seed Inspected	10,726	13,066	11,447
Supervised Mixing			
Pounds of Seed Mixed (thousand)	2,486	1,446	979
Retail and Wholesale Seed Inspections			
Number of Lots Sampled	970	917	890
Number of Regulatory Seed Tests Conducted	3,221	3,243	2,965
Seed Testing			
Purity Service Tests Conducted	2,969	3,200	3,289
Germination Service Tests Conducted	4,646	5,230	5,352



Maryland certified wheat seed production in Frederick County.

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 measures 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, staff conducts separate projects to address specific agents or situations that are having or may have significant impact on the health of Maryland's forests. In 2009, staff did specific assessment surveys for hemlock woolly adelgid (HWA), 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 monitors 13 plots established in six Maryland counties to assess the impact of the adelgid on hemlock resources. The condition of hemlock trees in these plots continues to deteriorate with significant dieback and mortality. By the close of 2009, 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 continue to remain low in 2009. 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, but did not carry over into the next season. Two SPB spots were found in Talbot in November of 2008 (8 acres).

Emerald ash borer — In cooperation with the Plant Protection and Weed Management Section, staff established 40 purple trap locations and set traps up in Baltimore County.

Pine shoot beetle — In cooperation with the Plant Protection and Weed Management Section, staff have conducted surveys for the pine shoot beetle since 1993 in western Maryland. Pine shoot beetle, a European bark beetle, was targeted in 2009 by a USDA APHIS funded survey conducted in 14 Maryland counties.

Defoliation and Damage Report

After seeing 15,793 acres of gypsy moth defoliation in 2006, 68,460 acres in 2007 and 19,279 acres in 2008, the third year of this gypsy moth outbreak finally came to an end. Gypsy moth caused only 295 acres of defoliation in the state in four counties. In 2009, 4,631 acres of gypsy moth caused tree mortality were aerially mapped. Just over 5,909 acres were aerially mapped in 2008.



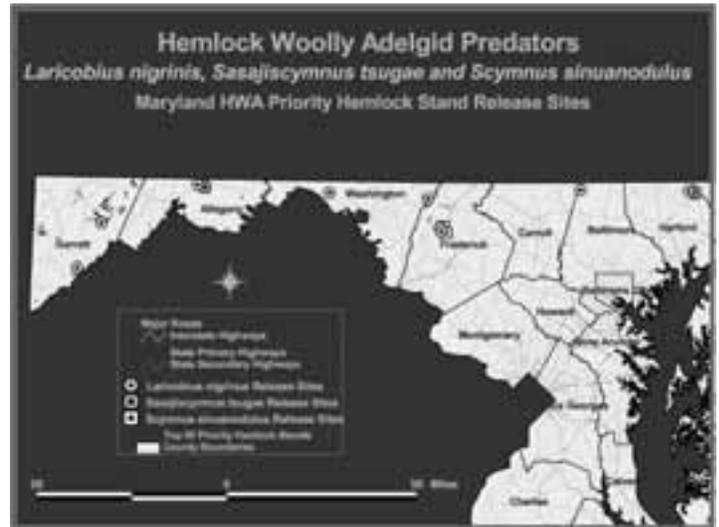
In addition to gypsy moth-caused damage the orange striped oakworm, cherry scallop shell moth, beech bark disease, oak wilt and frost caused damage to Maryland’s forests.

Hemlock Woolly Adelgid 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. So far in 2009, 675 hemlocks have had soil injection treatments for a total of 3,707 soil injection trees since 2005. So far in 2009, 51 trees have been trunk injected for a total of 524 trees since 2004.

The predatory beetle, *Laricobius nigrinus*, was recovered from Rocky Gap in 2005, 2006, 2007 and 2009. 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, Hagerstown watershed, Pretty Boy Reservoir and Broad Creek Boy Scout Camp. In 2008, additional *L. nigrinus* releases were made at Rocky Gap, Broad Creek, Savage River State Forest, Frederick City Watershed and Potomac State Forest. In 2009, additional *L. nigrinus* releases were made at Rocky Gap. Two other predatory beetle species, *Scymnus sinuanodulus* and *Sasajiscymnus tsugae* were released at several different sites, with no recoveries made. Through 2009, 3,603 trees in priority sites have been soil injected and 512 were trunk injected with imidacloprid insecticide for control of HWA.



Hemlock Trees Treated for Hemlock Woolly Adelgid with Imidacloprid 2004–2009

County	# Trees Soil Injected	# Trees Trunk Injected
Allegany	38	3
Baltimore	1,514	251
Frederick	494	96
Garrett	525	36
Harford	0	109
Washington	1,136	29
Total	3,707	524

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, and forested residential areas. Eighteen counties and Baltimore City were cost share partners in conducting the surveys in 2009. The 2008-2009 fall/winter surveys disclosed infestation levels resulting in the prescribed treatment of 32,722 acres of trees by the Forest Pest Management Section in 14 counties across the State, the highest number of counties since 1995. Only 295 acres of defoliation were seen with no defoliation within spray areas.

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 2009, some 28,929 acres (88 percent) were treated with the B.t. insecticide and some 3,793 acres (12 percent) were treated with the Dimilin insecticide.

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. It appears that this outbreak has collapsed.

Maryland Cooperative Gypsy Moth Suppression Program 1999–2009

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

Total Acres	2009	2008	2007	2006	2004	2003	2002	2001	2000	1999
Allegany	1,129	12,136	2,295	2,001	0	0	3,941	18,979	2,344	0
Anne Arundel	805	878	3,781	0	93	1,821	4,845	3,381	166	0
Baltimore	3,936	3,372	3,138	0	0	388	1,041	1,050	251	0
Baltimore City	179	193	709	0	0	0	135	0	0	0
Calvert	0	0	0	0	0	0	0	0	0	0
Caroline	0	0	0	0	0	0	0	0	0	0
Carroll	609	1,698	921	541	0	29	272	220	313	0
Cecil	3,767	5,927	3,220	2,941	567	5,644	13,114	2,971	0	0
Charles	36	0	0	0	0	879	3,809	1,517	362	0
Dorchester	0	0	0	0	0	1,198	1,148	156	416	521
Frederick	11,621	19,094	10,197	1,848	0	968	4,331	9,172	5,638	3,150
Garrett	107	32,257	16,340	14,188	0	0	0	429	0	0
Harford	1,096	2,898	1,134	870	0	0	0	0	0	0
Howard	1,097	1,465	813	216	0	159	255	149	0	0
Kent	0	0	0	0	0	0	0	0	0	0
Montgomery	319	1,205	445	0	0	1,273	413	2,112	640	26
Prince George's	0	0	0	0	0	0	505	499	512	0
Queen Anne's	0	0	0	0	0	0	0	0	0	0
Somerset	0	0	0	0	0	0	52	0	0	219
St. Mary's	0	0	0	0	0	0	0	0	56	0
Talbot	343	38	0	0	0	1,289	0	0	120	0
Washington	7,279	17,662	7,180	2,851	0	115	5,204	7,953	5,853	2,390
Wicomico	0	0	0	0	0	290	69	0	300	0
Worcester	399	399	0	0	0	0	0	0	0	0
State Totals	32,722	99,222	50,173	25,456	660	14,053	39,134	48,588	16,971	6,306

Defoliation by Gypsy Moth 1999 – 2009

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

Total Acres	2009	2008	2007	2006	2003	2002	2001	2001	1999
Allegany	0	5,905	6,575	0	0	0	25,194	8,913	0
Anne Arundel	0	310	8	0	0	203	527	2	0
Baltimore	14	413	549	57	0	27	9	104	29
Baltimore City	0	0	12	0	0	0	0	0	0
Calvert	0	0	0	0	0	0	0	0	0
Caroline	0	0	0	0	0	0	0	0	0
Carroll	0	10	67	4	0	0	10	2	0
Cecil	238	190	683	2	0	1,161	49	734	11
Charles	0	15	0	0	0	346	0	0	0
Dorchester	0	0	0	0	112	7,055	12,150	4,698	1,101
Frederick	0	8,204	5,578	244	0	1,156	799	2,402	32
Garrett	0	1,793	45,524	15,422	0	0	0	0	0
Harford	40	180	341	16	0	0	0	0	0
Howard	3	165	114	14	0	0	4	13	0
Kent	0	0	0	0	0	0	2	0	0
Montgomery	0	55	46	0	0	755	116	272	0
Prince George's	0	0	6	0	0	50	98	2	0
Queen Anne's	0	0	0	0	0	0	0	0	0
Somerset	0	0	0	0	0	536	663	0	0
St. Mary's	0	0	0	0	0	0	0	0	1
Talbot	0	184	19	0	0	6	24	0	0
Washington	0	1,855	8,938	34	0	507	5,079	6,089	23
Wicomico	0	0	0	0	0	1,937	1,459	0	0
Worcester	0	0	0	0	0	0	0	0	0
State Totals	295	19,279	68,460	15,793	112	13,739	46,183	23,231	1,197

Mosquito Control

The Maryland Department of Agriculture (MDA) lost a good friend and dedicated employee of 39 years in Phillip Brittingham. Phil approached his duties with yeoman-like endurance in his efforts to make Maryland a better place to live and a more enjoyable destination to visit. Phil was dedicated to his family, community and to this department. His passing is a great loss for MDA and Worcester County where he lived and worked his entire career.

The Maryland Department of Agriculture and cooperating local agencies provided mosquito control services to 2,132 communities with an estimated population of 1.3 million residents in 22 counties. Participation in the program is voluntary and requires a request to begin service or annual renewal of existing service and agreement by local government to pay a share (55 percent or greater) of the cost of providing mosquito control services. MDA provides mosquito control directly; however, Calvert, Caroline and Queen Anne's counties provide service to their respective communities. The towns of Easton, Fruitland and Ocean City also operate their own programs with funding assistance from MDA.

The mosquito control program is staffed by 18 classified employees and approximately 65 seasonal contractual employees. Regional offices are located in Annapolis, College Park, Hollywood and Salisbury, with a satellite facility in Dundalk to facilitate efficiency in providing services. Equipment used in the program includes 63 light trucks, one van, two heavy trucks, three boats, five all-terrain vehicles, three amphibious ditcher-excavators and one multiple engine, fixed wing aircraft.

Tiger mosquito infestations continue to drive the demand for program services, particularly in areas west of the Chesapeake Bay. The number of participating communities in Anne Arundel County has increased from 156 in 2004 to 252 in 2009. A waiting list of more than 80 communities has been established to manage service requests in the central and southern regions. The tiger mosquito, which has pest and vector significance due to its persistence as a day time biter and ability to transmit arboviruses to people and animals, is exclusively a container breeder, and is 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.



In Memoriam. Long-time MDA Mosquito Control Section Phil Brittingham passed away this year and is missed by all.

By all measures, the 2009 mosquito population in Maryland was above the long-term normal level. An exceptionally wet spring and strong winds which pushed tides further inland caused flooding of the high marsh lands resulting in extensive breeding of salt marsh mosquitoes throughout the Lower Eastern Shore counties. Landing counts, a standard method to measure the density of biting mosquitoes, routinely reported landing rates of 20 mosquitoes per minute and peak counts of 100 mosquitoes per minute. A significant and welcomed drop in the mosquito population occurred in July when rainfall was generally scattered and light throughout the State. Seasonal rainfall patterns returned in August and mosquito populations rebounded in the late season.

Biological Control of mosquitoes continued with the stocking of fish and Open Marsh Water Management (OMWM). Biological control of mosquitoes is a method of applied ecology which seeks to regulate mosquito populations by enhancing the access of predatory fish to populations of developing mosquito larvae. Properly designed and implemented OMWM projects can eliminate or greatly reduce the need for follow-up use of insecticides to control larval mosquitoes. Numerous studies have identified the benefits of OMWM in improving overall marsh productivity, preserving bio-diversity and increasing waterfowl utilization. Despite the documented benefits, securing permits to conduct OMWM is a lengthy and difficult process. In the early 1990s, the Maryland Department of Natural Resources (DNR) out of concern for the Black Rail, a secretive shore bird, placed state-owned marsh lands beyond the reach of MDA's OMWM program. There is no scientific evidence that OMWM adversely affected Black Rails or that the Black Rail population has responded favorably since the restriction of OMWM on state lands were put into place nearly 20 years ago. Wetland management practices were conducted on 1,085 acres. This represents an increase of 25 percent over 2008 (876) and represents a 250 percent increase over the 10 year average of 434 acres.

Long-term biological control of mosquito larvae can be accomplished through the release of *Gambusia holbrooki* minnows (mosquitofish) into permanent bodies of water. The use of this native species of fish is a cost-effective natural method of control since these minnows are highly adaptive and, once established, will produce a self-sustaining population. They are predaceous on many species of mosquito larvae and are considered an essential component of a strong IPM program.

During the 2009 mosquito season, 13,527 *Gambusia* were released at 25 sites in 10 counties. The habitat type consisted of ornamental ponds and stormwater retention ponds. These artificial wetlands are ideal sites to release mosquitofish since they tend to lack piscivores which allows the mosquitofish population to become established. These wetland types are also very capable of producing large broods of mosquitoes due to their design and, coupled with their close proximity to residences and businesses, long-term mosquito control is necessary to minimize nuisance and arboviral disease exposure.

Aerial spraying continues to be an invaluable tool for mosquito control as it provides the only practical way to treat the large expanses of wetlands that constitute the mosquito breeding habitat on Maryland's Lower Eastern Shore. Use of aircraft to apply insecticides for adult and larval mosquito control increased by 72 percent in 2009 (308,754 acres) as compared

to the yearly airspray average from 2004–2008 (179,566 acres) and was 51 percent greater than aerial spraying activity in 2008 (204,159 acres). The seasonal distribution of acres sprayed by aircraft was atypical in 2009 and reflects the prevailing weather conditions and high mosquito populations of the early season months. Normally, 50 percent of the yearly total of acres sprayed by aircraft occurs from mid August to mid October. In 2009, 66 percent of the aerial spray work occurred from April to June. The department continues its good fortune to have the services of an extremely knowledgeable and skilled pilot to administer the airspray program and aircraft maintenance as well as fly all missions. This year ranked third in the number of acres sprayed behind 2003 (332,000) and 1981 (321,862).

MDA continues to comply with regulatory updates from FAA and Homeland Security to keep the airspray program in operation. Upgrades to the aircraft instrumentation and pilot certification will enable the continuation of night-time spraying. The aircraft was moved to a secure hangar, which is a great improvement over the old facility and provides the level of security that is now required of aircraft equipped for applying insecticides.

Product Evaluations

Mosquito control scientists conducted field trials of two novel adulticides and a novel application technique. The synthetic pyrethroids have been the adulticides of choice in MDA's ground spray program for over 10 years. Large scale applications of pyrethroids by aircraft to control salt marsh mosquitoes on the Lower Eastern Shore have produced highly variable but generally poor results. The two new pyrethroid products tested produced adult mosquito mortality ranging from eight–80 percent based on pre and post application mosquito counts. Pyrethroid aerosol clouds produced in aerial applications are highly affected by the high temperature, heat inversions and variable wind speeds that are characteristic of the weather conditions at prime application times on the Lower Eastern Shore. Additionally, the pyrethroids tested were priced similarly to Naled, the product now in use and, therefore, there is no cost advantage.

Maryland was one of several states to experiment with a novel application technique using liquid methoprene, an insect growth regulator (IGR) to control tiger mosquito larvae. As previously stated, the tiger mosquito, makes use of a variety of man-made containers that hold small amounts of water for larval breeding habitats. Using an application technique that is very similar to how insecticides are applied to control adult mosquitoes with truck-mounted equipment, the IGR is

applied as an aerosol of extremely fine droplets that can drift and settle into breeding containers. In one field trial, larvae in breeding containers received effective doses from settling droplets at distances greater than 50 feet from the point of discharge. This technique, which holds promise as a tiger mosquito control method, will require EPA approval before it can be incorporated in an integrated management program.

Public education, community outreach and participation in professional association meetings and recertification programs serve a dual role in disseminating information on mosquitoes and vector-borne disease and providing training with the recognition and remediation of neighborhood tiger mosquito breeding sites. The predominant type of public contact was through media interviews. Mosquito Control personnel participated in 27 interviews in print, radio and TV media outlets in 2009. In addition, Mosquito Control employees participated in seven public meetings in four counties as guest speakers using Power Point presentations. Mosquito Control personnel participated in eight training sessions held for Master Gardeners, University of Maryland Extension, and local health and public works departments. Mosquito Control personnel also participated in the programs of state and regional professional societies which offered continuing education credits for attendees.

Mosquito-borne Disease Surveillance

The Maryland Department of Agriculture, working with the Maryland Department of Health and Mental Hygiene (DHMH), completed the ninth year of a cooperative effort to monitor the occurrence and distribution of mosquito-borne pathogenic viruses throughout the State. A total of 40,680 mosquitoes was collected, separated into 3,122 pools and analyzed for viruses at the DHMH Laboratory in Baltimore. Eight pools from two jurisdictions (Worcester and Prince George's counties) tested positive for West Nile virus. A mosquito sample collected in Forest Glenn, Montgomery County and processed by Department of Defense personnel also tested positive for West Nile virus. Maryland reported two human cases of WNV and its first human fatality since 2003. Human cases occurred in two jurisdictions, Baltimore and Montgomery counties, in 2009 with the fatality reported from Montgomery. This is the lowest incidence of human illness in Maryland since 2001 when the first cases were reported. The number of cases nation-wide dropped from 1,356 in 2008 to 663 with 30 fatalities nationally as of this report in 2009. Estimates of the cost of illness are difficult to determine, however, scholars have placed the cost for an uncomplicated case with full recovery at

\$1,000 per case for lost work and the cost of neuroinvasive illness at \$27,000. In addition to the two human cases, two cases of arbovirus in horses were reported, one fatal case of Eastern equine encephalitis in Worcester County and one non-fatal case of WNV in Prince George's County.

Interactions with Other Agencies

The cooperative effort between MDA and DHMH for mosquito-borne disease surveillance is of great benefit to public health. 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 greatly decreased during the past five years and currently pays for less than 10 percent of the actual costs incurred by MDA.

We look forward to continued cooperation with the U. S. Fish and Wildlife Service and the Army Corps of Engineers with proposed wetlands management projects for mosquito abatement and marsh restoration through OMWM work. Cooperation among MDA, DNR, and MDE is essential to provide effective mosquito control on wildlife management areas and other state lands under DNR control.

Mosquito Control Activity Summary

	2006	2007	2008	2009
Communities Participating in Mosquito Control Program	2,106	1,974	2,006	2,132
Number of Light Trap Nights	3,762	3,539	2,711	2,767
Percent of Light Trap Nights Below Threshold	65	68	68	55
Number of Landing Rate Counts Performed	20,756	25,861	22,672	22,487
Percent of Landing Rate Counts Below Action Threshold	66	71	49	37
Number of Public Service Requests	4,636	2,879	2,743	4,008
Number of Mosquitofish Stocked	3,737	14,251	19,756	13,527
Acres Managed by Open Marsh Water Management	493	302	876	1,085
Acres Treated with Insecticide	1,431,127	1,716,510	1,650,163	2,038,534
Acres Treated for Mosquito Larvae	24,880	29,784	14,800	10,505
Acres Treated for Adult Mosquitoes	1,406,247	1,686,726	1,635,363	2,028,029
Acres Treated by Aircraft	220,038	273,880	204,159	308,599
Acres Treated by Ground Equipment	1,186,209	1,442,630	1,446,004	1,729,935
Number of Mosquitoes Tested for Arboviruses	51,289	21,024	30,952	40,680
Number of Human Cases of Arbovirus Statewide	11	10	14	2
Number of Human Cases of Arbovirus in Areas with Mosquito Control	3	0	1	1
Number of Cases of Arbovirus in Domestic Animals	0	0	2	2
Number of Mosquito Pools Positive for Arbovirus	9	6	16*	8**

*Department of Defense collected an additional 11 positive pools at military reservations in Montgomery County, Maryland.

**Department of Defense collected 1 positive pool at military reservation in Montgomery County, Maryland.

Number of Human Cases of West Nile Virus Illness in Maryland, 2001– 2009

	2001	2002	2003	2004	2005	2006	2007	2008	2009	TOTAL
Allegany										0
Anne Arundel		8	7	2			2			19
Baltimore City	3	5	14	4	2	6		3		37
Baltimore Co.	3	1	17	3	1	3	2	2	1	33
Calvert							1			1
Caroline			1	1						2
Carroll			2							2
Cecil										0
Charles		1	1							2
Dorchester						2				2
Frederick		5	3					1		9
Garrett										0
Harford			2				2	3		7
Howard			3			1	1			5
Kent										0
Montgomery		7	10	1				4	1	23
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	14	2(1)	173 (20)

*Number of fatalities in parentheses

Number of Communities Participating in Mosquito Control 2008–2009

County	# of Communities		% Change
	2008	2009	
Allegany	2	3	+50
Anne Arundel	242	252	+4.1
Baltimore City	1	1	0
Baltimore County	329	359	+9.1
Calvert	67	76	+13.4
Caroline	8	65	+812.5
Carroll	3	3	0
Cecil	42	40	-4.8
Charles	97	101	+4.1
Dorchester	127	129	+1.6
Frederick	19	10	-47.4
Garrett	0	0	0
Harford	46	52	+13
Howard	9	11	+22.2
Kent	38	35	-7.9
Montgomery	22	20	-9.1
Prince George's	302	302	0
Queen Anne's	20	20	0
St. Mary's	111	109	-1.8
Somerset	125	126	+0.8
Talbot	110	117	+6.4
Washington	4	4	0
Wicomico	152	169	+11.2
Worcester	130	128	-1.5
TOTAL	2,006	2,132	+6.3

Cumulative Acres Treated with Insecticides for Mosquito Control By County During 2008–2009

County	Acres Sprayed		% Change
	2008	2009	
Allegany	3.44	1.2	-65.1
Anne Arundel	98,936.56	100,272	+1.35
Baltimore City	0	0	0
Baltimore County	87,619.5	51,092.8	-41.7
Calvert	103,634	142,150.2	+37.2
Caroline	45,119.1	39,175	-13.2
Carroll	263.24	452.1	+71.7
Cecil	56,011.5	52,746.67	-5.8
Charles	68,628.19	78,362.29	+14.2
Dorchester	283,717.43	372,526.79	+13.3
Frederick	1,202.74	889.93	-26
Garrett	0	0	0
Harford	12,348.9	11,598	-6.1
Howard	2.94	.71	-75.9
Kent	36,412.13	42,481.74	+16.7
Montgomery	7.66	2.51	-67.2
Prince George's	8,187.4	16,075.31	+96.3
Queen Anne's	100,018.8	110,788.8	+10.8
St. Mary's	102,591.49	96,009.12	-6.4
Somerset	143,676	187,599.42	+30.6
Talbot	209,543	271,168.9	+29.4
Washington	268.72	226.7	-15.6
Wicomico	202,425	284,576.5	+40.6
Worcester	89,545.13	180,336.9	+201.4
TOTAL	1,650,163	2,038,533.6	+23.5

Pesticide Regulation Section

The Pesticide Regulation Section (PRS) 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, not-for-hire businesses or public agencies.

A total of 63 private applicators were certified in 2009 for a three-year period after passing a closed book examination administered by section personnel during exam sessions. One thousand six hundred nineteen private applicators renewed their certificates by attending recertification training. Currently, there are 3,284 certified private applicators. Section staff approved and monitored 111 private applicator recertification training sessions that the University of Maryland Extension, MDA, or the pesticide industry conducted.

A total of 432 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 1,069 public agency applicators in 2009, bringing the total number of certified commercial and public agency applicators to 4,103. In 2009, a total of 18 exam sessions were held during which 2,667 exams were administered to 888 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. Two hundred seventy seven recertification training



A pesticide use observation inspection is part of the Pesticide Regulation Section's activities to assure that pesticide applicators are working within the law to protect consumers and the environment.

sessions for commercial pesticide applicators were approved and monitored by this section and were conducted by the pesticide industry, the University of Maryland Extension, or the department. By attending recertification training, 3,280 applicators were recertified in 2009.

During 2009, the section licensed 1,371 commercial businesses and 160 not-for-hire businesses to apply pesticides and to perform pest control services. Three hundred ten public agency permits were issued to governmental agencies that apply pesticides. Forty-one pest control consultant licenses were issued. A total of 1,710 registered employee identification cards were issued during 2009. The department currently has 15,060 employees of pesticide businesses and public agencies registered to apply pesticides under the supervision of certified applicators. A total of 146 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 2009, 809 routine business inspections were performed during which 243 businesses were cited for violations of the Pesticide Applicators Law and Regulations. Seventy-eight pesticide dealer inspections were conducted to ensure that restricted use pesticides were sold only to certified applicators. Seventy-nine 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 31 consumer complaints were investigated. Under the federal cooperative agreement, 28 pesticide producer establishment and 30 market place inspections were conducted. Other enforcement actions taken during 2009 included the assessment of 33 civil penalties totaling \$10,500.

Pesticide Technical Information Collection and Dissemination

A listing of pesticide sensitive individuals was first compiled in 1989. During 2009, this section registered 152 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. The PRS staff continues to work with Maryland Public School districts on implementation of IPM on school property. In addition, PRS staff members serve as members of the Northeast Region IPM Center's School IPM Working Group, the Northeast Region's K-12 IPM Curriculum Subcommittee, and the Association of Structural Pest Control Regulatory Official's IPM in School Committee. PRS staff continues to work with the Maryland Public School districts on the use and implementation of IPM on school property. During 2009, MDA hosted a meeting for school personnel and their pest control contractors. Topics for the meeting included discussions on compliance, implementation of IPM programs with limited budgets and nuisance wildlife problems.

Training Events

During 2009, the PRS hosted the annual EPA Region III State Pesticide Inspector's Workshop. Fifty-seven Inspectors from Maryland, Delaware, Pennsylvania, Washington D.C., Virginia and West Virginia were in attendance. The agenda for the workshop included health and safety training for the Inspectors as well as presentations on the importance of personal protective equipment (PPE) to prevent pesticide exposures, conducting inspections at pesticide producing establishments and market places where pesticides are sold, pesticide label interpretation, concerns and challenges of invasive species control, investigating fish kills along with respirator fit testing. Also included in the workshop was a field trip to the Sarbanes Ecological Science Center where a mock investigation exercise of a bird kill took place.

At the request of the EPA, the PRS hosted a six member delegation of the Chinese Ministry of Agriculture's Institute for the Control of Agrochemicals. The delegation was visiting the United States to see how pesticides are regulated on the national and local levels. Staff from EPA headquarters and EPA's Region III office provided information on pesticide regulation from the national perspective while MDA/PRS staff provided the delegation with information on how pesticides are regulated at the state level, as well as, the working relationship between the State and EPA.

Special Programs

During 2009, the section offered its recycling program for empty plastic pesticide containers to growers and commercial pesticide applicators at 20 locations. Collection centers were maintained in nine counties (Caroline, Frederick, Harford, Kent, Prince George's, Talbot, Washington and Wicomico) with the assistance of county government agencies. A total of 128 collection days were held from June through September. In addition, 13 pesticide dealer/custom applicators participated in inspection and collection of containers at their own facilities. A total of 49,000 containers weighing nearly 22 tons, were collected from 125 participants, of which 30 were first time participants. The containers were processed for transporting to a plastic recycling facility.

The Maryland Department of Agriculture's Pesticide Regulation Section staff continued to offer outreach and 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 could 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 2009, Telamon members provided training to 607 farm workers and 46 non-farm workers (health care providers). Telamon also provided pesticide safety and awareness training to 180 children of farm workers, from pre-K through eighth grade.

Pesticide Regulation Section Activities 2007–2009

	2007	2008	2009
Commercial Pesticide Businesses Licensed	1,354	1,631	1,371
Not-for-Hire Businesses Licensed	150	168	160
Commercial Pest Control Applicators Certified in One or More Category	2,947	3,113	3,134
Registered Personnel Employed by Licensed Businesses and Public Agencies	47,719	13,981	15,060
Public Agency Permits Issued	301	321	310
Public Agency Applicators Certified In One or More Category	996	1,054	1,069
Private Applicators Certified to Date	3,494	3,434	3,284
Dealer Permits Issued	149	141	146
Applicator Certification Examination Sessions Held	18	18	18
Individuals Taking Certification Examinations	934	982	888
Certification Examinations Administered in All Categories	2,172	2,463	2,677
Number of Businesses Inspected	801	975	809
Number of Businesses with Violations	203	363	243
Unregistered Employees Violations	15	42	26
Records Incomplete or Inaccurate Violations	98	175	143
Vehicles Not Properly Identified Violations	30	34	43
No Anti-siphon Device Violations	10	27	25
No First-aid/Safety Equipment Violations	11	13	13
Incomplete or No Customer Information Violations	0	27	14
Pesticide Dealer Inspections	78	77	78
Application Records Reviewed	801	975	809
Hearing and Investigational Conferences	0	1	0
Consumer Complaint Investigations	79	54	31
Pesticide Use Observations	66	86	79
Pesticide Samples Collected for Analysis	32	48	51
Market Place Inspections	35	42	30
Pesticide Producer Establishment Inspections	28	28	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 2009, the section registered 12,440 pesticide products; 3,732 fertilizers; 524 soil conditioners; 755 fertilizer/pesticide combinations; 147 liming materials and 14,512 commercial feeds. See Table 1 for details and comparisons to product registrations of prior years.

Inspection

Field inspectors routinely sample products that are randomly selected 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 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 2009, section inspectors performed approximately 1,978 on-site inspections. See Table 2 for details on inspection activities.

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 also provides support to the Maryland Departments of the Environment and Natural Resources, to the federal Department of Agriculture (USDA) and the U. S. Environmental Protection Agency (EPA).

Homeland Security—FERN (Food Emergency Response Network) for Chemistry

MDA's 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 if 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. In 2009, the section participated in 11 studies conducted by FERN for the analysis of Melamine in food.

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 Table 3 for details relating to stop sale orders.

Human and Animal Health Activities

Maryland Winter Wheat–Toxin Problem—Vomitoxin (Deoxynivalenol or DON)

An abnormally wet and cool spring rendered most of Maryland's winter wheat crop unacceptable due to high levels of vomitoxin. Much of the crop shipped to Pennsylvania flour mills was not accepted and a significant amount could not be used for animal feed. The section started monitoring DON in soft winter wheat for the Food/Feed Quality Assurance Program of the department for the purpose of insurance claims. The section worked closely with the Pennsylvania Department of Agriculture, the U.S Food and Drug Administration (FDA), grain elevators, feed mills and farmers in the state to determine the level of DON in the wheat and to assure that samples that exceeded FDA guidelines were kept from entering the human and animal food chain. A remediation plan was devised to deal with the products that were between the acceptable limits and the FDA guidelines to allow the product to be used in animal feeds.

The Agriculture Emergency Responders were activated to help with sampling of feed ingredients and finished feeds in various mills in the State. The total number of samples analyzed was 561. The samples included flour for human consumption, feed ingredients, whole grains, grain screenings and finished feeds. The flour samples were taken from a commercial flour mill and one tourist grist mill. Of the grain samples, nearly all soft winter wheat samples had elevated DON levels. Few of the oat and barley grain samples taken had elevated DON levels. There were several finished feeds and feed ingredients that were in excess of the FDA guidelines for the species. There were stop sale orders issued for these products and the products were not allowed in the animal feed chain. The results of the flour samples were forwarded to DHMH for their evaluation. Table 4 is a compilation of laboratory analyses.

Protein Adulteration Surveillance—Melamine

The section continues its monitoring activities for protein adulteration in pet foods by analyzing them for melamine. Since the pet food crisis in 2008, which resulted in many deaths of cats and dogs, and the hospitalization of many others, the section continues to monitor wet, moist and canned pet foods for melamine by an ELISA technique. If any pet foods are found to be over one ppm (part per million) they are confirmed by a second technique, HPLC-MS/MS. The section has analyzed 150 samples for the presence of melamine. Of these 150 samples 72 were below one ppm and required no further testing. The remaining 78 samples were over the limit and were confirmed. Of these 78, all were under the 10 ppm limit set by the FDA in 2008 for pet food. The samples ranged from one ppm to 8.5 ppm melamine.

Milk

The State Chemist laboratory staff continues to closely work with DHMH and MDA's Animal Health Section in a continuing monitoring project to determine the presence of lead in raw milk. 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.

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's 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 2009, the State Chemist Section of MDA completed 83 BSE inspections and collected 70 samples from 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 void of any violations of the FDA regulations pertaining to BSE.

All samples were analyzed by PCR (polymerase chain reaction) to determine the presence of bovine tissue via DNA replication.

Four samples contained bovine tissue—the results were reported to FDA.

The threat of terrorist activities has 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, etc. the need to read, understand and follow the specific precautions that appear on the warning handouts.

The economic havoc that would ensue from animal feed containing BSE transmissible ingredients inadvertently or deliberately fed to the ruminant farm animal populations could be ruinous to the beef industry and allied businesses, e.g., fast food companies, food stores, restaurants, etc. 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.

Antiterrorism and Homeland Security Issues

Because of the nature of the duties and capabilities of the section, many of the activities reported elsewhere in this document have homeland security implications. Specific mention has been made of the section's BSE and FERN activities. In addition, the section cooperates with the Department of Health and Mental Hygiene, Laboratories Administration, the State Police, the Maryland Department of the Environment and all of the local health departments through its position on the Laboratory Emergency Preparedness Advisory Committee.

As noted above, the section has inspectors who routinely visit establishments distributing fertilizer. A part of the inspection protocol involves reviewing the measures that the establishment uses to assure that fertilizer ingredients are not diverted to illegal uses. Protocols that are recommended at these inspections are those that have been developed in cooperation with the federal government, other states and industry groups.

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 which are analyzed by federal and state laboratories for several hundred different pesticides. 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. See Table 2.

USDA—Microbiological Data Program (MDP)

Since 2001, the section has been contracted by 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. 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. See Table 2.

Food Safety Survey of Maryland Produce

Since 1992, the section has collected from roadside vegetable/fruit stands random samples of Maryland grown produce which were then tested for 400 different pesticides. The data are sent to EPA and USDA for incorporation into national data banks. The section has performed this survey for 19 years and is pleased to report that the surveys indicated that Maryland grown produce does not contain any toxic levels of pesticides.

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 marketplace. Removal of violative products not only protects farm livestock but also provides protection to the public against exposure to drug resistant bacteria. In 2009, the section analyzed 51 samples of feed for 81 different drugs. 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 marketplace. 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.

Table 1. Product Registration and Enforcement Actions

Product Registration	2007	2008	2009
Pesticides	10,721	11,983	12,440
Fertilizers	3,483	3,778	3,732
Soil Conditioners	555	596	524
Fertilizer/Pesticide Combinations	689	779	755
Liming Materials	162	181	147
Feeds	13,209	14,555	14,512
TOTAL	28,819	31,872	32,110
Number of Companies with Registered Products		3,034	2,957
Registrants		2,559	2,458
Enforcement			
Non-Registered Notices	757	495	401
Stop Sale Orders	217	195	139
Non-Registered Stop Sales			150

Table 2. Inspection Program

	2009
Inspections (Feed, Fertilizer, Pesticides, Compost, etc.)	
Plants, warehouses, retailers, etc.	1,269
Inspections for BSE (mad cow disease)	83
Pesticide and microbiological data sites visited (USDA/MDA)	626
Pesticide and microbiological samples collected (USDA/MDA)	1,230

Table 3. Regulatory Actions

Sample Tracking Stop Sale Orders	2009
Deficiencies	
Pesticides	4
Fertilizers	50
Feeds	37
Over-Formulations	
Pesticides	0
Fertilizers	30
Feeds	22
Label Violations	26
Warnings	
Deficiencies	
Pesticides	3
Fertilizers	35
Feeds	27
Over-Formulations	
Fertilizers	20
Feeds	27
Products Not Registered Brought into Compliance	
Pesticides	7
Fertilizers	45
Soil conditioners	12
Fertilizer/pesticide combinations	5
Liming materials	6
Feeds	326

Table 4. Samples Collected and Analyzed – 2009

	Samples Collected	Total Number of of Chemical Analyses
Pesticide Formulation Analysis	305	765
Fertilizers (nitrogen, phosphorus, potassium, micro-nutrients)	584	4,645
Agricultural Liming Materials	29	109
Feeds and Pet Foods (protein, drugs, phytase, etc.)	1,258	15,664
Broiler Feed for Phytase	48	64
Livestock Feed for Drugs and Additives	150	1,050
Ruminant Tissue Analysis of Feed	82	90
Toxic Metal Analysis of Feeds, Fertilizers and Liming Material	98	1,206
Melamine in Animal/Human Food	58	70
Vomitoxin (VON)	603	724
Aflatoxin in State Chemist Inspection Samples	31	37
Mad Cow (BSE)	70	84
Milk Samples for Lead Analysis	2	6
Food Safety of Maryland Produce & Fruit 2008	64	23,393
Food Safety of Maryland Produce & Fruit 2009 (projected completion no later than January 2010)	64	23,393
Resource Conservation (MDA)	2	25
Animal Health Samples	1	6
Service Samples for Farmers, Veterinarians, etc.	3	37
National & International Quality Assurance Samples	77	3,163
EPA Samples (pesticide misuse investigations, market place monitoring)	54	452
FERN	10	95

Maryland Department of Agriculture Budget Allocations for Fiscal Year 2009

Total State Budget (Operating and Capital)	\$29,526,297,989
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Maryland Department of Agriculture Budget	\$ 119,474,922
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Maryland Department of Agriculture Budget Sources	
State General Fund	\$ 34,572,679
Special and Reimbursable Funds	
(Fees, Registration, Testing & MALPF)	\$ 63,576,967
Federal Funds	
(Grants & Cooperative Agreements)	\$ 16,525,276
General Obligation Bonds	
(Maryland Agricultural Water Quality Cost Share and Tobacco Conversion Program)	\$ 4,800,000
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Source: *Fiscal Digest of the State of Maryland, 2009 Session*

Long Service Awards

40 Years of State Service



Harwood Owings III, third from right with (l-r) Maryland State Chemist Warren Bontoyan, Asst. Secretary Mary Ellen Setting, and Secretary Buddy Hance.

35 Years of State Service



Christal Stanbrough, Aaron Webb, C. Ed Null, Jr., with Secretary Buddy Hance. Recognized but not present was Donald Dewitt.

30 Years of State Service



L. Mike Goff, Sherry Weygant, Carol Council, Kirk Penn, Neil Rotruck, Jr., Janet Schmid pictured with Secretary Buddy Hance.
Recognized but not present were Lawrence Lembeck, David Schofield, R. Will Wotthlie.

25 Years of State Service



Kenneth McManus, Mark Taylor, Noreen Eberly, Keith Connolley pictured with Secretary Buddy Hance.
Recognized but not present were Cheston Miller, Diana Mullinex, Catrilla Simpkins, Lynne Willson.

20 Years of State Service



Craig Zinter, Nancy Wilkinson, Donna Hill, Stephen Grossi, Rona Flagle, Gloria Chambers, Theresa Brophy, Fred Samadani, Warren Bontoyan pictured with Secretary Buddy Hance. Recognized but not present were Kimberly Arnold, Stephen Barry, Ronald Mitchell, Agnes Roberts, Linda Scott.

15 Years of State Service



Derrick Howe, Anuradha Teachout, Anna Goins, Sonya Gaynor, Offiah Offiah, Renato Cuizon with Secretary Buddy Hance. Recognized but not present were Thomas Brannock III, Jean Kerley, Deborah Minnich, Royden Powell III, Sheila Saffell, Daniel Schamberger, Nancy Tucker.

10 Years of State Service



Mary Darling, Phyllis Riggin, Laura Downes, Lawrence Blickman, Carla Ardis, Darren Alles, Jennifer David, Jennifer Schaafsma, Levin Schwaninger with Secretary Buddy Hance. Recognized but not present were Joseph Boako, Roshawn Diggs, Barbara Gerity, Charles Hayes, Stephanie Knutsen, Sara Lasher, George Nicholson, Paul Nuwer II, Peter Rupp, Jennifer Snoddy.



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



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