Agriculture at Work

PEOPLE, JOBS, INNOVATION

MARYLAND DEPARTMENT OF AGRICULTURE 2010 ANNUAL REPORT

MARYLAND DEPARTMENT OF AGRICULTURE

MARYLAND
Smart, Green & Growing

Mission Statementt

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

MARYLAND DEPARTMENT OF AGRICULTURE

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Dear Friends,

Maryland farmers and watermen are part of our State's great heritage and a large part of the engine that drives our economy. In Thomas Jefferson's words, agriculture is the "first and most precious of all the arts." Lt. Governor Brown, Agriculture Secretary Buddy Hance and I have traveled the State meeting with farmers and watermen to find the best ways to protect farming jobs and keep family farming profitable, preserve contiguous tracts of farmland, and grow smarter as a State. As we look forward to the future, we hope to build upon the progress we have already made to strengthen Maryland's agricultural economy. We have already made great strides in supporting our farmers and watermen. Together, we have encouraged Marylanders to Buy Local, provided cost-share funding for cover crops, permanently preserved over 30,000 acres of farmland, protected our livestock and poultry industries from unfair federal regulations, and created a new shellfish aquaculture initiative to both help struggling watermen and our water quality. These accomplishments and many others help to protect the health of our economy, our families and communities, our environment, and our food supply.

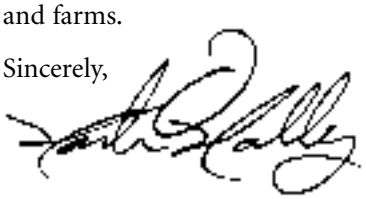
The theme of Moving Maryland Forward frames this Administration's decisions on our shared priorities. Marylanders will see a continued focus on innovation for a new economy and job creation as we move into the New Year. Agriculture is an important part of these initiatives as farmers diversify their businesses and use new technologies for on-farm conservation among other efforts to strengthen rural communities and keep farmland open and productive. As just one example of agricultural employment results, since its founding in 2007, the Maryland Agricultural and Resource Based Industries Development Corporation (MARBIDCO) has created 256 jobs and retained 287 jobs in Maryland through its entrepreneurial grants and loans programs. By continuing our work together, we will move Maryland forward through this national economic downturn and emerge very strongly with innovative new industries and jobs.

Governor O'Malley meets with poultry farmers to hear their concerns and to share his support for the industry.

In the federal government, we have worked very closely with United States Secretary of Agriculture Tom Vilsack, who has been very accessible to us, to support our livestock and poultry industries and secure federal dollars for soil conservation districts, a new Eastern Shore Animal Health facility, and cover crops. As we work through the Chesapeake Bay restoration process, I will remain in contact with U.S. Environmental Protection Agency Administrator Lisa Jackson to make sure that Maryland farmers are not placed at a competitive disadvantage to other states.

I want to thank each Marylander from every rural and agricultural sector who has met with us to share their views. We look forward to maintaining our open and honest dialog to advance our shared priorities of protecting and strengthening our middle class, including our family-owned businesses and farms.

Sincerely,



Martin O'Malley
Governor

Dear Friends,

Much of our attention at MDA over the past year has been on the State budget. While extremely challenging, Maryland is in a much better position than many states. Despite this, we've had to reduce programs, services and staffing where we didn't think there was room to cut back further. As difficult as these times are, as a farmer, I am an optimist. I do believe things will work out, and that we will emerge from the national economic downturn in a strong position to capitalize on new jobs and innovative business opportunities for our employees and for the businesses and citizens we serve.

At MDA, some of the efforts to become more efficient with our operating expenses and public programs and services include:

- Consolidating five regional animal health diagnostic laboratories down to two (Frederick and Salisbury).
- Boosting participation in the cover crop program by providing partial payment to farmers and making other farmer-requested changes.
- Putting in place the new Conservation Tracker to help account for and give credit to farmers for all conservation best management practices, not just those using government cost share.
- Launching an innovative remote sensing program through federal funds to certify cover crop fall planting and performance via satellite rather than sending field staff out to inspect each field.
- Providing two electronic options for farmers to submit their Nutrient Management Annual Implementation Reports (AIR) showing how they fulfilled their nutrient management plans each year.
- Using GPS technology to make Weights and Measures inspections more geographically efficient. In addition, the program is assigning inspections from headquarters to automate reports and make the results more statistically valid.
- Starting a centralized collection of fee and license payments through a lockbox system to make more efficient the handling of the State's cash resources.
- Implementing an energy efficiency performance contract at MDA headquarters office that will save more than $4.36 million over 14 years and reduce significantly its environmental footprint. Additionally, the agency has installed three rain gardens and increased recycling dramatically.
- Improving online services to consumers, making the web a first point of contact for program information. In addition, Maryland's Best provides a centralized location for consumers to find local products. Soon, farmers will be able to post their product availability directly to the web, again boosting services.
- Developing with federal funds a program to provide electronically the location of sensitive (such as wine grapes) and organic crops so that pesticide applicators can avoid spraying them.

During this fiscal year, the Maryland Office of the National Agricultural Statistics Service released its snapshot of agriculture in 2009. It details some interesting farm information. Did you know that farm receipts declined more than $200 million from 2008 to 2009? Farmers are feeling the pinch like everyone else. MDA, together with farmers, is working hard to help reverse this trend and regain stronger profitability. This is especially important in a difficult economy.

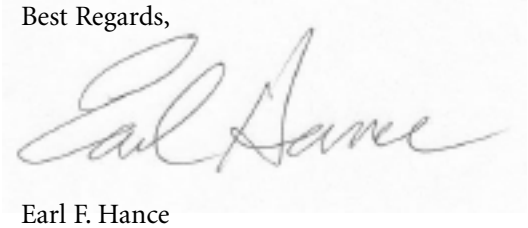
New initiatives to help farmers prepare for success when the economy turns around include:

- Convening, with industry leaders, in 2010 the Governor's Agricultural Forum which resulted in a Statewide Plan for Agriculture to chart a course for the industry over the next 15 years.
- Developing, through the Governor's Intergovernmental Commission for Agriculture, a tool kit to help local communities and officials understand the current state of agriculture, to find solutions to challenges, and to expand opportunity for the sector. Resources range from labor, environment and farmland preservation to energy, wildlife management and food security.
- Working with the Department of Health and Mental Hygiene and the University of Maryland to make possible licensing of farmers for on-farm processing of fruits, vegetables, poultry and rabbits so that farmers have greater access to markets and consumers to a broader array of local products.
- Revamping ancient aquaculture leasing rules and creating aquaculture development financing programs to encourage revitalization of this industry, which will help restore the Chesapeake Bay.
- Expanding alternative energy opportunities for agriculture.
- Modernizing wine laws to allow for market expansion.
- Creating a new nutrient trading tool so that farmers can sell nutrient reduction credits that exceed a benchmark level.

Finally, the federal U.S. Environmental Protection Agency's Total Maximum Daily Load (TMDL)/ Watershed Implementation Plan (WIP) process is well underway. Some of the elements in the WIP will require farmers to do things differently and we are working hard to make sure that the technical and financial assistance is there to help farmers meet the targets. If science shows that farmers can apply fewer nutrients and still meet the crop needs then input costs will be lower and profits potentially greater.

You can read more about most of these initiatives inside this report. I know that when we pull together, MDA, Maryland farmers, and the citizens and businesses we serve will be positioned to move Maryland forward. It is a new page in agriculture's long and successful story.

Best Regards,



Earl F. Hance
Secretary
Maryland Department of Agriculture

The Maryland Agricultural Commission

The Maryland Agricultural 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 discussions on the subjects of: the equine industry, the dairy crisis, MDA Animal Health diagnostic laboratories, forest certification and chain of custody, and the results of the forestry summit, the Chesapeake Bay model, the new Conservation Tracker, the livestock industry, Maryland Greenhouse Gas Reductions Act of 2009, viticulture in Maryland, rural jobs development, changes to the nutrient management plan, and the TMDL (Total Maximum Daily Load) process.

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 Somerset and Worcester counties in the fall and Baltimore and Carroll counties in the spring.

The commission continues to develop priorities and works actively on the implementation of the Statewide Plan for Agriculture and Resource Management. In addition the commission sponsored and members attended the Governor's Agriculture Forum in February to develop a new 15-year plan for Maryland agriculture.

The Maryland Agricultural Commission visits Lambco, Inc., a specialty meat processing facility in Carroll County, to learn about this growing segment of the livestock industry.

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 and legislation proposed by various units within the department for legal sufficiency, and assists in producing educational programs for departmental staff.

In 2010, the office:

- Worked with the OAG's Civil Division for the second time to defend competing claims against MDA filed by the Maryland Farm Bureau and the Waterkeepers, seeking disclosure of nutrient management records under the Public Information Act.
- Provided legal services to and supported increased enforcement of the Maryland Agricultural Land Preservation Foundation (MALPF). To date, this program, which now holds more than 2,100 easements state-wide has preserved 283,000 acres of farm land. Also successfully defended an action brought in Harford County that challenged the status of an agricultural land preservation easement.
- Supported increased enforcement of the State's Nutrient Management Law.
- Successfully defended an important case under the agricultural land preservation program in the Court of Special Appeals where the Court affirmed the MALPF position that a farm under the Foundation's easement may not be subdivided without Foundation approval.
- Successfully persuaded the I.R.S. to dismiss claims against two Maryland farmers in the U.S. Tax Court over the perpetual status of a state farmland preservation easement.
- Assisted the State Board of Veterinary Medical Examiners in licensing and disciplinary matters.

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. Because the foundation combined FY 2009 and FY 2010 funds into one easement acquisition offer cycle in FY 2009, the only new offers made during FY 2010 were those using new local funds or state funds recycled from previously rejected offers.

Four new offers were made during FY 2010 to preserve an additional 304 acres. After all acreage adjustments and withdrawn or rejected offers from the FY 2009/10 acquisition cycle have been taken into consideration, MALPF now has purchased or has pending offers to purchase easements on a cumulative total of 2,080 properties, permanently preserving approximately 283,500 acres. Using primarily local funds from Montgomery and St. Mary's counties and state funds from earlier rejections, MALPF committed $2.8 million to these four offers ($1.8 million in new funds).

The General Assembly adopted new legislation affecting MALPF during the 2010 legislative session. The most important change for the future of the program was to create a new

"partnership" program by explicitly authorizing the acquisition of agricultural preservation easements in partnership with outside public and private entities using ranking criteria, valuation methods, and easement provisions differing from those used in the regular program. No state funds would be used for the direct acquisition costs. MALPF has identified entities with complementary and, sometimes supplemental goals to those pursued by MALPF that may provide funding possibilities for future workable partnerships in acquiring preservation easements otherwise not available.

Senate Bill 59 removed the annual dedication of $4 million of MALPF funds from the agricultural transfer tax (and real estate transfer tax when agricultural transfer tax revenues are inadequate) to interest payment obligations undertaken as part of a "leveraged" installment purchase agreement (IPA) program. MALPF was advised by the Treasurer's Office and the Office of the Attorney General that leveraged IPAs are unconstitutional because tax revenues cannot be dedicated to serve debt beyond 15 years. If landowners choose the IPA payments option,

- **Goal:** The preservation of adequate amounts of farmland, woodland and open space in Maryland to ensure the continued production of food and fiber and to protect the agribusiness infrastructure for the future.
- **Objective:** By the year 2022, preserve 1,030,000 acres of farmland, woodland and open space land in Maryland through the purchase of permanent easements, local government land preservation programs, local Transfer of Development Rights (TDRs), and similar programs (SJ10-2002).

Performance Measures	2010 Actual
Output: Total number of easements, cumulative	2,010
Outcome: Total acres under easements	283,661

MALPF can fund it from its standard allocation of funds by investing the funds necessary at settlement to cover the payment of interest and principal.

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 July 1, 2010, all county certification programs had been reviewed under the changed requirements and brought into compliance with the certification regulations. Cumulative reviews over the last two fiscal years resulted in nine counties being fully recertified (Anne Arundel, Baltimore, Calvert, Cecil, Frederick, Kent, Montgomery, St. Mary's, and Worcester counties) as of June 30, 2010. Six counties are conditionally recertified (Carroll, Charles, Harford, Queen Anne's, Talbot, and Washington counties), one county received its first full certification (Caroline County), and one county was denied recertification (Wicomico County). At the end of FY 2010, 16 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, 2010, Maryland has preserved approximately 550,000 acres of agricultural land under MALPF, Rural Legacy, GreenPrint, and through local land preservation and transfer of development rights programs.

The Office of Administrative Services

The Office of Administrative Services manages all technical and support services for the department. It is comprised of four sections—Human Resources, Central Services, Fiscal Services, and Emergency Management.

The department has approximately 500 permanent and seasonal employees and Human Resource facilitates the recruitment, training, appropriate compensation, and retention of qualified individuals. Additionally, the office assists with the transition of those employees leaving government service. Programs and services for employees include risk management, employee leave bank, teleworking, wellness, blood drives, and training as well as employee recognition.

Central Services staff manage 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 implement 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 274 vehicles in addition to semi-annual inspections on all vehicles. The MDA fleet traveled more than 2.5 million miles last year.

Fiscal Services staff members handle all centralized accounting transactions for MDA. 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 over 99 percent of MDA bills on time as defined by state on-time guidelines.

Emergency Management for MDA addresses any and all emergencies within MDA. The department is in the process of completing a new management plan that will be tailored to MDA and in concert with the statewide emergency operations plan. Additionally, the department continues to provide annual training and drills for first responders.

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 2010 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 Maryland Municipal League, Maryland Association of Counties, and the Maryland Farm Bureau conventions.

During FY2010, staff distributed 256 news releases to approximately 315 news outlets and interested parties routinely, which generated approximately 844 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 422,207 visits of which 65 percent were new visitors during the year. The visitors viewed nearly 869,517 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.

Some of the biggest news stories handled by the Public Information office in 2010 were the drought, the devastating impacts of the February snow storms, environmental regulatory issues like the EPA Total Maximum Daily Load (TMDL) planning for agriculture, Concentrated Animal Feeding Operation permit process, 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 strong environmental accomplishments or impacts of agriculture, the state budget affect on MDA, farmers and other users of the agency's programs and services, and consumer complaints related to the high price of gas and the amount of fuel dispensed.

Exciting 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.

In the spirit of the Administration's efforts to provide transparency in government, the public information staff maintain 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 of 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 represent 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 state Smart, Green and Growing Communications Committee.

Government Relations

The department's Government Relations liaison works with elected officials to ensure that agriculture's interests are understood and best represented in laws, regulations and policies.

During the 2010 General Assembly Session, MDA put forward 11 departmental bills, of which 10 were signed into law.

- **SB 59**—alters MALPF funding methods and adds flexibility to the acquisition of easements using a settlement option the landowner prefers through a partnership with MARBIDCO.
- **SB 93**—alters and increases the fee structure for pesticide applicator certification examinations, registration of pest control employees with MDA and late fee payments for license, certificate or registration renewal under the Pesticide Applicator's law.
- **HB 420**—expands the activities and ways that the MDA Mosquito Control program can work in order to make it a more effective and efficient program.
- **HB 421**—authorizes the Secretary of Agriculture to adopt standards to regulate the use of the terms "locally grown" and "local" to advertise or identify an agricultural product—including seafood—and prohibits a person from knowingly advertising or identifying an agricultural product in violation of standards.
- **HB 974**—authorizes MDA to implement a nutrient credit trading program and facilitating transactions between participating parties.
- **SB 62**—directs revenue collected for licensing and inspecting horse stables to the Maryland Horse Industry Fund to help promote and protect the industry. It also increases the fees for licensing and inspecting horse stables from $75 to $125 to cover the cost of the administration of the program.
- **SB 81**—gives the State Board of Veterinary Medical Examiners the authority to increase the civil penalty for a licensee from $5,000 to $10,000 for any violation of Board laws or regulations in addition to suspension or revocation of a license.
- **SB 82**—clarifies definitions in Maryland's Commercial Feed Law to be more consistent with the broadly-endorsed American Association of Feed Control Officials (AAFCO) Model Bill and Regulations.
- **SB 90**—provides the Secretary of Agriculture with the authority to quarantine farmland and agricultural products and stop-sale on-farm agricultural products that have been contaminated by a chemical or radiological material or agent after consultation with the Governor and the Secretaries of Health and Mental Hygiene and the Environment.
- **SB 95**—gives the Board of Trustees of the Maryland Agricultural Land Preservation Foundation explicit authority to acquire preservation easements on farmland in partnership with outside public and private entities.

MDA also put forward another bill, SB 94, a bill to increase funding for the MDA Weights and Measures Program; however, this bill was not voted on in Committee. MDA has also spent a lot of time working with the Maryland Congressional Delegation to provide input into several high profile pieces of legislation, including the Food Safety and Modernization Act, Child Nutrition Reauthorization and the Agricultural Appropriations bills. Language included in the food safety legislation will enable MDA to qualify for funding to replace its aging poultry lab, as well as provide exemptions for some small farmers from the federal law.

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.

NASS has a rich history of collecting and distributing agricultural statistics, dating back over 140 years. Each year, the employees of NASS conduct hundreds of surveys and prepare reports that impact every facet of Maryland's agricultural community. Our mission, to provide timely, accurate and useful statistics in service to U.S. agriculture, would not be possible without the voluntary cooperation of Maryland farmers that take valuable time to respond to our surveys.

In 2009—the most recent year that annual statistics are available for this report—agriculture generated nearly $1.66 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, corn, soybeans and milk and dairy products. The Maryland Field Office of NASS estimated there were 12,800 farms in 2009 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.

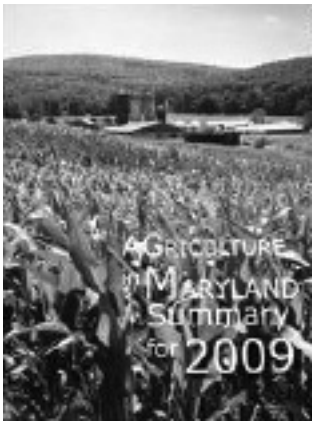
In February 2010, NASS published the results of the 2008 Organic Production Survey. This was the first-ever in-depth survey of organic farming in the United States and came in direct response to the growing interest in organics among consumers, farmers, businesses and others. The 2008 Organic Production Survey counted 129 organic farms during 2008. The 129 Maryland farms include USDA certified organic farms and farms that were exempt from certification.

Maryland organic farms are smaller, on average, than all Maryland farms. Organic farms averaged 72 acres of land, compared to 160 acres for all farms. Maryland organic sales totaled $10.4 million, including $4.9 million in crop sales and $5.5 million in sales of livestock, poultry and their products. Thirty-five percent of these farms have been in organic agricultural production for less than 10 years.

Approximately 18 percent of Maryland organic sales were direct to consumers, via farms stands, farmers' markets, Community Supported Agriculture (CSAs) and other arrangements compared to the national average of seven percent. Maryland farmers reported using a variety of conservation and environmental practices on their organic certified and exempt farms in 2008. Among the most popular were the use of green or animal manure and the planting and maintenance of buffer strips.

In December 2010, NASS released the results of the 2009 Census of Horticultural Specialties. The report provides the only comprehensive, detailed picture of Maryland's floriculture, nursery and specialty crops production. It provides information on the number and types of establishments, value of sales, varieties of products, production expenses and more.

Complete results of the 2008 Organic Production Survey and 2009 Census of Horticultural Specialties are available at www.agcensus.usda.gov. To obtain a copy of the *Agriculture in Maryland 2009 Summary* call 410-841-5740 or log on to www.nass.usda.gov/Statistics_by_State/Maryland.



Each year, NASS publishes an invaluable summary of the previous year's agricultural surveys.

Information Technology Services

Information Technology Services (IT) is responsible for maintaining and upgrading all telecommunications and data processing systems at the Maryland Department of Agriculture (MDA). MDA's Networking, Application Development and Technical Support sections have been effective and efficient in servicing the department's goals by ensuring employees are more productive to serve the public.

The Networking Staff has continued their effort to upgrade our e-mail system to the latest software. MDA employees now have the ability to access their e-mail from anywhere on the web, as well as the capability to access their network files from areas outside of headquarters.

Greenhouse and Motor pool were added to our existing network, ensuring connectivity back to the headquarters building for e-mail and file sharing. Also, all Catalyst switches located at headquarters were upgraded to Cisco 3750 switches.

Our Application Development Staff continues to provide licensing and registration data services to Maryland citizens as one of IT Services' top priorities. Many modifications have been implemented to gather, distribute and use data for licensing and registration systems including data on inspection and regulatory services. To offer these services over the web, numerous obstacles must be overcome. 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 continue the first phase of this project, IT's Application Development Staff will continue to learn and apply the programming techniques associated with web-based systems.

IT Services Application Development Staff have implemented the use of a lockbox system for receiving payments for licensing and registration renewals. Payments are received directly by the bank for processing. Electronic transfer of most payment data from the bank to MDA's databases reduces payment processing time and data entry errors ultimately reducing time to issue renewals. Within a year, all registration and licensing systems will be processed through the lockbox.

The Technical Support staff has made significant strides this year by implementing and a new help desk tracking system. Open Ticket Resource System (OTRS) is a web based customer request system that allows staff to track and respond to employees issues in a timelier manner. When technical calls are entered into the system, an email is sent to the entire team making them aware that a service is required. This allows the team to be more effective in servicing our employees by allowing minimal downtime.

One of Technical Support's staff greatest tasks is to ensure that all desktops and laptops are kept current. Routine software updates and general troubleshooting of workstations account for a significant amount of staff time. Updates are important to ensure that workstations' and laptops' operating systems and software are up to date. A yearly physical inventory is conducted at headquarters as well as all field offices. A complete update of the employee's system is performed at this time.

IT staff continues to host, support and assists in the maintenance of MDA's main website and Maryland's Best website. MDA's website was re-designed to conform to Maryland State's guidelines. A new server has been configured and software has been installed and updated to accommodate the transformation. The website for Maryland's Best is currently being re-designed and will be available late spring 2011. New searchable features are available as well as the ability to display YouTube videos on farmers and their produce as well as detailed information about the farmer.

Finally, a new employee intranet website was introduced to help employees locate and view information faster in one central location. The goal of this portal is to allow employees to link to relevant information at their convenience, rather than being distracted by electronic mail. Features such as training manuals and company policies and procedures can be utilized quickly and can substantially reduce queries and inquiries.

Marketing Services

Marketing Services' primary role is to develop profitable marketing opportunities for Maryland farmers. The division also serves as a conduit for federal resources and for policy information specific to the agricultural sector. In 2010, Marketing focused its efforts on building demand for local farm products through promotions, advertising as well as through business development activities with grocery store chains, food processors, chefs and other buyers. The market for local products is increasing in the state, with more than 78 percent of Marylanders saying they would prefer to buy food grown in Maryland (University of Baltimore Schaefer Center for Public Policy). Other key areas of activities include international marketing, with staff of the division facilitating meetings between Maryland food companies and farmers and international buyers from Russia, Cuba, the United Arab Emirates, Jordan, Canada and the European Union.

Buy Local

Through a combination of press releases, paid advertising through public and commercial radio, online and print, and promotional events, Marketing developed demand for local products throughout 2010. Primarily funded through a $200,000 grant from the U.S. Department of Agriculture designed to support the growth of the specialty crop industry, promotions encouraged consumers to buy Maryland grown fruits, vegetables, flowers, nursery products, wine and Christmas trees. Because of restrictions on federal funds, state funds were used to promote dairy, meat, poultry and the ag-tourism sectors. An estimated 800,000 Marylanders received promotional messages from MDA during the year.

The Maryland's Best web site, www.marylandsbest.net, is the primary conduit for information for consumers seeking local farm stands, farmers markets and information about Maryland farms. The web site includes contact information for farms, directions and video interviews with farmers about their farming operations. The web site, relaunched in 2007, has been used more than 500,000 times. In a first for this state program, Maryland author Lucie Snodgrass donated $2,000 to Maryland's Best in 2010 as part of the proceeds from the sales of her book, "Dishing Up Maryland" which features Maryland farmers and recipes with local food.

Governor Martin O'Malley supported the buy local program and Maryland's Best by kicking off the 2010 Buy Local Challenge Week with the third annual cookout at his residence in July. This event included farmers, food writers, chefs, grocery store representatives and media, as the Governor encouraged Marylanders to seek out Maryland-grown food. Media students at Loyola University in Baltimore City designed and published a book for Marketing in 2010 with recipes used at the cookout. These 200 books were distributed to promote the Maryland products included in each entry.

In its third year, the Jane Lawton Farm to School Program continued to drive increased consumption of locally grown produce in Maryland public schools. Marketing works closely with the Maryland State Department of Education on the program. Each county school system has participated in buying locally and they make the program work within their budget. For example, in Harford County Public Schools (HCPS) the school system buys direct from seven farms, they have 38,000 students in 54 schools with 15 production kitchens and serve nearly five million meals during the school year. In the Maryland growing season, HCPS will purchase 70–80 percent of their produce locally. This year, the program created a video contest among Maryland school children was held during September. Fifteen videos were submitted for the inaugural contest and they represented student's views on why eating local produce is important. Secretary Buddy Hance visited with the two Grand Prize winners—three high school students in Carroll County and one middle school student in Montgomery County—of the video contest at their schools.

A key function of the Marketing division is its annual buyer-grower event. This opportunity for Maryland farmers to meet with buyers has grown from about 20 participants in 2004 to about 300 in 2010. Throughout the year, Marketing staff link Maryland farmers with buyers from grocery store chains, restaurants and food service companies. This annual meeting is an opportunity to bring together buyers and farmers face-to-face to develop business. Companies represented in 2010 included Wegmans, Whole Foods, Safeway, Giant and Fresh Market. Chefs attending the Annapolis meeting included John Shields of Baltimore's Gertrude's and Spike Gjerde of the Woodberry Kitchen in Baltimore, selected one of the nation's top restaurants in Bon Appétit magazine.

With USDA Specialty Crop funds, Marketing also awarded $387,455 in grants to eight projects that will enhance the competitiveness of specialty crops in Maryland. Some of the projects include: developing biodegradable sod production netting and roll wrap from keratin for Maryland's sod production industry, increasing specialty crop sales of fruits and vegetables to low-income populations in eight Maryland communities, creating four new public events in 2011 featuring Maryland wine and specialty crops and creating a food safety program.

- **Objective:** Increase wholesale market sales opportunities of Maryland agricultural products to retail stores and institutional buyers by three percent per year.

Performance Measures	2010 Actual
Input:	
Number of producers in marketing database	787
Number of promotional activities conducted	48
Output:	
Producers participating in activities conducted	550
Outcome: Percentage of producers reporting a sales transaction as a result of MDA Marketing activities	40
Quality: Percent of producers reporting good or excellent satisfaction with MDA marketing activities	90

Liberty High School School students (l–r) Owen Linville, Robert Penn and Raleigh Linville receive awards from Agriculture Secretary Buddy Hance for winning the Grand Prize in the Maryland Department of Agriculture's Buy Local Student Video Contest for their video, "Maryland Farm to School."

Farmers Markets

The Farmers Market Nutrition Program (FMNP) works with farmers markets in all 23 Maryland counties and Baltimore City. MDA hosted a meeting for more than 100 farmers market masters in 2010. With a small grant from the Farmers Market Coalition, Marketing brought in Diane Eggert from the New York Farmers Market Federation to help market masters examine the advantages of coordinating their activities on a statewide level. MDA also received a USDA Federal-State Marketing Improvement Program grant to study the economic impact of farmers markets and to further develop the concept of creating a Maryland farmers markets association.

More than 300 Maryland farmers received approximately $537,000 from the FMNP program in 2010. Funded primarily by the USDA's Food and Nutrition Service, FMNP is designed to increase the access to local produce for low income citizens and senior citizens. This benefited 168,411 WIC (Women, Infants and Children) recipients in Maryland who purchased fresh produce at farmers markets. Also in 2010, Marketing and partners at the Maryland Department of Health and Mental Hygiene successfully rolled out a new program allowing WIC recipients to purchase fresh fruits and vegetables with WIC cash value vouchers, in addition to FMNP checks.

- **Goal:** Create new markets and support existing market opportunities for Maryland farmers and agribusinesses.

- **Objective:** Increase direct to consumer sales opportunities for Maryland agricultural producers by three percent per year.

Performance Measures	2010 Actual
Output:	
Number of producers participating in FMNP[1]	315
Amounts of FMNP checks redeemed by producers[2]	$537,000

[1]Bank list of farmers authorized to accept FMNP checks.

[2]Bank report of checks paid.

International Marketing

Marketing's international marketing component includes staff resources to represent Maryland processed food companies in Southern United States Trade Association (SUSTA) activities. MDA is a member of SUSTA through its membership in the Southern Association of State Departments of Agriculture, with member states stretching from Texas in the west, Florida in the South and Maryland in the North. SUSTA activities for Maryland have included food trade shows in the European Union, South Korea, Japan, Russia and inbound buyers from the United Arab Emerites and Korea.

MDA Marketing is also a member of the United States Livestock and Genetics Export Association (USLGE). Through membership in this organization, MDA participated in the Golden Autumn dairy genetics trade show in Moscow in 2010 along with the U.S. Holstein Association. Marketing anticipates hosting Russian buyers as a result of this activity and introducing them to Maryland dairy farms as a source of high quality cattle genetics.

In 2010, $12,500 state investment in participation in SUSTA and USLGE resulted in estimated sales of $2.5 million.

In other international marketing activities, Deputy Secretary Mary Ellen Setting led a trade mission to Havana, Cuba, in November 2010. This resulted in estimated sales of feed grains from Maryland companies of approximately $12 million.

- **Objective:** Increase the international sales by Maryland agribusinesses and the export of Maryland agricultural products to international markets.

Performance Measures	2010 Actual
Input: Number producers participating in MDA Activities	180
Outcome: Number of reported sales	7
Outcome: Dollar amount of sales	$14.8 million
Quality: Percent of producers reporting good or excellent satisfaction with MDA Marketing activities	95

Governor O'Malley launches *Dishing Up Maryland*, a cookbook featuring seasonal, Maryland food and the local watermen and farmers who produce it. A portion of the proceeds are donated by the author to Maryland's Best.

ACReS and Crop Insurance Promotion

Marketing houses two federally funded programs, crop insurance promotion and the Maryland Agricultural Conflict Resolution Service (ACReS) agricultural mediation program. The crop insurance promotion program is funded with approximately $324,000 from the USDA Risk Management Agency. Through press releases, newsletters, presentations and advertising in agricultural media, this program has successfully increased the participation of Maryland farmers in federal crop insurance programs to 6,269 farmers in 2010 from 5,240 in 2007. Farmer investment in crop insurance helps stabilize the Maryland agriculture economy as weather and market volatility make farming a challenging sector. In 2010, Maryland farmers received $27.5 million in indemnities from federal crop insurance following a significant drought in portions of the state.

- **Goal:** Provide educational and outreach programs to farmers to improve the economic well being of the Maryland agricultural industry.

- **Objective:** Increase the percentage of insurable crop acres in Maryland with buy-up levels of crop insurance to 65 percent by 2013.

Performance Measures	2010 Actual
Input: Insurable acres on Maryland farms	1,269,450
Output:	
Number of educational meetings and promotional activities	26
Direct educational contacts with farmers	1,095
Outcome:	
Percentage of insurable acres with buy-up coverage	59.2
Total crop protection in force (millions)	$314
Number of crop insurance policies sold	6,332

Farmers and others in the agricultural community who may be embroiled in disputes with family members, neighbors, government agencies, or even lenders got a fresh start by trying mediation through the Maryland ACReS. ACReS is a quick, confidential, no- or low-cost service offered by MDA and is available to Marylanders to help resolve agricultural related disputes before they end up in court.

MDA has provided USDA-certified mediation services for 11 years. Mediation is a voluntary, confidential process in which a neutral third party (the mediator) assists farmers, agricultural lenders, agencies, families and citizens to resolve disputes in a non-adversarial setting outside of the courts and regulatory process. Mediation is based on the voluntary cooperation and participation of all the involved parties with the assistance of mediators provided by MDA. Mediators are trained to serve as non-adversarial, neutral, third parties to help resolve disputes by encouraging the participants to develop a solution that meets their needs. An initial consultation with program staff and initial mediation session (about two hours) is provided at no charge. If additional mediation sessions are needed, costs are shared by the parties, with full or partial waivers of fees based on income.

During the last five years, the total number of request for mediation grew from eight in 2005 to 31 in 2010. Of the 31 requests, 22 mediations resulted in a written settlement. Farmers going through mediation have a projected savings of $71,500 in costs associated with other forms of conflict resolution.

Maurice Jones, a farmer from Harford County, demonstrates how to shuck corn to students who later prepared ears of corn for their lunch.

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 2010, there were 71 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. In 2010, responding to the changes in Maryland's oyster lease law, over 400 existing bottom leaseholders have indicated that they will farm oysters on their planting grounds.

The Maryland Aquaculture Review Board, which is chaired by the MDA aquaculture coordinator, provides monthly interagency review of permits and issues across departmental lines. The aquaculture coordinator works directly with those interested starting aquaculture businesses in evaluating business feasibility, locating project sites, determining culture methods and completing and filing application packages. In 2010, the board received over 150 requests for information on aquafarming and reviewed 17 applications for shellfish aquaculture projects in Maryland. These included projects proposing to raise shellfish seed, oysters, and clams on shellfish leases. Lease acreage will certainly expand by more than 50 percent in 2011.

The Maryland Aquaculture Coordinating Council is made up of 11 designated representatives from academic, regulatory, and political organizations as well as six members from industry appointed by the Governor. The aquaculture coordinator serves as a member of the coordinating council and provides administrative support. In 2010, the council provided recommendations used to draft and adopt new shellfish leasing regulations. The council also worked in conjunction with DNR, University of Maryland Extension and MARBIDCO to establish an aquaculture financial assistance program for shellfish aquaculture projects. The council also organized and funded a Maryland Aquaculture Conference to provide information to those seeking to enter the industry.

Aquaculture Coordination Council retiring member, Fred Wheaton, receives a certificate of appreciation from MDA Deputy Secretary Mary Ellen Setting and Dr. Andrew Lazur, Chairman.

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.

- **Goal:** To enhance or maintain the economic viability of the Maryland aquaculture industry.
- **Objective:** To increase the opportunity for new aquaculture business ventures.

Performance Measures	2010 Actual
Output: Number of applications reviewed by the Review Board	16
Outcome: Number of new or expanded aquaculture ventures	8

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 70 processing plants employing 1,217 people and more than 6,000 watermen who work the Chesapeake Bay. In 2009, watermen landed 55.8 million pounds of seafood at a dockside value of more than $67.3 million. This is an increase in value by 10 percent over 2008.

Advertising funds are generated from a $10 surcharge fee collected from commercial fishing and seafood processing licenses. In 2010, the fee garnered $60,600. 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. 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 2010, the site had more than 59,761 hits. This is an increase from 58,374 hits in 2009. In addition, the public received more than 255,000 pieces of information through the Internet and mailings.

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.

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, Maryland Rockfish Celebration and crab and oyster seasons. The program placed ads on the Baltimore Orioles radio station during baseball games.

Junior Chef Rockfish Cooking Contest winners.

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 2010, the funding paid for spring and fall seasonal billboard advertisements, advertisements on radio, television, in newspapers and magazines. The three year funding continues through 2012.

The program distributed 12 news releases to editors in the mid-Atlantic region. The topics covered seasonal species, special events and promotions. Consumer education included in these news releases discussed safety, handling, and nutrition information. The releases included photos and recipes with an opportunity for consumers to request more information or recipe brochures by mail, phone or website. These releases are posted on the Maryland seafood website as well as MDA's main website.

Program staff participated in trade shows, conferences, exhibits and special seasonal events including: International Boston Seafood Show, East Coast Commercial Fishermen's and Aquaculture Trade Expo, Harbor Day at the Docks in Ocean City, Food & Wine Festival at the National Harbor 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 2010, eight companies participated in the state booth and another eight companies were represented in the largest seafood show in the United States. In a survey of the companies exhibiting in the state of Maryland booth, an estimated increase in sales of over $150,000 and 14 new customers were realized.

The program sponsored and administered several seafood cooking contests including: National Oyster Cook-off, Jr. Rockfish Cooking Contest, and National Hard Crab Derby & Fair Cooking Contest. The program conducted a day-long seminar for chefs in Ocean City discussing sustainability and marketing.

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.

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 is responsible for the marketing of Maryland seafood internationally. While there is no funding for such activities, the staff was able to work on several projects through 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. Through a SUSTA grant, funding was provided that enabled Maryland participation at the European Seafood Show in Brussels. The eight participating companies reported direct sales over $42 million with 230 new sales leads that would result in additional sales of approximately $43.9 million in the next 12 months.

- **Goal:** To enhance or maintain consumer confidence of the safety and quality of Maryland seafood and to maintain product visibility in the competitive marketplace.
- **Objective:** To increase the number of responses consumers generated through marketing campaigns designed to increase visibility and consumer confidence.

Performance Measures	2010 Actual
Outcome:	
Number of consumer responses to campaigns	255,011
Number of hits on website	59,761

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 is also responsible 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 as 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 officials and other agencies with welfare issues through field consultation, training, investigative support and diagnostic evaluations of affected animals.

Program Operations

NOTE: Please see "FY10 Animal Health Program Statistics" for a summary of selected parameters regarding Animal Health operations. StateStat, a statewide 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 at the end of this section.

Program Consolidations

Laboratory and field operations consolidations in FY10 led to predicted cost savings of approximately $300,000, allowing the program to meet the 2010 budget. These consolidations were done in response to long-term, ongoing changes in the agriculture community leading to reduced program revenues, increased program operational and personnel costs, and state budget cuts. With continuing state-wide deficits, Animal Health program staff shortages continued into 2010 due to restrictions on hiring. Although budgeted for three field

- **Goal:** To provide affordable, accurate, and timely diagnostic laboratory services to all Maryland citizens involved in the health care of animals including but not limited to owners, breeders, producers, processors, veterinarians, exporters, importers, those responsible for wildlife, and consumers.

- **Objective:** In fiscal year 2004 the laboratories and headquarters began operating an automated laboratory information system named Vetstar Animal Disease Diagnostic System to reduce reporting time by 15 percent.

Performance Measures	2010 Actual
Output:	
Number of necropsies performed	6,137
Number of laboratory tests performed	63,890
Quality:	
Average number of days from necropsy accession to completion of presumptive report	0.5
Percentage of preliminary necropsy reports completed within one business day of a presumptive diagnosis	96
Efficiency: Number of necropsies per actual FTE veterinarian	2,068

veterinarians and five inspectors, field staff at the end of 2010 consisted of one field veterinarian and three inspectors. Laboratory and field operations were maintained due to cross-training and flexibility of existing staff to cover critical duties. The program continues to look for efficiencies in the use of scarce resources while providing quality service to laboratory customers and constituents.

Regulatory and Outreach Activities

Animal Health regulations and inspections are employed to prevent or control infectious or contagious disease in animals and for the public health; to promote animal welfare in markets; and to promote the agriculture industry overall. Where outreach and education can support compliance with regulations and disease prevention, inspectors provide information and assistance to animal owners, producers and other stakeholders. A total of 429 inspections of various activities, including farms, exhibitions, auctions and hatcheries were conducted in 2010.

- **Goal:** To ensure that Maryland's agricultural animals and animal products continue to meet or exceed health requirements for interstate commerce, international trade, and sale within Maryland.

- **Objective:** Continued recognition by the United States Department of Agriculture of Maryland's highest official status in all Cooperative Animal Disease Control/Eradication or other programs in which the Animal Health Program participates.

Performance Measures	2010 Actual
Output: Equine infectious anemia tests performed in MDA laboratories	16,306
Outcome:	
Number of non-avian, non-aquatic animals certified for interstate movement from Maryland (export)	11,730
Number of non-avian, non-aquatic animals certified for interstate movement into Maryland (import)	37,760

- **Objective:** Annually prevent cancellation of commercial livestock events by preventing, detecting and controlling indicated, exotic, foreign, and emerging animal diseases

Performance Measures	2010 Actual
Output: Number of imported horses quarantined in MD for contagious equine metritis testing (mares/stallions)	113/33

Interstate Movement: All animals moving into or out of Maryland or being imported or exported into or from Maryland must be examined for signs of contagious or infectious disease, have required vaccines, and be accompanied by a Certificate of Veterinary Inspection. Animal Health staff processed a total of 49,316 total movement permits in FY10.

Animal Exhibitions: Through continued outreach and education by program staff, progress continued to be made by fair and show exhibitors and sponsors in implementation of livestock exhibition regulations, revised in 2008. Animal Health staff inspected 93 exhibitions and processed 6,223 show permits in FY10. The 2010 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, exhibition 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.

Livestock and Poultry Auctions: All commercial livestock auctions in Maryland are inspected by Animal Health staff; in 2010, staff inspected 271 auctions. During the inspections, animals are observed for signs of infectious or contagious disease, including foreign animal diseases, and compliance with welfare, identification and other market regulations. No violations of market regulations, and no contagious or infectious diseases of significance were detected at auctions in 2010.

Biologics: The program issued 52 authorization letters to pharmaceutical companies or veterinarians allowing use of a biologic agent in Maryland, usually vaccines. A restriction on the use of Chick Embryo Origin (CEO) Infectious Larygotracheitis Vaccine in poultry was continued in 2010 to prevent the spread of this disease associated with vaccine use.

Tissue Residue Inspections: The Food and Drug Administration (FDA) contracts with the Animal Health Program to conduct follow-up investigations of violations of antibiotic residues in food animals. This program is one of the tools used to address this high priority public health issue. In 2010, staff performed eight "Violative Tissue Residue Inspections" for FDA.

Contagious Equine Metritus Import Quarantine Station: Maryland hosts two CEM quarantine stations in partnership with private facilities; one of these stations was 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. The program issued 115 import permits through the CEM program in FY10.

Animal Traceability/Animal ID: This year saw major changes in the federal USDA National Animal Identification System (NAIS); the program was in large part turned over to states and renamed Animal Disease Traceability (ADT). 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 that are not involved in a disease investigation, so they can resume normal commerce with little or no delay, minimizing economic losses and business disruptions. Federal directives are expected to require official tagging of all animals moving interstate; therefore, Maryland is working with neighboring states to develop a cooperative and efficient approach to meeting this objective.

To date, property owners and operators with livestock have registered 1,558 premises in Maryland. This represents approximately 20 percent of Maryland producers. To increase participation, program staff along with federal and industry partners, are working on ways to effectively integrate animal identification with existing production, marketing and disease control systems. The ADT staff aggressively registered poultry premises to comply with legislation enacted in 2005. To date, 3,065 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.

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. In 2010, the program sponsored Emergency Management Response System (EMRS) training, refresher training in respirator and other personal protective

equipment use, as well as Foreign Animal Disease training for Animal Health personnel. 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 two actual statewide emergency responses in 2010. These responses were 1) MEMA activation for the February 2010 snowstorm and related barn and chicken house collapses, and 2) MEMA activation for Hurricane Earl emergency and animal sheltering preparations. In the snowstorm event, more than 60 animal housing units were impacted during the snowstorm, and Animal Health staff worked collaboratively with the MDA Resource Conservation office, state department of the Environment, local environmental and animal control agencies to resolve subsequent animal welfare, depopulation and disposal issues. Vomitoxin (fungal infestation of cereal grains) investigations in grain and animals, and novel H1N1 surveillance in swine continued into early 2010.

Staff participated in numerous multistate industry emergency readiness planning activities and exercises, 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, and protecting worker health during outbreak response, and is a member of the Delmarva Emergency Poultry Disease Task Force.

Disease Surveillance and Response

The Animal Health program oversees or conducts ongoing routine and active or enhanced surveillance for several livestock and poultry diseases, including foreign animal diseases. Enhanced surveillance is an increased frequency or number of tests for a disease of particular significance or risk. Specific surveillance programs and/or investigations are highlighted below. A total of six foreign animal disease investigations were conducted in FY10. 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.

Quarantines: As a result of disease surveillance and response efforts in FY10, 13 quarantines ("hold orders") were placed and 16 quarantines were released on farms for contagious equine metritis, piroplasmosis in horses, equine herpesvirus,

rabies in cattle and horses, infectious laryngotracheatis in poultry, vesicular stomatitis in horses, swine garbage feeding, and routine 30 day quarantines for swine entering the state.

Equine Piroplasmosis: New cases of Equine Piroplasmosis, a tick-borne disease in Texas quarterhorses prompted trace backs throughout the United States, with a total to date of 108 confirmed cases across the nation since November 2009. No positive cases have been detected in Maryland, although there was one trace back to Maryland investigated.

Swine Influenza: The H1N1 pandemic influenza in 2009 gave rise to enhanced surveillance in swine by the Animal Health program, and this enhanced surveillance continued through the 2010 spring influenza season. All swine with influenza like signs (ILI), including swine at auctions, exhibitions, and farms or presenting for necropsy, were tested for influenza. No positive H1N1 swine was detected in Maryland in 2010; however, an outbreak of swine influenza, H3N2, nonpathogenic to humans, occurred in October 2010 and affected more than 200 pigs. This disease, frequently detected and common in other regions of the United States, has not been documented in Maryland in recent history.

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. The program performed a total of 9,821 AI tests in FY10. No avian influenza was detected in poultry in FY10 in Maryland.

Contagious Equine Metritis (CEM): An outbreak of contagious equine metritis in the United States in 2008 continued through 2009 and 2010. CEM is classified as 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 2010, a total of 28 horses in eight states linked to the 2008 outbreak have tested positive for the disease. Animal Health staff concluded one trace back investigation of a Maryland horse in FY10, and has had a total of six trace back investigations; all cases tested negative for the disease. Because of the extensive experience with the state's CEM quarantine station 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 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 2010. A total of 4,851 Johne's tests were conducted in FY10. In response to federal funding reductions, 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 to control Johne's disease.

Tuberculosis: Maryland remains a "Bovine Tuberculosis Free State;" nevertheless, the ongoing reemergence of bovine tuberculosis (BTB) in cattle and white tailed deer elsewhere in the United States is of concern. 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

Other Animal Health Program Activities

Throughout the year other MDA Animal Health programs remained active. These included the licensing of livestock markets and dealers, 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.

2010 Animal Health Program Statistics

Parameter	July 2009	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010	May 2010	June 2010	FY 2010
Animal Welfare Investigations	9	1	0	0	2	0	3	6	2	0	1	0	24
Biologic Authorization Letters	3	3	3	2	4	7	10	1	10	1	3	5	52
CEM Permits	9	16	13	18	7	12	7	6	5	7	9	6	115
Certificate of Movement	133	27	179	5	110	57	0	0	0	285	39	0	835
Dealer Inspections	0	1	1	0	0	0	0	2	6	3	4	1	18
Disease Investigations Domestic (Incl. Rabies)	0	7	3	2	0	0	1	o	3	1	1	0	18
Drug Residue Inspections	0	0	0	0	0	1	1	0	1	1	1	3	8
Equine Health Certificate – Export	414	248	463	595	321	145	333	139	194	240	243	385	3,720
Equine Health Certificate – Import	383	344	229	552	406	227	190	147	242	320	312	252	3,604
Equine Necropsies	2	2	4	6	3	1	2	2	6	5	3	1	37
Exhibition Inspections	32	27	15	0	0	0	0	0	2	0	2	6	84
Export Certificates (Non Equine)	677	205	1,223	556	430	250	505	363	444	897	459	2,001	8,010
Foreign Animal Disease Investigations	0	0	0	1	1	0	0	2	0	0	0	2	6
Hatchery Inspections	1	2	0	0	0	0	0	0	0	0	0	0	3
Import Certificates (Non Equine)	3,624	6,111	2,478	1,512	2,856	2,795	1,201	938	1,690	3,921	5,253	768	33,147
Inspections – Total Combined	80	74	46	24	23	27	27	19	38	25	21	25	429
Intrastate Certificates Total (Show)	854	503	287	17	33	0	0	0	42	1,047	1,551	1,889	6,223
Livestock Dealer Permits	6	0	0	0	0	0	0	0	0	0	14	0	20
Market Inspections	29	33	25	20	25	23	20	16	23	21	18	18	271

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 horses 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 Lab Focus

The Frederick Laboratory focuses on food animal livestock and has a staff of four laboratory scientists, a veterinary pathologist and two office managers. The laboratory has rabies, contagious equine metritis, equine herpes virus, equine infectious anemia, Lyme disease and Johne's disease diagnostic capabilities. The laboratory pathologist/laboratory director 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 food animal production 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. One field veterinarian fills in for the laboratory pathologist/ laboratory director. The facility has an incinerator and various staff members are certified to operate it. It serves the lab and Frederick County's animal control facility.

The Salisbury Laboratory has a unique poultry diagnostic facility and a staff of one board certified veterinary poultry pathologist/laboratory director, three laboratory scientists, one field inspector, a laboratory technician. The lab has a large molecular diagnostic capability that is dedicated to the detection of avian influenza, Newcastle disease, infectious bronchitis virus, infectious laryngotracheitis, *mycoplasma gallisepticum*, *mycoplasma synoviae*. The laboratory has diagnostic capabilities in serology, bacteriology, and parasitology. The laboratory primarily serves the commercial poultry industry as well as wild bird testing. The laboratory also performs equine infectious anemia tests for the horses on the Eastern Shore. Rabies and salmonella diagnostics are carried out at the Salisbury lab, as well as many other specific poultry disease diagnostic tests. The laboratory personnel participate in disease outbreak surge capacity programs with the Maryland Department of Health and Mental Hygiene. The facility shares a new laboratory information management system (LIMS) with Delaware which serves poultry producers in Maryland, Delaware and Virginia. Additionally, the laboratory mentors laboratory scientists from the Maryland Department of Health and Mental Hygiene, laboratory scientists from the Frederick Laboratory in Real Time Polymerase Chain Reaction (RRT-PCR) techniques as well as mentor of Salisbury University, University of Maryland Eastern Shore, and veterinary students. The facility has an incinerator and various staff members are certified to operate it.

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

Bob Robison runs samples through the PCR equipment at the Salisbury Animal Health Diagnostic Laboratory.

Table 2: Animal Health Program Laboratory Statistics

Diagnostic Activity	Number	Result
Mammalian Necropsy	210	N/A
Avian Necropsies	5,853	N/A
Avian Influenza by PCR	9,821	All negative
Avian Influenza by Flu Detect	2,292	All negative
Mycoplasma by PCR	117	32 positive
Elisa for poultry diseases	1,276	N/A
Rabies	104	4 positive
Equine Infectious Anemia	15,948	All negative
Contagious Equine Metritis	1,695	All negative
Equine Herpesvirus (EHV-1)	40	2 positive
Lyme Disease	124	80 positive
Johne's Disease in Cattle	4,869 (4,361 were serum Enzyme-Linked Immunosorbent Assay (ELISA) or PCR blood tests and 508 were fecal tests)	178 positive blood tests 156 positive fecal tests

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). Soon, more than 17 laboratory staff will have had two days of ISO 17025/OIE training. This accreditation is administered by the American Association of Laboratory Accreditation. The Salisbury and Frederick laboratories are participating in this program. The USDA's National Animal Health Laboratory Network (NAHLN) has requested this accreditation in place of their own program which the laboratories are under presently.

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 from the Wisconsin State Laboratory of Hygiene. 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.

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 and other training recommended by OSHA. This training included the use of standard operating procedures, training materials and training records. Training also included workshops on the subject of molecular diagnostics (avian influenza) at the National Veterinary Services Laboratory in Ames, Iowa.

The United States Animal Health Association's (USAHA) annual meeting/training was attended by the state veterinarian and three other staff veterinarians. 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 Emergency Management, Laboratory Directors—National Animal Health Laboratory Network, Brucellosis, Infectious Diseases of Horses, Tuberculosis Scientific Advisory Subcommittee, USAHA Committee on Transmissible Diseases of Poultry and other Avian Species, Committee of Salmonella, Mycoplasma and Infectious Laryngotracheitis Subcommittee of Transmissible Diseases of Poultry and other Avian Species.

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, the Delmarva Poultry Industry, the University of Delaware, Salisbury University, the University of Maryland Eastern Shore 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 and Veterinary Services, the National Poultry Improvement Plan, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Environmental Protection Agency, the Federal Bureau of Investigation, the U.S. Army and the Smithsonian Institution.

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.

The SBVME submitted one bill for consideration during the General Assembly's 2010 session. The bill, SB 81, amended the SBVME's maximum civil penalty authority—increasing it from $5,000 to $10,000 for a second or subsequent offense only. First-time violators could be charged up to $5,000. The SBVME reserves its authority to impose this penalty in lieu of, or in addition to suspension of a license, or in addition to revocation of a license. Prior to the signing of SB 81, which became effective October 1, 2010, the SBVME's penalty authority had remained unchanged for over 25 years. The recognition of three key factors was responsible for the SBVME's proposal: 1.) the existing civil penalty structure was not acting as an effective deterrent, particularly for repeat violators of the SBVME's laws and regulations; 2.) the mean professional income of veterinarians in private practice increased substantially according to statistics gathered by the American Veterinary Medical Association over a 10-year period; and 3.) the significance of pets—in terms of both financial and emotional investment—on the lives of humans has also amplified considerably.

In addition to a statutory amendment, the SBVME proposed and received approval of regulatory amendments and adoptions in 2010. Regulations undergoing amendments included those pertaining to identification of patient records and the imposition of civil penalties on veterinarians employing nonregistered veterinarians. The SBVME also adopted new regulations setting forth the requirements for the practical training of veterinary students. These regulations were developed pursuant to the signing of SB 78 in 2009. Further, the SBVME provided practitioners with model consent forms for utilization for senior veterinary students performing surgeries on animals in either a hospital setting or in a humane society/shelter setting.

As a result of changes made to the complaint-handling process in 2009, approximately 12 percent more complaints were reviewed by the SBVME within 120 days of initial complaint receipt than in 2009. Formal or informal disciplinary action (the latter of which may take the form of a letter of advice or admonition) was issued in approximately 68 percent of all complaints closed during the 2010 fiscal year. This represents a 10 percent increase over the number of actions taken during the 2009 fiscal year.

While the percentage of cases closed between the 2008 and 2009 fiscal years had risen by 28, the percentage decreased by 16 between the 2009 and 2010 fiscal years. This was largely attributed to the unanticipated loss of the SBVME's part-time assistant attorney general in January 2010. This vacancy was filled in June, and cases pending earlier in the year are now reaching resolution.

This year marked the first during which the SBVME's inspectors began wearing apparel with a logo designed specifically for the SBVME. This new apparel is expected to help the regulated community and the public more readily identify the inspectors during the course of their work for the SBVME.

- **Goal:** To protect the public and animal health and welfare through effective licensure or registration of veterinarians, veterinary technicians, and veterinary hospitals on an annual basis.

- **Objective:** To maintain the processing of completed registration applications, including all necessary supporting documents, and issue registrations within 30 days of receipt.

Performance Measures	2010 Actual
Output:	
Registrations issued for veterinarians	2,305
Registrations issued for veterinary hospitals	493

- **Goal:** To provide effective and efficient inspections of veterinary hospitals.

- **Objective:** By June 2011, 100 percent of all veterinary hospitals licensed in the State will pass inspection annually.

Performance Measures	2010 Actual
Output:	
Number of hospitals inspected	521
Number of initial inspections (new hospitals/owners)	10
Total number of inspections conducted*	548
Number of hospitals receiving follow-up inspections	22
Quality: Percent of hospitals passing inspection	99

**At the close of fiscal year 2010, there were 500 veterinary hospitals. 521 hospitals were inspected over the course of the year. As hospitals open and close throughout the year, this number fluctuates.*

In September, the City of Baltimore was host to the American Association of Veterinary State Boards (AAVSB), of which the SBVME is a member. This organization convenes annually and is widely attended by member boards for the purposes of discussing and obtaining input on issues facing veterinary boards across the country and in Canada and the U.S. Virgin Islands, learning about changes to national board examinations, receiving information about recent legal cases affecting health occupation boards, and providing networking opportunities for board administrators, members, and legal counsel. Chris H. Runde, D.V.M., chairman of the SBVME, provided welcoming remarks to conference attendees, and shared historical information about Maryland and Baltimore, in particular. This year's AAVSB conference was one of the highest attended to date.

The biggest hurdle facing the SBVME's staff continues to be the process by which licensees re-register annually. Research has begun with respect to making changes in the current process, with the anticipation that electronic filing of applications will become a reality over the next two years.

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

Category	Year 2008	Year 2009	Year 2010
Licenses issued to new veterinarians	140	138	157
Registrations issued to veterinarians	2,475	2,416	2,305
Registrations issued to registered veterinary technicians	47	117*	130*
Licenses issued to veterinary hospitals	512	526	493
Percentage of veterinary hospitals inspected and in compliance	100	99	99
Number of new complaints received	97	84	86**
Number of complaints pending from previous year	60	75	—
Number of complaints closed	82	114	96

**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 FY10.*

***This number includes 6 complaints filed against non-veterinarians.*

Weights and Measures

The regulation of weights and measures is one of the oldest functions of government. The Weights and Measures Program ensures that consumers get what they pay for whether it is a gallon of gasoline, a truckload of gravel, or a pound of hamburger. Purchases that require measurement affect virtually every consumer in the state and involve millions of individual transactions annually. Having uniform standards of measurement creates fairness and confidence in the marketplace, and benefits both buyers and sellers.

MDA is an active, voting member of the National Conference on Weights and Measures (NCWM). The NCWM is comprised of state and federal government officials as well as private industry representatives from throughout the United States. The NCWM provides a forum for the discussion and development of uniform policy and protocols that guide the regulation of weights and measures.

There are a total of 60,642 weighing and measuring devices in commercial use in Maryland at 7,162 separate businesses locations. The department has 18 inspectors who are specially trained and certified to test and inspect these devices according to established protocols to make sure they are within the required tolerances. Devices failing inspection may be taken out of service until corrected by the owner. Inspectors also visit stores to verify that packaged products contain the quantities specified, and that consumers are being charged the correct prices at checkout. In FY2010, the field staff conducted 42,024 device inspections. Inspectors also tested 11,716 individual lots of prepackaged commodities. Price verification inspections were conducted at 65 non food stores. Inspectors found significant deviations from the advertised prices in a number of stores. Nine firms received civil penalties for misrepresenting unit price violations. In FY2010, Weights and Measures imposed $82,500 in civil penalties for violations.

Field Inspection and Test Effort

	2008		2009		2010	
	Percent in Violation	Total Tests	Percent in Violation	Total Tests	Percent in Violation	Total Tests
A. Weighing Systems						
Large Scales	35.5	786	20.8	914	22.9	829
Medium Scales	17.9	677	17.3	553	17.0	925
Small Scales	17.5	6,971	17.7	12,122	16.4	8,530
B. Liquid Measuring Systems						
Retail Gasoline Meters	18.0	27,665	21.7	28,808	18.9	30,018
L P Gas Meters	18.7	465	19.9	456	14.8	284
Vehicle Tank Meters and Other Large Meters	20.8	1,288	17.0	1,648	16.2	1,169
C. Grain Moisture Meters	8.0	136	7.6	131	19.1	131
D. Programmed Tare Inspections	9.0	2,026	7.8	3,152	9.9	1,852
E. Price Scanning and Method of Sale	5.1	5,962	4.2	18,513	3.7	10,645
F. Delivery Ticket Inspections	0.9	2,852	2.2	3,052	0.8	2,658
G. Package Lots	15.8	12,761	16.2	12,356	20.4	11,716

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

In FY2010, field staff investigated 464 consumer complaints. The majority of the complaints were related to gasoline sales. Consumer complaints are given priority over routine inspections and require a significant amount of staff hours to investigate.

Weights and Measures is just as important today, as it was in the past, to maintain market confidence. (Maryland gas pump, 1920s).

The registration of approximately 7,000 businesses has created a database that has become an effective management tool. It allows administrative staff to target the most critical areas and provides each field inspector with a tool to plan their inspection work more efficiently, thereby reducing driving time and providing more uniform inspection coverage. This information has helped management prioritize the use of limited program resources to better protect Maryland consumers and maintain a level playing field for industries that operate in the State.

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 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, which accredits testing and calibration laboratories that are found competent to perform specific tests or calibrations, or types of tests or calibrations.

The Weights and Measures Program also participates in the National Type Evaluation Program (NTEP) which tests and inspects the accuracy of new measuring devices and measuring systems before they are approved for use in commerce. NTEP laboratories are authorized by the National Conference on Weights and Measures. Meeting the required NTEP performance standards and 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. All related costs are paid by the participating manufacturers requesting NTEP services.

Future program goals are to replace aging testing equipment and vehicles necessary to carry out the program's duties. Much needed replacements are, a vehicle scale test truck, trailers used to transport volumetric testing vessels and vans to carry and tow testing equipment. Due to past budgetary issues the field problem is funded entirely with special funds, which have not matched inflation. In order to maintain market confidence, Weights and Measures is needed today, just as in the past, and seeks the funding to maintain this vital service in the 2011 General Assembly.

Laboratory Effort Inspection and Test

	2008		2009		2010	
	Tested	% Rejected	Tested	% Rejected	Tested	% Rejected
Weights	4,256	10.7	2,511	12.2	4,362	13.1
Volumetric Measures (Non-Glass)	138	37.6	60	43.3	120	77.5
Length Devices	0	0.0	0	0.0	0	0.0
Temperature Devices	38	0.0	20	0.0	92	0.0
Timing Devices	0	0.0	3	0.5	5	0.0
Volumetric (Glass)	0	0.0	0	0.0	0	0.0
Scales/Meters	0	0.0	0	0.0	0	0.0
Standard Grain Samples	710	N/A	700	N/A	289	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

	2008 Number	2009 Number	2010 Number
Weighing and Measuring Devices Registration Certificates, Issued	7,239	7,079	7,091
Type Evaluation of Devices Conducted (NTEP)	21	16	36
Citizen Complaints Received and Investigated	716	681	472
Disciplinary Hearings, Criminal Arrests, Summonses Obtained and/or Civil Penalties	44	42	80

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

Food Quality Assurance

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 (MDA) graders sample commodities for comparison with standards developed by the U.S. Department of Agriculture (USDA) 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.

The primary commodities graded by the section this year were 365.6 million pounds of poultry, 50.7 million pounds of shell eggs, 23.3 million pounds of meat, 41.8 million pounds of grain and 12 million pounds of fruits and vegetables.

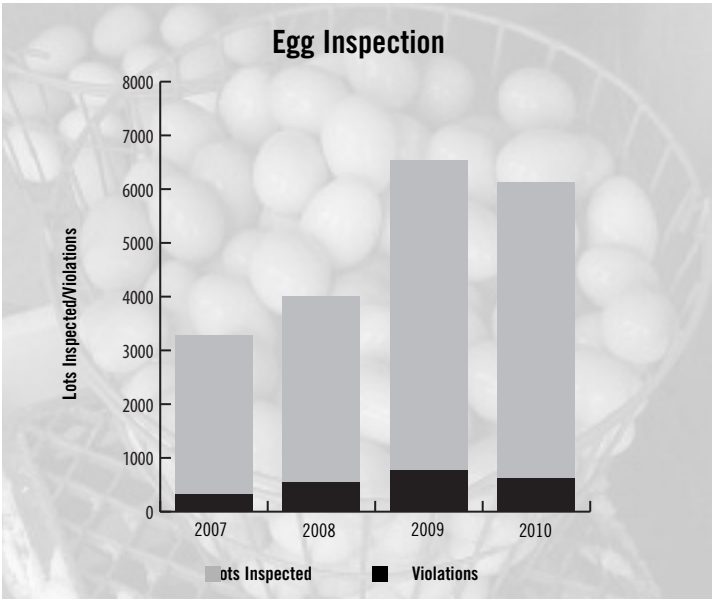
Many buyers require compliance audits of production practices in addition to the certification of product. The section conducts compliance audits of agricultural production facilities for compliance with standards for animal welfare, good agricultural practices, food security, food safety and quality 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 compliance 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. 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 USDA to develop and implement a Good Agricultural Practices program geared towards smaller producers selling fruits and vegetables directly to school systems and consumers and an additional $140,000 to assist producers selling wholesale in implementing a food safety program. These two programs will assist producers in meeting increasingly stringent federal requirements for producing fresh 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.

The percentage of eggs sampled found to be in compliance with the Maryland Egg Law increased to 88.6 percent this year compared to 86.8 percent last year. The lots inspected decreased slightly due to a short term vacancy in the program. The egg inspection chart shows comparison data for the eggs inspected and violations.



The largest egg related outbreak of food borne illness from *Salmonella enteritidis* occurred this year. The U.S. Food and Drug Administration traced the outbreak to two producers neither of which was registered to produce eggs for Maryland sales. MDA inspectors stepped up inspections to verify none of these eggs were offered for sale in Maryland.

The program has continued 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. This has allowed the program to inspect more eggs in 2009 and 2010 than 2007 and 2008.

Organic Certification

The U.S. Department of Agriculture (USDA) accredited Maryland Organic Certification Program certified 87 farms and 23 handlers of organic products in Maryland in 2010. The program also registered an additional 19 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 2012.

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 48 businesses with 74 business locations in 2010.

Poultry and Rabbit Slaughter

A new program has been developed and implemented to assist small poultry and rabbit producers to slaughter their animals on farm and sell them to restaurants, at farmer's markets and other locations within Maryland. The program consists of food safety training, basic food safety requirements during slaughter, and inspections to verify good food safety practices are followed. Producers who follow the requirements are certified by MDA. The program was started in May of 2010 and already over 140 producers have been trained and 20 producers have been successfully certified.

- **Goal:** To ensure standards for quality, weight, production practices, labeling and freedom from physical and microbial contaminants are consistently applied by all program employees on all regulated commodities and facilities.
- **Objective:** Employees will maintain an average score of 99 percent during supervisory comparisons for uniform interpretation of standards for quality, weight, production practices and reducing physical, chemical and microbial contaminants to ensure officially identified product is accurately certified.

Performance Measures	2010 Actual
Quality: Average score of employees on comparative gradings	99.4

- **Goal:** Enhance the marketability of Maryland poultry, eggs and organic commodities.
- **Objective:** Increase the percentage of poultry, eggs and organic facilities officially certified by the Section by 5 percent over the FY 2009 level by FY 2012.

Performance Measures	2010 Actual
Input:	
Pounds of poultry available for certification	638,466,367
Dozens of shell eggs available for certification	43,111,770
Organic facilities applying for certification	113
Output:	
Trade Shows, Conferences, Educational Presentations	38
Organic facilities inspected	92
Outcome:	
Percentage of poultry officially certified	57.3
Percentage of shell eggs officially certified	59
Number of certified organic facilities	113

- **Goal:** Reduce the risk of public health issues related to shell eggs, by increasing the volume of eggs sold to Maryland consumers that are compliant with the Maryland Egg Laws' requirements for quality; labeling; invoices; weight; physical and microbial contamination; and handling of shell eggs.
- **Objective:** Conduct facility inspections, sampling of product, outreach activities and enforcement actions that increase the compliance rate to 92 percent by FY 2011 and maintain for FY 2012.

Performance Measures	2010 Actual
Output: Percentage of eggs sold in Maryland sampled by inspectors	1.06
Outcome: Percentage of samples examined that are found to be in full compliance with the Maryland Egg Law	88.3

Maryland Agricultural Fair Board

The Maryland Agricultural Fair Board was established by an act of the state legislature in 1937. Originally known as the Maryland State Fair Board, the office was based at the Maryland State Fairgrounds in Timonium. When the Maryland Department of Agriculture (MDA) was established the office was moved to Annapolis and renamed the Maryland Agricultural Fair Board. The board falls within MDA's marketing office.

The board is composed of nine members appointed by the Governor. Term of office is five years and a member may serve a maximum of two terms. They may come back on the board after a break in service. The current board divided the state into regions that each board member manages. When a board vacancy occurs, all organizations funded within that region may nominate a replacement. The board meets three times a year and communicates throughout the year by phone and e-mail. Most meetings are held at MDA headquarters in Annapolis.

The board is managed by an executive secretary who is employed by the MDA on a part-time basis. Funding comes through the Racing Commission through a special grant that is funded by unclaimed pari-mutuel tickets and various fees. The current annual budget is $1.6 million. The grant process starts in December and is finalized by May 15. Grants to fairs and shows may be used for ribbons, awards, and premiums. Currently the board funds approximately 150 events. These range from the Maryland State Fair, to county fairs, local community shows, youth activities in 4-H and FFA.

The board publishes an annual guide to fairs and shows in Maryland that they fund. These brochures are placed in all welcome centers along state highways, all University of Maryland Extension offices, all Fairs and Shows, all chambers of commerce and all Maryland libraries.

Racing revenue is off for the first time in many, many years and the board's FY10 grants were reduced. The board holds regional budget meetings throughout the State with each group to review their request, financial reports, and fair activities.

- **Goal:** To provide opportunities for Maryland citizens to learn about Maryland's agriculture industry through fairs, shows, and youth events.
- **Objective:** To maintain attendance, exhibits and exhibitors at Maryland fairs and shows.

Performance Measures	2010 Actual
Input: Funds for events	$711,185
Output: Number of events funded through the Fair Board	165

Governor O'Malley takes in an event at the Maryland State Fair.

Mosquito Control

The 2010 mosquito population in Maryland was well below the long-term normal level by all measures. This was the only year in the memory of mosquito control personnel (dating back to 1957) when counts of mosquito activity taken at more than 30 surveillance sites in Dorchester County—where mosquitoes reach their greatest numbers—were all negative for *Ochlerotatus sollicitans*, the salt marsh mosquito.

An abundance of surface and groundwater recharged with melt from the record breaking snow falls combined with early warm spring temperatures pushed an early foliation of trees in the spring. The resulting thick canopy was detrimental to effective control of mosquito larvae in sylvan wetlands with aerial application of liquid Bti. The months of May and June saw no spraying for adult or larval mosquitoes by aircraft. The months of June and July also broke records for high temperatures and rainfall was low. Low rainfall and average tidal exchange on the salt marshes resulted in reduced numbers of salt marsh mosquitoes through most of the season. Tidal action and precipitation returned to typical seasonal levels during late August–October with a corresponding bounce in the salt marsh mosquito population. The number of acres sprayed by aircraft in 2010, 105,653, was well below the 34 year average of 159,284.

Culex salinarius and other associated species that breed in marshes and non-tidal wetlands were noticeably lower in numbers in 2010. The number dropped significantly in areas where they typically comprise more than half of the total of mosquito collections, particularly in areas west of the Chesapeake Bay. *Aedes albopictus*, the Asian tiger mosquito, increased as percentage of the total of mosquitoes collected in the central region of the state. This species, exclusively a container breeder, 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, boat bilges and tree holes serve as breeding habitat. A very small amount of rain or irrigation provides sufficient water for this species to prosper. There is evidence that drier than normal conditions are beneficial to tiger mosquito breeding success because abundant rainfall fills breeding containers causing them to overflow, which flushes tiger mosquito larvae to the ground where they quickly die. Tiger mosquito infestations continue to drive the demands for services, particularly in urban and suburban areas of central Maryland. This is most evident in Anne Arundel County where the level of community participation has increased to 254 from 156 in 2004. As an indication of public interest in mosquito control service, there are about 100 communities waiting to enter the program in the central region. The role of the tiger mosquito in disease cycles remains unclear. However, laboratory studies have shown the tiger to be a competent disease vector and viruses have been isolated from field-collected tigers in Maryland and other states. The tiger mosquito is the predominant pest and vector mosquito in all major metropolitan centers where a significant increase in cases of West Nile virus occurred.

Biological Control and Permanent Work

Biological mosquito control continued with the stocking of fish in ponds and open marsh water management (OMWM). OMWM is a mosquito control 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 and greatly reduce the need for follow up applications of insecticides to control larval mosquitoes. Numerous studies have indentified the benefits of OMWM in improving overall marsh productivity, promoting biodiversity and increasing use by waterfowl. However, OMWM projects will cause changes to the marsh and great care must be employed to minimize unwanted changes to marsh flora and fauna. The number of acres that can be put in OMWM has been reduced greatly by DNR restrictions.

Mosquito Control Source Reduction Projects 2009–2010

Mosquito control source reduction projects completed during the 2009–2010 season were conducted on both tidal and non-tidal wetlands throughout Somerset County and on Bishop's Head in Dorchester County (sites are listed on the next page). These projects have resulted in effective, long-term mosquito control and a reduction of insecticide use on a benefited area of 744.5 acres. In addition to accomplishing the department's Integrated Pest Management (IPM) goals, the Long Point Road project in Dames Quarter included the re-establishment of a natural pond that through erosion had become a tidal mud flat. This reclamation project has shown an increased benefit to wildlife and will reduce nutrient flow into Tangier Sound.

Previous inspection of the Crisfield dike system also revealed an area requiring extensive repair to prevent further erosion. This maintenance project took place in the Johnson Creek vicinity at a problematic section that has required constant repair. MDA, with support from the Somerset County

Department of Solid Waste and Drainage, constructed an extensive wooden weir and tide gate structure to strengthen the dike system and prevent further erosion of the salt marsh and sedimentation into Johnson Creek. Future maintenance and structural enhancement projects are planned in this area to improve the integrity of the dike system and further reduce sedimentation onto this wetland.

Permits have been obtained to continue source reduction projects in the 2010–2011 permanent work season. Future source reduction projects will depend on our ability to obtain permits and the operating condition of the amphibious excavators which require extensive maintenance due to more than 20 years of service on the salt marsh.

Mosquito Control Source Reduction Projects 2009–2010

Bishop's Head	20 acres
Tylerton, Smith Island Phase I	3.25 acres
Crisfield Dike System	189.3 acres
Deal Island Road Phase III	304.4 acres
Long Point Road, Dames Quarter	83.9 acres
Tylerton, Smith Island Phase II	3.25 acres
Handy Church, Marion Station	1.0 acre
Janes Island State Park	139.4 acres
Total Benefited Acres	744.50 acres

Long-term biological control of mosquito larvae can be accomplished through the release of *Gambusia holbrook*i 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 2010 mosquito season, 6,939 *Gambusia* were released at 37 sites in six 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.

Mosquito-borne Disease Surveillance

MDA, working with the Maryland Department of Health and Mental Hygiene (DHMH), completed to 10th year of a cooperative effort to monitor the occurrence and distribution of mosquito-borne pathogenic virus in Maryland. A total of 23,043 mosquitoes was collected, separated into 2,219 pools and analyzed for virus at the DHMH laboratory in Baltimore. MDA technicians collected five samples from two jurisdictions (Anne Arundel – 4, Baltimore – 1) that tested positive for West Nile virus. An additional three samples testing positive for West Nile virus were collected in Montgomery County by Department of Defense personnel. Maryland reported 23 human cases of West Nile virus including two fatal cases (Baltimore – 1, Montgomery – 1). Human cases were distributed as follows: Anne Arundel – 3, Baltimore City – 3, Baltimore County – 12, Howard – 1, Montgomery – 4. The majority of cases (21) occurred in communities that do not participate in adult mosquito control service. The number of cases nationwide increased to 972 as of this report from the final count of 720. A sharp increase in the number of cases reported from the Northeast region of the United States occurred in 2010. The regional number of cases increased from 19 in 2009 to 266 in 2010. Estimates of the costs of illness are difficult to determine, however, scholars have placed the cost for an uncomplicated case with full recovery at $1,000 per case and the cost of neuroinvasive illness at $27,000 per case. In addition to the above reported cases, two human cases of LaCrosse encephalitis (Harford – 1, Garrett – 1) and one case of dengue fever (Calvert) were reported in 2010. A single equine West Nile virus cased was reported in Frederick County.

Public Education

Public education continues to be an important part of our mosquito control program, particularly with the continuing problems created by the introduction and spread of the Asian tiger mosquito.

The predominant types of public education this season were media interviews and school functions. Nine interviews were conducted this season by mosquito control or public relations office employees, with both print and TV media outlets through the state.

Outreach was done at 12 different school functions in 2010, in Prince George's, Calvert and Wicomico counties. These included a science fair, a general insect and mosquito

presentation, a career day and Prince George's County's science quiz show, and The Science Bowl. In addition, Calvert County sent out over 14,000 brochures to all school children in Calvert County schools.

Mosquito control employees spoke at five community meetings in Prince George's, Calvert and Anne Arundel counties, and did three mass-yard inspections for Asian tiger mosquito breeding sites in Prince George's and Howard counties.

Six training sessions were offered in 2010 for groups such as Master Gardeners, University of Maryland Extension, departments of health and city groups. Employees spoke at two professional meetings (Southern Maryland Urban Pest Management Conference and Annual Meeting of the Mid-Atlantic Mosquito Control Association). Asian tiger mosquito displays were set for a month in each of in three county libraries this season: two in Prince George's and one in Anne Arundel.

The effects of public education efforts are difficult to quantify, particularly with media interviews and library displays. However, over 600 people were in attendance at the events with known participant levels.

Interactions with Other Agencies

The cooperative effort between MDA and DHMH for mosquito-borne surveillance of pathogenic virus is of great benefit to the citizens of Maryland. Live mosquitoes are collected, identified and processed by MDA staff and sent to the DHMH Laboratories in Baltimore for virus isolation. Findings of virus in mosquito populations usually precede human cases and allow for responses from MDA and local health authorities and the public to take personal precautions to avoid or reduce risk factors.

DHMH administers a federal grant for supporting vector-borne disease surveillance and provides funding to MDA to support field activities. Unfortunately, the level of federal funding has been sharply cut over the past six years and currently pays about 10 percent of the actual cost incurred by MDA.

MDA anticipates continued cooperation with DNR, MDE, The U.S. Fish and Wildlife Service and the Army Corps of Engineers in with applications and review processes for Toxic Materials Permits and National Pesticide Discharge Elimination System and for future OMWM and marsh restoration projects. Cooperation between these agencies is essential to providing mosquito control in Maryland's lower Eastern Shore, where the most severe mosquito problems occur.

- **Goal:** Maintain the adult mosquito population below the level that causes unacceptable annoyance to humans.

- **Objective:** Adult mosquito population in communities participating in the MDA mosquito control program will be below the annoyance action threshold 70 percent of the days between May 1 and October 31 and customer satisfaction will be 80 percent or greater.

Performance Measures	CY 2010 Actual
Output: Number of acres treated with insecticide	2,038,029
Efficiency: Cost per acre treated with insecticide for mosquito control	$1.42

- **Goal:** To reduce the exposure of the public to insecticides applied for adult mosquito control as a consequence of greater use of biological mosquito larvicides.

- **Objective:** Increase the use of biological larvicides to a level 100 percent above the 2000 base (58,183 acres).

Performance Measures	CY 2010 Actual
Output: Number of acres treated with biological insecticides to control mosquito larvae	10,505

Mosquito Control Activity Summary

	CY 2007	CY 2008	CY 2009	CY 2010
Communities Participating in Mosquito Control Program	1,974	2,006	2,132	2,165
Number of Light Trap Nights	3,539	2,711	2,767	2,676
Percent of Light Trap Nights Below Threshold	68	68	55	68%
Number of Landing Rate Counts Performed	25,861	22,672	22,487	26,189
Percent of Landing Rate Counts Below Action Threshold	71	49	37	33.6%
Number of Public Service Requests	2,879	2,743	4,008	3,414
Number of Mosquitofish Stocked	14,251	19,756	13,527	6,939
Acres Managed by Open Marsh Water Management	302	876	1,085	824.5
Acres Treated with Insecticide	1,716,510	1,650,163	2,038,534	1,492,387.5
Acres Treated for Mosquito Larvae	29,784	14,800	10,505	5,276.58
Acres Treated for Adult Mosquitoes	1,686,726	1,635,363	2,028,029	1,487,110.9
Acres Treated by Aircraft	273,880	204,159	308,599	105,653
Acres Treated by Ground Equipment	1,442,630	1,446,004	1,729,935	1,386,734.5
Number of Mosquitoes Tested for Arboviruses	21,024	30,952	40,680	23,043
Number of Human Cases of Arbovirus Statewide	10	14	2	23
Number of Human Cases of Arbovirus in Areas with Mosquito Control	0	1	1	2
Number of Cases of Arbovirus in Domestic Animals	0	2	2	1
Number of Mosquito Pools Positive for Arbovirus	6	16*	8**	8***

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

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

****Department of Defense collected an additional 3 positive pools at military reservations in Montgomery County.*

Number of Communities Participating in Mosquito Control CY 2008–2010

County	# of Communities 2008	2009	2010	% Change from previous year
Allegany	2	3	3	0
Anne Arundel	242	252	254	+.8
Baltimore City	1	1	0	0
Baltimore County	329	359	359	0
Calvert	67	76	76	0
Caroline	8	65	65	0
Carroll	3	3	3	0
Cecil	42	40	42	+5
Charles	97	101	93	-7.9
Dorchester	127	129	117	-9.3
Frederick	19	10	9	-10
Garrett	0	0	0	0
Harford	46	52	57	+9.6
Howard	9	11	11	0
Kent	38	35	35	0
Montgomery	22	20	20	0
Prince George's	302	302	334	+6.6
Queen Anne's	20	20	24	+20
St. Mary's	111	109	104	-4.6
Somerset	125	126	127	+0.8
Talbot	110	117	117	0
Washington	4	4	5	+25
Wicomico	152	169	173	+2.4
Worcester	130	128	137	+7
TOTAL	**2,006**	**2,132**	**2,165**	**+15%**

Cumulative Acres Treated with Insecticides for Mosquito Control By County During CY 2008–2010

County	Acres Sprayed 2008	2009	2010	% Change
Allegany	3.44	1.2	2	+66.6
Anne Arundel	98,936.56	100,272	78,052.14	-22.2
Baltimore City	0	0	0	0
Baltimore County	87,619.5	51,092.8	33,688.13	-34.1
Calvert	103,634	142,150.2	104,177	-26.7
Caroline	45,119.1	39,175	52,814	+34.8
Carroll	263.24	452.1	121.7	-73.1
Cecil	56,011.5	52,746.67	38,460.12	-27.1
Charles	68,628.19	78,362.29	53,437.3	-31.8
Dorchester	283,717.43	372,526.79	176,817.73	-52.5
Frederick	1,202.74	889.93	1,395	+56.7
Garrett	0	0	0	0
Harford	12,348.9	11,598	10,156.39	-12.4
Howard	2.94	.71	.1	-86
Kent	36,412.13	42,481.74	28,277.32	-33.44
Montgomery	7.66	2.51	2.93	+16
Prince George's	8,187.4	16,075.31	17,576.85	+9.3
Queen Anne's	100,018.8	110,788.8	101,822.7	-8.1
St. Mary's	102,591.49	96,009.12	69,422.3	-27.7
Somerset	143,676	187,599.42	128,820.9	-31.3
Talbot	209,543	271,168.9	160,174	-40.7
Washington	268.72	226.7	14.85	-93.4
Wicomico	202,425	284,576.5	208,340	-26.8
Worcester	89,545.13	180,336.9	228,814.1	+26.9
TOTAL	**1,650,163**	**2,038,533.6**	**1,492,387.5**	**-27**

Number of Human Cases of West Nile Virus Illness in Maryland, CY 2001– 2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL
Allegany											0
Anne Arundel		8	7	2			2			3	22
Baltimore City	3	5	14	4	2	6		3		3	40
Baltimore County	3	1	17	3	1	3	2	2	1	12(1)*	32
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			1	6
Kent											0
Montgomery		7	10	1				4	1	4(1)*	27
Prince George's		7	4	3	1	1	1				17
Queen Anne's			5					1			6
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)	23(2)	195(21)*

*Number of fatalities in parentheses

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 PRS 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 PRS—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 72 new private applicators were certified in 2010 for a three-year period after passing a closed book examination administered by section personnel during exam sessions. One thousand two hundred seventy-seven private applicators renewed their certificates by attending recertification training. Currently, there are 3,328 certified private applicators. Section staff approved and monitored 105 private applicator recertification training sessions that the University of Maryland Extension, MDA, or the pesticide industry conducted.

A total of 564 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 1,051 public agency applicators in 2010, bringing the total number of certified commercial, public agency applicators and consultants to 4,331. In 2010, a total of 18 exam sessions were held during which 2,130 exams were administered to 825 applicants. Once certified, commercial applicators are required to participate in at least one update training session approved by MDA each year in order to renew their certificates. Three hundred twenty-four recertification training sessions for commercial pesticide applicators were approved and monitored by this section and were conducted by the pesticide industry, the University of Maryland Extension, or the department. By attending recertification training, 3,991 applicators were recertified in 2010.

During 2010, the section licensed 1,458 commercial businesses and 173 not-for-hire businesses to apply pesticides and to perform pest control services. Three hundred nineteen public agency permits were issued to governmental agencies that apply pesticides. Forty-one pest control consultant licenses were issued. A total of 2,669 registered employee identification cards were issued during 2010. 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 120 dealer permits were issued to businesses that sell restricted use pesticides.

Supervising Inspectors Ellis Tinsley and Petey Councell conduct an inspection at a bulk pesticide storage facility to assure that pesticide storage, repackaging, mixing and loading operations are meeting state and federal regulations to protect the environment.

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 2010, 807 routine business inspections were performed during which 276 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 37 consumer complaints were investigated. Under the federal cooperative agreement, 26 pesticide producer establishments and 29 market place inspections were conducted. Other enforcement actions taken during 2010 included the assessment 60 civil penalties totaling $18,970.

In the last quarter of FY 2010, the PRS began conducting compliance assistance inspections at commercial agricultural pesticide application firms, custom blending operations and agricultural pesticide refilling establishments. PRS inspectors conduct inspections of bulk pesticide storage containers and mixing and loading pads at these facilities to ensure they are in compliance with state and federal regulations. These regulations were developed to protect the environment from agricultural pesticide releases at bulk storage sites and from agricultural spills and leaks resulting from pesticide refilling and dispensing (repackaging, mixing and loading) operations.

Pesticide Technical Information Collection and Dissemination

A listing of pesticide sensitive individuals was first compiled in 1989. During 2010, this section registered 163 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 lPM 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 district's on the use and implementation of IPM on school property. During 2010, MDA hosted a meeting for school personnel and their pest control contractors. Topics for the meeting included discussions on compliance, health related issues involving pest control, bat control and IPM education for students and staff.

Training Events

During 2010, the PRS inspectors and enforcement program coordinator attended the annual EPA Region III State Pesticide Inspector's Workshop hosted by the West Virginia Department of Agriculture. Sixty-two 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.

Special Programs

During 2010, 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 seven counties (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 41,000 containers weighing 20 tons, were collected from 130 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 WPS 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 worker. In 2010, Telamon members provided training in Spanish to 590 farm workers and 38 non-farm workers (health care providers). Telamon also provided pesticide safety and awareness training to 142 children of farm workers, from pre-K through eighth grade.

- **Goal:** To utilize proper pesticide management in order to reduce the potential adverse impacts of pesticides on human health, environmental resources and agricultural commodities.

- **Objective:** Seventy-five percent of inspected licensees, permittees and certified applicators will be in compliance with pesticide laws and regulations.

Performance Measures	2010 Actual
Outcome: Percent of licensees and permittees in compliance with laws and regulations.	74
Efficiency: Percent of licensees and permittees inspected.	65

- **Objective:** Eighty percent of private and commercial applicator recertification training sessions will address targeted pesticide issues and high volume violations.

Performance Measures	2010 Actual
Input: Number of certified private and commercial applicators.	7,764
Output: Number of re-certification training sessions conducted.	478
Quality: Percent of training sessions addressing targeted pesticide issues.	55

Pesticide Regulation Section Activities 2008–2010

	2008	2009	2010
Commercial Pesticide Businesses Licensed	1,631	1,371	1,458
Not-for-Hire Businesses Licensed	168	160	173
Commercial Pest Control Applicators Certified in One or More Category	3,113	3,134	3,280
Registered Personnel Employed by Licensed Businesses and Public Agencies	13,981	15,060	11,372
Public Agency Permits Issued	321	310	319
Public Agency Applicators Certified In One or More Category	1,054	1,069	1,051
Private Applicators Certified to Date	3,434	3,284	3,328
Dealer Permits Issued	141	146	120
Applicator Certification Examination Sessions Held	18	18	18
Individuals Taking Certification Examinations	982	888	825
Certification Examinations Administered in All Categories	2,463	2,677	2,130
Number of Businesses Inspected	975	809	807
Number of Businesses with Violations	363	243	276
Unregistered Employees Violations	42	26	16
Records Incomplete or Inaccurate Violations	175	143	184
Vehicles Not Properly Identified Violations	34	43	32
No Anti-siphon Device Violations	27	25	18
No First-aid/Safety Equipment Violations	13	13	8
Incomplete or No Customer Information Violations	27	14	24
Pesticide Dealer Inspections	77	78	98
Application Records Reviewed	975	809	807
Hearing and Investigational Conferences	1	0	4
Consumer Complaint Investigations	54	31	37
Pesticide Use Observations	86	79	65
Pesticide Samples Collected for Analysis	48	51	35
Market Place Inspections	42	30	29
Pesticide Producer Establishment Inspections	28	28	26
Container/Containment Inspections	N/A	N/A	4

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, and 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 CY2010 the section registered 12,772 pesticide products; 3,615 fertilizers; 422 soil conditioners; 759 fertilizer/pesticide combinations; 137 liming materials and 15,653 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 CY2010, section inspectors performed approximately 1,091 on-site inspections. See Table 2 Inspection Program.

Laboratory Analyses/Investigations

The Maryland Department of Agriculture's (MDA) 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 U.S, 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 reliable 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 2010, the section participated in 10 studies conducted by FERN for the analysis of melamine in food.

Since 2005, MDA's Maryland State Chemist laboratory has participated in 11 FDA/USDA/FERN collaborative check sample analysis studies involving highly toxic materials—three of which are among the most deadly known natural toxins and two among the most deadly man made toxic chemicals. The laboratory was successful in identifying these toxic materials in the collaborative check samples. The toxins/chemicals include heavy metals, Ricin, alpha amanitin, cyanide, tetramine, melamine, sodium fluroacetate, and pesticides.

Ammonium Nitrate
(Potential Explosive for Terrorist Activities)
The section inspection staff inspects fertilizer manufacturers and warehouses twice a year to determine amounts of ammonium nitrate stored and that monitoring of sales and distribution records are maintained in accordance with federal/state law.

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

Mycotoxin Contamination
MDA continues to monitor Maryland and imported grain products (livestock feed) for the specific mycotoxin known as vomitoxin. The Maryland State Chemist Section will continue this monitoring until there is evidence that stored contaminated grain from 2009 has been depleted and no longer poses a mycotoxin contamination threat of livestock feed.

The inspection staff and laboratory have also assisted the farm community in ascertaining the levels of aflatoxin, nitrates and prussic acid in silage and feed resulting from drought to prevent livestock death or illness.

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 10 ppm (part per million) they are confirmed by a second technique, HPLC-MS/MS. The section analyzed 58 samples in CY2010 for the presence of melamine. All samples were found to be negative for melamine.

Bovine Spongiform Encephalopathy
(BSE-Mad Cow Disease)
The section continued an inspection program in conjunction with FDA that began in 1999 to determine if feed mills, retail and wholesale distributors, haulers and grain storage facilities within Maryland comply with FDA regulations pertaining to the prevention of bovine spongiform encephalopathy (BSE), also known as Mad Cow Disease. Feed mills and/or feed distributors are issued stop sale orders for products determined to be not in compliance with state and FDA regulations.

In 2010, the section completed 54 BSE inspections and collected 74 samples from 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. Twelve samples contained bovine tissue and the results were reported to FDA.

Recent terrorist activities have resulted in placing additional emphasis on section inspection activities that go beyond the protocols established by the FDA. Section inspectors distributed handouts that list specific precautions that farmers, retailers, distributors and warehouses should follow to help ensure that ruminant animal feed manufactured or distributed in Maryland does not contain ingredients that may transmit BSE. The inspectors have been instructed to personally emphasize to mill workers, distributors, 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 routinely inspecting 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 collected from roadside vegetable/fruit stands random samples of Maryland grown produce which were then tested for 400 different pesticides. The data will be 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 market place. Removal of volatile products not only protects farm livestock but also provides protection to the public against exposure to drug resistant bacteria. In 2010, the section analyzed 120 samples of feed for 12 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.

Environment

Commercial Fertilizer Regulation
Since the early 1990's, the Maryland State Chemist Section saw the need to mitigate the leaching of commercial fertilizer nutrients into tributaries of the Chesapeake Bay. The section issues Stop Sale Orders and Warnings to registrants of products that are over formulated with either nitrogen and/or phosphorus compounds. The section was criticized by various segments of the regulated industry at the time MDA inaugurated this policy. Maryland was the first to implement this regulatory policy.

Commercial Fertilizer Distribution State/County
MDA's State Chemist Section continues to monitor (tabulate) the amount of commercial fertilizer distributed/sold in the State. Table 6 lists the individual amounts of farm and non-farm fertilizer by tonnage. The section also requires the amount of commercial fertilizer distributed/sold in each county.

Compost Facility Operator Certification

The Maryland Commercial Compost Law requires the presence of an MDA certified facility operator responsible for overseeing the manufacturing process from beginning to end. Examinations on the manufacturing of commercial compost are administered to those individuals required to become certified as compost facility operators. Fifteen people took the exam during 2010. Additionally, those individuals passing the exam are required to fulfill specific continuing education requirements in order to maintain their certification. This involves attending training courses approved by the Maryland State Chemist as well as participating in facility inspections conducted by State Chemist inspectors.

- **Goal:** To ensure the sale and distribution of safe, effective and environmentally acceptable products intended to (1) protect and promote agriculture, (2) control or eliminate pathogenic microorganisms and other pests in homes and public facilities, (3) protect forest and horticultural crops, (4) provide nutritiously balanced and safe livestock feed and pet food.

- **Objective:** Continue to ensure that 99 percent of randomly sampled pesticide products are in conformance with Maryland law relating to quality and safety with respect to active ingredient content and toxic material.

Performance Measures	CY 2010 Actual
Input: Number of pesticide products registered	13,195
Number of pesticide samples collected for analysis	302
Output: Number of laboratory analyses performed	948
Outcome: Percent of collected samples in conformance	99

- **Objective:** Ensure that 95 percent of pesticide products used to control pathogenic microorganisms are in conformance with Maryland law relative to effectiveness.

Performance Measures	CY 2010 Actual
Input: Number of disinfectant product samples collected	58
Output: Number of laboratory analyses performed	70
Outcome: Percent of collected samples in conformance	95

- **Objective:** Continue to ensure that 90 percent of randomly sampled fertilizer, soil amendments and liming materials are in conformance with Maryland laws relating to quality and safety with respect to the active ingredient content and toxic materials.

Performance Measures	CY 2010 Actual
Input: Number of products registered	4,935
Number of samples collected for analysis	497
Output: Number of analyses performed	2,248
Outcome: Percent of samples in conformance	61

- **Objective:** During fiscal year 2012 continue to ensure that at least 95 percent of livestock feed and pet food sampled are in conformance with Maryland law relative to nutrition (as per standards established by Association of American Feed Control Officials), drug content, and safety (related to toxic metal content and bovine spongiform encephalopathy (BSE).

Performance Measures	CY 2010 Actual
Input:	
Number of products registered	15,918
Number of feed mills	30
Number of feed samples collected from mills and retail outlets	1,229
Output: Number of laboratory analyses performed	6,909
Outcome: Percent of collected samples tested in conformance with law	84

Table 1. Product Registration and Enforcement Actions

Product Registration	CY2007	CY2008	CY2009	CY2010	FY2010
Pesticides	10,721	11,983	12,440	12,772	—
Fertilizers	3,483	3,778	3,732	3,615	—
Soil Conditioners	555	596	524	422	—
Fertilizer/Pesticide Combinations	689	779	755	759	—
Liming Materials	162	181	147	137	—
Feeds	13,209	14,555	14,512	15,653	—
TOTAL	28,819	31,872	32,110	33,358	—
Number of Companies with Registered Products	2,503	3,034	2,957	2,748	—
Registrants	2,086	2,559	2,458	2,293	—
Enforcement					
Non-Registered Notices	757	495	401	510	—
Stop Sale Orders	217	195	139	192	—

Table 2. Inspection Program

Inspections (Feed, Fertilizer, Pesticides, Compost, etc.)	CY2007	CY2008	CY2009	CY2010	FY2010
Plants, warehouses, retailers, etc.	1,519	1,147	1,269	1,039	1,234
Inspections for BSE (mad cow disease)	100	100	83	52	54
Pesticide and microbiological data sites visited (USDA/MDA)	196	334	626	511	—
Pesticide and microbiological samples collected (USDA/MDA)	—	696	1,230	1,082	—
Food Safety Program smples collected (farmers' markets, roadside stands, etc.)	48	64	64	112	—
Composting sites	6	2	0	0	—

Table 3. Regulatory Actions

Stop Sales	CY2007	CY2008	CY2009	CY2010	FY2010
Deficiencies					
Pesticides	1	6	4	1	—
Fertilizers	198	127	50	90	—
Feeds	56	40	37	59	—
Over-Formulations					
Pesticides	1	0	0	0	—
Fertilizers	82	9	30	33	—
Feeds	9	9	22	2	—
Mycotoxins (Feed)	*	*	*	65	—
Label Violations	9	9	26	7	—
Warnings					
Deficiencies					
Pesticides	1	0	3	0	—
Fertilizers	8	4	35	61	—
Feeds	29	20	27	40	—
Over-Formulations					
Pesticides	1	0	0	25	—
Fertilizers	14	9	20	49	—
Feeds	15	9	27	0	—
Mycotoxins (Feed)	*	*	*	14	—
Products Not Registered Brought into Compliance					
Pesticides	11	42	7	11	—
Fertilizers	89	39	45	15	—
Soil conditioners	2	16	12	2	—
Fertilizer/pesticide combinations	1	6	5	4	—
Liming materials	3	5	6	5	—
Feeds	651	341	326	473	—

**Mycotoxin stop sale actions prior to 2010 were included in the feed over formulation data.*

Table 4. Samples Collected and Analyzed

	Samples Collected FY2010	Chemical Analyses FY2010	Samples Collected CY2010	Chemical Analyses CY2010	Samples Collected CY2009	Chemical Analyses CY2009	Samples Collected CY2008	Chemical Analyses CY2008
Pesticide Formulation Analysis	268	672	341	855	305	765	193	772
Fertilizers (nitrogen, phosphorus, potassium, micro-nutrients)	423	3,364	407	3,237	584	4,645	538	4,196
Agricultural Liming Materials	38	143	45	169	29	109	51	196
Feeds and Pet Foods (protein, drugs, phytase, etc.)	1,189	14,804	1,151	7,234	1,258	15,664	1,046	13,025
Broiler Feed for Phytase	35	70	30	60	48	64	45	90
Livestock Feed for Drugs and Additives, Mineral Supplements and Ingredients	172	2,141	120	1,494	150	1,050	132	616
Ruminant Tissue Analysis of Feed for FDA	75	75	150	150	82	90	151	182
Toxic Metal Analysis of Feeds, Fertilizers and Liming Material	89	1,092	87	1,067	98	1,206	87	1,05
Melamine in Animal/Human Food	9	9	58	70	58	70	3	4
Vomitoxin (DON) in Feed	478	574	478	574	603	724	0	0
Aflatoxin in State Chemist Inspection Samples	63	75	67	74	31	37	398	464
Mad Cow (BSE) Inspection Samples for the State	57	57	74	74	70	84		
Food Safety of Maryland Produce & Fruit	80	29,200	66	24,090	64	23,393	64	23,393
Service Samples for Farmers, Veterinarians, etc.	31	380	19	233	3	37	13	156
National & International Quality Assurance Samples	116	4,764	116	4,764	77	3,163	55	2,250
EPA Samples (pesticide misuse investigations, market place monitoring)	54	452	53	444	54	452	49	490
Foor Emergency Response Network—FERN (joint laboratory network between federal and state agencies)	10	36	—	—	10	95	5	20

Table 5. MFR Outputs

	Actual 2010	MFR 2010	Actual 2009	MFR 2009	Actual 2008	MFR 2008
Pesticide Formulation						
Pesticide Regulation	12,772	13,195	13,251	11,500	11,983	11,500
Samples/Analyses	268	302	197	200	193	200
Lab Analyses	855	948	619	843	772	840
Fertilizers, Soil Amendments, Liming Material, Compost						
Products Registered	3,615	4,935	4,969	4,300	4,374	4,300
Samples Collected	423	497	650	650	538	650
Analyses	33,641	2,248	3,000	3,000	4,196	3,000
Livestock Feed and Pet Food						
Product Registration	15,633	15,918	15,240	—	—	—
Feed Mills in Operation	30	30	33	35	35	35
Routine Feed Mill Samples	1,098	1,229	1,400	1,500	1,046	1,500
Lab Analyses—Routine Samples	7,234	6,909	8,000	9,540	13,025	9,540
Ruminant Feed Mills/Warehouses Inspected	52	50	83	35	100	35
BSE (Mad Cow) Samples	74	—	70	—	100	—
BSE Ruminant Tissue Analyses	150	—	90	—	182	—

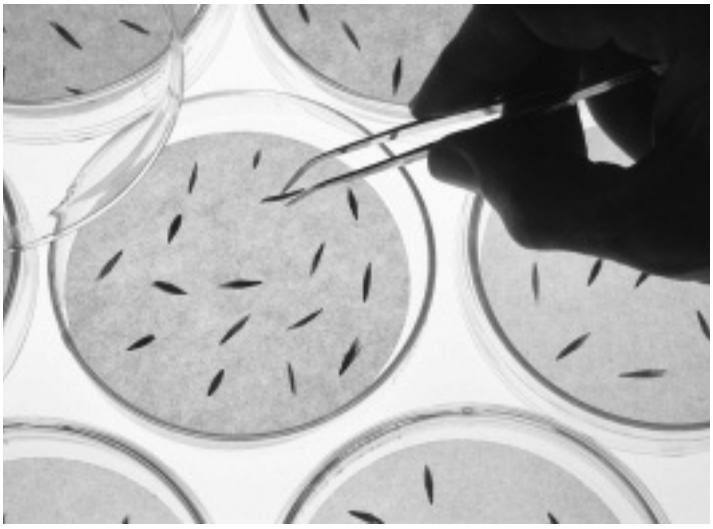
Table 6. Fertilizer Sale/Distribution—Tons

	FY2010	FY2009	FY2008	FY2007	FY2006
Farm Fertilizer	179,633	214,783	243,036	228,006	224,465
Non-Farm Fertilizer	136,073	154,800	202,702	181,033	157,801
Total	315,706	369,583	445,828	409,039	382,266

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 and field inspections, 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) 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 in seed technology.



Turf and Seed Section staff germinate seed such as this to determine that it meets standards.

Seed Laboratory

The Maryland Department of Agriculture's (MDA) seed testing laboratory is central to the operation of the section, supporting the regulatory, certification, supervised seed mixing and turfgrass activities, while also providing service testing for seed producers, dealers, farmers and other seed consumers. Turfgrass professionals depend upon the laboratory to provide them with purity, germination 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 and germination 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 ensure that the seed they plant meets the quality 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 to assist with their quality control programs. The laboratory also tests seeds used on wetland mitigation, restoration and conservation projects.

Key to a successful laboratory operation is a well-trained staff. The Association of Official Seed Analysts (AOSA) maintains an accreditation program for seed analysts in official laboratories throughout the United States. Analysts who pass rigorous tests, which include both written and practical examinations, are certified as official purity and germination analysts. At the present time, six MDA staff members are certified by AOSA in both purity and germination testing, out of a nationwide total of 105 analysts who have achieved this level of certification. The laboratory staff also routinely participates in various seed referee tests. 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 and conservation 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.

Turf and Seed Activities, 2008–2010

	2008	2009	2010
Field Inspections			
Acres of Turf Inspected	7,140	9,272	5,895
Acres of Crop Seed Inspected	13,066	11,447	9,904
Supervised Mixing			
Pounds of Seed Mixed (thousand)	1,446	979	1,337
Retail and Wholesale Seed Inspections			
Number of Lots Sampled	917	890	1,014
Number of Regulatory Seed Tests Conducted	3,243	2,965	3,145
Seed Testing			
Purity Service Tests Conducted	3,200	3,289	3,031
Germination Service Tests Conducted	5,230	5,352	4,535

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.

Vegetables like this cabbage planted Baltimore City Hall highlight a growing interest in backyard gardens and need for quality seed.

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

Harvest of soybeans grown on the Eastern Shore.

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 ensures 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.

Customer Service

Providing good customer service is a priority of the Turf and Seed section, and is one of the objectives measured by the section's Managing for Results (MFR) data. Staff strive to provide results in a timely manner to those customers submitting service requests. Due to the fact that the marketing and planting of seed is time-sensitive and is impacted by weather conditions, our customers rely on MDA staff to provide inspections, schedule supervised mixes, and send out seed test results rapidly to enable their businesses to remain successful in the seed market.

The mission of the Turf and Seed section is to provide the seed and turfgrass industries and consumers of Maryland with regulatory testing and certification programs that encourage the production and use of high quality seed and turfgrass and that insure an orderly marketplace. Our vision is to achieve excellence in seed testing, field inspection, certification and regulatory activities, utilizing a staff of knowledgeable and dedicated professionals to assist the industry and consumers of Maryland in the production and use of superior quality seed and turfgrass.

Factors Affecting Turf and Seed Activities

The numbers of acres of turf and crop seed inspected, as well as the number of pounds of seed mixed, have all been impacted by economic conditions. The downturn in the building and construction industries has affected the Turf and Seed section's revenue due to a temporary decrease in demand for seed mixes used on highway and building projects, and for the seeding of turfgrass sod used on construction sites.

- **Goal:** Ensure that seed offered for sale is accurately labeled and in compliance with Maryland Seed Law in order that the citizens of Maryland may rely on the accuracy of the labeling and thus be assured they are purchasing the quality of seed they desire.

- **Objective:** Ensure that 90 percent of seed lots offered for sale in Maryland are labeled correctly.

Performance Measures	2010 Actual
Outcome: Percent of seed lots found to be correctly labeled	89.2

- **Goal:** To ensure that service samples of seed submitted to the laboratory are completed in a timely manner.

- **Objective:** Ensure that all service purity analyses will be completed, on average, within three days of receipt of seed sample and all service samples submitted for germination testing will have been planted, on average, within three days of sample receipt.

Performance Measures	2010 Actual
Quality: Average number of days between receipt of service sample and completion of purity analysis	8.8
Quality: Average number of days between receipt of service sample and planting for germination tests	1.7

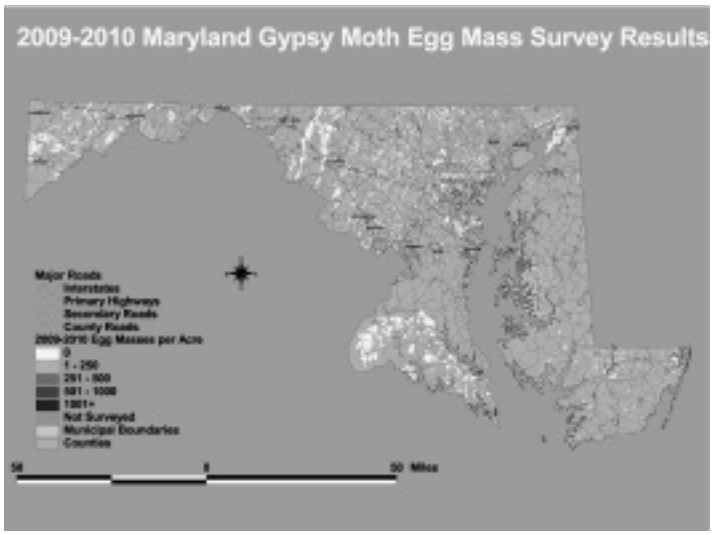
Forest Pest Management

Detection and Evaluation Surveys

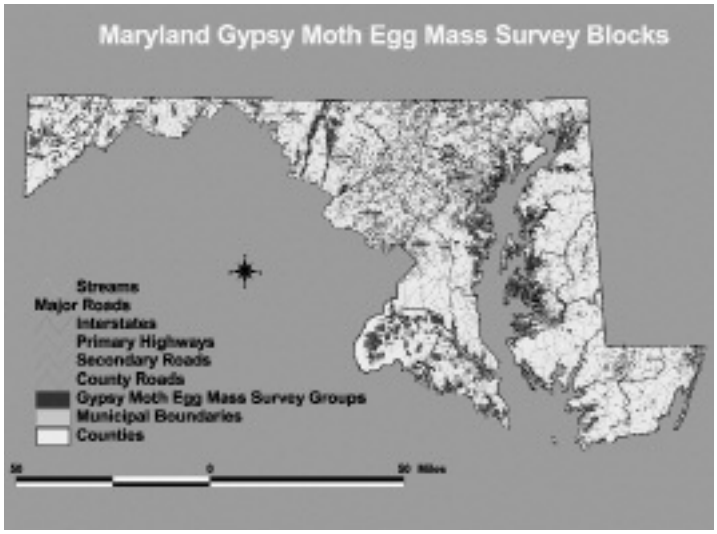
Bark Beetles—In cooperation with the United States Department of Agriculture (USDA), the Maryland Department of Agriculture (MDA), Plant Protection and Weed Management Section has operated an insect trapping network for the pine shoot beetle (*Tomicus piniperda*) for the past decade. Based on 2010 results, this introduced pest of Pinus from Europe has newly been detected in Baltimore, Carroll, Harford, and Howard counties, which now join Garrett, Allegany, Washington, Frederick, and Montgomery counties under state and federal quarantines for pine shoot beetle. Since the initial U.S. detection in Ohio in 1992, this small bark beetle now occurs in 17 states including Pennsylvania, West Virginia, and Virginia. The pine shoot beetle, a European bark beetle, was targeted in 2010 by USDA APHIS funded survey conducted in 15 Maryland counties. There were 51 trap sites of which 19 were positive. The pine shoot beetle was first found in western Maryland in 1995. Pine shoot beetles are commonly found in the four western Maryland counties (Allegany, Frederick, Garrett and Washington).

Southern pine beetle—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 2010, but populations usually build up to damaging levels on a 7–8 year cycle. Populations have been below outbreak level since 1994. Three sites were detected in 2010—two sites in Kent County, a first for this county for 34 acres, and one site in Talbot County. The 2010 Forest Damage Map does not have the Talbot County site as it was just recently confirmed.

Gypsy Moth—Egg mass surveys conducted in the fall of 2009 indicated damaging infestation levels in one county. In the spring of 2010, 144 acres were treated in the eastern shore areas of the state in Talbot County. Maryland experienced zero acres of defoliation. Surveys so far indicate that treatments will not needed on in 2011.



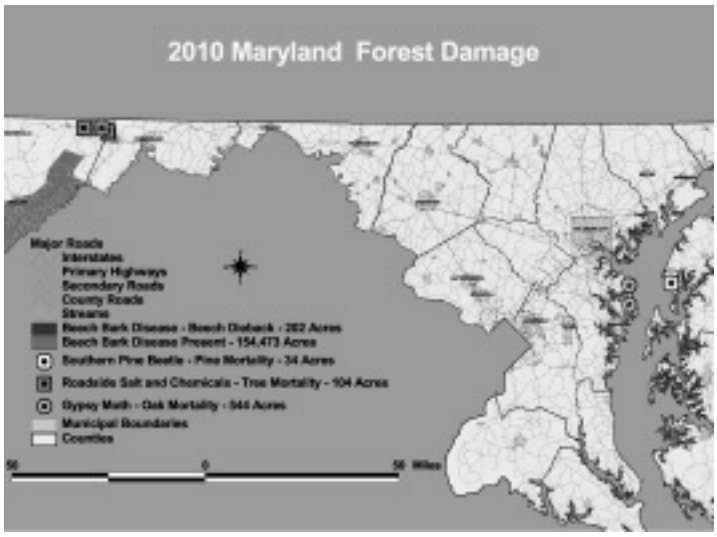
The map below depicts all of the survey areas MDA plans to survey. However, man power restraints do not make this possible on a yearly basis. The plan is to survey each area at least once every four years.

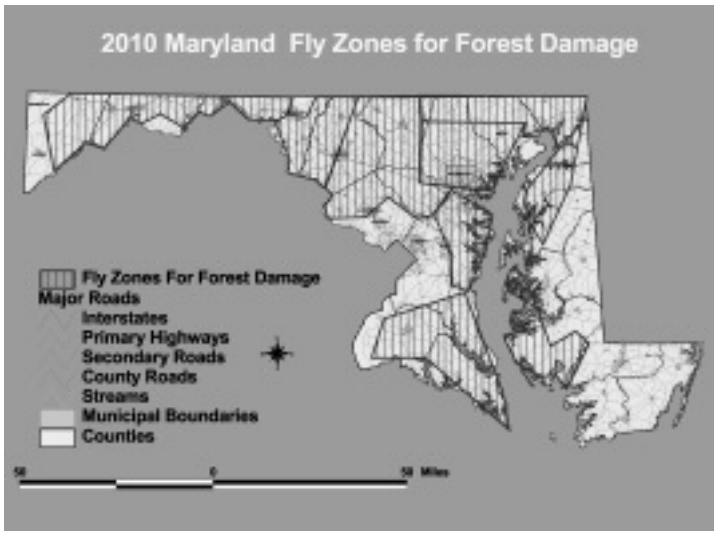


Sirex noctillio—MDA, Plant Protection and Weed Management Section placed 80 traps in 8 counties with no positives.

Emerald Ash Borer—MDA, Plant Protection and Weed Management Section and the Forest Pest Management Section placed 2,600 purple traps in 21 counties and the City of Baltimore. There were 33 positive traps all within the quarantined areas of Charles and Prince George's counties.

Hardwood Defoliators and other damage causing agents—In addition to gypsy moth caused damage the Beech Bark Disease, and roadside salt and chemicals caused damage to Maryland's forests.





Delimiting Surveys and Mapping

Aerial surveys were conducted to determine the extent of forest pest damage, especially by the gypsy moth.

Over the course of this latest gypsy moth outbreak (2007–2010) gypsy moth defoliation totaled 88,036 acres and gypsy moth mortality totaled 11,084 acres.

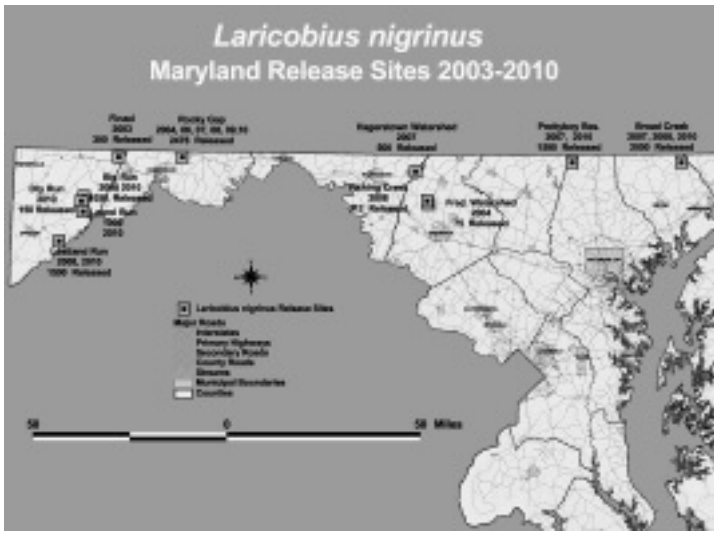
2010 Gypsy Moth-Caused Host Mortality from 2008 Gypsy Moth Defoliation

Region	# Defoliated Acres Surveyed	# Survey Points	#Dead Board Feet	# Dead Cords
Eastern Maryland	141	3	58,797	—
Northeastern Maryland	300	11	581,410	190
Central Maryland	7,219	133	4,931,196	4,540
Western Maryland	7,766	88	1,625,891	3,968
Southern Maryland	222	5	327,600	1,448
Total	**15,648**	**240**	**7,524,894**	**10,146**

Hemlock Woolly Adelgid Surveys and Monitoring

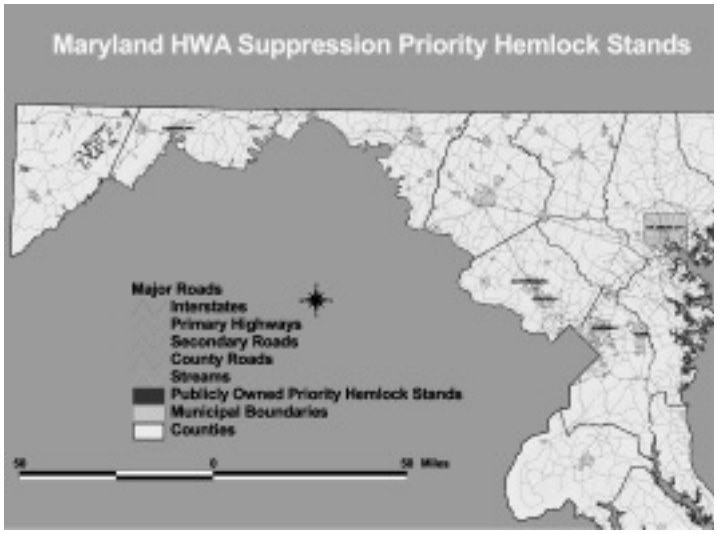
Hemlock Woolly Adelgid (HWA)—HWA remains the major threat to the health of eastern hemlock. Infested hemlocks occur in the metropolitan area between Baltimore and Washington and in natural stands from Harford to Garrett counties. As part of a mid-Atlantic multi-state survey, 13 plots have been set up in six counties to assess the HWA impact on hemlock stands. Comparing 1998 plot data and 2009–2010 plot data, the number of hemlocks with a vigor rating of healthy decreased 96 percent and the number of hemlocks still alive decreased by 24 percent. The potential for HWA biological control by the predatory beetle *Laricobius nigrinus* was evaluated in Frederick City watershed and in Rocky Gap State Park in Allegany County during 2004. *Laricobius* was recovered from Rocky Gap in the fall of 2005. Recoveries since then indicate that the beetle is now established at that site. Additional releases have been made at Rocky Gap in an effort to establish a field insectary so that beetles can be harvested for movement to other areas.

In 2010, 200 beetles were collected from Rocky Gap and released at Savage River State Forest. 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. 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. In 2010, additional releases were made at Laurel Run, Dry Run, Lostland Run, Big Run, Rocky Gap, Prettyboy Reservoir and Broad Creek. Since 2003, 11,943 *L. nigrinus* have been released in Maryland. Two other predatory beetle species, *Scymnus sinuanodulus* and *Sasajiscymnus tsugae* were released at several different sites, with no recoveries made.



Hemlock Woolly Adelgid Suppression

A joint MDA-DNR hemlock woolly adelgid (HWA) Task Force addressed the multidisciplinary needs of the HWA infestation. More than 50 hemlock stands were prioritized. The top 50 prioritized stands were selected as the sites where suppression might be attempted. Only publicly-owned sites would be part of this suppression project. So far in 2010, 3,771 hemlocks have had soil injection treatments for a total of 7,478 soil injection trees since 2005 more than doubling the number in one year. So far in 2010, 724 trees have been trunk injected for a total of 1,309 trees since 2004 also more than doubling the number in one year. The HWAS soil treatments decreased HWA populations by 44 percent while the control hemlocks' HWA population increased by 34 percent. This year MDA started to survey all 50 top priority sites for the HWA.

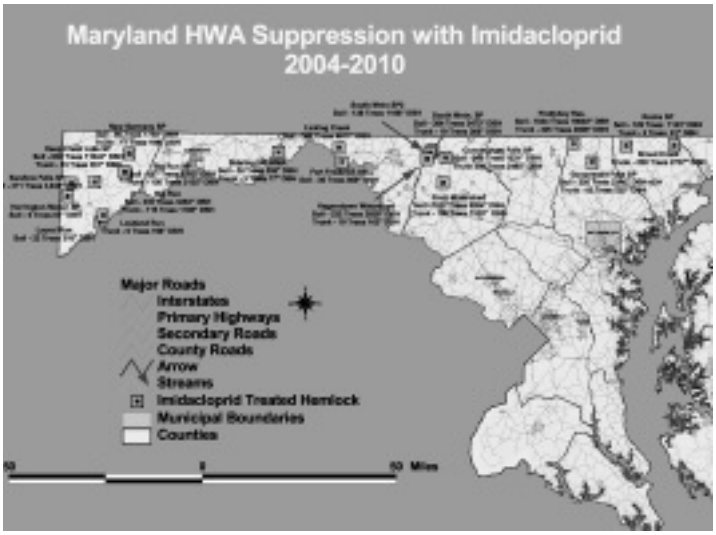


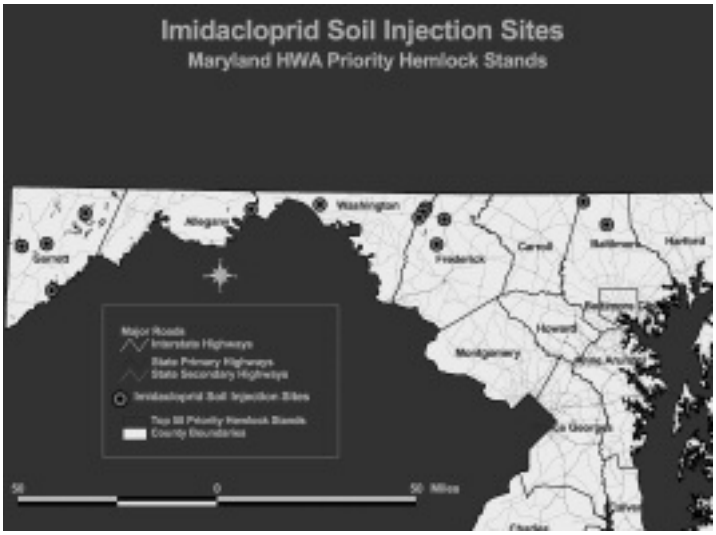
Hemlock Woolly Adelgid Suppression with Imidacloprid in Maryland CY2010

Treatment	# Trees	DBH (inches)
Soil Injection	3,771	34,563
Trunk Injection	724	8,534
Total	**4,495**	**43,097**

Hemlock Woolly Adelgid Suppression with Imidacloprid in Maryland 2004–2010

Treatment	# Trees	DBH (inches)
Soil Injection	7,478	72,216
Trunk Injection	1,309	16,719
Total	**8,787**	**88,935**





Goal: To prevent economic losses to forest and landscape trees due to insect pests and diseases.

Performance Measures	2010 Actual
Output:	
Total number of acres assessed (gypsy moth)	595,033
Number of acres where protective treatment is environmentally and economically feasible (gypsy moth)	144
Number of acres of treatment completed (gypsy moth)	144
Number of hemlock trees treated in riparian habitat (trunk injections)	724
Number of hemlock trees treated upland habitats (soil treatment)	3,771
Outcome:	
Losses prevented in treated areas (millions)	$0
Percent reduction of hemlock woolly adelgid	95

Plant Protection and Weed Management

CY 2010 Highlights

- **Emerald Ash Borer Biocontrol:** The ongoing battle to contain the devastating emerald ash borer (EAB) has required various tactics. One tool that shows promise is the release of biological control agents originating from the pest's country of origin that seek out and destroy their target. Since the release permit was approved by the USDA Animal and Plant Health Inspection Service (APHIS) in 2009, more than 38,700 parasitoids, one egg and two larval, have been released. Subsequent recovery of all three agents in the spring of 2010 indicates that they will overwinter in Maryland. Establishment will be confirmed if they are recovered in 2011. Native parasitoids are also being recovered at low levels indicating that over time they may also target to this new host. Continued releases and evaluation are planned.

- **Famous and Historic Tree Program:** Although the majority of Maryland-produced trees and shrubs are of high quality, nurseries and plant dealers in the State still face major challenges in the highly competitive retail sales market. Almost every new variety or cultivar that shows sales strength is quickly over-supplied in the marketplace, driving prices down. In addition, there are many skilled personnel in large commercial nurseries throughout the country who are able to produce identical items for prices that a small mid-Atlantic facility cannot match. One way to ensure Maryland growers receive top prices is to develop a "value-added" product that adds a distinction difficult or impossible for competitors to match. This concept is producing promising results for an array of agricultural commodities.

  In 2010, a central Maryland wholesale nursery teamed with an international forestry organization to produce a collection of ornamental and forest tree seedlings using a unique but clever value-added feature. All seedlings in the mail order catalogue have a connection to an historical event, site, or person in the United States. For example, the George Washington tulip poplar tree was produced from seed gathered from a tree Washington planted himself in 1785 on his Mount Vernon estate. The Angel oak seedling is produced from acorns collected from a tree on John's Island, S.C. that is over 1,400 years old and thought to be the oldest living organism east of the Mississippi River. Tree species associated with James Madison, Abraham Lincoln, Robert E. Lee, Martin Luther King, Clara Barton, and Mark Twain are also offered. The Survivor elm selection is produced from seed from a single American elm tree that withstood the 1995 Oklahoma City bombing attack that killed and injured hundreds. Initial year-end sales totals showed the two most popular trees sold through the program were the Washington, D.C. Tidal Basin cherry and the Johnny Appleseed apple. The historical connection of this plant material cannot be matched by outside competitors.

  The Plant Protection and Weed Management Section provided guidance and services to this nursery in the vital areas of interstate shipping and adherence to exterior plant quarantine regulations. A domestic shipping matrix was developed, outlining all applicable plant quarantines and identifing prohibited species. Pesticide treatments were recommended and witnessed on a monthly basis. Agricultural officials in other states were personally contacted and several agreements were formulated that resulted in market expansion and increased sales opportunities for the Maryland nursery. Monthly inspections to issue certificates were conducted throughout the year. Other modifications to tree production methods at the nursery can lead to further interstate sales. In 2011, MDA will supervise the destruction of volunteer *Prunus* within a one-mile radius of the nursery so that cherry selections can be shipped into the State of California. The Plant Protection and Weed Management Section recognizes the inherent benefits of a successful nursery industry in the State and is uniquely positioned to provide vital services in the production of "value-added" plant material.

- **Pine Shoot Beetle Quarantine:** The pine shoot beetle, expanded its damage and its range within Maryland in 2010. Four Maryland counties were found to be newly positive for pine shoot beetle in 2010: Carroll, Baltimore, Harford and Howard. Because of the significant and rather sudden increase in range expansion, the number of growers under federal quarantine regulations also rose significantly. MDA staff acted quickly to distribute information to the nursery industry and to the cut Christmas tree growers regarding the quarantine regulations and took necessary actions to limit spread of the beetle both intra- and interstate. A website was established to inform the public about the pine shoot beetle program in Maryland, www.mda.state.md.us/plants-pests/psb.php.

- **Goal:** To successfully safeguard the plant health and quality of plant resources in Maryland.
- **Objective:** Continue to provide inspections and laboratory testing that ensure at least 97 percent of plant lots meet plant certification standards and enhance the reputation and quality of plants produced in Maryland.

Performance Measures	2010 Actual
Outcome:	
Percent of plant lots meeting certification standards	95
Average number of days between request for certification and scheduled inspection and issuance of certificates	5

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. Honey bees are responsible for the pollination of 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 22 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 one percent of colonies inspected.

Varroa and tracheal mite populations were very low in Maryland in 2010, 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 2010. 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 21 counties this past year. Colonies are treated and monitored to ensure successful control of the beetles. There have been 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 3,315 honey bee colonies to move out of Maryland and 897 colonies to move into Maryland for pollination services. For the fifth year, Maryland beekeepers will send colonies to California for almond pollination. In December, 2,000 colonies were transported to California for this purpose, to return to Maryland in March of 2011.

- **Objective:** Continue to ensure Maryland honey bee colonies are free of disease, meet interstate certification requirements and are in sufficient supply to meet pollination needs of crops valued at more than $40 million per year in Maryland.

Performance Measures	2010 Actual
Output:	
Number of colonies inspected	8,124
Number of apiaries inspected	673
Number of tests conducted	57
Outcome:	
Honeybee colonies free of American foulbrood disease	8,101
Number of colonies meeting interstate certification requirements	4,620
Quality: Number of healthy colonies available for pollination contracts	8,101

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 $960 million in farm income. Other horticultural products and services sold boosted total gross receipts to more than $1.96 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 prior to its subsequent sale to other states to ensure that materials are free of dangerously injurious plant pests. State phytosanitary certificates that assure specific compliance with established domestic quarantines were issued to 10 states. In 2010, federal phytosanitary certificates required to export Maryland nursery stock were issued to 10 foreign countries including Argentina, Spain, and Vietnam. A total of 150 federal and 99 state certificates were issued in 2010, an increase of 128 percent from 2009. 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 367 Maryland locations to intercept dangerously injurious or exotic pests. The general health of Maryland-produced nursery stock was found to be excellent.

Pest Survey

The Cooperative Agricultural Pest Survey (CAPS) is a joint project between the MDA and the USDA APHIS, Plant Protection and Quarantine (PPQ). USDA recommends specific pests of quarantine export significance as survey priorities and provides funding for these surveys. MDA adapts the appropriate survey methods and conducts the actual surveys. 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 pests, imported fire ant, giant hogweed, noxious weed/Khapra beetle, pine shoot beetle, emerald ash borer, and *Sirex noctilio*. Outreach and education is an important component of our activities.

A total of 5,859 insect traps were deployed and monitored in 2010. Through the various types of surveys conducted, 20,536 samples were collected. Trapping techniques involved a wide range of devices, including purple prism and Lindgren funnel traps. Pheromones, food baiting and host volatile attractants are all employed for specific pests.

The surveys target pests that are exotic to Maryland. Nine extensive surveys targeting 25 exotic pests that impact trees, stored products, field, fruit and vegetable crops, nursery stock, and natural areas were conducted. MDA conducted exotic wood borer surveys in six counties and 15 sites and for exotic field and vegetable pests at 25 vineyards in 11 counties in 2010. No target pests were detected.

A few pests, such as the emerald ash borer and imported fire ant required responses. With the loss of the pheromone and blacklight trap program for monitoring endemic agronomic pests, MD growers were unaware of unusually high corn earworm and fall armyworm activity, resulting in costly losses on vegetable crops such as sweet corn.

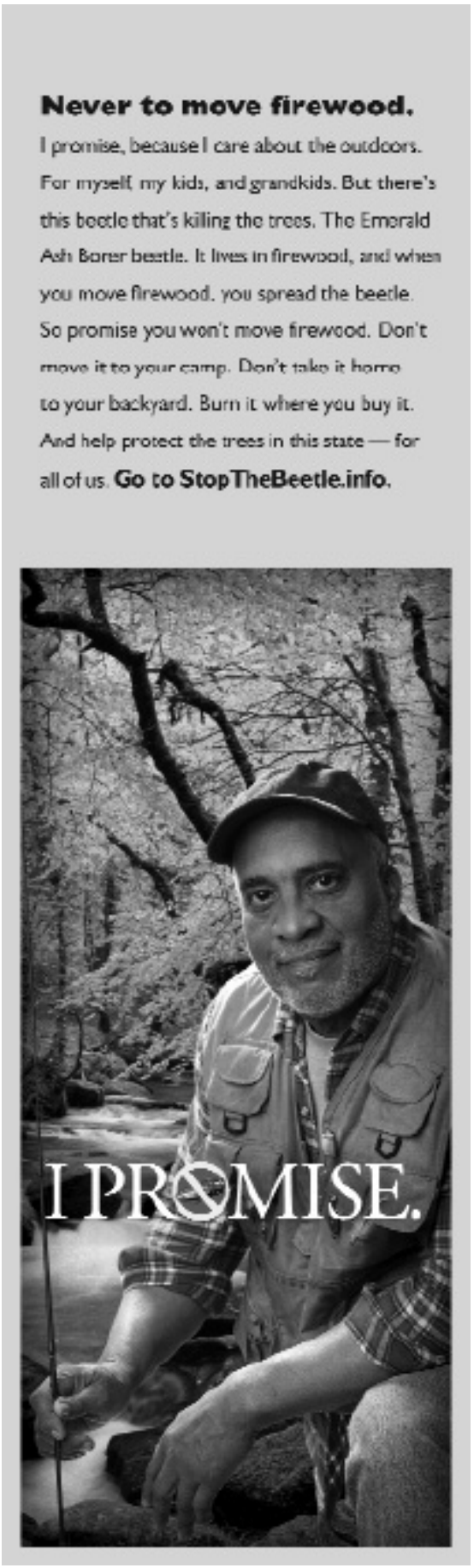
The **red imported fire ant**, *Solenopsis invicta*, a South American stinging insect, is occasionally shipped out of the southern United States, in spite of a federal domestic quarantine that prohibits movement of a variety of commodities unless treated and/or certified free of fire ants. This insect's ability to quickly colonize in a variety of habitats, and its aggressive foraging behavior, pose additional dangers if established in Maryland. Thirty-three isolated infestations have been eradicated in Maryland since 1989. 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, as well as survey and eradication efforts have had a positive impact on the incursion of fire ant. Ninety four surveys in seven counties and Baltimore City at 84 sites in 2010 yielded seven positive sites. Not unexpected were the six detections in Ocean City and one in Baltimore associated with tropical plants. The fire ant is being or has been eradicated from all positive sites.

Eradication efforts undertaken since the 2006 rediscovery of the **emerald ash borer** (*Agrilus planipennis*) (EAB) 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 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. 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 parasitic wasps that specifically target the eggs or larvae of the beetle and kill them. (See highlight).

With material and assistance from USDA, seven sites with known infestations had 33,881 parasitoids released in 2010. Larvae and adult EAB were collected and provided for propagation of additional parasitoids. In 2010, urban and forest trees were selectively treated around known infestations and several heavily infested trees were removed. Surveillance efforts increased with 2,601 purple prism traps monitored in 21 counties and Baltimore City. Other detection methods included girdled trap trees, destructive sampling where entire trees were debarked, biosurveillance (using a native solitary ground wasp) and visual surveys. Detections were only made from the area surrounding the known infested zone in Prince George's and Charles counties but show the population is increasing and slowly expanding its range. 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 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—see write up in Noxious Weed Management Section.



Pine Shoot Beetle (*Tomicus piniperda*), a potentially severe pest of pine trees in North America, continues to plague growers of pine and pine products in Maryland, including those involved in the nursery, Christmas tree and timber industries. This European beetle was inadvertently introduced into the Great Lakes Region in 1992. Since that time, this pest has been found in 18 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 to be free of the beetle before regulated products can be shipped to areas outside the quarantined area. MDA surveys first detected the pine shoot beetle in 1995 in Allegany County. From that time through 2009, pine shoot beetle had been detected in Garrett, Washington, Frederick and Montgomery counties. Each of those counties has been under state and federal quarantine restrictions since the initial detections. Over the past nine years, Garrett County has experienced at least a 10-fold increase in captured beetles.

In 2010, based on survey detections, four new counties were added to the Maryland pine shoot beetle quarantine (see highlight). The remaining northern counties and pine timber producing counties on the Eastern Shore were also surveyed and no beetles were detected.

The Plant Protection and Forest Pest Management staff surveys, outreach, inspections and certification made it possible for growers to confirm compliance with federal law and to continue shipping high quality pine trees and pine products. MDA staff, in cooperation with federal Plant Protection and Quarantine officers, continued to work with the nursery, Christmas tree, and logging industries in the quarantined counties in Maryland to distribute information relative to 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. For the first time, in 2010, not all farms in Maryland met the requirements for shipment of pine trees and pine products outside of the quarantined area within the state. At several farms within the area under quarantine, beetle activity and damage was at such a substantially high level that certification for movement outside of the federal quarantine was not possible. Fortunately, most of the affected growers ship the majority of their pine products within the quarantined area so were not affected to a large degree. In areas outside of the counties under quarantine in Maryland, MDA's Plant Protection and Forest Pest Management staff surveys, inspections and certification made it possible for growers to confirm compliance with federal law and to continue shipping high quality pine trees and pine products.

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 2010, samples submitted to the laboratory were received from within MDA, University of Maryland Extension, nursery and landscape businesses, and the general public.

Entomology Laboratory

There were some interesting specimens submitted to the lab in 2010, including two separately caught *Megarhyssa macrurus lunator*, a giant wasp that parasitizes woodboring horntails. This insect has a two-inch wing span and a three-inch long ovipositor which is slowly drilled into a tree trunk to deposit an egg in its host larva. Purseweb spiders (*Sphodros rufipes)* were seen and photographed by four people in different areas of the state; stinkhorn fungi (several species) were also widely noted this year. Paralleling increasing media reports, samples of bed bugs (*Cimex lectularius*) and brown marmorated stink bugs (*Halyomorpha halys*) greatly increased again this year. Florida wax scale (*Ceroplastes floridensis*) was found twice in southern nursery stock and several land planarians (*Dolichoplana striata*), the "long wandering flatworm," were found in containers, also shipped from the South. Neither species is thought to survive our winters. In mid-March, moderate rabbit damage was noted 36" above ground level on apple branches and young hollies, following February's record snowfall.

Plant Pathology Laboratory

The mission of the Plant Pathology Laboratory 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.

Between March and November, the lab processed 143 diseased samples submitted from six different sources: plant inspectors (33%), home growers (31%), commercial landscapers (12%), Plant Protection section (11%), Pesticide Regulation section (9%), and Forest Pest Management (4%). The samples comprised fungal (92%), bacterial (3%), nematodes (1%), viruses (1%), and abiotic disorders (4%).

The Plant Pathology Laboratory conducted disease surveys for plum pox virus (PPV), grape Phytoplasma yellows, brown rot fungus (*Phellinus noxius*), and *Phytophthora ramorum*.

(a) **Plum pox virus surveys** targeted *Prunus spp* in 10 commercial orchards in seven Maryland counties bordering Pennsylvania. Of the 2,939 samples processed and tested for PPV using the enzyme-linked immunosorbent assay (ELISA), none were positive to the virus.

(b) **Grape Survey:** Ten vineyards in Cecil, Calvert, Dorchester, Queen Anne's, and Talbot counties were surveyed for grape Phytoplasma yellows, and brown rot diseases. No plants were found to be infected with the two diseases.

(c) Seventeen nurseries and plant distribution centers in eight Maryland counties were surveyed for ***Phytophthora ramorum***. The surveys targeted all known host and associated *P. ramorum* host plants. A total of 427 plant, 39 water, and 18 soil samples were collected, processed, and tested for *P. ramorum* initially in ELISA. All ELISA-positive samples were sent to a USDA-appointed lab for confirmation by the more sensitive polymerase chain reaction (PCR) test. All samples tested negative for *P. ramorum* in PCR test.

The lab also received seven *P. ramorum* trace forward samples from Maryland-based nurseries that bought the samples from suspect Oregon nurseries. All seven trace forwards tested negative for *P. ramorum*.

Four contractual workers hired for the plant pathology lab in 2010 were trained in disease surveys, sample collection, processing, running ELISA, and interpretation of results.

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, *Rhinoncomimus 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.

Plant Certification

The MDA continues to participate in the virus-free rose certification program with Angelica Nursery, maintaining one variety of rose as certified stock plants in 2010. This variety was propagated by tissue culture, producing a total of 213 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 and Convention on the International Trade in Endangered Species (CITES) regulations 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 2009–2010, the program licensed 11 ginseng dealers and 301 ginseng collectors in the state.

During the 2009–2010 harvest and sales season, the certification program inspected, collected size and age data from, weighed, and certified 195.8 pounds of dry wild and wild-simulated ginseng root; 95.0 pounds of artificially propagated dry ginseng root and 9.5 pounds of wild-simulated stratified ginseng seed. The harvest and certification numbers recovered somewhat as compared to 2008–2009 when the harvest and certification numbers were among the lowest in Maryland over the last two decades. The increase in Maryland ginseng certified and sold likely reflects an increase in price of ginseng on the international market. Harvest and sales data were gathered and reports were

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. In this way, harvest pressure on wild ginseng may be reduced, in turn allowing wild ginseng populations in Maryland to rebound.

Responses to the annual questionnaires mailed to ginseng collectors and dealers at time of licensing indicate continuing concern and frustration by some that the incidence of out-of season poaching of wild ginseng in Maryland remains high. To work toward remediation of this problem, the Maryland Department of Agriculture continued its cooperation with the Maryland Department of Natural Resources, providing information and support to enable more effective policing and prosecution of violators of the regulations and laws that protect Maryland ginseng.

Another positive development to aid recovery of wild American ginseng populations in Maryland occurred in 2010. After a number of years of deliberation and study and over a year in process, the regulations regarding wild ginseng harvest in Maryland were changed. As of July 1, 2010, the harvest season for wild American ginseng in Maryland is September 1–December 15. The new regulations delay the start of the harvest season from August 20 to September 1. This change effectively gives the ginseng fruit longer to ripen, on average, and insures a higher percentage viability of seed. The change also complies with changes highly recommended by the U.S. Fish and Wildlife Service to not only bring all states with wild American ginseng populations into harmony in terms of parallel harvest season dates, but is also based on long term research that indicates the change as necessary to insure long term existence of wild American ginseng in its native range.

Weed Integrated Pest Management (IPM)

Plant Protection and Weed Management Section entomologists and staff continued to work with the Maryland Department of Transportation, State Highway Administration (SHA) 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 10 years. IPM investigations continued to target the suppression of *Cirsium* and *Carduus* thistles. Over the past 10 years, research has been 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.

In early 2010, MDA and SHA finalized a new work plan and memorandum of understanding for research over the next two years. In April 2010, MDA entered into a new two year agreement with the Research Division of the Maryland State Highway Administration to continue to monitor the impact on Canada thistle of the Canada thistle bud weevil (*Larinus planus*) and the Canada thistle leaf beetle (*Cassida rubiginosa*), track the incidence and spread of the disease causing apical chlorosis of Canada thistle, to develop a rearing protocol for the *Galerucella spp.* leaf beetle, an herbivore of purple loosestrife, (*Lythrum salicaria*) and implement a release program for use of this biocontrol agent on populations of purple loosestrife on State highway right of ways, and to develop a strategy for biocontrol of mile-a-minute weed (*Persicaria perfoliata*) on State highway right of ways that would include lab and greenhouse rearing and field release and monitoring of the weevil, *Rhinoncomimus latipes.*

In 2010, MDA staff reared 15,000+ adult *Galerucella spp.* leaf beetles, 8,500+ of which were field released. These figures represent the largest numbers ever reared in Maryland, and indicate the growing success of our rearing program at MDA. Releases were made along the Anacostia and Patuxent river watersheds and at new sites in Prince George's County. Additional releases were made in Howard County.

The MDA also developed and refined a rearing protocol for the mile-a-minute weevil (*Rhinoncomimus latipes)*. Staff members visited the New Jersey Department of Agriculture, Phillip Alampi Beneficial Insects Lab in Trenton, N.J. early in the year to learn certain aspects of the rearing protocol for *R. latipes.* The group then built and modified infrastructure and equipment at the MDA PP&WM greenhouse and laboratory facilities and successfully reared 1,400+ adult weevils. Of

those reared, 380+ were field released at sites in five counties in Maryland. The releases in two of those counties, Frederick and Montgomery, were the first releases ever recorded for those counties. (In 2009, the first ever releases were made in Prince George's County.) These 380+ weevils were the first "Maryland reared" weevils released in the state. To date, releases of the mile-a-minute weevil have been made in Howard, Prince George's, Montgomery, Frederick, and Harford counties.

MDA entomologists also continued to partner with the University of Delaware in a regional mile-a-minute weed biological control program. In this program, the University of Delaware coordinates a supply of mile-a-minute weevils, provided by the New Jersey Department of Agriculture. The MDA entomologist coordinating the project in Maryland chooses and coordinates sites for release, makes the field releases, coordinates or performs the monitoring of the release sites and the impact of the weevils on mile-a-minute weed, and collects and collates data, which is then presented to the primary research coordinator for the regional project at the University of Delaware. Since 2007, over 12,000 adult *R. latipes* weevils have been released in Maryland through this cooperative project. Six thousand weevils were released in 2010 alone.

Also partnering with MDA in specific aspects of these biological control projects 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 projects was, in part, derived from the Maryland Department of Transportation, State Highway Administration, Research Division. Additional funding for complimentary and parallel components of these projects was derived from grants with the U.S. Forest Service and from USDA APHIS. MDA was the primary coordinating and reporting agency and conducted the majority of the "on the ground" work.

A survey for the presence and effects of rose rosette disease was continued in 2010. 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 2010, 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. In 2010, after many attempts at inoculating healthy plants with the disease, the first incidence of rose rosette disease in this field experiment was noted on a landscape cultivar of rose.

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 Maryland Department of Agriculture may enter into an agreement with a county or political subdivision to provide technical and financial assistance for initiating weed management and eradication programs.

A weed control advisory committee has been established in each of 19 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.

The weed control program provided no grant assistance to the 19 participating counties in 2009 and this was continued in 2010. The county grant agreements have subsequently been rewritten as cooperative agreements. The county programs have had to rely on increased spray revenues or fee for services to offset the loss of the financial component. Spray revenues for all the county programs was in excess of a million dollars. The county programs are supervised by the state personnel as specified by agreement.

Noxious weed advisory notices were mailed to 228 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, knotweed, as well as invasive bamboo.

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. No new sites were found in 2008 or 2009. There are currently 10 sites in Garrett County that have undergone several years of eradication treatments and this year no new plants were detected. Only two sites needed treatment in Baltimore County this year and none in Harford County. An eradication effort is a multi-year effort.

The Weed Control staff partnered with the Maryland Department of Natural Resources (DNR) for the 11th 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 Eastern Shore counties for spraying phragmites. Total spray revenue for phragmites control was more than $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). It is thought that seed contamination at planting is responsible for the occurrence and spread of noxious weeds in these plantings. Due to the likelihood of weed problems occurring on land in these programs, spraying services were offered for noxious weed control.

Objective: During 2012 conduct pest risk mitigation activities that satisfy stakeholder needs regarding noxious weeds.

Performance Measures	2010 Actual
Intput:	
Number of counties eligible for program participation	23
Average grant amount per county	0
Output: Number of counties with executed noxious weed grant agreements	13
Outcome:	
Number of invasive weed species targeted	12
Number of clients using spray services	2,200
Quality: Percentage of treated acreage where control of State noxious weeds was achieved	98
Efficiency:	
County matching funds per State dollar	0
Percent compliance with noxious weed advisory notices	100

Other Section Activities

During 2010, 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 basic and specialist examinations for the Maryland Certified Professional Horticulturist program. This program was developed by the Maryland Nursery and Landscape Association (MNLA) to raise and improve the professional standards of Maryland's nursery, landscape, and garden center industries by giving special recognition to individuals who have shown a high level of competence in the principles and practices of these industries. Certification also allows this high level of attainment to be recognized by the gardening public.

This voluntary program is available to persons wishing to demonstrate their horticultural proficiency. After meeting a combination of educational and work experience, and studying the written manual which is the heart of the program, applicants must pass a comprehensive examination in order to be certified. The examinations are composed of both written and practical elements that are set up, proctored, and graded by MDA staff. The actual certification is issued and maintained by MNLA.

Plant Protection and Weed Management Summary of 2010 Activity

	2007	2008	2009
Beekeepers Registered	1,152	1,363	1,425
Apiaries Registered	1,152	1,849	1,968
Bee Colonies Registered	9,379	11,474	11,650
Bee Colonies with Disease (American Foul Brood)	34	40	25
Bee Colonies Certified for Movement Out of State	3,975	2,527	3,315
Colonies Moved into Maryland Under Permit	550	773	897
Bee Colonies Certified During Inspection	4,725	3,878	7,413
Ginseng Dealers Registered	9	11	13
Ginseng Collectors Licensed	230	303	298
Post Entry Quarantine/Facility Inspections Conducted	5	3	3
Nurseries Certified	369	355	336
Plant Dealers and Brokers Licensed	1,498	1,477	1,432
Phytosanitary Certificates Issued	301	109	249
Regulatory Actions Takes			5
Plant Pest Surveys Conducted/# Targets/#Samples	16/54/11,099	12/48/16,872	10/27/20,536
Blacklight Samples Processed/# Traps	5,611/44	2,077/29	Program discontinued due to budget reduction.

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.

- **Goal:** To minimize nutrient losses from agricultural operations to the Chesapeake Bay and waters of the State.
- **Objective:** To provide financial and human resources through a combination of voluntary and regulatory programs to improve the management of agricultural production in Maryland so as to reduce the potential for non-point source losses of nitrogen and phosphorus from Maryland farms.

Performance Measures	2010 Actual
Outcome: Reduction in nitrogen loadings to Chesapeake Bay and its tributaries (pounds)	6,127,181*
Outcome: Reduction in phosphorus loadings to Chesapeake Bay and its tributaries (pounds)	441,500*

** This data has been corrected since the Budget Book publication last year. Nitrogen reduction efficiency for cover crops changed from 4.88 pounds per acre to six pounds per acre. Nitrogen and phosphorus reduction efficiencies for manure transport changed from 68 pounds of nitrogen and 60 pounds of phosphorus per ton transported, to two pounds of nitrogen and 1.76 pounds of phosphorus per ton transported.*

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 2010, the SSCC approved or recommended the following policy initiatives:

- Revising the cover crop milestone goal from 460,000 acres planted annually to a more realistic 325,000 acres planted annually by 2011
- New soil conservation district cover crop enrollment goals necessary to achieve the 2011 milestone
- Guidelines and eligibility standards for the 2010–2011 Winter Cover Crop Program
- A review of its turf grass nutrient recommendations by the University of Maryland of as part of the larger effort to expand nutrient management measures in order to meet new Total Maximum Daily Load (TMDL) requirements
- Coordinating financial assistance programs provided by MDA and USDA Natural Resources Conservation Service (NRCS)

In Fiscal Year 2010, the SSCC received the following briefings and tracked these initiatives:

- MDA's new data tracking system, called Conservation Tracker
- MDA's Fiscal Year 2011 budget and potential impacts on soil conservation district support
- New state and federal requirements for animal feeding operations, including Notice of Intent requirements, lawsuits and zero discharge requirements for new operations
- Efforts to develop a methodology and accounting mechanism to report voluntary best management practices (BMPs) installed
- Revisions to Maryland's two-year water quality milestones which substitute additional BMPs for reduced cover crop acreage goals
- BMP demonstration and research project on the use of an algal turf scrubber to treat drainage water

- **Goal:** To maintain and support Maryland's role as a local, state and national leader in the areas of agricultural soil conservation, water quality and nutrient management policy development in order to ensure programs that are economically, environmentally, technically and socially feasible.

- **Objective:** To provide guidance, policy recommendations and support to assure delivery and implementation of soil conservation district programs to attain state water quality goals, by addressing five priority issues and refining programs to result in observable change.

Performance Measures	2010 Actual
Output: Number of priority issues addressed	7
Outcome: Percent of program refinements or recommendations resulting in observable change	60

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, Governor O'Malley's BayStat initiative and the Conservation Reserve Enhancement Program (CREP) Advisory Committee.

Geographic Information Systems

In Fiscal Year 2010, staff continued to provide technical assistance and spatial data to a range of program areas within MDA. GIS is a powerful software technology used for resource management and development planning. The technology 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, global positioning systems data and others are integrated and analyzed to create "smart maps" of a specific location.

During the year, staff reprocessed the 2009 Maryland Cropland Data Layer (CDL) 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 allows government agencies and the public to access state, local and municipal government spatial data sets and GIS applications. One of the applications contained in MDiMap is AgPrint, which targets areas for preservation and establishes conservation priorities. MDA is working with the Maryland Department of Planning to develop a new application which will display selected best management practices (BMPs) such as cover crops and progress in achieving implementation goals outlined in Maryland's Watershed Implementation Plan to restore the Bay. MDA also coordinated efforts with the Maryland Department of Natural Resources (DNR) to develop GIS protocols and tools for targeting potential Conservation Reserve Enhancement Program (CREP) riparian buffer projects located within 35 feet of streams and drainage ditches.

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 2010, annual reports on programs that benefit the Bay including the Maryland Agricultural Water Quality Cost-Share Program and the Nutrient Management Program were produced for the general public and interested constituents. In addition, the spring and winter editions of the newsletter, *Maryland Nutrient Management News*, were mailed to approximately 6,500 farmers and certified nutrient management consultants. In order to promote Maryland's 2010–2011 Cover Crop Program, a comprehensive communications program was initiated which included news releases, direct mail, print advertising and outdoor advertising.

In other areas, the Information and Education program worked with members of the CREP partnership to promote the benefits of establishing streamside buffers and wetlands through direct mail, fact sheets, posters and publicity placement. For youngsters ages 5–10, a range of educational activity books and conservation posters were updated and distributed to educators and visitors at public events. For homeowners, fact sheets and brochures from the popular *Backyard Actions for A Cleaner Bay* series were updated and distributed to the Master Gardeners. Major interactive educational exhibits were provided for 35 events including the 11-day Maryland State Fair, Maryland Home and Garden Show and Towson Gardens Day.

Governor Martin O'Malley announces record cover crop sign up during the summer of 2010, along with new innovative remote sensing technology and the conservation tracker program.

Conservation Grants

Established in 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program helps 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 conservation grants that cover up to 87.5 percent of the cost to install conservation measures known as best management practices (BMPs) on their farms to protect natural resources. Thirty practices were eligible for MACS grants in 2010.

In Fiscal Year 2010, MACS provided Maryland farmers with $17.7 million in grants to install 1,800 capital and special projects on their farms. Maryland farmers contributed approximately $950,000 toward the installation of the capital projects and will shoulder maintenance and upkeep expenses of the BMPs for years to come. Collectively, the projects will prevent an estimated 1.4 million pounds of nitrogen and 89,000 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 nearly half of the phosphorous savings (41,362 pounds).

Protecting streams from sediment pollution is another important MACS goal. In Fiscal Year 2010, MACS helped farmers manage an estimated 17,000 tons of soil annually by cost-sharing erosion control practices such as grassed waterways, grade stabilization structures and diversions. Managing animal waste to protect local waterways is a major Bay restoration goal. In Fiscal Year 2010, MACS helped farmers construct 45 animal waste storage structures that collectively will help manage 561,000 tons of manure annually.

Low Interest Loans for Agricultural Conservation (LILAC) help farmers bridge the cost-share gap by providing needed cash to get a project off the drawing board and in the ground. Guaranteed by the Maryland Water Quality Revolving Loan Fund, LILAC loans are typically offered at three to four percent below market rates. They are available at lending institutions statewide. In Fiscal Year 2010, MACS provided farmers with $214,390 in LILAC loans to help pay for conservation tillage and manure handling equipment.

Cover Crop Program
Cover crops are important to the health of the Chesapeake Bay and the productivity of Maryland's farmland. Small grains, such as wheat, rye or barley, are planted as cover crops in the fall to help farmers control soil erosion on their fields over the winter and reduce the amount of nutrients that end up in the Bay.

During the 2009–2010 planting season a variety of factors—including a late harvest, low cover crop seed germination rates and heavy fall rains—resulted in unfavorable planting conditions. As a result, cover crop acreage was 13 percent lower than the previous year with Maryland farmers planting 206,810 acres of cover crops statewide. MACS provided these farmers with $8.9 million in grants to help offset associated seed, labor and equipment costs. On a positive note, the cover crop signup for the 2010–2011 planting season was the largest in MACS history, with more than 506,000 acres enrolled.

Manure Transport Program
Excess animal manure can threaten the health of the Chesapeake Bay. Poultry and livestock farmers with high soil phosphorus levels or more manure than they can utilize properly may apply for grants to help cover the cost of hauling manure off their farms. Eligible farmers receive up to $20 per ton to transport excess manure to alternative use facilities or other operations that can use the manure safely and in accordance with their nutrient management plans. Cost-share rates are 25 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties on the Eastern Shore.

Increasing the amount of excess manure that is transported annually out of the Chesapeake Bay Watershed is one way the state plans to meet the Bay's new nutrient reduction goals. In FY 2010, Maryland's Manure Transport Program helped poultry producers ship 46,226 tons of poultry litter outside of the Chesapeake Bay Watershed. Cumulatively, Maryland farmers transported 80,899 tons of manure to approved farms and businesses both in and out of the watershed using $469,398 in state grants. Delmarva poultry companies provided matching funds to transport poultry litter. Other animal producers received up to 87.5 percent cost-share or a maximum of $7,500 per farm.

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. Due to budget reductions, funding for nutrient management services has diminished in recent years. In Fiscal Year 2010, MACS issued $63,213 in cost-share grants to 53 farmers in 11 counties who hired private consultants to develop nutrient management plans covering 21,471 acres of farmland.

Conservation Reserve Enhancement Program (CREP)
CREP is a state-federal conservation partnership that pays landowners competitive land rental rates to take environmentally sensitive land out of production and install conservation practices that protect water quality and provide wildlife habitat. Rental contracts typically range from 10 to 15 years. In 2010, promotional efforts focused on re-enrolling the first wave of landowners whose CREP contracts were set to expire. As of June 30, 2010, CREP participation stood at 69 percent of its enrollment target of 100,000 acres. Enrollment figures continue to fluctuate as some contracts expire while others are renewed or new contracts are added. CREP figures prominently in Maryland's Watershed Implementation Plan and is among the state's two-year milestones to place natural filters on private lands.

MACS provides CREP landowners with cost-share grants to establish conservation practices on land that they have agreed to no longer till or graze. In FY 2010, MACS provided 65 landowners statewide with $224,681 in cost-share funds to install streamside buffers, conservation cover, wetlands, livestock crossings and animal fencing on land enrolled in CREP. Maryland also provides a $100 per acre signing incentive to farmers who enroll or re-enroll in the program. Funded by the Chesapeake Bay 2010 Trust Fund, MACS provided $405,000 in sign-up bonuses for 4,050 acres of land in FY 2010.

MACS Highlights

- **Goal:** Control and reduce agriculturally related water pollution through the implementation of best management practices (BMPs).

- **Objective:** Each year reduce nutrient loads caused by agricultural sources in the following amounts: (a) reduce soil erosion by 15,000 tons per year, and (b) increase the amount of animal waste managed by 2,500 tons per day/per year.

Performance Measures	2010 Actual
Output:	
Number of cost-share agreements approved by the Board of Public Works	623
Number of BMPs installed controlling erosion and improving water quality	680
Outcome:	
Acres of land treated	1,218
Animal units served	65,297
Additional tons of soil saved per year	17,009
Additional tons of manure managed per day/per year	1,537
Pounds of nitrogen load reduction	119,541

- **Objective:** To focus dollars on acres which provide the most efficient measures.

- **Objective:** To manage cost-share incentives toward meeting Maryland's Tributary Strategies' goal for nutrient reductions by planting cover crops on cropland.

Output: Acres of cover crops planted	206,810
Outcome:	
Pounds of nitrogen load reduction	1,240,860
Pounds of phosphorous load reduction	41,362

- **Goal:** To help farmers address potential nutrient problems on farms where animal production results in the production of excess manure or manure cannot be fully utilized because land is over-enriched with phosphorus.

- **Objective:** In 2011, have 20 percent of the poultry producers with excess manure participate in the program.

Performance Measures	2010 Actual
Input:	
Financial assistance paid to transport manure	
State funds	$469,398
Poultry companies	$402,846
Output:	
Participation of livestock producers with excess manure	14%
Outcome: Tons of manure transported	80,899
Efficiency: Cost per ton manure transported (state funds)	$5.80

- **Goal:** To help farmers obtain a nitrogen and phosphorus based nutrient management plan developed and written by a certified private consultant for the proper management and utilization of all nutrient sources.

- **Objective:** To concentrate state resources on achievements through regulatory programs.

Performance Measures	2010 Actual
Output: Acres of nutrient management developed with cost share	21,471
Outcome:	
Pounds of nitrogen load reduction	62,263
Pounds of phosphorous load reduction	4,294
Efficiency: Cost per acre	$2.94

**MFR nitrogen reduction does not include efficiencies for all capital BMPs.*

Maryland Nutrient Management Program

The Water Quality Improvement Act (WQIA) 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 follow nutrient management plans when fertilizing crops and managing animal waste. These science-based documents specify how much fertilizer, manure or other nutrient sources may be safely applied to individual crop fields in order to prevent excess nutrients from contaminating waterways. Nutrient management plans are required for all agricultural land used to produce plants, food, feed, fiber, animals or other agricultural products.

Non-agricultural nutrient applicators, including commercial lawn care companies, landscapers, golf course managers and public groundskeepers, are required by law to follow University of Maryland (UME) guidelines when applying nutrients to lawns, athletic fields or other landscapes. Both agricultural and non-agricultural nutrient applicators are required to maintain accurate records of soil test results and nutrient applications and make these records available to MDA if they are selected for audit.

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 to submit their initial nutrient management plans to MDA. As of June 30, 2010, 5,722 farmers had filed their initial nutrient management plans with MDA. The figure represents 99.9 percent of regulated farm operators and 99.9 percent of regulated acreage (1,324,302 acres). MDA enforcement specialists worked throughout the year to bring the compliance rate to 100 percent by tracking down missing plans and collecting $2,800 in fines and penalties. MDA is currently pursuing enforcement actions against five remaining farmers who have failed to submit initial nutrient management plans for 702 acres of farmland.

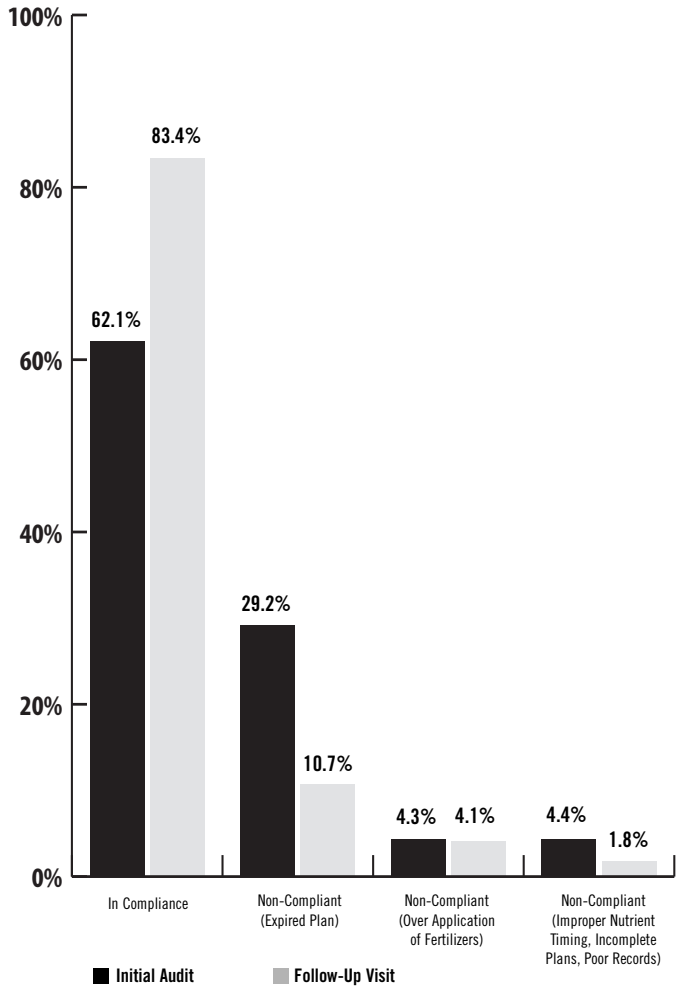
Annual Implementation Reports: Famers are required to update their nutrient management plans at least every third year and submit Annual Implementation Reports (AIRs) to MDA describing their use of nutrients for the previous calendar year. AIRs allow MDA to verify farm information, identify changes in property farmed and document fertilizer and nutrient use. These reports are due to MDA by March 1 of each year.

In April 2010, MDA issued 1,367 warning notices to farmers who failed to file their AIRs by the March 1 deadline, followed by 473 notices of pending fines. By June 30, 2010, approximately 97.2 percent of regulated farmers had submitted their AIRs to MDA. MDA is working to bring the remaining farmers into compliance. In FY 2010, MDA collected $9,000 in fines against 36 farmers who failed to submit their AIRs.

On-Farm Audits and Inspections: MDA's six nutrient management specialists conduct on-farm audits and inspections to verify that nutrient management plans are current, records are in line with plans, and that farmers are using plans to properly manage nutrients. In FY 2010, MDA conducted 412 implementation audits covering 168,117 acres. Specialists issued 167

warnings to correct major violations and documented and issued timelines for minor violations to be corrected. The majority of the violations were due to expired nutrient management plans. By the end of the fiscal year, 99 of the 167 major violations had been corrected. MDA continues to work to bring all farmers into compliance. In FY 2010, MDA collected $1,150 in fines against four farmers who failed to take corrective actions. The remaining 64 farmers are in various stages of the enforcement process.

Results of Initial On-Farm Audits and Follow-Up Inspections FY 2010



Nutrient Management Plan Reviews

MDA nutrient management specialists review nutrient management plans prepared by certified consultants and farmers to ensure that they meet regulatory standards and are effective in protecting water quality. A site visit is conducted as part of this review process.

In FY 2010, MDA specialists reviewed 256 nutrient management plans developed by certified consultants and farmers. All plans reviewed complied with regulatory requirements. Eighty-one commercial nutrient applicators were also inspected and found to be in compliance.

In order to participate in MDA cost-share programs, farmers must be in good standing with the Nutrient Management Program. In FY 2010, MDA specialists reviewed 113 nutrient management plans for farmers seeking reimbursement through the Maryland Agricultural Water Quality Cost-Share (MACS) Program. All of these plans met regulatory requirements.

An additional 22 nutrient management plans were reviewed as part of the Maryland Department of the Environment's (MDE) cross compliance for issuing sewage sludge utilization (SSU) permits. The majority of plans written for SSU permits failed to meet MDA's standards. Major inadequacies included missing recommendations for phosphorus and potassium and improper use of the Phosphorus Site Index tool. MDA and MDE are working with sludge management companies to fix the problems.

Certification and Licensing Programs

Consultant Certification: In FY 2010, MDA certified 52 new consultants who passed the Nutrient Management Certification Exam, bringing to 1,148 the number of individuals who have successfully completed the program. The figure includes 380 consultants who are licensed by MDA and about 130 who are actively writing plans. MDA also funded 21 University of Maryland consultants in FY 2010, down from 28 positions funded in Fiscal Year 2009 due to state budget reductions.

Farmer Training and Certification: Farmers can become certified by MDA to write nutrient management plans for their own operations through the Farmer Training and Certification Program. In FY 2010, MDA certified 23 farmers to write their own nutrient management plans. To date, 325 farmer/operators have been certified to develop nutrient management plans for properties that they own or manage.

Education Programs

Nutrient Applicator Voucher Training: In 2010, MDA and UME conducted 31 voucher training sessions attended by 634 individuals seeking to obtain or renew their vouchers. To date, 5,828 vouchers have been issued.

Nutrient Applicator Training for Non-Agricultural Applicators: MDA provides training to lawn care workers who apply nutrients to private lawns, golf courses, recreation fields and other public lands. During the year, 34 participants attended two training sessions offered in English and Spanish.

Continuing Education: In FY 2010, MDA and UME sponsored 37 education classes on nutrient management topics ranging from the Revised Universal Soil Loss Equation to the Phosphorus Site Index. More than 500 individuals attended the training. MDA approved an additional 50 courses and field events sponsored by other recognized organizations. Approximately 874 individuals attended this training.

Nutrient Management Exam Training: MDA offers a training course for individuals planning to take the Nutrient Management Certification Exam. In FY 2010, 51 individuals completed the two-day training course.

Nutrient Management Training for Soil Conservation District Personnel: In FY 2010, MDA offered a special one-day training course to help prepare soil conservation district personnel to assist animal operations with management plans required by MDE's Confined Animal Feeding Operation (CAFO) permit. Fifty-four individuals attended the training.

Urban and Other Non-Agricultural Nutrient Management Programs

Approximately 700 businesses are regulated by MDA's Urban Nutrient Management Program. Each year, roughly 10 percent of these operations are selected randomly for inspection. In FY 2010, MDA reviewed the maintenance records of 24 golf courses, 32 lawn and landscape companies and three public lands maintenance facilities. The reviews resulted in 19 warnings against five golf courses and 14 lawn and landscape companies. The most common compliance issues were lack of soil tests and over application of nutrients. Operations that failed their first inspection were given a deadline to make corrections and received a follow up inspection. As of June 30, 2010, 12 follow up inspections were conducted with satisfactory ratings.

- **Goal:** To minimize nutrient losses from agricultural operations and non-agricultural nutrient users to the Chesapeake Bay and waters of the State.

- **Objective:** To ensure all eligible Maryland farmers have and implement their nutrient management plan developed by certified consultants, keep records pertaining to their plans, and file a copy of their plans with the MDA. To have all operators update their plans as needed, based on the time frame(s) set by the plans.

Performance Measures	2010 Actual
Input:	
Number of site inspections and plan reviews	412
Total number of certified consultants and certified operators	1,473
Output:	
Cumulative acreage of plan summaries filed with MDA as of June 30 each year	1,324,302
Compliance as percent of total eligible acreage	99
Outcome:	
Nitrogen load reduction in pounds*	3,840,476
Phosphorus load reduction in pounds*	264,860
Quality:	
Adequacy of plans based on plan consultant's review and inspection	85.4

**Formula used to determine nitrogen and phosphorus load reductions is based on the Chesapeake Bay Program values.*

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.

Technical Assistance

In FY 2010, MDA funded 74 technical assistance positions in soil conservation districts statewide, down from 75 positions the previous year, and well short of the 110 positions specified by the Agricultural Stewardship Act of 2006.

Notwithstanding, MDA field staff is essential in helping farmers protect natural resources and meet Chesapeake Bay restoration goals. MDA field technicians work directly with farmers to develop protective Soil Conservation and Water Quality Plans (SCWQPs) for 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. Due to their importance in identifying opportunities to install best management practices to protect natural resources, SCWQPs are a key feature of Maryland's Watershed Implementation Plan (WIP). They are also required by numerous federal and state programs including the Federal Food Security Act, the Chesapeake and Atlantic Coastal Bays Critical Area Law, and MDE's Animal Feeding Operation (MAFO) Permit. In FY 2010, technical staff working in soil conservation district offices statewide developed 938 new Soil Conservation and Water Quality Plans to protect 53,038 acres of Maryland farmland. An additional 889 plans covering 80,044 acres were updated.

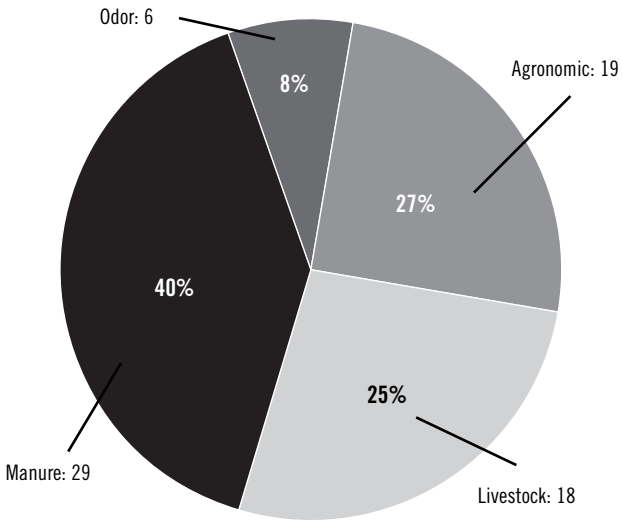
Best management practices (BMPs) are conservation measures designed to control soil erosion, manage nutrients and protect water quality. They are featured in all SCWQPs. MDA field technicians work closely with famers to design BMPs and supervise their installation or construction. They also develop maintenance plans to keep them in good working order while helping farmers calculate costs to install BMPs and apply for state and federal cost-share and low interest loans. Technicians assisted farmers with the installation of 863 highly-valued BayStat BMPs in FY 2010.

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. During the year MDA and MDE, worked jointly with soil conservation districts to assess farm management complaints and take action against polluters when necessary. "Rapid response teams" were developed to quickly focus existing resources on evaluating and resolving possible on-farm environmental issues. Emphasis is placed on voluntary corrective actions by farmers or landowners with assistance provided by local soil conservation districts or the University of Maryland Extension.

In FY 2010, 72 agricultural complaints were received concerning sediment and erosion control issues, odors, manure and livestock concerns. Of this figure, 64 complaints were corrected or closed, six complaints are pending enforcement, two complaints are open and one enforcement action was resolved involving a complaint that was handled during FY 2008–09.

Type of Agricultural Complaints FY 2010



Agricultural Water Management

Drainage ditches are commonplace on the Eastern Shore. A network of approximately 820 miles of ditches is maintained by 101 public drainage associations (PDAs) and four public watershed associations in Caroline, Queen Anne's Somerset, Wicomico and Worcester counties. Together, these ditches drain 183,000 acres of agricultural and developed land.

MDA works with local PDAs to ensure that operation and maintenance plans for public drainage systems are in good working order and that best management practices are installed to protect water quality. During the fiscal year, two wetlands were restored in the Middle Branch PDA which drains into the Coastal Bays Watershed. These wetlands filter more than 2,000 acres of residential and agricultural stormwater runoff monthly. Twelve additional wetlands were restored to filter 2,900 acres of stormwater runoff near the Horsebridge PDA, which feeds the Pocomoke River. The Goodwill PDA, which also drains into the Pocomoke River, restored two additional wetlands to filter 3,000 acres of residential and agricultural stormwater runoff.

On-farm best management practices such as stream fencing, streamside buffers and watering troughs help farmers better manage farms and protect Maryland's streams, rivers and the Chesapeake Bay.

Special Projects and Grants

The Office of Resource Conservation actively manages 27 ongoing research and technical assistance grants totaling $6.6 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 FY 2010, the program received several grants to assist in establishing a nutrient trading program for Maryland that creates a public marketplace for the sale and purchase of nutrient credits (phosphorus and nitrogen).

Conservation Tracker

MDA piloted its new Conservation Tracker database system in local soil conservation district offices this year. Conservation Tracker provides Governor O'Malley's BayStat program with accurate information on BMPs in use on Maryland farms that have positive benefits for the Bay. It uses a geo-referenced profile of the location of BMPs installed on Maryland farms and calculates the nutrient reduction credits Maryland farmers receive for their efforts. The system highlights BMPs specified by Governor O'Malley's two year milestones by documenting the broad array of water quality BMPs that have been installed on Maryland farms using federal and state grant funds. The data helps MDA target technical and financial resources to areas that can achieve the greatest water quality benefits. In the future, Conservation Tracker will be expanded to include additional BMPs that the farmers have installed without government assistance.

Nutrient Trading

The Maryland Nutrient Trading Program is a public, voluntary marketplace for buying and selling nutrient credits. When fully implemented, the program is expected to play a critical role in enhancing water quality in the Chesapeake Bay and its tributaries by creating incentives for private sector financing of agricultural practices to further reduce nutrient runoff and emissions. The Maryland trading platform is based on the World Resources Institute's NutrientNet suite of tools. It incorporates both Chesapeake Bay Program models and the national Nutrient Trading Tool (or NTT) developed by USDA's Natural Resources Conservation Service. Maryland's trading program currently provides nitrogen and phosphorus credits but will eventually include sediment and carbon trading. To assist those interested in trading, MDA has established a website that contains a credit calculator, a marketplace, and a central registry. Whether credits are sold directly to a buyer or

through a third-party broker or aggregator, the online marketplace serves as a convenient and constantly updated location to assess trading activity and find potential trading partners. The web site can be accessed at www.mdnutrienttrading.com. In FY 2010:

- House Bill 974 authorized MDA to establish an agricultural certification, verification, and registration program to support nutrient trading.
- Web site developed and available.
- Close to 1,200 people attended regional outreach and informational meetings held around the state to introduce the nutrient trading program.
- Eight training workshops in Maryland and West Virginia, gave 126 participants hands-on experience in using the online calculation tool.

Maryland Envirothon

MDA and soil conservation districts 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 five-member group of Boy Scouts from Carroll County won this year's state competition and went on to place 5th among more than 270 teenagers from 45 U.S. states and 9 Canadian provinces at the 2010 Canon Envirothon held at California State University in Fresno August 1–6, 2010. The team was awarded $7,500 in Canon scholarships.

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

- **Goal:** To improve the water quality and habitat of the Chesapeake Bay region by utilizing programs and staff resources to reduce nitrogen and phosphorus levels from agriculture that meet or exceed the new agricultural Tributary Strategies goal of 50 percent nitrogen and 60 percent phosphorus load reduction from pre-1985 loads from agricultural sources by 2010.
- **Objective:** To develop and promote soil conservation and water quality plans and best management practices to meet local water quality goals for nitrogen and phosphorus by increasing new and revised planning acres under the new Tributary Strategies to 80 percent (800,000 acres) coverage by 2010 and environmentally friendly ditch maintenance to 25 miles of public drainage by the end of 2010.

Performance Measures	2010 Actual
Output:	
Number of new acres under conservation plans (cp)	53,038[1]
Environmentally friendly ditch maintenance (miles) per year	12[1]
Outcome:	
Pounds of nitrogen reduced (N=0.66 lb/acre) per cp	28,593
Pounds of phosphorus reduced (P=0.10 lb/acre)[3] per cp	4,323
Quality:	
Citizen complaints about cases of water pollution caused by agriculture	72
Backlog of farmers service requests (in number of days)	57

[1] *Funding reduced.*

Maryland Department of Agriculture Budget Allocations for Fiscal Year 2010

Total State Budget (Operating and Capital)	$30,614,670,194
Maryland Department of Agriculture Budget	$ 102,763,155
Maryland Department of Agriculture Budget Sources	
State General Fund	$ 29,960,289
Special and Reimbursable Funds (Fees, Registration, Testing & MALPF)	$ 41,089,793
Federal Funds (Grants & Cooperative Agreements)	$ 6,713,293
General Obligation Bonds (Maryland Agricultural Water Quality Cost Share, MALPF & Tobacco Conversion)	$ 24,999,780

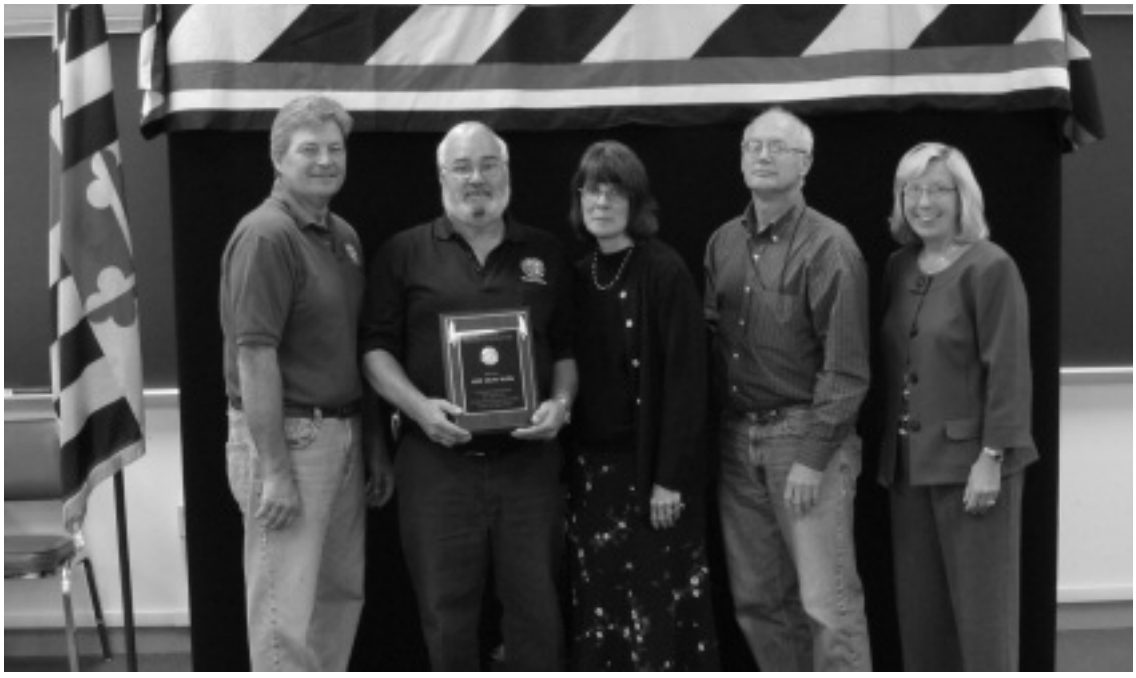
Source: Fiscal Digest of the State of Maryland, 2010 Session

Long Service Awards

40 Years of State Service

(L–R): Sec. Buddy Hance, Donald Lewis, Warren Bontoyan, Dep. Sec. Mary Ellen Setting

35 Years of State Service



(L–R): Sec. Buddy Hance, John Ralph Heard, Rose Heard, Michael Cantwell, Dep. Sec. Mary Ellen Setting

30 Years of State Service

(L–R): Sec. Buddy Hance, Pegeen Morgan, Gaye Williams, Lois Capshaw, Dep. Sec. Mary Ellen Setting

25 Years of State Service

(L–R): Sec. Buddy Hance, Lane Heimer, Charles Coleman, Thomas Bramble, Merry McNeil, Donna Crouch, Brenda Alexander, Dep. Sec. Mary Ellen Setting

20 Years of State Service

(L–R): Sec. Buddy Hance, Barbara Bassford, Karl Roscher, Rowland Agbede, Karen Wick, Dep. Sec. Mary Ellen Setting

15 Years of State Service

(L–R): Sec. Buddy Hance, Lynn McNally, Dep. Sec. Mary Ellen Setting

10 Years of State Service

(L–R): Sec. Buddy Hance, Daniel Schwaninger, Tonya Jones, Kimberly Rice, Kimberly Parker, Amy Eichelman, Philip Davidson, Robert Hofstetter, Dep. Sec. Mary Ellen Setting

October 2010 Employee of the Quarter

The MDA Team of the Quarter Award honored six analysts from the Turf and Seed section: *Carleeta Carter*, *Stephen Hurst*, *Kadawedduwa Kumara*, *Kim MacFarland*, *Susan Wagner* and *Nancy Wilkinson*. They were recognized for their willingness to cross train across various functions of the two Turf and Seed labs to ensure that the heavy workload of the lab is effectively managed. This team is responsible for processing all seed samples used in the reporting and decision making necessary to accurately label quality seeds in Maryland.

(L–R): Sec. Buddy Hance, Kim McFarland, Kadawedduwa Kumara, Nancy Wilkinson, Dep. Sec. Mary Ellen Setting

Dawn Littleton Bradley received the MDA Employee of the Quarter Customer Service Award. She serves as a vital link between MDA and the Soil Conservation Districts for the cover crop program, which enrolled a record number of farmers and acres this year. Ms. Bradley performed outstanding statewide outreach by going above and beyond her normal work schedule, often using her personal time, to ensure that the cover crop program is successful.

May 2010 Employees of the Quarter

Carol Council, an Administrator with the Maryland Agricultural Land Preservation Foundation received an award for her leadership. Examples would include her pro-active public outreach explaining the program; impact on policy issues such as natural gas drilling rights in Garrett County; and for mentoring interns to encourage their interest in land preservation and public service.

Jason Keppler, a Programmer and Analyst with the Resource Conservation Office received an innovation award for his work to establish dynamic data-based projects that track and report agricultural best management practices and farm conservation planning that are part of the BayStat (www.baystat.maryland.gov) program and the new Conservation Tracker.

Diana Mullenix, front office manager at the Frederick Animal Health Diagnostic Laboratory, received a customer service award. Diana is a key to the lab's mission of diagnosing and assisting in the control and eradication of animal and zoonotic diseases through her recordkeeping, management and interaction with everyone from producers, veterinarians, government colleagues, and everyone who has interacted with the lab for 25 years.

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Aquaculture Coordinator, Noreen Eberly (410) 841-5724

Aquaculture Coordinating Council
Chairman, Don Webster

Aquaculture Coordinator, Karl Roscher (410) 841-5724

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Chairman, Dale Hough

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Chairman, James Steele

Executive Director, J. Robert Burk (410) 841-5822

Maryland Organic Certification Advisory Committee
Chairman, Luke Howard

Agricultural Coordinator, Karen Fedor (410) 841-2719

Maryland Winery and Grape Growers Advisory Committee
Chairman, Richard Penna

Agricultural Coordinator, Karen Fedor (410) 841-5770

Seafood Marketing Advisory Committee
Chairman, William Woodfield

Agricultural Coordinator, Noreen Eberly (410) 841-5820

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State Soil Conservation Committee
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Executive Secretary, Louise Lawrence (410) 841-5863

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Chairman, Michael Edward "Eddie" Boyle, Jr.

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